PARTNERS HEALTHCARE SYSTEM, INC.
DON APPLICATION # PHS-19092711-HE
ATTACHMENTS

SUBSTANTIAL CAPITAL EXPENDITURE AND SUBSTANTIAL CHANGE IN SERVICE NEWTON-WELLESLEY HOSPITAL

SEPTEMBER 27, 2019

BY

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2. Project Description

Partners HealthCare System, Inc. ("Applicant") located at 800 Boylston Street, Suite 1150, Boston, MA 02199 is filing a Notice of Determination of Need ("Application") with the Massachusetts Department of Public Health for a substantial capital expenditure and a substantial change in service by Newton-Wellesley Hospital ("NWH" or "Hospital") located at 2014 Washington St, Newton, MA 02462. This Application requests approval for the following projects (collectively, the "Proposed Project"): (1) renovation to establish an observation unit; (2) renovation and expansion of endoscopy unit; (3) renovation to expand special care nursery; (4) renovation to inpatient adult psychiatric units; (5) acquisition of a cardiac computerized tomography ("CT") unit; and (6) conservation projects.

A. Establishing a Permanent Observation Unit

In February of this year, NWH received approval from the Department of Public Health to repurpose its existing postpartum unit in the South Building (specifically, the 4 South floor) of the Hospital's main campus to use this clinical space as a temporary Observation Unit ("OU"). Prior to opening this temporary OU, all patients that were assigned "outpatient status with observation services" ("observation patients") were treated and cared for on the inpatient floors of the Hospital, which limited capacity within these units for inpatients. Consequently, to address capacity constraints on the inpatient floors, NWH is seeking to open a new 8-bed permanent OU within existing shell space near the hospital's Emergency Department ("ED"). This new dedicated unit will allow staff to address some of the capacity constraints on the inpatient floors, offering expedited access for patients in need of inpatient services, including those patients being directly admitted from other Partners' hospitals that NWH has a clinical relationship with, such as Brigham and Women's Hospital ("BWH") and the Massachusetts General Hospital ("MGH"), through the Community Hospital Transfer Program ("CHTP").

B. Renovation and Expansion of Endoscopy Services

NWH's Endoscopy Unit requires renovation and expansion to address the current and future demand for endoscopy services. Over the past three fiscal years ("FY"), the Hospital experienced a 6.8% increase in the number of patients seeking endoscopic procedures. To address this increased demand for services and to ensure patients have access to necessary procedures, the Proposed Project will allow NWH to expand its endoscopy services in the following ways: (1) expand the use of its existing Endoscopic Retrograde Cholangio-Pancreatography ("ERCP") room, so additional endoscopic fluoroscopy procedures may be performed; and (2) convert a general storage room to clinical space to offer manometry services. This expansion will allow NWH to meet the growing demand for endoscopic procedures at the hospital and is expected to reduce current wait times for elective procedures.

C. Expansion of the Special Care Nursery Services

Currently, NWH has a 12-bed level IIB Special Care Nursery ("SCN") that consists of 11 bays and 1 isolation room. This unit provides care for babies who are born prematurely or have certain medical conditions that require a higher level of care (beyond the services provided at the mother's bedside). Over the past three fiscal years, the SCN has seen an increase in the number of patients in need of services, with 15% growth during this time period. Given the increased demand for the Hospital's SCN services, at times, NWH experiences "surges" of patients in need of SCN care. When the census within the unit reaches 9 patients or greater, the SCN defers patients seeking transfer from other area hospitals to ensure NWH patients may be

accommodated. Furthermore, if the SCN reaches a census of 12 or greater, obstetrics patients that are less than 36 weeks gestation or those patients deemed "high risk" must be transferred to another hospital to ensure the mother and baby may be properly cared for with the appropriate equipment. Through the Proposed Project, NWH is seeking to add 4 SCN bassinets/beds to accommodate current and projected demand for SCN services. This expansion will allow increased access to SCN services, leading to improved health outcomes and patient experience.

D. Renovations to the Psychiatric Unit

NWH has two inpatient adult psychiatric units that comprise a total of 45 beds. These units provide acute care for adults with active psychiatric conditions. Across the country, the number of suicides has increased in recent years, making it the 10th leading cause of death in the United States. Inpatient psychiatric units also are experiencing increased rates of suicide. To combat this issue, The Joint Commission ("TJC") convened an expert panel in the summer of 2017 and developed a set of recommendations for ligature-resistant inpatient psychiatric units.[1] The Centers for Medicare & Medicaid Services ("CMS") then implemented these recommendations into the Conditions of Participation for Hospitals.[2] Based on these new TJC and CMS requirements, all psychiatric units must implement changes to ensure psychiatric units are ligature-resistant. Ligature risks are of particular concern in psychiatric units as they present a threat to patient safety, especially for patients with suicidal ideation.[3] Through the Proposed Project, NWH will renovate its Adult Psychiatric Units to implement TJC's standards for a ligature-resistant environment.

Moreover, through the Proposed Project, NWH is seeking to renovate shell space near Usen, floor 3 to create exercise space for psychiatric patients, as well as additional meeting space. The new exercise space will assist in patients' treatment and provide these individuals with access to daily exercise. Evidence in recent years suggests that exercise has a unique effect on some psychiatric disorders, prompting mental health clinicians to rethink treatment strategies and to consider the possibility of exercise not just in therapy, but as therapy. Accordingly, the Proposed Project will provide NWH's psychiatric patients with an alternative form of therapy – exercise. These renovations will enhance the delivery of NWH"s behavioral health services.

E. Acquisition of a Cardiac CT Scanner

In 2016, NWH commenced its expansion of cardiovascular services through the creation of the Elfers Cardiovascular Center ("Center"). The Center is a compilation of robust multidisciplinary disease centers offering diagnostic and interventional cardiac capabilities. The Center was established to offer coordinated, collaborative and cost-effective cardiac care to patients. The next step in meeting this mission is to expand upon the Center's diagnostic capabilities through the acquisition of a dedicated cardiovascular computerized tomography scanner ("Cardiac CT") and develop interventions for patients with chest pain syndromes, coronary artery disease ("CAD") and cardiomyopathy.

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[1] Erin Murphy Smith, *Suicide risk assessment and prevention,* NURSING MGMT., Nov. 2018 at 22, 22, https://journals.lww.com/nursingmanagement/Fulltext/2018/11000/Suicide_risk_assessment_and_prevention.6.aspx#pdf-link; *Special Report: Suicide Prevention in Health Care Settings*, THE JOINT COMMISSION ONLINE (Nov. 2017), https://www.jointcommission.org/issues/article.aspx?Article=GtNpk0ErgGF%2B7J9WOTTkXANZSEPXa1%2BKH0/4kGHCiio%3D.

[2] CTRS. FOR MEDICARE & MEDICAID SERVS., QSO: 18-21 ALL HOSPITALS, CMS CLARIFICATION OF PSYCHIATRIC ENVIRONMENTAL RISKS, 1 (July 20, 2018), https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/QSO18-21-Hospitals.pdf.

[3] Smith, *supra* note 1.

The Proposed Project includes the acquisition of a Cardiac CT that will serve as the primary diagnostic tool to more effectively and efficiently diagnosis CAD and other cardiovascular conditions in patients at NWH. The benefits of this technology include: (1) less radiation exposure than other imaging modalities, including nuclear cardiology stress tests; (2) a reduction in invasive coronary angiograms; and (3) a reduction in the number of patients being transferred to alternative facilities for more invasive procedures.

F. Other Renovation Projects

Finally, the Applicant submits this Application for approval of other renovation projects at NWH designed to improve access to and the quality of existing services and facilities. As provided in further detail below, upgrades and renovations will be performed to various aspects of the facilities on the Hospital's main campus. These additional renovation projects are included in this Application as the Hospital's combined planned capital expenditures exceed the applicable inpatient minimum capital expenditure threshold.

The additional renovation projects to upgrade aging facilities at the Hospital's main campus include the following:

- Replacement of 3 high pressure boilers and accompanying auxiliary equipment, including the installation of 2 – 1.5-megawatt gas fired co-generation engines. The original equipment was installed in 1968 and is in need of upgrade to prevent mechanical and electrical failures. The installation of co-generation engines will ensure a reliable power source.

- Replacement of the existing HVAC building automation systems, including the control system and pneumatics. This upgrade in equipment will allow NWH to trend and monitor temperature and humidity in critical areas of the Hospital, such as the operating rooms.

- Replacement of the primary and secondary electrical gear with new Main-Tie-Main switchgear to support primary electrical service to NWH's entire campus. Additionally, the Hospital will move all of utilities underground for improved resiliency and reliability.

- Replacement of the Hospital's chiller plant, including the replacement of 6 existing cooling towers and 2 – 750-ton chillers with 6 new 850-ton Marley cooling towers and 2 new 850-ton Trane chillers, as well as auxiliary support equipment. The replacement of this equipment will prevent system failures and improve the capacity and reliability of NWH's physical plant.

- Renovations to the Hospital's building exteriors, including brick and mortar repairs and building envelope water proofing.

Attachment/Exhibit

2

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. Partners HealthCare Patient Panel

Partners HealthCare is a not-for-profit, integrated health care system that was formed in 1994 by an affiliation between The Brigham Medical Center, Inc. (now known as Brigham Health) and The Massachusetts General Hospital ("MGH").[1] Partners HealthCare currently operates two tertiary hospitals, six community acute care hospitals, and one acute care specialty hospital in Massachusetts; one community acute care hospital in Southern New Hampshire; one facility providing inpatient and outpatient mental health services; and three facilities providing inpatient and outpatient services in rehabilitation medicine and long-term care. Partners HealthCare also operates physician organizations and practices, a home health agency, nursing homes and a graduate level program for health professionals. Partners HealthCare is a non-university-based nonprofit private medical research enterprise and its academic medical centers are principal teaching affiliates of the medical and dental schools of Harvard University. Partners HealthCare provides its services to patients primarily from the Greater Boston area and eastern Massachusetts, as well as New England and beyond. Additionally, Partners HealthCare operates a licensed, not-for-profit managed care organization that provides health insurance products to the MassHealth Program (Medicaid), Commonwealth Care (a series of health insurance plans for adults who meet income and other eligibility requirements) and commercial populations.

Partners HealthCare serves a large and diverse patient panel as demonstrated by the utilization data for the 36-month period covering Fiscal Years ("FY") 16-18 and the preliminary data available for FY19.[2] Appendix 2 provides this demographic profile for Partners HealthCare in table form. The number of patients utilizing Partners HealthCare's services has increased since FY16, with 1,380,203 unique patients in FY16, 1,409,382 unique patients in FY17 and 1,504,478 unique patients in FY18.[3] [4] Preliminary data for FY19 indicate that from October 1, 2018 – April 30, 2019,

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

[2] Fiscal year October 1 – September 30. While preliminary data is available for FY19, annual comparisons are calculated using data for FY16-18 as the FY19 data is only for October 1, 2018 – April 30, 2019 and is subject to change over time.

[3] Entities include: Brigham and Women's Hospital, Brigham and Women's Faulkner Hospital, Massachusetts General Hospital, Newton-Wellesley Hospital, and North Shore Medical Center; Cooley Dickinson Hospital, Martha's Vineyard Hospital, McLean Hospital, and Nantucket Cottage Hospital (post-Epic data only); Massachusetts Eye and Ear Infirmary (outpatient post-Epic data only); Spaulding Rehabilitation Hospital (Telehealth, Partners Mobile Observation Unit, Home Hospital programs for GH and BWH, Stay Connected with GH, Lifeline, and CareSage programs are not included); Brigham and Women's Physicians Organization, Massachusetts General Physicians Organization, Newton-Wellesley Medical Group, and North Shore Physicians Group; Cooley Dickinson PHO (post-Epic data only); and Partners Community Physicians Organization (pre-Epic non-risk patients not included).

[4] The methodology for aggregating Partners HealthCare's patient panel data has evolved into an automated process utilizing internal data resources. Initially, in 2017, when Partners HealthCare began developing its patient panel for Determination of Need applications, such as the Change of Ownership for Massachusetts Eye and Ear and the Substantial Capital Expansion for Brigham and Women's Hospital, staff manually aggregated the necessary data.

Partners HealthCare had 1,182,064 unique patients. Partners HealthCare's patient mix consists of approximately 41.9% males and 58.1% females based on FY18 data, with gender unknown for less than 0.01% of the patient population. The Massachusetts Center for Health Information and Analysis ("CHIA") reports that Partners HealthCare's patient panel represents 19% of all discharges in the Commonwealth.[5] The system's case mix adjusted discharge rate is 23%.[6]

Partners HealthCare has seen an increase in the number of patients it serves across all age cohorts between FY16 and FY18. Current age demographics show that the majority of the patients within Partners HealthCare's patient population are between the ages of 18-64 years of age (61.2-61.7% of the total patient population). Patients that are 65 and older also make up a significant portion of the total patient population (26.8-28.6% of the total patient population). Only 10.2-11.5% of Partners HealthCare's patients are between 0-17 years of age. Preliminary data for FY19 shows similar trends with regard to increases across age cohorts and cohort distribution.

Partners HealthCare's patient panel reflects a mix of races. Data based on patient self-reporting demonstrates that in FY18, 72.6% of the total patient population identified as White; 5.5% identified as African American or Black; 4.1% identified as Asian; 1.4% identified as Hispanic/Latino; 0.1% identified as American Indian or Alaska Native; and 0.1% identified as Native Hawaiian or Other Pacific Islander. Since patients were grouped into these categories based on how they self-identified,[7] there is a portion of the patient population (16.1% in FY18) that either chose not to report their race or identified as a race that did not align with the above categories. Therefore, it is important to note that the racial composition of the Partners HealthCare patient panel may be understated.

Partners HealthCare provides care to patients from a broad range of geographies including all fifty states. While Partners HealthCare's patient panel resides mainly in Eastern Massachusetts, there is a sizeable portion of the patient panel that resides outside of Massachusetts (10.5%, or 158,537 patients, in FY18). By applying the Department's Health Service Area ("HSA") categories to FY18 data, 43.4% of Partners HealthCare's patients reside in HSA 4 (652,456 patients); 16.2% reside in HSA 6 (244,040 patients); 13.6% reside in HSA 5 (205,029 patients); 6.5% reside in HSA 3 (97,667 patients); 6.0% reside in HSA 1 (90,902 patients); 3.3% reside in HSA 2 (49,437 patients); 0.003% reside in MA but outside of HSAs 1-6 (38 patients); and the origin of 6,372 patients or 0.4% of the panel is unknown.

However, since these submissions, Partners HealthCare staff have developed a new automated process that allows for the collection and amalgamation of system-wide data. This refined methodology allows staff to continuously monitor and improve the way that data are aggregated. Accordingly, between June 2018 and May 2019, staff further refined the data collection processes leading to an increase of no more than 1% in overall patient counts for the system. Staff will continue to refresh and refine the process for aggregating data across the system, leading to more exact patient panel data.

[5] MASSACHUSETTS CTR. FOR HEALTH INFORMATION ANALYSIS, *Fiscal Year 2017: Partners HealthCare System*, http://www.chiamass.gov/assets/Uploads/mass-hospital-financials/2017-annual-report/system-profiles/Partners-HealthCare.pdf.

[6] *Id.*

[7] With the exception of the category "Hispanic/Latino," the race categories shown above are based on the 1997 Office of Management and Budget standards on race and ethnicity. Patients were grouped into these categories based on their responses as follows – White: "White"; African American or Black: "African American", "Black", "Black or African American"; American Indian or Alaska Native: "American Indian", "American Indian or Alaska Native"; Asian: "Asian"; Native Hawaiian or Other Pacific Islander: "Native Hawaiian or Other Pacific Islander", "Native Hawaiian/Other Pacific Islander", "Pacific Islander"; Hispanic/Latino: "Hispanic"," Hispanic or Latino"," Latino"; Other/Unknown: All other responses.

B. Newton-Wellesley Hospital Patient Panel

Newton-Wellesley Hospital ("NWH") is a 285-bed comprehensive community hospital, providing a continuum of care services. The Hospital is a member of Partners HealthCare, and this affiliation allows the hospital to provide patients with seamless accessibility to the finest community-based medicine, as well as the most advanced specialty care in the world. Through multiple collaborations with MGH; MassGeneral Hospital for Children; and Brigham and Women's Hospital (BWH), NWH offers patients access to various centers of excellence, such as the Mass General Cancer Center at Newton-Wellesley, Kaplan Center for Joint Reconstruction Surgery, the Spine Center, the Elfers Cardiovascular Center, the Auerbach Breast Center and the Center for Weight Loss Surgery. NWH also provides the latest diagnostic technology including a 64-slice CT scanner, MRI, PET/CT scans, sleep studies and interventional radiology services. As a result of updates to the Hospital's technology, NWH has made numerous developments and enhancements in health screening, diagnosis and treatment. The Hospital is committed to providing patients with the highest quality care.

Overall NWH Patient Panel

Attachment 2a provides the demographic profile for NWH in table form.[8] The number of patients utilizing NWH remained steady from FY16-FY-19 year-to-date ("YTD"), with 216,785 unique patients in FY16, 203,542 unique patients in FY17, and 210,536 unique patients in FY18. In the first six months of FY19, NWH had 128,314 unique patients. Of these patients, approximately 40% are male and 60% are female.

In regard to age, the majority of NWH's patients are between the ages of 18-64 (62.9%, or 132,475 patients in FY18). The next largest age cohort is patients that are in the 65+ age cohort (22.8%, or 48,091 patients, in FY18). Subsequently, 14.2% of NWH's patients are between ages 0-17 (29,969 patients in FY18).

Moreover, NWH's patients reflect various races. Data based on patient self-reporting demonstrate that in FY18, 82.4% of patients identified as White; 2.9% identified as African American or Black; 6.3% identified as Asian; 0.2% identified as Hispanic/Latino; 0.1% identified as American Indian or Alaska Native; and 0.2% identified as Native Hawaiian or Other Pacific Islander. Since patients were grouped into these categories based on how they self-identified, there is a portion of the patient population (7.8% in FY18) that either chose to not report their race or identified as a race that did not align with the above categories. Therefore, it is important to note that the racial composition of NWH's patients may be understated.

Finally, aggregated zip code data by HSA for FY18 demonstrate that the vast majority NWH's patient population or 80.8% of patients resided in HSA 4 (170,143 patients); 5.7% resided in HSA 2 (11,962 patients); 5.4% resided in HSA 5 (11,276 patients); 1.8% resided in HSA 6 (3,744 patients); 1.7% resided in HSA 3 (3,552 patients); 0.3% resided in HSA 1 (734 patients). 8,877 patients or 4.2% of the panel was from outside of Massachusetts, and the origin of 0.1% (242 patients) of the panel was unknown.

NWH Observation Patient Panel

Aggregated OU data provided that 3,785 patients received observation services at the hospital in FY16; this number decreased slightly to 3,544 patients in FY17 and increased again in FY18 to

[8] The Hospital patient panel is comprised of Newton-Wellesley Hospital and Newton-Wellesley Medical Group

3,605. With respect to age, in FY16, 52% of all observation patients were in the 60+ age cohort (1,967 patients), this number increased to 53% of patients (1,892 patients) in FY17 and slightly decreased in FY18 to 51% (1,826 patients). Moreover, the gender breakdown for observation patients shows that more females received these services during FY16-FY18. In FY16, 59% of all observation patients (2,227 patients) were females and 41% (1,557) were males. The following two fiscal years had similar trends with 57% of observation patients (2,011 patients) identifying as female in FY17 and 43% identifying as male (1,533 patients). Similarly, in FY18, 57% of observation patients were female (2,059 patients) and 43% (1,546) were male.

The racial breakdown of NWH's observation patients provides that the majority of the patients self-identify as White or Caucasian. Data based on patient self-reporting demonstrate that in FY18, 85% of patients identified as White or Caucasian; 3.6% identified as African American or Black; 5.5% identified as Asian; 0.3% identified as Hispanic/Latino; 0.1% identified as American Indian or Alaska Native; and 0.5% identified as Native Hawaiian or Other Pacific Islander. Since patients were grouped into these categories based on how they self-identified, there is a portion of the patient population (5.2% in FY18) that either chose to not report their race or identified as a race that did not align with the above categories. Similar trends in race exist for these patients in FY16 and FY17.

In a review of underlying conditions associated with observation services at NWH, the most prevalent diagnoses in FY18 were: (1) pain in throat and chest; (2) syncope and collapse; (3) dizziness and giddiness; (4) abdominal and pelvic pain; (5) dorsalgia; (6) transient cerebral ischemic attacks and related symptoms; (7) malaise and fatigue; and (8) other symptoms and signs with cognitive functions and awareness.

Endoscopy Patient Panel

The Division of Gastroenterology at NWH provides wide-ranging clinical expertise in all areas of gastroenterology and hepatology. The Division is serviced by highly-trained gastroenterologists who provide specialized care in the areas of esophageal disorders, gastroesophageal reflux disease, liver diseases, disorders of the pancreas and biliary system, and inflammatory bowel diseases (Crohn's disease and colitis). NWH's gastroenterology services include: (1) inpatient and outpatient consultations; (2) manometric services including esophageal, biliary/pancreatic, and rectal; (3) ablation therapy for Barrett's esophagus; (4) colonoscopy; (5) ERCP; (7) endoscopic ultrasonography; (8) liver biopsy; and (9) video capsule endoscopy.

During the last three fiscal years, NWH has provided endoscopic services to approximately 11,000 patients each year – 10,567 in FY16, 10,958 patients in FY17 and 11,290 in FY18. Of these patients, 55% (5,767 patients) in FY16 were female and 45% (4,800 patients) were male; in FY17 54% (5,886 patients) were female and 46% (5,072 patients) were male; and in FY18 53% (5,994 patients) were female and 47% (5,296 patients) were male. In regard to race, in FY18, 90% of the patients that sought endoscopic procedures were White or Caucasian; 4.4% of patients were Asian; 1.9% were Black or African-American; 0.15% were Hispanic or Latino; 0.13% were native Hawaiian or Other Pacific Islander; and 0.04% were American Indian or Alaska Native. Since patients were grouped into these categories based on how they self-identified, there is a portion of the patient population (3.5% in FY18) that either chose to not report their race or identified as a race that did not align with the above categories. Similar trends in race exist for these patients in FY16 and FY17.

Special Care Nursery Patient Panel

NWH has a 12-bed level IIB Special Care Nursery ("SCN") that consists of 11 bays and 1 isolation room. This unit provides care for babies who are born prematurely or have certain medical conditions that require a higher level of care (beyond the services provided at the mother's bedside). NWH's SCN is a partnership with BWH and offers advanced medical equipment to accommodate the unique needs of sick and premature newborns. Specific features of the SCN include: (1) 24-hour newborn specialist care; (2) medical and surgical pediatric subspecialist care; and (3) flexibility to accommodate twins, triplets and other patient and family needs. To further patient experience, the SCN's 12-bed areas are private, so skin-to-skin contact may be done to further comfort and bond infants with their families.

Over the past three fiscal years, the SCN has seen an increase in the number of patients in need of services. In FY16, 594 patients utilized NWH's SCN. In FY17, the number of patients seeking SCN services increased to 684 patients, and in FY18, the number of patients utilizing the SCN slightly decreased to 621 patients. Overall, the SCN experienced 15% growth for the three year period.

Other demographic data provided indicate that all patients utilizing these services are in the 0-2 age cohort. More male patients utilize SCN services than females. In FY16 and FY17, 45% of patients in the SCN were female and 55% were male. In FY18, this trend shifted slightly as 40% all of patients seeking SCN services were female and 60% were male. The top diagnoses for patients in the SCN were: (1) prematurity; (2) respiratory distress syndrome; and (3) transient tachypnea of the newborn.

Psychiatric Patient Panel

NWH's has two inpatient adult psychiatric units that comprise a total of 45 beds. These units provide acute care for adults with active psychiatric conditions. When needed, psychiatric hospitalization provides a safe environment for intensive assessment and treatment, including medications and other therapies. All admitted patients at NWH have an attending psychiatrist who works with the patient to develop an appropriate treatment plan. Being part of a general medical hospital, patients also have access to consultations from other specialties, such as medicine, neurology, etc. While in the hospital, patients work with a multidisciplinary team that includes psychiatric nurses, mental health counselors, social workers, and occupational therapists.

Admitted psychiatric patients at NWH meet with occupational and recreational therapists to develop a treatment plan and practice coping skills that promote healthy lifestyle and routine, self-care and more positive thinking. Attention is individualized to address specific areas of concern, such as recovery for addictions, support for changing self-harming behaviors and safety assessments for discharge planning.

Aggregated data indicate that in FY16, 758 patients received psychiatric services at NWH; in FY17, this number increased to 806 patients; and in FY18, patient volume decreased slightly to 625 patients. With respect to age, a third of patients that receive psychiatric services at NWH are in the 19-29 age cohort, followed by the 50-59 age cohort and the 30-39 age cohort. In regard to gender, patients are evenly distributed with approximately 50% females and males.

In regard to race, data indicate that the majority of NWH's psychiatric patients self-identify as White or Caucasian. Data based on patient self-reporting demonstrate that in FY18, 80% of patients identified as White or Caucasian; 6.7% identified as African American or Black; 4.6%

identified as Asian; 0.3% identified as Hispanic/Latino; 0.5% identified as American Indian or Alaska Native; and 0.3% identified as Native Hawaiian or Other Pacific Islander. Since patients were grouped into these categories based on how they self-identified, there is a portion of the patient population (7.0% in FY18) that either chose to not report their race or identified as a race that did not align with the above categories. Similar trends in race exist for these patients in FY16 and FY17.

In a review of underlying conditions associated with psychiatric patients at NWH, the most prevalent diagnoses in FY18 were: (1) suicidal thoughts; (2) anxiety; (3) depression; and (4) psychosis.

Cardiovascular CT Patient Panel

Currently, NWH has 3 CT scanners. However, these units are not capable of performing CT angiography and these scanners are not dedicated to NWH's Cardiovascular Center. Consequently, given that this modality will establish a new cardiovascular imaging program, the hospital does not have historical patient panel data. However, based on the number of patients within NWH's patient panel with CAD, cardiomyopathy and other pertinent diagnoses, NWH staff estimate that upon acquisition in Year 1: 500 patients will receive cardiac CT services; in Year 2: 1000 patients; and in Year 3: 1000 patients.

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.

A. Need for a New Observation Unit

Increased Need for Observation Services Associated with an Aging Patient Panel

The population in the United States and throughout the Commonwealth of Massachusetts is aging, increasing the number of emergency department ("ED") visits for those in the 65+ age cohort.[9] With the current focus by providers and payers on value-based healthcare (i.e. the Institute for Healthcare Improvement's Triple Aim: higher quality outcomes and patient satisfaction, improving the health of populations and lowering costs), observation units ("OUs") offer an "ideal care delivery model" for the geriatric population to manage their care and conditions.[10] "In the ED, pressures to reduce crowding and maximize throughput push ED physicians to make efficient disposition decisions, which can be challenging considering the complexity of an older patient population and the time that may be needed to reach an accurate diagnosis. Older patients often present to the ED with challenging or ambiguous complaints (e.g

[9] Christopher Caspers, M.D., *Observation Care for Elderly Patients*, AM. C. OF EMERGENCY PHYSICIANS: ACEP OBSERVATION SECTION NEWSLETTER (Sept. 2018), https://www.acep.org/how-we-serve/sections/observation-medicine/news/september-2018/observation-care-for-elderly-patients/

[10] *Id.*

failure to thrive, loss of appetite, weakness, dizziness, etc.), delayed presentations, cognitive impairment, complications from polypharmacy, and unique psychosocial challenges (i.e. living alone, fixed income, etc.). These factors can require a relatively longer period of evaluation to make an accurate disposition decision than many crowded EDs cannot provide."[11]

OUs are an appropriate care alternative for the aging population, allowing for timely diagnosis and short-term treatment where older patients may be safely managed following an initial ED evaluation.[12] "This essential clinical function has the benefit of avoiding an unnecessary and costly inpatient stay for both the patient and healthcare system and allows for a brief period of hospitalization. OU care can provide a setting for standardized evaluations by social work, physical therapy, medication reconciliation, and geriatric assessments to evaluate medical, social and functional issues prior to discharge."[13] Furthermore, the provision of care in an efficient, protocol-driven OU, reduces the duration and inherent risks of hospitalization in elderly patients, such as development of delirium; deconditioning; falls; hospital acquired infections; pressure injuries; and medication errors, potentially leading to improved quality outcomes.[14]

According to the University of Massachusetts' Donahue Institute's ("UMDI") *Long-Term Population Projections for Massachusetts Regions and Municipalities*, the statewide population is projected to grow a total of 11.8% from 2010 through 2035.[15] An analysis of UMDI's projections shows that the growth of the Commonwealth's population is segmented by age sector, and that within the next 20 years, the bulk of the state's population growth will cluster around residents that are age fifty (50) and older.[16] Moreover, between 2015 and 2035, the Commonwealth's 65+ population is expected to increase at a higher rate compared to all other age cohorts.[17] By 2035, the 65+ age cohort will represent approximately a quarter of the Massachusetts population.[18] As the number of patients that fall into the 65+ age cohort for NWH continues to grow, the demand for observation services is expected to increase as well, as advanced age leads to more ED visits.

Currently, patients in the 60+ age cohort account for approximately half of the observation services provided at NWH. Given projected increases in the overall population (including the 65+ age cohort), and the current stabilized growth trends experienced by NWH for observation services, the hospital must prepare its facilities to provide these services to a greater number of patients in the coming years. Prior to the opening of the temporary OU at NWH, all observation patients were transferred to inpatient floors for care, creating capacity constraints in the ED and other Partners' hospitals that were seeking to move patients to NWH's medical/surgical beds. The temporary OU has alleviated some of the capacity constraints on the inpatient floors, allowing

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[11] *Id.*
[12] *Id.*
[13] *Id.*
[14] *Id.*
[15] U. OF MASS. DONAHUE INST., *Long-term Population Projections for Massachusetts Regions and Municipalities* 11 (Mar. 2015), 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. *Id.* at 7. Within the past five years, Massachusetts has been experiencing an increase in the population growth rate per year due to high immigration and low domestic outflow, which is expected to slow down in 2030. *Id.* at 12.
[16] *Massachusetts Population Projections – EXCEL Age/Sex Details*, U. OF MASS. DONAHUE INST. (2015), http://pep.donahue-institute.org/downloads/2015/Age_Sex_Details_UMDI_V2015.xls. This data has been extracted for counties where current Partners HealthCare hospitals and affiliates are located. *Id.*
[17] U. OF MASS. DONAHUE INST., *supra* note 18, at 14. The report uses the cohorts as defined by the U.S. Census Bureau 2010 Census Summary, which are 0-19, 20-39, 40-64, and 65+. *Id.* Figure 2.5 in the report demonstrates that where the 65+ cohort increases from 2015 to 2035, all other cohorts are predicted to decrease. *Id.*
[18] *Id.*

many observation patients to be cared for in a distinct unit. The co-location of observation patients in one area of the hospital has created operational efficiencies, including expedited discharge processes for these patients.[19] Accordingly, the proposed creation of a permanent OU near the ED will allow NWH to increase access to these necessary observation services and ensure the hospital can meet future demand by its aging patient panel. Moreover, a new OU will allow the hospital to provide services in a more efficient manner, creating greater throughput in the ED (decreasing capacity constraints) and on inpatient floors, as well as increasing the overall number of patients who benefit from these services.

The Necessity of A Designated Observation Unit for Population Health Management

As noted, earlier this year NWH opened a temporary OU. However, prior to the opening of this unit, observation patients were placed on inpatient floors of the Hospital for care. The placement of these patients within NWH's inpatient units created capacity constraints, increasing wait times for ED patients in need of admission, as well as patients seeking to be directly-admitted (transferred) to NWH from another Partners' hospital through the CHTP.

As part of system-wide population health planning efforts, Partners developed the CHTP to allow ED clinicians at BWH and MGH to directly admit qualifying patients to NWH's inpatient units, leveraging available capacity within the system for patients in need of community-based care. Once a patient is transferred to NWH through the CHTP, a hospitalist cares for the individual, updating clinical information in Partners' shared electronic health record ("EHR") system, Epic. CHTP is one of the ways that Partners is managing population health efforts and eliminating capacity constraints in the BWH and MGH EDs.

The creation of a permanent OU at NWH will alleviate some of the capacity constraints on the Hospital's inpatient units, allowing for expedited placement of ED patients in need of an admission to an inpatient bed. Furthermore, patients at other Partners' hospitals will be transferred more quickly to NWH when an inpatient bed is available, ensuring that patients are being cared for and managed in the appropriate setting. Consequently, NWH's OU plays a critical role in the system's population health management efforts.

Current and Projected Demand for Observation Services

Tables 1 and 2 outline the current and future demand for observation services at NWH. In FY16, NWH provided 3,785 patients with these services. In FY17, the number of patients receiving observation services slightly decreased to 3,544 patients and in FY18, the number of patients receiving these services increased again to 3,605 patients. The annualized number of patients seeking observation services at the hospital for FY19 shows anticipated growth with 3,858 patients receiving these services.

Table 1: Current Demand for Observation Services

Age Group	2016	2017	2018	FY19 May Annualized
0-18	514	459	478	556
19-29	258	199	265	312

[19] Observation patients are discharged more quickly than patients in the inpatient setting, given the larger number of patients within the inpatient units.

30-39	267	259	279	296
40-49	316	285	275	296
50-59	463	450	482	485
60-69	555	489	498	536
70-79	544	533	548	566
80-89	591	607	537	570
90+	277	263	243	241
Total	**3,785**	**3,544**	**3,605**	**3,858**

Table 2 outlines the 5-year projected demand for observation services at NWH. These volume projections show a gradual increase in the number of patients receiving services both within the OU and on the inpatient floors due to an increase in the aging population, and thus, the demand for observation services.

Table 2: Projections for Observation Services at NWH

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

Accordingly, the creation of an OU at NWH will provide the hospital with a plan to meet the current and future demand for observation services. This project also will allow hospital leadership to address current capacity constraints within the inpatient units by providing alternative placement for some of the observation patients. The creation of a permanent OU will assist in creating efficiencies, including greater throughput within the hospital's ED and expedited discharge processes for observation patients.

B. Need for the Expansion of Endoscopy Services

Currently, the Adult Endoscopy Unit at NWH consists of 8 procedure rooms, 1 ERCP room, 17

pre- and post-procedural bays, a scope cleaning station, a scope storage room, a general storage room (the size of a procedure room) and sterile storage. Through the Proposed Project, NWH is seeking to expand endoscopy services in the following ways: (1) expand the use of the ERCP room to perform fluoroscopy procedures; and (2) convert a general storage room to clinical space to offer additional manometry services. This expansion will allow NWH to meet the growing demand for endoscopy procedures at the hospital and reduce the 12-week wait time that currently exists for an elective endoscopic procedure.

Increased Need for Endoscopy Services by an Aging Patient Panel

By 2050, the number of U.S. older adults, defined as persons aged 65 and over, is expected to more than double, rising from 40.2 million to 88.5 million individuals.[20] Higher rates of GI disease among this older population are driving demand for endoscopy services as these types of procedures are commonly performed on older adults to diagnose and treat GI conditions. [21] GI cancers are among the disorders that disproportionately effect the 65+ age cohort. For this population, pancreatic, liver and colorectal cancer incidences are on the rise. Advancing age is a high risk factor for cancer, and more than 60% of new cancer cases and over 70% of cancer mortalities occur in the elderly population each year."[22] With over 55,000 new cases of pancreatic cancer diagnosed annually in the US, this disease is the fourth leading cause of cancer-related death. Furthermore, the incidence of pancreatic cancer increases with age; in the United States, 87% of all patients with pancreatic cancer are diagnosed after the age of 60.[23] Rates of liver cancer also are increasing for those 65 and older with a 37% increase in the age-adjusted death rate for these adults from 2008 to 2016.[24] The death rate from liver cancer for individuals 75 and older was 35% in 2016.[25] In addition, colonoscopy, a specific type of endoscopic procedure, is often accepted as the "gold standard" for detecting colon cancer. Given that the incidence of colorectal cancer increases with age, colonoscopy plays a major role in cancer detection, especially for patients in the 65-75 age cohort, who are less susceptible to complications and more likely to seek treatment if an issue is found. Consequently, the need for endoscopic procedures to diagnose and treat these oncologic conditions is increasing with the aging population.

A number of other conditions that are more prevalent in the 65+ age cohort also increase demand for endoscopy services. For example, approximately 35% of adults aged 65+ are obese, representing over 8 million adults aged 65–74, and almost 5 million adults aged 75+.[26] The number of obese individuals within the US is expected to increase in the coming years, leading many of these individuals to need and receive novel endoscopic devises to address their condition.[27] Moreover, over 20% of adults in the US have Gastroesophageal Reflux Disease ("GERD") leading to a greater need of manometry services.

Nonalcoholic fatty liver disease ("NAFLD") also frequently requires endoscopy services. NAFLD

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[20] CTRS. FOR DISEASE CONTROL AND PREVENTION, NAT'L CTR. FOR HEALTH STAT., DATA BRIEF NO. 106, PREVALENCE OF OBESITY AMONG OLDER ADULTS IN THE UNITED STATES, https://www.cdc.gov/nchs/data/databriefs/db106.pdf (Sept. 2012).
[21] Anne Travis et al, *Endoscopy in the Elderly,* 107 AM. J. GASTROENTEROLOGY 1495–1501 (2012).
[22] Oliver Higuera et al., *Management of pancreatic cancer in the elderly*, 22 WORLD J. OF GASTROENTEROLOGY 2, 764-75 (2016).
[23] *Id.*
[24] CTRS. FOR DISEASE CONTROL AND PREVENTION, NAT'L CTR. FOR HEALTH STAT, *supra* note 23.
[25] *Id.*
[26] *Id.*
[27] *Id.*

is the build-up of extra fat in liver cells that is not caused by alcohol.[28] Affecting over 100 million individuals in the US, it is most common in the 65+ age cohort, "in whom it carries a more substantial burden of hepatic (nonalcoholic steatohepatitis, cirrhosis and hepatocellular carcinoma) and extra-hepatic manifestations and complications (cardiovascular disease and extrahepatic neoplasms) than in younger age groups."[29] [30] Historically, NAFLD was thought to be of little importance, but recent advances have uncovered that fatty liver disease can lead to end stage liver disease, cirrhosis and liver cancer.[31] With incidence of NAFLD growing steadily each year, it is estimated that by the year 2020 fatty liver disease will be the leading reason for liver transplants in the US.[32] NWH offers evaluation, diagnosis and treatment plans for patients with this disease, with endoscopy being an important tool in providing care.

Currently, patients in the 65+ age cohort account for approximately half (50-51% over the last three fiscal years) of the patients that obtain endoscopy services from NWH. Accordingly, the proposed expansion of NWH's Endoscopy Unit will allow the Hospital to address the needs of its aging patient panel and provide improved access to endoscopy services that address various digestive diseases and conditions. As discussed previously, UMDI's *Long-Term Population Projections for Massachusetts Regions and Municipalities* provide that the statewide population is projected to grow a total of 11.8% from 2010 through 2035.[33] Moreover, between 2015 and 2035, the Commonwealth's 65+ population is expected to increase at a higher rate compared to all other age cohorts.[34] By 2035, the 65+ age cohort will represent approximately a quarter of the Massachusetts population.[35] This general trend of growth appears consistent across NWH's patient panel with the number of patients in need of endoscopic procedures growing over the last three fiscal years. As the number of patients that fall into the 65+ age cohort for NWH continues to grow, the demand for endoscopy services is expected to increase given that age is one of the largest risk factors for Gi disorders.

Current and Projected Demand for Endoscopy Services

As stated, NWH's Adult Endoscopy Unit has experienced an increase in the demand for endoscopy services. Between FY16 and FY18, there has been a 6.8% increase in the number of patients seeking endoscopic procedures. Tables 3 and 4 outline the current demand for services

Table 3: Historical Endoscopy Unit Patient Volume

	FY16	FY17	FY18	FY19 May Annualized
Number of Patients receiving	10,567	10,958	11,290	12,314

[28] *Non-Alcoholic Fatty Liver Disease,* AM. LIVER FOUNDATION, https://liverfoundation.org/for-patients/about-the-liver/diseases-of-the-liver/non-alcoholic-fatty-liver-disease/ (last visited Mar. 29, 2019).
[29] M. Bertolotti et al., *Nonalcoholic fatty liver disease and aging: epidemiology to management,* 20 WORLD J. OF GASTROENTEROLOGY (39), 14185-204 (Oct. 21, 2014).
[30] *Non-Alcoholic Fatty Liver Disease, supra* note 31.
[31] *Fatty Liver Clinic,* MASS. GEN. HOSP. GASTROENTEROLOGY, https://www.massgeneral.org/gastroenterology/services/fatty_liver_clinic.aspx?display=home (last visited Mar. 29, 2019).
[32] *Id.*
[33] U. OF MASS. DONAHUE INST., *supra* note 18.
[34] *Id.*
[35] U. OF MASS. DONAHUE INST., *supra* note 18 at 14.

endoscopic procedures				

Extrapolations on current volume data show a continued increase in the number of patients seeking endoscopy services at NWH. Current projections provide that 12,314 patients will receive endoscopy services in FY19 – a 16% increase from FY16.

Table 4: Historical Inpatient and Outpatient Procedure Endoscopy Unit Volume

Endoscopy Volume	FY16	FY17	FY18
Outpatient	13,159	13,441	13,792
Inpatient	715	969	553
Total	**13,874**	**14,410**	**14,335**

Table 4 outlines the hospital's historical endoscopic volume and Table 4a outlines the projections for endoscopic procedures.

Table 4a: Projected Endoscopy Unit Procedure Volume

	FY2020	F2021	FY2022
Number of endoscopic procedures	14,240	14,383	14,526

C. Need for Expanded Special Care Nursery Services

Every year, more than 500,000 infants are born prematurely in the US. Preterm birth (prior to the 37th week of pregnancy) is the leading cause of infant mortality and morbidity and almost half of these births result in a neurologic disability, including cerebral palsy, cognitive impairment, and behavioral problems. Massachusetts has a preterm birth rate of 8.9%, with overall rates both across the state and in Middlesex County (where NWH is located) worsening over the past ten years. On an average week in Massachusetts, 138 babies are born preterm and 106 babies are born with low birthweight. Consequently, demand for special care nursery services, as well as neonatal intensive care services has increased dramatically over time.

Over the past three fiscal years, NWH's SCN has experienced a 15% growth in the demand for services (see Table 5 below). Given this increased demand for the hospital's SCN services, at times, NWH experiences "surges" of patients in need of SCN care. When the census within the unit reaches 9 patients or greater, direct transfers into the SCN from other area hospitals are prohibited to ensure NWH patients may be accommodated. Furthermore, if the SCN reaches a census of 12 or greater, obstetrics patients that are less than 36 weeks gestation or those patients deemed "high risk" must be transferred to another hospital to ensure the mother and baby may be properly cared for with the appropriate equipment. Accordingly, although the NWH SCN has an average daily census of 10.2 patients, this figure does not represent all of the mothers and babies that required transfer to ensure appropriate care.

Table 5 outlines the current demand for SCN services at NWH.

Table 5: Special Care Nursery Patient Volume

	FY16	FY17	FY18	FY19 May Annualized
Current Number of Special Care Nursery Patients	594	684	621	590

Through the proposed project, NWH is seeking to add 4 SCN beds to accommodate additional growth and the need for additional capacity in the SCN. Table 6 outlines the projected demand for SCN services.

Table 6: Projected Demand for Special Care Nursery Services

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

D. Need for Renovations to the Psychiatric Unit

According to the Centers for Disease Control and Prevention ("CDC"), suicide was the second leading cause of death among individuals age ten through thirty-four in 2014.[36] Further, for every completed suicide, there are twenty attempted suicides.[37] The American Psychiatric Association estimates that approximately 1,500 suicides take place on inpatient hospital units in the US each year.[38] As of November 2018, suicide was the tenth leading cause of death in the United States, many of which occur within healthcare facilities, including psychiatric hospitals, psychiatric units within general hospitals, general medical/surgical wards, and emergency departments.[39]

To combat this issue, The Joint Commission ("TJC") convened an expert panel in the summer of 2017 and developed a set of recommendations for ligature-resistant inpatient psychiatric units.[40] The Centers for Medicare & Medicaid ("CMS") then implemented these recommendations into the Conditions of Participation for Hospitals.[41] Based on these new TJC and CMS requirements, all psychiatric units must prevent ligature risks. These risks are defined as anything which could be used to attach a cord, rope, or other material for the purpose of hanging or strangulation.[42] Ligature points commonly include, but are not limited to, shower rails, coat hooks, pipes, windows, door frames, handles, hinges, and closures.[43] Ligature risks

[36] Smith, *supra* note 1 at 25.
[37] *Id.*
[38] Smith, *supra* note 1 at 24.
[39] Smith, *supra* note 1.
[40] *Id.*
[41] CTRS. FOR MEDICARE & MEDICAID SERVS., *supra* note 2.
[42] CTRS. FOR MEDICARE & MEDICAID SERVS., S&C MEMO: 18-06- HOSPITALS, CLARIFICATION OF LIGATURE RISK POLICY, 1 (Dec. 8, 2017), https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/SurveyCertificationGenInfo/Downloads/Survey-and-Cert-Letter-18-06.pdf.
[43] *Id.* at 2.

are of particular concern in psychiatric units as they present a threat to patient safety, especially patients with suicidal ideation.[44] Through the Proposed Project, NWH will renovate its Adult Psychiatric Unit to implement TJC's standards for a ligature-resistant environment. These renovations are crucial to providing a safe setting for patient care and ensuring no deaths on the unit.

Moreover, through the Proposed Project, NWH is seeking to renovate shell space near Usen Floor 3 to create exercise space for psychiatric patients, as well as additional meeting space (a designated sensory space). The new exercise space will allow NWH to offer medication education classes once per week and assist in patients' treatment and allow these individuals to participate in daily exercise, including yoga via a newly created yoga studio. "The benefits of exercise to physical health are well known, but evidence in recent years suggests a unique effect on some psychiatric disorders, prompting mental health clinicians to rethink treatment strategies and to consider the possibility of exercise not just in therapy but as therapy. Above and beyond the standard benefits of exercise in healthy living and general well-being, there is strong evidence demonstrating the ability of exercise to in fact treat mental illness and have significant benefits on a neurotrophic, neurobiologic basis."[45] Accordingly, the proposed project will provide NWH's psychiatric patients with an alternative form of therapy through exercise.

E. Need for a Cardiac CT

Cardiac Conditions and the Need for Cardiac CT Services for An Aging Population

According to the 2015 Massachusetts Behavioral Risk Factor Surveillance System ("BRFSS"), statewide, 5.7% of Massachusetts adults are diagnosed with myocardial infarction and 5.3% are diagnosed with angina or CAD annually. These percentages are similar to figures from previous years, representing a consistent incidence rate trend: in 2013, 5.2% of Massachusetts adults were diagnosed with myocardial infarction, and 4.7% were diagnosed with angina or CAD; and in 2014, 5.6% of Massachusetts adults were diagnosed with myocardial infarction, and 5.8% were diagnosed with angina or CAD. Moreover, according to the American Heart Association, 12,023 people died of CAD in Massachusetts in 2013, making heart disease, the second leading cause of death.

In 2018, America's Health Rankings noted that 10.2% of the 65+ age cohort in the Massachusetts had CAD; nearly double the rate of the overall population.[46] As previously discussed the 65+ age cohort is increasing and by 2035, this group will represent approximately a quarter of the Massachusetts population.[47] As the number of patients that fall into the 65+ age cohort for NWH continues to grow, the demand for Cardiac CT services, including angiography will continue to increase given that this minimally invasive procedure is seen as both a safe and cost-effective alternative for certain patients to cardiac catherization and angiograms.

F1.a.iii **Competition:**
Provide evidence that the Proposed Project will compete on the basis of price, total medical expenses, provider costs, and other recognized

[44] *Id.*
[45] Nancy A. Melville, *Exercise Gains Moment as Psychiatric* Treatment, MEDSCAPE (Nov. 16, 2012), https://www.medscape.com/viewarticle/774639
[46] *Public Health Impact: Heart* Disease, AMERICA'S HEALTH RANKINGS (2018) https://www.americashealthrankings.org/explore/annual/measure/CHD/state/MA
[47] U. OF MASS. DONAHUE INST., *supra* note 18, at 14.

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.

A. Creation of an Observation Unit

The creation of a designated OU at NWH may have a positive to negligible effect on the Massachusetts healthcare market. Since the 1980s when OUs were started as "chest pain observation units," a wide variety of studies have found these designated areas to be cost-effective, offering a similar level of care as the inpatient setting.[48] Seen as a lower-cost alternative to inpatient care for a multitude of patients in the late 1990s and early 2000s, OUs became a cost-effective delivery model for providing care to seniors, those with co-morbidities and those patients who needed further evaluation.[49] Consequently, over one third of hospitals now have dedicated OUs within their facilities.[50]

Nearly 30 years after their inception, OUs are still the subject of cost efficiency studies to determine if these units are the best alternative for evaluating the level of care that patients need.[51] With an increase in the number of patients being admitted to these units over the last 7 years, one recent study compared the costs of observation services and inpatient care following an ED admission for nonspecific chest pain patients. This study conducted by Abbass, et al., found that "the cost associated with OU services is consistently lower compared with the cost associated with inpatient admissions for the study population. Within the study, more than 37% of the sample was admitted to inpatient units (n=5,890) versus 62.7% to OUs (n=9,961). The adjusted median cost of OUs was $5,411 ($4,652, $7,157) vs. $6,946 for an inpatient admission ($5,978, $18,683). The estimated adjusted cost saving of OUs was $1,535 (95% CI=$1,206, $1,411) compared with inpatient admissions."[52] Extrapolated data provide that the estimated annual cost savings to the U.S. healthcare system, if all U.S. hospitals adopted OUs for conditions that require short stay, to be $3.1 billion. Accordingly, the addition of an OU to NWH will create an alternative cost-effective care model to inpatient care, allowing for overall reduction in provider costs within the healthcare market.

B. Expansion of Endoscopy Services

The expansion of endoscopy services at NWH will have a negligible effect on competition in the Massachusetts healthcare market based on price, TME, provider costs or other recognized measures of health care spending. The evolution of endoscopy from a purely diagnostic tool to a therapeutic resource has impacted its use in a considerable way.[53] Advances in endoscopic techniques, such as ERCP, endoscopic ultrasound ("EUS"), and enteroscopy have turned the endoscopic pathway into an alternative to surgery for some pathologies."[54] A comparative study

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[48] Ibrahim M. Abbass, RPh, PhD et al., *Revisiting the Economic Efficiencies of Observation Units,* MANAGED CARE, Mar. 2015, https://www.managedcaremag.com/archives/2015/3/revisiting-economic-efficiencies-observation-units
[49] *Id.*
[50] *Id.*
[51] *Id.*
[52] *Id.*
[53] C. Loras et al., *Study of the standard direct costs of various techniques of advanced endoscopy,* DIGESTIVE AND LIVER DISEASE, July 2018, at 689-698.
[54] *Id.*

on the differences in costs between endoscopic procedures and corresponding surgical alternatives indicates that out of the 33 advanced endoscopic procedures reviewed – 57% of the time, the cost of the endoscopic procedure was anywhere from two to five times less than the costs for the equivalent surgical alternative.[55] Moreover, studies have found that these endoscopic techniques are as therapeutic (and in some cases may even be more therapeutic) than the analogous surgery, with fewer side effects and less complications.[56] Patients experiencing fewer complications have lower rates of readmission, fewer physician visits and faster recovery periods. Accordingly, endoscopy is considered a lower-cost alternative than traditional surgical options for many applications, lowering provider costs, payer costs, and out-of-pocket expenses for patients, leading to an overall reduction in TME, while achieving high quality outcomes.

In addition, when endoscopy is used as a screening and diagnostic tool, as in the case of colonoscopy, GI disorders such as colorectal cancer may be detected in the disease's early stages. According to the American Cancer Society when cancer is found in its earliest stages, with no opportunity to spread, patients have more cost-effective treatment options and better survival rates.[57] For example, when colorectal cancer is found at an early stage (prior to metastases), the 5-year survival rate is approximately 90% with minimal clinical interventions. Preventative care, such as screenings through colonoscopy lead to early detection and thereby a reduction in the utilization of healthcare services. Consequently, when treatment is timely and appropriate, cost efficiencies are created leading to a reduction in overall services and costs, directly impacting TME.

