

STAFF MEMORANDUM TO THE COMMISSIONER FOR DETERMINATION OF NEED	
Applicant Name	Atrius Health, Inc.
Applicant Address	36 Shops at 5 Way, Plymouth, MA 02360
Filing Date	January 5, 2023
Type of DoN Application	DoN-Required Equipment
Total Value	\$978,000.00
Project Number	-22101711-RE
Ten Taxpayer Group	None
Community Health Initiative	\$48,900.00
Staff Recommendation	Approval
Type of Review	Delegated
<p><u>Project Summary and Regulatory Review</u></p> <p>Atrius Health, Inc. (Applicant, Atrius Health) submitted a DoN Application for a Substantial Change in Service to provide mobile magnetic resonance imaging (MRI) service two days per week, and a fixed Computerized Tomography (CT) unit at a new satellite clinic located at 36 Shops at 5 Way, Plymouth, MA 02360. The capital expenditure for the Proposed Project is \$978,000; the Community Health Initiatives (CHI) contribution is \$48,900.</p> <p>This DoN application falls within the definition of DoN Required Equipment, which is reviewed under the DoN regulation 105 CMR 100.000 and falls under Delegated Review. The Department must determine that need exists for a Proposed Project, on the basis of material in the record, where the Applicant makes a clear and convincing demonstration that the Proposed Project meets each Determination of Need Factor set forth within 105 CMR 100.210. This staff report addresses each of the six factors set forth in the regulation.</p>	

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## Application Overview

### Background

The Applicant, Atrius Health, Inc. (Atrius Health) is a Massachusetts nonprofit multi-specialty medical group practice organized under M.G.L. c. 180 that holds the clinic and satellite licenses for its locations,<sup>1</sup> and is a Massachusetts Health Policy Commission (HPC) Certified Accountable Care Organization (ACO). Atrius Health<sup>2</sup> owns 30 medical practice locations in Massachusetts, and has a services agreement with Atrius Management Services Organization, LLC<sup>3</sup> (Atrius MSO) to provide administrative support services.

At the site of the Proposed Project, in Plymouth, MA, Atrius Health is in the process of consolidating six medical practice locations into a single location, the Plymouth Clinic, (the Clinic, f/k/a the Plymouth Medical Group, PMG).<sup>4</sup> The Plymouth Clinic will be licensed as a new satellite of the Atrius Health - Harvard Vanguard Medical Associates, Wellesley Practice.<sup>5</sup> The Plymouth Clinic will be modeled after its other multispecialty practices, offering a full range of services including internal medicine, pediatrics, and various specialty and ancillary services, including pharmacy, lab and radiology.<sup>6</sup>

### Proposed Project

The Proposed Project is to provide two advanced imaging modalities, MRI and CT, at the Plymouth Clinic. Specifically, Atrius Health is seeking approval for one fixed/installed scanner to provide full-time CT services and two days of service of a mobile MRI at the Plymouth Clinic. Atrius Health will either purchase or lease the CT scanner. The MRI services will be provided pursuant to an existing lease that Atrius Health currently holds for provision of mobile MRI services. The Applicant states that the Proposed Project will complement the general diagnostic imaging modalities (X-Ray and ultrasound) which will be available at the Plymouth Clinic.

The Proposed Project is driven by a need to expand access to cost effective advanced imaging for Atrius Health patients in the greater Plymouth service area and is part of the Applicant's ongoing efforts to improve access to necessary care, promote care coordination, and help control total medical expenses for the community.

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<sup>1</sup> licensed by the Massachusetts Department of Public Health (DPH) under M.G.L. c. 111 s. 51

<sup>2</sup> The sole corporate member of Atrius Health, Inc. is a Massachusetts-licensed physician (currently Chris Andreoli).

<sup>3</sup> Atrius MSO is owned by Collaborative Care Holdings, LLC, which is owned by Optum as of June 1, 2022

<sup>4</sup> In 2016, Atrius Health, Inc., acquired PMG Physician Associates (PMG), a medical practice with seven practice locations in the Plymouth region (four in Plymouth, one in Kingston, one in Duxbury, and one in Bourne). The Bourne practice will remain at its current location.

<sup>5</sup> The construction plans are concurrently under review by the DPH Plan Review Department.

<sup>6</sup> The total capital cost for the Plymouth Practice is estimated to be \$18 million (including all DON required equipment requested in this DoN) which is below the capital expenditure threshold that would require a Notice of DON for the construction of the entire new clinic facility, and there is no ambulatory surgery.

## Factor 1: Patient Panel<sup>7</sup>

Tables 1 below shows the historic Patient Panel since 2019. Between January 1, 2022, and June 30, 2022, Atrius Health's Patient Panel consists of approximately 383,507 unique patients.

**Table 1: Atrius Health - Patient Panel, January 2019 – June 2022**

Calendar Year	2019	2020	2021	2022*
Number Of Unique Patients	427,618	417,689	381,725	383,507
*Patient counts based on patient unique encounters from January 1 - June 30, 2022				

**Table 2: Demographic Profiles**

	2019	2020	2021	2022*
<b>Gender</b>				
Female	58.4%	58.3%	58.0%	58.1%
Male	41.6%	41.7%	42.0%	41.9%
<b>Age</b>				
0 to 18	0.7%	0.7%	0.7%	0.7%
19 to 64	76.8%	76.1%	75.1%	74.8%
65+	22.6%	23.2%	24.2%	24.5%
<b>Race</b>				
Caucasian	68.8%	68.1%	67.7%	67.4%
Black	6.7%	6.7%	7.1%	7.3%
Asian	6.5%	6.6%	6.8%	7.3%
Patient Declined	11.0%	11.6%	11.2%	10.4%
Hispanic	3.3%	3.4%	3.6%	3.8%
Other	3.6%	3.5%	3.5%	3.6%
Native American	0.1%	0.1%	0.1%	0.1%
Native Hawaiian	0.0%	0.0%	0.0%	0.0%

The Applicant provided demographic patient information in Table 2. Staff notes the following observations about these data below:

- **Gender**- Females consistently comprise ~58% of patients.
- **Age**-The 65 and over age cohort comprises nearly a quarter of Atrius Health's Patient Panel, and its share of the total is increasing year over year.

<sup>7</sup> As defined in 105 CMR 100.100, Patient Panel is the total of the individual patients regardless of payer, including those patients seen within an emergency department(s) if applicable, seen over the course of the most recent complete 36-month period by the Applicant or Holder... (2) If the Proposed Project is for a new facility and there is no existing patient panel, Patient Panel means the anticipated patients.

