ATTACHMENT 2: NARRATIVE

2. Project Description

Franklin MRI Center, LLC ("Applicant") is a joint venture between Baystate Franklin Medical Center ("BFMC") and Shields Family Equity II, LLC ("Shields") that was formed in 2006 to establish a licensed clinic to provide magnetic resonance imaging ("MRI") services. Currently, the Applicant is authorized to provide fixed MRI services seven days per week at BFMC located at 164 High Street in Greenfield. To meet demand, and for access, quality, health equity and cost efficiency purposes, the Applicant is filing a Notice of Determination of Need ("Application") with the Massachusetts Department of Public Health ("Department" or "DPH") for a change in service to add a part-time mobile MRI to its MRI clinic license. Specifically, the mobile unit will operate five days per week as a satellite location at Baystate Wing Hospital ("BWH"), another Baystate Health, Inc. ("BH System") hospital located at 40 Wright Street in Palmer ("Proposed Project").

The need for the Proposed Project is based on the need of BWH to provide accessible MRI services to its patients. BWH currently arranges for on-site MRI services for its patients through a contractual agreement with the UMass Memorial Imaging Center ("UMMIC"). UMMIC is a licensed MRI clinic partly owned by UMass Memorial Medical Center that provides part-time mobile MRI services at BWH. This arrangement was instituted while BWH was a member of the UMass Memorial Health Care System ("UMMHC"). However, as BWH is now a member of the BH System, BWH determined that it would no longer contract with UMMIC for MRI services and seeks to have the Applicant, of which BH System (as the parent of BFMC) is a part owner, fulfill the continued need for access to MRI services at BWH.

With regard to patient panel, the Applicant and BWH conducted an evaluation of the imaging needs of BWH's patients. Based on this analysis, the Applicant and BWH determined that continued access to on-site MRI services is necessary to provide a full complement of services at BWH. Specifically, historical utilization and future volume projections support the need for part-time on-site MRI services at BWH to allow continued ready access to imaging services and continuity of care. Moreover, data shows that BWH's 65+ age cohort comprises close to 25% of its patient panel with this number projected to substantially increase by 2035. Given this increase in older patients, BWH anticipates a greater need to diagnosis and treat patients' various medical conditions with MRI imaging services. Through the Proposed Project, the Applicant will be able to sustain BWH's ability to provide timely access to MRI services now and into the future.

Additional factors contributing to the need for the Proposed Project are social determinant of health ("SDoH") factors faced by the patient panel, as well as the geographic isolation of the panel. Some of the communities within BWH's service area, such as Warren, have high levels of poverty with many individuals (40%) living at or below the poverty line. Moreover, the population faces additional barriers to care, such as high levels of unemployment, low levels of education attainment and an overall lack of public transportation. The Proposed Project will enable BWH to continue to offer on-site, co-located MRI services, alleviating the need for patients to travel to alternative locations for imaging services. The continued provision of MRI services at BWH will ensure equitable care for all patients by reducing barriers to accessing these vital diagnostic services in a timely manner. Furthermore, a variety of benefits of co-location are identified in the literature, including improved access, greater convenience and satisfaction, greater opportunities for provider collaboration, faster diagnosis and timely implementation of accurate treatment regimes. The availability of co-located services will allow for the continuation of a "health home" for patients, so they receive necessary services at one location, allowing for better care continuity, and in turn, higher quality health outcomes.

Finally, the Proposed Project will compete on the basis of provider price, costs and total medical

expenses (“TME”). MRI services currently are available at BWH as provided by UMMIC and will undergo a delivery shift as it becomes a service of the Applicant; however, costs are not projected to increase as a result of this shift. Similar to the current UMMIC arrangement, the MRI services offered by the Applicant at BWH will be independent diagnostic testing facility (“IDTF”) services and, therefore, will be reimbursed at rates that are lower than hospital-based rates. Moreover, the Applicant’s proposed MRI service at BWH will help address current out-of-network challenges faced by individuals, including BWH’s employees, covered by Health New England (“HNE”) because the existing UMMIC MRI clinic is out-of-network. Accordingly, the Proposed Project will provide patients in need with continued access to high-quality MRI services while also meaningfully contributing to Massachusetts’ goals for cost containment.

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. Overview of Patient Panel Selection

As discussed above, the Applicant is a joint venture between BFMC and Shields that is currently authorized to provide fixed MRI services in Greenfield and that seeks to provide part-time mobile MRI services at BWH. The Applicant notes that although BFMC and BWH are hospital members of the BH System, because the MRI service at BWH is to be licensed to the existing Franklin MRI Center, LLC joint venture, provision of the BH System panel is not required. Moreover, given the broad geographic span of the BH System, the varying services and physician availability in the different BH System regions, and the localized nature of each BH System hospital’s specific patient population, the Applicant notes that even if it were required to provide system-wide data, such data would not be particularly helpful to an evaluation of the Proposed Project, which affects a discreet component of services, specifically, MRI services at BWH.

In further consideration of the fact that the patient population for services is highly localized among the BH System hospitals and being that the part-time mobile MRI service proposed for implementation pursuant to this Application will be sited fifty-four miles from the existing Greenfield location, the Applicant relies on BWH’s patient panel, rather than the patient panel served by the existing MRI service at BFMC in Greenfield, to determine the need for the Proposed Project. Accordingly, the Applicant provides below the demographic data for the patient panel at BWH. Historical utilization data for the current MR imaging services at BWH is also provided to establish the need for the Proposed Project.

B. BWH Patient Panel

BWH is located in Palmer, Massachusetts. As the only hospital in its area, BWH serves Palmer and the surrounding communities by providing community-based acute hospital services. It is licensed by the Department to operate seventy-four beds. BWH offers a broad array of services, including Emergency Department (“ED”), primary care and specialty care, including surgery, oncology, orthopedics, neurology, cardiopulmonary, and other inpatient and outpatient services. BWH also has an outpatient center located in Ware (formerly, Baystate Mary Lane Hospital

("BMLH") and now, Baystate Mary Lane Outpatient Center ("BMLOC")) that offers a satellite emergency facility as well as primary care, specialty care, day surgery, cancer center (a Baystate Medical Center ("BMC") satellite), and other ancillary services. BWH currently arranges for on-site MRI services for its patients through a contractual agreement with the UMMIC but seeks, through this Application, to have the Applicant fulfill the need for access to MRI services at BWH.

Demographic Profile

BWH provides care primarily to patients in the greater Palmer community at multiple hospital satellites. With regard to gender, from fiscal year ("FY") 2016-2018, 45% of the patient panel identified as male and 55% identified as female. During this same period, BWH's top twenty patient origin communities (as determined by the Applicant and BWH) served were: Ware; Palmer; Springfield; Belchertown; Monson; Ludlow; Wilbraham; Three Rivers; Warren; West Brookfield; Chicopee; Brimfield; Bondsville; West Warren; Gilbertville; Hampden; Wales; Thorndike; East Longmeadow; and Granby. Over 85% of BWH's patients are from these communities. Preliminary data for the first two quarters of FY19 shows similar trends. The following chart provides a further breakdown of the FY16-18 numbers and demonstrates the percentage of patients from each of these twenty cities and towns in BWH's service area. The remaining patients in the panel are either from other cities and towns in Massachusetts or do not reside in the state.

City/Town	FY 2016	FY 2017	FY 2018
Ware	9,182 (14.8%)	8,830 (13.6%)	7,390 (14.5%)
Palmer	6,646 (10.7%)	7,868 (12.1%)	5,365 (10.5%)
Springfield	5,676 (9.1%)	5,372 (8.2%)	4,833 (9.5%)
Belchertown	5,550 (8.9%)	5,290 (8.1%)	4,168 (8.2%)
Monson	5,387 (8.7%)	6,757 (10.4%)	4,567 (9.0%)
Ludlow	4,736 (7.6%)	4,933 (7.6%)	3,912 (7.7%)
Wilbraham	3,175 (5.1%)	3,432 (5.3%)	2,595 (5.1%)
Three Rivers	1,884 (3.0%)	2,216 (3.4%)	1,582 (3.1%)
Warren	1,740 (2.8%)	1,724 (2.6%)	1,364 (2.7%)
West Brookfield	1,621 (2.6%)	1,708 (2.6%)	1,501 (2.9%)
Chicopee	1,451 (2.3%)	1,334 (2.0%)	1,047 (2.1%)
Brimfield	1,351 (2.2%)	1,607 (2.5%)	1,096 (2.2%)
Bondsville	966 (1.6%)	1,065 (1.6%)	751 (1.5%)
West Warren	917 (1.5%)	944 (1.5%)	717 (1.4%)
Gilbertville	840 (1.4%)	824 (1.3%)	646 (1.3%)
Hampden	741 (1.2%)	892 (1.4%)	688 (1.4%)
Wales	690 (1.1%)	782 (1.2%)	541 (1.1%)
Thorndike	640 (1.0%)	784 (1.2%)	543 (1.1%)
East Longmeadow	570 (0.9%)	577 (0.9%)	524 (1.0%)
Granby	472 (0.8%)	426 (0.7%)	383 (0.8%)

The demographic profile for patients receiving care at BWH for the period from FY16 to FY18 shows that the majority of patients within BWH's patient population are between the ages of 19-64. However, there are a significant number of patients that are 51 years of age and older. From FY16 to FY18, patients in the 51+ age cohort grew from 46.2% to 47.7% of BWH's patient panel. Moreover, there is a meaningful portion of patients that are 65 and older. Specifically, the

percentage of BWH's total patient population in the 65+ age cohort increased from 21.2% in FY16 to 22.9% in FY18. Based on these data, as well as preliminary data for FY19 and population projections provided by the University of Massachusetts Donahue Institute ("UMDI") which predict that the principal cities and towns where the majority of BWH's patients reside will experience increases in their aging populations in coming years, the Applicant expects to see continued increases in the number of older adults receiving services at BWH into the future.