C. Expansion of the Special Care Nursery

The expansion of SCN services at NWH will not have an adverse effect on competition in the Massachusetts health care market based on price, TME, provider costs or other recognized measures of health care spending. NWH is a community hospital that plays a central role in the Partners' population health management strategies. As a lower cost, high quality option for patients, frequently BWH and MGH transfer patients, including newborns who need a lower level of care to NWH for services through the CHTP. Moreover, other academic medical centers ("AMCs") in Boston also utilize NWH (Tufts Medical Center, Boston's Children's Hospital, etc.) to provide newborns and families with expert care closer to home. When patients receive care in the appropriate setting, especially in the community hospital setting, the charges per visit are typically lower than in the AMC setting.[58]

As outlined in the Massachusetts Health Policy Commission's 2016 Report: *Community Hospitals at a Crossroads: Findings from an Examination of the Massachusetts Health Care System,* "Community hospitals provide valuable contributions to [the Commonwealth's] health care system. These [benefits] include their role in providing convenient and local access to services, serving government payer patients, providing services efficiently and at relatively low prices, and providing high-quality care." Through the Proposed Project, NWH is not seeking to add capacity to the system, rather the Hospital is trying to meet demand for SCN services, so high-risk mothers do not have to be transferred to other facilities for delivery and babies in need of services, either at NWH or at other local facilities, may be treated at the hospital. Additional capacity at NWH will

[55] *Id.*
[56] *Id.*
[57] *Can Colorectal Polyps and Cancer Be Found Early?,* AM. CANCER SOC'Y, https://www.cancer.org/cancer/colon-rectal-cancer/detection-diagnosis-staging/detection.html (last revised Feb. 21, 2018).
[58] HEALTH POL'Y COMMISSION, COMMUNITY HOSPITALS AT A CROSSROADS: FINDINGS FROM AN EXAMINATION OF THE MASSACHUSETTS HEALTH CARE SYSTEM (Mar. 2016), https://www.mass.gov/files/documents/2016/07/xf/community-hospitals-at-a-crossroads.pdf

allow appropriate newborns and other babies to be transferred from AMCs to a lower-cost setting, decreasing the overall cost of care. Accordingly, the additional of 4 beds to NWH's SCN will have a negligible impact on the Commonwealth's healthcare market.

D. Renovations to the Psychiatric Unit

The healthcare market within the Commonwealth will not be impacted by the proposed renovations to NWH's Psychiatric Unit as no additional capacity will be created through this project. Rather, this project seeks to ensure the hospital's compliance with TJC's ligature-resistant standards that are the optimal practice for reducing suicides within inpatient psychiatric settings. Furthermore, the expansion of shell space to incorporate an exercise area for psychiatric patients within the unit provides a low-cost alternative form of therapy that is more cost-effective than psychotropic or antipsychotic drugs. Accordingly, this component of the proposed project will not impact the State's overall healthcare market.

E. Acquisition of a Cardiac CT for Angiography

The acquisition of a cardiac CT to conduct angiography at NWH will not have a negative impact on the Massachusetts healthcare market. Currently, NWH does not perform cardiac catherization services or angiograms on cardiac patients. However, the Hospital has a need to determine the level of CAD prevalence that a patient may have, so the individual may be appropriately treated. "According to study results on the cost-effectiveness of CT angiography, when a patient with an expected CAD prevalence of less than 85% is found to have a positive stress test result, coronary CT angiography is a less expensive alternative to direct performance of cardiac catheterization. In fact, studies have demonstrated that diagnostic cardiac catheterization of patients with atypical symptoms will demonstrate significant CAD less than half of the time. If the pretest probability of CAD is low, the coronary CT angiography findings are more likely to obviate cardiac catheterization and thereby reduce both the cost and effective radiation dose of the workup."[59] A study conducted by Thomas Jefferson University found at a 50% prevalence of CAD, performing coronary CT angiography prior to cardiac catheterization results in an average cost saving of $789 per patient with a false-negative rate of 2.5% and average additional radiation exposure of 1-2 mSv, which the study clinicians called minimal.[60] Consequently, the acquisition of a cardiac CT to perform angiography will provide NWH's patients with a minimally invasive alternative to determine CAD prevalence, ultimately leading to a negligible to positive effect on the Massachusetts healthcare market.

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

A. NWH's Establishment of an Observation Unit

NWH's creation of a dedicated OU is supported by extensive literature related to evidence-based strategies for addressing capacity constraints on the hospital's inpatient floors. Through the proposed project, NWH will create an 8-bed dedicated OU, so that patients meeting the inclusion criteria for observation services may be moved from the ED for further evaluation. Moreover, this

[59] Thomas Jefferson U., *Coronary CTA a cost-effective alternative to cardiac catheterization for the evaluation of* CAD, SCIENCEDAILY (Apr. 21, 2010), https://www.sciencedaily.com/releases/2010/04/100421162617.htm
[60] *Id.*

new dedicated unit will allow staff to address capacity constraints on the inpatient floors, assuring expedited access for patients in need of inpatient services, including those patients being directly-admitted from other Partners' hospitals that NWH works with on the CHTP.

Observation Units – Background Information

Observation units are dedicated spaces, frequently within or adjacent to an ED within a hospital where patients receive care, usually for a short period of time instead of being admitted to the hospital.[61] Patients who are not well enough for discharge, but not sick enough to warrant inpatient admission are treated on an outpatient basis in OUs.[62] Often referred to as "6-to-24 hour" patients, these individuals generally require care that exceeds the time of a normal ED visit, but not long enough for full inpatient admission.[63] CMS defines observation care as, "a well-defined set of specific, clinically appropriate services, which include ongoing short term treatment, assessment, and reassessment before a decision can be made regarding whether patients will require further treatment as hospital inpatients or if they are able to be discharged from the hospital."[64] Observation patients are classified into two groups; (1) diagnostic patients with a chief complaint that requires monitoring and further diagnostic evaluation, and (2) therapeutic patients in whom the diagnosis is known, but the severity of the illness does not allow for safe, immediate discharge.[65] Studies suggest that observation units provide equal care when compared to inpatient care and can result in lower costs for some conditions.[66]

Benefits of Observation Care

Approximately one-third of hospitals have a dedicated OU, which includes a designated space with operational guidelines, condition-specific protocols, appropriate staffing and administrative oversight, ancillary services support, and close attention to quality metrics.[67] OUs provide a lower-cost alternative to inpatient admission since these services are treated as outpatient care, and the cost savings may benefit both hospitals and patients.[68]

Furthermore, given that chest pain is the most common symptom in patients admitted to OUs, likely related to the prevalence of CAD in older adults, OUs allow for risk-stratification, as well as access to numerous non-invasive cardiac testing modalities.[69] In patients who present with syncope, OUs are usually equipped with or have access to the appropriate resources for cardiac monitoring and stress testing.[70] For patients with abdominal pain, OUs provide the benefit of serial exams, repeat laboratory studies, and further imaging to clarify a diagnosis.[71] Additionally,

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[61] Christopher W. Baugh et al., *Making Greater Use of Dedicated Hospital Observation Units For Many Short-Stay Patients Could Save $3.1 Billion A Year,* HEALTH AFFAIRS, Oct. 2012, at 2314.
[62] Michael A. Ross et al, *Protocol-Driven Emergency Department Observation Units Offer Savings, Shorter Stays, And Reduced Admissions,* HEALTH AFFAIRS, Dec. 2013, at 2149, 2150.
[63] *Id.*
[64] CTRS. FOR MEDICARE & MEDICAID SERVS, MEDICARE BENEFIT POLICY MANUAL, CHAPTER 6 – HOSPITAL SERVICES COVERED UNDER PART B, https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/bp102c06.pdf. revised Dec. 18, 2015)
[65] Mark G. Moseley et al, *Emergency Department Observation Units and the Older Patient,* CLIN. GERIATR. MED., Oct. 28, 2013.
[66] Baugh, *supra* note 64 at 2314.
[67] Ross, *supra* note 65 at 2150.
[68] *Id.*
[69] Moseley, *supra* note 68
[70] *Id.*
[71] *Id.*

patients may receive initial doses of antibiotics, intravenous fluids, and antiemetics until their condition(s) improve within an OU.[72]

B. Expansion of Endoscopy Services

Currently, the Adult Endoscopy Unit at NWH consists of 8 procedure rooms, 1 ERCP room, 17 pre- and post-procedural bays, a scope cleaning station, a scope storage room, a general storage room (the size of a procedure room) and sterile storage. Through the Proposed Project, NWH is seeking to expand endoscopy services in the following ways: (1) expand the use of the ERCP room to perform fluoroscopy procedures; and (2) convert the general storage room to clinical space, the Hospital may offer additional manometry services. This expansion will allow NWH to meet the growing demand for endoscopy procedures at the hospital.

Endoscopy: Background Information

Endoscopy is a nonsurgical procedure using an endoscope, a flexible tube with a light and camera attached to it, to examine a patient's digestive tract. Endoscopy allows doctors to view and operate on the internal organs without making large incisions and is most commonly used to help determine the cause of GI symptoms, to remove a small sample of tissue for biopsy, and/or to guide physicians during surgical procedures. Endoscopic procedures are generally performed one of two ways; during an upper endoscopy or esophagogastroduodenoscopy ("EGD"), the endoscope is passed through the mouth and into the esophagus, providing a view of the esophagus, stomach, and upper part of the small intestine. During a lower endoscopy or colonoscopy, the endoscope is passed through the rectum into the large intestine to examine the colon. Colonoscopy can show irritated and swollen tissue, ulcers, polyps and cancer. ERCP is used to obtain images of the pancreas and gallbladder, to place stents, and to obtain biopsies. EUS combines endoscopy and ultrasound technology to obtain images of the digestive tract. Other endoscopy technologies include capsule endoscopy, where a patient swallows a small pill with a camera inside to take images of the intestines as it moves through the digestive tract; chromoendoscopy, a technique that uses a specialized dye on the lining of the intestine to help doctors visualize abnormalities; endoscopic mucosal resection ("EMR"), a technique used to remove cancerous tissue in the digestive tract; and narrow band imaging ("NBI"), the use of a special filter to create contrast between the vessels and the mucosa, the inner lining of the digestive tract.

Other types of endoscopic procedures include EGD, colonoscopy, enteroscopy, esophageal manometry fluoroscopy. EGD is used as a diagnostic tool to examine the lining of the esophagus, stomach and duodenum in the presence of epigastric symptoms such as heartburn, regurgitation, upper abdominal pain, unexplained anemia, unexplained weight loss, or pain or difficult swallowing. EGD is also utilized to monitor effectiveness of treatments or track complications for persons with certain diseases such as Crohn's disease, peptic ulcers, cirrhosis, or swollen veins in the lower esophagus.

Colonoscopy is used as a screening tool to check the entire colon and large intestine for colorectal polyps or cancer, as well as a diagnostic tool for patients who have bleeding from the anus, changes in bowel activity, pain in the abdomen, and unexplained weight loss, and is recommended for all adults aged 50 and older, as well as anyone with parents, siblings, or children with a history of colorectal cancer or polyps. A colonoscopy shows irritated and swollen tissue, ulcers, and polyps, which doctors may remove for biopsy during the procedure.

[72] *Id.*

Removal of polyps can prevent colorectal cancer, which is frequently not diagnosed until the disease is advanced.

Enteroscopy is the examination of the small intestine and provides a more extensive view of the small-bowel than that provided from a colonoscopy. Enteroscopes often have an apparatus attached, such as an overtube or small balloon, and are used to reach less accessible parts of the colon. Enteroscopy is generally used for the evaluation of the source of GI bleeding not identified by colonoscopy, localization of known or suspected small-bowel lesions, and tissue sampling form the small bowel.

Esophageal manometry is a test that examines the esophagus and provides information about the motility, or movement of food. Used to examine the bands of muscle at the top and bottom of the esophagus, esophageal manometry shows the pressure, strength, and wave pattern of the esophageal muscle's contractions that move food through the esophagus and into the stomach. Esophageal manometry is used to diagnose esophageal spasm, a swallowing problem; achalasia, a condition that prevents food from entering the stomach; and scleroderma, a progressive disease that causes the muscles in the lower esophagus to stop moving, leading to severe gastroesophageal reflux.

Fluoroscopy is a key technology in modern interventional endoscopy.[73] When combined with standard video endoscopy, fluoroscopy increases a clinician's ability to obtain a global overview of therapeutic procedures in real-time.[74]

Endoscopy: Use as a Screening and Diagnostic Tool

When endoscopy is used as a screening tool, as in the case of colonoscopy, clinicians are able to identify conditions in the early stages of a disease and delay or prevent further development of the disease. In contrast to diagnostic tests, screening tests evaluate individuals that have a low pretest probability of a particular disease. These individuals are either asymptomatic or are at preclinical stages of their disease. Thus, colonoscopy is considered the "gold standard" in detecting colorectal cancer. Moreover, endoscopy is frequently used as a diagnostic tool to evaluate stomach pain, ulcers, gastritis, digestive tract bleeding, changes in bowel habits, and polyps or growths in the colon. Studies have shown that upper endoscopy is more accurate than x-rays in detecting abnormal growths, such as cancer, and is more accurate for examination of the upper digestive system. Upper endoscopy may also be used to identify and remove polyps, or to dilate or stretch narrowed areas of strictures of the esophagus, stomach, or duodenum that result from cancer or other diseases.

Endoscopy: Use as a Treatment Tool

Therapeutic endoscopy is an endoscopic procedure during which treatment is carried out. Advances in therapeutic and interventional endoscopy over the last three decades have made a substantial impact on treating various conditions. Endoscopic therapy is "the most effective form of treatment in stopping hemorrhage from actively bleeding lesions and has reduced the need for emergency bowel resection." Moreover, endoscopic placement of stents for "the treatment and palliation of benign and malignant strictures involving the esophagus, duodenum,

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[73] Douglas G. Adler, M.D., *The Role of Fluoroscopy in the Endoscopic Management of Luminal Gastrointestinal Disorders*, 9 TECHNIQUES IN GASTROINTESTINAL ENDOSCOPY 135 (July 2007) https://www.sciencedirect.com/science/article/pii/S1096288307000277

[74] *Id.*

and colorectal regions of the gastrointestinal tract have shown to be more efficacious, cost-effective, and associated with less morbidity and mortality. Accordingly, these important treatment advances are used to address GI conditions and disease.

C. Expansion of the Special Care Nursery

As stated, NWH has a 12-bed level IIB Special Care Nursery ("SCN") that consists of 11 bays and 1 isolation room. This unit provides care for babies who are born prematurely or have certain medical conditions that require a higher level of care. Over the past three fiscal years, the SCN has seen an increase in the number of patients in need of services, experiencing 15% growth during the noted timeframe. Consequently, through the proposed project, NWH is seeking to add 4 SCN beds to accommodate current and project demand for SCN services.

There is a considerable amount of literature outlining the need for and the role of SCNs. These units, such as NWH's SCN, provide level II neonatal care for infants born at 32 or more weeks gestation and who weigh at least 1,500 grams (3.3 pounds) who have physiologic immaturity, such as an inability to maintain body temperature or inability to take oral feedings, or who are moderately ill, but are expected to recover quickly and do not need subspecialty services on an urgent basis. SCNs also are for infants transitioning out of the neonatal intensive care unit ("NICU"), infants who need mechanical ventilation for less than 24 hours or continuous positive airway pressure, and infants born before 32 weeks gestation and weighing less than 1,500 grams (3.3 pounds) who are awaiting transfer to a NICU facility. Additionally, SCNs provide the same services as a level I well newborn nursery, including neonatal resuscitation at every delivery, postnatal care to stable term newborn infants, stabilization and care for infants born at 35-37 weeks gestation who are physiologically stable, and newborn infants who are ill and born before 35 weeks gestation and are awaiting transfer to a facility that provides a higher level of care.

Newborns may be transferred to a SCN if they have a number of conditions, including but not limited to a prenatal diagnosis warranting special care, significant prematurity, maternal conditions, such as drug use or diabetes, delivery complications, jaundice, respiratory distress, body temperature instability, feeding intolerance, or seizures. Moreover, newborns who have trouble feeding need to be closely monitored for caloric and fluid intake, as well as vitamin and mineral supplementation to ensure optimal growth, to correct delays in growth, and to avoid the risk of excessive intake. These services are provided in the SCN.

D. Renovations to the Psychiatric Unit

The Joint Commission ("TJC") convened an expert panel in the summer of 2017 and developed a set of recommendations for ligature-resistant inpatient psychiatric units.[75] The Centers for Medicare & Medicaid ("CMS") then implemented these recommendations into the Conditions of Participation for Hospitals.[76] Based on these new TJC and CMS requirements, all psychiatric units must prevent ligature risks, defined as anything which could be used to attach a cord, rope, or other material for the purpose of hanging or strangulation.[77] Ligature points commonly include, but are not limited to, shower rails, coat hooks, pipes, windows, door frames, handles,

[75] *Id.*
[76] CTRS. FOR MEDICARE & MEDICAID SERVS., *supra* note 2.
[77] CTRS. FOR MEDICARE & MEDICAID SERVS., *supra* note 45.

hinges, and closures.[78] Ligature risks are of particular concern in psychiatric units as they present a threat to patient safety, especially patients with suicidal ideation.[79]

The CMS Patients' Rights – Condition of Participation ("CoP") at § 482.13 provides all patients with the right to care in a safe setting; the presence of ligature risks in a psychiatric patient's physical environment compromises his or her right to receive care in a safe setting.[80] To comply with TJC recommendations, CMS also now requires staff to be appropriately trained in identifying patients at risk of harm to self or others, environmental patient safety risk factors, and mitigation strategies.[81] Both TJC and CMS surveys now place an added emphasis on the assessment of ligature, suicide, and self-harm observations in psychiatric units.[82]

TJC requires that all patient rooms, patient bathrooms, corridors, and common patient care areas of inpatient psychiatric units be ligature-resistant.[83] Doors between patient rooms and hallways must contain ligature-resistant hardware, including hinges, handles, and locking mechanisms, however health care organizations are not required to have risk-mitigation devices installed to decrease the chance that the top of the corridor door will be used as a ligature attachment point.[84] Inpatient psychiatric units, as well as psychiatric hospitals and general/acute care settings must ensure the transition zone between patient rooms and patient bathrooms be ligature-free or ligature-resistant, and patient bathrooms must have a solid ceiling.[85] Drop ceilings may be used in hallways and common patient areas as long as all aspects of the hallway are fully visible to the staff and there are no objects that patients could easily use to gain access to ligature risk points in the space above the drop ceiling.[86] Patients' risk for suicide should be assessed and balanced to determine the best type of patient bed to meet medical and psychiatric needs; for those patients who require medical beds with ligature points, staff must implement appropriate mitigation plans and safety precautions.[87]

E. The Acquisition of a Cardiac CT for Angiography

Cardiac CT provides noninvasive technology that combines images to create a three-dimensional model of the whole heart. Cardiac CT is used to detect or evaluate ischemic heart disease, CAD, problems with the aorta, problems with heart function and valves, and pericardial disease. By providing an image of the entire heart, cardiac CT allows physicians to see coronary arteries, aortic and other cardiac structures to determine the levels of calcification of coronaries and valves. This testing modality also provides a view of the chest and upper abdomen, allowing for the detection of other non-cardiac abnormalities.

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[78] *Id.* at 2.
[79] *Id.*
[80] *Id.* at 6.
[81] *Id.* at 7.
[82] CTRS. FOR MEDICARE & MEDICAID SERVS., *supra* note 2, *Now effective: Surveying, scoring of ligature, suicide, self-harm in inpatient psychiatric setting,* THE JOINT COMMISSION, https://www.jointcommission.org/issues/article.aspx?Article=gyekSlHbR9Hi6%2FCHXVKFw2XUfze5Q3AXIdxy7eEkhZM%3D (last visited Apr. 25, 2019);
[83] *Now effective: Surveying, scoring of ligature, suicide, self-harm in inpatient psychiatric setting, supra* note 85. TJC recommends the use of "ligature-resistant" rather than "ligature-free" as it is not likely possible to remove all potential ligature risk points. *Id.*
[84] *Id.*
[85] *Id.*
[86] *Id.*
[87] *Id.*

Physicians may inject intravenous ("IV") contrast material in conjunction with performing a cardiac CT to perform a coronary CT angiogram ("CTA"); this technique is used to obtain images of the coronary arteries and to determine if there are plaque or calcium deposits in the artery walls. Buildup of plaque or calcium deposits causes atherosclerosis, which over years leads to CAD, and complete blockage can cause a heart attack. CTA is also used to predict major cardiac events by identifying and characterizing plaque in at-risk patients with minimal radiation exposure. Prior to CTA, physicians used cardiac catheterization, a more invasive procedure, to assess heart function. CTA is a noninvasive alternative to cardiac catheterization that is performed in significantly less time and poses less risk and discomfort to the patient and has been shown to have excellent negative predictive value in low to intermediate CAD-risk patients.

CTA is also useful in imaging assessment of endocarditis, allowing physicians to see complications not seen on transthoracic echocardiography, the initial imaging used with endocarditis. CTA is used to assist in preoperative planning to evaluate complications with endocarditis for surgery, as well as clinical management, determining proximity of cardiovascular structures to retrosternal regions, and to assess the existence and extent of CAD. When combined with echocardiography, CTA can accurately diagnose a perivalvular abscess/pseudoaneurysm related to endocarditis, the presence of which can result in double the normal mortality rates. CTA following transthoracic echocardiography ("TTE") can also define the coronary arterial anatomy, eliminating the need for an invasive cardiac catheterization. Further, since cardiac CT provides a view of the chest and upper abdomen, there is a possibility of non-cardiac incidental findings; one study found that patients in the 65+ age cohort were three times more likely to have incidental findings and five times more likely to have pulmonary nodules discovered. CTA is a versatile diagnostic tool used to reliably evaluate the coronary arteries and is central in performing pre-operative workups.

F.1.b.ii **Public Health Value /Outcome-Oriented:**
Describe the impact of the Proposed Project and how the Applicant will assess such impact. Provide projections demonstrating how the Proposed Project will improve health outcomes, quality of life, or health equity. Only measures that can be tracked and reported over time should be utilized.

A. Creation of an Observation Unit at NWH: Improving Health Outcomes and Quality of Life

NWH anticipates that the creation of an OU at the hospital's main campus will provide its patients with improved health outcomes, improved quality of life and additional access to high quality observation services. As more fully discussed in Factor F.1.b.i., the creation of an OU at NWH's main campus will provide qualifying patients with an alternative care delivery model for necessary short-term stays. Additionally, OUs allow for more diagnostic certainty, better clinical outcomes, and improvement in the use of hospital resources. As discussed, OUs are especially useful in treating older adults as these designated units provide therapeutic intervention and a more comprehensive evaluation than services available in an ED.

The creation of an OU will also impact patient experience through the creation of efficiencies. This new dedicated unit will allow qualifying patients to be expedited from the ED to the OU for further evaluation. Moreover, this project will provide staff with the ability to address capacity constraints on the inpatient floors, assuring more rapid access for patients in need of inpatient services, including those patients being directly-admitted from other Partners' hospitals through the CHTP and allowing for expedited discharge.

B. The Impact of Expanding Endoscopy Services at NWH will Lead to Improved Health Outcomes and Quality of Life

As more fully discussed in Factor F.1.b.i., the expansion and renovation of the Endoscopy Unit at NWH will improve access to treatment options, including innovative endoscopic procedures and devices, such as fluoroscopy and manometry; reduce wait times for procedures; and ensure higher quality outcomes. Endoscopy is used as a diagnostic tool, as well as an alternative to open surgery for some conditions. When endoscopy is used as a screening or diagnostic tool, various conditions are identified expeditiously, leading to timely treatment and improved quality outcomes. When endoscopy is performed rather than a corresponding open surgery, patients tend to have smaller or fewer incisions; less pain, lower risk of infection; shorter hospital stays; quicker recovery times; less scarring and a reduced loss of blood.[88] Consequently, endoscopic procedures frequently have fewer side effects and less complications for patients, leading to improved quality outcomes, while shorter recovery periods lead to improved quality of life for patients and their families.[89] [90]

Moreover, the expansion and renovation of NWH's Adult Endoscopy Unit will also impact patient experience. Current wait times for endoscopic procedures are 12 weeks on average. With the expansion of these services, patients will receive expedited care.

C. Improving Patients Outcomes and Experience through the Expansion of the Special Care Nursery

The expansion of the SCN at NWH will improve access, patient outcomes, as well as patient experience. Over the past three fiscal years, the hospital has seen a 15% increase in the demand for SCN services. Consequently, at times, NWH's SCN experiences "surges" in volume exceeding capacity and forcing staff to transfer high-risk mothers and newborns to other facilities for treatment. The proposed project will allow fewer mothers to be transferred to other hospitals. Furthermore, when the unit is at capacity, other facilities, such as AMCs (including Partners' AMCs) are unable to transfer patients in need of SCN services in the community setting. With the addition of 4 new SCN beds (for a new total of 16 beds on the unit), the Hospital can create a "surge plan," ultimately providing greater access to SCN services and creating a better experience for patients through a reduction in the number of transfers to other facilities. Health outcomes will also be improved as patients will have more timely access to care, expediting services, thereby leading to improved outcomes.

Additionally, through the proposed expansion, patients will continue to receive the high level of services that are synonymous with NWH's SCN. Multi-disciplinary team members will round on patients and social workers will be available to work with families on any social determinant of health and clinical needs. To ensure families return to a safe environment in the community, social workers ensure post-partum depression screenings occur and implement safe care plans for mothers in need of such services.

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[88] Loras, *supra* note 56.
[89] *Id.*
[90] *Minimally Invasive Surgery,* JOHNS HOPKINS MED., https://www.hopkinsmedicine.org/minimally_invasive_robotic_surgery/types.html (last visited Mar. 29, 2019).

D. Improving Patient Outcomes through Renovations to the Psychiatric Unit

The implementation of a ligature-resistant environment within the NWH Psychiatric Unit will have a positive impact on health outcomes and patient experience as addressing these physical plant requirements will create a safe environment within the unit for patients experiencing suicidal ideation. When developing this new standard, TJC convened an expert panel that reviewed the impact of a ligature-resistant environment on psychiatric units; the overall outcome was a reduction in the number of suicides within these areas. Accordingly, implementation of these standards within NWH's Psychiatric Unit will ensure patients are in the safest environment possible, improving health outcomes and reducing suicides.

Furthermore, the implementation of an exercise area within NWH's Psychiatric Unit will provide patients with an alternative to traditional therapy and psychotropic drug options. Studies have found exercise improves mental health by "reducing anxiety, depression, and negative mood and by improving self-esteem and cognitive function."[91] Exercise has also been found to alleviate symptoms such as low self-esteem and social withdrawal, leading to overall improved health outcomes for patients.[92]

E. Improving Patient Outcomes through the Acquisition of a Cardiac CT

Acquisition of a Cardiac CT will improve patient health outcomes and experience as the hospital will be providing a minimally invasive option for qualifying patients to determine their level of CAD and other cardiovascular conditions. This new modality will eliminate the need for more invasive procedures, such as a cardiac catherization or angiogram. Moreover, the acquisition of this new imaging modality will ensure qualifying patients may be treated at NWH for services, rather than being transferred to BWH or MGH. Accordingly, this component of the Proposed Project will have a positive impact on patient health outcomes and patient experience.

F. Additional Strategies for Improving Patient Experience and Ensuring High Quality Outcomes for All Services at NWH

The Applicant and NWH are committed to developing and implementing population health management ("PHM") strategies to ensure high quality outcomes and an exceptional care experience for all patients. As a system, the Applicant, in collaboration with its hospitals, continues to develop PHM programs that utilize combined resources and capacity. Care models that are rooted in collaboration, including patient-centered medical homes, care integration and other care initiatives are specifically used throughout the Partners' hospitals. Accordingly, the Applicant and NWH offer a number of programs to ensure quality care for patients.

In 2017, the Applicant, in collaboration with MGH and BWH, began offering a program to directly admit appropriate patients from the MGH and BWH emergency department to NWH through the CHTP. This direct admit initiative allows for efficient, timely and safe transfer of patients to the most appropriate setting, optimizing system integration to triage patients requiring complex, tertiary, multi-specialty care to Partners' AMCs and lower acuity patients to Partners' community hospitals, such as NWH. These innovations allow the system to provide greater access to services by matching patients clinical needs to the right level of care from both a quality and cost perspective.

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[91] Ashish Sharma, M.D. et al., *Exercise for mental health*, 8 PRIMARY CARE COMPANION J. CLINCAL PSYCHIATRY 106, 106 (2006), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1470658/.
[92] *Id.*

The CHTP seeks to alleviate capacity constraints at MGH and BWH (within the ED and on the inpatient floors) by directly admitting eligible patients (that meet specific criteria) to the inpatient units at NWH (174 patients were transferred from January 2018 to February 2019). Managing patients in the appropriate setting, ultimately leads to improved quality outcomes and the ability to achieve greater cost efficiencies. Moreover, patient experience is improved by reducing wait-times for patients to be admitted.

Furthermore, similar to other Partners' hospitals, for its highest risk and most complex patients, NWH's clinical staff offer the Integrated Care Management program ("iCMP"). iCMP provides eligible patients with a care manager who develops a care plan in tandem with the patient and other members of the clinical team. The care manager works in-person and telephonically to coordinate a patient's care and ensures that patients are not readmitted to the hospital when possible. Additionally, the care manager connects patients with community based resources that are vital for recovery.

NWH also has a Cross-Continuum Group. This committee is comprised of multidisciplinary care team members that review various patients and topics each month. Since 2008, this Group has conducted safety huddles, focused on care transitions and addressed key quality issues, such as patients with wounds that are transferred from skilled nursing facilities. These efforts have improved patient outcomes and experience.

Through the Proposed Project, NWH will continue to offer these programs, thereby ensuring improved quality outcomes for patients and a better overall patient experience. For all patients, access to these critically needed services will allow them to receive appropriate and timely care, as well as address any social determinant of health challenges that a patient may be facing. By providing access to these PHM strategies, NWH provides holistic care, which in turn ensures higher quality outcomes.

G. Assessing the Impact of the Proposed Project

To assess the impact of the Proposed Project, NWH 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:

Creation of an Observation Unit

1. **Balance Measure – Patient Satisfaction:** Patients that are satisfied with care are more likely to seek additional treatment when necessary. NWH staff will review patient satisfaction scores around wait times in the ED to determine the impact of greater throughput on patient experience with the addition of the OU.

   Measure: From the Press Ganey Patient Engagement Survey: Satisfaction with Waiting Time to Treatment Area.

   Projections: Baseline:[93] 21st percentile rank; Year 1: 50th percentile rank; Year 2: 60th percentile rank; and Year 3: 75th percentile rank.

[93] Currently, NWH's baseline mean score for this measure is 73.7. This score places NWH in the 21 percentile rank.

Monitoring: Any category receiving less than the targeted percentage for a given year will be evaluated and policy changes instituted as deemed appropriate.

2. **Outcome Measure focused on Access – Wait Times:** The amount of time a patient waits in the ED after he/she has been assigned outpatient status with observation services.

   Measure: Length of stay for ED patients that have been assigned to the OU.

   Projections: Baseline: 276 minutes; Year 1: 276 minutes Year 2: 258 minutes; and Year 3: 250 minutes.

   Monitoring: Reviewed quarterly by clinical staff.

3. **Outcome Measure – Length of Stay:** This measure evaluates increased efficiency in caring for patients in the OU to facilitate timely discharge.

   Measure: Length of stay for patients in the OU.

   Projections: Baseline: 18 hours; Year 1: 17.25 hours; Year 2: 16.75 hours; and Year 3:16 hours.

   Monitoring: Reviewed quarterly by clinical staff.

   Expanded Endoscopy Services

1. **Balance Measure – Patient Satisfaction:** NWH staff will review patient satisfaction scores for endoscopy services.

   Measure: From the Press Ganey Patient Engagement Survey: Patient satisfaction with NWH endoscopy services measured against other Massachusetts hospitals *for overall rating of care*.

   Projections: Baseline: 41st percentile rank; Year 1: 50th percentile rank; Year 2: 55th percentile rank; and Year 3: 60th percentile rank.

   Monitoring: Any category receiving less than the targeted percentage for a given year will be evaluated and policy changes instituted as deemed appropriate.

2. **Access – Reduction in Inpatient Case Delays:** This metric reviews delays in the start time of inpatient cases. This information will be obtained via NWH's electronic health record ("EHR") system, EPIC.

   Measure: Time interval (scheduled start to actual start) between inpatient cases performed in the Endoscopy Unit.

   Projections: Baseline: 78.2 minutes; Year 1: 70 minutes; Year 2: 65 minutes; and Year 3: 60 minutes.

   Monitoring: Reviewed quarterly based on inpatient case data.

3. **Clinical Quality – Improved Patient Flow in the Endoscopy Unit.** This measure evaluates the total time a patient scheduled for an outpatient sedation case is in the Endoscopy Unit. This information will be obtained via NWH's EHR system, EPIC.

   Measure: Total patient time (actual start to actual end of procedure) in the Endoscopy Unit.

   Projections: Baseline: 49.3 minutes; Year 1: 48 minutes; Year 2: 44 minutes; and Year 3: 40 minutes.

   Monitoring: Reviewed quarterly by clinical staff.

Expanded Special Care Nursery Services

1. **Balance Measure – Patient Satisfaction:** Patients that are satisfied with care are more likely to seek additional treatment when necessary. NWH staff will review patient satisfaction scores for care provided in the Special Care Nursery.

   Measure: From the Press Ganey Patient Engagement Survey: Press Ganey results for the questions *willingness to recommend* NWH's SCN services.

   Projections: Baseline:[94] 0 percentile rank; Year 1: 50th percentile rank; Year 2: 60th percentile rank; and Year 3: 75th percentile rank.

   Monitoring: Any category receiving less than the targeted percentage for a given year will be evaluated and policy changes instituted as deemed appropriate.

2. **Access – Increase Available Capacity:** Through the expansion of the NWH's SCN, the Hospital will increase capacity to receive direct transfers from other Partners' hospitals for those patients living in the NWH catchment area.

   Measure: Average daily census.

   Projections: Baseline: 9 patients; Year 1: 10 patients; Year 2: 11 patients; and Year 3: 12 patients.

   Monitoring: Reviewed quarterly by clinical staff.

3. **Outcome Measure – Transfers to Other Facilities:** The number of patients that have to be transferred to other facilities for care.

   Measure: Number of transfers or referrals to other hospitals.

   Projections: Baseline: 12 transfers Year 1: 11 transfers; Year 2: 10 transfers; and Year 3: 9 transfers.

   Monitoring: Reviewed quarterly by clinical staff.

[94] Currently, surveys are not submitted to the families seeking services from the SCN. NWH will begin collecting this data in 2019.

Renovations to the Psychiatric Units

1. **Patient Safety Measure – Decrease Hours of Physical Restraint Use**

   Measure: Hours that patients spend in physical restraints per patient day.

   Projections: Baseline: 0.3633; Year 1: 0.3451; Year 2: 0.3279; and Year 3: 0.3115.

   Monitoring: Reviewed quarterly by clinical staff. Overall rating can be compared both at the state and national level using QNet data.

2. **Balance Measure – Improve Patient Satisfaction with Medication Education through the Addition of Medication Education Classes**

   Measure: Patients who are more satisfied with the information that they receive around medications are more apt to take necessary pharmaceuticals as directed when discharged. Information gathered via the NWH Psychiatric Units' Patient Satisfaction Survey is used for this measure. The specific questions that will be tracked and evaluated are around education about medication side effects and how staff addressed concerns about medication(s). For this survey tool, a Likert scale of 1 to 5 is used. This scale specifies that "1" is very poor, "2" is poor, "3' is fair, "4" is good, "5" is very good. The annual projections below are the average Likert Scale outcomes for the Patient Satisfaction Survey.

   Projections: Baseline: 3.92; Year 1: 4.12; Year 2: 4.32; and Year 3: 4.54.

   Monitoring: Reviewed quarterly by clinical staff.

Acquisition of the Cardiac CT

1. **Balance Measure – Patient Satisfaction:** NWH staff will review patient satisfaction scores via Press Ganey Patient Engagement Surveys.

   Measure: From the Press Ganey Patient Engagement Survey: *Overall rating of care* as measured against other Massachusetts hospitals.

   Projections: Baseline: 41st percentile rank; Year 1: 50th percentile rank; Year 2: 55th percentile rank; and Year 3: 60th percentile rank.

   Monitoring: Any category receiving less than the targeted percentage for a given year will be evaluated and policy changes instituted as deemed appropriate.

2. **Outcome Measure – Reduction in Elective Cardiac Catherization Procedures:** NWH will review how may elective diagnostic cardiac catherization procedures are referred to other hospitals by cardiologists.

   Measure: Number of elective diagnostic cardiac catherization procedures that are referred to other hospitals by NWH cardiologists.

   Projections: Baseline: 150; Year 1: 130; Year 2: 110; and Year 3: 90.

Monitoring: Reviewed quarterly by clinical staff.

3. **Outcome Measure – Reduction in the Radiation Risk of the Testing Modality:** NWH will review the number of nuclear medicine studies that cardiac patients receive post-acquisition of the new cardiac CT.

   Measure: Number of patients receiving nuclear medicine studies conducted post-acquisition of the new Cardiographe.

   Projections: Baseline: 1,028; Year 1:926; Year 2: 823; and Year 3: 720.

   Monitoring: Reviewed quarterly by clinical staff.

F1.b.iii **Public Health Value /Health Equity-Focused:**
For Proposed Projects addressing health inequities identified within the Applicant's description of the Proposed Project's 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.

To ensure health equity to all populations, including those deemed underserved, the Proposed Project will not affect accessibility of NWH's services for poor, medically indigent, and/or Medicaid eligible individuals. NWH does not discriminate based on ability to pay or payer source and this practice will continue following implementation of the Proposed Project. As further detailed throughout this narrative, the Proposed Project will increase access to high quality care for the services in the Proposed Project.

NWH ensures that all patients have access to culturally competent care. The hospital has adopted the Culturally and Linguistically Appropriate Service ("CLAS") standards set forth by the U.S. Department of Health and Human Services Office of Minority Health for all practice sites. NWH provides effective, understandable, and respectful care with an understanding of patients' cultural health beliefs, practices and preferred languages. Additionally, NWH has arrangements to offer ongoing education and training in culturally and linguistically appropriate areas for staff at all levels and across all disciplines.

In regard to interpreter services, NWH contracts with Cultural Communication Systems, Inc., Pacific Interpreters and Deaf Talk Video to ensure all patients have ready access to necessary language services. In FY18, NWH received 6,885 requests for interpreter services and completed 6,844 of these requests.[95] These requests were facilitated by 86 interpreters (35 per diem and 51 contractors through a contract agency). The most common language requests at NWH were for Spanish, Russian and Chinese. Interpretation encounters are documented in an internal centralized Interpreter Services Tracking System, a which contains a reporting tool for year-end statistics of positive encounters. NWH staff review the annual statistics and seek ways to improve these services.

[95] Not all requests for interpreter services were completed as some requests were cancelled.

NWH also has in place programming to ensure equitable care. In recent years, the Hospital has made significant efforts to bridge, build and increase culturally competent programs with the goal of expanding accessibility. For example, NWH's Domestic Violence/Sexual Assault ("DV/SA") Program now works in tandem with the Hospital's Deaf Survivors Center to ensure that all relevant web-based materials for the program have an American Sign Language component.

Furthermore, given that national and local data indicate the disparate impact of sexual and domestic violence on undocumented and non-English speaking communities, the Hospital's Collaborative for Healthy Families and Communities has empowered REACH (a local domestic violence organization that specializes in serving Latinx, immigrant, and Spanish-speaking communities) by ensuring grant monies support the organization's work in these areas and communities. Grant monies build on a longstanding partnership between the Hospital's DV/SA program and REACH to better serve immigrant and Spanish-speaking communities in Waltham.

Finally, all Partners HealthCare hospitals, including NWH participate in the American Hospital Association's #123Equity Pledge Campaign. This Campaign seeks to eliminate health and health care disparities that exist for racially, ethnically and culturally diverse individuals. The campaign requires hospital leaders to accelerate progress in the following areas: (1) Increasing the collection and use of race, ethnicity, language preference and other socio-demographic data; (2) Increasing cultural competency training; and (3) Increasing diversity in leadership and governance. Currently, all Partners HealthCare hospitals participate in the Campaign. This Campaign allows NWH staff to ensure equal access to the benefits created by the Proposed Project.

NWH leadership is ensuring progress around the Campaign's goals through the following methods:

- Increasing the collection of socio-demographic data:
  - NWH implemented a sexual orientation/gender identity ("SOGI") database that allows Hospital staff to collect this data on patients, so each individual may be provided with culturally competent care and be informed of available programs.
  - NWH staff are aware of statewide data that document the barriers that deaf and hard of hearing patients experience in receiving care.[96] To address these barriers, NWH is seeking to add members of the deaf and hard of hearing communities to the Hospital's Community Benefits Committee to ensure appropriate programming and resources for these patients. Additionally, interpreter services staff at NWH are reviewing processes and practices with these patient populations.

- Increasing cultural competency training:
  - Towards the goal of better serving LGBTQ patients, NWH staff have created a best practices document for "Creating an Affirming Environment for Transgender and Gender Non-Conforming Patients." Hospital staff have also created three bibliographies of curated materials (one of focused on LGBTQ adults, one on LGBTQ children, and one on issues affecting LGBTQ families of faith) for staff who are interested in further educating themselves. Staff also had several presentations on this same topic and are in the midst of organizing a full-day LGBTQ conference that will be held on October 31, 2019. The organizing body for this conference is a newly-formed LGBTQ Advisory Committee.

[96] Data obtained from the Center for Living and Working's listening sessions.

- Based on metrics from the Partners Health Equity and Quality Committee regarding disparate care received by African American patients, NWH included a presentation on the Black Maternal Health Crisis in the Hospital's Fall 2018 Labor and Delivery Conference.

Increasing diversity in leadership and governance:

- NWH has hired an Equity and Inclusion Officer to ensure appropriate programming and equitable care for all patients. Erin Miller is the NWH's Equity, Inclusion and Abuse Prevention Officer.

These efforts are on-going and will continue throughout the implementation of the Proposed Project.

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 seeks to expand timely access to a variety of services, including observation, endoscopy SCN, psychiatric and specific radiology services. By providing patients with enhanced access to these high quality services, patient wait times in the ED, for endoscopic procedures and for cardiac CT imaging services will be reduced. Timely treatment often ensures fewer complications, leading to reduced ED visits and hospitalizations, thereby leading to improved health outcomes. Moreover, expedited access to care may lead to a reduction in disease/condition-related complications, such as pain that directly impact a patient's quality of life. Convenient access to cardiac CT services will lead to expedited quality care as better imaging information allows clinicians to determine the best treatment for a patient. Finally, access to high quality psychiatric services also will enhance patient outcomes and experience by ensuring a safe, ligature-resistant environment.

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.

A. Partners Screening and Linkage Programs

Currently, each of the acute care hospitals within Partners has a screening and referral program for the social determinants of health ("SDoH"). While variation exists amongst the hospitals as to the populations that are screened and the logistics for screening – at a minimum, all of the 133 Partners primary care practices that are participating in the MassHealth Accountable Care Organization ("ACO") Program, are screening patients for SDoH needs.

All the Partners' hospitals and practices conducting SDoH screens utilize a similar screening tool. This tool explores eight domains of SDoH needs (housing, food insecurity, violence, etc.), inquiring if patients have issues with any of the domains and whether they would like assistance. Screens are conducted via iPads that are linked to the Partners' electronic health record ("EHR") system, Epic. If the hospital or practice is not on the Epic system, the screening tool is available in an alternate electronic form via iPads or on a paper-based form. The SDoH screening tool is

currently available in eight different languages – the most common languages spoken by Partners' patients.

Partners and NWH have been thoughtful about the implementation of a universal SDoH screening program, recognizing that there is a limited amount of capacity within the community-based organizations that patients will be "linked" to for services and understanding a staggered approach to implementation is best, so that Partners and NWH do not overwhelm the available resources.

When a patient has a positive SDoH screen, varying staff at each hospital or practice follow-up with the patient, such as a social worker or community health worker. These staff members confirm that a request for assistance has been made by the patient. Upon confirmation, the staff member may assist the patient directly or refer the patient to a community-based organization that may be able to provide specific services or supports. The patient's SDoH need(s) and circumstances determine the intensity of follow-up that is provided.

SDoH screens are tracked in a patient's EHR in the Epic system. Tracking includes whether a SDoH screen was conducted, if there were positive responses indicating the patient needs assistance, and if the patient was provided with written support materials ("Tip Sheets") or referred to a support person. Moreover, case managers and other staff assisting patients with SDoH needs may provide notes in the Epic system as to where the patient is in the process of accessing resources to address his/her SDoH needs. Currently, Partners is working to implement a data exchange system with external community-based partners that will enable Partners practices and providers to understand the final disposition of the patient if referred to an external organization for support.

Currently, Partners staff are collecting data utilizing the information that is provided in Epic to better understand the SDoH needs of patients, including information on the most common SDoH needs, and if those SDoH needs vary by geography; ethnicity and race; or other demographic factors. These data inform staff about the demand for community-based resources in specific geographies, so staff can understand if these organizations need additional capacity to help patients. Partners and NWH staff want to ensure that the most vulnerable patients are able to access services more quickly than patients that may currently have stability.

B. Providing linkages at NWH

To ensure continuity of care, improved health outcomes and enhanced quality of life, through the proposed Project, NWH will continue existing formal processes for linking patients with their primary care physicians and specialists for follow-up care, as well as case management/social work support to ensure patients have access to resources around SDoH issues. Providing patients with linkages to these necessary services prevents unnecessary readmissions, ensures appropriate care management and provides the patient with the resources for leading a better life. Moreover, patients at NWH will benefit from the hospital's PHM strategies, including an existing system of care coordination and care delivery alternatives aimed at improving patient experience and outcomes.

At NWH every patient is screened for the following SDoH: violence, neglect and abuse and a variety of psycho-social needs. Psycho-social needs include the eight SDoH domains outlined above. Hospital staff utilize the screening tool in Epic to conduct screens. Moreover, the hospital has discharge planning processes in place to address any SDoH issues prior to a patient returning home. This process allows case manager and social workers to ensure that a patient's needs are being addressed and that he/she has been linked to the appropriate community-based

organization(s) for services. In regard to post-discharge follow-up, patients are contacted if they do not fill necessary prescriptions or if they fall within a high-risk group, such as the iCMP population.

NWH continues to work with its vast network of community-based partners to provide patients with access to real-time SDoH services. When community-based groups are unable to assist patients, NWH has a Patients In Need Program that often provides charitable funds for basic needs, such as a hotel stay, transportation, etc. The Hospital also has a clothing close and thrift store where patients can regularly seek assistance with finding appropriate clothing for the season. Finally, NWH offers a Senior Supper, which facilitates access to nutritious food for seniors. These efforts ensure that patients receive necessary linkages for follow-up care and services.

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.**

Since a broad range of input is valuable in the planning of a project, the Applicant carried out a diverse consultative process with individuals at various regulatory agencies regarding the Proposed Projects. The following individuals are some of those consulted regarding this Project:

- Department of Public Health: Margo Michaels, Director, Determination of Need Program; Nora Mann, Former Director, Determination of Need Program; Rebecca Rodman, Deputy General Counsel; and Ben Wood, Director, Office of Community Health Planning and Engagement.
- MassHealth: Steven Sauter, Director, Acute Hospital Program, MassHealth Office of Providers and Plans and David Garbarino, Director of Purchasing Strategy and Analytics at Executive Office of Health and Human Services – MassHealth.

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

A. Community Engagement on the Proposed Project

Based upon NWH's strategic plan, the hospital developed the components of the Proposed Project to expand services, implement necessary renovations and ensure the sustainability of the hospital's physical plant. In contemplation of this expansion and renovation, NWH's leadership sought to define its community broadly and engage patients and family members that may be impacted by the Proposed Project to obtain feedback and answer questions. These engagement efforts are described below.

In an effort to ensure appropriate community engagement, the Proposed Project was presented to the Hospital's Patient and Family Advisory Council ("PFAC") on May 22, 2019. During this meeting Ms. Nora Wells, MBA, MPH, Senior Manager, Strategic Planning and Implementation at NWH gave a presentation to PFAC members regarding all of the components of the Proposed Project. PFAC members were interested in the Community Health Initiative component of the

Determination of Need and asked that a representative from Community Benefits attend a future PFAC meeting to discuss the distribution of funds for projects. Additionally, all members were enthusiastic about the Proposed Project and the impact it will have on the Hospital.

Moreover, on August 1, 2019, Ms. Lauren Lele, MPA, CAVS, Director of Community Benefits and Volunteers and Ms. Nora Wells, MBA, MPH, Senior Manager, Strategic Planning and Implementation at NWH presented to the local community Department of Public Health meeting on the Proposed Project. This group meets quarterly and is comprised of leaders from 6 Departments of Public Health and other local community agencies. This group discusses current and relevant health-related topics to determine best practices and explore opportunities for collaboration. At this meeting 19 members attended, 10 of whom were community members. None of the individuals had any questions regarding 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 in conjunction with NWH took the following actions:

- Presented to NWH's PFAC on May 22, 2019.
- Presented to the local community Department of Public Health meeting on August 1, 2019.

For detailed information on these activities, see Attachment 2b.

For transparency and to educate the community regarding the public health value of the proposed Project, NWH developed a presentation to provide at the aforementioned PFAC meeting. This presentation documents the components of the Proposed Project and the patient panel need that the Project will meet, as well as the impact of the proposed Project including its public health value. Meeting minutes from the PFAC meeting may be found in Attachment 2b.

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. **<u>Cost Containment:</u>**
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 center around providing low-cost care alternatives without sacrificing high quality. In fact, the Commonwealth's independent state

agency that develops policy to reduce health care cost growth and improve the quality of patient care, the Health Policy Commission, has a stated goal of bettering health and care at a lower cost across the Commonwealth. Consequently, the Proposed Project will meaningfully contribute to Massachusetts' goals for cost containment through the efforts outlined below.

Creation of an Observation Unit

OUs are a lower-cost alternative for inpatient care. These units allow patients to be evaluated in an appropriate setting, but services are classified as outpatient, rather than inpatient. Cost efficiency studies have found that OUs are the best alternative for evaluating the level of care that patients need.[97] With an increase in the number of patients being admitted to these units over the last 7 years, one recent comparison study estimated adjusted cost savings of OUs to be $1,535 per visit. Accordingly, the addition of a permanent OU to NWH will create an alternative cost-effective care model to inpatient care, allowing for overall reduction in provider costs within the healthcare market.

Expansion of Endoscopy Services

The expansion and renovation of the Hospital's endoscopy services will allow more patients access to high quality care. Studies comparing endoscopic procedures to open surgery have found that these minimally invasive procedures are two to five times less costly than open surgery. Furthermore, patients who have endoscopy tend to have fewer side effects and complications, as well as faster recovery times, leading to less health care utilization (through reduced readmissions and emergency department visits) and therefore, reduced costs for providers, payers and patients. Moreover, when endoscopy is used as a screening or diagnostic tool, clinical conditions are identified in a timely manner, providing patients with more treatment interventions that tend to be lower cost. Accordingly, the Proposed Project will lower costs by providing timely access to cost-effective surgical alternatives. This Project also will provide earlier diagnoses for some patients, allowing for expedited treatment, thereby leading to a lower cost of care.

Expansion of the Special Care Nursery

The expansion of the SCN at NWH will provide patients within the Partners system, as well as other area AMCs with a high quality, lower cost alternative for SCN services. Currently, the hospital accepts patient transfers from all area hospitals for patients qualifying for level IIB SCN services. However, given surges in volume at times, NWH's SCN capacity becomes constrained, prohibiting transfers from other area AMCs and causing NWH staff to transfer high-risk mothers and babies when the census becomes too high. The Proposed Project will allow the Hospital to develop a surge plan, so greater access will be available to meet patient demand. By treating more patients in the appropriate lower-cost setting, NWH will meet the goals of cost containment set forth by the Commonwealth.

Renovations to the Psychiatric Unit

Better quality care will be provided to patients based on the creation of a ligature-resistant environment in NWH's Psychiatric Unit. TJC's new ligature-resistant standard seeks to prevent suicides within inpatient psychiatric units. Additionally, the renovation of shell space to incorporate an exercise area for psychiatric patients within the unit provides a low-cost alternative form of

[97] *Id.*

therapy that is more cost-effective than psychotropic or antipsychotic drugs. Accordingly, these renovations will meet Massachusetts goals for cost containment.

Acquisition of a Cardiac CT for Angiography

As discussed, study results on the cost-effectiveness of CT angiography, when a patient with an expected CAD prevalence of less than 85% is found to have a positive stress test result, coronary CT angiography is a less expensive alternative to direct performance of cardiac catheterization. Studies have demonstrated that diagnostic cardiac catheterization of patients with atypical symptoms will demonstrate significant CAD less than half of the time. A study conducted by Thomas Jefferson University found that at a 50% prevalence of CAD, performing coronary CT angiography prior to cardiac catheterization results in an average cost saving of $789 per patient with a false-negative rate of 2.5% and average additional radiation exposure of 1-2 mSv, which the study clinicians called minimal. Consequently, the acquisition of a cardiac CT to perform angiography meets the goals of the Commonwealth for lower cost care options yielding high quality results.

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

The Proposed Project will improve public health outcomes as patients will have more timely access to necessary services.

Creation of an Observation Unit

The expansion of observation services at NWH will improve public health outcomes through additional capacity and improved care processes as demand continues to increase for the aging patient panel, ultimately leading to better quality outcomes and an enhanced patient care experience. Studies have documented the benefits of obtaining timely care, including expedited treatment of diseases and conditions that impact a patient's quality of life. When patients receive care in the appropriate setting and achieve cost savings, both the health care market and patients benefit from these practices.

Expansion of Endoscopy Services

The expansion of endoscopy services at NWH will improve public health outcomes as patients will have more timely and continued access to necessary services as demand continues to increase for the aging patient panel, ultimately leading to better quality outcomes and an enhanced patient care experience. Moreover, as discussed, studies have documented the benefits of obtaining timely endoscopy services, including more timely treatment of diseases and conditions that impact a patient's quality of life. When patients receive timely care, in the appropriate setting and achieve cost savings, both the health care market and patients benefit from these practices.