- **Race/Ethnicity-** The Panel shows increasing diversity over the reporting period. While the Caucasian cohort represents approximately two thirds of the Patient Panel, the data reflects a declining Caucasian share while all other cohorts are increasing.
- **Patient Origin-** The Primary service area is widely distributed in eastern Massachusetts with 75.3% of patients residing in 79 towns. The top 15 towns account for 32.6% of Atrius Health's total Patient Panel with Boston accounting for the largest share of just 4.3%, and the next two, Plymouth and Quincy accounting for 3.3% and 3.2% respectively. All the other towns contribute less than 3% of the Patient Panel. For the Plymouth Clinic patient population, 76.2% of patients reside in 10 towns with the largest share residing in Plymouth (41.0%). Kingston (6.4%), Buzzards Bay (6.0%), Carver (4.7%), and Duxbury (3.8%) contribute the next largest shares to the patient population.
- **Payor Mix:** Overall, 25.5% of the Patient Panel is covered by government payors. Medicaid Patients comprise 7% of overall Atrius patients and between 6 and 7% of CT and MRI patients.  
Medicare FFS and Medicare Advantage patients comprise 17.5% of the Patient Panel and 31.0% and 39.7% of the CT and MRI patients respectively. Patients covered by ACO and APM contracts comprise 65% of the Atrius Patient Panel and ~75% of the advanced imaging patients.

**Table 3: Payor-mix for Atrius Health and for CT and MRIs**

	<b>Atrius Health</b>	<b>CT</b>	<b>MRI</b>
Commercial Risk (HMO/POS/PPO)	47.0%	37.0%	43.0%
Commercial PPO (non-risk) and Indemnity	26.7%	16.0%	19.1%
Medicaid HMO	6.9%	5.6%	6.8%
Medicare FFS	12.0%	25.9%	20.6%
Medicare HMO (Medicare Advantage)	5.5%	13.8%	10.4%
Other Government	1.1%	0.1%	0.1%
Self-Pay	0.8%	1.5%	0.1%
<b>TOTAL:</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>ACO and APM Contracts</b>	<b>65.1%</b>	<b>75.6%</b>	<b>74.4%</b>
<i>Note: "Other Government" includes FFS Medicaid and the Health Connector.</i>			

## Factor 1(a) Patient Panel Need

The Applicant attributes Patient Panel need for the Proposed Project to the following:

1. Need for local, accessible, and cost-effective imaging services for its patients
2. Need to ensure access for the growing aging population
3. Increasing prevalence of diseases requiring advanced imaging modalities
4. Need to meet future need: projections over the next 5 years

### 1. Need for Local, Accessible, And Cost-Effective Imaging Services

While Plymouth Clinic patients<sup>8</sup> have the option to utilize Atrius Health's other MRI and CT services, the closest Atrius Health location is 30 minutes away. The only local option for MRI and CT in the greater Plymouth region is through a local hospital facility that is not part of the Atrius Health system. The Applicant asserts that all of Atrius Health's existing MRI and CT locations are nearing capacity. These three issues create access challenges that are discussed throughout this report.

The volume of MRIs and CTs historically performed at all Atrius Health locations is outlined in the Table 4.

**Table 4: Total CTs and MRIs Performed at All Atrius Health Locations**

	2019	2020	2021	2022
<b>Total CT</b>	19,510	16,326	19,972	22,379
<b>Total MRI</b>	25,627	19,458	25,024	25,066
Note, 2020 volumes were lower due to the COVID-19 Pandemic				

Once fully consolidated, the Plymouth Clinic location will offer Internal Medicine/Family Medicine, ENT, Visual Specialty, Orthopedics, Podiatry, and Urgent Care services, all specialties that order may CT and MRI exams for the diagnosis and management of certain diseases.

## **MRI**

MRI services are provided in Kenmore, Norwood, and Weymouth, Chelmsford, and Concord, The Chelmsford and Concord locations are serviced with a mobile MRI unit. Plymouth Clinic providers placed orders for 1,286 MRIs between April 1, 2021, and March 31, 2022, of which only 17.7% (227) occurred at an Atrius Health location; while 82.3% (1,059) went to external locations. Ninety-five percent (95%) of MRI orders placed by the Plymouth physicians were for: lumbar spine, brain, abdomen, cervical spine, upper extremity joint, lower extremity joint, magnetic resonance angiography of the head, magnetic resonance angiography of the neck, thoracic spine, and breast; these comprise the top 10 MRI exams orders. The closest Atrius Health location to Plymouth that offers MRI imaging services, Weymouth, is 30 minutes away and has a wait time of nearly two weeks for routine MRI exams.

Atrius Health currently leases a mobile MRI unit on a monthly basis. The unit provides services at its Chelmsford location, 3 days a week and at Concord, 2 days a week. Under this existing lease, the Applicant seeks to add (2) days of service at the Plymouth Clinic. It anticipates volumes of 9-10 exams each day. By leveraging this equipment seven days per week, travel and wait-times will be reduced, with little additional incremental cost to the patients or the Atrius system.

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<sup>8</sup> The patients associated with the former PMG practices now receive most care from Atrius Health and are referred to as Plymouth Clinic patients in this report.

## **CT**

CT services are provided at Kenmore, Norwood, and Weymouth. Plymouth Clinic providers placed orders for 2,635 CTs between April 1, 2021, and March 31, 2022, of which only 8.1% (214) occurred at an Atrius Health location; while 81.6% (2151) went to external locations despite there being timely, but not proximate, availability at existing Atrius CT facilities. Ninety-two percent (92%) of the total CT orders for these patients were abdomen/pelvis, chest, chest for lung cancer screening (LDCT), brain, and abdomen; these comprise the top five types of CT exams ordered. CT services will be provided by a fixed (installed) CT Unit where it anticipates initially providing CTs 5 days per week ramping up from 6 to 12 per day. (See projections below.)

The Applicant notes that these advanced imaging services will be used primarily by Plymouth Clinic patients, and that ensuring access within the Atrius Health system at the Plymouth Clinic, will facilitate continuity of care for its patients. As discussed further in Factor 1(b) and (e), having these options within the Atrius system where approximately 65% of patients are in ACO/APM risk contracts, ensures the Applicant's ability to cost effectively deliver care.

### **2. Need to Ensure Access for the Growing Aging Population**

Including CT and mobile MRI at the Plymouth Clinic will ensure that older adult patients are able to conveniently and efficiently access these diagnostic tools. MRI and CT are imaging modalities that can diagnose and stage diseases that have a higher prevalence of conditions in older adults. These conditions are among the most frequently ordered types of scans noted above. Since the 65 and over population comprises nearly a quarter of Atrius Health's Patient Panel, age related conditions are prevalent among its patients, and as the population ages, there will be increased need for advanced imaging to diagnose and manage diseases in the most expeditious, cost-effective manner. Patients having any of these diseases benefit from early diagnosis and treatment.

In the service area of the Proposed Project, the southeast region of Massachusetts, the 65+ population is expected to increase to 24% of the region's population by 2035 according to the Donahue Institute's Long-term Population Projections for Massachusetts Regions and Municipalities.<sup>a</sup>

The growth of the region's 65+ population supports ensuring sufficient capacity and access to MRI and CT services. A report by the UMass Donahue Institute in 2018 noted an overall 4.6% increase between 2015 and 2018 in the total population in Plymouth, MA, where four of the Plymouth practices are located.<sup>b</sup> However, the cohort aged 65 and older is expected to increase by 18%,<sup>c</sup> while the population aged 0-64 in Plymouth is expected to decrease by 2% between 2020 and 2025.