The Applicant also reviewed race data based on patient self-reporting. Data collected in FY18 indicate that BWH's patient panel is largely reflective of a Caucasian/White population (86.7%). The next largest cohort of patients self-identify as Hispanic or Latino (6.4%), followed by African American or Black (3.3%), Asian (0.7%), and American Indian or Alaska Native (0.2%). A portion of patients (2.8%) either did not report their race or identified as a race that was not among the surveyed categories. Thus, it is important to note that the racial composition of BWH's patient panel may be understated.

Finally, BWH's payer mix shows the breakdown by the following categories: Medicare, Medicare Advantage, Medicaid, Commercial, and "Other." In FY18, BWH's public payer mix included nearly 50% of all patients, including Medicare beneficiaries, who represented 19.01% of the patient panel; Medicare Advantage beneficiaries who represented 6.89% of the patient panel; and Medicaid beneficiaries, who represented 22.94% of the patient panel. Additionally, commercially insured patients represented 44.12% of BWH's patient panel. The remainder of patients (7.04%) were covered by some other form of insurance or were designated as self-pay. Preliminary data for the first two quarters of FY19 shows similar trends.

Historical MRI Utilization

A review of BWH's patients who had undergone MRI scanning defines the most common areas of the body scanned. In FY18, BWH's patients underwent MRI scans as follows:

Area of Body Scanned	Percentage of Patients
Brain	31.3%
Lumbar	19.6%
Lower Extremities	17.7%
Upper Extremities	9.7%
Cervical	9.2%
Abdomen	5.0%
Thoracic Spine	2.9%
Head/Neck	1.4%
Pelvis	1.2%
Arthogram	0.7%
Chest	0.4%
Sacrum	0.4%
Other	0.5%

BWH's MRI patient panel also can be broken down into the following categories: neurology (63.8%); orthopedic (29.6%); body (5.0%); angio (0.5%); chest (0.4%); and other (0.5%). These data demonstrate that over 90% of BWH's patients receiving MRI services underwent scanning related to neurological or orthopedic conditions.

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.

As BWH is no longer a member of UMMHC, through the Proposed Project, the Applicant seeks approval to operate its own mobile MRI service at BWH. In effect, this will result in a one-to-one replacement of the existing MRI service, as the current UMMIC-run MRI operates three 12-16-hour days per week and the Applicant's proposed MRI at BWH will operate five days per week with 8 hours of operation each day. As a one-to-one replacement, capacity for MRI will not be increased in the Commonwealth and continued on-site access to MRI services at BWH will be ensured. Volume trends indicate there will be increased demand for MRI services at BWH, particularly as the population ages. Other factors will also result in increased demand for an on-campus MRI service, including BWH's ongoing physician recruitment efforts to satisfy the needs of its patient panel in the geographic area. Accordingly, the Applicant seeks the Department's approval to operate a part-time clinic-based mobile MRI service five days per week at BWH in place of the current UMMIC-run MRI clinic on BWH's campus.

A. Historical Demand for MRI Services at BWH

Historical volume for MRI services at BWH via the UMMIC-run clinic has changed over the past several years. In FY16, 1,691 MRI scans were performed for BWH patients, 1,445 scans in FY17, and 1,846 scans in FY18. Although there was a decrease in volume from FY16 to FY17, these data reflect an overall growth in volume over the last three fiscal years. The Applicant notes that the decreased MRI volume at BWH in FY17 may be attributed to BWH's transition to the BH System's information technology system in mid-2017. Technical issues around integrating the various hospital technology systems resulted in patients being diverted to locations within the BH System other than BWH for MRI services. This diversion of patients to various sites for MRI services created uncertainty among patients as to whether MRI services were still being provided at BWH. In addition, BH System physicians were not always aware that MRI services were available through UMMIC at BWH, were unsure of how to access medical record information, and instead referred to other MRI services operated by the BH System.

To address these issues, the BH System and BWH have worked to inform patients about the availability of MR imaging services on BWH's campus and to educate clinical staff on accessing the associated records within the electronic medical record data systems. These efforts, aimed at ensuring patients are able to access conveniently located MRI services at BWH and mitigating the need to travel for this service, have been successful as evidenced by the increase in scan volume from FY17 to FY18. Moreover, preliminary data for the first quarter of FY19 suggests continued growth in MRI volume at BWH (491 MRI scans were performed in the first quarter of FY19 at BWH).

B. Projected Demand for MRI Services at BWH

Based on numerous factors, the Applicant has developed modest volume projections for the first

five years of operation of the Proposed Project. It is projected that in Year 1 the Applicant will provide 1,988 scans at BWH; in Year 2, 2,113 scans; in Year 3, 2,238 scans; in Year 4, 2,363 scans; and in Year 5, 2,363 scans. This reflects an expected increase of roughly 19% over the first five years of operation.

Changes in Patient Panel

The expected growth in the number of projected MRI scans into the future is based in part on the expected changes within BWH's patient panel. First, there has been an increase in the number of outpatient providers in the BWH service area, including specialists in surgery, orthopedics, plastic surgery, and sports medicine. Primary care providers also are being added. These are referral sources that ultimately will contribute additional MRI volume to BWH. For instance, additional MRI volume is expected to result from the new wound care center that is set to open at BWH's BMLOC satellite in Ware, as well as from the expansion of cancer services offered at the Ware campus by BMC and Baystate Medical Practices, Inc. Many of the oncologists associated with the cancer program did not previously refer patients to the MRI service at BWH due to technical issues with electronic health information systems. However, the Applicant and BWH are working with these providers to ensure they have full access to all electronic health information for their patients. Consequently, the Applicant anticipates that it will receive increased MRI volume at BWH from providers working at these institutions.

Additionally, BWH has recently opened a new, expanded ED. While patients seeking treatment at the ED may not need emergency MRI services, these patients may require MRI to diagnose and treat other non-emergent conditions. Through the Proposed Project, patients will have convenient access to the Applicant's BWH-based MRI service for follow-up, which may result in increased MRI service utilization.

Finally, the MRI clinic at BWH is currently out-of-network for the BH System affiliate. As a result, individual, including BWH's own employees, who are covered by HNE must pay out-of-network co-insurance for MRI services through the existing UMMIC-run MRI clinic. As a service of the Applicant, MRI at BWH will be an in-network benefit, thus improving access. This will further meet the needs of the patient panel and increase access to MRI services.

Older Adults

The Applicant notes that the need for MRI is also expected to increase as the number of BWH's patients that are within the 65+ age cohort continues to grow. Statewide population projections provided by UMDI suggest that total population growth in Massachusetts is expected to increase through 2035.[1] While initial projections suggested a consistent statewide population growth rate of 3.2%, updated projections anticipate that the Massachusetts population will grow by 11.8% from 2010 to 2035.[2] Analysis of these projections suggest that certain age cohorts will account for a greater share of the population than others. Specifically, within the next 15-20 years, the largest part of the Commonwealth's population growth will be attributable to residents within the

[1] UNIVERSITY OF MASSACHUSETTS DONAHUE INSTITUTE, LONG-TERM POPULATION PROJECTIONS FOR MASSACHUSETTS REGIONS AND MUNICIPALITIES 11 (Mar. 2015), *available at* http://pep.donahue-institute.org/downloads/2015/new/UMDI_LongTermPopulationProjectionsReport_2015%2004%20_29.pdf. The Massachusetts Secretary of the Commonwealth contracted with the University of Massachusetts Donahue Institute ("UMDI") to produce population projections by age and sex for all 351 municipalities.

[2] *Id*. Updated projections account for rapid growth experienced through 2014.

50+ age cohort, and the 65+ cohort will increase at a rate higher than all other age cohorts.[3] By 2035, residents that are 65+ will represent roughly a quarter of the state's population.[4]

The growth trend is similar in the Lower Pioneer Valley region where BWH is located and where many patients in BWH's patient panel reside. By 2035, there will be a notable increase in the number of individuals 65+ in the Lower Pioneer Valley region, growing from 14% in 2010 to 23% by 2035.[5] Like the state, older adults will comprise almost a quarter of the population in the Lower Pioneer Valley region by 2035 and will contribute to the changing demographics of health care needs. Assuming that the demographic trends within BWH's patient population mirror those of the surrounding region, which it projected based on data trends from FY16 through FY18 and FY19 preliminary data (BWH's 65+ population increased from 21.2% in FY16 to 22.9% in FY18, and preliminary FY19 data for the first two quarters indicates that 65+ patients account for 26.9% of BWH's total patient population), it is expected that BWH will continue to see growth in the 65+ age cohort that it serves into the future.