Expansion of the Special Care Nursery

Expanded SCN services at NWH will have a positive impact on public health outcomes as more patients will be able to access services on-site, rather than being transferred to another facility. This expedited access to SCN services for newborns and babies will lead to timely treatment, thereby leading to improved quality outcomes and an overall better experience for families. When

a child is sick, moving the baby to a new location is very stressful for a family. Consequently, allowing the baby to remain in the same familiar care setting will assist the family and create greater satisfaction with the care experience.

Renovations to the Psychiatric Unit

Renovations will have a positive impact on public health outcomes as a ligature-resistant environment within the NWH Psychiatric Unit will prevent suicides. Moreover, the implementation of an exercise area within the Psychiatric Unit will provide patients with an alternative to traditional therapy, as well as psychotropic and antipsychotic drug. Studies have found exercise improves mental health by alleviating symptoms, leading to overall improved health outcomes for patients.

Acquisition of the Cardiac CT

Acquisition of a Cardiac CT will improve patient health outcomes and experience as the hospital will be providing a minimally invasive option for qualifying patients to determine their level of CAD or cardiovascular condition/disease. This new modality will eliminate the need for some patients to receive invasive procedures, such as a cardiac catherization or angiogram. Moreover, this acquisition will ensure qualifying patients may be treated at NWH for services, rather than being transferred to BWH or MGH.

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.

As outlined in Section F.1.B.ii, NWH has numerous programs in place to ensure linkages to social service organizations, such as through the iCMP for high-risk, chronically ill patients. Additionally, as part of the transition to the MassHealth ACO model of care, the Applicant and NWH have implemented a universal screening program for SDoH. This includes eight domains such as: housing, food insecurity, finances, childcare, transportation, etc. Currently, staff are developing workflows to connect patients to internal and external resources if the patient screens positive in any of the SDoH domains.

Additionally, in response to the root causes for some health equity issues faced by certain patients, NWH's Collaborative for Healthy Families and Communities has implemented the following initiatives:

- Expanding efforts to ensure linguistic accessibility (via American Sign Language interpreters, Spanish language interpreters) at NWH's community events;
- Expanding efforts to ensure transportation for all patients. NWH staff understand that a lack of transportation is an access issue for patients, especially for immigrant and non-English speaking patients and community members in Waltham;
- Providing free immunizations and care to uninsured patients while these individuals are within the MassHealth application phase; and
- Hiring of a community health worker in Waltham to address health equity issues specific to that community.

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.**

A. Creation of an Observation Unit

Proposal: The creation of a dedicated OU will allow staff to address capacity constraints in the ED and on the inpatient floors, assuring expedited access to care for patients that meet OU criteria and for patients in need of inpatient services, including those patients being directly-admitted from other Partners' hospitals via the CHTP.

Quality: The creation of an OU at NWH's main campus will allow for more diagnostic certainty, better clinical outcomes, and improvement in the use of hospital resources. As discussed, OUs are especially useful in treating older adults as these designated units provide therapeutic intervention and a more comprehensive evaluation than services available in an ED. Moreover, the creation of an OU will also impact patient experience. This new dedicated unit will allow qualifying patients to be expedited from the ED to the OU for further evaluation.

Efficiency: Efficiencies will be created around staffing by co-locating observation patients in one centralized location.

Capital Expense: The proposed implementation of permanent OU represents a cost-effective project as NWH staff have worked with the architects and the design team to implement a cost-effective expansion.

Operating Costs: Continuing to place observation patients on the hospital's inpatient floors creates operational inefficiencies, causing ED patients and patients seeking transfer to have extended stays in their current locations prior to admission and increasing administrative costs associated with inefficient and ineffective patient throughput. The Proposed Project will eliminate these inefficiencies, leading to stabilized operating costs.

List alternative options for the Proposed Project:

Option 1

Alternative Proposal: Forgo opening a permanent OU and continuing placing observation patients on inpatient floors.

Alternative Quality: Patients will have prolonged wait times in the ED or other Partners' facilities as existing capacity constraints on inpatient floors will continue to be a challenge.

Alternative Efficiency: No operational efficiencies will be generated by co-locating observation patients in one unit, such as staffing efficiencies. Additionally, throughput will

continue to be constrained for ED patients, as well as patients being directly admitted through the CHTP.

Alternative Capital Expenses: Although there will be no capital expenses associated with this alternative, there will be an impact on operating costs.

Alternative Operating Costs: Constrained capacity on the inpatient floors creates longer wait times in the ED and other Partners' hospitals where patients are seeking transfer. These constraints lead to increased operating costs (via boarding and staffing) and a higher overall cost of care for patients.

Option 2

Alternative Proposal: NWH considered "carving out" a section on inpatient beds to create an observation unit.

Alternative Quality: This project would have reduced capacity on the inpatient floors, which is already constrained leading to reduced throughput for patients seeking inpatient admission from the ED or from other Partners' hospitals.

Alternative Efficiency: No efficiencies would be created through this alternative as the hospital would have less inpatient space and no staffing efficiencies could be achieved.

Alternative Capital Expenses: This alternative would have less capital expense associated with it, but greater operating costs than the Proposed Project.

Alternative Operating Costs: Constrained capacity on the inpatient floors creates longer wait times in the ED and other Partners' hospitals where patients are seeking transfer via the CHTP. These constraints lead to increased operating costs (via boarding and staffing) and a higher overall cost of care for patients.

B. Expansion of Endoscopy Services

Proposal: Renovate and expand the Endoscopy Unit to ensure access to endoscopy services for an aging patient panel.

Quality: The Proposed Project is a superior alternative for providing high quality endoscopy services and improving health outcomes for patients. The expansion of endoscopy services, will allow patients to receive timely diagnosis and treatment for GI diseases and conditions. When endoscopy is used as a diagnostic tool, various conditions are identified expeditiously, leading to timely treatment and improved quality outcomes. When endoscopy is performed rather than a corresponding surgery, patients tend to have fewer complications and faster recovery times.

Efficiency: Through the Proposed Project, wait times for procedures will be reduced with the expansion of the clinical space. Moreover, additional types of procedures will be offered, such as manometry.

Capital Expense: The proposed expansion of endoscopy services represents a cost-effective project as NWH staff have worked with the architects and the design team to implement a cost-effective expansion.

Operating Costs: Operating costs will be supported by the new services being provided through the expanded unit.

List alternative options for the Proposed Project:

Option 1

Alternative Proposal: Do not renovate or expand the Endoscopy Unit at NWH.

Alternative Quality: This is not a superior alternative, as endoscopy patients will begin to wait longer periods of time for high quality endoscopic procedures.

Alternative Efficiency: Through this alternative, wait times will continue to increase and no new services will be provided.

Alternative Capital Expenses: If no expansion occurs, there be no capital costs.

Alternative Operating Costs: Although operating costs will not increase, patients will be left with extended wait times for service and the increased administrative costs associated with ineffective and inefficient throughput.

C. Expansion of the Special Care Nursery

Proposal: Expand NWH's SCN by 4 bassinets to meet current and future demand for services.

Quality: Over the past three fiscal years, the hospital has seen a 15% increase in the demand for SCN services. Consequently, at times, NWH's SCN experiences "surges" in volume, exceeding capacity and forcing staff to transfer high-risk mothers and newborns to other facilities for treatment. With the addition of 4 new SCN beds, the Hospital can create a "surge plan," ultimately providing greater access to SCN services and creating a better experience for patients as less transfers to other facilities will occur.

Efficiency: The Proposed Project will create efficiencies by ensuring patients have access to more timely care, thereby leading to improved health outcomes.

Capital Expense: The proposed expansion of SCN services represents a cost-effective project as NWH staff have worked with the architects and the design team to implement a cost-effective expansion.

Operating Costs: Continuing to transfer patients during surge times within the SCN creates operational inefficiencies and impacts overall patient experience. The Proposed Project will eliminate these inefficiencies, leading to stabilized operating costs.

List alternative options for the Proposed Project:

Option 1

Alternative Proposal: Continue to provide SCN services via a 12-bed unit at NWH.

Alternative Quality: This proposal is not a superior alternative as surges within the SCN continue to necessitate the transfer of patients to other Partners' facilities. Moreover, patients needing community-based care could not be transferred to NWH, impacting overall patient experience.

Alternative Efficiency: This alternative would not allow for the development of a surge plan leading to operational efficiencies.

Alternative Capital Expenses: Although no capital costs would be required to keep the status quo, operating costs would be impacted.

Alternative Operating Costs: This alternative would not allow the Hospital to meet the current and future demand for SCN services, leading to inefficiencies, including the transfer of patients to other facilities.

Option 2

Alternative Proposal: Expansion of the SCN on Floor 6 North of the Hospital allows NWH to use existing space to expand the SCN by 2 bassinets.

Alternative Quality: This alternative would not allow NWH to meet the current and future demand for SCN services, ultimately impacting patient outcomes and experience.

Alternative Efficiency: Although this alternative would allow for some efficiencies to be created during times when volume is surging in the Nursery, it would still require some patients to be transferred due to space constraints.

Alternative Capital Expenses: The capital expenses would be less for this alternative. However, operational costs would be impacted.

Alternative Operating Costs: This alternative would only lead to minimal operating efficiencies being established, allowing for some improvement in operating costs.

D. Renovations to the Psychiatric Unit

Proposal: The Proposed Project implementing a ligature-resistant environment within NWH's Psychiatric Unit is the only alternative for the hospital, as this is a TJC standard and non-compliance would lead to fines and other regulatory compliance challenges.

Quality: This is a superior alternative, as the TJC standard seeks to prevent suicides on the inpatient psychiatric unit, creating a safe environment for all patients.

Efficiency: Ensuring compliance with TJC standards creates efficiencies within regulatory compliances processes.

Capital Expense: NWH's facilities staff is working to ensure that the TJC standard is met in the most cost-efficient manner.

Operating Costs: To not comply with a TJC standard would raise operating costs in the form of applied fines.

There are no alternatives to this component of the Proposed Project as this TJC standard must be met.

E. Acquisition of a Cardiac CT

Proposal: Acquisition of a cardiac CT to perform cardiac CT angiography at NWH.

Quality: Patients, including elderly patients, would have access to an alternative, minimally-invasive procedure for determining risk of CAD and other cardiovascular syndromes.

Efficiency: The implementation of this new modality creates efficiencies by allowing certain patients to remain at NWH for care, rather than being transferred to another Partners' facility for treatment. Furthermore, this proposal allows for patients to receive cost-effective outpatient services to determine disease state, rather than costly invasive procedures.

Capital Expense: The proposed expansion of cardiovascular imaging services represents a cost-effective project as NWH staff have evaluated pricing for various modalities to ensure selection of the most appropriate cardiac CT.

Operating Costs: Operating efficiencies will be achieved by allowing qualifying patients to access diagnostic capabilities at NWH, rather than transferring patients for more invasive procedures to other hospitals. These efficiencies will lead to improved operating costs.

List alternative options for the Proposed Project:

Option 1

Alternative Proposal: No acquisition of a cardiac CT to perform angiography at NWH.

Alternative Quality: Patients will not have access to an alternative, minimally-invasive procedure for determining the risk of CAD and other cardiovascular syndromes.

Alternative Efficiency: Without a cardiac CT, patients will continue to be transferred to other facilities for diagnosis and treatment of CAD and other cardiovascular syndromes.

Alternative Capital Expenses: Although no capital expenses will be incurred through this alternative, there would be an impact on overall costs to patients and providers due to transfers.

Alternative Operating Costs: Operating efficiencies would not be achieved via this alternative as NWH will continue transferring patients to other hospitals for diagnosis and treatment.

Option 2

Alternative Proposal: Creation of a cardiac catherization lab at NWH.

Alternative Quality: This alternative proposal would lead to an appropriate diagnosis by patients. However, cardiac catherization and angiograms are more invasive procedures with longer lengths of stay and recovery periods than cardiac CT angiography.

Alternative Efficiency: Although qualifying patients would not need to be transferred to other Partners' facilities for services, the newly established service will take time to create efficiencies, a considerably longer period of time than the creation of efficiencies through outpatient testing (e.g. a cardiac CT).

Alternative Capital Expenses: The capital expenses associated with the creation of cardiac catherization are much greater than the purchase of a cardiac CT

Alternative Operating Costs: Operating costs associated with the establishment of a cardiac catherization lab are higher than the acquisition of the cardiac CT.

Attachment/Exhibit

3

Attachment/Exhibit

A

Table 1: PHS Patient Panel

	FY16		FY17		FY18		FY19YTD	
	Count	%	Count	%	Count	%	Count	%
PHS Total	1,380,203		1,409,382		1,504,478		1,182,064	
Gender								
Female	807,014	58.5%	821,100	58.3%	874,594	58.1%	691,057	58.5%
Male	572,742	41.5%	587,998	41.7%	629,748	41.9%	490,882	41.5%
Other/Unknown	447	0.0%	284	0.0%	136	0.0%	125	0.0%
Age								
0-17	140,527	10.2%	153,413	10.9%	173,386	11.5%	134,115	11.3%
18-64	844,879	61.2%	867,566	61.6%	927,594	61.7%	732,660	62.0%
65+	394,438	28.6%	388,198	27.5%	403,456	26.8%	315,263	26.7%
Unknown	359	0.0%	205	0.0%	42	0.0%	26	0.0%
Race								
American Indian or Alaska Native	1,517	0.1%	1,597	0.1%	1,887	0.1%	1,451	0.1%
Asian	55,128	4.0%	58,210	4.1%	62,248	4.1%	49,541	4.2%
Black or African American	79,476	5.8%	81,160	5.8%	83,262	5.5%	65,493	5.5%
Hispanic/Latino	24,148	1.7%	22,726	1.6%	21,231	1.4%	17,346	1.5%
Native Hawaiian or Other Pacific Islander	1,024	0.1%	1,127	0.1%	1,131	0.1%	831	0.1%
Other/Unknown	209,781	15.2%	217,873	15.5%	242,613	16.1%	169,365	14.3%
White	1,009,129	73.1%	1,026,689	72.8%	1,092,106	72.6%	878,037	74.3%
Patient Origin								
HSA_1	12,711	0.9%	13,672	1.0%	90,902	6.0%	76,463	6.5%
HSA_2	47,712	3.5%	47,880	3.4%	49,437	3.3%	38,026	3.2%
HSA_3	91,544	6.6%	95,405	6.8%	97,667	6.5%	82,037	6.9%
HSA_4	620,714	45.0%	633,792	45.0%	652,456	43.4%	541,719	45.8%
HSA_5	205,542	14.9%	213,440	15.1%	205,029	13.6%	134,865	11.4%
HSA_6	246,715	17.9%	246,855	17.5%	244,040	16.2%	196,902	16.7%
In MA but not in HSA 1-6	88	0.0%	63	0.0%	38	0.0%	20	0.0%
Outside of MA	146,467	10.6%	151,535	10.8%	158,537	10.5%	108,377	9.2%
Unknown	8,710	0.6%	6,740	0.5%	6,372	0.4%	3,655	0.3%

Date Pulled: May 22, 2019

Table 2: Total NWH Patient Panel

	FY16		FY17		FY18		FY19YTD	
	Count	%	Count	%	Count	%	Count	%
PHS Total	216,785		203,542		210,536		128,314	
Gender								
Female	131,120	60.5%	124,245	61.0%	128,274	60.9%	79,764	62.2%
Male	85,626	39.5%	79,287	39.0%	82,255	39.1%	48,543	37.8%
Other/Unknown	39	0.0%	10	0.0%	7	0.0%	7	0.0%
Age								
0-17	27,250	12.6%	27,139	13.3%	29,969	14.2%	16,244	12.7%
18-64	134,853	62.2%	127,736	62.8%	132,475	62.9%	79,923	62.3%
65+	54,651	25.2%	48,664	23.9%	48,091	22.8%	32,143	25.1%
Unknown	31	0.0%	3	0.0%	1	0.0%	4	0.0%
Race								
American Indian or Alaska Native	323	0.1%	284	0.1%	300	0.1%	169	0.1%
Asian	12,302	5.7%	12,231	6.0%	13,328	6.3%	8,015	6.2%
Black or African American	6,328	2.9%	5,803	2.9%	6,076	2.9%	3,522	2.7%
Hispanic/Latino	559	0.3%	464	0.2%	459	0.2%	257	0.2%
Native Hawaiian or Other Pacific Islander	430	0.2%	512	0.3%	484	0.2%	242	0.2%
Other/Unknown	17,111	7.9%	15,381	7.6%	16,424	7.8%	9,082	7.1%
White	179,732	82.9%	168,867	83.0%	173,465	82.4%	107,027	83.4%
Patient Origin								
HSA_1	974	0.4%	770	0.4%	734	0.3%	412	0.3%
HSA_2	12,961	6.0%	11,581	5.7%	11,962	5.7%	6,966	5.4%
HSA_3	4,448	2.1%	3,642	1.8%	3,552	1.7%	2,026	1.6%
HSA_4	167,845	77.4%	162,767	80.0%	170,143	80.8%	106,055	82.7%
HSA_5	12,495	5.8%	11,250	5.5%	11,276	5.4%	6,539	5.1%
HSA_6	5,796	2.7%	4,023	2.0%	3,744	1.8%	2,042	1.6%
In MA but not in HSA 1-6	21	0.0%	21	0.0%	6	0.0%	6	0.0%
Outside of MA	11,807	5.4%	9,230	4.5%	8,877	4.2%	4,172	3.3%
Unknown	438	0.2%	258	0.1%	242	0.1%	96	0.1%

Date Pulled: 3/27/2018

Attachment/Exhibit

B

Patient and Family Advisory Council Meeting Minutes[1]

Dear Newton-Wellesley Health System Patient and Family Advisory Council (PFAC) Members,

The next PFAC meeting will be on Wednesday, July 31st, 2019, at 6:00 pm in Bowles 4/S second floor of the hospital across from the Shipley Auditorium.

Please mark your calendars; more information will be sent closer to the meeting.

Recapping our last meeting on May 22th, PFAC discussed main subjects:

- NWH Determination of Need

1. **NWH Determination of Need:**

Determination of Need was presented by Nora Wells, MBA,MPH,Senior Manager, Strategic Planning and Implementation.
Nora explained to the members determination of needs for projects within the hospital. The MA Department of Public Health oversees the DON's and proposals for substantial capital expenditures. The DON program is to ensure that resources will be made reasonably and equitably to all.
NWH is in the process of completing a DON applications for infrastructure and for clinical projects. Submissions are targeted for late summer/early fall.
Factors of Determination of need:

- Community Engagement
- Develop Community Health Initiatives
- NWH will need to provide 75% of the percentage of their DON costs to fund NWH service areas for local health priority issues and 25% to fund state wide projects.

PFAC members requested that later in the year to have a member of community benefits attend a PFAC meeting to discuss the distribution of funds.

In closing, I want to take this opportunity to thank you for serving on the PFAC. Your participation and enthusiasm for improving the patient experience is appreciated.

We look forward to seeing you at the next PFAC meeting on Wednesday,

The remaining PFAC dates for the year are as follows:

July 31-Bowles 4/5

September 25th, Allen Riddle Living Room

November 20th, Allen Riddle Living Room

[1] The meeting minutes have been redacted to include only the relevant portions of the meeting.

Sincerely,

Jil Perlmutter OTR/L
Newton-Wellesley Hospital
Lead, Patient and Family Advisory Council
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Jperlmutter@partners.org

Sandra Muse, DNP
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Attachment/Exhibit

4

Attachment/Exhibit

A

Partners HealthCare System, Inc.

Analysis of the Reasonableness of Assumptions Used For and Feasibility of Projected Financials of Partners HealthCare System, Inc. For the Years Ending September 30, 2019 Through September 30, 2023

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BERNARD L. DONOHUE, III, CPA

One Pleasure Island Road
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September 18, 2019

Mr. Brian Huggins
Partners HealthCare System, Inc.
399 Revolution Drive STE 645
Somerville, MA 02145

RE: Analysis of the Reasonableness of Assumptions and Projections Used to Support the Financial Feasibility and Sustainability of the Proposed Capital Projects at Newton-Wellesley Hospital

Dear Mr. Huggins:

I have performed an analysis of the financial projections prepared by Partners HealthCare System, Inc. ("Partners HealthCare") detailing the projected operations of Partners HealthCare including the projected operations of the capital projects listed below at Newton-Wellesley Hospital ("NWH") in Newton, MA. This report details my analysis and findings with regards to the reasonableness of assumptions used in the preparation and feasibility of the projected financial information of Partners HealthCare as prepared by the management of Partners HealthCare ("Management"). This report is to be included by Partners HealthCare in its Determination of Need ("DoN") Application – Factor 4(a) and should not be distributed or relied upon for any other purpose.

I. EXECUTIVE SUMMARY

The scope of my analysis was limited to the five year consolidated financial projections (the "Projections") prepared by Partners HealthCare as well as the actual operating results for Partners HealthCare for the fiscal years ended in 2017 and 2018 ("Base Budget"), and the supporting documentation in order to render an opinion as to the reasonableness of assumptions used in the preparation and feasibility of the Projections with regards to the impact of the following capital projects at NWH:

- Renovation to establish an observation unit
- Renovation and expansion of endoscopy unit
- Renovation to expand special care nursery
- Renovation to inpatient adult psychiatric units
- Acquisition of a cardiac computerized tomography ("CT") unit
- Conservation projects

The impact of the proposed capital projects at NWH as listed above, which are the subject of this DoN application, represent a relatively insignificant component of the projected operating results

and financial position of Partners HealthCare. As such, I determined that the Projections are not likely to result in a scenario where there are insufficient funds available for capital and ongoing operating costs necessary to support the ongoing operations of Partners HealthCare. Therefore, it is my opinion that the Projections are financially feasible for Partners HealthCare as detailed below.

II. RELEVANT BACKGROUND INFORMATION

Refer to Factor 1 of the application for description of proposed capital projects at NWH and the rationale for the expenditures.

III. SCOPE OF REPORT

The scope of this report is limited to an analysis of the Projections, Base Budget and the supporting documentation in order to render an opinion as to the reasonableness of assumptions used in the preparation and feasibility of the Projections with regards to the impact of certain capital projects involving and ancillary to the projects as listed above at NWH. My analysis of the Projections and conclusions contained within this report are based upon my detailed review of all relevant information (see Section IV which references the sources of information). I have gained an understanding of Partners HealthCare and the capital projects at NWH through my review of the information provided as well as a review of Partners HealthCare website, annual reports, and the DoN application.

Reasonableness is defined within the context of this report as supportable and proper, given the underlying information. Feasibility is defined as based on the assumptions used, the plan is not likely to result in insufficient "funds available for capital and ongoing operating costs necessary to support the proposed project without negative impacts or consequences to [Partners HealthCare] existing patient panel" (per Determination of Need, Factor 4(a)).

This report is based upon historical and prospective financial information provided to me by Management. If I had audited the underlying data, matters may have come to my attention that would have resulted in my using amounts that differ from those provided. Accordingly, I do not express an opinion or any other assurances on the underlying data presented or relied upon in this report. I do not provide assurance on the achievability of the results forecasted by Partners HealthCare because events and circumstances frequently do not occur as expected, and the achievement of the forecasted results are dependent on the actions, plans, and assumptions of management. I reserve the right to update my analysis in the event that I am provided with additional information.

IV. PRIMARY SOURCES OF INFORMATION UTILIZED

In formulating my opinions and conclusions contained in this report, I reviewed documents produced by Management. The documents and information upon which I relied are identified below or are otherwise referenced in this report:

1. Five-Year Pro-Forma Statements for the fiscal years ending 2019 through 2023, provided July 26, 2019 and updated September 9, 2019;

2. Infrastructure Investments & Capacity Planning, Newton-Wellesley Hospital, PHS Finance Committee report as of June 2018, provided July 26, 2019;

3. Newton-Wellesley Hospital, FY19 Capital Budget Review, Board of Trustees, provided July 26, 2019.

4. Multi-Year Financial Framework of Partners HealthCare System, Inc. for the fiscal years ending 2019 through 2023 prepared as of December 6, 2018;

5. Audited Financial Statements of Partners HealthCare System, Inc. and Affiliates as of and for the years ended September 30, 2018 and 2017;

6. Company website – www.partners.org;

7. Various news publications and other public information about the Company;

8. Determination of Need Application Instructions dated March 2017; and

9. Draft Determination of Need Factor 1, provided August 26, 2019 and updated September 18, 2019.

V. REVIEW OF THE PROJECTIONS

This section of my report summarizes my review of the reasonableness of the assumptions used and feasibility of the Projections. The Projections are delineated between five categories of revenue and six general categories of operating expenses of Partners HealthCare as well as other non-operating gains and losses for the Organization. The following table presents the Key Metrics, as defined below, of Partners HealthCare which compares the results of the Projections for the fiscal years ending 2019 through 2023 to Partners HealthCare historical results for the fiscal year ended 2018.

	Partners, as reported	Change in Key Metric of pro forma results compared to prior year				
	2018	**2019**	**2020**	**2021**	**2022**	**2023**
EBIDA ($)	1,164,519	19,481	121,298	50,066	41,901	55,019
EBIDA Margin (%)	8.8%	0.0%	0.5%	0.0%	-0.1%	0.0%
Operating Margin (%)	2.3%	-0.2%	0.3%	0.0%	0.0%	0.0%
Total Margin (%)	6.2%	-1.7%	0.5%	0.0%	0.0%	0.0%
Total Assets ($)	18,303,531	781,560	859,616	632,264	909,820	939,339
Total Net Assets ($)	8,972,581	742,000	767,657	791,768	818,354	844,373
Unrestricted Cash Days on Hand (days)	212.2	5.0	(6.4)	(13.7)	2.6	7.0
Unrestricted Cash to Debt (%)	132.5%	5.1%	-0.7%	0.4%	5.3%	8.1%
Debt Service Coverage (ratio)	6.5	(1.8)	1.2	(2.8)	3.2	0.3
Debt to Capitalization (%)	43.3%	-2.3%	-1.8%	-2.8%	-1.5%	-1.4%

The Key Metrics fall into three primary categories: profitability, liquidity, and solvency. Profitability metrics, such as EBIDA, EBIDA Margin, Operating Margin, Total Margin, and Debt Service Coverage Ratio are used to assist in the evaluation of management performance in how efficiently resources are utilized. Liquidity metrics, such as Unrestricted Days Cash on Hand, and Unrestricted Cash-to-Debt measure the quality and adequacy of assets to meet current obligations as they come due. Solvency metrics, such as Debt to Capitalization, and Total Net Assets, measure the company's ability to service debt obligations. Additionally, certain metrics can be applicable in multiple categories.

The following table shows how each of the Key Metrics are calculated.

Key Metric	Definition
EBIDA ($)	(Earnings before interest, depreciation and amortization expenses) - Operating gain (loss) + interest expense + depreciation expense + amortization expense
EBIDA Margin (%)	EBIDA expressed as a % of total operating revenue. EBIDA / total operating revenue
Operating Margin (%)	Income (loss) from operations / total operating revenue
Total Margin (%)	Excess (deficit) of revenue over expenses / total operating revenue
Total Assets ($)	Total assets of the organization
Total Net Assets ($)	Total net assets of the organization (includes unrestricted net assets, temporarily restricted net assets and permanently restricted net assets)
Unrestricted Cash Days on Hand (days)	(Cash & cash equivalents + investments + current portion investments limited as to use + investments limited as to use - externally limited funds) / ((Total operating expenses - non recurring charges - depreciation & amortization) / YTD days)
Unrestricted Cash to Debt (%)	Unrestricted Cash-to-Debt (%) - (Cash & cash equivalents + investments + current portion investments limited as to use + investments limited as to use - externally limited funds) / (Current portion of long-term obligations + long-term obligations)
Debt Service Coverage (ratio)	Debt service coverage ratio (ratio) - (Excess (deficit) of revenue over expenses + depreciation expense + amortization expense + interest expense) / (Principal payments + interest expense)
Debt to Capitalization (%)	Debt to Capitalization (%) - (Current portion of long-term obligation + long-term obligations) / (Current portion of long-term obligations + long-term obligations + unrestricted net assets)

In preparing the Key Metrics, Management noted the following:

- Partners has a balloon payment on long-term debt maturing in fiscal year ending 2021 and prepared the Projections to include the balloon payment.

1. Revenues

The only revenue category on which the proposed projects would have an impact is net patient service revenue. Therefore, I have analyzed net patient service revenue identified by Partners HealthCare in both their historical and projected financial information. Based upon my analysis of the projected results from Fiscal Year 2019 through Fiscal Year 2023, the proposed projects would represent approximately 0.009% (about 9 one-thousandths of 1%) of Partners HealthCare operating revenue beginning in FY 2020 to

0.019% (about 2 one-hundredths of 1%) in FY 2023. The first year in which revenue is present for the proposed projects is FY 2020.

It is my opinion that the revenue growth projected by Management reflects a reasonable estimation based primarily upon the organization's historical operations.

2. Operating Expenses

I analyzed each of the categorized operating expenses for reasonableness and feasibility as it relates to the projected revenue items. I reviewed the actual operating results for Partners HealthCare for the years ended 2017 and 2018 in order to determine the impact of the proposed projects at NWH on the consolidated entity and in order to determine the reasonableness of the Projections for the fiscal years 2019 through 2023. Based upon my analysis of the projected results from Fiscal Year 2019 through Fiscal Year 2023, the proposed projects would represent approximately 0.005% (about 5 one-thousandths of 1%) of Partners HealthCare operating expenses beginning in FY 2020 to 0.023% (about 2 one-hundredths of 1%) in FY 2023. The first of the capital projects listed above is expected to come online in FY 2020.

It is my opinion that the growth in operating expenses projected by Management reflects a reasonable estimation based primarily upon the organization's historical operations.

3. Non-Operating Gains/Expenses and Other Changes in Net Assets

The final categories of Partners HealthCare Projections are various non-operating gains/expenses and other changes in net assets. The items in these categories relate to investment account activity (realized and unrealized), philanthropic and academic gifts, benefit plan funded status, fair value adjustments and other items. Because many of these items are unpredictable, nonrecurring, or dependent upon market fluctuations, I analyzed the non-operating activity in aggregate. Based upon my analysis, there were no non-operating expenses projected for the proposed projects at NWH. Accordingly, it is my opinion that the pro-forma non-operating gains/expenses and other changes in net assets are reasonable.

4. Capital Expenditures and Cash Flows

I reviewed Partners HealthCare capital expenditures and cash flows in order to determine whether Partners HealthCare anticipated reinvesting sufficient funds for technological upgrades and property, plant and equipment and whether the cash flow would be able to support that reinvestment.

Based upon my discussions with Management and my review of the information provided, I considered the current and projected capital projects and loan financing obligations included within the Projections and the impact of those projected expenditures on Partners HealthCare cash flow. Based upon my analysis, it is my opinion that the pro-forma capital expenditures and resulting impact on Partners HealthCare cash flows are reasonable.

VI. FEASIBILITY

I analyzed the projected operations for Partners HealthCare and the changes in Key Metrics prepared by Management as well as the impact of the proposed capital projects as listed above at NWH upon the Projections and Key Metrics. In performing my analysis, I considered multiple sources of information including historical and projected financial information for Partners HealthCare. It is important to note that the Projections do not account for any anticipated changes in accounting standards. These standards,

which may have a material impact on individual future years, are not anticipated to have a material impact on the aggregate Projections.

Because the impact of the proposed capital projects as listed above at NWH represents a relatively insignificant portion of the operations and financial position of Partners HealthCare, I determined that the Projections are not likely to result in insufficient funds available for capital and ongoing operating costs necessary to support the proposed projects. Based upon my review of the Projections and relevant supporting documentation, I determined the projects and continued operating surplus are reasonable and based upon feasible financial assumptions. Therefore, the proposed capital projects as listed above at NWH are financially feasible and within the financial capability of Partners HealthCare.

Respectively submitted,

Bernard L Donohue, III, CPA

Bernard L. Donohue, III, CPA

Attachment/Exhibit

B

Factor 4: Financial Feasibility and Reasonableness of Expenditures and Costs

Applicant has provided (as an attachment) a certification, by an independent certified public accountant (CPA) as to the availability of sufficient funds for capital and ongoing operating costs necessary to support the Proposed Projects without negative impacts or consequences to the Applicant's existing Patient Panel.

F4a.i **Capital Costs Charts:**

For each Functional Area document the square footage and costs for New Construction and/or Renovations

		Present Square Footage		Square Footage Involved in Project				Resulting Square Footage		Total Cost		Cost/Square Footage	
				New Construction		Renovation							
Add/Del Rows	Functional Areas	Net	Gross	Net	Gross	Net	Gross	Net	Gross	New Construction	Renovation	New Construction	Renovation
1	Obs Unit 3r		0		3,262				3,262	$9,438,630	$0	$2,893.51	$0.00
2	Cardiac CT		2,308		0		2,308		2,308	$0	$3,007,416	$0.00	$1,303.04
3	Psych Renovation		17,250		1,383		17,250		18,633	$4,001,724	$22,477,440	$2,893.51	$1,303.04
4	SCN 5 West		747		0		747		747	$0	$973,371	$0.00	$1,303.04
5	GI ERCP to OR		400		0		400		400	$0	$521,216	$0.00	$1,303.04
6	GI Storage to Procedure Room		246		0		246		246	$0	$320,548	$0.00	$1,303.04
7	Boiler Plant/Co-Gen		7,400		1,380		5,800		7,180	$3,993,072	$7,557,760	$2,893.53	$1,303.06
8	Primary Electrical Gear		0		1,172		0		1,172	$3,391,194	$0	$2,893.51	$0.00
	Total: (calculated)	0	28351	0	7197	0	26751	0	33948	$20,824,620	$34,857,751	$11,574	$7,818

**Please note the total costs on this chart are based on

the following line items on Cost Chart F4aii: 1) Site Survey and Soil Investigation + 2) Construction Contract + 3) Fixed Equipment Not in Contract + 4) Architectural Costs.

The noted line items within Cost Chart F4aii contain all of the projects within the Determination of Need, including the conservation projects. Accordingly, some costs are associated with no square footage (e.g. electrical gear replacement, etc.), and therefore the cost per square foot is inflated.

Attachment/Exhibit

5

Attachment/Exhibit

A

[redacted]

[redacted]

[redacted]

Newton-Wellesley Hospital

2018 Community Health Needs Assessment

Final Report

Submitted to:

NEWTON-WELLESLEY HOSPITAL

Health Resources in Action
Advancing Public Health and Medical Research

Table of Contents

EXECUTIVE SUMMARY

Background and Methods

Newton-Wellesley Hospital (NWH) is a 265-bed comprehensive medical center affiliated with Partners Health Care. NWH's mission is to treat and care for all its patients and their families as they would a beloved family member. In January 2018, NWH engaged Health Resources in Action (HRiA), a non-profit public health organization in Boston, to conduct its triennial community health needs assessment (CHNA). In addition to fulfilling the requirement by the IRS Section H/Form 990 mandate, the NWH CHNA process was undertaken to:

- Identify and provide an update on the health needs and assets of the Newton-Wellesley service area (Natick, Needham, Newton, Waltham, Wellesley, and Weston)
- Identify the Newton-Wellesley service area community needs for cancer prevention and screening
- Understand how outreach activities can be more effectively coordinated and delivered across the institution and in collaboration with community partners

The CHNA used a participatory, collaborative approach and examined health in its broadest context. As part of this assessment, NWH sought input from its Community Benefits Committee to inform the methodology, including recommendation of secondary data sources, and identification of key informants and focus group segments. The assessment process included synthesizing existing data on social, economic, and health indicators from various sources, as well as, conducting eight interviews and six focus groups to explore perceptions of the community, health and social challenges for community members, and recommendations for how to address these concerns. **In total, over 50 individuals were engaged in the 2018 assessment process.**

Findings

The following provides a brief overview of key findings that emerged from this assessment.

<u>Community Social and Economic Context</u>

The following section provides an overview of the population within the NWH service area.

Demographic characteristics:

- *Age:* Similar to the 2015 CHNA, according to the American Community Survey of the U.S. Census Bureau, with the exception of Waltham (14.0%), all of the towns in the NWH service area had a higher percentage of children under 18 years of age compared to Massachusetts (20.7%). Focus group participants and interviewees described the population served by NWH as a mix, with aging adults, young families, and middle-age persons.
- *Racial and Ethnic Diversity:* The diversity of the area was a characteristic named in almost every interview and focus group. Since the 2015 CHNA, the racial/ethnic composition of NWH's service area has remained similar. According to the most recent census data, Waltham had the

> *"The [Waltham] community prides itself of its immigrant history. It is already seasoned to newcomers, new languages, and building onto existing culture."*
> – Interview Participant

highest percent of Black (5.6%) and Hispanic/Latino (13.3%) residents in the NWH service area, relatively similar to the proportion of Black (6.6%) and Hispanic/Latino (10.9%) residents for Massachusetts overall. Since the 2015 CHNA, except for Newton, all towns experienced an increase in their immigrant population. According to the most recent census data, the towns of Newton (28.4%), Needham (22.4%), Natick (17.3%), and Waltham (16.9%) had a higher percent of residents born outside of the US than the state (16.5%),

- *Education:* The high quality of the area's school system was mentioned in most focus groups and interviews and was described as one of the primary reasons for living in the assessment communities. Similar to the 2015 CHNA, quantitative data indicate the six cities/towns in the NWH service area are very well educated.
- *Employment:* Since the 2015 CHNA, trends suggest an increase in the percent of residents unemployed in Waltham (4.8% to 5.3%), while there was little change in the percent unemployed for Newton (4.6% to 4.4%) and Needham (5.3% to 5.1%).

Income and poverty: Focus group participants and interviewees reported that the economic status of residents in the NWH service area varies by community. Residents living in Newton, Needham, and Wellesley were described as largely affluent, while Natick was described as more middle class to upper middle class and Waltham was considered a more blue-collar community, with many lower income residents and a large proportion of students receiving free or reduced lunch. According to the most recent census data, Waltham (5.5%) and Weston (4.8%) had the highest percent of families living below the poverty level, though this prevalence was below that for the state (8.0%). According to the Massachusetts Department of Elementary and Secondary Education, within the service area cities and towns, Waltham had the highest proportion of students participating in free (35.5%) and reduced lunch (5.9%) programs, a prevalence that exceeded Massachusetts overall (33.6% and 4.7%, respectively).

Housing: As in the 2015 CHNA, the high cost of housing and changing housing dynamics in the community were reported to be challenges. Residents spoke about rising rent, lack of affordable housing and long wait lists. Participants described overcrowding and homelessness as two consequences of high housing costs and limited options. According to the most recent census data, housing cost burden was highest for renter-occupied units in Newton (39.9%) and owner-occupied units in Weston (26.6%).

> *"With how real estate has sky rocketed, it's squeezing middle to low income people."*
> —Interview Participant

Transportation: Perceptions about transportation in the service area varied. Transportation to Boston was generally reported to be easy and many residents from the NWH service area travel into the city. More locally, however, transportation options were reported to be less available, making travel from town to town difficult for those without personal vehicles. Reflecting patterns across Massachusetts, the majority of workers in each assessment community drove to work according to the most recent census data, a trend that was similar to the 2015 CHNA.

Crime and safety: Overall, participants perceived their communities to be largely safe from crime. However, participants expressed concerns about personal safety in some communities. Several participants voiced concerns about the safety of immigrants and the fear of police in some communities. Similar to the previous CHNA, in 2016, according to the Federal Bureau of Investigations, the violent and property crime rates were highest in Waltham (155.6 violent crimes and 1,081.5 property crimes per 100,000 population) and Natick (157.7 violent crimes and 1,345.9 property crimes per 100,000 population).

Community Resources and Assets

Focus group and interview participants identified several strengths of their community which were similar to those reported in 2015 CHNA - including:

Community amenities: Participants spoke highly of green spaces and recreational opportunities available to them, as well as access to libraries, faith organizations, higher education, shopping, and the availability of cultural events. Additionally, participants appreciated the variety and extensiveness of services in their communities, including healthcare, public health, and programming for children and youth.

Collaboration: Collaboration across different organizations was also reported to be an asset in the NWH service area. Participants shared examples of partnerships in the community including those between local police and schools and youth services organizations, work between public health departments and those working in senior services.

> *"It is easy to get people to get together and work on issues"*
>
> – Interview participant

Generosity: Generosity of residents was described as another important community asset. Participants shared that residents are active in their communities and generous with their time and financial resources. Residents look out for one another and desire to give back. Locally funded scholarships for graduating seniors were mentioned, as well as a high rate of volunteerism.

Strong local infrastructure: Several participants shared that the area has a strong business base and effective local government, which they believed were substantial assets. Participants praised local police, fire departments, and school leadership.

Community Health Issues

The assessment identified several key health issues and concerns affecting NWH's service area, namely:

Leading Causes of Mortality: Similar to the 2015 CHNA, the leading causes of death in the NWH service area are heart disease and cancer, according to the Massachusetts Department of Public Health.

Chronic Diseases and Related Risk Factors: Chronic diseases were not heavily discussed as a pressing concern for the community. According to the Massachusetts Department of Public Health, most cities and towns in the NWH service area had lower rates of mortality due to heart disease as compared to the state (142.0 per 100,000 population), except for Natick (144.8 per 100,000 population) and Waltham (144.3 per 100,000 population). The asthma emergency department visit rate for Waltham residents (406.5 visits per 100,000 population) was more than twice the rate for Needham residents (181.7 visits per 100,000 population), according to the Center for Health Informatics and Analysis.

Mental Health: Among community health issues raised during the assessment process, mental health was the issue mentioned most frequently, particularly affecting the elderly, immigrants, and low-income residents. According to youth risk surveys, a higher percent of middle school youth in Waltham (14.8%), Natick (10.3%), and Wellesley (9.0%) reported suicide ideation than the average statewide (8.0%).

> *"Stories of getting across the border and the trauma, it is just horrifying, and they're coming to school and trying to concentrate."*
>
> - Focus Group Participant

Substance Use: Similar to the 2015 CHNA, substance use was also reported to be a substantial challenge for the community. Opioids were the substance of greatest concern to participants. Substance use among seniors was also reported to be an issue in the community, as well as use among youth. Participants working with youth reported that vaping has substantially increased among students in recent years.

Reproductive and Maternal Health: In interviews and focus groups, reproductive and maternal health was not discussed. However, quantitative data from the Massachusetts Department of Public Health demonstrates that similar to patterns across Massachusetts, from 2013 to 2015, the percent of mothers with inadequate prenatal care increased slightly in Needham (11.1% to 13.0%), Wellesley (12.8% to 16.2%), and Weston (12.8% to 19.2%).

Communicable Disease: Communicable diseases were not discussed in interview or focus groups. According to data from the Massachusetts Department of Public Health, the chlamydia case rate per 100,000 population for all cities and towns in the NWH service area are below the rate for Massachusetts. However, following patterns across the state, the chlamydia case rate increased for all assessment communities from 2013 to 2016, with the greatest percent increase in Newton (73.2%), Weston (50.0%), Waltham (47.9%), and Wellesley (43.5%).

Access to Care

Similar to the 2015 CHNA, access to health care was raised as a concern among interview and focus group participants; they identified several barriers to accessing care, including:

Cost and Insurance: The cost of care, including insurance, co-pays, and medication, was mentioned by participants as a barrier to access, especially for lower income residents, including seniors. Obtaining insurance was reported by participants to still be a challenge for residents, particularly those in the immigrant communities. According to the most recent census data, a higher proportion of Black residents in Needham (12.8%), Waltham (7.6%), and Wellesley (6.5%) lacked health insurance relative to the state (5.5%) and Middlesex (6.1%) and Norfolk Counties (4.4%).

> *"People are afraid to go to the doctor because they'll get an enormous bill."*
>
> – Focus Group Participant

Navigating the Healthcare System: Navigating complex healthcare systems was reported to be difficult, especially for residents with chronic illnesses or multiple providers. Continuity of care after hospitalization was also mentioned as a challenge for cancer patients, frail seniors, and those with chronic illnesses. Participants reported a need for a strong network of community-based services as well as advocates/navigators to help patients navigate the healthcare system.

Behavioral Health: Focus group and interview participants reported that mental health and substance use services are insufficient to meet demand. Some mentioned that many mental health providers don't accept insurance or MassHealth, so people with mental health concerns, especially those who are lower income residents are undiagnosed or untreated. Additionally, stigma around mental health and substance use was shared as a substantial barrier to accessing care.

Cultural Competency: The lack of cultural competency of providers, as well as limited access to languages other than English were identified as barriers for some community participants to access healthcare. Miscommunication between providers and residents about health conditions and treatments was discussed, and according to one interviewee, led to improper use of medication. The lack of providers' knowledge and awareness of the unique needs of the LGBTQ population was also mentioned by participants as a barrier.

> *"The doctors explain things in ways that our clients don't understand. They are ashamed to ask if they don't understand. They don't feel comfortable even asking the interpreter."*
>
> – Interview Participant

Transportation: According to participants, lack of cost-effective and convenient transportation options creates challenges to accessing health and other services in the NWH area, especially for lower income residents. While some options exist, long wait times, spotty service, and cost make it difficult for lower income residents and seniors to access medical care.

Community Suggestions for Future Programs, Services, and Initiatives

Participants shared several suggestions to improve the community issues they identified, including:

Behavioral Health Services and Training: Focus group and interview participants called for an increase in culturally competent services, and providing behavioral health training support for schools, providers, and institutions working with seniors.

Prevention Programming and Education: Broader outreach of prevention programming and education was suggested by participants through expanding health fairs and screenings, providing education about healthy lifestyles, and creating a resource list of available services.

Engagement with Schools: Participants suggested continuing professional development for school staff on health issues like substance use, mental health, and sexual health, as well as student/family workshops on nutrition, fitness, and healthy relationships. Another way to engage schools is for physicians to periodically come to schools to do checkups and give free vaccines.

> *"For some kids it may be the only medical professional they're seeing – in the school because they're not going for annual checkups"*
>
> – Interview participant

Services for Seniors: Seniors and those working with seniors identified suggestions for this population including assistance with end-of-life planning and education about mental health to reduce stigma. Additional services were suggested such as adult day care, home-based supports, and technology-based approaches.

Health Care Navigation Support: Participants mentioned care coordination as an important strategy, so residents know how to navigate complex health systems, take care of themselves after a hospital stay, and effectively take medications. Participants recognized that seniors are less likely to have a strong system of informal supports and need additional navigation support.

Cancer: Increasing access to and awareness of cancer screening was a suggestion from participants, specifically more prostate screening programs for men of color and mobile mammograms. Participants recommended engaging with community institutions, including faith organizations. Care coordinators were mentioned by participants as helpful to enhance support for those with cancer.

Workforce Development: Some participants also suggested that NWH could play a role in improving workforce options for residents, especially as it relates to healthcare. Specific ideas included holding a job fair and providing career education and support for students.

> *"Our students want to enter the nursing field."*
> – Interview participant

Domestic Violence Training: A couple of participants stated that providers would benefit from more education about domestic violence and trauma to better engage patients in conversations about these issues and identify abuse.

Transportation: Several participants recommended more community-level work on transportation, as they did in the previous CHNA, by offering more convenient and cost-effective public transportation options. One participant suggested the hospital re-institute the bus it once offered. Another mentioned the hospital developing strategies to connect residents to transportation through services like Uber.

Key Themes and Conclusions

This assessment report describes the social and economic context of NWH's service area, key health issues and concerns, and perceived assets and opportunities for addressing current needs and gaps. Several overarching themes and conclusions emerged:

- ***Community Strengths***: In focus groups and interviews, residents praised the vitality of their communities and saw diversity as a substantial asset. The high quality of the area's school system was described as an important strength in the region. Overall, participants reported that there are good healthcare facilities in the NWH service area.

- ***Identified Areas of Need***: Five areas of need were prominent in focus groups and interviews including:
    - ***Housing***: Lack of affordable housing in the area was a theme across focus groups and interviews. Participants expressed concern about increasing housing costs for the residential stability of residents of Waltham, lower income residents in the region, and seniors.
    - ***Transportation***: Limited transportation options and high costs were also a challenge, particularly for lower income residents and seniors. Even where public transportation exists, there are several barriers to using it, including wait times, cost, and language barriers.
    - ***Mental Health:*** This was the health concern mentioned most frequently in interviews and focus groups, with youth, seniors, and immigrants perceived as disproportionately affected. Participants cited high rates of anxiety and depression and often mentioned issues related to trauma. They also shared concerns about lack of access to mental health services. Participants noted that increasingly, those suffering from mental health concerns also engage in substance misuse.
    - ***Substance Use:*** A substantial challenge for the community is substance use, particularly opioids. Substance use admissions to DPH-funded treatment programs were highest for residents of Waltham and Natick. The prevalence of heroin-related treatment has increased in each of the NWH communities since the last assessment. Newton, Waltham, and Needham had the highest percent of patients admitted to DPH-funded treatment programs due to heroin as their primary substance of use. Participants working with youth reported that vaping has substantially increased among students in recent years.

- ***Access to Care:*** Residents reported challenges in meeting the social, economic, and health care needs of residents in the NWH service area, especially immigrants, low-income residents, and seniors. A few participants reported that obtaining health insurance was still a challenge for some residents, particularly those in immigrant communities. Participants reported that navigating healthcare and continuity of care after hospitalization can be challenging, particularly for residents with chronic illness or multiple providers. Cultural competency of providers, as well as language access, were also identified as barriers for some community participants to access healthcare. Those working with non-English speaking populations repeatedly noted a lack of bilingual providers, particularly in specialty services such as mental health.

BACKGROUND

Overview of Newton-Wellesley Hospital

Newton-Wellesley Hospital (NWH) is a 265-bed comprehensive medical center affiliated with Partners Health Care. NWH's mission is to treat and care for all its patients and their families as they would a beloved family member. NWH's compassionate and talented physicians, nurses, and staff and multiple centers of excellence contribute to their nationally-recognized quality health care.

Summary of Previous Community Health Needs Assessment

In 2015, Newton-Wellesley Hospital completed a community health needs assessment (CHNA) of its primary service area (Natick, Needham, Newton, Waltham, Wellesley, and Weston) using a participatory, collaborative approach that examined health in its broadest context. The purpose of this CHNA was to provide an empirical foundation for future health planning of communities served by NWH. The 2015 CHNA also fulfilled the community health needs assessment mandate for non-profit institutions as put forth by the MA Attorney General and the IRS. The assessment process included synthesizing existing data on social, economic, and health indicators, as well as conducting five focus groups and twelve interviews with a range of diverse individuals to identify the perceived health needs of the community, challenges to addressing these needs, current strengths and assets, and opportunities for action. The 2015 assessment identified the following needs: cost of living and transportation, Waltham, and behavioral health. Previously collected information on these health issues, as well as community assets and resources, may be found in the 2015 assessment report available NWH's website:
https://www.nwh.org/media/file/NWH%20Draft%20CHNA%20Report_1%2021%2015%20TM%20FINAL.pdf

Review of Initiatives

Based on the results of its 2015 CHNA process, NWH developed a plan to address the following priority areas: mental health, elder care, Waltham, access to care/transportation, and substance abuse. The 2016 plan is available on NWH's website:
https://www.nwh.org/media/file/Implementation%20Plan%202016.pdf. Since the 2015 CHNA, NWH has provided a variety of services and programming to address the identified key needs and issues (see Appendix A).

NWH included five priority areas in its 2016 implementation plan to address the needs of its service area and the table in Appendix A reviews the impact of that work. It is organized by priority area and includes a description of activities, services, and programs. The impact of these activities in FY2015, 2016, and 2017 is demonstrated by numbers of individuals served, services provided, and goals achieved.

Purpose and Scope of 2018 CHNA

The purpose of the 2018 NWH CHNA was to build upon the 2015 CHNA and provide a comprehensive portrait of the service area's health, assets, and needs to inform future planning processes and to fulfill IRS requirements. The 2018 CHNA provides an update on the social, economic, and health patterns reported in the 2015 CHNA. Additionally, the 2018 report includes a focus on the cancer continuum, including cancer prevention and screening. NWH contracted Health Resources in Action (HRiA), a non-profit public health organization in Boston, MA, to collect and analyze data to develop the CHNA report.

The 2018 NWH community health needs assessment was conducted to fill several overarching goals, specifically to:

- Identify and provide an update on the health needs and assets of the Newton-Wellesley service area
- Identify the Newton-Wellesley service area community needs for cancer prevention and screening
- Understand how outreach activities can be more effectively coordinated and delivered across the institution and in collaboration with community partners

This report discusses the findings from the 2018 CHNA, which was conducted from January to June 2018.

Definition of the Community Served

The 2018 NWH CHNA focused on the six cities and towns that comprise the Hospital's primary service area. These communities are Natick, Needham, Newton, Waltham, Wellesley, and Weston. While the CHNA process aimed to examine health concerns across the entire service area, there was a particular focus on identifying the needs of the most underserved population groups of the area and delving into the topical areas that arose during the previous CHNA.