### **3. Increasing Prevalence of Diseases Requiring Advanced Imaging Modalities**

MRI and CT are used for diagnosis and treatment planning for both chronic and acute illnesses that are not well evaluated by other imaging modalities.

The Applicant notes that it has a growing program for lung cancer screening. Based on provider order data from the Atrius Health electronic medical record (EMR) for the period April 1, 2021-March 30, 2022, nearly 25% of the CT orders placed by Atrius Health providers for the Plymouth Clinic patients were placed for (LDCT) Chest for lung cancer screening. Early identification of lung cancer allows for better prognosis and decreased mortality.<sup>d</sup>

The Applicant implemented a “Best Practice Advisory” within the EMR in 2021 to prompt providers to order LDCT for eligible patients. Since the expansion of LDCT inclusion criteria in 2021, the number of eligible, enrolled patients in the Atrius Health LDCT program has increased. From January 1- August 5, 2022, 2150 individuals from the Atrius Health Patients Panel were screened demonstrating need for access to CT exams. Table 5 demonstrates the Atrius Health LDCT program growth (note: 2020 screening volume was affected by the COVID-19 Public Health Emergency).

**Table 5: Atrius Health LDCT Program – CT screenings completed at Atrius Health**

<b>Year</b>	<b>New Patient/Initial LDCT Screenings</b>	<b>Total LDCT Program Screenings Includes new patient/initial and follow-up screenings as part of the LDCT program</b>
2016	471	1,632
2017	719	1,929
2018	608	2,130
2019	634	2,510
2020	356	2,308
2021	750	2,945
2022 (thru 8/5/22)	876	2,133
<b>Total</b>	<b>4,414</b>	<b>15,587</b>

#### **4. Need to Meet Future Need: Projections Over the Next 5 Years**

The Applicant states that the need for the Proposed Project is also supported by projected demand and is based on a comprehensive Atrius Health Commissioned 2019 study<sup>9</sup> following its decision to consolidate the 6 PMG practice locations. The Study identified which ancillary services it should provide at the new location and also projected that the overall patient volume at the Plymouth Clinic will grow over the next five years, causing MRI and CT utilization need to increase proportionately.

Based on Atrius Health’s experience related to opening ultrasound services in Plymouth, it anticipates that 75% of the MRI and CT orders will be fulfilled at the Plymouth Clinic.

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<sup>9</sup> by Stroudwater Associates



**Table 6: Projections of the Number of MRI and CT Scans at the Plymouth Clinic**

Modality	21-22 Order Volumes	2024	2025	2026	2027	2028
<b>MRI Scans</b>	1286	956	1,173	1,537	1,611	1,626
<b>% Growth</b>		-26%	23%	31%	5%	1%
<b>CT Scans</b>	2635	1,866	2,209	2,999	3,142	3,173
<b>% Growth</b>		-29%	18%	36%	5%	1%

### **Analysis**

Based on a review of the literature and other DoN applications, staff concurs with the Applicant's ongoing and growing needs, especially for the aging population which comprises ~25% of their patients as the need for these modalities is particularly due to the prevalence of cancers, cardiovascular, and musculoskeletal diseases.

- Cancer is the leading cause of death in Massachusetts with a mortality rate of 155.5/100,000 in 2014. Cancer incidence over the 2011-2015 timeframe was 459.4 per 100,000,<sup>e</sup> which is higher than the national average.<sup>f</sup> Advancing age is the most important risk factor for cancer; according to the National Cancer Institute, 83.2% of new cancer cases are diagnosed in people aged 45-84, with one quarter of new cancer cases being diagnosed in people aged 65-74. The median age for a cancer diagnosis is 66 years.<sup>g, h, i</sup>
- Three-quarters of those ages 65 and older suffer from a musculoskeletal disease, including arthritis, back pain and trauma where, depending on the condition, MRI or CT are the most effective imaging modalities. Almost half (49.6%, 22.2 million) of adults aged ≥65 years have arthritis according to recent data.<sup>j</sup>
- Cardiovascular disease is the second leading cause of death in Massachusetts. From 2013-2015, adults diagnosed with myocardial infarction annually ranged from 5.2-5.7%, and those diagnosed with angina/coronary heart disease from 4.7-5.8%.<sup>k</sup>

Staff notes that projected volume of the MRI and CT units at the Plymouth Clinic is based on historical data of physicians' orders and on data related to recapturing patients once the service is offered within a practice. Staff notes that for both MRI and CT, year one projected volume is below the historical order volumes by 26% and 29% for MRI and CT, respectively, but recaptured as the facility achieves full operating status.<sup>10</sup>

<sup>10</sup> From April 1, 2021, and March 31, 2022.

For MRI, the projected compound annual growth rate (CAGR) of exams ordered, for the projection period 2022-2028, is 3.4%. By 2028, staff calculated that the Applicant anticipates performing approximately ~15 scans per day, two days a week which approaches capacity.<sup>11</sup> Consequently, it is likely that the Applicant will need to reassess MRI need at that time.

For CT, the projected CAGR of scans ordered for the Applicant's projection period 2022-2028 is 2.7%. Based on the Applicants volume projections, by 2028, staff calculated that the Applicant anticipates performing approximately ~12 scans per day, five days a week<sup>12</sup> which is within capacity.

Staff finds that the Applicant's projected growth rates are reasonable given the growth in the local aging population, age-related conditions and LDCT screenings. Through the Proposed Project, the Applicant will attain greater control over the provision of imaging services and, as a result, will be able to improve timely local access to high-quality imaging services for Atrius' Plymouth Clinic patients, and thereby support cost effective, continuity of care and improve patient satisfaction as described further below.

As a result of information provided by the Applicant and with additional analysis, Staff finds the Applicant has met the requirements of Factor 1(a).

## **Factor 1(b) Public Health Value: Improved Health Outcomes and Quality of Life; Assurances of Health Equity**

### **1. Public Health Value- Evidence-Based- Improved Health Outcomes**

The Applicant states that both MRI and CT are well established technologies delivering accurate information in a non-invasive or minimally invasive manner,<sup>13</sup> that enable physicians to make timely and appropriate medical decisions and develop effective treatment plans across numerous clinical conditions. The clinical applications of these two imaging modalities have expanded from initially being employed for joint and spinal imaging, to include imaging the brain, ears, abdomen, lungs and heart. Applicant notes that within the Atrius Health patient population there is strong prevalence of vascular disease, various cancers, lung disease, stroke, as well as musculoskeletal disease, the incidence of which increases with age. MRI and CT are both readily used in the diagnosis, treatment planning, and monitoring of these diseases and injury.

- **MRI** is used in an expanding array of clinical applications and has the advantage of not using ionizing radiation.<sup>l</sup> MRI is particularly good at differentiating soft tissue abnormalities making the technology ideal for imaging joints, muscles, brain and spinal cord tissue, as well as bones and internal organs.<sup>m</sup>

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<sup>11</sup> Scan times vary for MRI but assuming .75 hours X 10 hours equals 13 scans per day.