This increase in older adult patients is significant as MRI – as further discussed at Factor F1.b.i – is extremely beneficial in connection with a variety of neurological disorders, musculoskeletal conditions, cardiovascular diseases, and cancers that have higher incidence rates related to aging.[6] Common principal and secondary diagnoses for older patients within these categories include stroke and dementia; osteoarthritis, hip fracture, and intervertebral disc disorders; congestive heart failure and coronary atherosclerosis; and oncology.[7] To this point, in FY18, the main MRI procedures that the UMMIC mobile unit performed at BWH were neurologic and orthopedic, which accounted for more than 90% of all MRI cases. Body, angiographic, chest, and other MRI scans accounted for the remaining MRI scans during the same period.

Based on this data, the Applicant notes that the anticipated continued growth among the older adult age segment of the population will contribute to increases in patients within this cohort who will utilize MRI for diagnosis and treatment. The large number of age-related medical conditions for which MRI is key in providing diagnosis, management, and treatment information makes access to MRI services integral in the care of a patient. Accordingly, the continued on-site availability of MRI services at BWH is necessary to benefit older individuals who present to BWH with age-related diseases and illnesses, and the Applicant seeks to meet this need through the Proposed Project.

C. SDoH Factors and the Need for Co-Located Care at BWH

SDoH faced by the patient panel are an additional factor contributing to the need the Proposed Project. As noted, BWH is located in Palmer, a small community in western Massachusetts. As a

[3] *Massachusetts Population Projections – EXCEL Age/Sex Details*, UNIVERSITY OF MASSACHUSETTS DONAHUE INSTITUTE (2015), http://pep.donahue-institute.org/downloads/2015/Age_Sex_Details_UMDI_V2015.xls; s*ee also* UNIVERSITY OF MASSACHUSETTS DONAHUE INSTITUTE, *supra* note 3. Figure 2.5 in the University of Massachusetts Donahue Institute's Long-Term Populations Projection report demonstrates that while all other cohorts are predicted to decrease, the 65+ cohort increases from 2015 to 2035. UNIVERSITY OF MASSACHUSETTS DONAHUE INSTITUTE, *supra* note 1, at 14.
[4] UNIVERSITY OF MASSACHUSETTS DONAHUE INSTITUTE, *supra* note 1, at 14.
[5] *Id.* at 45.
[6] WORLD HEALTH ORGANIZATION, WORLD REPORT ON AGEING AND HEALTH (2015), *available at* http://apps.who.int/iris/bitstream/10665/186463/1/9789240694811_eng.pdf.
[7] Lauren Wier et al., *Healthcare Cost and Utilization Project Statistical Brief #103: Hospital Utilization among Oldest Adults, 2008*, AGENCY FOR HEALTHCARE RESEARCH & QUALITY 2010, *available at* https://www.hcup-us.ahrq.gov/reports/statbriefs/sb103.pdf; Rebecca Anhang Price et al., *Healthcare Cost and Utilization Project Statistical Brief #125: Cancer Hospitalizations for Adults, 2009*, AGENCY FOR HEALTHCARE RESEARCH & QUALITY 2012, *available at* https://www.hcup-us.ahrq.gov/reports/statbriefs/sb125.pdf.

geographically isolated hospital, BWH faces the challenge of providing a broad spectrum of services in its community setting to underserved residents. Specifically, many of the communities within BWH's service area have high levels of poverty with many individuals (e.g., nearly 40% in Warren) living at or below the poverty line.[8] Moreover, the population faces high levels of unemployment, low levels of educational attainment and an overall lack of public transportation in the region that makes accessing certain healthcare services challenging to many underserved residents. These SDoH factors coupled with the geographic isolation of the patient panel create barriers to accessing care, including MRI services.

Given that BWH is no longer a member of UMMHC, BWH explored ways to separate its MRI service from UMMHC but continue to make on-site MRI services available at its campus in order to ensure continuity of care for its patients and address barriers to care. As further discussed at Factor F5.a.i, after careful consideration and analysis of alternative options, BWH and the Applicant determined that the Applicant's proposed establishment of a part-time mobile MRI service at BWH is the best option for meeting the patient panel's SDoH needs. The Proposed Project will facilitate improved alignment with the BH System, and the continued co-location of MRI services on-site at BWH will ensure timely access to care, alleviate the need for patients to travel to alternative locations or outside of the region for imaging services, and allow BWH to continue to provide a full complement of diagnosis and treatment services to its patient panel. Overall, the continued provision of MRI imaging services at BWH will ensure equitable care for all patients by reducing barriers to accessing these vital services and will allow for the continuation of a "health home" for patients, so they receive necessary services at one location, allowing for better care continuity, and in turn, higher quality health outcomes. Accordingly, the Applicant seeks approval for the Proposed Project.

F1.a.iii **<u>Competition</u>:**
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.

The Proposed Project will not have an adverse effect on competition in the Massachusetts healthcare market based on price, TME, provider costs or other recognized measures of health care spending. First, the Applicant is seeking to establish a part-time mobile MRI service at BWH to meet demand for MRI services. As noted in Factor F1.a.ii, data from FY16-FY18 demonstrate that the volume of scans on the existing UMMIC-run MRI unit at BWH has increased by 9.2% over the last three fiscal years. Moreover, volume trends for the first quarter of FY19 and projected changes in the patient panel indicate there will be increased demand for MRI services at BWH into the future, particularly as the population ages. Through the Proposed Project, a part-time MRI service will be sustained at BWH, thereby ensuring timely access to MRI services and allowing for improved patient care and patient experience.

This is particularly significant in recognition of the fact that BWH is a high quality, lower cost provider as evidenced by its Community Hospital Acceleration, Revitalization, & Transformation ("CHART") designation by the Health Policy Commission ("HPC").[9] This designation is provided to non-teaching, non-profit hospitals within the Commonwealth whose "relative prices are lower

[8] BAYSTATE WING HOSPITAL COMMUNITY HEALTH NEEDS ASSESSMENT 2019.
[9] *CHART Phase 2 Hospital Eligibility*, MASSACHUSETTS HEALTH POLICY COMMISSION, https://www.mass.gov/files/documents/2017/12/06/chart-phase-2-rfp-eligibility.pdf (last visited Jun. 14, 2019).

than the statewide median relative price."[10] Given BWH's current market position as a CHART hospital, the sustainment of MRI services at BWH will ensure that the growing population has access to a full complement of co-located services at a lower cost provider, and therefore will not adversely impact TME.

Second, an evaluation of the costs associated with the volume projections for the Proposed Project provides that the Applicant's new mobile MRI service at BWH will represent an immaterial amount of costs to the Massachusetts healthcare market, especially when compared to the overall costs for other healthcare providers and when viewed in the larger context of the Commonwealth's healthcare market. Specifically, upon implementation of the Proposed Project, the Applicant will be reimbursed IDTF rates for the MRI mobile clinic serving BWH, similar to those rates currently received by the UMMIC-run service. As detailed in issue seven of the HPC's DataPoints series *Variation in Imaging Spending*, imaging spending in the state is driven by site of service, with imaging tests performed in hospital outpatient departments costing substantially more than the same tests performed in non-facility settings, such as IDTFs. For example, in 2015, if Medicare beneficiaries in Massachusetts had received specific high-cost imaging procedures in non-facility settings rather than facility settings, Medicare spending would have been reduced by $27 million (6%) for these imaging procedures.[11] Given that the MRI service provided by the Applicant at BWH will be provided at substantially lower IDTF rates, the Proposed Project is a more cost-effective way to meet demand than implementing a hospital-based service and will have a negligible to positive impact on competition in the Massachusetts health care marketplace.

Finally, the Applicant highlights that the proposed MRI service at BWH will help address current out-of-network challenges faced by individuals, including BWH's employees, covered by HNE because the existing UMMIC MRI clinic is out-of-network. The Proposed Project will address these out-of-network challenges by allowing individuals covered under HNE to access the Applicant's MRI service at BWH as an in-network service and at reduced out-of-pocket costs. As a result, these individuals will have increased access to high-quality, cost-effective, local MRI services that are co-located and integrated with BWH's complement of hospital services. Accordingly, the Applicant asserts that the Proposed Project will provide patients with continued access to high-quality MRI services while also meaningfully contributing to Massachusetts' goals for cost containment.

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

Factor F1.a.ii outlines the Proposed Project will meet patient panel need. As described below, the Proposed Project is also supported by evidence-based literature related to the utility of MRI technology and the benefits associated with receiving timely, co-located, fully integrated health care services. In summary, this review touches on clinical applicability, as well as access, convenience and quality. Cost-savings and health equity advancements are also associated with the Proposed Project; however, these benefits are addressed in Factors F1.a.iii and F2.a and Factors F1.b.iii, F1.b.iv and F2.c, respectively.

[10] *Id.*
[11] *HPC Data Points, Issue 7: Variation in Imaging Spending*, MASSACHUSETTS HEALTH POLICY COMMISSION, https://www.mass.gov/service-details/hpc-datapoints-issue-7-variation-in-imaging-spending (last visited Jun. 14, 2019).