PROCESS AND METHODS

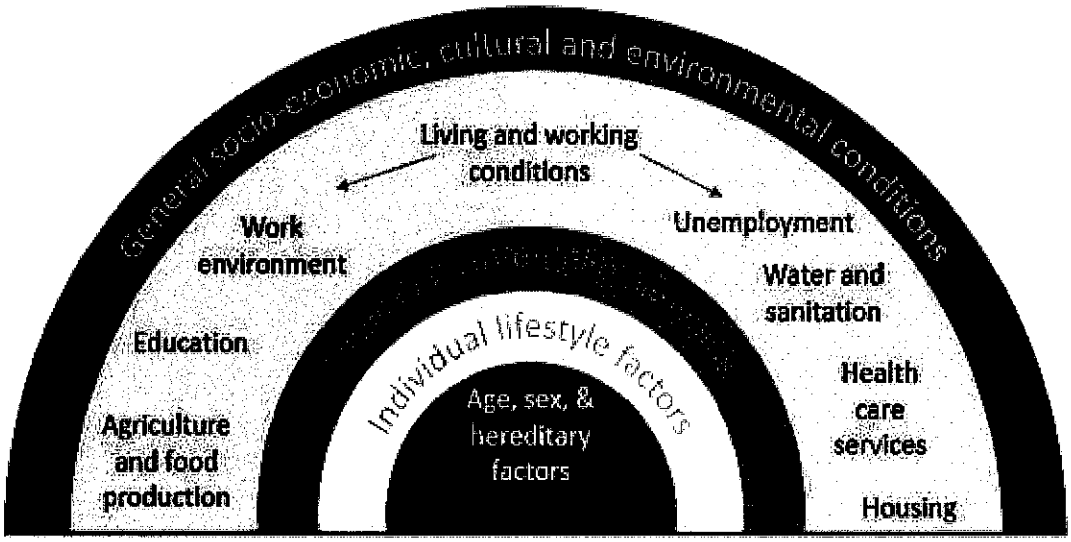
The following section describes how data for 2018 CHNA were collected and analyzed. This section also provides an overview of the health framework that guided this assessment process. This CHNA conceptualizes health in the broadest sense and recognizes that factors at multiple levels shape the community's health. These include, for example, lifestyle behaviors (e.g., physical activity and smoking), clinical care (e.g., access to medical services), social and economic factors (e.g., employment opportunities), and the physical environment (e.g., access to healthy food).

Approach and Community Engagement Process

Social Determinants of Health Framework

Figure 1, below, provides a visual depiction of the multiple factors that shape health. Individual lifestyle factors, located closest to health outcomes, are influenced by upstream social and economic factors such as housing, educational opportunities, and occupational factors. The beginning of the CHNA describes many of these social and economic factors, and reviews key health outcomes among residents of the Newton-Wellesley Hospital service area.

Figure 1. Social Determinants of Health Framework



DATA SOURCE: World Health Organization, Commission on the Social Determinants of Health, Towards a Conceptual Framework for Analysis and Action on the Social Determinants of Health, 2005.

Community Benefits Committee Engagement

The NWH Community Benefits Committee provided strategic oversight of the CHNA process. This committee is comprised of 40 members representing community stakeholders in the hospital service area and Newton-Wellesley Hospital staff and administrators involved in strategic planning and community benefits efforts. A list of members can be found in Appendix B. The committee provided guidance on each component of the assessment, including the CHNA methodology, recommendation of secondary data sources, and identification of key informants and focus group segments.

Quantitative Data: Reviewing Existing Secondary Data

Secondary data provide information about social and economic indicators, as well as health behaviors and health outcomes along the cancer continuum, specifically prevention and screening. When possible, this CHNA compared indicators from the 2015 CHNA to most recent data for the NWH service area. Data sources included: the U.S. Census Bureau, American Community Surveys, County Health Rankings, the Massachusetts Behavioral Risk Factor Surveillance System (BRFSS), the Massachusetts Department of Public Health, MetroWest Health Foundation, the Massachusetts Department of Elementary and Secondary Education, and the Federal Bureau of Investigation.

Qualitative Data: Focus Groups and Interviews

Focus Groups

In May 2018, six focus groups were conducted with 44 individuals from across the NWH service area. Focus groups were conducted with representatives of priority populations or sectors, including: faith-based community members, Haitian-creole speaking population, domestic violence frontline staff, school nurses, affordable housing residents, and Council on Aging staff. Focus group participant demographic characteristics can be found in Appendix C. While all NWH service area cities/towns were

represented in focus groups, focus group participants most often resided in Newton or Waltham (34.1% and 36.4%, respectively). The majority of participants were female (86.4%) and 45 years or older (77.3%). Almost half of participants self-identified as Black or African American (45.5%), followed by about a third of participants who self-identified as White (34.1%). Three-fourths of participants had at least some college education (75%).

Focus group discussions explored participants' perceptions of the community, priority health concerns, and suggestions for future programming and services to address these issues. A semi-structured moderator's guide was used across all focus groups to ensure consistency in the topics covered. The moderator's guide was translated to Haitian-Creole for one focus group. Each focus group was facilitated by a trained moderator, and detailed notes were taken during each discussion. On average, focus groups lasted 90 minutes and included 5-10 participants. As an incentive, focus group participants received a $30 stipend to compensate them for their time. (5ee Appendix D for a list of participating organizations).

Key Informant Interviews

In April 2018, HRiA conducted eight interviews with community stakeholders to gauge their perceptions of the community, health concerns, and what programming, services, or initiatives are most needed to address these concerns. Interviews were conducted by phone with eight individuals representing a range of sectors including education, social services, and health care, among others (See Appendix D for a list of participating organizations). A semi-structured interview guide was used across all discussions to ensure consistency in the topics covered. Each interview was facilitated by a trained moderator, and detailed notes were taken during conversations. On average, interviews lasted approximately 30-60 minutes.

Qualitative Analyses

The collected qualitative information was manually coded and then analyzed thematically for main categories and sub-themes. Data analysts identified key themes that emerged across all groups and interviews as well as the unique issues that were noted for specific populations. Frequency and intensity of discussions on a specific topic were key indicators used for extracting main themes. While town differences are noted where appropriate, analyses emphasized findings common across the NWH service area. Selected paraphrased quotes – without personal identifying information – are presented in the narrative of this report to further illustrate points within topic areas.

Information Gaps

As with all assessment efforts, there are some information gaps related to the assessment methods that should be acknowledged. First, for quantitative (secondary) data sources, in several instances data for a given indicator could not be provided at the city/town level due to the small population size in the geographic region. Similarly, there were limited data available stratified by subgroup for the communities in the NWH service area. In many cases data were only available for Community Health Network Area 18 (CHNA 18), county or state level. CHNA 18 is a large geographic area comprised of Needham, Newton, Wellesley, Weston, and also includes Brookline and Dover, towns that are not part of NWH's primary service area. Middlesex County includes Natick, Newton, Waltham, and Wellesley; Norfolk County includes Needham and Wellesley. Additionally, several updated health outcomes for cities/towns in service area were not available because they are either no longer collected and or reported by the data source.

While examining data across multiple time points provides important information about health patterns over time, there were some indicators for which data may not have been available for the same geographic unit (e.g., county vs. community health network area 18; longitudinal data were not available for all towns) across multiple time points. There were also a few indicators that changed slightly since the 2015 CHNA. Accordingly, direct comparisons across time points should be interpreted conservatively or with caution. For example, the indicator of poor mental health for adults shifted from 15+ days of poor mental health in the past month to 14+ days of poor mental health. One indicator changed significantly in recent years, challenging the assessment of time trends. For example, in recent years there has been a shift in eligibility criteria for free/reduced lunch program participation, from assessments of an individual student's eligibility to determination of a school or school district's eligibility for free/reduced lunch for all students. In response, surveillance data have shifted from observing the percent of students needing free/reduced lunch to the percent of students experiencing economic disadvantage, as assessed by participation in state-based socioeconomic, nutritional, and health care services. Similarly, some data regarding patterns for middle school students were focused on different grade levels over time or across assessment communities (e.g., Grades 6-8 vs. Grades 7-8). Also, for students, data were not always available for the same year. Footnotes indicate any differences in the population or time period of focus across assessment communities.

Data based on self-reports should be interpreted with particular caution. In some instances, respondents may over- or underreport behaviors and illnesses based on fear of social stigma or misunderstanding the question being asked. In addition, respondents may be prone to recall bias—that is, they may attempt to answer accurately but remember incorrectly. In some surveys, reporting and recall bias may differ according to a risk factor or health outcome of interest. Despite these limitations, most of the self-report surveys analyzed in this CHNA benefit from large sample sizes and repeated administrations, enabling comparison over time.

Additionally, while the focus groups and interviews conducted for this CHNA provide valuable insights, results are not statistically representative of a larger population due to non-random recruiting techniques and a small sample size. Recruitment for focus groups was conducted by community organizations and participants were those individuals already involved in community programming. Because of this, it is possible that the responses received only provide one perspective of the issues discussed. Lastly, it is important to note that data were collected at one point in time, so findings, while directional and descriptive, should not be interpreted as definitive.

FINDINGS

Community Social and Economic Context

The health of a community is linked with numerous factors, including the resources and services that are available (e.g., access to healthy foods, transportation), and who lives in the community. The following section provides an overview of the population of the Newton-Wellesley Hospital service area. The demographics of a community are connected to the health behaviors and outcomes of that area. Age, race, and ethnicity are important factors that influence an individual's health, and the distribution of these characteristics in a community may shape the number and type of services and resources available.

Demographic Characteristics

Populatian

As shown in Table 1, cities/towns in the NWH service area range widely in size, from 88,317 residents in Newton and 62,699 residents in Waltham, to 28,909 residents in Wellesley and 11,946 residents in Weston in 2012-2016. In interviews and focus groups, population growth was a common theme. As one focus group participant stated, *"they are building anywhere they can."* Quantitative data show that all of the cities/towns in the NWH service area experienced total population growth between 2000 and 2016. During this time period, the towns of Natick (10.0%) and Wellesley (8.6%) experienced a higher percent change in population than the state's overall population increase (6.2%), and that for Middlesex (7.0%) and Norfolk (6.3%) Counties. Compared to the 2015 CHNA, the percent change in the population from 2000 to 2016 was at least double the percent change in population from 2000 to 2012 across cities/towns in the NWH service area. The towns of Needham (0.3% to 4.3%) and Weston (-0.3% to 4.2%) experienced the greatest proportional increase in the percent growth of the population over this period, whereas population growth in Waltham increased from 2.6% from 2000 to 2012 to 5.9% population growth from 2000 to 2016 (data not shown).

Table 1: Total Population by State, County, and City/Town, 2000, 2012-2016

Geography	2000	2016	% Change
Massachusetts	6,349,097	6,742,143	6.2%
Middlesex County	1,465,396	1,567,610	7.0%
Norfolk County	650,308	691,218	6.3%
Natick	32,170	35,385	10.0%
Needham	28,911	30,167	4.3%
Newton	83,829	88,317	5.4%
Waltham	59,226	62,699	5.9%
Wellesley	26,613	28,909	8.6%
Weston	11,469	11,946	4.2%

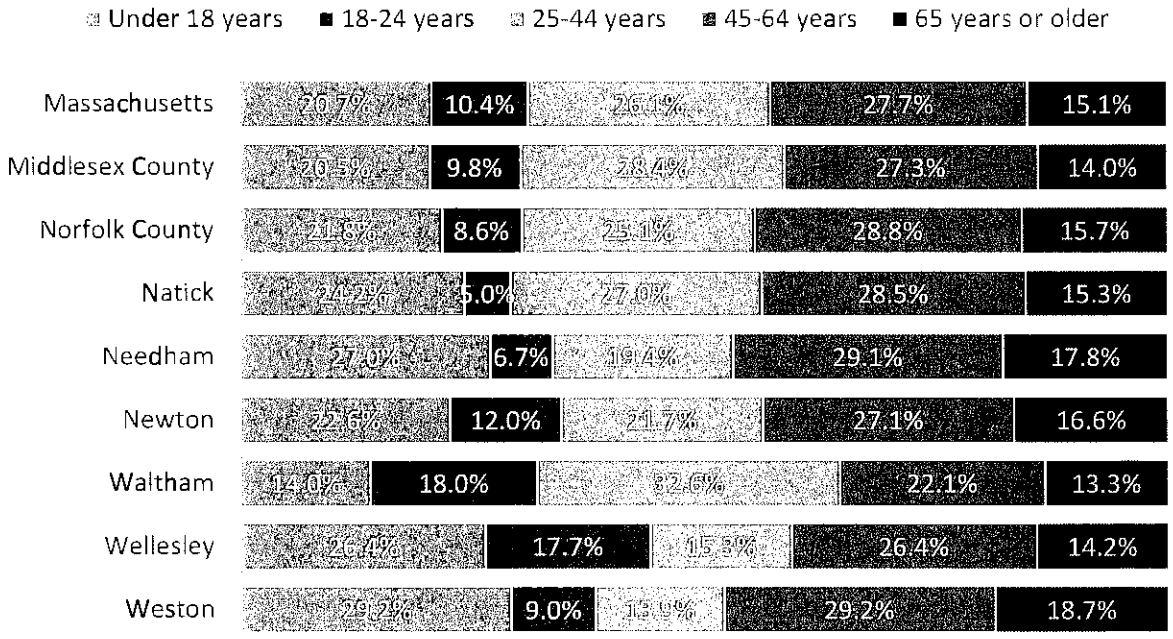
DATA SOURCE: U.S. Census Bureau, 2000 Census; and U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016.

Age Distribution

Similar to the 2015 CHNA, in 2012-2016, with the exception of Waltham (14.0%), all of the towns in the NWH service area had a higher percent of children under 18 years of age compared to the state (20.7%) (Figure 2). The proportion of residents 18-24 years of age in the towns of Waltham (18.0%) and Wellesley (17.7%) was nearly double that for Massachusetts (10.4%). The towns of Weston (18.7%), Needham (17.8%), Newton (16.6%), and Natick (15.3%) had a larger proportion of residents age 65 or over relative to the state (15.1%). These patterns generally reflect the age distribution across cities/towns in the NWH service area reported in the 2015 CHNA (data not shown).

In discussing the age of residents of the assessment communities, focus group participants and interviewees described the population served by NWH as a mix, with aging adults, young families, and middle age persons. Participants reported that Newton had a higher portion of elderly residents, while Waltham was described as younger, in part due to newcomers from other countries.

Figure 2: Age Distribution by State, County, and City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

Racial and Ethnic Diversity

> *"Waltham is truly a melting pot. It's made up of a vast variety of people from different cultures and different income and a lot of different issues."* —Interview Participant

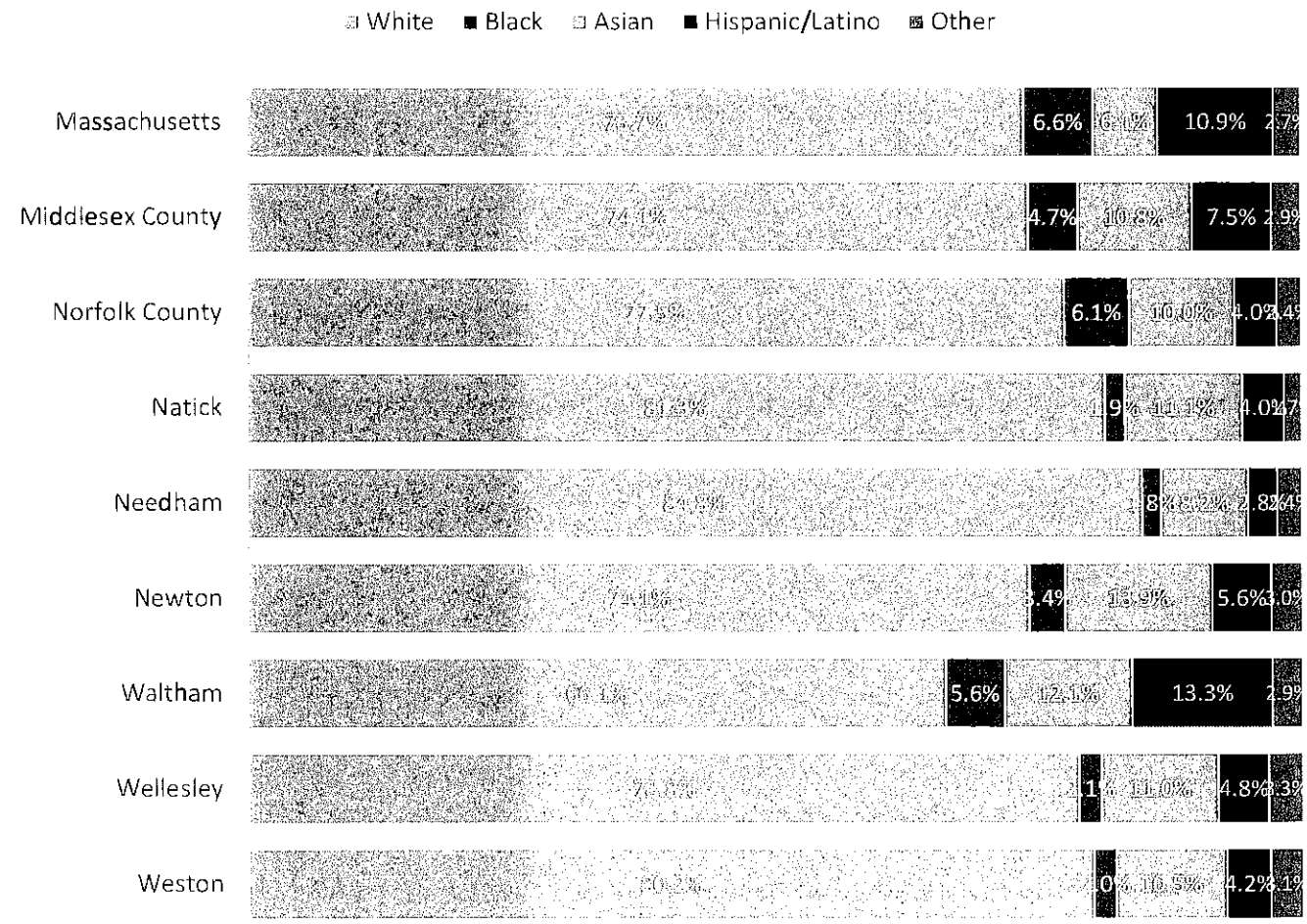
> *"This is a big, multicultural city."* —Focus Group Participant

The diversity of the area was a characteristic named in almost every interview and focus group. Residents described a richness of ethnic markets, restaurants, and cultural events in their communities. Communities differed in the cultural backgrounds of their residents. Weston and Wellesley were described as having a significant Asian population. Waltham was considered the most diverse

community in the NWH service area with a predominantly Spanish-speaking population but also an influx of new groups including a growing number of residents from Uganda. As one interviewee stated about Waltham, *"the community prides itself of its immigrant history. It is already seasoned to newcomers, new languages, and building onto existing culture."*

Since the 2015 CHNA, the racial/ethnic composition of NWH's service area has remained similar. As shown in Figure 3, in 2012-2016 Waltham had the highest percent of Black (5.6%) and Hispanic/Latino (13.3%) residents in the NWH service area, relatively similar to the proportion of Black (6.6%) and Hispanic/Latino (10.9%) residents for Massachusetts overall. The towns of Needham (84.8%), Natick (81.3%), Weston (80.2%), and Wellesley (78.8%) had a higher proportion of White residents than the average for the state (73.7%) in 2012-2016. Newton had the highest proportion of Asian (13.9%) residents in 2012-2016, similar to the 2015 CHNA. In 2012-2016, Wellesley had the highest percent of residents who identified as an "Other" racial/ethnic group (3.3%), whereas in the 2015 CHNA Waltham had the highest proportion of residents (5.4%) who identified as an "Other" racial/ethnic group (data not shown).

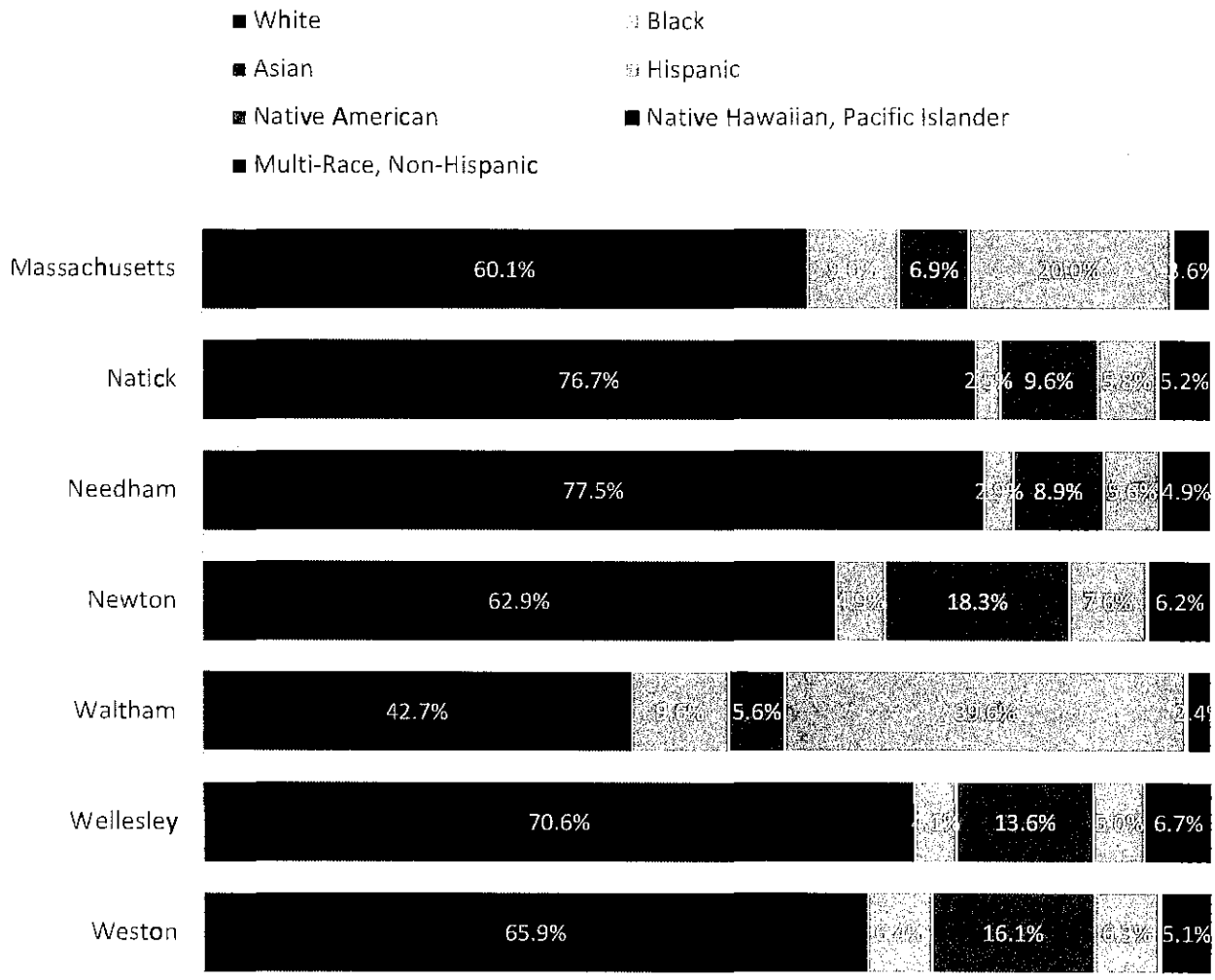
Figure 3: Racial/Ethnic Composition by State, County, and City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

In 2017-2018, 57.4% of Waltham School District students represented racial/ethnic minority groups, reflecting greater racial/ethnic diversity than public school districts across Massachusetts (39.8%) (Figure 4). Waltham School District had double the proportion of Hispanic (39.6%) students enrolled than the state (20.0%), and a similar proportion of Black students (9.6%) as Massachusetts (9.0%). With the exception of Waltham (5.6%), the cities/towns in the NWH service area had a higher proportion of Asian students than the state (6.9%), with Newton (18.3%) and Weston (16.1%) having the highest percent of Asian students. Compared to the state overall (3.6%), with the exception of Waltham, cities/towns across the NWH service area had a higher proportion of students who identified as multi-racial.

Figure 4: Racial Composition of Public School District Student Enrollment, by State and City/Town, 2017-2018

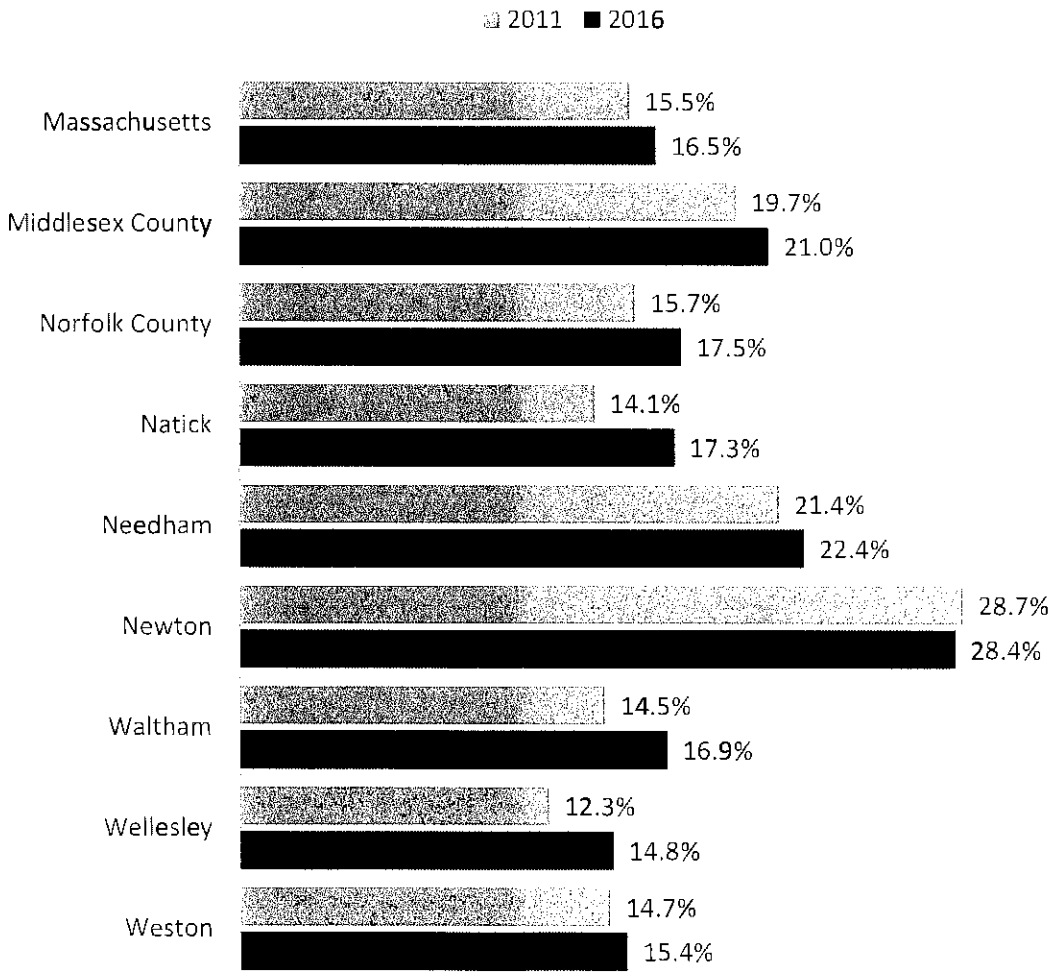


DATA SOURCE: School and District Profiles, Massachusetts Department of Elementary and Secondary Education, 2017-2018

As illustrated in Figure 5, from 2007-2011 to 2012-2016, with the exception of Newton, all towns experienced an increase in the immigrant population. In 2012-2016, the towns of Newton (28.4%), Needham (22.4%), Natick (17.3%), and Waltham (16.9%) had a higher percent of residents born outside of the US than the state (16.5%), while in 2007-2011 only Newton (28.7%) and Needham (21.4%) had a higher percent of immigrant residents than the state (15.5%).

While participants praised the vitality of their communities and saw diversity as a substantial asset, they also reported challenges in meeting the needs of all its residents, especially as newer groups come to the area. For example, they noted that schools have a large number of English language learners and their needs are sometimes difficult to adequately meet. While not mentioned as a prominent issue for the community, a couple of participants observed that racial tensions also exist.

Figure 5: Percent of the Population 5 Years and Over Born Outside of the US by State, County, and City/Town, 2007-2011 and 2012-2016

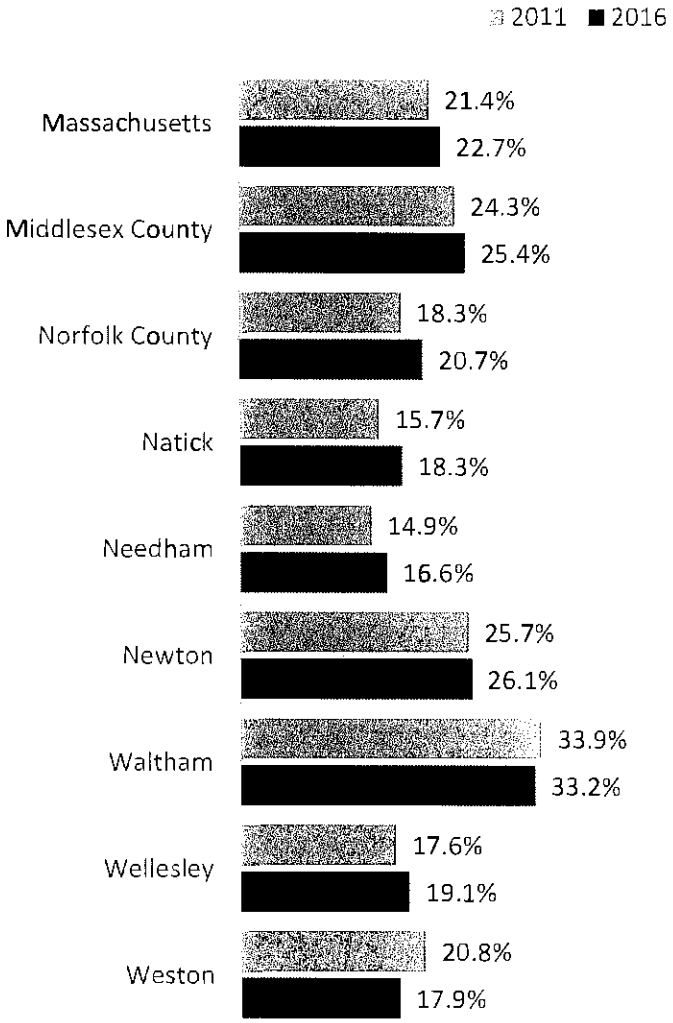


DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2007-2011 and 2012-2016

Language

In 2012-2016, more than a quarter of residents 5 years of age and older in Waltham (33.2%) and Newton (26.1%) spoke a language other than English at home, a percent that exceeded that for the state (22.7%) (Figure 6). From 2007-2011 to 2012-2016, with the exception of Waltham and Weston, cities/towns across the NWH service area experienced a slight increase in the percent of residents who spoke a language other than English at home, similar to patterns across Massachusetts and for Middlesex and Norfolk Counties.

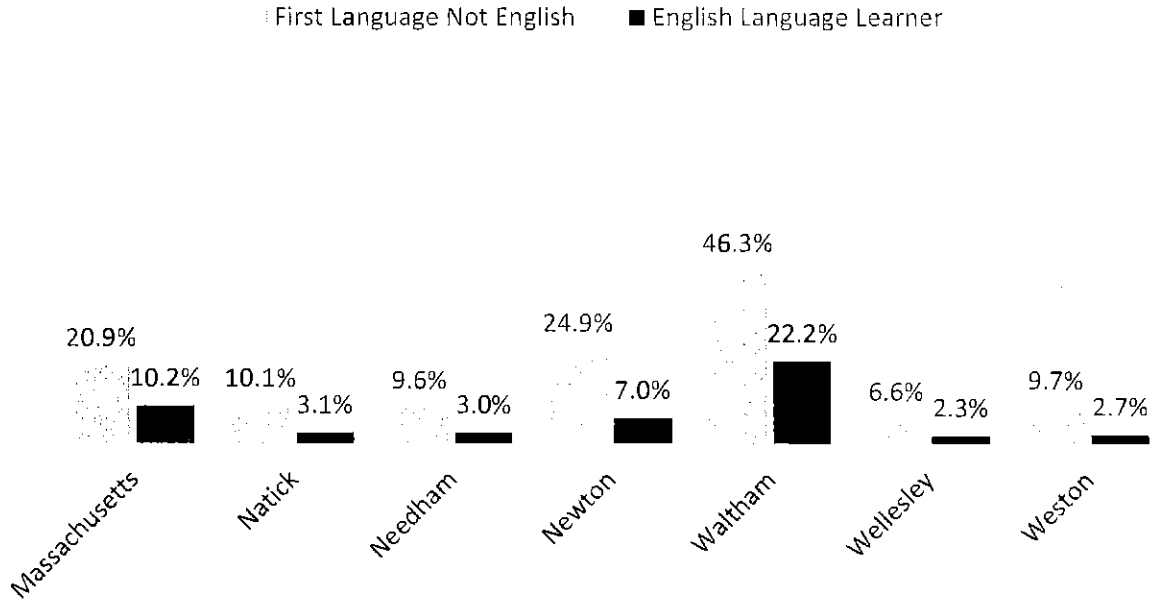
Figure 6: Percent of Population Over 5 Years Who Speak Language Other than English by State, County, City/Town, 2007-2011 and 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2007-2011 and 2012-2016

In 2017-2018, Waltham (46.3% and 22.2%, respectively) had more than double the percent of public school district students whose first language was not English or who were English language learners compared to the state (20.9% and 10.2%, respectively) (Figure 7). Additionally, English was not the first language for one-quarter (24.9%) of Newton public school district students.

Figure 7: Percent of Public School District Students whose First Language is Not English and who are English Language Learners by State and City/Town, 2017-2018



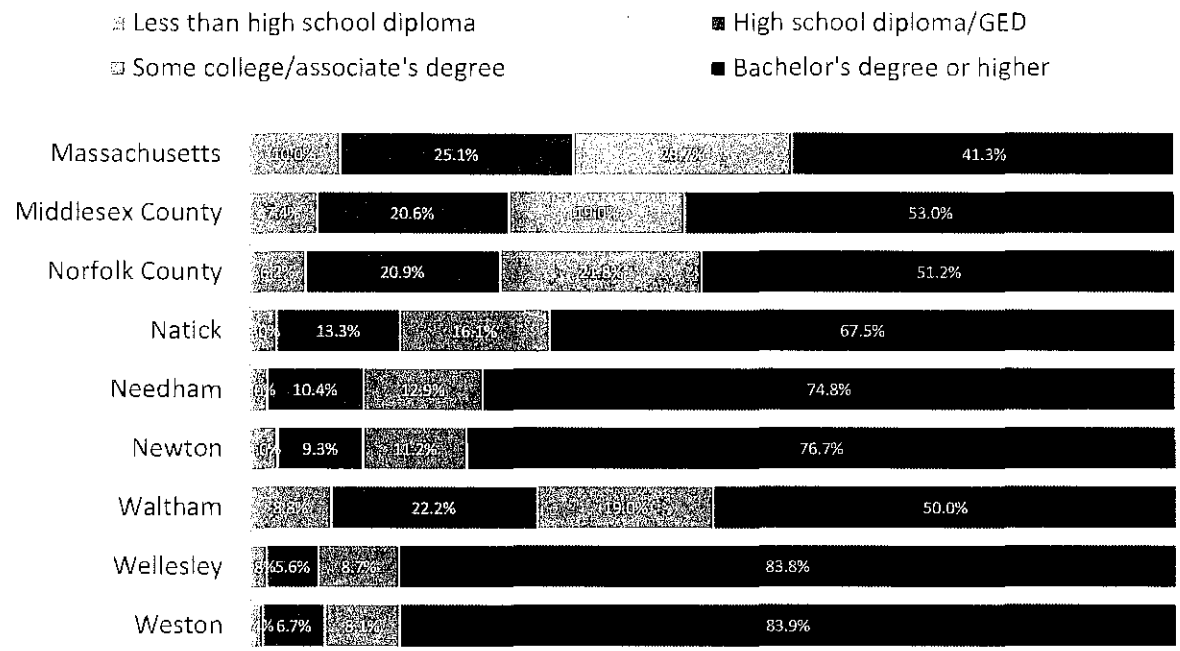
DATA SOURCE: School and District Profiles, Massachusetts Department of Elementary and Secondary Education, 2017-2018

Education

> *"[We have a] great education system here."* —Focus Group Participant
>
> *"We have a large influx of young adolescents from Latin America. They don't speak any English and are not staying within the school system. We are grappling with this."* —Interview Participant

The high quality of the area's school system was mentioned in most focus groups and interviews and was described as one of the primary reasons for living in the assessment community. Similar to the 2015 CHNA, quantitative data indicate the six cities/towns in the NWH service area are very well educated (Figure 8). Compared to the state, a higher proportion of adults aged 25 and older have earned a Bachelor's Degree or higher in all six assessment communities. Weston (83.9%) and Wellesley (83.8%) had the highest percent of residents who have earned a Bachelor's degree or higher. Waltham (8.8%) had the highest percent of residents who had less than a high school diploma. Of note, the proportion of Waltham adults 25 years of age and older with less than a high school education decreased from 10.7% in 2007-2011 to 8.8% in 2012-2016.

Figure 8: Educational Attainment of Adults Aged 25 Years and Older, by State, County, and City/Town, 2012-2016

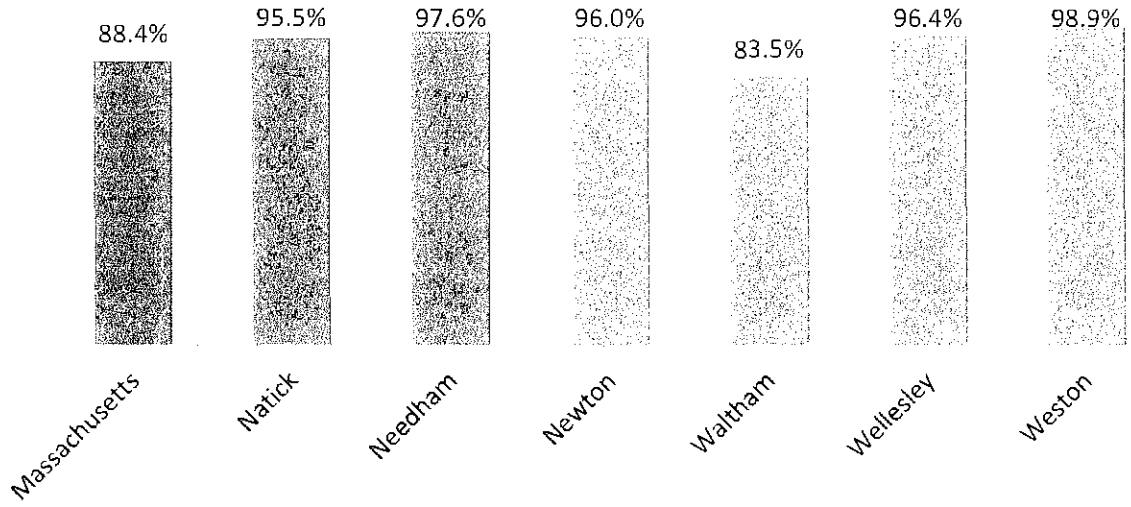


DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

In 2017, Waltham (83.5%) had the lowest percent of students who graduated from high school within four years, below the state average (88.4%) (Figure 9). Among the other five towns in the NWH service area, at least 95% of high school students graduated within four years, higher than the percent for the state (88.4%).

Meeting the needs of a diverse student body was a challenge mentioned by many participants. They noted that English language learners, who often face pressure to support their families economically, are more likely to drop out of school. Language barriers were described as creating additional challenges to engaging students' families. Finally, according to participants, issues related to trauma and the current political climate for undocumented residents placed additional burdens on schools to provide enough support. Additionally, one person stated that a concern in the community is teen mothers tending not to come back to school after giving birth.

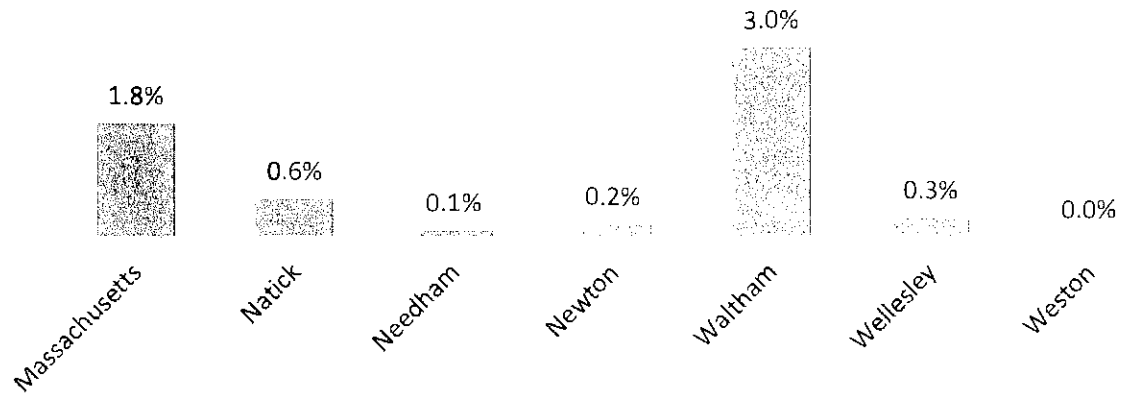
Figure 9: Percent of Public School District High School Students Who Graduate in Four Years, by State and City/Town, 2017



DATA SOURCE: School and District Profiles, Massachusetts Department of Elementary and Secondary Education, 2017

As shown in Figure 10, the proportion of Waltham public school district students who dropped out of high school (3.0%) was nearly double that of the state (1.8%) in 2017.

Figure 10: Percent of Public School District High School Students who Dropped Out, by State and City/Town, 2016-2017



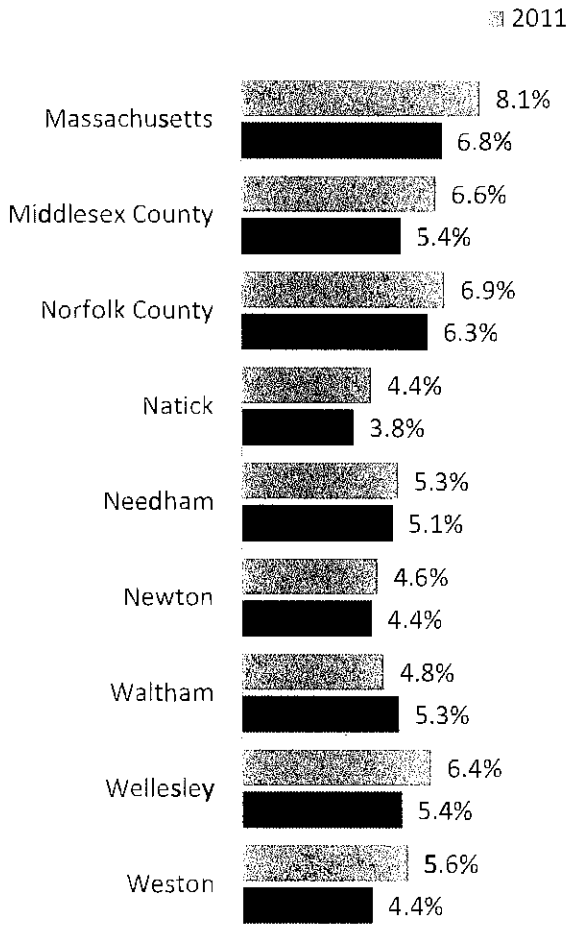
DATA SOURCE: School and District Profiles, Massachusetts Department of Elementary and Secondary Education, 2017

Employment

As illustrated in Figure 11, from 2007-2011 to 2012-2016 trends suggest an increase in the percent of residents unemployed in Waltham (4.8% to 5.3%), while there was little change in the percent unemployed for Newton (4.6% to 4.4%) and Needham (5.3% to 5.1%). During this same period, the percent of residents who were unemployed decreased slightly for the state and for three of the six assessment communities: Natick, Wellesley, and Weston. In the 2015 CHNA, the towns of Wellesley, Weston, and Needham had the highest proportion of unemployed residents, and in 2012-2016, Wellesley, Waltham, and Needham had the highest unemployment rate across the NWH service area.

Few participants commented on employment in the area. The few who did discuss employment reported that jobs were available, including for lower income residents and students in the summer. However, the expense of childcare was identified as posing a challenge for some residents. As one focus group participant stated, *"sometimes you get a job but childcare is very expensive. It costs almost the same as salary."*

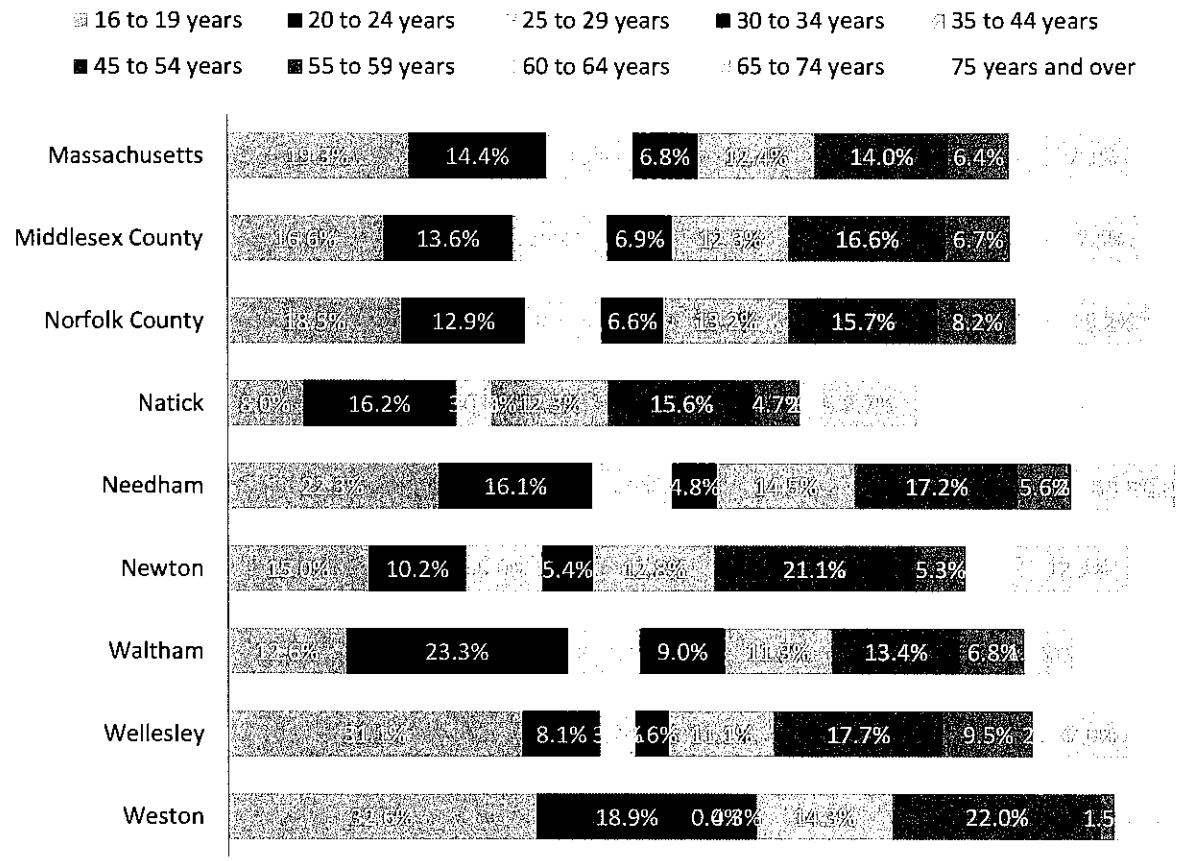
Figure 11: Unemployment by State, County, and City/Town, 2007-2011 and 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2007-2011 and 2012-2016

Shown in Figure 12 is the age distribution of unemployed residents across each of the NWH service area communities. In Weston (32.6%), Wellesley (31.1%) and Needham (22.3%), a higher share of unemployed residents were 16-19 years of age. In 2012-2016, the largest unemployed age group among adults in cities and towns was generally residents 45-54 years of age, except for Natick (27.3% were 75+) and Waltham (23.3% were 20-24 years of age).

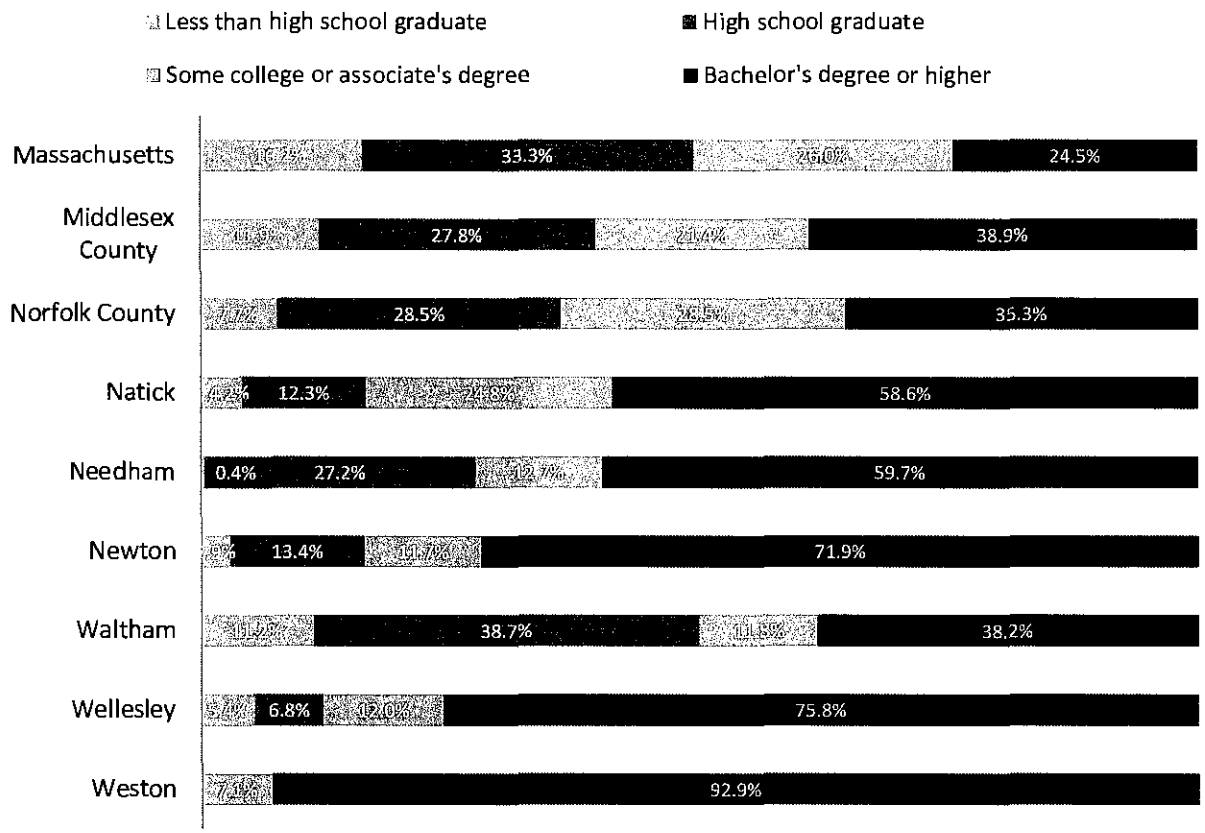
Figure 12: Age Distribution of Unemployed Adults, by State, County, and City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016
NOTE: Data are for persons 16 years of age or older.

The educational attainment of unemployed residents across each of the NWH service area communities in 2012-2016 is presented in Figure 13. In Waltham, 38.7% of unemployed residents were high school graduates, a prevalence that exceeded the other NWH assessment communities and Massachusetts overall (33.3%). With the exception of Waltham, across the majority of NWH service area towns, adults with a bachelor's degree or higher were more likely to be unemployed.

Figure 13: Educational Attainment of Unemployed Residents, by State, County, City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016
NOTE: Data are for persons 25-64 years of age.