<sup>12</sup> Assumes operating 50 weeks per year, 5 days/week:  $3173/50/5 \approx 12$

<sup>13</sup> For detecting some types of conditions, a contrast agent is administered via intravenous means, which is minimally invasive as compared to exploratory types of procedures previously utilized.

As mentioned under Factor 1(a), 95% of all MRI orders entered by Plymouth Clinic providers are for patients with conditions in the above referenced categories. MRI is vital to identifying demyelinating plaques, cerebral contusions, syringomyelia, and infarction including hemorrhagic and ischemic stroke, allowing early intervention and treatment leading to better patient outcomes.<sup>n, o</sup> Orthopedic imaging with MRI of the joints and spine provides high diagnostic accuracy for ligament and tendon tears, disc herniation, annular tears and other soft tissue and bony abnormalities. MRI imaging also provides disease progression and staging for oncology patients.<sup>p</sup>

- **CT** is used to identify disease or injury within various regions of the body including lesions in the abdomen, lungs, and brain. CT is particularly useful in diagnosing pulmonary embolisms (blood clots in the pulmonary veins) and brain hemorrhage.<sup>q</sup> Within minutes, CT scans provide physicians with a diagnosis or exclusion of disease and have been shown to reduce the rate of hospitalizations.<sup>r</sup>

Studies demonstrate the accessibility and availability of diagnostic imaging (as well as the quality of subsequent treatment) are directly associated with lung cancer outcomes. The National Cancer Institute's National Lung Screening Trial documented that heavy smokers between the ages of 55-74 are 20% less likely to die from lung cancer when they are screened with LDCT of the chest.<sup>s</sup> According to the American Cancer Society, annual LDCT screening for persons who meet eligibility criteria<sup>14</sup> has been shown to result in a significantly lower chance of dying from lung cancer based on early detection.<sup>t</sup>

As noted in Factor F1.(a), 25% of CT orders are specifically for LDCT of the lungs and their screening program follows the guidelines set forth by the Centers for Medicare & Medicaid Services (CMS).<sup>15</sup>

## **2. Maintain Patient satisfaction and convenience**

The Applicant asserts the Proposed Project will positively affect patient satisfaction by ensuring continued access to local, in network MRI and CT services negating the need for patients to travel either outside the Atrius system services to the nearest hospital out-patient department (HOPD) or to the next closest Atrius facility that offers advanced imaging, which is over 30 minutes away. Patient satisfaction is linked to patient compliance with their medical care plan, which leads to improved health outcomes.

## **3. Addressing Atrius System Access with Ongoing COVID-Related Challenges**

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<sup>14</sup> Age 50-80 and in fairly good health, currently smoke or have quit in the past 15 years and have at least a 20 pack-year smoking history.

<sup>15</sup> These guidelines require that patients meet certain eligibility criteria to be covered as screening, including age 50-77 years, no sign of lung cancer, a smoking history of at least 20 pack-years, currently smoke or have quit within the last 15 years. Patients aged 78-80 are recommended for screening by the American Cancer Society but are not currently covered under CMS reimbursement guidelines.

The COVID-19 pandemic challenged accessibility to MRI and CT services by increasing wait times leading to delayed diagnosis and treatment of disease nationally and internationally.<sup>u, v</sup> Local hospitals have been overwhelmed by the number of patients needing imaging due to deferred care during the pandemic.<sup>w</sup> When in an HOPD, a patient's imaging can be delayed for more emergent cases. Enhancing MRI and establishing CT services within Atrius Health's Plymouth Clinic, will ensure patients have timely access while optimizing quality of care through timely and efficient diagnosis and treatment which can decrease hospitalization, morbidity and mortality of the aging population.<sup>x</sup>

The Applicant asserts that through avoidance of the confusion of a hospital-based setting it, expects to improve compliance with imaging orders, and thus improve health outcomes, particularly older adults and the chronically ill.

#### **4. Health Equity and Social Determinants of Health (SDOH)**

The Applicant affirms its commitment to serving a diverse patient population and strives to address the needs of individuals who may be at risk for poor health due to SDOH issues. Atrius Health's model of care is focused on the individual, regardless of payer source or ability to pay and it works with patients who have difficulty paying for care.

The Applicant asserts it has always participated in Medicaid (MassHealth) and currently participates as the ACO Partner in the MassHealth ACO plan, Tufts Health Together with Atrius Health, serving some of the Commonwealth's most vulnerable populations. Through the Proposed Project, this segment of the Atrius Health population will gain affordable access to advanced imaging services.

Since the closest Atrius Health service is at least 30 minutes away, access will also be more convenient: offering services closer to home, reduces costs associated with transport, time away from work, and child and elder care, which can meaningfully impact lower-income families.

The Applicant states that Atrius Health respects and honors the cultural differences among its patient and staff. Radiology Services leadership is culturally diverse and the staff performing the CT and MRI imaging provide respectful, compassionate care to all patients. Examples of existing programs and initiatives were provided. First, as part of an effort to address disparities and inequities in patient care, the Applicant states it has a robust diversity, equity and inclusion (DEI) program, which provides training to staff on cultural and socioeconomic differences. Second, it also provides interpreter services for 240 spoken languages for patients in their preferred language as well as American Sign Language. Third, The Atrius Health Equity Steering Committee is charged with monitoring health disparities and establishing plans to reduce inequities, thereby improving equitable access to services for all Atrius Health patients. The scope of the Health Equity Steering Committee is broad and includes ancillary and all imaging services.

#### ***Analysis***

Staff concur with the Applicant's assertion that providing timely, local access to imaging services may contribute to improved health outcomes and patient satisfaction. Review of the literature supports the assertion that patient satisfaction is an important indicator for measuring quality in

healthcare; patient satisfaction impacts clinical outcomes, patient retention, medical malpractice claims; and timely, efficient, and patient-centered care directly influence patient satisfaction.<sup>y</sup>

Advanced imaging can improve disease detection, diagnosis and treatment by enabling more accurate diagnosis and treatment and it can also result in the avoidance of more invasive and costly procedures<sup>z</sup> leading to improved health outcomes. Since the 65+ population comprises about one quarter of the Applicant's patient population, staff affirms the ongoing need for MRI and CT services as the risk for cancer, cardiovascular disease, and Alzheimer's, the leading causes of death in Massachusetts, increase with age, and consequently demand for the proposed imaging services is likely to increase with a growing aging population.<sup>aa</sup>

The Health Policy Commission conducted an analysis that demonstrates the importance of ensuring that lower income patients achieve convenient, and early access to affordable diagnostic services. The Study of the Center for Health Information and Analysis (CHIA) 2019 Massachusetts Health Insurance Survey and found that among Massachusetts commercially insured patients with lower incomes, 59% had trouble accessing care due to cost; it also found that lower-income residents disproportionately forgo needed care.<sup>bb</sup>

The Applicant has described its ongoing commitment to ensuring public health value and equity through its DEI initiatives, demonstrating that the Proposed Project will contribute to Atrius Health's continued efforts to improve access to care for underserved populations by making MRI and CT services accessible at a lower cost to the Plymouth Clinic patients. Staff reviewed its public payor-mix and notes that there appears to be no decline in access to these advanced imaging modalities over the overall Atrius Patient Panel.