A. MRI as an Imaging Modality

MRI is a well-established, non-invasive imaging system that uses a magnetic field combined with pulses of radio waves to produce detailed images of organs, tissues, and structures within the human body.[12] MR images are valuable in that they are obtained without using any ionizing radiation, so patients are not exposed to the harmful effects that are associated with x-ray, computed tomography ("CT"), and positron emission tomography ("PET") imaging.[13] To obtain bodily images and information via MRI, patients are placed at the center of an extremely strong magnetic field and measurements related to how atoms respond to pulses of radiofrequency energy are collected and analyzed.[14] The function of MRI is to provide clinicians access to anatomical and functional information that is important in diagnosing, planning treatment for, and monitoring a variety of conditions.[15]

B. Clinical Applications of MRI, Particularly for Older Adults

Clinical applications of MRI are extensive. As discussed in further detail below, some of these clinical applications include conditions that fall within the categories of neurology, orthopedics, oncology, and the cardiovascular system. Significant with regard to the Proposed Project, the main categories of MRI procedures performed at BWH from FY16 to FY18 (neurologic, orthopedic, body, chest, and angiographic MRI scans) were routinely performed to diagnose, evaluate, and monitor treatment for various brain/neurologic, orthopedic/musculoskeletal, cancer, and heart and blood vessel conditions. Moreover, the demand for these types of scans increases with age as many of the conditions associated with such scans are tied to aging, and the Applicant projects demand for MRI services for these specific clinical categories at BWH will increase in the future as the patient panel ages. Accordingly, the Applicant seeks to operate an on-campus mobile MRI service at BWH as a one-to-one replacement for the current contracted MRI services.

Neurology

The first clinical application of MRI is in the field of neurology. Structural MRI has become the accepted standard for examination of the brain, offering exquisite anatomical detail related to the shape, size, and integrity of gray and white matter structures in the brain, as well as high sensitivity to pathology changes.[16] Moreover, functional MRI offers information regarding brain activity and how normal function is disrupted in disease.[17] The combination of structural and functional MRI has shown great utility in determining which parts of the brain are handling critical functions; identifying the anatomic location corresponding with specific motor, somatosensory, language and cognitive processes; assessing the effects of trauma on brain function; caring for and treating epilepsy; and diagnosing and managing stroke and degenerative disease (e.g., Alzheimer's), the

[12] *Magnetic Resonance Imaging (MRI)*, NAT'L INST. OF BIOMEDICAL IMAGING & BIOENGINEERING, https://www.nibib.nih.gov/science-education/science-topics/magnetic-resonance-imaging-mri (last visited Jun. 14, 2019).
[13] *(MRI) Magnetic Resonance Imaging: Benefits and Risks,* U.S. FOOD & DRUG ADMIN., https://www.fda.gov/Radiation-EmittingProducts/RadiationEmittingProductsandProcedures/MedicalImaging/MRI/ucm482765.htm (last updated Dec. 9, 2017).
[14] *Magnetic Resonance Imaging (MRI)*, *supra* note 12.
[15] *Id.*; *(MRI) Magnetic Resonance Imaging: Benefits and Risks*, *supra* note 13.
[16] M. Symms et al., *A review of structural magnetic resonance neuroimaging*, 75 J. NEUROLOGY, NEUROSURGERY & PSYCHIATRY 1235 (2004), *available at* http://jnnp.bmj.com/content/jnnp/75/9/1235.full.pdf; *What is fMRI?*, UC SAN DIEGO CTR. FOR FUNCTIONAL MRI, http://fmri.ucsd.edu/Research/whatisfmri.html (last visited Jun. 14, 2019).
[17] *What is fMRI?*, *supra* note 16.

risks of which increase with age.[18]

Orthopedics/Musculoskeletal System

While orthopedic MRIs demonstrate clinical utility across all age groups to diagnose a wide spectrum of musculoskeletal conditions, they are particularly important in the diagnosis and treatment of older adults age 65+, who are affected by orthopedic/musculoskeletal issues at high rates.[19] Research indicates that with older age comes bone fragility, loss of cartilage resilience, reduced ligament elasticity, loss of muscular strength, and fat redistribution that decreases the ability of the tissues to carry out their normal functions.[20] Loss of mobility and physical independence resulting from age-related orthopedic/musculoskeletal issues, such as osteoarthritis, degenerative disc disorders, fractures and fall-related injuries, are particularly devastating in this population and lead to increased ED use and hospitalization.[21] Special attention is required in this older adult population, as an early diagnosis can avoid delays in treatment, which are associated with increased morbidity and mortality.[22] MRI holds great potential for diagnosing and helping to treat these conditions, due to its ability to noninvasively display high-definition images of the musculoskeletal system, including bones, cartilage, muscles, tendons, ligaments, and joints.[23]

Oncology

MRI also plays a role in cancer diagnosis, staging, and treatment planning.[24] MRI's superior soft tissue resolution allows clinicians to distinguish between normal and diseased tissue to precisely pinpoint and monitor treatment of cancerous tumors and metastases within certain parts of the body.[25] Specifically, orthopedic MRIs are increasingly used for tumor screening and staging within

[18] Symms et al., *supra* note 16; Prashanthi Vemuri & Clifford R. Jack Jr., *Role of structural MRI in Alzheimer's disease*, 2 ALZHEIMER'S RESEARCH & THERAPY 1 (2010), *available at* https://alzres.biomedcentral.com/track/pdf/10.1186/alzrt47; *What is fMRI?*, *supra* note 16; Daniel Orringer et al., *Clinical Applications and Future Directions of Functional MRI*, 32 SEMINARS IN NEUROLOGY 466 (2012), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3787513/; Bum Joon Kim et al., *Magnetic Resonance Imaging in Acute Ischemic Stroke Treatment*, 16 J. STROKE 131 (2014), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4200598/; *Stroke Statistics*, THE INTERNET STROKE CENTER, http://www.strokecenter.org/patients/about-stroke/stroke-statistics/ (last visited Jun. 14, 2019); Rita Guerreiro & Jose Bras, *The age factor in Alzheimer's disease*, 7 GENOME MED. 1 (2015), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4617238/.

[19] Apostolos H. Karantanas, *What's new in the use of MRI in the orthopaedic trauma patient?*, 45 INT'L J. CARE OF THE INJURED 923 (2014); Ramon Gheno et al., *Musculoskeletal Disorders in the Elderly*, 2 J. CLINICAL IMAGING SCI. 1 (2012), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3424705/.

[20] Gheno et al., *supra* note 19; AJ Freemont & JA Hoyland, *Morphology, mechanisms and pathology of musculoskeletal ageing*, 211 J. PATHOLOGY 252 (2007).

[21] Gheno et al., *supra* note 19; Faranak Aminzadeh & William Burd Dalziel, *Older Adults in the Emergency Department: A Systematic Review of Patterns of Use, Adverse Outcomes, and Effectiveness of Interventions*, 39 ANNALS EMERGENCY MED. 238 (2002), *available at* https://pdfs.semanticscholar.org/e64f/9f138604121ed5fb7b176d92fbd9e61fbb90.pdf; Wier et al., *supra* note 7.

[22] Gheno et al., *supra* note 19.

[23] Poornima Maravi et al., *Role of MRI in Orthopaedics*, 21 ORTHOPAEDIC J. M.P. CHAPTER 74 (2015), *available at* https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=2ahUKEwiS093T19PaAhWEiOAKHcguA_UQFjABegQIABA8&url=http%3A%2F%2Fwww.ojmpc.com%2Findex.php%2FOJMPC%2Farticle%2Fdownload%2F31%2F25&usg=AOvVaw3hriKb3xbWliXUT_yczE1K; Gail Dean Deyle, *The role of MRI in musculoskeletal practice: a clinical perspective*, 19 J. MANUAL & MANIPULATIVE THERAPY 152 (2011), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3143009/.

[24] *MRI for Cancer*, AMERICAN CANCER SOCIETY, https://www.cancer.org/treatment/understanding-your-diagnosis/tests/mri-for-cancer.html (last updated May 16, 2019).

[25] J Lu et al., *Cancer diagnosis and treatment guidance: role of MRI and MRI probes in the era of molecular imaging*, 14 CURRENT PHARMACEUTICAL BIOTECHNOLOGY 714 (2013); *MRI for Cancer*, *supra* note 24.

the musculoskeletal system, neurologic MRIs are often used to monitor the growth and function of brain tumors, and body and chest MRIs are useful tools in the diagnosis, staging, surgical planning, and treatment response evaluation of cancer patients with thoracic lesions, including involvement of the chest wall, lungs, esophagus, and heart.[26] This capability is particularly important for older adults, as advancing age is the most important risk factor for cancer overall.[27]

Cardiovascular System

Finally, MRI has become widely available as a valuable tool for the diagnosis and management of a wide spectrum of cardiovascular conditions.[28] Chest and angiographic MRIs provide accurate data representative of cardiac structure, function, and perfusion, and are designed to assess cardiovascular morphology, ventricular volumes and function, myocardial perfusion, tissue characterization, and flow quantification.[29] Age-related indications within the clinical cardiovascular setting include assessment of myocardial viability and perfusion; evaluation of congenital heart disease, pericardial disease, aortic disease, and cardiac masses; detection of atherosclerosis; and diagnosis of coronary artery disease.[30]

C. Value of Continued Access to On-Campus MRI Imaging

As outlined above, access to MRI is critical for a wide spectrum of patients seeking care at BWH given its applicability to diagnose, plan treatment for, and monitor a variety of conditions. While patients currently have access to MR imaging at BWH through a contractual agreement with UMMIC, BWH has determined that it will terminate such agreement as it is no longer a member of UMMHC. In replacement of the UMMIC-run MRI service, and to ensure continued availability of on-campus MRI services for its patient panel, BWH seeks to have the Applicant fulfill the continued need for access to MRI services at BWH. As detailed below, continued availability of an on-campus MRI service at BWH is significant with regard to patient satisfaction, convenience, and access to integrated care – all of which contribute to quality and health outcomes.