Income and Poverty

> *"We [Waltham] are economically diverse—there are more young professionals moving from Boston city-proper buying luxury condos while 30% of our student body are considered economically disadvantaged."* —Interview Participant

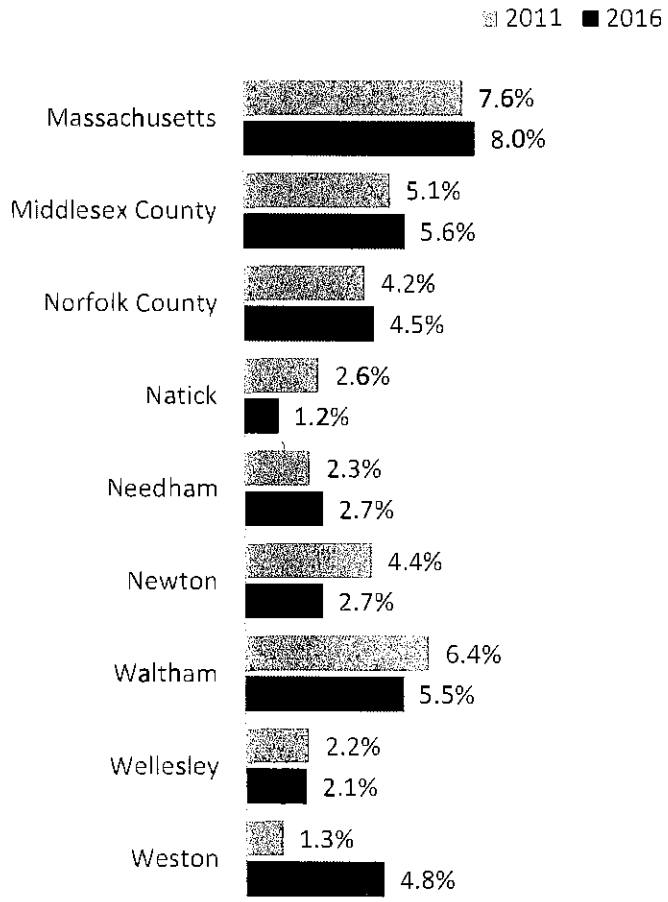
> *"There are persistent inequities in our community and schools."* —Interview Participant

Focus group participants and interviewees reported that the economic status of residents in the NWH service area varies by community. Residents living in Newton, Needham, and Wellesley were described as largely affluent, while Natick was described as more middle class to upper middle class. However, each of these communities was noted as having residents who struggle. Waltham was considered a

more blue-collar community, with many lower income residents and a large proportion of students receiving free or reduced lunch. Residents also highlighted economic diversity across Waltham, and an increase in young professionals. The high cost of living, including high taxes and housing costs, was reported to be a concern in the area, affecting the ability of families to meet basic needs, such as housing and healthcare.

In 2012-2016, Waltham (5.5%) and Weston (4.8%) had the highest percent of families living below the poverty level, though this prevalence was below that for the state (8.0%) (Figure 14). In 2007-2011, Waltham (6.4%) and Newton (4.4%) had the highest percent of families living in poverty among the six assessment communities. Of note, during 2007-2011 and 2012-2016 all six cities/town had a lower percent of families whose income in the past year was below the poverty level compared to the state.

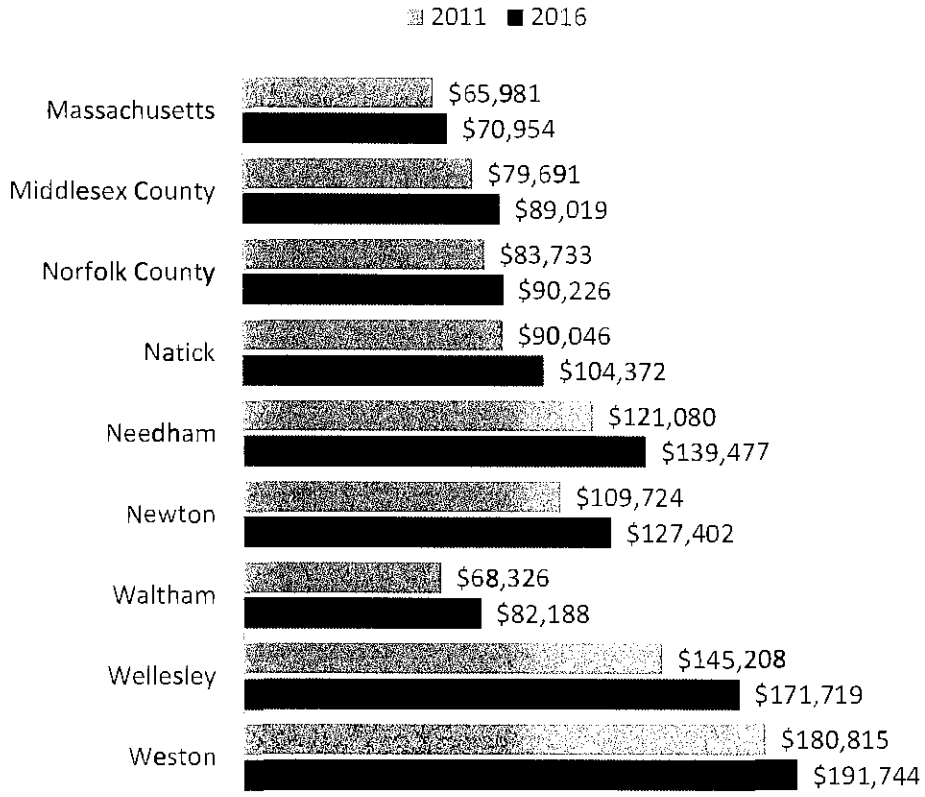
Figure 14: Percent of Families whose Income in the Past 12 Months is Below Poverty Level by State, County, and City/Town, 2007-2011 and 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2007-2011 and 2012-2016

As shown in Figure 15, across the NWH service area towns, similar to the 2015 CHNA the median household income was lowest in Waltham in 2007-2011 ($68,326) and 2012-2016 ($82,188). The median household income increased across all six assessment communities from 2007-2011 to 2012-2016. The towns of Wellesley ($26,511), Needham ($18,397), and Newton ($17,678) experienced the greatest increase in median household income over this period. Of note, the increase in median household income for each NWH service area town was more than double the household income increase seen across Massachusetts and also exceeded patterns Middlesex and Norfolk Counties during this period.

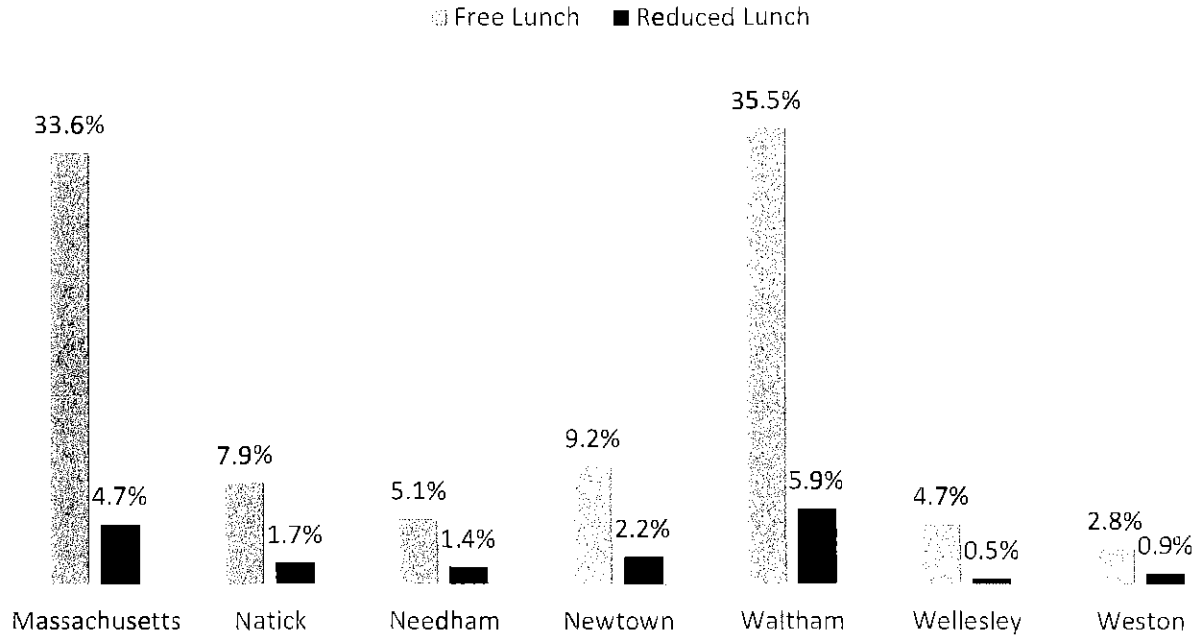
Figure 15: Median Household Income by State, County, and City/Town 2007-2011 and 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2007-2011 and 2012-2016

As shown in Figure 16, across the NWH service area, participation in free and reduced lunch programs for public school district students was highest in Waltham (35.5% and 5.9%, respectively), a prevalence that exceeded Massachusetts overall (33.6% and 4.7%, respectively).

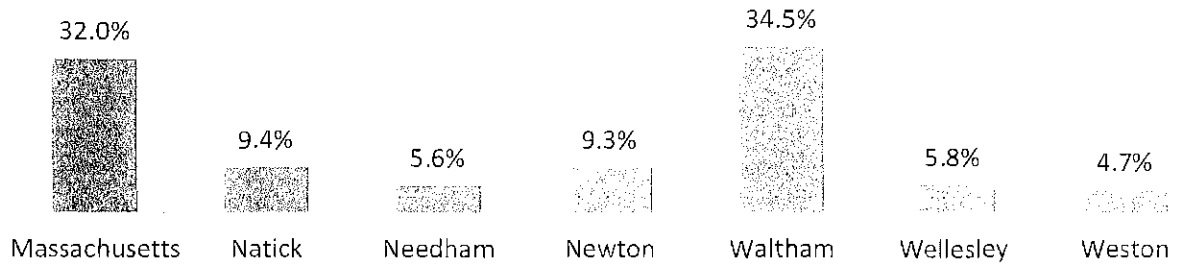
Figure 16: Percent of Public School District Students Who Participated in Free and Reduced Lunch Programs, by State and City/Town, 2013-2014



DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, 2013-2014 (Selected populations)
NOTE: Since 2014, students in school districts and schools with a high concentration of low-income students are entitled to receive free meals under the school nutrition program. This shift in free and reduced lunch programs from focusing on individual students to schools and school districts eliminated the free and reduced lunch data for many school districts. In turn, the "economically disadvantaged" metric was developed so that consistent metrics could be used throughout the state.

Economic disadvantage among public school students is assessed by whether students participate in at least one of the following programs: Supplemental Nutrition Assistance Program (SNAP), Transitional Assistance for Families with Dependent Children (TAFDC); Department of Children and Families' (DCF) foster care program; and/or MassHealth (Medicaid). In 2017-2018, 34.5% of public school district students in Waltham met the criteria for being economically disadvantaged, a percent that slightly exceeded that for the state (32.0%) (Figure 17). Among the other assessment communities, the percent of the public school district students who were economically disadvantaged ranged from 4.7% in Weston to 9.4% in Natick.

Figure 17: Percent of Public School District Students who are Economically Disadvantaged, by State and City/Town, 2017-2018



DATA SOURCE: School and District Profiles, Massachusetts Department of Elementary and Secondary Education, 2017-2018

Housing

> *"With how reol estate has sky rocketed, it's squeezing middle to low income people."* —Interview Participant
>
> *"Landlords are raising the rent – they get their money, but they don't know how many people live in the apartment – which is a safety concern."* —Interview Participant

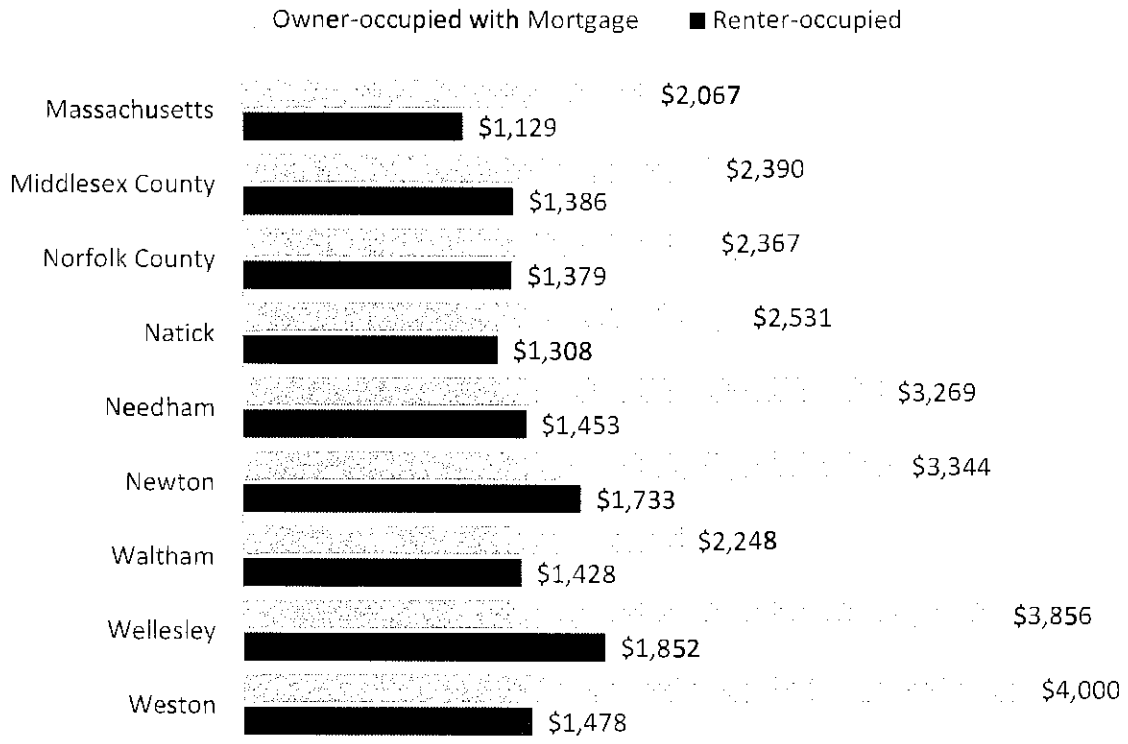
As in 2015 CHNA, the high cost of housing and changing housing dynamics in the community were reported to be challenges. Housing was a topic discussed in most interviews and focus groups. Residents spoke about rising rent, attributed in part to demand for housing from wealthier people who are moving to the area. According to participants, the residents of Waltham in particular continue to experience economic pressure as more expensive housing is built and people from more expensive surrounding towns are moving in, attracted by high quality schools and lower housing costs. Participants expressed concern about some lower income residents, including seniors, being able to remain in the community.

Lack of affordable housing in the area was a theme across focus groups and interviews. As one interviewee stated, *"a lot of building is going on in our communities, but they are very high-rent type places."* While more affordable housing options, including public housing, exist, participants shared the wait lists for these can be long. Additionally, according to several participants, affordable housing options are often not located close to public transportation, creating further challenges for lower income residents.

The housing challenges of seniors was a substantial topic of conversation, as it was in the 2015 CHNA. Participants from more affluent areas of the NWH service area expressed concern that they would not be able to remain in their communities if they downsized. As one focus group participant stated, *"seniors cannot afford market value."* Participants reported long wait lists for an apartment or home in an affordable senior living development. Recent policy changes, specifically restrictions on accessory apartments, have further constrained housing options for seniors, according to one participant.

In 2012-2016, of the six NWH service area towns, median monthly housing costs for owner-occupied units were lowest in Waltham ($2,248), though these housing costs exceeded the average across Massachusetts ($2,067) (Figure 18). The towns of Natick ($1,308) and Waltham ($1,428) had the lowest renter-occupied housing costs across the assessment communities, yet these costs were higher than the state average ($1,129). Monthly housing costs for renter-occupied units were highest in Wellesley ($1,852) and Newton ($1,733) and lowest in Natick ($1,308). Monthly mortgage costs were highest in Wellesley ($3,856) and Weston ($4,000). Similar to the 2015 CHNA, in 2012-2016 the median monthly housing costs in each of the six assessment communities exceeded those for the state for both owner-occupied and renter-occupied units.

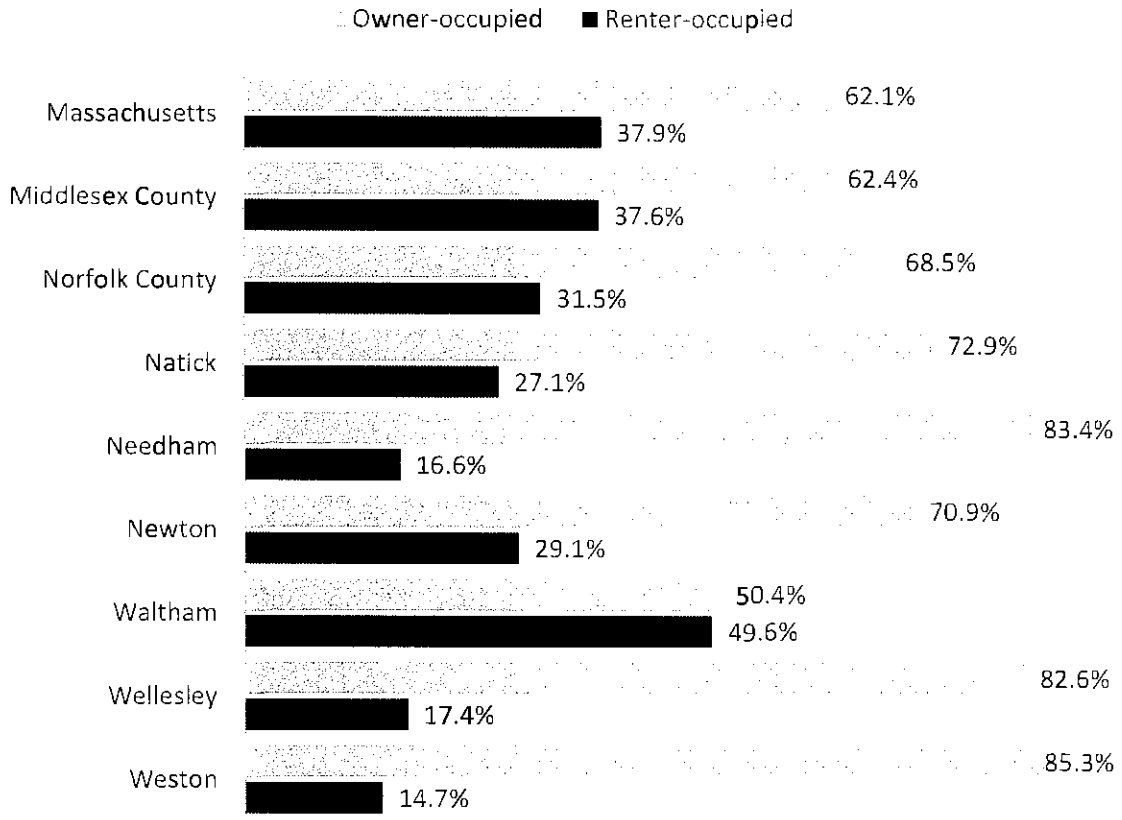
Figure 18: Median Monthly Housing Costs by Tenure and State, County, and City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

Similar to patterns in the 2015 CHNA, with the exception of Waltham (50.4%), towns across the NWH service area had a higher percent of owner-occupied housing units than the state average (62.1%) in 2012-2016 (Figure 19). Half (49.6%) of Waltham housing units were renter-occupied, compared to approximately one-third of Massachusetts units (37.9%). The towns of Weston (85.3%), Needham (83.4%), and Wellesley (82.6%) had the highest percent of owner-occupied housing units, mirroring patterns in the 2015 CHNA.

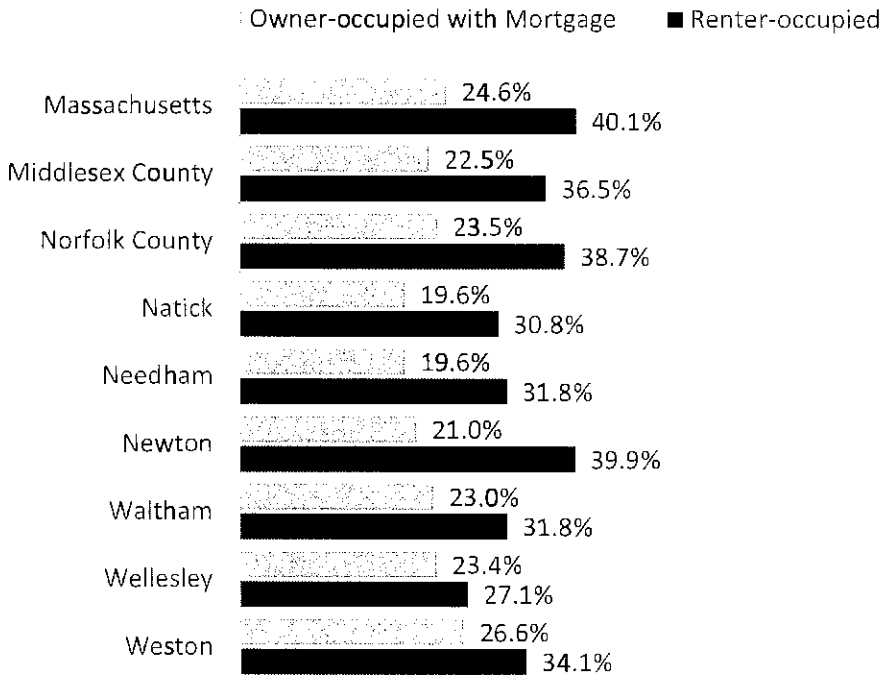
Figure 19: Percent of Owner-Occupied and Renter-Occupied Housing Units by State, County, and City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

As illustrated in Figure 20, in Waltham 23.0% of residents in owner-occupied units and 31.8% of residents in renter-occupied units spent more than 35% of their household income on housing costs, similar to most towns across the NWH service area in 2012-2016. Following state patterns, across each of the six assessment communities housing costs comprised 35% or more of household income for a higher percent of renter-occupied housing units than owner-occupied housing units – a pattern that was also seen in the 2015 CHNA. Housing cost burden was highest for renter-occupied units in Newton (39.9%) and owner-occupied units in Weston (26.6%). Of note, similar to the 2015 CHNA, the percent of renter-occupied units with housing costs of 35% or more across all six assessment communities was lower than that for the state (40.1%). With the exception of Weston (26.6%), among owner-occupied units, the proportion of residents with housing costs of 35% or more was lower than the state average for all towns in the NWH service area towns.

Figure 20: Percent of Housing Units Where Residents Whose Housing Costs are 35% or More of Household Income by State, County and City/Town, 2012-2016

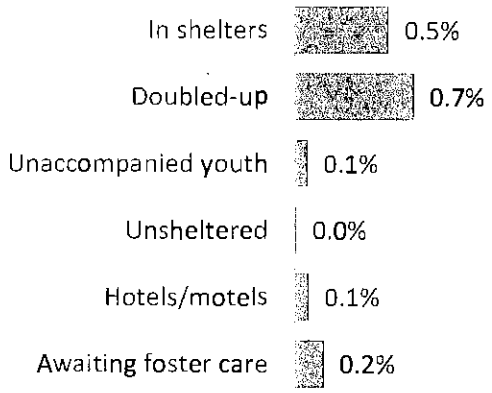


DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016
NOTE: Owner costs for owners with a mortgage

Participants described overcrowding and homelessness as two consequences of high housing costs and limited options. Interviewees reported seeing multiple families living in housing meant for one, creating safety issues, which was further exacerbated by lack of enforcement by landlords. As one interviewee explained, *"when you rent an apartment to a couple – you have to keep tracking to make sure there aren't seven or eight people living in the property."* According to participants, the high cost of housing has contributed to homelessness, especially among undocumented individuals. Health and social service providers shared the challenges they face in delivering services to a growing population of homeless residents who not only often suffer from physical ailments, but also mental health and substance use issues. Lack of tracking of the homeless population makes it hard to coordinate services to them, according to one participant.

In 2016-2017, there were 21,112 homeless students across Massachusetts public schools. As illustrated in Figure 21, a higher proportion of youth (<18 years of age) who were experiencing homelessness reported "doubling up" (e.g., sharing a room) (0.7%) or shelters (0.5%) as their primary nighttime residence in 2016-2017.

Figure 21: Total Number of Homeless Youth by Primary Nighttime Residence in Massachusetts, 2016-2017



DATA SOURCE: Massachusetts Department of Elementary and Secondary Education, Homeless Student Program, School District Data, 2016-2017
NOTE: Denominator of Massachusetts statewide population under age 18 in 2016 (Source: US Department of Commerce, Bureau of the Census, S year estimate American Community Survey, 2012-2016)

Transportation

> *"[Transportation is] pretty accessible if you're going into Boston. It's hard to go from town to town."* —Focus Group Participant

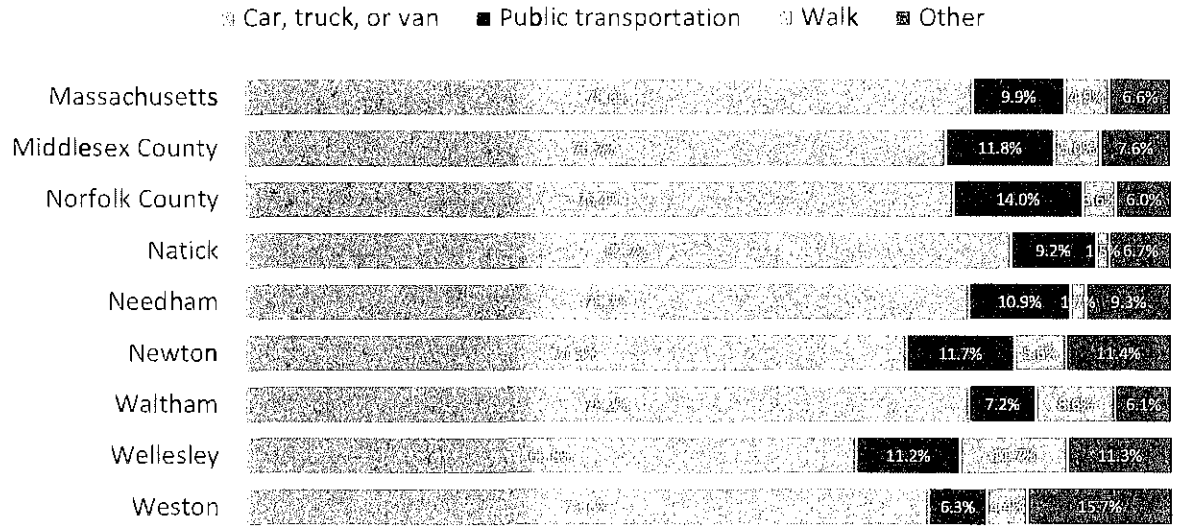
Perceptions about transportation in the service area varied. Transportation to Boston was generally reported to be easy and many residents from the NWH service area travel into the city. However, as stated previously, some public housing developments were described as far from public transportation, creating challenges for lower income residents.

More locally, however, transportation options were reported to be less available, making travel from town to town difficult for those without private vehicles. Weston, for example, was considered to have no access to public transportation while communities such as Waltham do. Although, participants shared, even where public transportation exists, there are several barriers to using it. For example, as participants of one focus group reported, bus stops in Waltham are not located near the high school so families cannot take the bus to school-based events. Long wait times for buses and short operating hours (ending in early evening) were noted as additional challenges. As one focus group participant remarked, *"some people rely on the bus, it doesn't always run on time. I do have a license, but I don't have a car. I know what it's like to wait on a bus."* Cost, language barriers, and lack of knowledge about transportation services were also identified as making transportation difficult for some residents to access.

Seniors and those who work with seniors reported that several additional transportation options are available to elderly residents. The RIDE program, for seniors and those with disabilities who cannot independently use public transportation was mentioned, although was noted to be difficult to use for transfers.[1] Additionally, participants shared that rides for both medical and nonmedical purposes are provided through local councils on aging and senior centers. While senior centers provide vans, growing demand was described as putting a strain on these services and participants generally saw a need for more transportation options. For seniors, another identified transportation challenge was that some services provide curb-to-curb pick up and seniors, especially those who are frailer, require door-to-door service. According to participants, while services such as Uber and Lyft were noted as expanding transportation options for residents without a private vehicle, these options can be expensive and require the ability to use the service apps, which can be a constraint for some.

In 2012-2016, similar to state patterns (78.6%), nearly eight in ten (78.2%) Waltham residents drove to work (Figure 22). In contrast, fewer Waltham residents took public transportation (7.2%) and more walked (8.6%) to work compared to patterns across Massachusetts (9.9% and 4.9%, respectively). Reflecting patterns across Massachusetts, the majority of workers in each assessment community drove to work in 2012-2016, a trend that was similar to the 2015 CHNA. Newton (11.7%), Wellesley (11.2%), and Needham (10.9%) had a higher percent of residents who commuted to work via public transportation as compared to the state (9.9%). Across the six assessment communities, Weston (6.3%) had the lowest percent of public transportation commuting. A higher percent of residents walked to work in Wellesley (11.7%) than the other towns in the assessment area and the state overall (4.9%).

Figure 22: Mode of Transportation to Work for Workers Aged 16+ Years by State, County, and City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016
NOTE: Car, truck, or van includes both driving alone and carpooling; public transportation does not include taxi; other includes other means and working from home

[1] https://www.mbta.com/accessibility/the-ride

Crime and Safety

> *"We're doing pretty good on violence. We're not overrun with crime. With any city, we're a fairly safe city."* —Interview Participant

Overall, participants perceived their communities to be largely safe from crime. As one focus group participant stated, *"Waltham is a quiet place and safe. We see police presence and that makes us feel safe."* However, participants expressed concerns about personal safety in some communities. Several participants described the prevalence of concerns about immigration and fear of police in some communities. Participants from social service agencies reported a rise in domestic violence, yet noted a reluctance of victims to report incidents due to fear of involving the police. Bullying and other forms of violence were mentioned as an issue in the LGBTQ community.

In 2012 and 2016, the violent crime rate was highest in Waltham (236.5 and 155.6 crimes per 100,000 population, respectively) and Natick (181.3 and 157.7 crimes per 100,000 population, respectively) (Figure 23). During this same period, the violent crime rate was lowest in Needham (6.8 crimes and 19.5 crimes per 100,000 population, respectively). The violent crime rate across all six assessment communities was lower than that for Massachusetts overall in both 2012 and 2016, similar to the 2015 CHNA. Mirroring state patterns, from 2012 to 2016 the violent crime rate declined in Natick, Newton, and Waltham, while the violent crime rate increased in Needham, Wellesley, and Weston. Of note, there was a ten-fold increase in the violent crime rate for Weston from 2012 (8.7 crimes per 100,000 population) to 2016 (82.3 crimes per 100,000 population).

Figure 23: Violent Crime Rate per 100,000 Population, by State, County, and City/Town, 2012 and 2016

DATA SOURCE: Federal Bureau of Investigation, Offenses Known to Law Enforcement, 2012 and 2016
NOTE: violent crime includes murder and non-negligent manslaughter, rape, robbery, and aggravated assault;

As shown in Figure 24, among the NWH service area towns, the property crime rate was highest in Natick and Waltham in both 2012 (2,353.9 and 1,375.5 crimes per 100,000 population, respectively) and 2016 (1,345.9 and 1,081.5 crimes per 100,000 population, respectively). In 2016, the property crime rate was lower than the state average (1,561.1 crimes per 100,000 population) for all six assessment communities, whereas in 2012 the property crime rate in Natick (2,353.9 crimes per 100,000 population) exceeded the rate for Massachusetts (2,153.0 crimes per 100,000 population. From 2012 to 2016, following state patterns, the property crime rate declined across all six assessment communities. Notably, from 2012 to 2016, the property crime rate declined by 42.8% in Natick and by 38.8% in Needham.

Figure 24: Property Crime Rate per 100,000 Population, by State, County, and City/Town, 2012 and 2016

DATA SOURCE: Federal Bureau of Investigation, Offenses Known to Law Enforcement, 2012 and 2016
NOTE: property crime includes burglary, larceny-theft, and motor vehicle theft

Community Resources and Assets

Participants were also asked about strengths and assets of their communities and several themes emerged, which were like those reported in 2015 CHNA, including community amenities, collaboration, generosity, and local infrastructure.

Community Amenities

Overall, people reported that they liked their communities and described them as wonderful places to live and raise their families. As one focus group participant stated, *"[Newton is] a nice city to raise family; I've been here for the last 40 years."* Some participants, such as one interviewee from Waltham, reported that they enjoyed the closeness of the community: *"we are a city with small tawn feel."* Participants spoke highly of green spaces and recreational opportunities available to them, as well as access to libraries, faith organizations, higher education, shopping, and the availability of cultural events. Participants also spoke about the important role played by senior centers and local councils on aging in providing programming and reducing the isolation that often accompanies aging.

Additionally, participants appreciated the variety and extensiveness of services in their communities, including healthcare, public health, and programming for children and youth. They also mentioned services that work to address the needs of lower income residents including community health centers, food programs, and shelters. Participants praised the range and commitment of social service organizations; as one interviewee stated, *"Waltham has a great wealth of grass raats, non-for-profit organizations that are all working with bare bones to try and do outreach, so supportive."*

Collaboration

Collaboration across different organizations was also reported to be an asset in the NWH service area. Participants shared examples of partnerships in the community including those between local police and schools and youth services organizations, work between public health departments and those working in senior services around interventions related to hoarding and evictions of seniors, and the initiative being led by the Boston Food Bank and Waltham Public Schools to develop a mobile food pantry. The Healthy Waltham collaborative initiative and Healthy Aging Initiative work in several communities were cited as examples of successful, multi-agency efforts.

Generosity

Generosity of residents was described as another important community asset. Participants shared that the residents are active in their communities and generous with their time and financial resources. They described communities where people *"look out for each other"* and desire *"to give back."* They pointed to locally-funded scholarships given out to graduating seniors, funding events for neighbors experiencing crisis *("there's always a GoFundMe page"*), and a high rate of volunteerism. As one interviewee stated, *"it is easy to get people to get together and work on issues."*

Strong Local Infrastructure

Several participants shared that the area has a strong business base and effective local government, which they believed were substantial assets. Numerous residents mentioned the new Mayor of Waltham who they saw as accessible and supportive of their issues and concerns. The Mayor of Newton was also reported to be taking the lead on key community issues. Other participants praised local police and fire departments and school leadership. As one interviewee from Waltham stated, *"our current superintendent and mayor are strengths to our community – especially around youth."*

Community Health Issues

Leading Causes of Mortality

As shown in Table 2, similar to the 2015 CHNA, the leading causes of death in the NWH service area in 2014 were heart disease and cancer. These patterns were consistent with those for Massachusetts in 2014. In the 2015 CHNA, cerebrovascular disease emerged as the third leading cause of death for Needham and Weston, whereas in 2014 cerebrovascular disease was the third leading cause of death in Newton, Wellesley, and Weston. In 2014, as with Massachusetts, injuries and poisoning were the third leading cause of death in Natick, Needham, and Waltham. Of note, in the 2015 CHNA patterns for total cancer and lung cancer were presented separately, limiting further comparisons of leading causes of death across the 2015 and 2018 CHNAs.

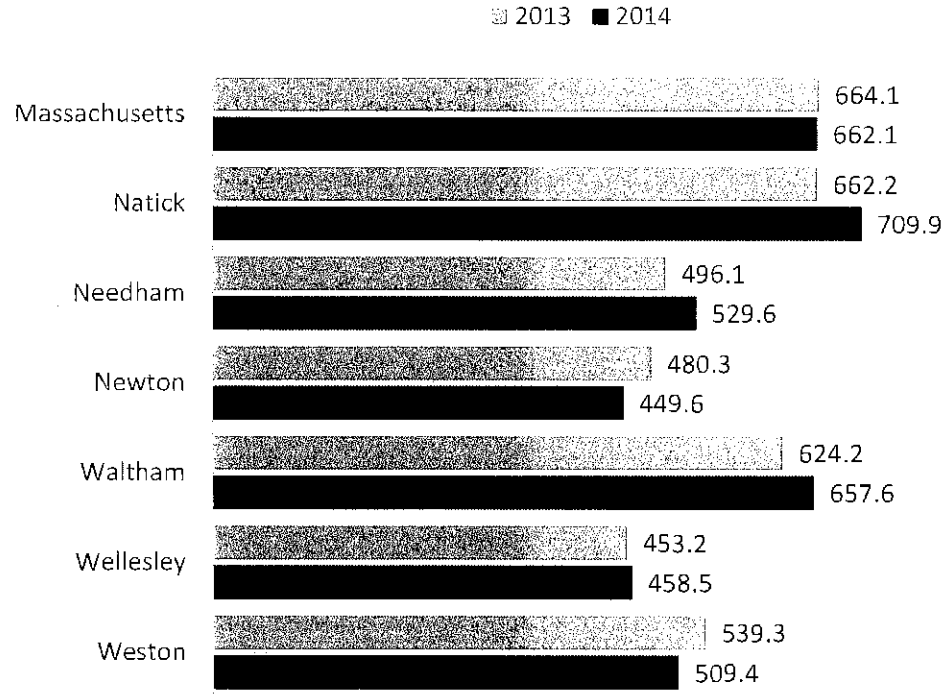
Table 2: Leading Causes of Death, by State and City/Town, 2014

Rank	Massachusetts	Natick	Needham	Newton	Waltham	Wellesley	Weston
1	All-Site Cancer	Heart Disease	All-Site Cancer	All-Site Cancer	All-Site Cancer	Heart Disease	All-Site Cancer
2	Heart Disease	All-Site Cancer	Heart Disease	Heart Disease	Heart Disease	All-Site Cancer	Heart Disease
3	Injuries and Poisoning	Injuries and Poisoning	Injuries and Poisoning	Cerebrovascular Disease	Injuries and Poisoning	Cerebrovascular Disease	Cerebrovascular Disease

DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2014

In 2013 and 2014, across five of the six assessment communities the age-adjusted mortality rate was lower than that of the state; however, rates varied by town (Figure 25). Waltham had the second highest mortality rate in both 2013 (624.2 deaths per 100,000 population) and 2014 (657.6 deaths per 100,000 population), whereas in the 2015 CHNA the mortality rate in Waltham (612.2 deaths per 100,000 population) in 2010 was higher than the mortality rate for other towns in the NWH service area. In 2013 and 2014, the mortality rate in Natick (662.2 and 709.9 deaths per 100,000 population, respectively) exceeded that for Massachusetts (664.1 and 662.1 deaths per 100,000 population, respectively). In the 2015 CHNA, Natick had the second highest mortality rate (574.8 deaths per 100,000 population) in 2010. In 2013-2014, the mortality rate declined in Newton and Weston, and increased in Natick, Needham, and Waltham.

Figure 25: Age-Adjusted Mortality Rate per 100,000 Population, by State and City/Town, 2013-2014



DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2013-2014

Chronic Diseases and Related Risk Factors

As in the 2015 CHNA, chronic disease and related health issues such as obesity, were not extensively discussed. Those from or serving immigrant groups were most likely to mention chronic disease in conversations; participants specifically identified diabetes, hypertension, and childhood obesity as concerns in their community.

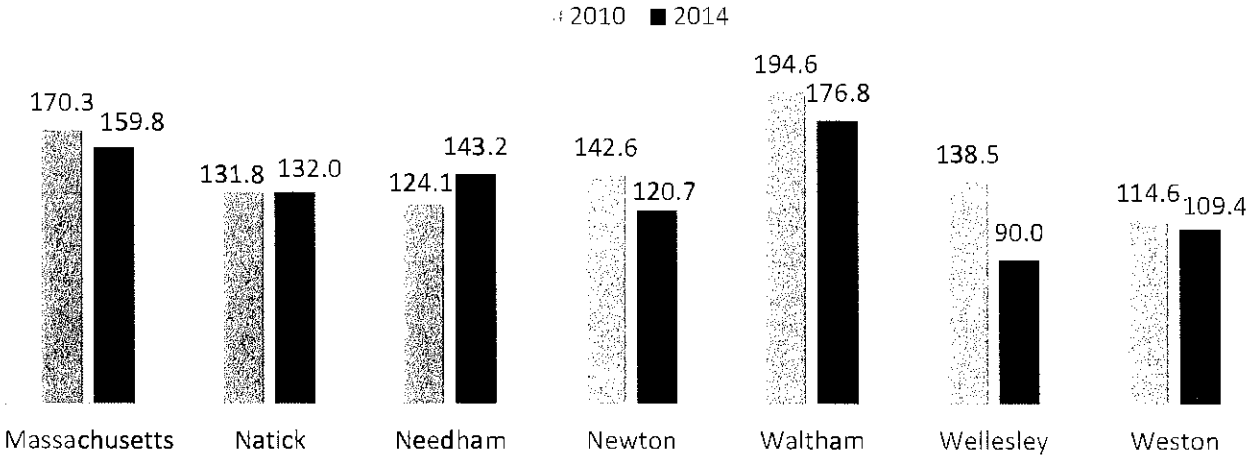
Cancer

> *"Cancer is a huge worry, it couses o lot of stress."* —Focus Group Participant
>
> *"Cancer is not 'if you're going to get it', it's 'when you're going to get it."* —Focus Group Participant

Cancer was the leading cause of death across the State and in Needham, Newton, Waltham, and Weston in 2014 (Table 2). Cancer was identified as a specific area of focus for the 2018 CHNA and thus was discussed in several interviews and focus groups. There was a sense among participants that cancer was prevalent—and also inevitable. When asked about the types of cancer they saw in their communities, participants most often mentioned breast cancer. As one focus group participant stated, *"breost concer is an epidemic."* Among seniors, pancreatic and stomach cancer were considered to be more common.

Since the 2015 CHNA, from 2010 to 2014 the cancer mortality rate decreased by 35.0% in Wellesley, 15.4% in Newton, and 9.1% in Waltham, while it increased by 15.4% in Needham (Figure 26). In 2010 and 2014 Waltham had the highest age-adjusted cancer mortality rate due to all cancers, the only town in the assessment area that had a higher cancer mortality rate than Massachusetts overall.

Figure 26: Age-Adjusted Mortality due to Cancer per 100,000 Population, by State and City/Town, 2010 and 2014



DATA SOURCE: Massachusetts Department of Public Health, MassCHIP, 2010; and Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2014

As shown in Table 3, in 2014 the lung cancer mortality rate in Needham (44.0 deaths per 100,000 population), and the prostate cancer mortality rate in Weston (28.3 deaths per 100,000 population) and Waltham (9.1 deaths per 100,000 population) each exceeded the average for Massachusetts. One year prior, in 2013 (data not shown), cancer mortality rates also varied by site and city/town. In 2013, Weston (59.6 deaths per 100,000 population), Natick (48.0 deaths per 100,000 population), and Waltham (44.2 deaths per 100,000 population) had lung cancer mortality rates that exceeded the state average (41.4 deaths per 100,000 population). In 2013, breast cancer mortality rates exceeded the state average (10.5 deaths per 100,000 population) in Newton (13.9 deaths per 100,000 population) and Natick (12.6 deaths per 100,000 population). The prostate cancer mortality rate in Waltham (10.0 deaths per 100,000 population) was greater than the average for the state (7.3 deaths per 100,000 population) in 2013.

Table 3: Age-Adjusted Mortality due to Cancer per 100,000 Population, by State and City/Town, 2014

Geography	Breast	Cervical	Colorectal	Lung	Prostate
Massachusetts	10.8	0.6	12.9	42.5	7.2
Natick	-	0.0	18.1	31.2	-
Needham	-	0.0	-	44.0	-
Newton	4.5	-	8.8	24.1	3.6
Waltham	10.5	0.0	8.5	40.6	9.1
Wellesley	-	0.0	-	20.7	-
Weston	0.0	0.0	0.0	-	28.3

DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2014
NOTE: Dash (-) denotes where rates were not calculated due to small counts

In 2010-2014, the cancer incidence rate for all cancers was higher than the state average (470.8 cases per 100,000 population) for Norfolk County (485.9 cases per 100,000 population), and below the state average for Middlesex County (459.6 cases per 100,000 population) (Table 4). Notably, the breast cancer incidence rate in Middlesex (140.7 cases per 100,000 population) and Norfolk (147.1 cases per 100,000 population) Counties exceeded the breast cancer incidence rate for Massachusetts overall (136.1 cases per 100,000 population). Norfolk County had a higher incidence rate for colorectal cancer (38.6 cases per 100,000 population) and prostate cancer (120.2 cases per 100,000 population) than the state average (37.8 and 114.3 cases per 100,000 population, respectively). In Middlesex and Norfolk Counties, the incidence rate for cancer of the cervix and lung was slightly lower than that for Massachusetts overall.

Table 4: Age-Adjusted Cancer Incidence Rate, by State and County, 2010-2014

Geography	All-Site	Breast	Cervical	Colorectal	Lung	Prostate
Massachusetts	470.8	136.1	5.2	37.8	64.6	114.3
Middlesex County	459.6	140.7	5.0	37.0	60.3	109.0
Norfolk County	485.9	147.1	4.5	38.6	61.7	120.2

DATA SOURCE: Massachusetts Cancer Registry, https://www.cancer-rates.info/ma/, 2010-2014

In 2009-2013, across five of the six assessment communities the cancer incidence rate was highest for breast cancer (Table 5), while in Weston cancer incidence was highest for prostate cancer. Breast cancer incidence was highest in Needham (536.9 cases per 100,000 population), cervical cancer incidence was highest in Waltham (14.7 cases per 100,000 population), colorectal cancer incidence was highest in Natick (243.8 cases per 100,000 population), and Weston had the highest incidence rate of cancer of the lung (364.0 cases per 100,000 population) and prostate (476.7 cases per 100,000 population)

Table 5: Age-Adjusted Cancer Incidence Rate per 100,000 Population, by City/Town, 2009-2013

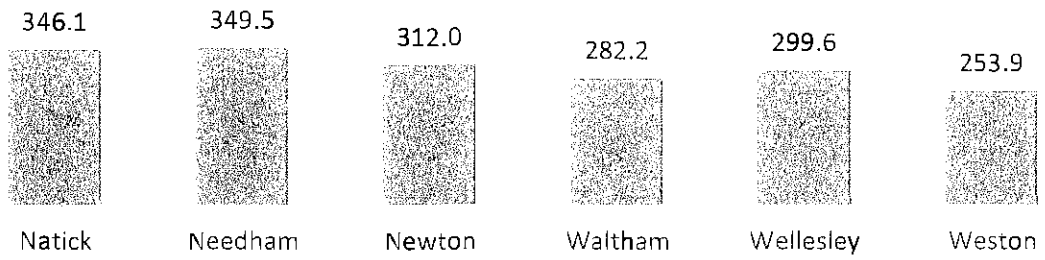
Geography	Breast	Cervical	Colorectal	Lung	Prostate
Natick	457.9	3.0	243.8	338.9	327.1
Needham	536.9	10.3	218.9	273.6	458.3
Newton	506.7	11.6	201.8	333.9	395.4
Waltham	381.6	14.7	189.2	329.4	238.1
Wellesley	470.1	7.0	157.9	175.4	428.0
Weston	433.4	0.0	216.7	364.0	476.7

DATA SOURCE: Massachusetts Department of Public Health, Massachusetts Cancer Registry, Cancer Incidence City & Town Supplement, 2009-2013
NOTE: MA data not provided

As shown in Figure 27, in 2013 the cancer hospitalization rate was lowest in Weston (253.9 hospitalizations per 100,000 population) and Waltham (282.2 hospitalizations per 100,000 population). The cancer hospitalization rate was highest in Needham (349.5 hospitalizations per 100,000 population) and Natick (346.1 hospitalizations per 100,000 population).

Cancer services were reported to be available in the community, including at NWH. Cancer care in the area, including at NWH, was perceived to be good, although provider participants noted that patients often have difficulty understanding and navigating cancer care options. Navigating cancer care was identified as a challenge for seniors, in particular, who were also considered more likely to have cancer and to not have families nearby or informal supports. Engaging in cancer treatment was also reported to be a challenge for some people, especially lower income residents. For example, those who are unable to access transportation were described as having difficulty regularly obtaining radiation and chemotherapy. Ensuring cancer survivors have access to healthy food and social support was also reported to be challenging for some.

Figure 27: Cancer Hospitalization Rates per 100,000 Population, by State and City/Town, 2013



DATA SOURCE: Center for Health Information and Analysis (CHIA), as cited by Massachusetts Department of Public Health, 2013
NOTE: MA data not available

In focus groups, some participants indicated they were aware of the importance of cancer screening tests. When asked about cancer prevention and screening programs, participants mentioned a partnership between the City of Waltham and Charles River Community Health to enhance access to screening for lower income residents, and cited several examples of partnerships with local community organizations that are focused on screening. As one interviewee stated, *"there's a health care ministry in the Church. They do a great job alerting us about things going on...like breost cancer awareness month and so forth."* Focus group participants mentioned that they usually relied on their doctors to tell them about different tests.

According to participants, there are barriers to accessing screening, including lack of awareness of what to expect and fear of the outcome. As one participant of a focus group stated, *"the internet has created more fear...people are just looking up so much information on the internet."* Lack of insurance coverage

was also mentioned: *"most plans will cover the basics, but if there's an additional procedure, I won't know if it's covered."* Those working with immigrants stressed that health care and prevention are low priorities. As one focus group participant explained, *"they live day by day—they are worried about rent, jabs, kids."* Providers reported that misconceptions about the HPV vaccine means not all young people who could benefit from it are immunized. Participants saw a need for more awareness campaigns around cancer screening.

As illustrated in Figure 28, in 2014 three-quarters (75.5%) of female residents 50 to 74 years of age in Newton reported receiving a mammogram in the past two years, a prevalence that was much lower than breast cancer screening among female residents across Massachusetts (88.1%) for that same year.

Figure 28: Percent of Female Adults (50-74 Years) who Reported Receiving a Mammogram within Past 2 Years, by State and Newton, 2014

DATA SOURCE: Centers for Disease Control and Prevention, 500 Cities Project, 2014
NOTE: Age-adjusted; Data for the other assessment communities were not available

In 2014, eight in ten (81.1%) female residents 21 to 65 years of age in Newton reported receiving a pap test within the past three years, a percent that was below the average prevalence of cervical cancer screening across the state (87.8%) (Figure 29).

Figure 29: Percent of Female Adults (21-65 years) who Reported Pap Test within Past 3 Years, by State and Newton, 2014

DATA SOURCE: Centers for Disease Control and Prevention, 500 Cities Project, 2014
NOTE: Age-adjusted; Data for the other assessment communities were not available

In 2014, fewer than two-thirds (64.0%) of Newton residents 50-75 years of age reported receipt of colon cancer screening within the time frames recommended by the US Preventive Services Task Force (Figure 30). In contrast, in 2014 three-quarters (76.7%) of Massachusetts residents reported colon cancer screening within the recommended schedule.

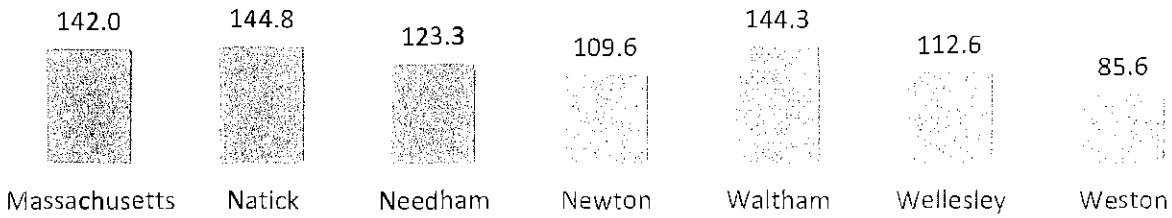
Figure 30: Percent of Adults (50-75 years) who Reported FOBT within Past Year, Sigmoidoscopy within Past 5 Years and FOBT within Past 3 Years, or Colonoscopy within Past 10 Years, by State and Newton, 2014

DATA SOURCE: Centers for Disease Control and Prevention, 500 Cities Project, 2014
NOTE: Age-adjusted; Data for the other assessment communities were not available

Heart Disease

In 2014, the age-adjusted heart disease mortality rate in Natick (144.8 deaths per 100,000 population) and Waltham (144.3 deaths per 100,000 population) was greater than the state average (142.0 deaths per 100,000 population). Weston (85.6 deaths per 100,000 population) had the lowest heart disease mortality rate in the NWH service area (Figure 31).

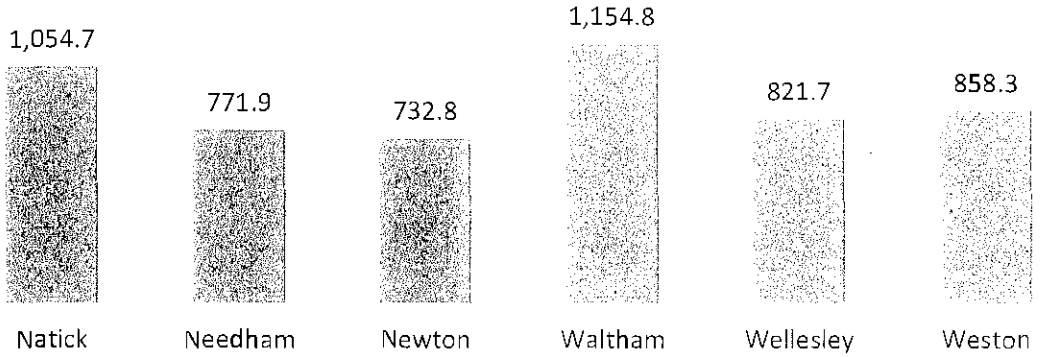
Figure 31: Age-Adjusted Mortality due to Heart Disease per 100,000 Population, by State and City/Town, 2014



DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2014

In 2013, Waltham (1,154.8 hospitalizations per 100,000 population) and Natick (1,054.7 hospitalizations per 100,000 population) had the highest cardiovascular disease hospitalization rate across the six assessment communities (Figure 32). The cardiovascular disease hospitalization rate was lowest in Newton (732.8 hospitalizations per 100,000 population) and Needham (771.9 hospitalizations per 100,000 population) in 2013.