As a result of information provided by the Applicant and with additional analysis, Staff finds the Applicant has met the requirements of Factor 1(b).

### Factor 1(c) Efficiency, Continuity of Care, Coordination of Care

The Applicant asserts that the Proposed Project will improve efficiency, continuity and coordination of care through 1) expansion of Atrius Health's existing integrated services to a new site and 2) co-location of the new imaging with primary and specialty care providers at the Plymouth Clinic site where the imaging reports are integrated into the patient's medical record (EMR) and immediately accessible by the patient's clinical care team.

All of Atrius Health's imaging is integrated in the EMR via a link to picture archiving and communications (PAC) system resulting in effective, timely communication among providers with more comprehensive diagnostic reports, thereby promoting early diagnosis and treatment to improve health outcomes and quality of life.

In contrast, the Applicant asserts that when patients receive care at a hospital radiology department timely communication of important abnormal results is a challenge among providers who use a different EMR, despite advances in EMR interoperability. Through this current process, delays can occur due to inefficiencies in coordination of care.

Co-location of these services within the Plymouth Clinic will improve efficiency and continuity and coordination of care for patients by easing coordination of visits to multiple providers through EMR integration and documentation in a single record, thereby reducing delays in developing and initiating the patient's care plan.

To ensure medical appropriateness and to provide guidance as to how the exam is clinically performed, all CT and MRI examinations orders at Atrius Health undergo a clinical review prior to imaging. Exam protocols are individually determined, with a review of relevant portions of the patient's EMR.

### ***Analysis***

Review of the literature suggests access to integrated health information technology systems directly impacts health outcomes through reducing fragmentation and improving coordination among care providers.<sup>cc, dd</sup> Additional studies show as access to a single, integrated health record, can reduce errors, improve patient safety, and support better patient outcomes.<sup>ee</sup>

As a result of information provided by the Applicant and with additional analysis, Staff finds the Applicant has met the requirements of Factor 1(c).

### **Factor 1(d) Consultation**

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

### **Factor 1(e) Evidence of Sound Community Engagement through the Patient Panel**

The Department's Guideline<sup>16</sup> for community engagement defines "community" as the Patient Panel, and requires that at minimum, the Applicant must "consult" with groups representative of the Applicant's Patient Panel. Regulations state that efforts in such consultation should consist of engaging "community coalitions statistically representative of the Patient Panel."<sup>ff</sup>

The Applicant conducted a virtual focus group involving a representative group of Plymouth patient volunteers on August 3, 2022.<sup>17</sup> Following a presentation of an overview of the new site and the proposed new CT and MRI service, there was a discussion of the implications for patients of having local CT and MRI services provided internally to Atrius Health, which included improved coordination of care, and improved access to high quality, low-cost CT and MRI imaging services.

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<sup>16</sup> Community Engagement Standards for Community Health Planning Guideline

<sup>17</sup> The panel was hosted by:

- Dr. Rebecca Schwartz, Executive Chair, Ancillary Services, Chief Radiology
- Dr. David Grace, Chief, PMG Internal Medicine
- Karen Craft, Senior Director, Radiology Services
- John Clark, Senior Director, Real Estate

Participants expressed interest in the types of imaging, the timeframe, and enthusiasm for a local option that eliminated the necessity to travel or to a hospital.<sup>18</sup>

### ***Analysis***

Staff finds that the Applicant met the required community engagement standard of Consult in the planning phase of the Proposed Project. As a result of information provided by the Applicant and with additional analysis, Staff finds the Applicant has met the requirements of Factor 1(e).

### **Factor 1(f) Competition on Price, Total Medical Expenses (TME), Costs and Other Measures Of Health Care Spending**

The Applicant asserts that the Proposed Project will compete on the basis of price, total medical expense, provider costs and other recognized measures of health care spending based on the following:

1. It will provide a lower cost alternative to the only CT and MRI available to the Plymouth region, which is located at a higher cost hospital outpatient department,
2. It will save patients and staff time and money, through improved coordination of care since Atrius Health uses a single, integrated EMR across its practices.
3. It will enhance Atrius Health's value-based primary care since nearly 85% of its revenue is derived from risk-based arrangements which is at the core of the practice's strategy, operations, and culture. By creating value for patients, purchasers, and payers (both public and private) population-based payments are leveraged to deliver market leading reduced total medical expense (TME) results, with efficiency in inpatient and outpatient hospital utilization, while providing a high quality of care.

The Applicant notes the most recent HPC Cost Trends Report shows Atrius Health had the lowest percentage among provider organizations of certain services occurring at a hospital outpatient department in 2019, and second lowest in 2020.<sup>gg</sup> Because Atrius Health operates as one system, using fully integrated radiologists, EMR and PACS software platforms, Atrius Health can operate at a high level of efficiency at a lower cost per imaging exam.

### ***Analysis***

The HPC reported in its Board Meeting on June 8, 2022, that Atrius Health was consistently among the three provider groups with the lowest unadjusted total medical spending by payments per member year (PMPY) for the five-year period 2015-2020.<sup>hh</sup> After adjusting for patient risk scores and other characteristics, the HPC reported Atrius Health had the second lowest medical claims spending PMPY in 2019.<sup>ii</sup>

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<sup>18</sup> One patient emailed the following after the presentation, "Looking forward to your new facility! Everything under one roof" [referring to CT and MRI services].

As a result of information provided by the Applicant and with additional analysis, Staff finds the Applicant has met the requirements of Factor 1(f).

### ***Analysis of Factor 1***

As a result of information provided by the Applicant and additional analysis, staff finds that the Applicant has demonstrated that the Proposed Project has met Factor 1(a-f). The Applicant proposed specific outcome, and process measures to track the impact of the Proposed Project which staff has reviewed, and which will become a part of the reporting requirements. The Factor 2: Cost Containment, Improved Public Health Outcomes and Delivery System Transformation

### **Cost Containment**

The Applicant asserts the Proposed Project will contribute directly and meaningfully to the Commonwealth's cost containment goals by improving availability and accessibility of MRI and CT services in a lower cost setting, as an alternative to higher cost, hospital-based services where over 80% of its Plymouth Clinic patients currently go for advanced imaging. Atrius Health has a documented established track record in managing TME (adjusted and unadjusted) and minimizing the use of low-value services.<sup>jj</sup> The Proposed Project will help ensure that Atrius Health continues to deliver timely, integrated and coordinated care to its patients, facilitated by its integrated EMR.

The Proposed Project will further contribute to lowering TME for the Plymouth Clinic patients since over 45% of patients are enrolled in risk-based health plans for which Atrius Health bears most of the financial responsibility for the costs of care delivered to the patient. By providing services within the Atrius Health system, care is coordinated for every patient and services are delivered at a lower cost than other providers and savings accrue for the consumer and the Commonwealth.