Patient Satisfaction and Convenience

First, the continued availability of MRI services at BWH will contribute to patient satisfaction, which

[26] *MRI for Cancer*, *supra* note 24; Orringer et al., *supra* note 18; Shanti Parmar & Nirali Gondaliya, *A Survey on Detection and Classification of Brain Tumor from MRI Brain Images using Image Processing Techniques*, 5 INT'L RESEARCH J. ENGINEERING & TECHNOLOGY 162 (2018), *available at* https://www.irjet.net/archives/V5/i2/IRJET-V5I239.pdf; Deyle, *supra* note 23; Marcos Duarte Guimaraes et al., *Magnetic resonance imaging of the chest in the evaluation of cancer patients: state of the art*, 48 RADIOLOGIA BRASILEIRA 33 (2015), *available at* http://www.scielo.br/pdf/rb/v48n1/0100-3984-rb-48-01-0033.pdf.

[27] *Age and Cancer Risk*, NAT'L CANCER INSTITUTE, https://www.cancer.gov/about-cancer/causes-prevention/risk/age (last updated Apr. 29, 2015).

[28] Constantin B. Marcu et al., *Clinical applications of cardiovascular magnetic resonance imaging*, 175 CMAJ 911 (2006), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1586078/.

[29] *Id.*; F. Alfayoumi, *Evolving clinical application of cardiac MRI*, 8 REVIEWS IN CARDIOVASCULAR MED. 135 (2007), *available at* https://www.ncbi.nlm.nih.gov/pubmed/17938613; Wen-Yih Isaac Tseng et al., *Introduction to Cardiovascular Magnetic Resonance: Technical Principles and Clinical Applications*, 32 ACTA CARDIOLOGICA SINICA 129 (2016), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4816912/.

[30] Marcu et al., *supra* note 28; Tseng et al., *supra* note 29; W.P. Bandettini & A.E. Arai, *Advances in clinical applications of cardiovascular magnetic resonance imaging*, 94 HEART 1485 (2008), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2582334/; Justin D. Anderson & Christopher M. Kramer, *MRI of Atherosclerosis: Diagnosis and Monitoring Therapy*, 5 EXPERT REVIEW OF CARDIOVASCULAR THERAPY 69 (2007), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3938864/.

is an important indicator used for measuring quality in health care.[31] Patient satisfaction affects clinical outcomes, patient retention, medical malpractice claims, as well as the timely, efficient, and patient-centered delivery of quality health care, and is a very effective indicator to measure the success of doctors and hospitals.[32] Thus, its importance cannot be overstated. Patient satisfaction will be sustained through the Proposed Project by ensuring that patients continue to enjoy access to on-campus MRI services and do not need to travel elsewhere for imaging care. Moreover, the switch from three 12-16-hour days to five 8-hour days per week will improve prime time accessibility and allow patients to enjoy more options for scheduling appointments during normal hours. In sum, the Applicant anticipates that the Proposed Project will positively impact patient satisfaction and convenience, and, in turn, quality.

Access to Integrated Care

Another advantage of the Proposed Project is that it will facilitate patients receiving a full complement of comprehensive, integrated care at BWH. When health care delivery is spread out across a number of separately located and operated providers, often the result is fragmented care.[33] Care fragmentation is considered an important source of inefficiency in the US health care system and a large concern for patients.[34] The termination of the contractual agreement with UMMIC leaves open the potential for fragmented care as it leads BWH patients to have to travel elsewhere to receive MR imaging services.

Co-location is one way to address fragmented care. The benefits associated with co-location include: improved access for patients; more patient/family satisfaction because services are provided in a setting familiar to patients; increased collaboration among providers and better coordination of care; increased efficiency; and overall improved health outcomes.[35] By replacing the existing UMMIC-run MRI service, the Applicant will be able to reduce the need for patients seeking medical care at BWH to travel elsewhere for MR imaging services, and thereby, will be able to facilitate greater access to integrated care and improved health outcomes.

F1.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 Applicant expects that the Proposed Project will provide BWH's patient panel with continued access to imaging services that will directly impact health outcomes and quality of life. Studies indicate that delayed access to healthcare services results in decreased patient satisfaction, as well as negative health outcomes due to delays in diagnosis and treatment.[36] Through the

[31] Bhanu Prakash, *Patient Satisfaction*, 3 J. CUTANEOUS & AESTHETIC SURGERY 151 (2010), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3047732/.
[32] *Id.*
[33] Kurt C. Stange, *The Problem of Fragmentation and the Need for Integrative Solutions*, 7 ANNALS FAMILY MED. 100 (2009), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2653966/.
[34] *Id.*
[35] SUSANNA GINSBURG, ISSUE BRIEF: COLOCATING HEALTH SERVICES: A WAY TO IMPROVE COORDINATION OF CHILDREN'S HEALTH CARE? (The Commonwealth Fund 2008), *available at* https://www.commonwealthfund.org/publications/issue-briefs/2008/jul/colocating-health-services-way-improve-coordination-childrens.
[36] Julia C. Prentice & Steven D. Pizer, *Delayed Access to Health Care and Mortality*, 42 HEALTH SERVICES RESEARCH 644 (2007), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1955366/.

continued operation of an on-site MRI service at BWH, the Applicant aims to provide timely access to imaging services, thereby reducing barriers to accessing care and improving health outcomes and quality of life for all BWH patients.

The Applicant expects that the Proposed Project will result in continued access to integrated hospital, ED and imaging services. The MRI will be available on-site at BWH, allowing patients to continue to receive a full complement of services in one setting, ensuring care continuity for all patients, including many patients who are underserved and have numerous barriers to accessing care. As noted above, timely access to high quality, integrated care directly impacts quality outcomes. This is especially true for inpatients and ED patients, who require urgent and emergent access to imaging services to diagnose and treat acute conditions. As more fully discussed in Factors F.1.b.i. and F.2.a., continued access to on-site MRI services for BWH patients allows for access to high-quality, low-cost imaging care, which will improve health outcomes and quality of life for BWH patients.

The continued availability of MRI services at BWH will also address the aging patient panel's need for MRI services. As the number of patients 65+ continues to increase, so too will the demand for MRI services to detect and treat age-related conditions for which older adults require care, including neurological disorders (e.g., stroke and Alzheimer's disease), orthopedic and musculoskeletal conditions (e.g., arthritis, degenerative disk disease, and fractures), cancer, and cardiovascular disease (e.g., coronary heart disease and atherosclerosis).[37] Continued on-campus access to MRI services for these high-acuity older patients with neurology orthopedic, oncology, and cardiovascular conditions is crucial as it allows clinicians to determine appropriate treatment options in a timely manner, which impacts overall health outcomes.

Finally, given that the Applicant is a joint venture with a BH System hospital (i.e., BFMC), all imaging results at BWH will be part of a fully integrated medical record. This integrated medical record will not only be available to primary care and specialty physicians across the BH System, but, given that the Applicant will participate alongside the BH System in the Pioneer Valley Information Exchange ("PVIX"), patients will also be able to authorize providers outside of the BH System to access their imaging information. Studies show that having access to integrated health information technology systems, including integrated picture archiving and communication systems ("PACS") information, has a direct impact on health outcomes as access to a single medical record for patients leads to enhanced care coordination by care teams.[38] Additionally, an integrated medical record allows primary care physicians and specialists to have access to the same patient information, allowing for real-time care decisions, thereby reducing duplication of services and unnecessary testing. The availability of these integrated record services for all of the Applicant's and BWH's patients will facilitate quick and easy access to patient images and reports, which will in turn effect timely care, improved outcomes, and better quality of life.

B. Assessing the Impact of the Proposed Project

To assess the impact of the Proposed Project, the Applicant has developed the following quality metrics and reporting schematic, as well as metric projections for quality indicators that will measure patient satisfaction, access and quality of care. The measures are discussed below:

[37] Maravi et al., *supra* note 23; Deyle, *supra* note 23; Orringer et al., *supra* note 18; Kim et al., *supra* note 18; Guimaraes et al., *supra* note 26; Parmar & Gondaliya, *supra* note 26; Marcu et al., *supra* note 28; Anderson & Kramer, *supra* note 30.

[38] Isla M. Hains et al., *The impact of PACS on clinician work practices in the intensive care unit: a systematic review of the literature*, 19 J. AMERICAN MED. INFORMATION ASS'N 506 (2012), *available at* https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3384105/.

1. **Patient Satisfaction:** Patients that are satisfied with care are more likely to seek additional treatment when necessary. The Applicant will review patient satisfaction levels with the MRI service.

   Measure: To ensure a service-excellence approach, patient satisfaction surveys will be distributed to all patients receiving MRI services with specific questions around: (a) satisfaction with the wait time for services; (b) satisfaction around the comfort of procedures; (c) satisfaction levels with pre- and post-appointment communication; and (d) satisfaction with staff and facility environment.