Figure 32: Cardiovascular Disease Hospitalization Rates per 100,000 population, by City/Town, 2013



DATA SOURCE: Center for Health Information and Analysis (CHIA), as cited by Massachusetts Department of Public Health, 2013
NOTE: MA data not available

While local data on heart disease prevalence among adults are not available, in 2012 and 2016, 3.6% of adults reported a coronary heart disease diagnosis (Figure 33). In 2015, 5.6% of adults in Newton reported a heart disease diagnosis, similar to the prevalence for the CHNA 18 region in 2007 (5.6%) as reported in the 2015 CHNA (data not shown).

Figure 33: Percent of Adults Ever Reported Coronary Heart Disease Diagnosis, Massachusetts, 2012 and 2016

DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2012 and 2016

As shown in Figure 34, approximately one quarter of Massachusetts adults reported a high blood pressure diagnosis in 2013 and 2015 (27.2% and 27.1%, respectively). In 2015, a slightly higher proportion of Newton adults (29.4%) reported being told by a health care provider that they had high blood pressure, a prevalence that was higher than that for CHNA 18 in 2007 (20.8%) as reported in the 2015 CHNA (data not shown).

Figure 34: Percent of Adults Ever Reported High Blood Pressure, Massachusetts, 2013 and 2015

DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2013 and 2015

In 2013 and 2015, nearly one-third of Massachusetts adults reported a high cholesterol diagnosis (32.5% and 30.1%, respectively) (Figure 35). In 2015, the prevalence of high cholesterol diagnoses among Newton adults (31.1%) was similar to that for the state (30.1%) (data not shown).

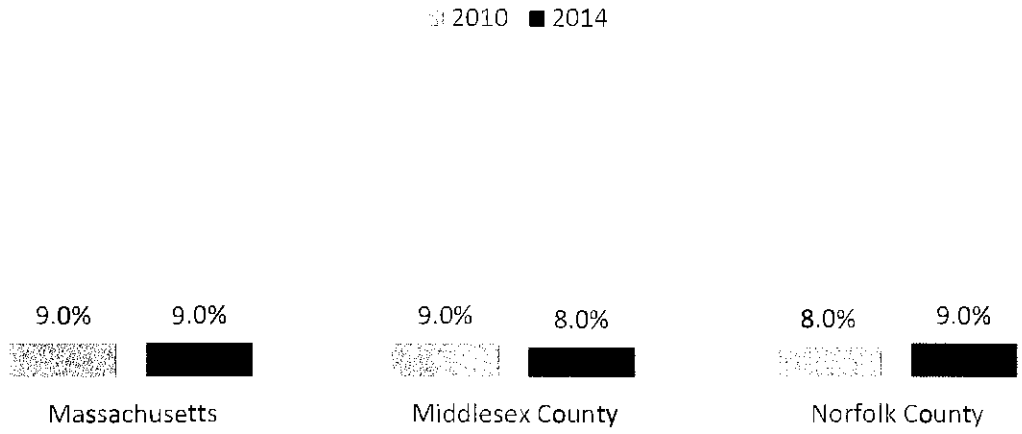
Figure 35: Percent of Adults Ever Reported High Cholesterol, Massachusetts, 2013 and 2015

DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2013 and 2015

Diabetes

From 2010 to 2014, the prevalence of diagnosed diabetes remained stable among adults across Massachusetts, Middlesex County, and Norfolk County, with 8.0% to 9.0% of residents reporting a diabetes diagnosis (Figure 36). This prevalence was slightly higher than that reported in the 2015 CHNA, in which in 2007 6.8% of CHNA 18 residents and 7.5% of Massachusetts residents reported being diagnosed with diabetes. In 2015, 9.5% of Newton adults reported being diagnosed with diabetes, compared to 8.0% of adults across Massachusetts (data not shown).

Figure 36: Percent of Adults Aged 20+ Years with Diagnosed Diabetes by State and County, 2010 and 2014

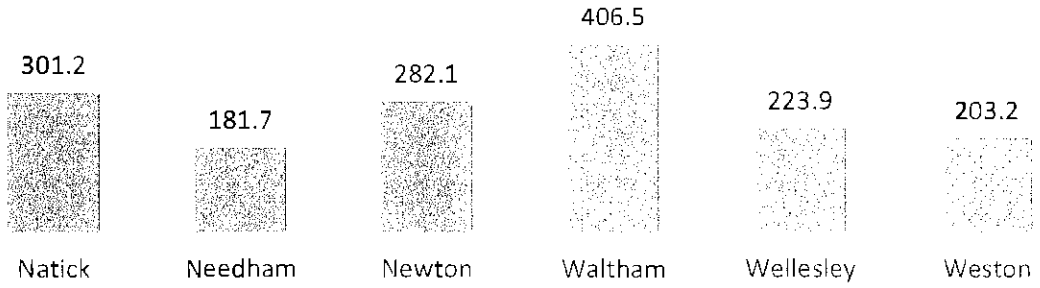


DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, as reported by National Diabetes Surveillance System, as cited by County Health Rankings, 2010 and 2014

Asthma

In 2013, the asthma emergency department visit rate for Waltham residents (406.5 ED visits per 100,000 population) was more than twice the rate for Needham residents (181.7 ED visits per 100,000 population) (Figure 37). The asthma emergency department visit rate was also high in Natick (301.2 ED visits per 100,000 population) and Newton (282.1 ED visits per 100,000 population).

Figure 37: Asthma Emergency Department (ED) Visit Rates per 100,000 Population, by State and City/Town, 2013

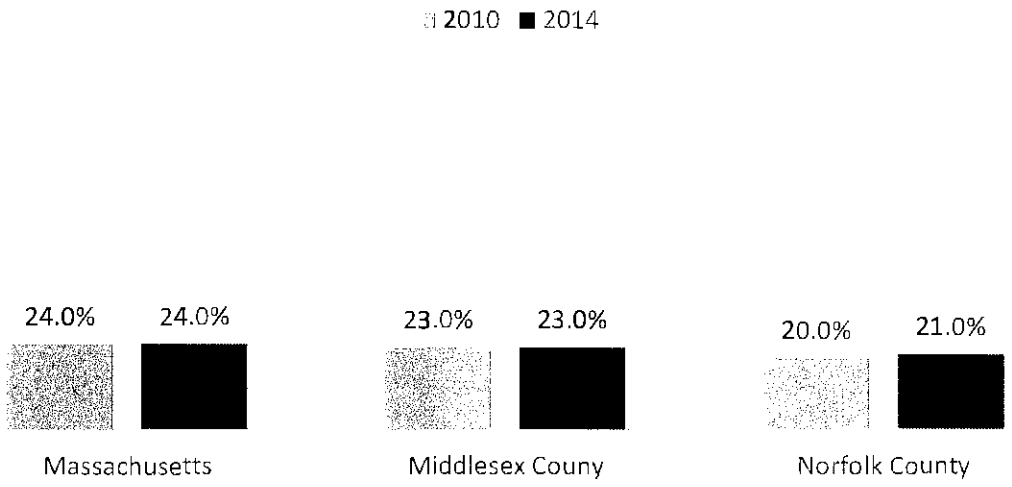


DATA SOURCE: Center for Health Information and Analysis (CHIA), as cited by Massachusetts Department of Public Health, 2013
NOTE: MA data not available

Obesity

The prevalence of obesity among adults 20 years of age and older remained stable from 2010 to 2014 for Massachusetts overall and for Middlesex and Norfolk Counties (Figure 38). In 2014, a smaller percent of Norfolk County (21.0%) residents were obese compared to Middlesex County (23.0%) and the state (24.0%). As shown in Figure 39, in 2015 the prevalence of obesity among Newton (28.7%) adults was greater than that for Massachusetts overall (23.5%).

Figure 38: Percent of Adults 20 Years and Over who Are Obese, by State and County, 2010 and 2014



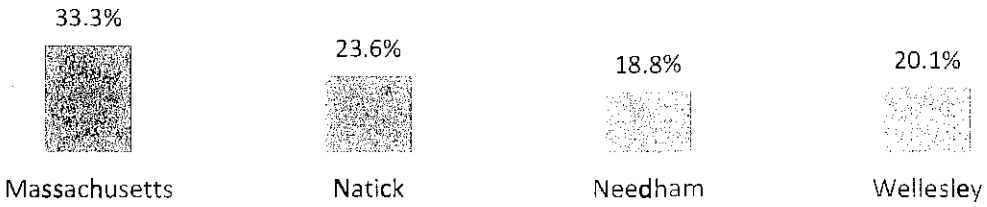
DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, as reported by National Diabetes Surveillance System, as cited by County Health Rankings, 2010 and 2014
NOTE: Obese includes adults that report a BMI >=30

Figure 39: Percent of Adults who are Obese, by State and Newton, 2015

DATA SOURCE: Centers for Disease Control and Prevention, 500 Cities Project, 2015
NOTE: Age-adjusted

Amongst seventh grade students, the prevalence of overweight or obesity in Natick (23.6%), Needham (18.8%), and Wellesley (20.1%) was lower than the state prevalence (33.3%) in 2012-2014 (Figure 40). Data for the other assessment communities were not available. Compared to the 2015 CHNA, the prevalence of obesity and overweight for seventh grade students increased slightly since 2010, when 22.1% of Natick students and 17.4% of Needham students were overweight or obese (data not shown).

Figure 40: Percent of Students (Grade 7) who are Overweight or Obese, by State and Select City/Town, 2012-2014

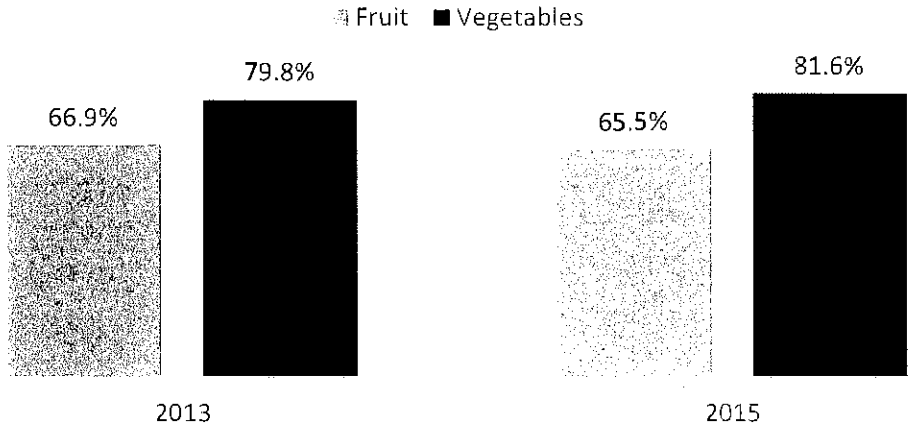


DATA SOURCE: MetroWest Health Foundation, Health Data Search, 2018
NOTE: Data for the other assessment communities were not available

Healthy Eating and Physical Activity

In 2015, approximately 80% of Massachusetts adults reported consuming fruits (79.8%) and vegetables (81.6%) at least once daily, an increase over patterns in 2013 (66.9% and 65.5%, respectively) (Figure 41). In 2015, one-fifth (19.6%) of Massachusetts adults reported consuming 5 or more servings of fruits and vegetables daily, below patterns for Massachusetts adults in the 2015 CHNA (26.2% in 2009) (data not shown).

Figure 41: Percent of Adult Population Consuming Fruits and Vegetables At least One Time per Day, Massachusetts, 2013 and 2015

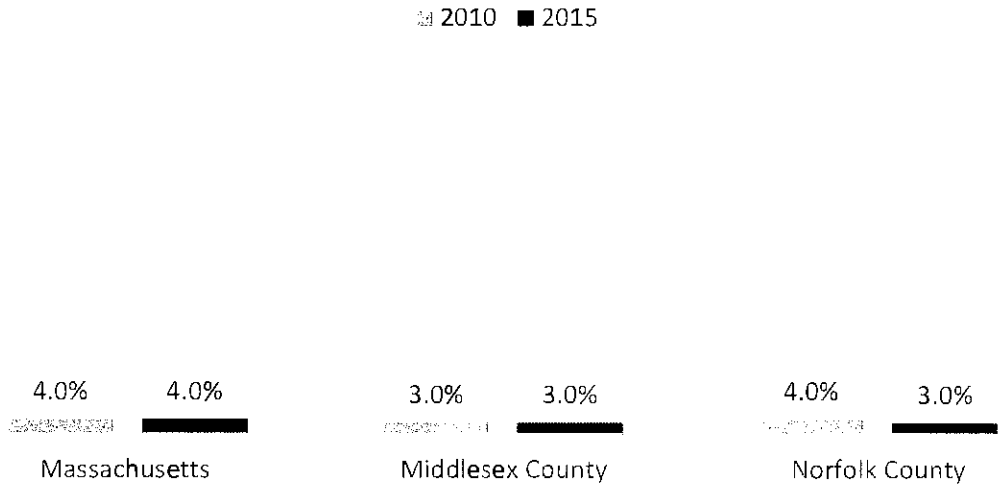


DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, 2013 and 2015
NOTE: Age-adjusted

As shown in Figure 42, in 2015 4.0% of low-income Massachusetts residents and 3.0% of Middlesex and Norfolk County low-income residents did not live close to a grocery store. From 2010 to 2015, these trends remained similar.

Accessing healthy food was identified as a challenge for some groups in the community. While fresh food options were considered available in the NWH service area, participants noted cost and transportation as barriers to accessing these healthier food options. Participants reported that there are food pantries and community nutrition programs to support lower income residents, although some participants expressed concerns about meals in the summertime for students who receive free and reduced lunch. Lack of knowledge about how to purchase and prepare healthy meals, especially among newcomer groups, was also identified as a barrier to healthy eating. One focus group participant suggested classes to address this barrier: *"training around eating healthy on a budget is needed. You need to know what to buy when you go to a supermarket."*

Figure 42: Percent of Population Who are Low-Income and Do Not Live Close to a Grocery Store, by State and County, 2010 and 2015

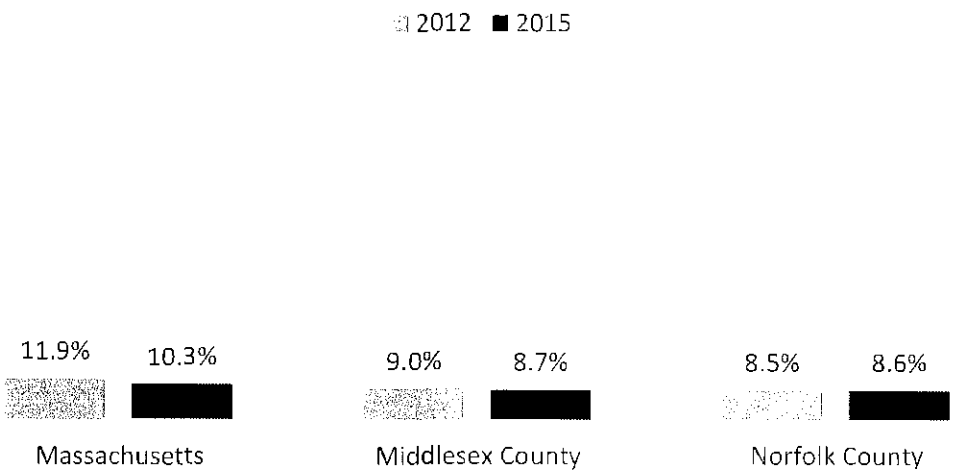


DATA SOURCE: United States Department of Agriculture (USDA) 2010, as cited by County Health Rankings

In 2012 and 2015, a lower percent of residents in Middlesex and Norfolk Counties did not have access to a reliable source of food in the past year, compared to the state overall (Figure 43). From 2012 to 2015, these patterns remained relatively stable for Middlesex (9.0% and 8.7%, respectively) and Norfolk (8.5% and 8.6%, respectively) Counties.

A couple of participants stated that food insecurity is a concern for some in the area and pointed to rising participation rates at local food pantries. For example, a mobile school pantry program at the Waltham Public Schools has seen a substantial increase in the number of people registered since it opened in November 2017.

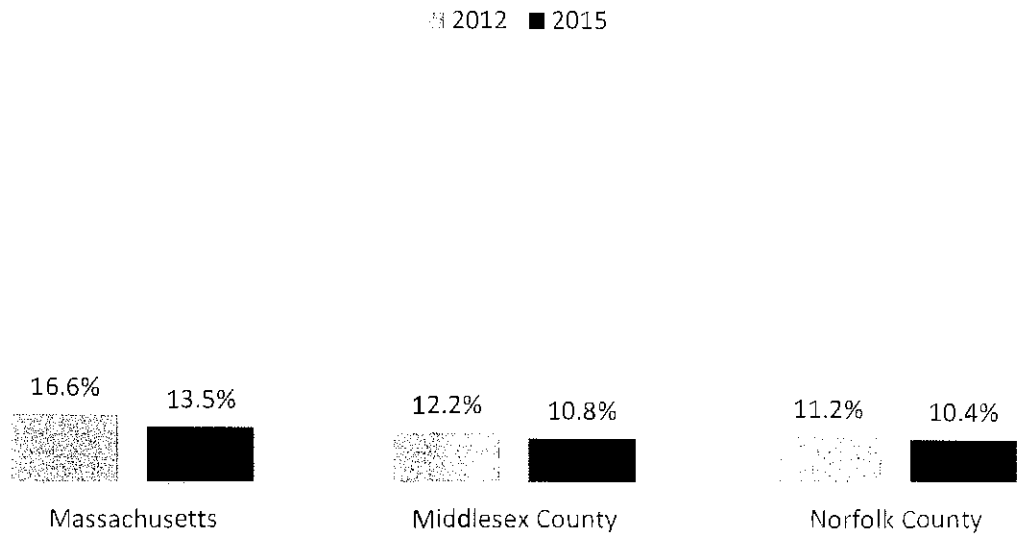
Figure 43: Percent of Total Population that Did Not Have Access to a Reliable Source of Food During Past Year, by State and County, 2012 and 2015



DATA SOURCE: Feeding America, Map the Meal Gap, 2012 and 2015

Among residents younger than 18 years of age, a lower percent of Middlesex and Norfolk County residents did not have access to a reliable source of food in the past year compared to the state average in both 2012 and 2015 (Figure 44). In 2015, 10.8% and 10.4% of Middlesex and Norfolk County residents <18 years of age, respectively experienced food insecurity. Trends suggest a slight decline in food insecurity from 2012 to 2015.

Figure 44: Percent of Population Under 18 Years that Did Not Have Access to a Reliable Source of Food in Past Year, by State and County, 2012 and 2015



DATA SOURCE: Feeding America, Map the Meal Gap, 2012 and 2015

As shown in Figure 45, one fifth (20.0%) of adults in Middlesex and Norfolk Counties reported no leisure time physical activity in 2014 compared to 22.0% of adults across Massachusetts. While patterns for Massachusetts and Norfolk Counties remained relatively stable from 2010 to 2014, trends suggest a slight decrease in no leisure time physical activity reported in Middlesex County (22.0% to 20.0%) over this period. In 2015, one quarter (25.5%) of Newton adults reported no leisure time physical activity (data not shown). Statewide, physical activity trends in 2014 were similar to the 2015 CHNA, when 21.3% of Massachusetts adults reported no leisure time physical activity in 2007-2009. However, a smaller proportion of adults in CHNA 18 (14.8%) reported no leisure time physical activity in 2007-2009 (data not shown), compared to patterns for Middlesex and Norfolk Counties in 2014.

Additionally, half (51.8%) of Massachusetts adults met the guidelines for weekly aerobic exercise, and nearly one-third (31.5%) met the guidelines for strength training in 2015 (data not shown). According to participants, there are numerous community resources to support a healthy lifestyle. Residents mentioned tennis courts and golf courses, bike paths and hiking trails, as well as gyms and fitness centers. Fitness programs offered through local parks and recreation departments and at senior centers were also mentioned as options. One focus group participant described, *"Newton is an active city, you can do a lot of things around. I see people walking around all the time...there are also a lot of walking groups."* However, participants acknowledged that cost, especially for gyms and exercise programs, can be a barrier for lower income residents.

Figure 45: Percent of Adult Population Over 20 Years Reported No Leisure Time Physical Activity, by State and County, 2010 and 2014

DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, as reported by National Diabetes Surveillance System, as cited by County Health Rankings, 2010 and 2014

Mental Health and Substance Use

Mental Health

> *"Elderly population is totally underserved with their mental health needs."* —Interview Participant

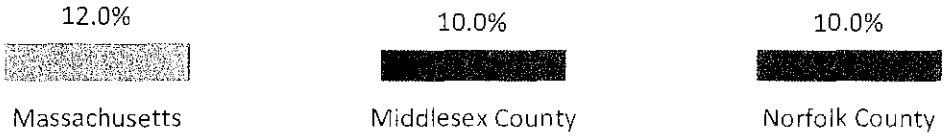
> *"Mental health is not a good term for us. Mental health is crazy in the Latino community."* —Interview Participant

The following section illustrates the prevalence of behaviors and mental health outcomes among youth in the NWH service area. As in the 2015 CHNA, mental health was the community health concern mentioned most frequently in interviews and focus groups, with children and youth, seniors, and immigrant groups perceived as disproportionately affected. Participants cited high rates of anxiety and depression, and noted that increasingly, some of those suffering from mental health concerns also engage in substance misuse. They also shared concerns about lack of access to mental health services. A couple of providers pointed out that patients with medical issues are increasingly presenting with behavioral health issues as well, which creates challenges for the health care system.

Among seniors in the NWH service area, depression and cognitive decline were identified as the prominent mental health concerns. Hoarding was also reported to be an issue, as it was in the 2015 CHNA. Social isolation of seniors was seen as a cause for depression and participants praised local institutions such as senior centers for their role in enhancing socialization for the community's seniors. Fear of getting Alzheimer's disease was also mentioned by numerous participants. Participants acknowledged that an increasing number of seniors have serious health issues and/or dementia but no family support, which creates substantial pressure on local institutions. As one provider explained, *"we've had a lot of elders come in who came into our radar who do not know what to do, they are declining in a way that they need support; their kids have their own lives and I can't bother them."* The stigma of mental illness and memory decline among seniors was reported to be strong, resulting in a reluctance among elders to seek out care. As one focus group participant stated, *"[seniors] will not admit it, they will not seek help."*

To assess mental health status among adults, the Behavioral Risk Factor Surveillance System survey asks respondents whether they experienced poor mental health, or feelings of sadness and depression at least 14 days in the past month. As shown in Figure 46, Middlesex (10.0%) and Norfolk (10.0%) County adults were slightly less likely to report experiencing poor mental health than residents statewide (12.0%). In the 2015 CHNA, 5.6% of residents in CHNA 18 reported 15 or more poor mental health days in the past month in 2002-2007 (data not shown). This suggests an increase in the percent of NWH service area adults experiencing poor mental health days in since the 2015 CHNA. Importantly, the geographic units (CHNA 18 in 2002-2007 and Counties in 2016) and slight decrease in number of poor mental health days reported (from 15 days to 14 days in the past month) necessitates cautious interpretations of that time trends for this indicator.

Figure 46: Percent of Adults Reporting 14 or More Days of Poor Mental Health per Month, by State and County, 2016



DATA SOURCE: Centers for Disease Control and Prevention, Behavioral Risk Factor Surveillance System, as cited by County Health Rankings

As shown in Figure 47, from 2013 to 2014, the suicide rate in Massachusetts ranged from 8.5 to 9.8 deaths per 100,000 population. In Newton, the suicide rate in 2013 (9.5 deaths per 100,000 population) was nearly double that in 2010 (4.7 deaths per 100,000 population) as reported in the 2015 CHNA. While more recent data were not available for all NWH assessment communities, in 2010 the suicide rate was highest in Natick (9.1 deaths per 100,000 population) and Weston (8.9 deaths per 100,000 population), and lowest in Needham (<1 death per 100,000 population) and Wellesley (3.6 death per 100,000 population) (data not shown).

Figure 47: Suicide Mortality per 100,000 Population, by State and City/Town, 2013 and 2014

DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2013 and 2014
NOTE: Data for the other assessment communities were not available; * indicates data not available

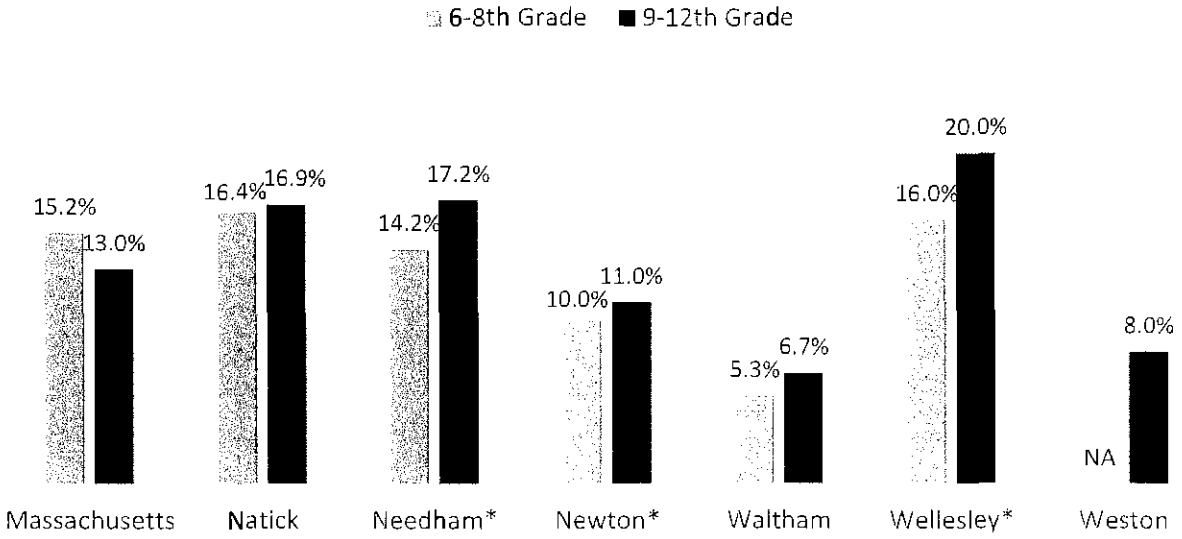
Mental health concerns among students was mentioned in many conversations, similar to the 2015 CHNA. Participants reported high rates of depression and anxiety among children and youth; they noted that these issues manifest themselves in classroom outbursts, eating disorders, and suicide or suicidal ideation. While academic pressure was identified as one factor—as in the 2015 CHNA—participants more often mentioned issues related to trauma, especially among newly immigrating young people. As

one focus group participant stated, *"stories of getting across the border and the trauma, it is just horrifying, and they're coming to school and trying to concentrate."* Participants also noted that children of increasingly younger ages are experiencing mental health issues. As one interviewee commented, *"kids in elementary school have suicidal ideation."* School-based therapists or counselors were described as having very high caseloads, making it difficult to establish needed connections with students so they can voice their concerns and seek help.

While bullying in and out of school was not a prominent theme in discussions, it was identified as a cause of distress among LGBTQ youth. A couple of interviewees also reported that the number of children with autism and developmental delays is increasing.

In 2015-2017, youth experiences of electronic bullying varied across the NWH assessment communities (Figure 48). Waltham had a lower prevalence of electronic bullying amongst middle (5.3%) and high (6.7%) school students than other assessment communities and the state (15.2% and 13.0%, respectively). Notably, compared to the 2015 CHNA, reports of electronic bullying for both middle and high school youth declined substantially in Waltham from 2012 (18.1% and 25.1%, respectively) to 2015-2017 (5.3% and 6.7%, respectively) (2012 data not shown). In 2015-2017, Natick (16.4%) and Wellesley (16.0%) had a higher prevalence of electronic bullying among middle school students compared to surrounding towns and youth statewide (15.2%), while in the 2015 CHNA this prevalence was highest in Waltham (18.1%) (data not shown). Among high school students, one fifth (20.0%) of Wellesley students reported being bullied electronically, a prevalence that was higher than other NWH service area towns and the state (13.0%) average for 2015-2017. In the 2015 CHNA, 22.0% of Wellesley high school students reported electronic bullying in 2012, suggesting relatively similar trends over this period for Wellesley.

Figure 48: Percent of Students (Grades 6-8 & 9-12) Bullied Electronically by State and City/Town, 2015-2017

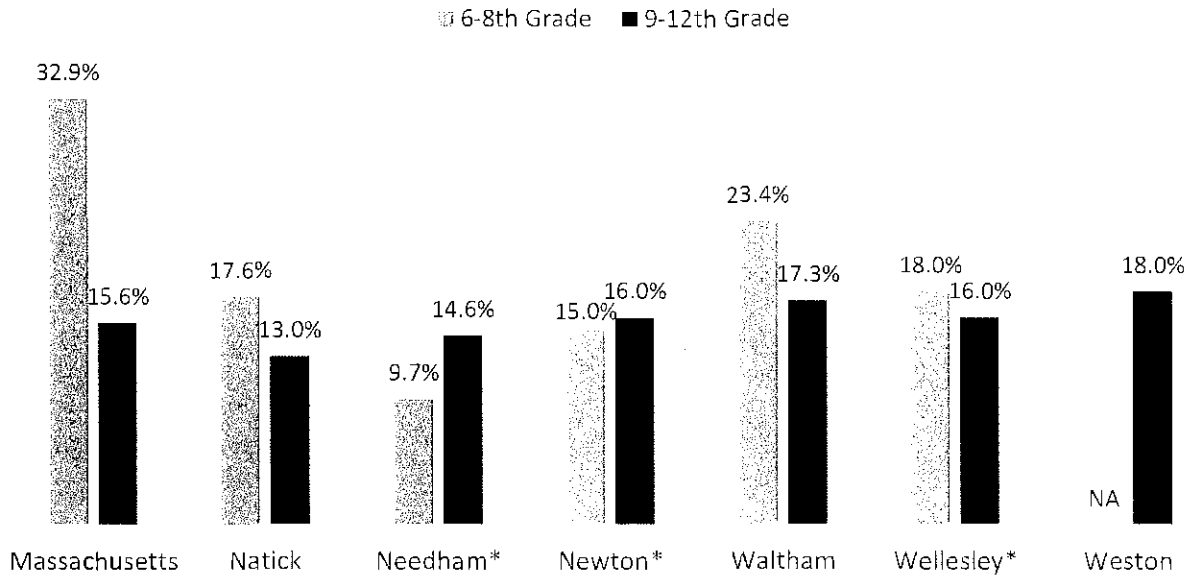


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2017; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: NA indicates data were not available; * indicates grades 7-8

As shown in Figure 49, nearly one quarter (23.4%) of middle school youth in Waltham reported that they experienced bullying on school campuses, a prevalence that was higher than the other assessment communities in 2015-2017, but below the state average (32.9%). Of note, compared to the 2015 CHNA, the prevalence of bullying on school property amongst middle school youth declined for all four of the assessment communities for which 2012 data were available, with the towns of Needham, Waltham, and Wellesley experiencing a decline of at least 40% over this period (data not shown).

Among high school students, on-campus bullying was highest for students in Weston (18.0%) and Waltham (17.3%), while high school students in Natick (13.0%) and Needham (14.6%) reported a lower prevalence of in-school bulling compared to their peers in other assessment communities and statewide (15.6%). Compared to the 2015 CHNA, bullying on school property declined by at least 25% for high school youth in Needham, Waltham, Wellesley, and Weston, while the prevalence increased slightly in Newton (14.0% to 16.0%, respectively) (data not shown; 2012 data not available for Natick).

Figure 49: Percent of Students (Grades 6-8 & 9-12) Bullied on School Property by State and City/Town, 2015-2017

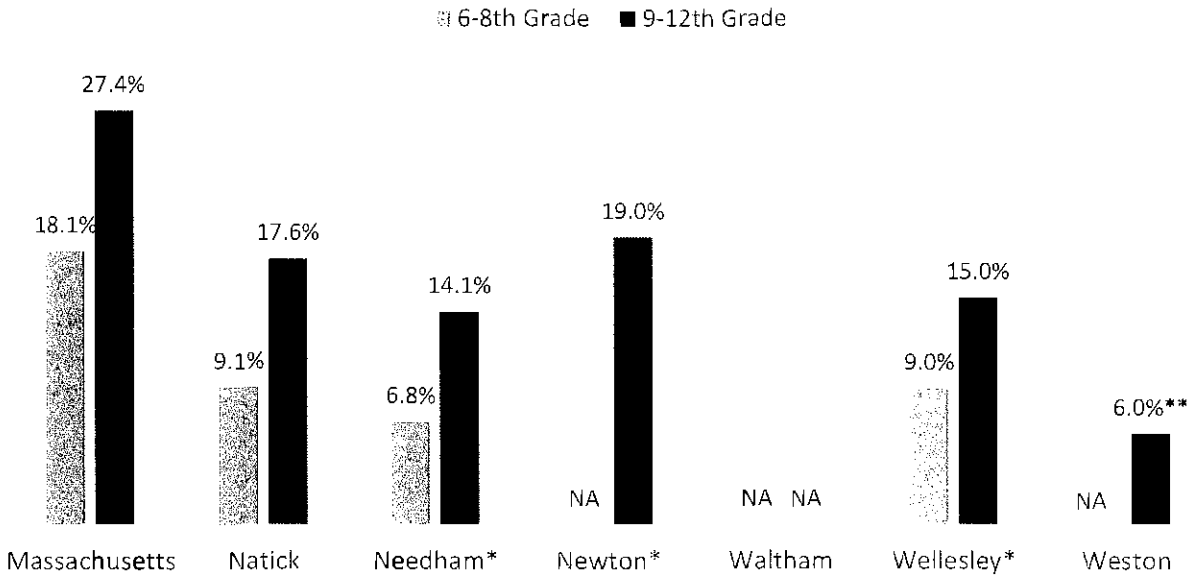


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2017; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: NA indicates data were not available; *indicates grades 7-8

In 2015-2017, the percent of middle and high school students reporting symptoms of depression was substantially lower for the assessment communities for which data were available, compared to the state overall (Figure 50). While nearly one-fifth of middle school youth across Massachusetts reported symptoms of depression in 2015-2017, fewer than 10.0% of middle school youth in the assessment communities for whom data were available reported symptoms of depression. One fifth (19.0%) of Newton high school students reported depressive symptoms in 2015-2017. Though this percent was higher than other assessment communities, it was lower than that for high school students across Massachusetts (27.4%).

Compared to the 2015 CHNA, the prevalence of symptoms of depression among middle school youth declined across each of the assessment communities for which comparative data were available. Longitudinal patterns among high school youth varied across cities/towns in the NWH service area. Relative to the 2015 CHNA, patterns suggest a slight decline in depressive symptoms for high school youth in Needham (16.6% to 14.1%) and Wellesley (16.0% to 15.0%), a three-fold decrease in Weston (18.0% to 6.0%), and a slight increase in Newton (17.8% to 19.0%).

Figure 50: Percent of Students Symptoms of Depression Issues by State and City/Town, 2015-2017

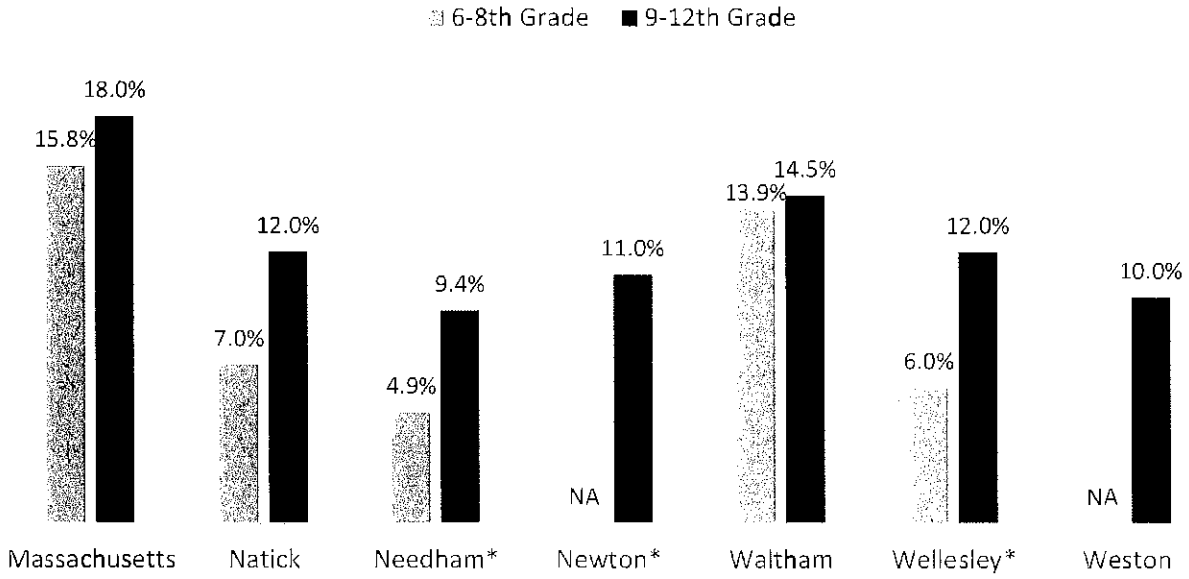


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2017; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: NA indicates data were not available; * indicates grades 7-8; ** indicates reported diagnosis

In 2015-2017, middle and high school youth in Waltham (13.9% and 14.5%, respectively) had the highest prevalence of reported self-harm compared to the other assessment communities for which data were available (Figure 51). However, compared to their peers statewide (15.8% and 18.0%, respectively), there was a lower percent of middle and high school youth indicating self-harm for each of the assessment communities for which data were available.

Since the 2015 CHNA, the prevalence of self-harm among Waltham middle school youth declined since 2012 (19.4% to 13.9%), while patterns remained relatively similar for Natick (7.3% to 7.0%) and Wellesley (7.0% to 6.0%) over this period (data not shown; comparative data for other cities/towns not available). Similarly, since the 2015 CHNA the prevalence of self-harm reported by high school students declined in Waltham from 20.1% in 2012 to 14.5% in 2017. Needham, Newton, Wellesley, and Weston also experienced a decrease in the percent of high school students reporting self-harm from 2012 to 2015-2017 (data not shown).

Figure 51: Percent of Students (Grades 6-8 & 9-12) Reporting Self Harm, by State and City/Town, 2015-2017

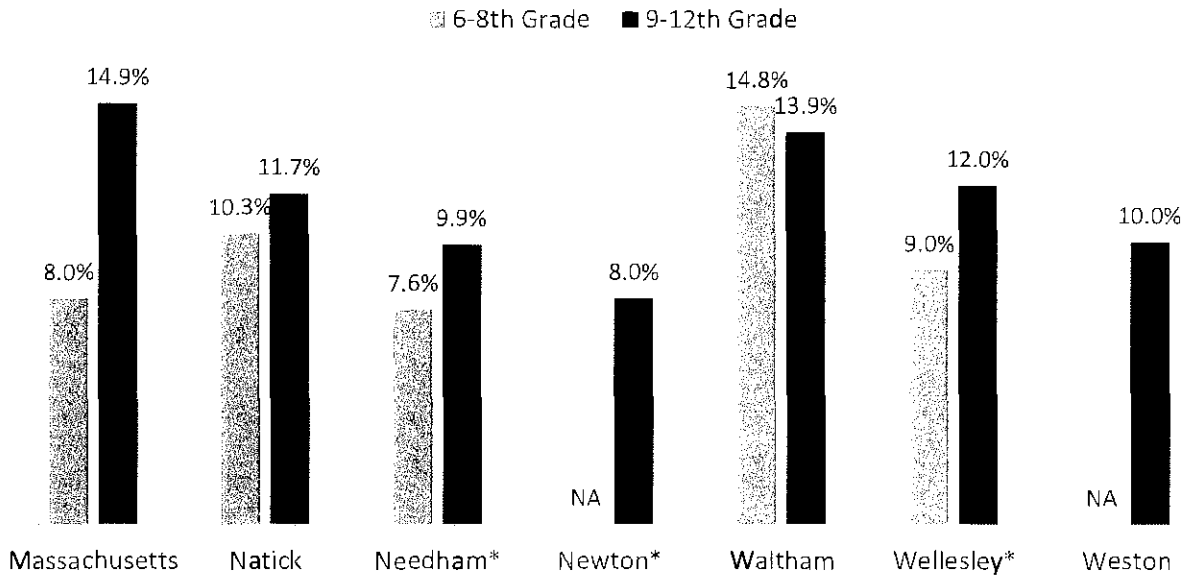


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2017; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: NA indicates data were not available; * indicates grades 7-8

As shown in Figure 52, a higher percent of middle school youth in Waltham (14.8%), Wellesley (12.0%), and Natick (11.7%) reported suicide ideation than the average statewide (8.0%) in 2015-2017. Among high school youth, suicide ideation was also more prevalent in Waltham (13.9%), Wellesley (12.0%), and Natick (11.7%) and lowest in Newton (8.0%). The prevalence of suicide ideation among high school youth across the NWH service area was lower than for youth across Massachusetts overall.

Compared to the 2015 CHNA, the prevalence of suicide ideation amongst middle school youth decreased from 2012 to 2015-2107 in Waltham (18.9% to 14.8%) and Wellesley (12.0% to 9.0%) and patterns remained similar for Natick (data not shown; comparative data for other cities/towns not available). Among high school students, since the 2015 CHNA the prevalence of suicide ideation increased in Natick (8.3% to 11.7%) and Weston (8.5% to 10.0%). Patterns increased slightly in Newton and Waltham and remained similar over time for Wellesley (data not shown).

Figure 52: Percent of Students (Grades 6-8 & 9-12) Reporting Suicide Ideation, by State and City/Town, 2015-2017

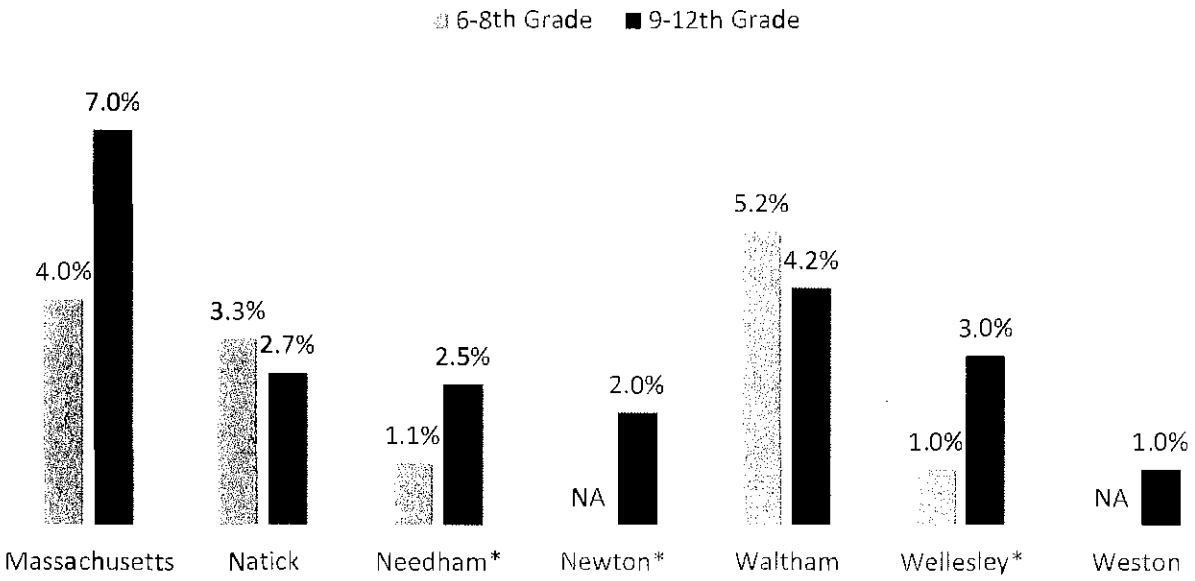


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2017; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: seriously considered attempting suicide; NA indicates data were not available; * indicates grades 7-8

In 2015-2017, middle school student reports of a past suicide attempt were highest in Waltham (5.2%) and lowest in Needham (1.1%) and Wellesley (1.0%) (Figure 53). Among the NWH assessment communities, only Waltham had a higher prevalence of suicide attempts among middle school youth than patterns for Massachusetts overall (4.0%). For high school youth, the prevalence of suicide attempts was highest in Waltham (4.2%) and lowest in Weston (1.0%) and was below the state average (7.0%) for all the assessment communities.

Longitudinal patterns since the 2015 CHNA indicate a slight increase in the percent of middle school students reporting suicide attempt in Natick (1.8% to 3.3%), and a slight decrease in Wellesley (3.0% to 1.0%) from 2012 to 2015-2017 (data not shown). Since the 2015 CHNA, the prevalence of suicide attempts among high school students decreased slightly in Newton (3.6% to 2.0%), and decreased more than three-fold in Waltham (15.1% to 4.2%) from 2012 to 2017 (data not shown). Since the 2015 CHNA, suicide attempt patterns remained similar for high school students across the other assessment communities (data not shown).

Figure 53: Percent of Students Reporting Suicide Attempt, by State and City/Town, 2015-2017



DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2017; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: NA indicates data were not available; * indicates grades 7-8

Substance Use

> *"Navigating what is available in the community (substance use services) is a challenge. There is so much stigma asking for help, and it can be really intimidating to ask for help."* —Interview Participant

> *"We're playing catch up – we're so behind where we need to be in terms of resources and rehab, detox."* —Interview Participant

Similar to the 2015 CHNA, substance use was also reported to be a substantial challenge for the community. Opioids were the substance of greatest concern to participants. Participants shared that overdoses have occurred throughout the NWH service area, linked to prescription drug misuse and the availability of cheaper heroin and more dangerous fentanyl. Overprescribing of pain medication and mental health issues were identified as causes of substance use addiction. Substance misuse was not seen as more prevalent in a particular group; in fact, several participants spoke about its wide-ranging nature. As one interviewee stated, *"substance use can occur in any community, rich or poor. You can have an addict on heroin that is a doctor or a lawyer."* Substance use has also contributed to other community issues, according to participants, specifically to a rise in petty crime and homelessness.

Substance use among seniors was also reported to be an issue in the community. Participants described that among seniors, lifelong smoking is prevalent, contributing to long-term health consequences. Others noted that social isolation contributes to drinking problems among seniors.
At the policy and systems levels, participants reported some progress in addressing substance misuse, but also shared a sense that more needs to be done. Participants noted that Waltham, for example, recently hired a substance use case manager for the city who works with community partners, including police departments and hospitals, to strengthen relationships and increase education and outreach in the community. Yet, participants commented that there is more to be done; for example, as one interviewee noted, in Waltham, of five recommended tobacco regulations, the city has only adopted one: raising the age to buy tobacco to 21.

Presented in Table 6

Table 6 are the rates of admissions to Bureau of Substance Abuse Services (BSAS)-funded and licensed treatment programs. In FY 2017, admissions were highest for residents of Waltham (770.3 admissions per 100,000 population) and Natick (658.5 admissions per 100,000 population). Intravenous drug use admissions were also highest in Waltham (263.2 admissions per 100,000 population) and Natick (197.8 admissions per 100,000 population). In the 2015 CHNA (2009-2011), Waltham and Natick also had the highest rate of admissions to DPH-funded treatment programs and admissions for injection drug use. Since the 2015 CHNA, with the exception of Natick (567.5 to 658.5 admissions per 100,000 population, respectively), treatment admissions decreased across the NWH service area. Since the 2015 CHNA, treatment admissions for intravenous drug use increased for residents of Natick (125.3 to 197.8 admissions per 100,000 population) and Waltham (238.4 to 263.2 admissions per 100,000 population).

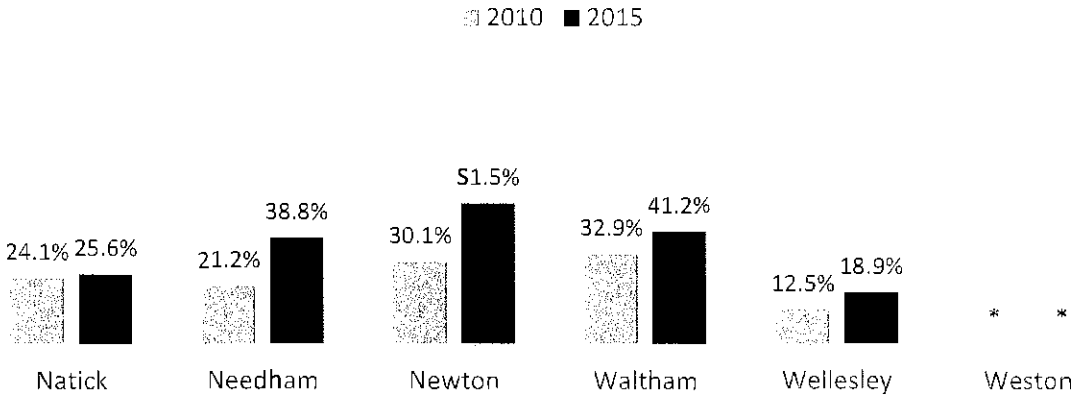
Table 6: Rate of Admissions to DPH Funded Treatment Programs per 100,000 Population, by State, County, and City/Town, FY 2017

Geography	Admissions to BSAS Funded/Licensed Treatment Programs	Intravenous Drug User Admissions to BSAS Funded/Licensed Treatment Program
MA	1,651.9	707.4
Middlesex County	870.6	364.5
Norfolk County	903.2	396.0
Natick	658.5	197.8
Needham	202.2	53.0
Newton	270.6	113.2
Waltham	770.3	263.2
Wellesley	162.6	24.2
Weston	83.7	*

DATA SOURCE: Office of Statistics and Evaluation, Bureau of Substance Addiction Services, Massachusetts Department of Public Health, FY2017
Note: * indicates n<5

In 2015, among patients admitted for substance use treatment, Newton (51.5%), Waltham (41.2%), and Needham (38.8%) had the highest percent of patients admitted due to heroin as their primary substance of use (Figure 54). From 2010 to 2015, the prevalence of heroin-related treatment increased in each of the NWH assessment communities. One-quarter or less of patients from Natick (25.6%) and Wellesley (18.9%) were seeking treatment for heroin use in 2010 and 2015.

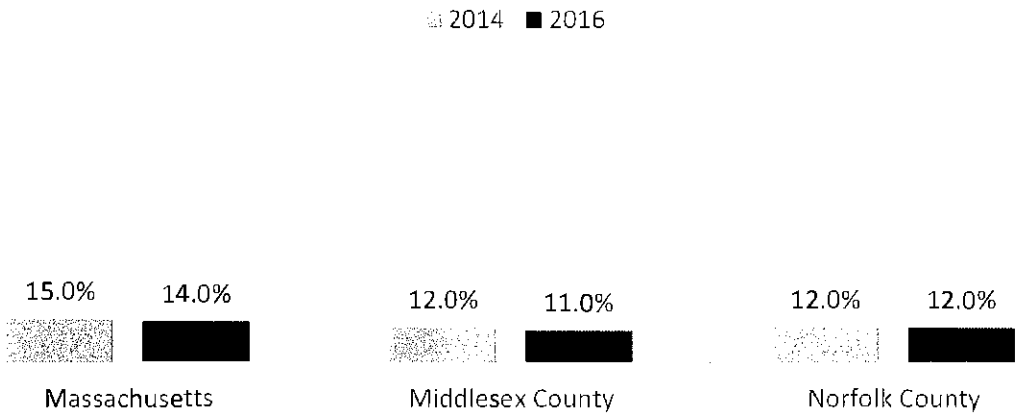
Figure 54: Percent of Patients in Treatment Listing Heroin as Their Primary Substance of Use, by City/Town, 2010 and 2015



DATA SOURCE: Massachusetts Department of Public Health, Bureau of Substance Abuse Services, The Massachusetts Opioid Epidemic: A visualization of findings from the Chapter 55 report, 2010-2015
NOTE: * indicates data not available for Weston

In 2014 and 2016, approximately one in ten adults in Middlesex and Norfolk Counties reported that they currently smoked, a prevalence that as slightly lower than Massachusetts overall (15.0% and 14.0%, respectively) (Figure 55). This prevalence of current smoking was similar to patterns in 2006-2012 (data not shown) as reported in the 2015 CHNA. In 2015, 17.1% of Newton adults reported currently smoking, higher than the state average (14.2%) that same year (Figure 56).

Figure 55: Percent of Adults Who Report Current Smoking Status, by State and County, 2016



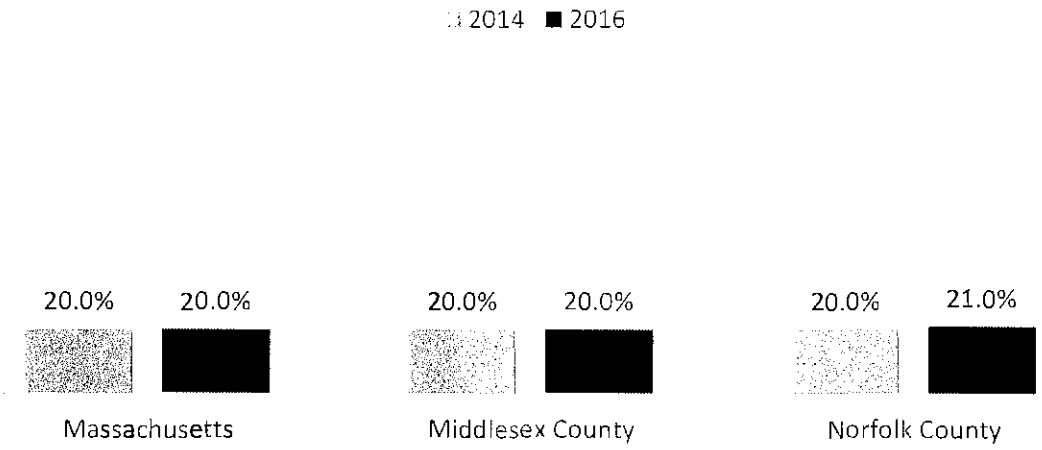
DATA SOURCE: Centers for Diseases Control and Prevention, Behavioral Risk Factor Surveillance System, as cited by County Health Rankings, 2014 and 2016

Figure 56: Percent of Adults Who Reported Current Smoking, by State and Newton, 2015

DATA SOURCE: Centers for Disease Control and Prevention, 500 Cities Project, 2015

In 2014 and 2016, one-fifth of adults in Middlesex and Norfolk Counties reported excessive drinking, similar to patters for Massachusetts (Figure 57). In the 2015 CHNA, the prevalence of excessive drinking was slightly lower in Middlesex (18.0%) and Norfolk (19.0%) Counties in 2006-2012 (data not shown). In 2015, 17.2% of Newton adults reported excessive drinking, below the statewide (19.1%) average that same year (Figure 58).