Atrius Health's delivery model is focused on providing high quality care in a cost-efficient manner. Several tools within the EMR are utilized to promote the appropriate use of CT and MRI. Prior to the patient's being seen, order requisitions are reviewed in the context of the patient's history (as documented in the EMR), any prior imaging (including external to Atrius), and exam appropriateness given the patient's clinical indications. These tools and processes improve the efficiency of care delivery.

Other cost containment efforts of the Proposed Project include that additional capital equipment expense is avoided since Atrius Health elected to maximize the use of its existing mobile MRI contract as described in Factor 1; and Atrius Health's selection of CT equipment for the Proposed Project reflects the minimum requirements for an outpatient practice, rather than a higher end, more expensive unit that the Applicant posits might be more appropriate for a hospital with intensive care needs.

### **Public Health Outcomes**



The Proposed Project will improve public health outcomes by improving speed of access to high quality, low-cost CT and MRI services, thereby leading to more timely diagnosis and treatment. As stated in Factor 1, CT and MRI are well established modalities, critical to properly diagnosing and treatment planning for many common health conditions, including cancer, cardiovascular disease, pulmonary conditions, and arthritis. In addition, ensuring access to MRI and CT services at the Plymouth Clinic and integrating them into Atrius Health's delivery system, will result in improvements in both continuity and coordination of care, with attendant improvements in health outcomes for its patients.

The Proposed Project will allow same-day access to CT exams, and MRI exams completed within a week. In the event there is a "critical result" Atrius Health Radiologists immediately direct message the ordering provider through the EMR since these will be fully integrated into the Atrius system.

### **Delivery System Transformation**

As noted in Factor 1(b), the Applicant stresses that in delivering effective, coordinated, care to adult and pediatric patients in eastern Massachusetts it aims to consistently provide culturally competent care to its patients. It further states its emphasis on diversity, equity, and inclusion (DEI) guides major decisions made by the organization. Atrius Health regularly trains staff to fully respect patients of all cultural, racial, and ethnic backgrounds. In 2023 all patient-facing staff will complete implicit bias training. In addition to trainings, Atrius Health offers DEI resources on its Intranet, available to all staff.

Additionally, since Atrius Health patients speak dozens of languages, to ensure patients fully understand imaging procedures, interpreter services are available in person and via an iPad app.

Further, Atrius Health routinely screens for social determinants of health in its pediatric and adult populations and when vulnerabilities are identified, it helps connect patients to internal and external resources (e.g., social work; community services) to support their needs, including but not limited to those specific to an aging population. The efforts will be integrated into the Proposed Project.

Finally, Atrius Health is implementing an IT project to develop the necessary fields and capabilities to capture race and ethnicity data more accurately and in greater detail to help better identify and address disparities.

### ***Analysis: Cost Containment, Public Health Outcomes, and Delivery System Transformation***

As described herein, the Applicant is a documented quality low-cost provider. Given its high proportion of risk-based contracts, it has a strong incentive to ensure that care is delivered in the most appropriate efficient manner, minimizing low-value care. The Proposed Project seeks to improve access to imaging services within Atrius Health's lower-cost setting while improving the coordination and effectiveness of advanced imaging services. Ensuring timely access to coordinated imaging services can reduce delays in diagnosis and treatment, and thus contribute to improved patient satisfaction and health outcomes.

Central to the goal of Delivery System Transformation is the integration of social services and community-based expertise. It is documented that persistent disparities in a number of health outcomes, including some of the leading causes of death, points to the importance of screening for and relief from SDOH related health disparities, prevention and disease promotion.<sup>kk</sup> The Applicant's SDOH screening is integrated into the care processes, to identify and address health disparities and risks.

As a result of information provided by the Applicant and with additional analysis, Staff finds the Applicant has met the requirements of Factor 2.

### **Factor 3: Relevant Licensure/Oversight Compliance**

Staff finds that the Applicant has provided evidence of compliance and good standing with federal, state, and local laws and regulations and will not be addressed further in this report.

### **Factor 4: Financial Feasibility**

The Applicant has demonstrated that it has sufficient funds available for capital and operating costs necessary to support the Proposed Project without negative effects or consequences to the existing Patient Panel. Documentation sufficient to make such finding is supported by an analysis by an independent CPA.

The scope of the CPA Report, performed by BDO, is limited to an analysis of the seven-year Projections for the fiscal years ending December 31, 2022, through 2028, prepared by Management, and the supporting documentation. The CPA reviewed documents produced by Management as well as third party industry data sources to formulate its conclusions; these documents included:

1. Financial Model for Atrius Health for the periods ending December 31, 2018 through December 31, 2028;
2. Atrius Health – 2022 Gap Closure Plan updated March 14, 2022;
3. Signed Atrius-GE CT Quote dated April 29, 2022;
4. Atrius DON Sketch dated June 21, 2022;
5. MRI and CT Construction Cost Budget dated June 22, 2022;
6. Audited Financial Statements for Atrius Health, Inc. and Affiliates for Fiscal Years Ended December 31, 2021, 2020, 2019, and 2018;
7. Unaudited Cash Flow Statements for Atrius Health, Inc. for Fiscal Years Ended December 31, 2021, 2020, 2019, and 2018;
8. Determination of Need Application Instructions dated March 2017 and draft DON Narrative Report and Factor 4 Charts;
9. 2021 Annual Health Care Cost Trends Report Chartpack, Massachusetts Health Policy Commission, dated September 2021;
10. Integra Reports, published by MicroBilt Corporation;

11. IBISWorld Industry Report, Primary Care Doctors in the US, dated August 2022.

### **Revenue**

Total revenue for the Applicant includes capitation revenue, fee for service (“FFS”) revenue, pharmacy revenue, and other revenue. Capitation revenue comprises ~75% of the cumulative total revenue from FY 2022 through FY 2028. The revenue projected for the Proposed Project is equal to ~0.1 % of the Applicant’s total revenue and is based upon number of scans and estimated net revenue per scan per year. Projections based on historical operating results and anticipated demographic trends in the Atrius Health service area, show that revenue will increase from \$1.6 million to \$2.8 million beginning in FY 2024 through FY 2028. Since the projections are within the range of annual revenue growth rates for the Applicant between FY 2019 and FY 2021 the CPA concluded that they reflect a reasonable estimation of future revenue of Atrius Health.

### **Operating Expenses**

The CPA analyzed each category of operating expenses for reasonableness and feasibility related to the Projections. *Leakage* and *Salary and Benefits* account for ~57.0% and 27.0% of total operating expenses, respectively.

After FY 2023, the weighted average change in the leakage rate is equal to 1.9 percent annually. This falls within the historical rate of change in the blended leakage rate of -0.8 percent to 12.5 percent from FY 2019 to FY 2021.

*Salary* was projected based on estimated full time equivalent (“FTE”) per department and salary per FTE. Overall salary and benefits expense are projected to increase annually between 2.2% and 8.0% the Projections, which falls within or exceeds the historical rate of increases in salary and benefits ranging from -7.7% to 3.3%.