   Projections: Baseline: 90% Year 1: 90% Year 2: 91% Year 3: 92%

   Monitoring: Any category receiving a less than exceptional rating (satisfactory level) will be evaluated and policy changes instituted.

2. **Quality of Care – Critical Value Reporting:** When critical values or abnormal test results are registered within an electronic health record for a patient, the referring physician is notified via electronic communication. A benefit of having an integrated electronic health record and PACS system is the ability to send these messages to a referring physician, so that clinical decisions may be expedited.

   Measure: Number of contracted radiologists conducting critical value reporting on cases being interpreted.

   Projections: Baseline: 100% Year 1: 100% Year 2: 100% Year 3: 100%

   Monitoring: MRI scans will be forwarded to the BWH film library and follow-up will be conducted with the referring physician. The radiologist will be made available to answer any questions.

3. **Quality of Care – Quality of MRI Scan:** The quality of an MRI scan is imperative to its interpretation. Accordingly, the Applicant will evaluate the number of scans that need to be repeated within a 48-hour period from the date of the original scan to ensure radiology technicians are performing appropriate scans.

   Measure: The number of repeat MRI scans performed on patients within a 48-hour period from the date of the original scan.

   Projections: Baseline: <1% Year 1: <1% Year 2: <1% Year 3: <1%

   Monitoring: MRI technologists will track the number of scans that are repeated and scheduled for the next scan day. Technologists will document each case and conduct a monthly comparison to total volume to meet or exceed the metric.

4. **Quality of Care – Peer Review Over Read Correlation:** To evaluate the accuracy of scan interpretations, the Applicant will conduct peer review readings to ensure quality outcomes for patients.

   Measure: The Applicant will have its contracted radiologists conduct peer review readings on a random basis (one case per scan day) based on the American College of Radiology

("ACR") Peer to Peer criteria and will follow-up on all discrepancies with the original reading radiologist.

Projections: Baseline: 95% Year 1: 95% Year 2: 96% Year 3: 97%

Monitoring: A random selection of cases based on ACR Peer to Peer criteria will be reviewed. Radiologists will evaluate scans documenting any inconsistencies and discuss outstanding issues with the original reading radiologist.

5. **Access – Backlog Reporting:** The Proposed Project seeks to ensure access to MRI services. Accordingly, the Applicant will track any backlogs associated with the service.

   Measure: The number of times scanning day utilization is greater than 90% and adjustments need to be made to the schedule.

   Projections: Baseline: <10% Year 1: <10% Year 2: <10% Year 3: <8%

   Monitoring: The Applicant's staff will assess daily hours of service and implement adjustments if necessary.

6. **Provider Satisfaction – Value Assessment:** Ensuring provider satisfaction with MRI scans and their overall value when treating patients is necessary to access the impact on care for patients. The Applicant will survey referring physicians to validate scan utility.

   Measure: Confirmation with referral physician about the utility of MRI scans.

   Projections: Baseline: 95% Year 1: 95% Year 2: 96% Year 3: 97%

   Monitoring: MRI referral physician population will be queried to validate scan utility via surveys.

F1.b.iii **<u>Public Health Value/Health Equity-Focused:</u>**

For Proposed Projects addressing health inequities identified within the Applicant's description of the Proposed Project's need-base, 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.

One of the dominant themes from BWH's 2019 Community Health Needs Assessment ("CHNA") is the impact that the underlying SDoH have on the service area.[39] Generally speaking, SDoH such as poverty, lack of employment opportunities, limited transportation, limited health literacy, linguistic barriers, lack of social support and domestic violence limit many people's ability to care for their own and their family's health.[40] This is also true in BWH's service area, where the population experiences a number of barriers that make it difficult to access affordable, quality

[39] BAYSTATE WING HOSPITAL COMMUNITY HEALTH NEEDS ASSESSMENT 2019, *supra* note 8.
[40] *Id*.

care.[41] Specifically, social and economic challenges experienced by the population affect access to needed health services and contribute to disparities in health outcomes observed among vulnerable populations, including low-income, racially/ethnically diverse, and older adult cohorts.[42] As detailed below, to prioritize the identified community needs and promote health equity, the Applicant will take specific actions to ensure equal access to the health benefits created by the Proposed Project.

A. Non-Discrimination

Many of the cities and towns in BWH's service area struggle with high poverty rates. The service area includes towns in Hampshire, Hampden, and Worcester counties that have poverty rates[43] above 15%.[44] Notably, the town of Warren has a poverty rate close to 40%.[45] Low education levels and high unemployment rates are also associated with these communities.[46] Given these demographics, residents often face difficulties meeting their basic food, clothing, and healthcare needs.[47] Moreover, as part of BWH's 2019 CHNA, focus group participants and key informant interviewees identified multiple barriers imposed by the health insurance system that directly impact the treatment of health concerns, including a limited number of providers that accept patients with public insurance (e.g., Medicaid).

To ensure health equity to all populations in BWH's service area, including those deemed underserved, the Proposed Project will not affect accessibility of the Applicant's services for poor, medically indigent, and/or Medicaid eligible individuals. The Applicant does not discriminate based on ability to pay or payor source and will continue this practice following implementation of the Proposed Project at BWH. Accordingly, as further detailed throughout this narrative, the Proposed Project will ensure access to MRI services for all of BWH's and the Applicant's patients.

B. Culturally-Appropriate Care and Language Access

Additionally, the Applicant will provide effective, understandable, and respectful care with an understanding of patients' cultural health beliefs and practices and preferred languages. The Applicant has also developed arrangements to offer ongoing education and training in culturally and linguistically appropriate areas for staff. These steps will promote health equity and ensure equal access to MR imaging services.

The diversity of BWH's patient panel necessitates that BWH and the Applicant provide inclusive services that address the unique needs of its patients. This is further evidenced by data from focus groups that were engaged as part of BWH's 2019 CHNA, which indicate the need for need for health information to be understandable and accessible, increased health literacy, provider education about how to communicate with patients about medical information, and training in cultural humility as a means to deliver culturally sensitive care.[48] Accordingly, there are a number of systems in place at BWH to access culturally competent staff and interpreter services, including

[41] *Id*.
[42] *Id*.
[43] Poverty rates are defined by the Applicant as at or below 200% of the poverty rate.
[44] BAYSTATE WING HOSPITAL COMMUNITY HEALTH NEEDS ASSESSMENT 2019, *supra* note 8.
[45] *Id*.
[46] *Id*. In addition, more than a third of residents in these communities pay more than 30% toward housing.
[47] BAYSTATE WING HOSPITAL COMMUNITY HEALTH NEEDS ASSESSMENT 2019, *supra* note 8. Poverty was identified as a factor that impacts overall health, access to health care, and access to program and services that promote health, and interviewees also identified the high poverty and unemployment rates in BWH's service area as the underlying root cause of poor health.
[48] BAYSTATE WING HOSPITAL COMMUNITY HEALTH NEEDS ASSESSMENT 2019, *supra* note 8.

access to certified/qualified interpreters and translators at no cost to patients at all points of clinical contact; additional translation services in less frequently encountered languages are available at all times through video remote interpreting and phone interpreting lines. Through the Proposed Project, the identified interpreter and translation programs will be fully integrated into the Applicant's MR imaging service at BWH and patients will have access to these robust services that alleviate barriers to care and further health equity.

C. Transportation and Integrated Care

Finally, the Proposed Project will ensure that patients have access to co-located MRI services, which is particularly important for older adults, low-income individuals and those living in rural areas, and will lead to improved care experiences and quality outcomes. Public transportation options in the BWH service area are sparse and non-existent in some places.[49] In fact, BWH's 2019 CHNA identifies transportation as a barrier to care in the region, explaining that individuals who do not own a vehicle face difficulty accessing healthcare and that lack of accessible transportation has an impact on health for low-income or elderly populations living in rural areas where public transportation may have limited routes and frequency of service.[50] Patients may not obtain the care they need given the difficulty associated with getting to or from medical appointments, especially when medical appointments require travel to multiple locations.

Accordingly, the Applicant is committed to ensuring that the Proposed Project addresses identified health inequities, by allowing all patients continued access to necessary MRI services. Specifically, the Proposed Project will address barriers to care and health inequities by co-locating necessary MRI services at BWH. Moreover, operation of the MRI clinic five days per week will better allow the Applicant to ensure that patients seeking care at BWH receive access to MR imaging services convenient with their other hospital appointments. By providing part-time MRI services at BWH five days per week, all patients – including older adults, low-income individuals, and those living in rural areas – will have immediate access to imaging services that are co-located and integrated with BWH's other hospital services. Such co-location and integration will help to eliminate the need to travel to multiple, geographically separate providers to receive a full continuum of care and, thereby, will help to eliminate transportation barriers to care. This is beneficial to patients both from a cost standpoint and from a care experience standpoint, as transportation to multiple providers is not only costly but can also cause confusion, frustration, and lead to adverse health outcomes as a result of missed appointments.