Figure 57: Percent of Adults Who Report Excessive Drinking, by State and County, 2014 and 2016



DATA SOURCE: Centers for Diseases Control and Prevention, Behavioral Risk Factor Surveillance System, as cited by County Health Rankings, 2014 and 2016
NOTE: Excessive drinking includes those who reported binge drinking or heavy drinking

Figure 58: Percent of Adults Who Reported Binge Drinking, by State and Newton, 2015

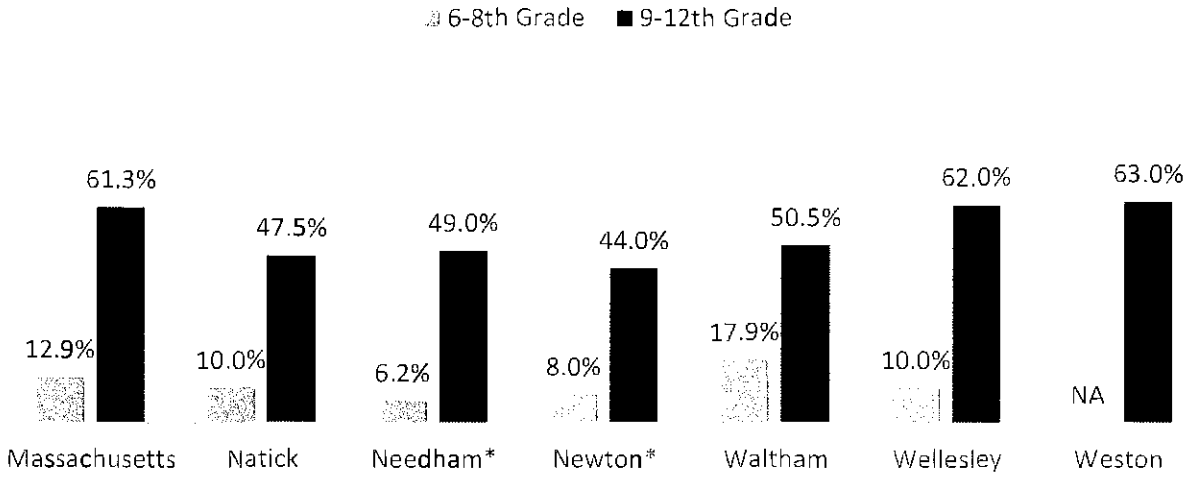
DATA SOURCE: Centers for Disease Control and Prevention, 500 Cities Project, 2015

In focus groups and interviews, use of marijuana and alcohol among students was reported, as in the 2015 CHNA. This was in part attributed to school pressures. As one interviewee observed, *"those reporting higher levels of anxiety and depression are also reporting high rates of substance use. There seems to be a correlation with substance use and grades."* Participants also reported that the rise in marijuana use is linked to legalization and a sense among students that use of the drug is safe for young people. Problematic as well, according to participants, is lack of parent enforcement and intervention in their children's substance use. This was summed up by one focus group participant who said, *"parents think [substance use] is a rite of passage—they're teenagers."*

Among youth middle school youth, lifetime alcohol use was highest in Waltham (17.9%), followed by Natick (10.0%) and Wellesley (10.0%) (Figure 59). Of the six NWH service area cities/towns, only Waltham had a lifetime alcohol use prevalence among middle school students that exceeded the prevalence for the state (12.9%). Mirroring state patterns, since the 2015 CHNA, lifetime alcohol use among middle school students declined for four of the five assessment communities for which data were available, with the greatest decrease in Waltham (30.4% to 17.9%) and Needham (14.8% to 6.2%; data not shown).

Among high school students, similar to statewide (61.3%) patterns, six in ten high school students in Wellesley (62.0%) and Weston (63.0%) reported alcohol use in their lifetime in 2015-2017. Half of high school students in Waltham (50.5%) and Needham (49.0%) reported lifetime alcohol use. Since the 2015 CHNA (2012 estimates), the prevalence of lifetime alcohol use declined for five of the six assessment communities, with the exception of Weston (59.4% to 63.0%; data not shown).

Figure 59: Percent of Students Reporting Lifetime Alcohol Use, by State and City/Town, 2015, 2016, 2017

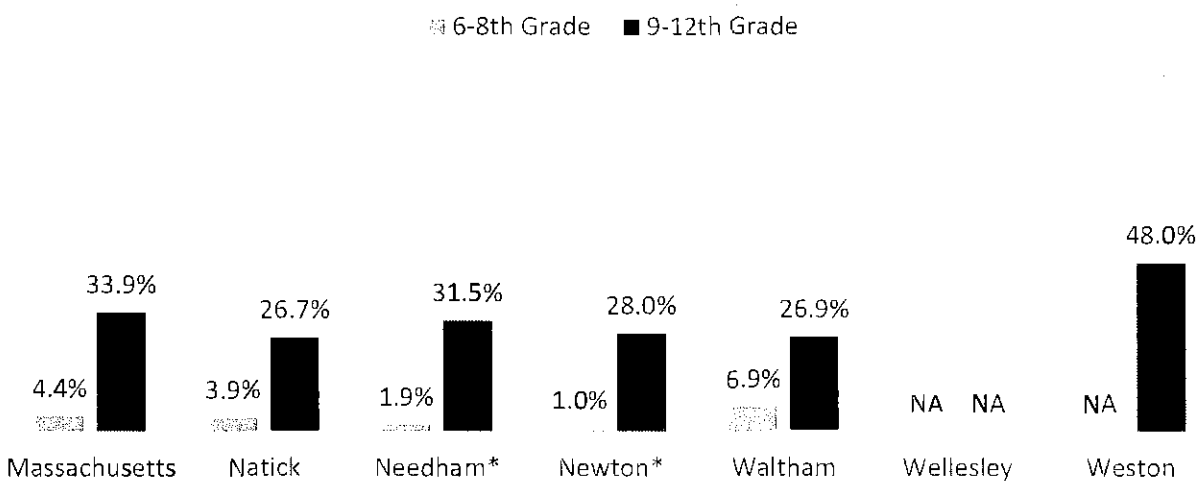


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: Years of data vary by geography; NA indicates data were not available; * indicates grades 7-8

During the 2015 to 2017 period, with the exception of Waltham (6.9%), current alcohol use among middle school youth was below the state average (4.4%) (Figure 60). Since the 2015 CHNA, current alcohol use among middle school youth declined across for each of the assessment communities for which data at both time points were available. Notably, current alcohol use among middle school youth in Waltham declined from 14.5% in 2012 to 6.9% in 2017 (data not shown).

The prevalence of current alcohol use among high school students ranged from a low of one-quarter in Waltham (26.9%) to half of students in Weston (48.0%) during the 2015 to 2017 period. Weston was the only assessment community where current alcohol use among high school youth exceeded the prevalence for Massachusetts youth overall (33.9%). Compared to the 2015 CHNA, current alcohol use among high school youth increased in Weston from 2012 (44.4%) to 2015 (48.0%). Current smoking prevalence among high school youth declined across the other four assessment communities for whom 2012 data were available, with more than a 25% decline in Natick and Waltham (data not shown).

Figure 60: Percent of Students Reporting Current Alcohol Use, by State and City/Town, 201S, 2016, 2017

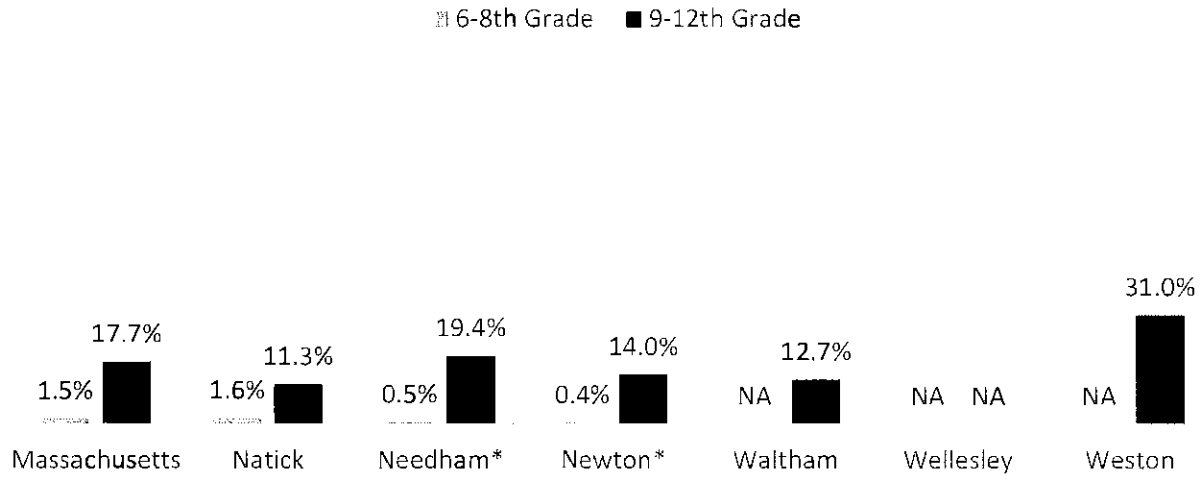


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: NA indicates data were not available; * indicates grades 7-8

Following patterns for lifetime and current alcohol use, in 2015-2017 nearly one-third (31.0%) of high school students in Weston reported binge drinking, a prevalence that was nearly double that for Massachusetts overall (17.7%) and exceeded the prevalence across the other NWH service area cities/towns for which data were available (Figure 61). Compared to the 2015 CHNA, the percent of high school students reporting binge drinking in 2012 declined by approximately half in Natick (22.0% to 11.3%) and Waltham (26.3% to 12.7%) (data not shown). Binge drinking also declined among high school students in Newton (17.8% to 14.0%) (data not shown). In contrast, since the 2015 CHNA, the prevalence of binge drinking increased in Weston (29.7% to 31.0%) (data not shown).

Among middle school students, reported binge drinking among Natick (1.6%) was similar to patterns for Massachusetts overall (1.5%) during the 2015 to 2017 period. Since the 2015 CHNA (2012 estimates), binge drinking among middle school students declined slightly across Massachusetts (3.0% to 1.5%) and in Natick (2.2% to 1.6%).

Figure 61: Percent of Students Reporting Current Binge Alcohol Use, by State and City/Town, 2015, 2016, 2017

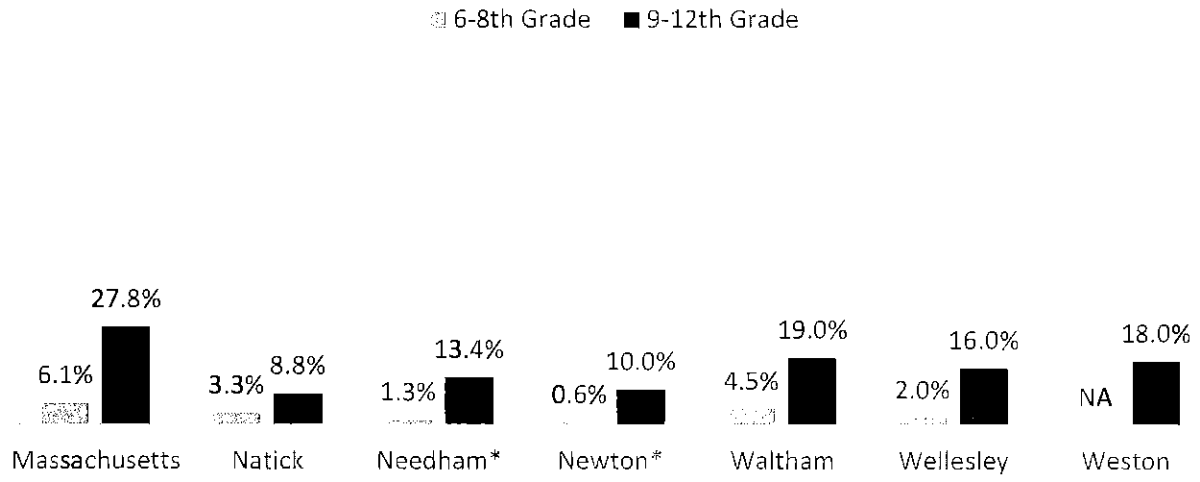


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTE: NA indicates data were not available; *indicates grades 7-8

Over the 2015 to 2017 period, a lower percent of middle school youth in each of the five assessment communities for which data were available reported lifetime cigarette use compared to their peers statewide (6.1%) (Figure 62). Among middle school youth, the prevalence of lifetime cigarette use was highest in Waltham (4.5%). Since the 2015 CHNA, there was a substantial decline in lifetime cigarette use for middle school youth in Waltham (19.4% to 4.5%) and a slight decrease in Natick (5.4% to 3.3%), Needham (5.7% to 1.3%), and Newton (1.2% to 0.6%) (2012 data not shown).

The prevalence of lifetime cigarette use among high school youth was also lower in each of the six assessment communities compared to Massachusetts overall (27.8%) during the 2015 to 2017 period. Lifetime cigarette use was highest for high school youth in Waltham (19.0%) and Weston (18.0%) and lowest in Natick (8.8%). Following state patterns, since the 2015 CHNA the percent of high school youth reporting lifetime cigarette use declined by at least 25% across the assessment communities from 2012 to the 2015 to 2017 period.

Figure 62: Percent of Students Reporting Lifetime Cigarette Use, by State and City/Town, 2015, 2016, 2017

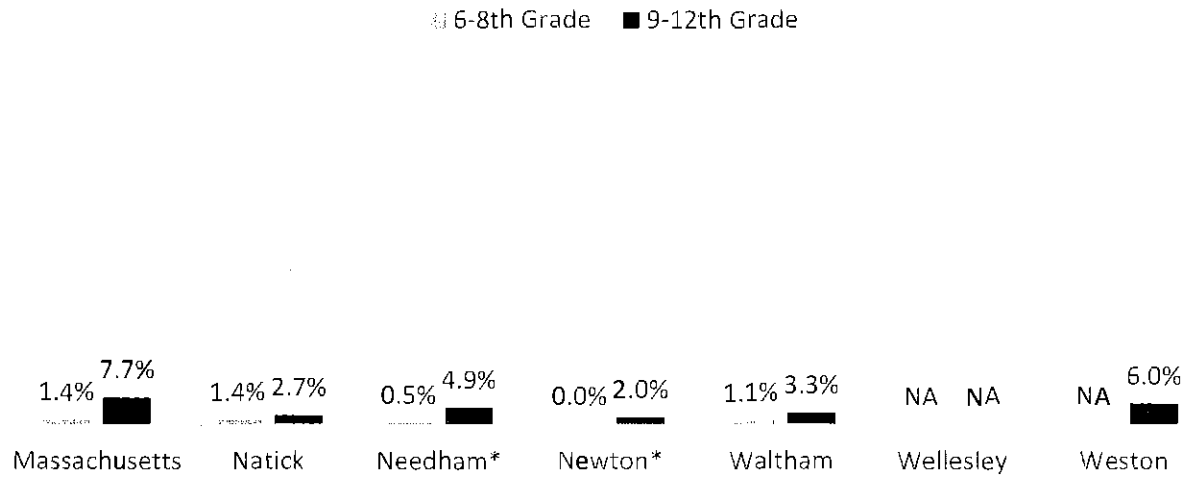


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; * indicates grades 7-8

As shown in Figure 63, during the 2015 to 2017 period current cigarette among middle school youth in Newton, Needham, and Waltham was lower than for Massachusetts overall, while the prevalence of current cigarette use among middle school students in Natick was similar to state levels. From 2012 to 2015-2017, current cigarette use among middle school youth declined for each of the assessment communities for which data are available over both time points, with Waltham experiencing the greatest decline (5.7% to 1.1%; data not shown).

In the five assessment communities for which data are available, a lower percent of high school youth reported current cigarette use than their peers statewide. Current cigarette use among high school students was highest in Weston and Needham and lowest in Newton. Reflecting state patterns, current cigarette use among high school youth declined across each of the four assessment communities for which data were available from 2012 to 2015-2017 (data not shown).

Figure 63: Percent of Students Reporting Current Cigarette Use, by State and City/Town, 2015, 2016, 2017

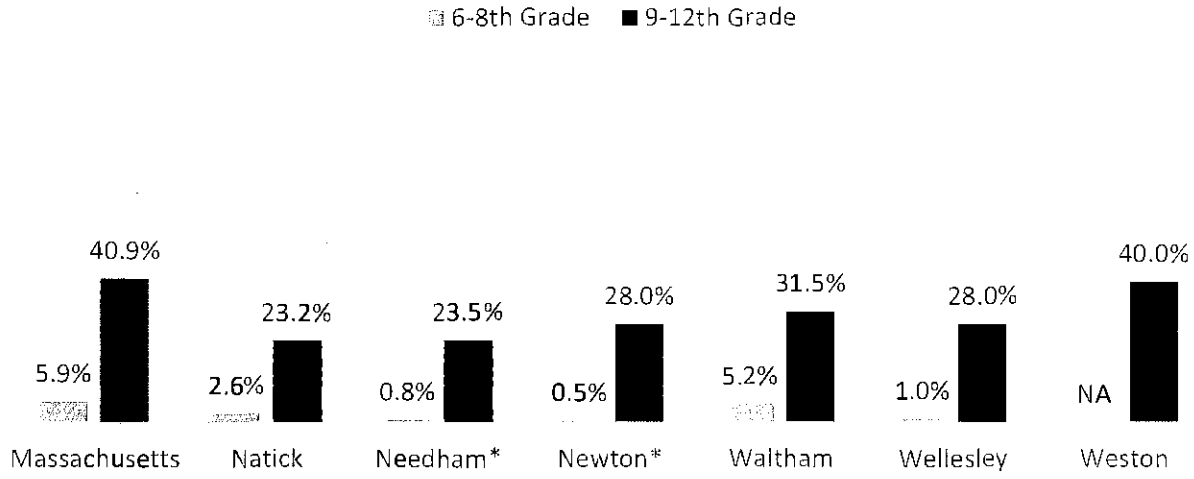


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; * indicates grades 7-8

As shown in Figure 64, during the 2015-2017 period, a smaller proportion of middle school youth reported lifetime use of marijuana than those in high school. Among middle school students, lifetime marijuana use was highest in Waltham (5.2%), followed by Natick (2.6%), and did not exceed the state average (5.9%) for any of the cities/towns in the assessment region. Lifetime marijuana use amongst middle school students in 2015-2017 was lower than patterns in the 2015 CHNA for all assessment communities for which comparative data were available. Notably, lifetime marijuana use declined by more than 50% in Waltham (11.4% to 5.2%) and Needham (4.3% to 0.8%), and declined slightly in Newton (1.2% to 0.5%) (data not shown).

Among high school students, for each of the NWH service area cities/towns the prevalence of lifetime marijuana use was lower than Massachusetts overall (40.9%). In the assessment region, lifetime marijuana use was highest in Weston (40.0%) and Waltham (31.5%) and lowest in Needham (23.5%) and Natick (23.2%). Lifetime marijuana use among high school students was lower in 2015-2017 than 2012 with the exception of Newton, which remained constant at 28% over both time periods (data not shown).

Figure 64: Percent of Students Reporting Lifetime Marijuana Use, by State and City/Town, 2015, 2016, 2017

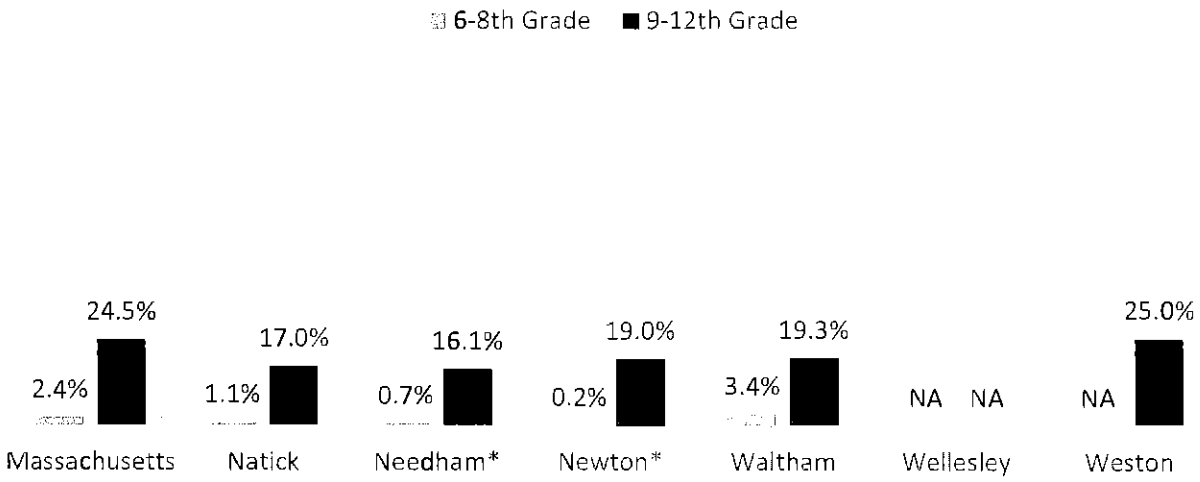


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; * indicates grades 7-8

Shown in Figure 65, current marijuana use among middle school students in Waltham (3.4%) was slightly higher than the state average (2.4%) and exceeded the prevalence across the NWH service area cities/towns for which data were available in the 2015 to 2017 period. Since the 2015 CHNA, current marijuana use among middle school students declined across all assessment communities for which data were available, with a sizable decrease in Waltham (7.7% to 3.4%) (data not shown).

During the 2015 to 2017 period, one-quarter of Weston (25.0%) high school students reported current marijuana use, similar to the statewide prevalence (24.5%). Nearly one fifth of high school students reported current marijuana use in Waltham (19.3%), Newton (19.0%), and Natick (17.0%). Compared to the 2015 CHNA, current marijuana use among high school students declined slightly in Natick (19.0% to 17.0%), Waltham (22.7% to 19.3%), and Weston (28.2% to 25.0%). In contrast, since the 2015 CHNA the prevalence of current marijuana use increased slightly for high school students in Newton (17.0% to 19.0%) (data not shown).

Figure 65: Percent of Students Reporting Current Marijuana Use, by State and City/Town, 2015, 2016, 2017



DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; * indicates grades 7-8

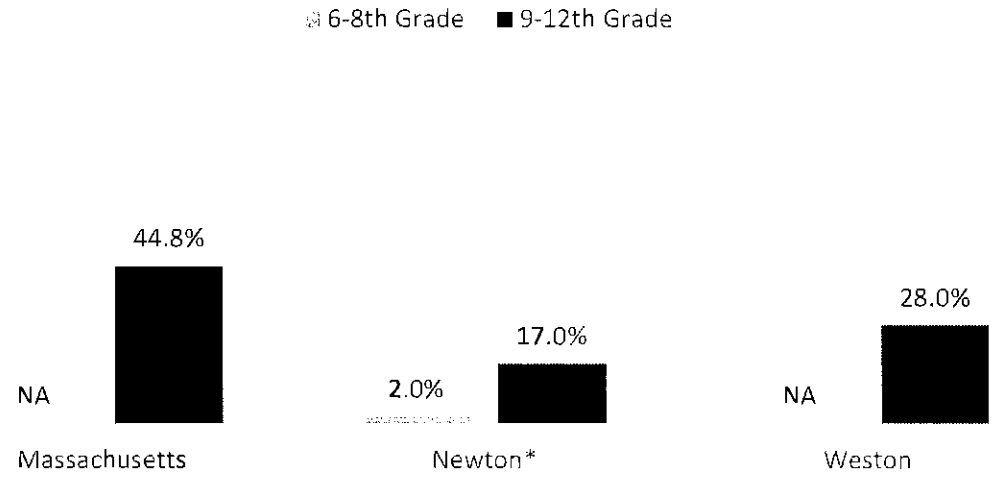
Emerging as a concern in the NWH service area in 2018 is vaping. Participants working with youth reported that vaping has substantially increased among students in recent years and that it happens both within and outside of school. The accessibility of vaping products, which can be purchased online, as well as lack of understanding about the health consequences of vaping were seen as factors contributing to its prevalence. According to participants, the ability to address this growing public health issue is hampered by its newness. As one interviewee explained, *"for vaping, the barriers are it's so new that we're learning about it; it's non-regulated, youth receive contradictory messages, school and board of health policies and regulations are just now under review."*

Relative to vaping, participants shared that the state of Massachusetts recently raised the age to purchase tobacco and vaping products to 21. However, those working in schools reported challenges in

trying to establish school-based policies about vaping. Participants stated that schools in the NWH service area have also begun adopting the Screening, Brief Intervention, and Referral to Treatment (SBIRT) program to address substance use by middle and high school students.[2]

During the 2015 to 2017 period, lifetime electronic cigarette use ranged from a high of 28.0% in Weston and a low of 17.0% in Newton, well below the prevalence for high school students across Massachusetts (44.8%) (Figure 66). Data regarding the prevalence of lifetime electronic cigarette use for middle school students were not available for most assessment communities, though estimates indicate that 2.0% of middle school students in Newton reported electronic cigarette use in their lifetime.

Figure 66: Percent of Students Reporting Lifetime Electronic Cigarette Use by State and City/Town, 2015, 2016, 2017

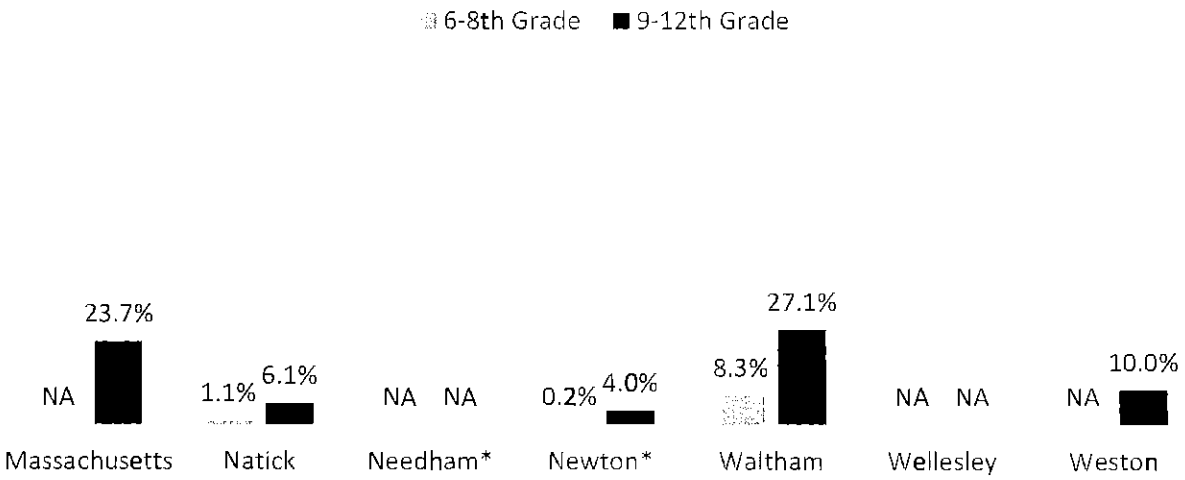


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; * indicates grades 7-8

[2] https://www.mass.gov/service-details/screening-brief-intervention-and-referral-to-treatment-sbirt

As shown in Figure 67, during the 2015 to 2017 period current electronic cigarette use among middle school students was highest in Waltham (8.3%). Among high school students, the prevalence of current electronic cigarette use in Waltham (27.1%) exceeded the state average (23.7%), and was lowest in Newton (4.0%).

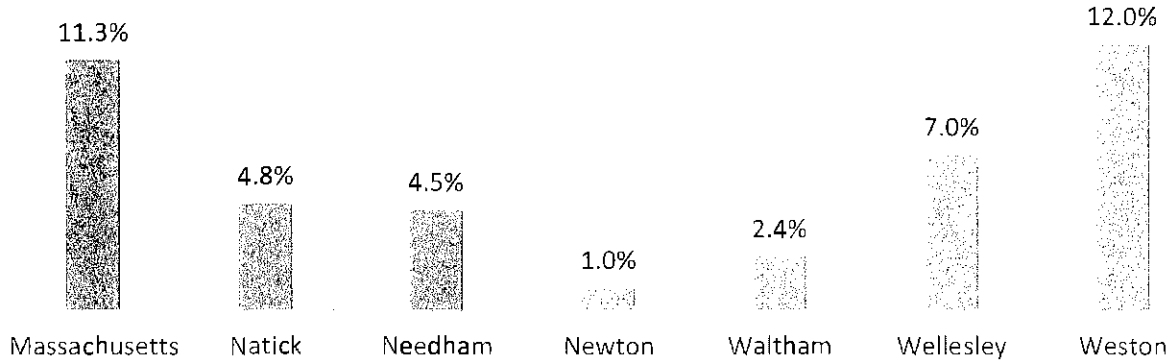
Figure 67: Percent of Students Reporting Current Electronic Cigarette Use by State and City/Town, 2015, 2016, and 2017



DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; * indicates Grades 7-8

During the 2015-2017 period, lifetime prescription drug misuse reported by high school students exceeded the state average (11.3%) in Weston (12.0%), and was lowest in Newton (1.0%) and Waltham (2.4%) (Figure 68). Following patterns for Massachusetts, across the assessment communities, the prevalence of lifetime prescription drug misuse among high school students was lower in 2015-2017 than 2012 (data not shown). Since the 2015 CHNA, the greatest decrease in life prescription drug misuse was seen in Waltham (17.0% to 2.4%) (data not shown).

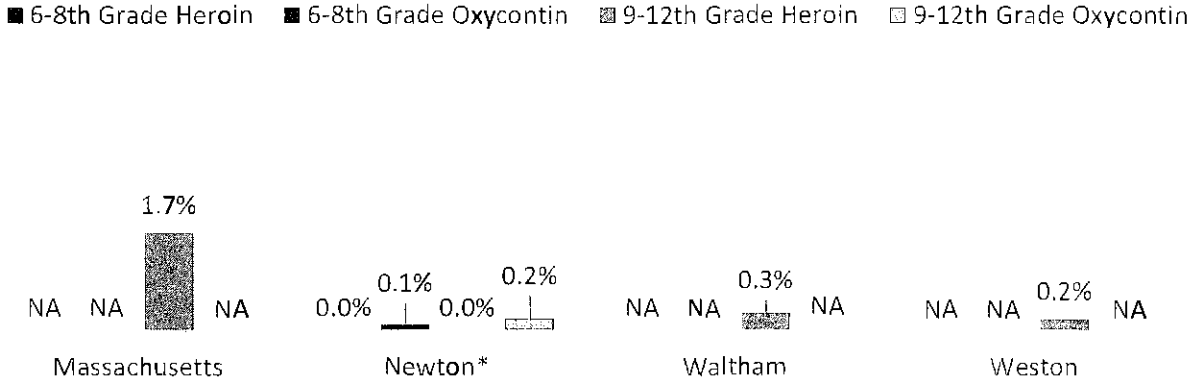
Figure 68: Percent of High School Students (Grades 9-12) Lifetime Misuse of Someone Else's Prescription, by State and City/Town, 2015, 2016, 2017



DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; *During the 12 months prior to survey administration

Among both middle and high school students in the NWH service area cities/towns for which data were available, current opioid use was lower than the average across Massachusetts (Figure 69).

Figure 69: Percent of Students Reporting Current Opioid Use by State and City/Town, 2015, 2016, 2017

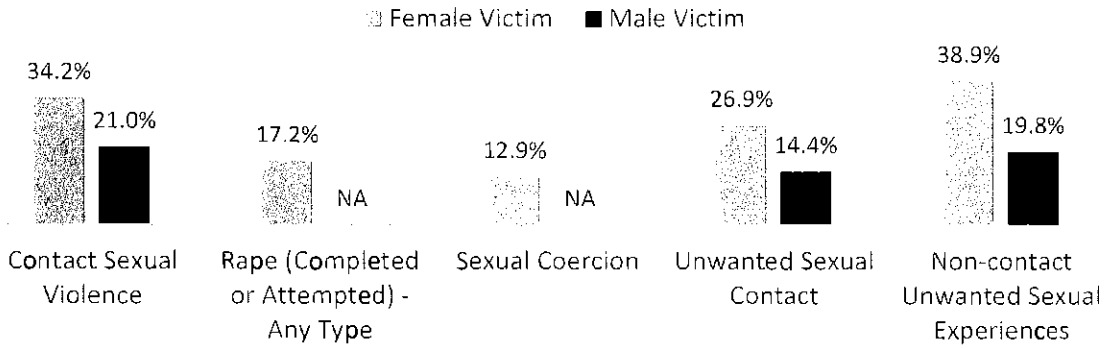


DATA SOURCE: Massachusetts Youth Health Risk Report, 2015; Natick High School and Middle School Adolescent Health Survey 2016; Needham High School and Middle School Adolescent Health Survey, 2016; Newton Youth Risk Behavior Survey, 2016; Waltham Public Schools Youth Risk Behavior Survey, 2017; Wellesley High School and Middle School Adolescent Health Survey, 2016, Weston Youth Health Assessment, 2015.
NOTES: NA indicates data were not available; * indicates grades 7-8; data not available for all assessment communities

Violence, Abuse, and Neglect

Beyond discussions of crime and safety generally, violence, abuse, and neglect was not discussed in focus groups and interviews. Across Massachusetts, the prevalence of reported lifetime experiences of sexual violence was highest for female victims (Figure 70). In 2010-2012, more than one-third of women reported non-contact unwanted sexual experiences (38.9%) or sexual violence (34.2%). One-quarter of women reported unwanted sexual contact (26.9%), and 17.2% reported rape, with nearly one in ten reporting sexual coercion (12.9%). Among men, one fifth reported contact sexual violence (21.0%) and non-contact unwanted sexual experiences (19.8%), and 14.4% reported unwanted sexual contact.

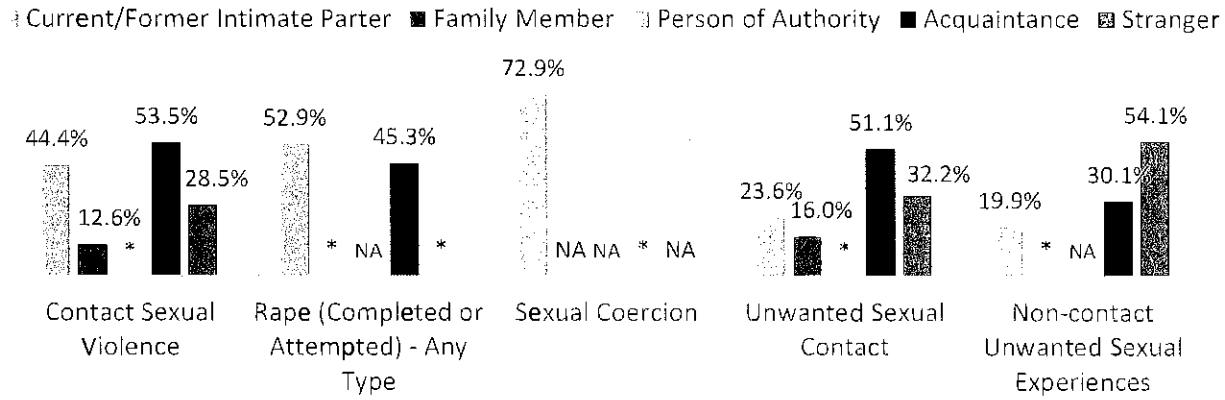
Figure 70: Lifetime Prevalence of Sexual Violence Victimization in the State of Massachusetts, 2010-2012



DATA SOURCE: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention, The National Intimate Partner and Sexual Violence Survey, 2010-2012 State Report

Shown in Figure 71 is the type of perpetrator for lifetime sexual violence victimization reported by women in 2010-2012. Intimate partners were the most common perpetrators of sexual coercion (72.9%) and rape (52.9%) for women. An acquaintance was the most common perpetrator of contact sexual violence (53.5%) and unwanted sexual contact (51.1%) for women. Strangers (54.1%) more commonly perpetrated non-contact unwanted sexual experiences.

Figure 71: Lifetime Prevalence of Sexual Violence Victimization, by Type of Perpetrator, among Women, Massachusetts, 2010-2012



DATA SOURCE: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention, The National Intimate Partner and Sexual Violence Survey, 2010-2012 State Report
NOTES: Asterisk (*) denotes where rates were not calculated due to small counts; NA denotes where victimization by type of perpetrator were not reported.

Among men, an equal percent of perpetrators of lifetime contact sexual violence were acquaintances (50.3%) or intimate partners (49.6%) in 2010-2012 (Figure 72). Nearly one half of non-contact unwanted sexual experiences reported by men in 2010-2012 were committed by acquaintances (48.5%), followed by strangers (35.1%).

Figure 72: Lifetime Prevalence of Sexual Violence Victimization by Type of Perpetrator, among Men, Massachusetts, 2010-2012

DATA SOURCE: Centers for Disease Control and Prevention, National Center for Injury Prevention and Control, Division of Violence Prevention, The National Intimate Partner and Sexual Violence Survey, 2010-2012 State Report
NOTES: Asterisk (*) denotes where rates were not calculated due to small counts; NA denotes where victimization by type of perpetrator were not reported.

In 2014, across Massachusetts child maltreatment victimization was most commonly perpetrated by parents, followed by unmarried partner(s) of the parent and other relatives (Table 7).

Table 7: Count of Child Maltreatment Victimization by Relation to the Child, Massachusetts, 2014

Perpetrator	Count
Parent	20,946
Multiple Relationships	1,457
Unmarried Partner of Parent	1,357
Other Relative	960
Other	456
Legal Guardian	125
Unknown	203
Child Daycare Provider	66
Foster Parent	61
Other Professional	54
Group Home and Residential Facility Staff	36

DATA SOURCE: U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. *Child maltreatment* 2014, 2010-2012

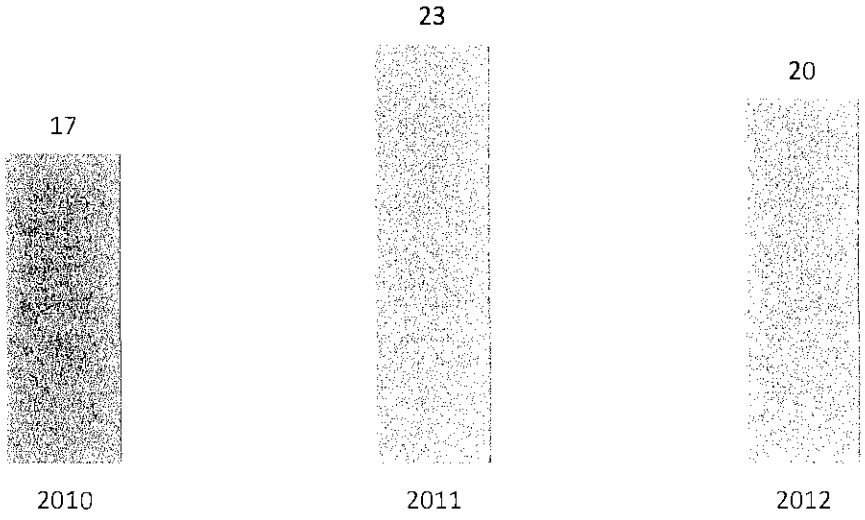
As shown in Figure 73, the rate of child maltreatment victimization increased from 17.2 cases per 1,000 children in 2010 to 22.9 cases of victimization per 1,000 children in 2014.

Figure 73: Rate of Child Maltreatment Victimization per 1,000 Children, Massachusetts, 2010 to 2014

DATA SOURCE: U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. *Child maltreatment* 2014, 2010-2012

From 2010 to 2012, the number of child maltreatment fatalities across Massachusetts ranged from 17 deaths in 2010 to 23 deaths in 2012 (Figure 74).

Figure 74: Count of Child Maltreatment Fatalities, Massachusetts, 2010-2012

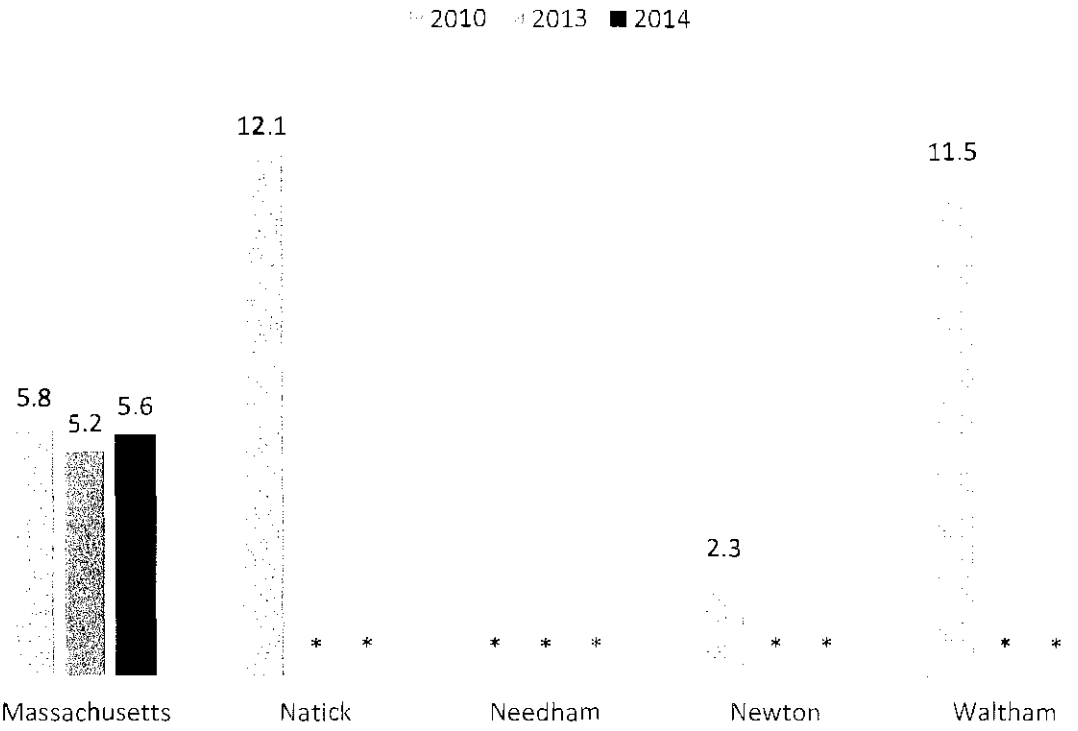


DATA SOURCE: U.S. Department of Health and Human Services, Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. *Child maltreatment* 2014, 2010-2012

Injury-Related Behaviors

While falls among elderly residents was a concern that emerged in the 2015 CHNA, injury-related behaviors did not come up in focus groups and interviews. In 2010, the age-adjusted mortality rate due to motor vehicle accidents in Natick (12.1 deaths per 100,000 population) and Waltham (11.5 deaths per 100,000 population) was double that for Massachusetts (5.8 deaths per 100,000 population) (Figure 75). While more recent data were not available for the NWH service area cities/towns, trends across Massachusetts suggest that the motor vehicle-related mortality rate remained stable from 2010 to 2014.

Figure 75: Age-Adjusted Motor Vehicle-Related Death Rate per 100,000 Population, by State and Select City/Town, 2010, 2013, and 2014



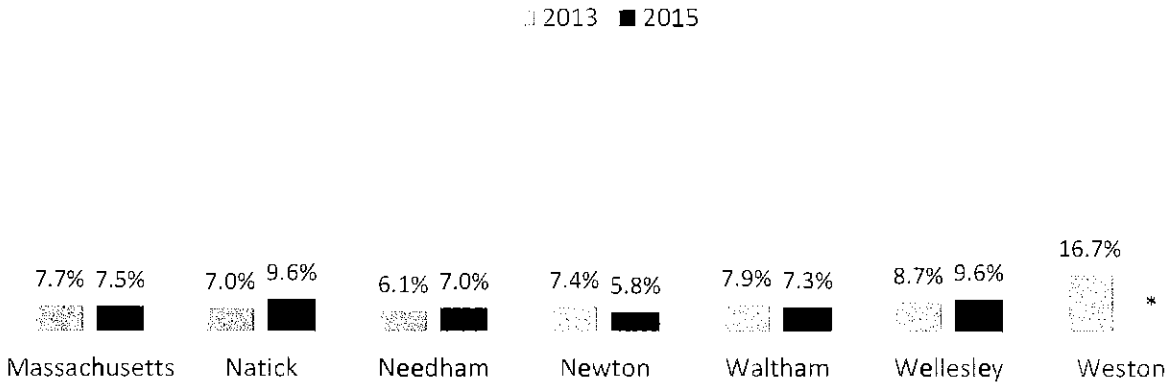
DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2010, 2013, and 2014

NOTE: Data not available for all assessment communities; * indicates data not available.

Reproductive and Maternal Health

In interviews and focus groups, reproductive and maternal health was not discussed. In 2015, the proportion of low birthweights births was highest in Natick (9.6%) and Wellesley (9.6%), a prevalence that exceeded patterns across Massachusetts (7.5%) (Figure 76). In 2013, Weston (16.7%), Wellesley (8.7%), and Waltham (7.9%) had a prevalence of low birthweight that was higher than the state overall (7.7%). From 2013 to 2015, the percent of low birthweight births increased slightly in Natick (7.0% to 9.6%), Needham (6.1% to 7.0%), and Wellesley (8.7% to 9.6%), while this prevalence decreased for Newton (7.4% to 5.8%).

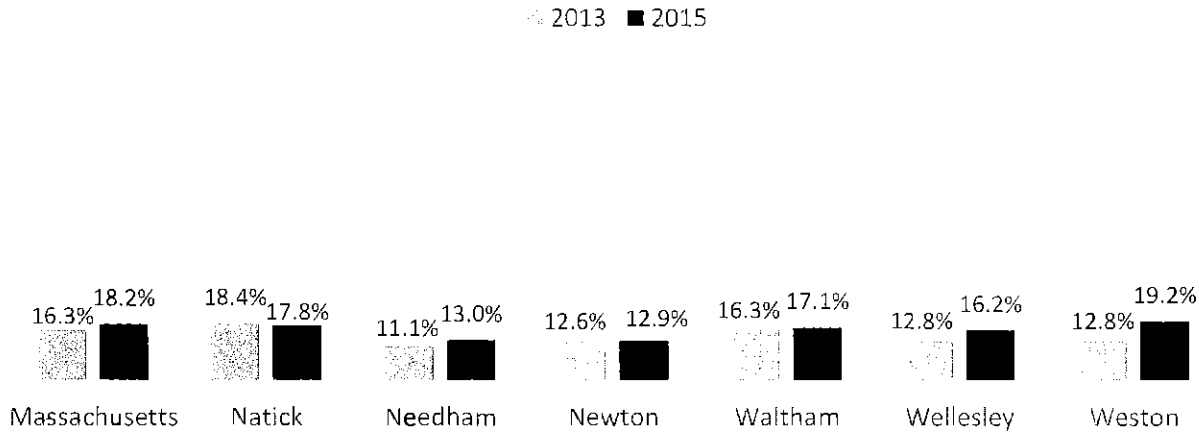
Figure 76: Percent of Low Birthweight Births, by State and City/Town, 2013 and 2015



DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2013-2015
NOTE: * indicates data suppressed due to small numbers

Similar to patterns across Massachusetts, from 2013 to 2015, the percent of mothers with inadequate prenatal care increased slightly in Needham (11.1% to 13.0%), Wellesley (12.8% to 16.2%), and Weston (12.8% to 19.2%) (Figure 77). In 2015, the percent of mothers with inadequate prenatal care was highest in Weston (19.2%), a prevalence that exceeded the state average (18.2%). Natick (18.4%) and Waltham (16.3%) had the highest percent of mothers receiving inadequate prenatal care in 2013. From 2013 to 2015, inadequate prenatal care increased notably in Wellesley (12.8% to 16.2%) and Weston (12.8% to 19.2%).

Figure 77: Percent of Mothers with Inadequate Prenatal Care, by State and City/Town, 2013 and 2015



DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2013-2015

As shown in Table 8, among the NWH service area cities/towns for which data were available, the rate of births to adolescent mothers was highest in Waltham in 2013 (6.8 births per 1,000 population) and 2014 (8.5 births per 1,000 population), but was below the state average.

Table 8: Rate of Births to Adolescent Mothers per 1,000, by State and City/Town, 2013-2014

	2013	2014
Massachusetts	12.0	10.6
Newton	1.2	1.9
Waltham	6.8	8.5

DATA SOURCE: Massachusetts Department of Public Health, Registry of Vital Records and Statistics, 2013-2014
NOTE: Data not available for other assessment communities

Communicable Disease

Communicable diseases were not discussed in interview or focus group discussions. The section below presents quantitative data for cases of HIV, Hepatitis C, tuberculosis, syphilis, gonorrhea, and chlamydia in the NWH service area.

HIV

From 2013 to 2015, Waltham had the highest number of residents diagnosed with HIV, followed by Newton (Table 9). Trends suggest a slight decline in the population diagnosed with HIV in Waltham (12 cases in 2013 to 7 cases in 2016).

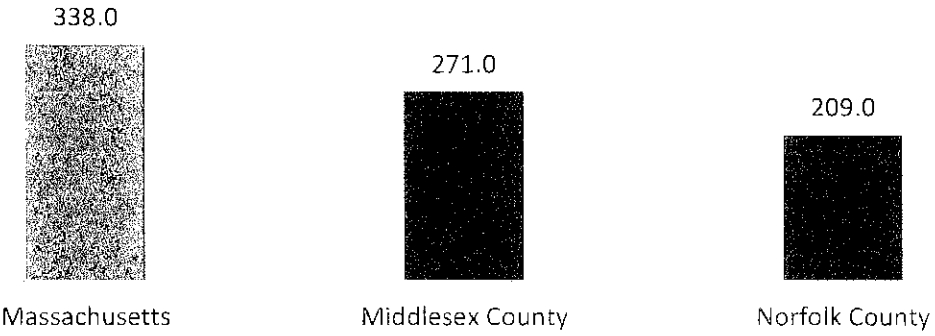
Table 9: Number of Individuals Diagnosed with HIV, by State and City/Town, 2013-2016

Geography	2013	2014	2015	2016
Massachusetts	696	653	605	641
Natick	<5	5	0	<5
Needham	0	<5	0	0
Newton	<5	<5	7	<5
Waltham	12	12	7	7
Wellesley	0	0	0	0
Weston	<5	0	0	0

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS, 2013-2016
NOTE: Does not include prisoners

The rate of persons living with an HIV diagnoses who were 13 years of age or older was 38.2% below the rate for Massachusetts overall (338.0 cases per 100,000 population) for Norfolk County (209.0 cases per 100,000 population) and 19.8% below the state average for Middlesex County (271.0 cases per 100,000 population).

Figure 78: Rate of Persons Aged 13+ Years Living with a Diagnosis of HIV per 100,000 Population, by State and County, 2015



DATA SOURCE: National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, as reported by County Health Rankings, 2015

Hepatitis C

From 2013-2015, the number of confirmed and probable cases of Hepatitis C were highest in Waltham, followed by Newton, compared to the other assessment communities.

Table 10: Number of Confirmed and Probable Cases of Hepatitis C, by State and City/Town, 2013-2015

Geography	2013	2014	2015
Massachusetts	8,177	8,899	8,994
Natick	20	24	24
Needham	10	6	11
Newton	46	42	37
Waltham	52	52	50
Weston	<5	<5	0

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS, 2013-2015

Tuberculosis

From 2013 to 2016, the number of confirmed and probable cases of tuberculosis were highest in Newton (6 cases) in 2013 and Waltham (5 cases) in 2014 (Table 11).