Since the projected increases in total operating expenses are within range of annual expense growth rates between FY 2019 and FY 2021, it is the CPA’s opinion that the operating expenses reflect reasonable estimation of future expenses of the Applicant. The CPA further notes that the projected total expenses as a percentage of total revenue range from 96.9% to 102.4%.

### **Capital Expenditures and Proposed Project Financing**

The CPA reviewed the capital expenditures and financing projected related to the Proposed Project. The capital costs related to the Proposed Project are projected to be ~\$978,000 and include the build out cost for the MRI and for the CT units and are based upon prior experience, developed sketches and a quote from the CT equipment vendor.

Funding of the project will be through capital/cash on hand. The Applicant has an unrestricted cash and investments balance exceeding \$340 million throughout the projection period. As such, the Applicant appears to have sufficient capital to fund the Proposed Project without requiring debt financing.

CPA concluded that *“The Projections exhibit a cumulative operating EBITDA<sup>19</sup> surplus of approximately 1.9% of cumulative projected revenue of Atrius Health for the seven years from fiscal year (“FY”) 2022 through 2028. Based upon our review of the relevant documents and analysis of the Projections, we determined the anticipated operating EBITDA surplus is a reasonable expectation and based upon feasible financial assumptions. Accordingly, we determined that the Projections are reasonable and feasible, and not likely to have a negative impact on the Applicant’s patient panel or result in a liquidation of Atrius Health’s assets.”*

## **Analysis**

Staff has determined that the Applicant has provided sufficient documentation of the availability of sufficient funds for capital and ongoing operating costs necessary to support the Proposed Project without negative impacts or consequences to the Applicant’s Patient Panel, based on the CPA’s analysis, and as a result, Staff finds that the Applicant has met the requirements of Factor 4.

## **Factor 5: Assessment of the Proposed Project’s Relative Merit**

The Applicant has provided sufficient evidence that the Proposed Project, on balance, is superior to alternative and substitute methods for meeting the existing Patient Panel needs identified by the Applicant pursuant to 105 CMR 100.210(A)(1). Evaluation of 105 CMR 100.210(A)(5) 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.

The Applicant reports that it evaluated and rejected two alternatives to the proposed project:

1. To Maintain status quo- to continue to utilize external providers for CT and MRI imaging and to not acquire CT or expand days of mobile MRI to extend MRI services to the Plymouth Clinic.
2. To install both fixed CT and a fixed MRI units.

1. Maintaining the current situation does not address the efficiency, quality and cost needs described throughout the Application and this staff report. The benefits of operational and cost controls that the Proposed Project affords would not be achieved- there would be no same day service, less coordination of care and increased operating costs from patients leaving the Atrius Health system of care where image and service quality are dependent on outside factors over which Atrius Health has no control and limited ability to monitor.

2. To install both a fixed CT scanner and a fixed MRI scanner.

While the level of quality and efficiency for alternative 2 is the same as the Proposed Project, capital costs would be greater because this option would include the acquisition of an MRI with construction to house the fixed unit. Because Atrius Health has two days per week of service

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<sup>19</sup> EBITDA (“Earnings before Depreciation, Interest and Tax”)

available on an existing MRI that is currently leased on a monthly basis, there is no additional capital expense for the unit other than construction of a vestibule.

### ***Analysis***

The Proposed Project was chosen as the best alternative to meet the needs of the Plymouth Clinic patients. Throughout the Application, Atrius Health made a case that quality and efficiency of care will be improved, and capital expense and operating costs will be kept to a minimum with the Proposed Project; it is also the least costly alternative. The expected cost of the CT scanner is \$561,120 which is less than the cost of a CT unit in an acute care setting. The estimated capital cost to construct the space for the CT scanner is \$266,500. Since Atrius Health currently leases a mobile MRI on a monthly basis that is only utilized five days per week, there is no capital equipment cost, only an estimated cost of \$111,500 to construct the MRI vestibule. The additional two days/week operating costs includes the costs of relocating the MRI unit, clinical staff to operate the scanner, and minor supply costs.

Staff finds that the Applicant has appropriately considered the quality, efficiency, and capital and operating costs of the Proposed Project relative to potential alternatives. As a result of information provided by the Applicant and with additional analysis, staff finds the Applicant has met the requirements of Factor 5.

### **Factor 6: Fulfillment of DPH Community-based Health Initiatives Guideline**

This is a DoN project that will result in a Tier 1 Community-based Health Initiative (CHI). The Applicant plans to establish Computerized Tomography (CT) and mobile MRI services that constitutes a DoN-Required Equipment acquired by an entity other than a hospital. As such, Atrius Health's Proposed Project does not require the Applicant to submit CHI forms.

To fulfill Factor 6 requirements, Atrius Health will contribute their full CHI contribution to the Community Health Fund. With fulfillment of the below conditions, the Applicant will have demonstrated that the Proposed Project has met Factor 6.

### **Overall Application: Findings and Recommendations**

Based upon a review of the materials submitted, Staff finds that, with the addition of the recommended conditions detailed below, the Applicant has met each DoN Factor for the Proposed Project and recommends that the Department approve this Determination of Need, subject to all applicable standard and Other Conditions.

### **Conditions to the DoN**

1. The total required CHI contribution of \$48,900.00 will be directed to the Massachusetts Statewide Community Health Fund.

2. To comply with the Holder's obligation to contribute to the Massachusetts Statewide Community Health Fund, the Holder must submit the payment, a check for \$48,900.00, to Health Resources in Action (the fiscal agent for the CHI Statewide Initiative).
  - i. The Holder must submit the funds to HRiA within 30 days from the date of the Notice of Approval.
  - ii. The Holder must promptly notify DPH (CHI contact staff) when payment has been made.

Payment should be sent to:  
Health Resources in Action, Inc., (HRiA)  
2 Boylston Street, 4th Floor  
Boston, MA 02116  
Attn: Ms. Bora Toro

## Appendix I

The Applicant provided several metrics that it will monitor regularly to assess the impact of the Proposed Project. These will be reported to the DoN program on an annual basis following project implementation. *Reporting will include a description of numerators and denominators*