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 result in high quality health outcomes and quality of life for BWH's patient panel by allowing for continued access to fully integrated care at one location. Through the Proposed Project, patients will have continued on-site access to MRI services at BWH. The continued operation of an on-site MRI service promotes health equity by ensuring all patients have access to MRI services at BWH. As previously indicated, patients may not receive necessary imaging services if they are not available on-site due to transportation issues and comfort level with the site of care. In addition, individuals, including BWH's employees, who are covered by HNE cannot access MRI services at BWH without high co-insurance as UMMIC is not an in-

[49] *Id*.
[50] *Id*.

network provider. The Proposed Project will achieve health equity goals by ensuring patients have equal access to MRI services.

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.

The Proposed Project will ensure continuity of care, improved health outcomes and enhanced quality of life by allowing continued delivery of a full complement of clinical services at BWH and facilitating provision of coordinated care to the BWH patient panel. As noted above, a growing body of evidence suggests that care fragmentation is an important source of inefficiency in the US healthcare system and that co-location is an established way to combat fragmented care.[51] Benefits associated with co-location include: improved access, increased collaboration among providers, better coordination of care, increased efficiency, and overall improved health outcomes.[52] The Applicant's provision of on-site MRI services five days per week will allow patients to schedule and attend multiple appointments at BWH on the same day to minimize transportation needs. In doing so, patients also will have access to the BWH's system-wide support services, including culturally competent staff and translation services. On-site imaging services also are important to the large population of low-income and 65+ patients in BWH's rural service area, for whom it is critical to make access as simple as possible. These patients are more likely to receive the care that they need, including imaging services, when they can be accessed at one site that is situated within the community. Accordingly, by co-locating MRI services at BWH with all other hospital services, the Applicant will be able to facilitate greater continuity of care, improved health outcomes, and enhanced quality of life for BWH patients.

In addition, given that the Applicant is a joint venture with a BH System hospital, all imaging results at the Applicant's new BWH location will be part of a fully integrated medical record. This integrated medical record be available to primary care and specialty physicians across the BH System and, given the BH System and the Applicant's participation in the PVIX, patients will also be able to authorize providers outside of the BH System to access their imaging information. Thus, through the Proposed Project, providers will have seamless access to a patient's electronic medical records and scan results, increasing care team collaboration, which leads to higher quality outcomes for patients.

Finally, the Proposed Project will improve continuity and coordination of care for the patient panel by addressing current out-of-network challenges faced by individuals covered by HNE. As noted above, the UMMIC-run MRI clinic at BWH is currently out-of-network for the BH System affiliate. As a result, individuals who are covered by HNE, including BWH's own employees covered by HNE, cannot access MRI services at BWH without paying high out-of-network co-insurance. The Proposed Project will address these out-of-network challenges by allowing individuals covered under HNE to access the Applicant's MRI service at BWH as an in-network service and at reduced out-of-pocket costs. Consequently, these individuals will have increased access to high-quality local MRI services that are co-located and integrated with BWH's complement of hospital services.

[51] Stange, *supra* note 33; GINSBURG, *supra* note 35.
[52] GINSBURG, *supra* note 35.

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 sought input from a variety of stakeholders in planning the Proposed Project. The Applicant conducted a formal consultative process with individuals at various regulatory agencies regarding the Proposed Project. The following individuals are some of those consulted with regard to the Proposed Project:

- Margo Michaels, Director, Determination of Need Program, Department of Public Health
- Rebecca Rodman, Esq., Deputy General Counsel, Department of Public Health
- Ben Wood, Director, Office of Community Health Planning and Engagement, Department of Public Health

F1.e.i <u>Process for Determining Need/Evidence of Community Engagement:</u>
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.

As outlined in Factors F1.a.i and F1.a.ii, the need for the Proposed Project has been established by utilization of the current UMMIC-run MRI service at BWH, as well as by the SDoH factors and future projections that support the continued provision of co-located MRI services at BWH into the future. However, to inform and consult the community about the Proposed Project, BWH and the Applicant sought to engage the patient panel, family members, and community members and local stakeholders that may be impacted by the Proposed Project. Engagement occurred through various initiatives, as are outlined below.

As a first step in the engagement process, the Applicant sought to engage the Baystate Health Eastern Region ("BHER") Patient and Family Advisory Council ("PFAC") on October 9, 2018. The BHER PFAC was formed in 2016 following the merger of BWH and BMLH, by combining by combining the BWH and BMLH (now the BMLOC) PFACs. The PFAC is an important forum for creating partnerships among patients, families and staff dedicated to ensuring the delivery of high quality, safe and positive memorable health care experiences at BWH and the BMLOC. The Applicant chose to present to the BHER PFAC on this Proposed Project as the PFAC's goals include ensuring the delivery of high quality, safe and positive memorable health care experiences at BH System locations with a specific focus on the following: (1) Strengthening decision-making by drawing upon the diverse experiences and viewpoints of the people who look to BH System hospitals and primary care locations for care; (2) Offering insight and recommendations for improving quality, service, safety, access, education and patient/family satisfaction and loyalty; (3) Serving as a coordinating group to receive and respond to patient and community input, channeling information, needs and concerns to staff and administration; (4) Enhancing relationships between BH System patients and families and the community; (5) Reflecting the unique culture of each BH System hospital and primary care location and reflect the socio-demographics of the facility's patient service area; and (6) Ensuring that the interests of the BH System affiliated ACO patients, and their families, are met. During the PFAC meeting, Leah Bradley, BWH's Director of Diagnostic Services and Behavioral Health, informed PFAC members of the need for the Proposed Project and the MRI services that will be offered by the Applicant at BWH. Feedback from the meeting was positive with PFAC members supportive of the Proposed Project.

In addition, the Proposed Project was presented to BHER Community Benefits Advisory Council ("CBAC"). Similar to the BHER PFAC, the BHER CBAC was formed in 2016 following the merger of BWH and BMLH. Today, the BHER CBAC brings a community lens and filter for BWH and BMLOC's health priorities, with participants on the BHER CBAC representative of the employees, community benefit program managers, constituencies and communities served by BWH and the BMLOC. The BHER CBAC provides a community perspective on how to increase wellness and resilience opportunities for optimal health for an entire population; guidance in matching BHER resources to community resources, thus making the most of what is possible with the goal to improve health status and quality of life; and policy advocacy to assure and restore health equity by targeting resources for residents. BHER CBAC members meet monthly, are co-chaired by a hospital leader and a community representative, and are responsible for reviewing community needs assessment data and using this analysis as a foundation for providing BWH and BMLOC with input on its community health planning efforts and community benefits investments. In consideration of the BHER CBAC's goals and responsibilities, the Applicant sought to engage this group on the Proposed Project. Accordingly, on October 24, 2018, Leah Bradley, BWH's Director of Diagnostic Services and Behavioral Health, presented to the CBAC, with the goal of educating the group on the Proposed Project and the community benefit associated with it. The CBAC members did not express any concerns regarding the Proposed Project.

Finally, to ensure appropriate awareness within the community about the Proposed Project, BWH and Shields Healthcare Group posted the legal notice associated with the Proposed Project prominently on their websites. This was done to bring awareness of the Proposed Project to all patients, family members, local residents and resident groups, informing them of the continued availability of co-located MRI services at BWH via the Applicant. It also provides an opportunity for comment on the Proposed Project.

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 the BHER PFAC on October 9, 2018;
- Presentation to the BHER CBAC on October 24, 2018; and
- Publication of legal notice to the BWH and Shields Healthcare Group websites.

For detailed information on these activities, see Appendix 3B.

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 goals for cost containment in Massachusetts are focused on the provision of low-cost care alternatives without sacrificing high quality care. Specifically, the HPC, an independent state agency charged with monitoring health care spending growth in Massachusetts and providing data-driven policy recommendations regarding health care delivery and payment system reform, has set the following goal for cost containment: Better health and better care – at a lower cost – across the Commonwealth. The Proposed Project seeks to align with these goals by providing continued access to high-quality MRI services in a cost-effective setting.

As previously discussed in Factor F1.a.iii, the price of MRI services at BWH will remain the same following implementation of the Proposed Project. Specifically, the contracted rates for the Applicant's MRI service will be the same as those rates currently utilized by the UMMIC-run service. Specifically, the services provided by the Applicant at BWH will be provided at IDTF rates. As outlined at Factor F1.a.iii, IDTF rates are substantially lower than hospital-based rates and IDTFs are a more cost-effective option for providing high-quality imaging services. Given that no change will be occurring to the price of MRI services and given that the services will continue be provided at lower IDTF rates, the Proposed Project will not negatively impact the overall cost growth benchmark set for the state.

Moreover, as a lower cost provider in the Commonwealth, BWH's current costs for healthcare services are below the median costs of other community hospitals within the same cohort. Given BWH's lower cost provider status, it is highly unlikely that the Proposed Project will have an adverse impact on provider costs, price or TME. Rather, the sustainment of MRI services at BWH is likely to have a positive impact on the Commonwealth's goals for cost containment, as it will allow the service area population to access a full complement of co-located services at a lower cost provider situated within the community.

Finally, the Applicant highlights the cost benefits associated with access to co-located, integrated health care services. Frequently, when patients delay treatment (typically because of the inconvenience of driving to a secondary location or due to a SDoH factor, such as a lack of transportation) conditions worsen, leading to critical events that are often more expensive.[53] Thus, one way to promote lower cost care is to provide patients with accessible, high quality co-located services to ensure that all patients receive necessary care in a timely manner. Accordingly, the Proposed Project seeks to eliminate barriers to care through the continued availability of a full complement of services at BWH and ensuring patients receive the care they need when they need it. Such co-location of services will create care efficiencies for patients, improve care coordination, promote faster diagnosis and intervention, improve quality and, thereby, reduce the overall costs of health care. Moreover, the Proposed Project also seeks to reduce overall operational inefficiencies, such as the need to transfer patients to off-site locations for MRI services, which will also contribute to savings for patients, the hospital and insurers, thereby reducing overall TME.

[53] Prentice & Pizer, *supra* note 36.

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

The need to offer on-site MRI services at BWH to improve public health outcomes is precipitated by historical trends hospital services in Massachusetts, which suggest that hospital utilization will remain high into the future. According to the HPC's 2018 Cost Report, the Commonwealth continues to have higher hospital utilization than the U.S. across inpatient, ED, and outpatient services.[54] As hospital utilization remains high, the demand for MRI services is expected to remain high as well, as these services are important for detecting, managing, and treating a variety of conditions across several fields.

In Massachusetts, cancer remains the leading cause of death. From 2011 through 2015, there were 183,661 newly diagnosed cases of cancer in Massachusetts, for an average annual age-adjusted incidence rate of 466.1 cases per 100,000 persons.[55] However, overall, cancer incidence in Massachusetts decreased slightly from 2011 to 2015.[56] These decreases in overall cancer rates are evidence that scientific discoveries, access to care and more timely care are important tools in reducing overall mortality rates. To continue this trend, it is imperative that Massachusetts' residents, especially elderly residents, have access to integrated cancer care and diagnostic imaging services. Through the Proposed Project, the Applicant will continue to provide vital imaging services for numerous conditions and diseases, including cancer. By expediting access to imaging services and providing all patients with necessary care, the Proposed Project will impact overall population health in the area, thereby impacting public health outcomes in the Commonwealth.

Furthermore, access to diagnostic testing for neurological disorders, orthopedic and musculoskeletal conditions, and cardiovascular disease testing, such as MRI, a clinician's understanding of the pathogenesis of a condition. MRI is also a powerful clinical tool when trying to determine current disease state and treatment options. Accordingly, access to MRI scans allows clinicians to make timely clinical decisions that impact overall health outcomes, such as mortality. Through local access to these services, patients will be evaluated in an expedited manner, allowing for improved health outcomes in the county and the state.

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.

SDoH are the conditions and environments in which people are born, grow, live, eat, work, play and age, that affect access to the healthcare system and a wide range of health risks and outcomes.[57] Socioeconomic status, education, employment, housing, food security,

[54] MASSACHUSETTS HEALTH POLICY COMMISSION, 2018 ANNUAL HEALTH CARE COST TRENDS REPORT CHARTPACK (2019), *available at* https://www.mass.gov/files/documents/2019/02/13/2018%20CTR%20Chartpack.pdf.
[55] MASSACHUSETTS DEP'T PUBLIC HEALTH, CANCER INCIDENCE AND MORTALITY IN MASSACHUSETTS 2001-2015: STATEWIDE REPORT (July 2018), *available* at https://www.mass.gov/files/documents/2018/07/27/Cancer-incidence-and-mortality-statewide-2011-2015.pdf.
[56] *Id.*
[57] *Social Determinants of Health: Know What Affects Health*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/socialdeterminants/ (last updated Jan. 29, 2018).

transportation, social protective factors, social support, and language/literacy are all examples of SDoH that have an impact on the physical and mental well-being of the population. BWH and the Applicant will employ numerous programs to address issues associated with the SDoH, ensure all patients have equal access to care, and ensure linkages to social service organizations.

The Applicant notes that the availability of an on-site MRI unit promotes access to health care services among the patient panel, including those categorized as underserved. As described in F1.b.iii, the population in BWH's service area has high poverty rates, high unemployment rates, and low education levels. These SDoH, in turn, impede access to care with the potential for patients forgoing necessary MRI testing if it requires travel outside of the BWH region. Moreover, BWH and the Applicant have found that patients who are not able to prioritize healthcare needs as a result of socioeconomic status are more likely to receive care if it is in a setting with which they are familiar and is conveniently located, such as a community hospital like BWH. As a result, continued operation of an on-site MRI unit increases the likelihood that patients in BWH's service area will access care and allows for seamless communication between providers and caregivers around a patient's diagnosis and treatment. Through the Proposed Project, patients will be able to schedule and attend multiple appointment on-site at BWH in one day, which will maximize patient satisfaction. This will also result in minimizing transportation needs, which can be a barrier to care if patients require services off-site from BWH. Accordingly, on-site provision of MRI services five days per week at BWH will reduce health inequities, thereby positively impacting quality outcomes for patients.

Additionally, patients of the Applicant's MRI service will further benefit from care coordination through access to BWH's system-wide support services. BWH provides access to translation services for patients for whom English is not a primary language. In addition, BWH employs fully-trained, culturally competent staff to care for patients. By providing access to interpreter services and culturally competent staffing, the Applicant is able to address SDoH that might otherwise impede patient access to care.

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.**

Proposal: The Proposed Project is for the licensure of part-time mobile MRI unit that will operate five days per week as a satellite location of the Applicant at BWH. The mobile MRI unit will replace services currently provided under a legacy arrangement dating to BWH's prior membership in UMMHC.

Quality: The Proposed Project represents the superior alternative for quality MRI services and improved health outcomes as patients will have continued access to on-site imaging along with emergency, inpatient, and other hospital services at BWH. Historically, BWH has received MRI services through a contractual arrangement with UMMIC, which is affiliated with UMMHC. Given that BWH is now an affiliate of the BH System, the Applicant is seeking to continue the operation

of an on-site MRI service at BWH as a licensed hospital service. The provision of on-site MRI services at BWH via the Applicant will ensure continued access to co-located MRI services for all of BWH's patients. Furthermore, the Proposed Project will improve access to co-located services for patients covered by HNE, who currently face high out-of-network costs when accessing the UMMIC-run unit. Overall, the Proposed Project will result in the provision of quality MRI services and improved health outcomes as patients will have access to co-located, in-network imaging and hospital services at BWH.

Efficiency: The continued operation of an MRI service at BWH will improve efficiency of care as patients will have access to a full complement of services at one location. Consequently, patients will not have to travel off-campus to a provider of imaging services as part of their ED, inpatient, or outpatient care. Additionally, administrative efficiencies will be achieved through the Proposed Project through the integration of electronic medical records and the PACS system that may be accessed by BWH and the Applicant. Finally, individuals who are covered by HNE will now have access to in-network MRI services at BWH, which is not currently possible as UMMIC is not an in-network provider for these individuals.

Capital Expense: Through the Proposed Project, the Applicant will provide MRI services at BWH. The facilities and equipment related costs for this model are $804,429.

Operating Costs: The operating costs associated with the Proposed Project are $1,625,219.

List alternative options for the Proposed Project:

Option 1

Alternative Proposal: Continue to provide patients with access to MRI services through as the current arrangement with UMMIC.

Alternative Quality: As previously described, patients covered by HNE will have higher out-of-pocket expenses resulting from this arrangement and, therefore, may be forced to seek MRI services outside of BWH, which will lead to fragmented care, reduced care coordination, and lower quality outcomes.

Alternative Efficiency: This arrangement would not allow a separation from UMMHC and improved alignment with the BH System.

Alternative Capital Expenses: There are no capital expenses associated with continuing this arrangement. Such contracted services are considered operating expenses.

Alternative Operating Costs: Continuing in this arrangement does not result in changes in operating expense.

Option 2

Alternative Proposal: Purchase and operate a fixed MRI at BWH under the BWH hospital license. This option was not selected given the high costs to establish the service and lack of demand for a fixed unit at this time.

Alternative Quality: A fixed site, hospital-based MRI unit could be operated as a hospital department, integrating electronic health information and financial data. BWH would be

able to more easily offer additional hours each day and to conduct contrast studies at all times. Transfer of patients to other BH System hospitals would no longer be required as the MRI unit would be available every day. While this option meets quality goals, it is not a cost-effective means of meeting the patient panel need.

Alternative Efficiency: A fixed MRI unit at BWH would allow BWH to fully integrate the MRI service financially and would allow BWH to control the service. Scheduling would be improved as patients would have greater access to a full-time unit. However, this option is not viable as BWH does not have the volume to support the costs to establish a fixed site unit.

Alternative Capital Expenses: There would be significant capital expense associated with the establishment of a fixed-site MRI at BWH. Construction activities would be required to accommodate a unit. Additional capital would be required to purchase the equipment. At this time, BWH is unable to support the capital costs based on the historical volume for the MRI service.

Alternative Operating Costs: Operating a fixed-site MRI unit would result in additional costs to BWH. Employees would need to be hired to staff the unit as well as to provide certain administrative and support functions. Maintenance of the unit could also result in operating costs to BWH. Finally, the difference in IDTF and hospital fees would drive operating costs up. At the present time, the operating costs to support a fixed MRI unit are not a cost-effective means of ensuring access to this service. Accordingly, this option will have higher operating costs than the Proposed Project that cannot be supported by the volume that the MRI will serve.

ATTACHMENT 3: FACTOR 1 SUPPLEMENTAL INFORMATION