1. Turnaround Time (TAT): Radiology reports are typically available in the patient's medical record, through the patient portal, and to the ordering provider the day the exam is completed. Atrius Health radiology leadership closely monitors TAT, including urgent requests (STAT), for CT and MRI and will continue to do so for services provided at the Plymouth Clinic.
  - a. Measure: TAT is measured from the time the exam is completed to the time the interpretation is finalized for all imaging services provided at Atrius Health including MRI and CT.
  - b. Projections: For STAT exams: Reporting is expected within one hour. For Routine exams: Reporting is expected within 48 hours. In YTD 2022, 99.34% of all CT exams and 98.67% of all MRI exams are reported within their expected applicable TAT. TAT for CT and MRI at the Plymouth Clinic are expected to meet or exceed these performance thresholds.
  - c. Monitoring: Plymouth Clinic performance will be monitored like all other Atrius Health imaging: TAT for CT and MRI exams are compiled and reviewed monthly by radiology leadership. All exams that do not meet the reporting TAT standard are reviewed to determine the cause of the delay. Improvement measures will be implemented by radiology leadership if a problem is identified.
2. Quality Assurance (QA): Atrius Health has an intensive imaging QA program, facilitated by the provision of direct technical feedback by radiologists. Radiologists can dictate comments on any technical imaging issues. Comments for each imaging modality are reviewed monthly by the radiology services management team which is made up of regional managers. The feedback drives improvement in exam quality across Atrius Health. This imaging QA program will include the new Plymouth Clinic CT and MRI scans. Currently, fewer than 1% of all imaging studies are identified as having QA issues requiring repeat imaging; Atrius Health will closely monitor the exams at the Plymouth Clinic, particularly in the first year, to ensure that similar or better quality is achieved.
  - a. Measure: Percentage of non-diagnostic exams requiring repeat imaging.
  - b. Projections: Currently there is no baseline for the Plymouth Clinic. Overall, across all imaging modalities at Atrius Health practices, the incidence of negative technical feedback and the need for a repeat exam is less than 1% for each modality. The incidence of repeat imaging for Plymouth Clinic is projected to be consistent with this threshold.
  - c. Monitoring: QA comments and the repeat rate (need for repeat imaging) will be evaluated monthly and action taken on any improvement measures identified, including the basis for any required repeat imaging.

3. Patient Experience/Satisfaction: Patient satisfaction and positive patient experience help to ensure patient compliance with imaging orders.
  - a. Measure: Patient satisfaction is reported monthly for radiology services including CT and MRI based on Press Ganey survey responses.
  - b. Projections: Radiology Department Baseline: 2021 - 82.4% “very good”; Projections for the Radiology Department for the 2022 and 2023 are 83% “very good” and for the following three years: 2024—83%; 2025—85%; 2026—85%. Plymouth Clinic patient satisfaction with MRI and CT is expected to be consistent with these projections.
  - c. Monitoring: Patient satisfaction scores by practice location are monitored and evaluated monthly by the Atrius Health Department of Quality, Safety, and Patient Experience, and reviewed monthly by the Radiology Regional Service Line Managers. If monthly trending shows a decline, the practice and staff will be evaluated by Radiology Regional Service Line Managers and improvement measures will be implemented as needed.
4. Access: Access to advanced imaging is currently monitored for each practice that provides CT and MRI imaging services. The Proposed Project seeks to ensure timely access for CT and MRI exams for the Plymouth Clinic Patient Panel at the Plymouth Clinic.
  - a. Measure: Wait time for first available appointment from when the order was placed.
  - b. Projections: Currently there is no baseline for the Plymouth Clinic. Current average access for CT at other Atrius Health locations is same day/next day for first available appointment; access for MRI services at other Atrius Health locations for urgent and emergent exams is same day/next day, access for routine exams is within 10 -14 days. Access in the Plymouth Clinic Patient Panel for CT and MRI would be improved based on increased capacity associated with the planned service days and projected volume.
  - c. Monitoring: The Plymouth Clinic wait times will be added to Atrius Health standard reporting data when services become operational and will be monitored monthly by Radiology Regional Service Line Managers. Service adjustments will be made if there are access constraints, as indicated by persistent increases in wait times for first available appointments from when the order was placed.

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<sup>a</sup> [UMDI LongTermPopulationProjectionsReport 2015 04 29.pdf \(donahue-institute.org\)](#) P 31

<sup>b</sup> <https://www.mass.gov/doc/population-projections-methods-umdi-massdot/download>

<sup>c</sup> <https://www.mass.gov/doc/population-projections-methods-umdi-massdot/download>

<sup>d</sup> <https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/lung-cancer-screening#bootstrap-panel--4>

<sup>e</sup> Centers For Disease Control & Prevention, State of the State of Massachusetts  
<https://www.cdc.gov/nchs/pressroom/states/massachusetts.htm>.



- <sup>f</sup> National Cancer Institute. State Cancer Profiles. Quick Profiles: Massachusetts. <https://statecancerprofiles.cancer.gov/quick-profiles/index.php?statename=massachusetts>.
- <sup>g</sup> National Cancer Institute, Cancer causes and Prevention, Age and Cancer Risk, NCI Surveillance, Epidemiology and End Results program, <https://www.cancer.gov/about-cancer/causes-prevention/risk/age>
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- <sup>k</sup> BRFSS Statewide Reports and Publications. A Profile of Health Among Massachusetts Adults, by year. <https://www.mass.gov/lists/brfss-statewide-reports-and-publications>
- <sup>l</sup> [Magnetic Resonance Imaging \(MRI\) \(nih.gov\)](#)
- <sup>m</sup> [Magnetic Resonance Imaging \(MRI\) of the Bones, Joints, and Soft Tissues | Johns Hopkins Medicine](#)
- <sup>n</sup> [MRI of brain infarction - PubMed \(nih.gov\)](#)
- <sup>o</sup> [Magnetic resonance imaging in neurological disorders - PubMed \(nih.gov\)](#)
- <sup>p</sup> [The role of MRI in musculoskeletal practice: a clinical perspective - PMC \(nih.gov\)](#)
- <sup>q</sup> [Computed Tomography \(CT\) \(nih.gov\)](#)
- <sup>r</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5183924/>
- <sup>s</sup> [Computed Tomography \(CT\) Scans and Cancer Fact Sheet - NCI](#)
- <sup>t</sup> [Lung Cancer Early Detection | Lung Cancer Screening](#)
- <sup>u</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8280577/>
- <sup>v</sup> <https://ascopost.com/news/december-2021/effect-of-the-covid-19-pandemic-on-cancer-imaging/>
- <sup>w</sup> <https://bmccgeriatr.biomedcentral.com/articles/10.1186/s12877-019-1197-9#Sec21>
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- <sup>bb</sup> Massachusetts Health Policy Commission, 2021 Cost Trends Report, pp. 18-19. <https://www.mass.gov/doc/2021-health-care-cost-trends-report/download>
- <sup>cc</sup> HealthIT.gov. Improve Care Coordination. Available at <https://www.healthit.gov/topic/health-it-basics/improve-care-coordination>
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- <sup>ff</sup> DoN Regulation 100.210 (A)(1)(e). Available at <https://www.mass.gov/files/documents/2018/12/31/jud-lib-105cmr100.pdf>
- <sup>gg</sup> <https://www.mass.gov/doc/2022-cost-trends-report-chartpack/download> (p. 63)
- <sup>hh</sup> <https://www.mass.gov/doc/presentation-board-meeting-june-8-2022/download> (slide 27)
- <sup>ii</sup> <https://www.mass.gov/doc/presentation-board-meeting-june-8-2022/download> (slide 28)
- <sup>jj</sup> <https://www.mass.gov/doc/presentation-board-meeting-june-8-2022/download> SLIDE 27
- <sup>kk</sup> Singh GK, Daus GP, Allender M, et al. Social Determinants of Health in the United States: Addressing Major Health Inequality Trends for the Nation, 1935-2016. *Int J MCH AIDS*. 2017;6(2):139-164. doi:10.21106/ijma.236