Table 11: Number of Confirmed and Probable Counts of Tuberculosis, by State and City/Town, 2013-2016

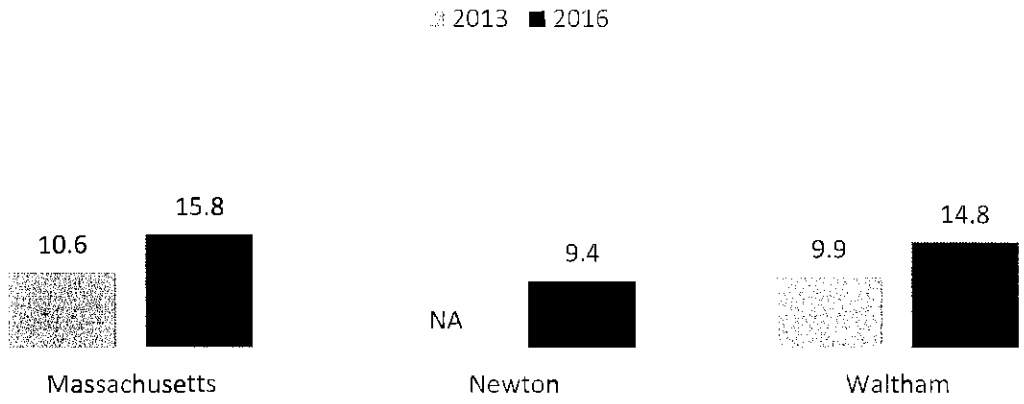
Geography	2013	2014	2015	2016
Massachusetts	201	199	192	190
Natick	0	<5	0	<5
Needham	0	0	0	0
Newton	6	3	1	2
Waltham	3	5	2	1
Wellesley	0	0	0	0
Weston	<5	0	0	0

DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, HIV/AIDS, 2013-2016

Syphilis

Similar to state patterns, in Waltham the syphilis case rate increased from 9.9 cases per 100,000 residents in 2013 to 14.8 cases per 100,000 residents in 2016 (Figure 79). In 2016, the syphilis case rate in Newton (9.4 cases per 100,000 residents) was 68.1% below the rate for Massachusetts overall (15.8 cases per 100,000 residents).

Figure 79: Syphilis Case Rate per 100,000 Population, by State and City/Town, 2013 and 2016



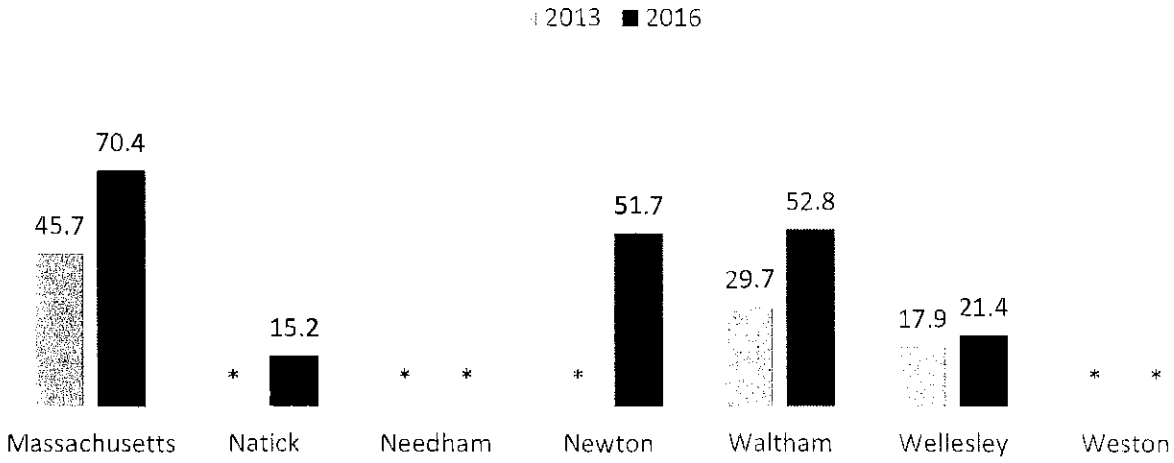
DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, Division of STD Prevention, 2013 and 2016

NOTE: NA indicates that rates were not calculated due to small number of cases

Gonorrhea

Among the cities/towns in the NWH service region for which data were available, the gonorrhea case rate was below the state rate in both 2013 and 2016 (Figure 80). In 2016, the gonorrhea case rate was highest in Waltham (52.8 cases per 100,000 population) and Newton (51.7 cases per 100,000 population), and lowest in Natick (15.2 cases per 100,000 residents).

Figure 80: Gonorrhea Case Rate per 100,000 Population, by State and City/Town, 2013 and 2016



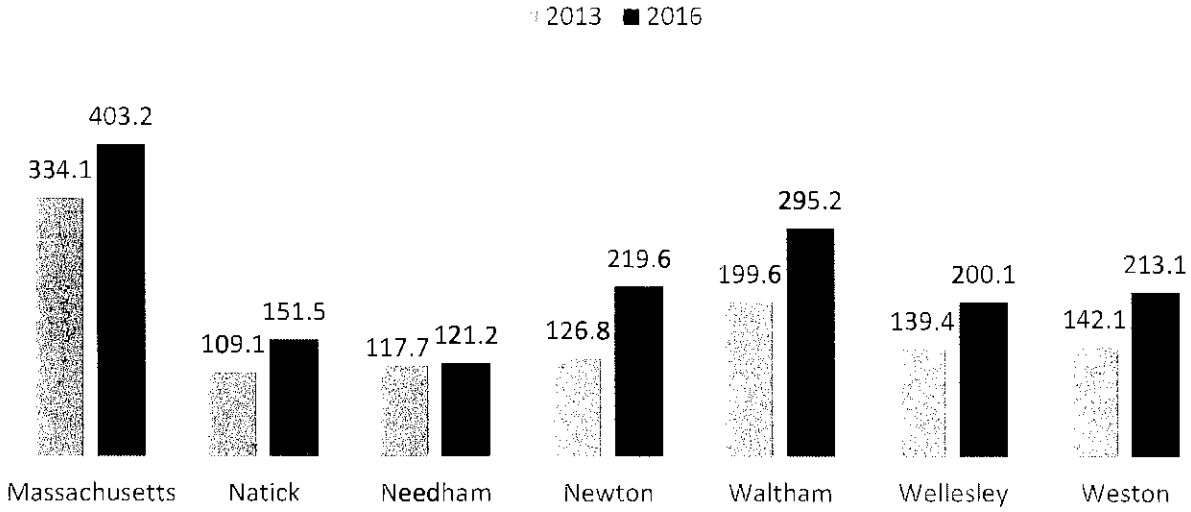
DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, Division of STD Prevention, 2013 and 2016

NOTE: NA indicates that rates were not calculated due to small number of cases

Chlamydia

As shown in Figure 81, the chlamydia case rate was below the rate for Massachusetts overall for all cities/towns in the NWH service area. However, following patterns across the state, the chlamydia case rate increased for all assessment communities from 2013 to 2016, with the greatest percent increase in Newton, Weston, Waltham, and Wellesley. In both 2013 and 2016, the chlamydia case rate was highest in Waltham (199.6 and 295.2 cases per 100,000 population, respectively). The chlamydia case rate was lowest in Natick (109.1 cases per 100,000 population) in 2013 and Needham (121.2 cases per 100,000 population) in 2016.

Figure 81: Chlamydia Case Rate per 100,000 Population, by State and City/Town, 2013 and 2016



DATA SOURCE: Massachusetts Department of Public Health, Bureau of Infectious Disease and Laboratory Sciences, Division of STD Prevention, 2013 and 2016

NOTE: NA indicates that rates were not calculated due to small number of cases

Access to Care

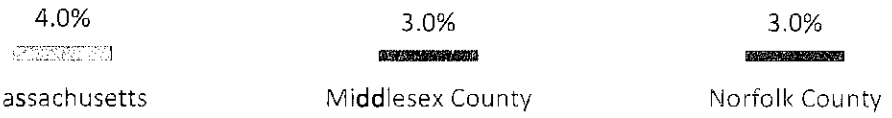
Overall, participants reported that there are good healthcare facilities in the NWH service area. They mentioned local hospitals as well as primary care providers. Charles River Community Health was praised by numerous participants for its care of lower income residents, its bilingual staff, and its strong prevention programming. At the same time, a couple of participants identified the absence of a hospital in Waltham as a barrier to accessing care. Focus group participants and interviewees cited additional barriers to accessing healthcare in the community which were similar to those identified in 2014 including cost and insurance, navigating healthcare, cultural competency, and transportation. Health care providers shared challenges in ensuring culturally competent health services, addressing the trauma experienced by some patients, and connecting non-English speaking individuals to appropriate services. Numerous participants expressed concern about the community's many undocumented residents, who face substantial barriers to accessing health and other resources.

Cost and Insurance

A few participants reported that obtaining health insurance was still a challenge for some residents, particularly those in immigrant communities. This was attributed to a lack of knowledge about how to obtain health insurance as well as the cost. An additional challenge identified by participants for residents of all income levels was understanding insurance, including knowing which providers accept which insurances, and what services are covered by insurance. The cost of care—including insurance premiums and deductibles, co-pays, and medication—was mentioned as a barrier to access as well, especially for lower income residents, including seniors. As one participant of a focus group commented, *"people are afraid to go to the doctor because they'll get an enormous bill."*

As shown in Figure 82, in 2014 3.0% of adults younger than 65 years of age across Middlesex and Norfolk Counties did not have health insurance, slightly below the prevalence across Massachusetts (4.0%).

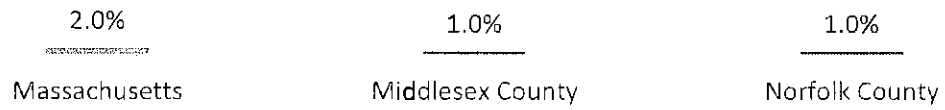
Figure 82: Percent of Adults under Age 65 without Health Insurance, by State and County, 2014



DATA SOURCE: U.S. Census Bureau, Small Area Health Insurance Estimates, as reported by County Health Rankings, 2014

In 2014, 1.0% of children under 19 years of age in Middlesex and Norfolk Counties did not have health insurance, slightly below the state average (2.0%) (Figure 83).

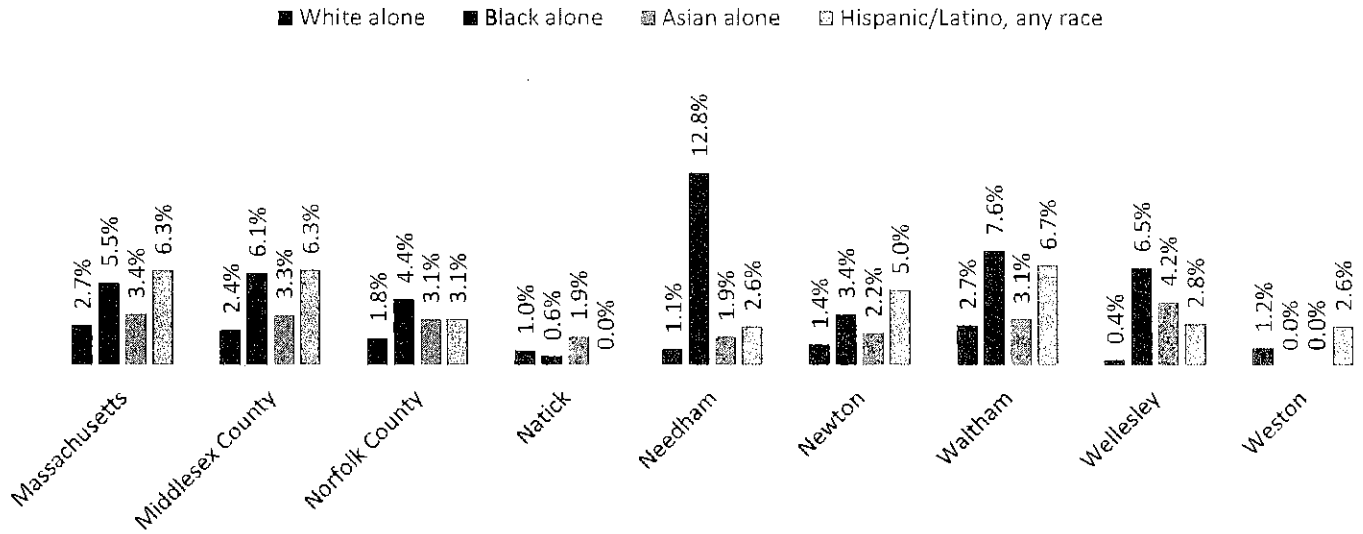
Figure 83: Percent of Children under Age 19 without Health Insurance, by State and County, 2014



DATA SOURCE: U.S. Census Bureau, Small Area Health Insurance Estimates, as reported by County Health Rankings, 2014

In 2012-2016, approximately 6% of Black and Hispanic/Latino Middlesex County residents did not have health insurance, compared to approximately 2% of White residents and 3% of Asian residents(Figure 84). During this period, a higher proportion of Black residents in Needham (12.8%), Waltham (7.6%), and Wellesley (6.5%) lacked health insurance relative to the state and Middlesex and Norfolk Counties overall. In Newton, a higher percent of Hispanic/Latino (5.0%) residents lacked health insurance than any other racial group in the city. In Wellesley, 4.2% of Asian residents lacked health insurance, a proportion that exceeded the state average (3.4%). Notably, the percent of residents without health insurance increased for each racial/ethnic group from 2008-2012 to 2012-2016, with the greatest increase in lack of health insurance seen for Asian residents across both Middlesex and Norfolk Counties, followed by Hispanic/Latino residents of Middlesex County, Black residents of Middlesex County, and Black residents of Norfolk County.

Figure 84: Racial Composition of Population without Health Insurance, by State, County, and City/Town, 2012-2016



DATA SOURCE: U.S. Census Bureau, American Community Survey 5-Year Estimates, 2012-2016

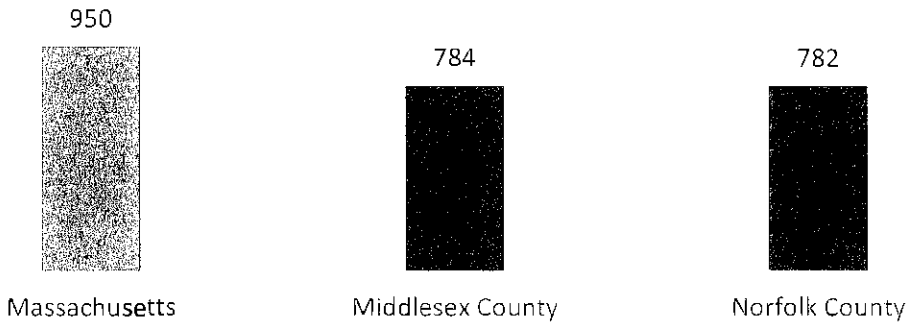
Navigating the Healthcare System

As in the 2015 CHNA, participants reported that navigating healthcare can be challenging. They described the complexity of the healthcare system, a system that is especially difficult for those with chronic illnesses or multiple providers to effectively manage. A related challenge, according to both residents and providers, was continuity of care after hospitalization. For example, one focus group participant explained, *"my sister-in-law is struggling with cancer – she just went home last night – left [the hospital] at 8pm at night. How does she get her meds? Her husband is blind and she can't drive. All these transition issues -who is going to make sure of medication reconciliation?"* Continuity of care was identified as a particular concern for frail seniors and those with chronic illnesses who require a set of supports upon returning to their homes. Participants reported a need for a strong network of community-based services as well as advocates/navigators to help patients navigate the healthcare system.

Physician Access

As shown in Figure 85, in 2014 there was one primary care physician per 784 Middlesex County residents and per 782 Norfolk County residents, a ratio that was approximately 17% lower than the ratio for Massachusetts (950:1) overall.

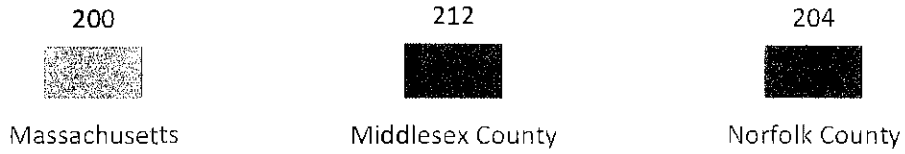
Figure 85: Ratio of Population per One Primary Care Physician, by State and County, 2014



DATA SOURCE: American Medical Association, Area Health Resource File, as reported by County Health Rankings, 2014

In 2016, the ratio of Middlesex (212:1) and Norfolk (204:1) County population to mental health providers was slightly less favorable than the ratio for the state (200:1) (Figure 86). That is, for every 212 Middlesex county residents and every 204 Norfolk County residents, there was one mental health provider available, while on average a mental health provider was available per 200 Massachusetts residents.

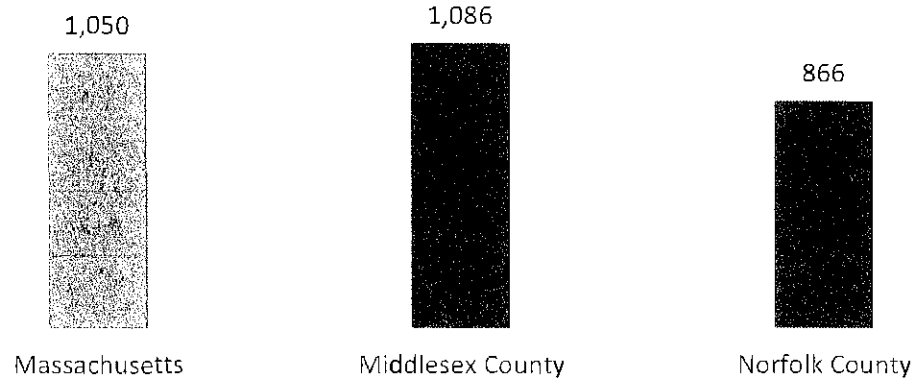
Figure 86: Ratio of Population per One Mental Health Provider, by State and County, 2016



DATA SOURCE: National Provider Identification Registry, Centers for Medicare and Medicaid Services, as reported by County Health Rankings, 2016

In 2015, there were 1,086 Middlesex County residents per dentist, a ratio that was 3.4% above the state average (1,050:1) (Figure 87). In contrast, there were more dentists available per capita in Norfolk County (886:1), a ratio that was 17.5% below the ratio for Massachusetts overall.

Figure 87: Ratio of Population per One Dentist, by State and County, 2015



DATA SOURCE: National Provider Identification file, Centers for Medicare and Medicaid Services, Area Health Resource File, as reported by County Health Rankings, 2015

Behavioral Health

Participants reported that there are some mental health services available in the area; one noted that Massachusetts has one of the highest rates of mental health providers per population. Numerous local services were named including Springwell, Riverside Mental Health, Advocates in Framingham, Jewish Family Services, and mental health services at some hospitals. Project Interface, a referral program for mental health, was reported to be working well. PrideSide at Wayside Youth and Family Support Network was described as providing mental health supports to LGBTQ individuals. However, existing mental health services were seen as insufficient to meet demand. As an interviewee claimed, *"everyone is overextended."* Services for children and youth, including pediatric beds for psychological issues, were noted as particularly lacking. Additional workforce challenges cited by participants included a lack of providers who are culturally competent or who have expertise in trauma-informed care. Several participants shared that ongoing care after intense treatment was also lacking but critical in helping to support patients once they leave a hospital. As one focus group participant explained, *"there is high intensity case management and then—boom—it goes away."*

An additional barrier to accessing mental health services, according to participants, is that many mental health providers do not accept insurance or MassHealth; as a result, many with mental health concerns, especially those of lower income, are undiagnosed or go untreated. As one interviewee stated, *"we don't have enough programs that accept all insurance or have enough programs that have availability for patients in general."* Limits on the number of mental health visits covered by insurance were also identified as posing additional barriers to proper care.

One costly consequence of lack of sufficient mental health services, participants noted, is use of the hospital emergency room for mental health care. Participants also described that primary care providers and pediatricians, as well as school staff and senior center staff, are increasingly finding themselves intervening on mental health issues, a role for which they report lack of expertise; thus, participants noted a need for more training.

According to focus group participants and interviewees, stigma about mental health is a substantial barrier to accessing care. As one focus group participant observed, *"it's societal, the stigma prevents people from getting help earlier in life."* Stigma and misunderstanding about mental illness was described as particularly prevalent among seniors and within immigrant groups. As one focus group participant shared, *"we need support... but the culture is that only crazy people go to mental health support."*

Like mental health services, substance use services were reported to be available in the area, although insufficient to meet the need for these services. Focus group participants and interviewees mentioned Genesis House and the role of Boston Medical Center on substance use issues. Waltham was reported to have good services. However, participants shared that the NWH service area still lacks sufficient providers and existing providers have high caseloads. High workforce turnover and lack of bilingual providers were identified as additional challenges. Participants indicated that some substance use services, including a local methadone clinic, are not accessible by public transportation. One participant perceived that lack of coordination and information sharing across agencies addressing substance use in Waltham has contributed to challenges in making sure people are served.

As with mental health, participants noted that primary care providers, pediatricians, schools, and senior centers are playing an increasing role in addressing substance use, but find they lack training and staff to

do this work. According to participants, stigma about substance use treatment creates additional barriers to accessing care.

Cultural Competency

Cultural competency of providers, as well as language access, were also identified as barriers for some community participants to access healthcare. Those working with non-English speaking populations repeatedly noted a lack of bilingual providers, particularly in specialty services such as mental health. As one focus group participant explained, *"language thing is a huge one. So many phone calls to find Spanish providers. You can't even keep a list—turnover is high."* An additional barrier to effective healthcare identified by a couple of interviewees was miscommunication between providers and patients about health conditions and treatments. As one interviewee who works with immigrants explained, *"the doctors explain things in ways that our clients don't understand. They are ashamed to ask if they don't understand. They don't feel comfortable even asking the interpreter."* One result of this, according to this interviewee, is improper use of medication. The lack of understanding about and ability to understand the unique needs of LGBTQ patients was also mentioned as a barrier to accessing care for these patients. For example, one interviewee explained that LGBTQ youth, *"don't receive queer-competent or queer-affirming sex education."*

Transportation

Transportation is a challenge for some patients in the NWH service area. According to participants, lack of cost-effective and convenient transportation options creates challenges to accessing health and other services in the NWH area, especially for lower income residents. While some options exist, long transit times, spotty service, and cost make it difficult for lower income residents and seniors to access medical care.

Community Suggestions for Future Programs, Services, and Initiatives

While focus group participants and interviewees praised the range of health and social services available in their communities, they also identified some gaps. Many of these gaps were similar to those identified in the 2015 CHNA report:

Addressing Behavioral Health

As in the 2015 CHNA, participants highlighted the importance of addressing behavioral health in its service area. Specific recommendations included:

- *Increase behavioral health services*. Focus group participants and interviewees encouraged more behavioral health services including residential programs that can offer longer-term and more intensive care, as well as community-based supports for aftercare. Participants said that more behavioral health providers are needed, especially those who are bilingual and have expertise in working with different cultural communities as well as LGBTQ patients. Increasing the number of providers who accept insurances and MassHealth was seen as one pathway to increasing these services. Those working with seniors suggested a need for mental health providers who could make home visits to seniors who are confined to their homes.
- *Provide training and support for schools, primary care providers, ond institutions working with seniors*. Schools, pediatricians, primary care providers, senior centers and councils on aging were described as playing an increasing role in identifying and supporting people with behavioral health concerns; yet, as participants shared, they lack expertise. The solution, according to participants, was more training as well as professional supports. Participants suggested mental health experts provide training and workshops. As one interviewee stated, *"nursing departments in schools are*

hungry for training on how to help students manage anxiety." Participants also expressed that more on-the-ground mental health experts were needed to support school-based therapists and staff in senior centers and councils on aging. Additionally, a couple of participants wanted to see more support for primary care providers and pediatricians, including more training and access to mental health expertise. One interviewee suggested primary care providers receive more education about pain management, including non-pharmacological approaches, and how to manage patient expectations.

- *More education programs.* Focus group participants and interviewees stressed that more education be provided in the community about mental health and addiction to help residents understand these issues and reduce the stigma surrounding them. Participants suggested education about stress management and eating disorders for students. Given the rise in marijuana use and vaping, participants also recommended parent education about the dangers of these substances. One person suggested that brief hardcopy or electronic documents could be created to help parents and others recognize behavioral health concerns, such as, what does an eating disorder look like, what does school phobia look like.
- *Create media campaigns.* Given the stigma and lack of understanding surrounding behavioral health, several participants suggested a more wide-spread effort around education using PSAs; they also suggested that such an effort was needed for e-cigarettes and marijuana.
- *Implement systems approaches.* Several participants suggested that more systemic approaches to addressing behavioral health in the community would be helpful and recommended working with schools to develop policies around substance use. Partnerships with and support for smaller, grassroots organizations working in behavioral health, like Waltham Overcoming Addition, were also encouraged. One participant suggested the development of a tracking system for those seeking substance use services to ensure people receive the services they need.

Prevention Programming and Education

Participants noted that health is connected to prevention and behavior change. As in the 2015 CHNA, participants observed that although good education programs exist in the community, more work in this area is required:

- *Expand health fairs and screenings.* Participants suggested the hospital continue to support and perhaps expand the health fairs and health-related events it conducts in the community. Organizations like faith institutions, schools, and community based agencies like Healthy Waltham and Middlesex Human Services Agency were all mentioned as partners.
- *Provide education about healthy lifestyles*: Participants encouraged more community-based education related to nutrition education and exercise, including diabetes. Several participants mentioned the importance of reaching children as well as their parents. A few participants suggested programs specifically targeted to lower income people who face barriers to healthy eating, including training around eating healthy on a budget and cooking classes. Attendance at educational events was recognized as a challenge and participants recommended small participation incentives and meals be provided to enhance interest. One interviewee suggested engaging primary care physicians in promoting the programs to patients, explaining that *"people are more likely to give consideration if they hear it from their doctor."* Another participant suggested that similar to other hospitals, NWH work with primary care providers and pediatricians to implement a healthy food *"prescription program."*
- *Conduct broader outreach in communities.* Engaging with community institutions was seen as critical for effective prevention programming to reach those who need it most. Schools, faith institutions, the YMCA, and Boys and Girls Clubs were all mentioned as potential partners for the hospital. As

one interviewee emphasized, *"you have to go to where they are, where they're comfortable."* Bi-lingual programs were described as essential for reaching non-English speakers. As one interviewee stated, *"students and families react different when programs are available in their native language. It's one thing to have an interpreter, but something gets lost in translation."*

- *Create a resource list.* Participants spoke about increasing awareness of services among residents. As one focus group participant stated, *"many people know about the services from word to mouth; they should find a way to ensure that everyone is aware of what is available."* Participants suggested creating a list of resources.

Engagement with Schools

Given the variety of health issues affecting students and families, schools were considered critical partners in providing support. Participants' suggestions for engaging with schools included:

- *Physician presence in schools*. Given the busy lifestyles of families and the barriers some face to accessing primary care, focus group participants suggested physicians periodically come to schools to do checkups and give vaccines. As one focus group participant explained, *"school nursing and health has become much bigger than it was years before – for some kids it may be the only medical profession they're seeing – in the school because they're not going for annual checkups."*
- *Professional development*. Participants suggested the hospital could offer school staff-specific education about pressing health concerns such as substance use, mental health, and sexual health. One participant suggested professional development be offered at the hospital, at the end of the school day, and include a tour of the hospital.
- *Workshops for students and families*. Participants recommended more school-based education, and suggested enhancing health classes but also offering educational workshops and trainings to students, parents, and school staff on topics such as nutrition, fitness and wellness, behavioral health, and healthy relationships. Holding student-focused physical and mental health fairs at schools was also suggested. A couple of participants proposed parenting education, particularly for immigrant parents, some of whom face challenges understanding and parenting their more Americanized children.
- *Support for students with complex medical needs*. Participants stated that more support was needed to help students with complex health issues, including staff coverage and connections to other supports. As one participant explained, *"as we get these children, we have to fight tooth and nail to get professional coverage for these students. Going through multiple agencies because...we need to have resources (i.e., manpower) to cover [staff], especially when the point person is sick."*

Services for Seniors

Seniors and those working with seniors identified several gaps in services for this population:

- *Additional services for seniors*. Participants recommended more senior services such as adult day care and home-based supports including home healthcare, cleaning, and grocery services. Technological-based approaches, such as telemedicine to deliver therapy and other appointments were seen as promising approach to support seniors that would benefit from expansion. Better engagement of seniors from minority populations in these services was also suggested.
- *Assistance with end-of-life planning*. While not uniquely a senior issue, more education and support around end-of-life planning, including healthcare proxies, power of attorney and advanced directives was suggested by a couple of interviewees.
- *Education about mental health*. Participants reported that stigma about mental health is strong among elders and suggested more senior-focused education to address this barrier. Senior centers

were seen as critical partners in delivering programming and education to older residents; however, participants also encouraged developing strategies to reach home-bound seniors.

Health Care Navigation Support

As in the previous CHNA, support for patients to navigate the health system was identified as a gap:

- *Enhanced connection to community-based services*. Participants recommended more care coordinators to enhance patients' connection to community services such as home care, housing, and social services after hospitalization. Helping people understand how to take care of themselves after a hospital stay, including how to effectively take medications, was considered important. Participants saw care coordinators as an important strategy to reduce repeat visits to the ER and hospital readmissions.
- *Healthcare navigation support*. Helping people with more complex health issues, such as cancer, was also suggested. Older people—who are more likely to have these health conditions and less likely to have a strong system of informal supports—were seen as particularly vulnerable. Again, care coordinators were viewed as a critical strategy to address this gap.

Cancer

Participants provided several suggestions related to cancer prevention and those with a cancer diagnosis, including:

- *Increase access to and awareness of screening*. Participants recommended increasing awareness campaigns and education around cancer screening. As one interviewee stated, *"cancer screening could be more active and informative across the board with different ages."* More prostate screening programs for men of color was suggested by one participant and mobile mammograms by another participant. Engagement with community institutions, including faith organizations and those serving specific cultural groups, was seen as essential to reaching residents.
- *Enhance support for those with cancer*. Enhancing supports for those with cancer was also mentioned by participants. They suggested patient navigators or care coordinators would help patients in navigating treatment options, especially those who have no family supports. Another participant suggested increasing resources to help cancer patients with basic needs including meal preparation, grocery shopping, transportation, and childcare.

Workforce Development

Some participants also suggested that NWH could play a role in improving workforce options for residents, especially as it relates to healthcare. Specific ideas included:

- *Hold a job fair*. Participants of one focus group suggested the hospital hold a job fair in the community to provide information about openings at NWH and perhaps other organizations.
- *Career education and support for students.* Several participants suggested the hospital could do more to promote health careers among the service area's students. As one interviewee stated, *"our students want to enter the nursing field."* A couple of participants suggested the hospital provide summer jobs and internships; one participants recommended mentorships or co-op arrangements.

Other Suggestions

A couple of other health gaps were mentioned, although with less frequency than those discussed previously:

- *Domestic Violence Services*. A couple of participants stated providers—including primary care physicians, ER staff, and obstetricians/gynecologists—would benefit from more education about domestic violence and trauma and the most effective ways to engage patients in conversations about these issues and identify abuse. As one focus group participant stated, *"if the physicians aren't trauma-informed, then that's an issue. The doctor needs to ask the right questions."*
- *Transpartatian*. Several participants recommended more community-level work on transportation, as they did in previous CHNA. Providing more transportation supports, especially for seniors, was mentioned by a couple of participants. One participant suggested the hospital re-institute the bus it once offered. Another mentioned the hospital could develop strategies to connect residents to transportation through services like Uber, including education about how to use the apps. Tackling transportation at the local level was also suggested.

KEY THEMES AND CONCLUSIONS

The 2018 CHNA included a review and synthesis of secondary social, economic, and health outcome data and an analysis of discussions with community residents and leaders across the NWH service area. This report builds upon the 2015 CHNA by examining social, economic, and health patterns and community concerns and considers persistent and emerging health concerns since the 2015 CHNA, with a focus on cancer outcomes and care. Several key themes emerged from this review:

Community Strengths

In focus groups and interviews, residents praised the vitality of their communities and saw diversity as a substantial asset. The high quality of the area's school system was described as an important strength in the region. Participants appreciated the spirit of collaboration and variety and extensiveness of services in their communities, including healthcare, public health, and programming for children, youth, and lower income residents. Overall, participants reported that there are good healthcare facilities in the NWH service area.

Identified Areas of Need

Housing

Lack of affordable housing in the area was a theme across focus groups and interviews. Residents spoke about rising rent in the service area, attributed in part to demand for housing from wealthier people who are moving to the area. Participants expressed concern about increasing housing costs for the residential stability of residents of Waltham, lower income residents in the region, and seniors.

Transportation

Limited transportation options and high transportation costs were also a challenge, particularly for those without private vehicles, such as lower income residents and seniors. Even where public transportation exists, there are several barriers to using it, including wait times, cost, language barriers, and lack of knowledge of transportation services.

Mental Health

Mental health was the community health concern mentioned most frequently in interviews and focus groups, with children and youth, seniors, and immigrant groups perceived as disproportionately affected. Participants cited high rates of anxiety and depression and often mentioned issues related to trauma, especially among recent immigrant communities. Relative to the other cities/towns in the NWH service area, a larger percent of Waltham students reported self-harm, suicidal ideation, and suicide attempts. Participants noted that increasingly, those suffering from mental health concerns also engage in substance misuse. They also shared concerns about lack of access to mental health services.

Substance Use

Substance use, particularly opioids, was also reported to be a substantial challenge for the community. Substance abuse admissions were highest for residents of Waltham and Natick. The prevalence of heroin-related treatment has increased in each of the NWH communities since the last assessment. Newton, Waltham, and Needham had the highest percent of patients admitted due to heroin as their primary substance of use. Participants working with youth reported that vaping has substantially increased among students in recent years. Since the 2015 CHNA, current alcohol use among middle

school youth declined, as did lifetime cigarette use. Substance use patterns among youth varied across the assessment communities: alcohol use was more prevalent in Weston; electronic cigarette use was highest in Waltham; and prescription drug misuse was more common in Weston and Wellesley.

Access to Care

Residents reported challenges in meeting the social, economic, and health care needs of all residents in the NWH service area, especially immigrants, low-income residents, and seniors. A few participants reported that obtaining health insurance was still a challenge for some residents, particularly those in immigrant communities. With the exception of Newton, all cities/towns in the NWH service area experienced a growth in the immigrant population since the 2015 CHNA. Participants reported that navigating healthcare and continuity of care after hospitalization can be challenging, particularly for residents with chronic illness or multiple providers. Cultural competency of providers, as well as language access, were also identified as barriers for some community participants to access healthcare. Those working with non-English speaking populations repeatedly noted a lack of bilingual providers, particularly in specialty services such as mental health.

Other Topics of Interest

Cancer

There was a sense among participants that cancer – particularly breast cancer – was prevalent and inevitable. In the NWH service area, cancer incidence was highest for breast cancer and prostate cancer. Among the assessment communities, Waltham had the highest cancer mortality rate due to all cancers. Since the 2015 CHNA, the cancer mortality rate noticeably decreased in Wellesley, Newton, and Waltham, while it increased in Needham. Cancer care in the area, including at NWH, was perceived to be good, although participants noted that patients often have difficulty understanding and navigating cancer care options; navigating the cancer care system was reported to be more difficult for lower income residents and seniors.

PRIORITY HEALTH NEEDS OF THE COMMUNITY

In July 2018, members of the NWH Community Benefits Committee reviewed the five identified areas of need (housing, transportation, mental health, substance use, access to care) in the community health needs assessment and their impact on the most vulnerable populations identified (seniors, immigrants, and low-income residents). Committee members were instructed to consider the following criteria for ranking these needs:

- Achievable
- Available Resources
- Community Need
- Community Readiness/Capacity
- Marketable to Community
- Measurable
- Political Will
- Alignment with Hospital/Community Initiatives

Members of the committee picked their top three out of the five identified needs using an online voting system. Paying attention to vulnerable populations of seniors, immigrants, and low-income residents, the committee determined to prioritize the following needs:

- Mental Health
- Substance Use
- Access to Care

APPENDIX A: Review of Initiatives

Newton-Wellesley Hospital 2018 Review of Initiatives

Because of the key findings from the 2014 CHNA, Newton-Wellesley Hospital identified five priority areas, each of which aligned with an identified community health need, that included: mental health, elder care, Waltham in general, access to care/transportation, and substance abuse. Since the 2014 Needs Assessment, Newton-Wellesley Hospital has provided a variety of services and programming to address the identified key needs and issues.

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
Priority Area: Mental Health				
Develop relationships between hospitals and schools	The hospital is focused on addressing the mental health needs of the families in our community through collaboration with area high schools with emphasis on managing mental health problems and prevention initiatives.	Began to lay foundation for a structured partnership with all 7 area schools in Newton, Natick, Needham, Weston, Waltham and Wellesley.	The Resilience Project was formally created – a school and community based initiative to promote the mental health and well-being of adolescents. Met with 7 high schools 2-3x each to develop a school-specific program to address mental health. Provided a NWH "school team" comprised of a social worker and child psychiatrist for on-going consultation and support.	Met with 7 high schools 2-3x each to develop a school-specific program to address mental health. Provided a dedicated team of clinicians for on-going consultation and support. Have become the dedicated resource for school staff in the community. Launched the NWH Resilience Council comprised of clinical staff (7) and community members (21).
Professional development for school faculty and staff		Held a mental health summit with 10-15 attendees (principals, school health reps, guidance staff and at least one superintendent) from the six school districts in our PSA.	100 school staff from 7 area high schools attended first annual ¾ day mental health summit. Key note speaker: Alec Miller, PsyD. on DBT; school professional panel and breakout groups. CEU's given.	100 school staff from 7 area high schools attended second annual mental health summit. Key note speaker: Jean Rhodes, PhD, on Mentorship; community panel; breakout sessions. CEU's given.

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
				Tailored professional consultation according to high school need - challenging students (Natick High School); to Special Education team (Needham High School); Dialectical Behavior Therapy (DBT) training (Waltham); Substance Use (Newton); parental education (Wellesley). Professional Development talks for school faculty and staff: Substance Use, and the Developing Brain, School refusal, and Managing the Aftermath of a Crisis in the School.
Educational sessions for students and parents		Participated in 3 school-sponsored lectures and forums open to parents, students and the community.	Participated in 4 school-sponsored lectures and forums open to parents, students and the community. NWH Child & Adolescent staff serve on student, parent and community committees and Boards to provide clinical expertise on policy and program development (i.e., City of Newton PATH, Middlesex Partnership for Youth).	Participated in 6 school-sponsored lectures and forums open to parents, students and the community. NWH Child & Adolescent staff serve on student, parent and community committees and Boards to provide clinical expertise on policy and program development, i.e., City of Newton PATH, Middlesex Partnership for Youth. Launched the Parent Program. Provides parents with education, support and practical strategies with sessions topics

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
				that include Social Media, Talking About Drugs and Alcohol, Raising a Resilient Child, and others. Parents Program launched with one 10-week session (20 parents). A second session of 20 parents planned for 2018.
Expanded access to Child/Adolescent Triage Program in NWH	The National Institute of Mental Health reports that 1 in 5 children or adolescents experience a mental health problem before the age of 18, yet only 1 in 5 of these children or adolescents receives the treatment they need.	Expanded access. Hired an additional social worker. Clinic and ED visit volume increased by 22%.	Direct school referral to Clinic. Hired an additional psychiatrist. Clinic and ED visit volume increased by 19%.	Clinic and ED visit volume increased by 31%. Expansion of clinical volume three-fold since 2011. Direct school referral to Clinic. Hired a child and adolescent psychologist.
Mental wellness education programs to parents in low-income housing units			With CAN-DO, involved in an initiative to provide educational programming on nutrition to low income residents through the Bridge to Self-Sufficiency Program. Outcomes for 2016 were educational healthy eating program planning and grant submission.	
Priority Area: Elder Care				
Educational programming for seniors		Senior supper held at NWH for over 100 community seniors. Provided socialization, nutrition, health education.	Senior supper held at NWH for over 100 community seniors. Provided socialization, nutrition, health education. Provided one Mindfulness workshop at local senior center.	In FY 2017, 150 seniors attended an annual senior supper that has been taking place for over 20 years. The event fostered socialization, nutrition and wellness.

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
		Provided educational information at senior health fairs. Provided hospital staff as presenters at lectures, forums and on panels on topics such as safe driving, medication management, sleep, nutrition, etc. Provided free blood pressure, flu clinics, and other screenings. Everything took place in senior centers, assisted living facilities, and other community venues.	Conducted by Behavioral health staff in the NWH Integrated Care Management Program. Supported the newly created, Waltham Connections, multi-agency organization through programing and financial supports. On 9 occasions provided educational information at senior health fairs. Provided hospital staff as presenters at lectures, forums and on panels on topics such as safe driving, medication management, sleep, nutrition, etc. Provided free blood pressure, flu clinics and other screenings. Everything took place in senior centers, assisted living facilities, and other community venues.	Provided two Mindfulness workshops at local senior centers. Conducted by Behavioral health staff in the NWH Integrated Care Management Program. Supported the newly created, Waltham Connections, multi-agency organization through programming and financial support. Collaborated with Newton Senior Services on plans under the PLAAN initiative under the World Health Organization, Age Friendly Cities initiatives. Conducted two focus groups with 20 clinical leaders participating. On 14 occasions provided educational information at senior health fairs. Provided hospital staff as presenters at lectures, forums and on panels. Provided free blood pressure, flu clinics, and other screenings. Everything took place in senior centers, assisted living facilities, and other community venues.

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
Educational programming for caregivers				Provided a forum for education on advance care planning for community members. Program was geared to attendees from the perspective of organizational leaders and as caregivers themselves.
Education about elder abuse	The DV/SA Program provides free, voluntary, and confidential services to patients and employees who are experiencing domestic violence, family violence and sexual assault. Survivors were served through support groups, counseling and safety planning, and several hundred consults to providers. Professionals provided education and training on all areas of abuse to include elder abuse.	The program provided thousands of hours of additional time were devoted to community education, training, policy development, & collaboration with community organizations.	NWH Program Manager for Domestic and Sexual Abuse conducted a presentation on Elder Abuse for 16 community Department of Public health officials and community agency representatives.	Provided education and consultation to several thousand health care providers and multidisciplinary professionals on topics ranging from partner abuse to elder trauma to ACES to polyvictimization. Conducted a needs assessment, hired an elder-specific advocate, started an elder-specific helpline, and expanded to include 7 additional area police departments in addition to Minuteman Senior Services.
"A Matter of Balance" – intervention to reverse or prevent loss of function and disablement through coping skills, fall risk reduction, and decreasing activity restrictions.	The intervention, A Matter of Balance, mitigates the negative effects of fear of falling has among elders. The program focuses on coping skills, fall risk reduction and decreasing activity restrictions. The purpose of the program is to reverse or prevent loss of function and disablement commonly associated with fear of falling among older persons.	65 participants	80 participants	64 participants

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
Abuse in Later Life partnership	Create a collaborative response to the growing DV/SA issue of abuse in later life.	The program also contributed substantively to state-wide efforts to ensure better collaborations between healthcare providers and violence & abuse specialists.	Began a multiyear partnership with REACH, Springwell Elder Protective Services, the Waltham PD, & the Middlesex Co DA's Office to respond to the issue of abuse later in life.	The multi-disciplinary Abuse in Later Life partnership conducted a needs assessment, hired an elder-specific advocate, started an elder-specific helpline, and expanded to include 7 additional area police departments in addition to Minuteman Senior Services.
Newton at Home	Provision of post-discharge services to frail elderly at risk for re-hospitalization. The project enables seniors to remain safely and independently in their own home by providing a broad array of programs and services, e.g. shopping, medication delivery, transportation to medical providers, friendly volunteer visitors, etc.	9 patients discharged from the acute setting were enrolled in the program.	8 patients discharged from the acute setting were enrolled in the program.	8 patients discharged from the acute setting were enrolled in the program.
Priority Area: Waltham				
Create Waltham Wellness Collaborative	In the NWH service area of Waltham, the obesity rate is higher than all other communities NWH serves. In addition, Waltham youth have higher obesity percentage rates than youth statewide. NWH has created a partnership with Healthy Waltham to address this issue in populations throughout the city, with focus on the healthy living of youth and seniors.	Collaborated and financially funded the creation of a Wellness Collaborative with Healthy Waltham. Focus on improve health and wellness, greater awareness to Waltham's obesity issue, especially in youth.	Expanded the Collaborative to partner with Waltham Partnership for Youth and specifically the Waltham Youth and Community Coalition. Supported the Fit in Five Wellness Challenge open to all Waltham residents to focus on eating right and exercising more for five weeks in the spring. Provided 5 educational/motivational blog	Supported the Walking Waltham initiative to engage the entire community and get more people walking—from ages 2-96. Promote physical activity, and help combat obesity and stress. Initiative promotes walking in Waltham's natural spaces and on city streets. Conducted in-school programming around healthy eating and promoting healthy

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
			entries on health eating and activity. Conducted in-school programming around healthy eating and promoting healthy choices for youth in Waltham.	choices for youth in Waltham through participation at the Waltham High School Health Fair (1000 students attended). Actively participate in Waltham Connections for Healthy Aging. A model created for incorporating age-friendly aspects into the policies and practices of Waltham organizations to improve lives of local seniors. Goals are to include seniors who typically face economic, ethnic or other barriers; as well as to provide mechanisms for social interaction and engagement. Supported Healthy Waltham to participate in the School Health Advisory Committee. Focused on the development of a new school wellness policy.
Screening mammograms for women			Explored possibility of providing mammograms to homeless women living in a hotel shelter. Challenged remained of access to PCP for follow up care. Determined not to be feasible at this time.	
School physicals for underprivileged youth	Provide medical care to children and adolescents who do not have access to a private physician so as not to delay entry into school as well as	11 children were provided immunizations.	27 children were provided immunizations.	27 children were provided immunizations.

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
	provide continued pediatric care.	Care included provided avenues for being followed by a primary pediatric clinician. Uninsured were assisted with the application phase of Mass Health.	Care included provided avenues for being followed by a primary pediatric clinician. Uninsured were assisted with the application phase of Mass Health.	Care included provided avenues for being followed by a primary pediatric clinician. Uninsured were assisted with the application phase of Mass Health.
Mental wellness seminars for parents			Offered 4 lectures and opportunities discussion for parents through the Resilience Project.	Pediatricians provided on-site health sessions at Waltham High School to 4 parents of at-risk youth. Topics covered included nutrition, healthy eating, fitness, handling stress. Session materials were also made available in Spanish. Provided support to Waltham Partnership for Youth for the education of 20 bilingual youth to complete an interpreter training for conducting community education programs in Spanish to community members, including parents, on subjects such as mental health and substance use.
Healthcare related seminars for the homeless		Began discussion with Community Day Center in Waltham as to health needs for consumers.	Attended monthly meetings of the Waltham Homeless Assistance Coalition. Clinical representation included emergency department, care management, and integrated care management (behavioral health).	Provided CPR certification class for residents of homeless hotel in Waltham. 11 residents attended. Family friendly meal was held after the program. Attended monthly meetings of the Waltham Homeless Assistance Coalition. Clinical representation included

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
				hospitalist service and integrated care management (behavioral health). Began efforts towards internal staff education on care for vulnerable populations, i.e., homeless individuals. Internal activities and resources have been directed towards this effort. Two provider education forums held.
Taxi vouchers to homeless shelters	NWH also supports various community agencies with additional transportation support to facilitate client access to needed healthcare.		Established taxi voucher accounts for 2 community homeless organizations to facilitate on-going access to healthcare services.	Established taxi voucher accounts for 2 community homeless organizations to facilitate on-going access to healthcare services.
Priority Area: Access to Care/Transportation				
Access for health appointments	To assist with access issues, NWH provides medical transportation through Springwell, the area agency on aging. Support through a taxi voucher system.	360 round-trip rides to NWH were provided by Springwell. The majority, 276 rides, were Waltham residents. Taxi voucher accounts were created for one community low income housing agency, and contributions were given to already established senior agency transport services.	287 round-trip rides to NWH were provided by Springwell. Most the Springwell transportation, 219 rides (76%), was Waltham residents. Taxi voucher accounts were created for one community low income housing agency, and contributions were given to already established senior agency transport services.	220 round-trip rides to NWH were provided by Springwell. Most the Springwell transportation, 178 rides (81%), were Waltham residents. Taxi voucher accounts were created for one community low income housing agency, and contributions were given to already established senior agency transport services.
Provide data set to all communities			Convened the Departments of Public Health in all six of NWH communities to meet 3 times in the year to discuss relevant and related topics for the	Convened the Departments of Public Health in all six of NWH communities to meet Quarterly on relevant and related topics for the community and NWH.

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
			community and NWH. Topics included substance use, opioid management, care coordination in the community, emergency care, etc. 15-20 attendees at each meeting. NWH Emergency Department data provided on a quarterly basis in the areas of top five diagnosis, overdose, and behavioral health.	Topics included, patient confidentiality, Flu, Substance use, Worrisome Living Conditions, and others. 4 meetings held. Approx. 20 attendees at each meeting. NWH Emergency Department data provided on a quarterly basis in the areas of top five diagnosis, overdose, and behavioral health.
Priority Area: Substance Abuse				
Provide Narcan	Access and use of Narcan is an effective option of treating drug overdose. The use of this resource in the community is a need for various agencies. NWH is able to provide Narcan and training to our community partners to support their efforts of dealing with the opioid crisis. Naloxone kits are also made available to those who present at the hospital with an opioid overdose.		Provided 283 doses of Narcan to local community partners – police and fire, public health, schools, higher education institutions, and shelters. NWH dispensed 37 naloxone kits to patients in the Emergency Department with diagnosis of opioid overdose.	Provided 365 doses of Narcan to local community partners – police and fire, public health, schools, higher education institutions, and shelters. NWH dispensed 57 naloxone kits to patients in the Emergency Department with diagnosis of opioid overdose.
Provide Narcan training			With distribution of Narcan, training was provided by NWH ED physicians.	With distribution of Narcan, training was provided by NWH ED physicians. NWH clinical staff provided a pharmacist training program to area pharmacists. 57 attendees. Collaborated with Norfolk

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
				County 7. Supported by the public health depts. of Wellesley, Needham, Dedham, Canton, Milton, Westwood, and Norwood
High school-based on-site event		Numerous clinicians provided education to 15 school programs with audiences of youth, parents and educators. Provide resources and on-site location for high school student exposure for career exploration in healthcare through shadow, tour and on-going student volunteer opportunities. Participated with one student for 6 weeks in the Newton Mayor Internship Program. Provided an extensive student vocational based work-place skill development program though volunteer services. (89 *vocational* student volunteers; 15 school-based vocational partnerships)	Numerous clinicians provided education to 20 school programs with audiences of youth, parents and educators. Provide resources and on-site location for high school student exposure for career exploration in healthcare through shadow, tour and on-going student volunteer opportunities. Participated with two students for 6 weeks in the Newton Mayor Internship Program. Provided an extensive student vocational based work-place skill development program through volunteer services. (100 *vocational* student volunteers; 20 vocational partnerships)	Numerous clinicians provided education to 20 school programs with audiences of youth, parents and educators. Provide resources and on-site location for high school student exposure for career exploration in healthcare through shadow, tour and on-going student volunteer opportunities. NWH Simulation Center was also made available for local High school classes. Participated with two students for 6 weeks in the Newton Mayor Internship Program. Provided an extensive student vocational based work-place skill development program through volunteer services. (115 *vocational* student volunteers; 27 vocational partnerships)
Online alcohol education program for 9th grade students and parents			Financially supported the use of the AlcoholEdu curriculum for parents and 9th grade students in the Needham High School. Approx. 400 students.	

Activities, Services and Programs listed in 2016 Implementation Strategy	Comment on Activity, Service and/or Program (e.g., collaborations, partnerships, successes, etc.)	Number of Individuals Served, Number of Classes Offered, etc.		
		FY15	FY16	FY17
Wellness classes designed to address tobacco use		Hospital's wellness center offered, at no cost, attendees 3 distinct classes on tobacco cessation (12 attendees) led by an experienced clinician.	Hospital's wellness center offered, at no cost, attendees classes on tobacco cessation (8 attendees) led by an experienced clinician.	Hospital's wellness center offered, at no cost, attendees classes on tobacco cessation (8 attendees) led by an experienced clinician.

APPENDIX B: List of Community Benefits Committee Members

Last Name, First Name	Role and Organization	Service Area
Anthony, Bob	President, Adolescent Wellness, Inc; NWH Overseer	Wellesley
Brede, Debra	NWH Board of Trustees; NWH Overseer	Wellesley
Cohen, Shep	Chair, Board of Health	Wellesley
Collier, Duke	Chair, NWH Board of Trustees	NWH
Crowley, Rev. Brandon Thomas	Senior Pastor, The Myrtle Baptist Church	West Newton
DiMaggio, Maria	Communications & Development Director, Healthy Waltham	Waltham
Dowcett, Kaytie	Executive Director, Waltham Partnership for Youth	Waltham
Flynn, Gregory	Honorable Justice, Waltham District Court	Waltham
Fuss, Rosemary	NWH Overseer	Wellesley
Gerard, Kim	Program Manager, Community Outreach, NWH Community Benefits Department	NWH
Hannah, Margaret	Executive Director, Freedman Center for Child and Family Development	Newton
Hattis, Paul	Senior Associate Director, MPH Program; Associate Professor, Dept of Public Health & Community Medicine, Tufts University Medical School	Newton
Hoshino, Ruth	Director of School Health Services	Newton
Jaff, Michael	President, NWH	NWH/Newton
Kay, Linda	NWH Overseer	Newton
Kelly, Chris	NWH Board of Trustees; NWH Charitable Foundation Board	Wellesley
Koppel, Adam	NWH Board of Trustees; NWH Overseer	Wellesley
Lefman, Cheryl	Community Health Coordinator, Wellesley Health Dept.	Wellesley
Lele, Lauren	Director, Community Benefits & Volunteer Services	NWH
Looney, John	Vice President of Marketing, Communications and Public Affairs	NWH
Mack, Heather	Vice President, NWH Development Office	NWH
Marriott, Julie	Co-Chair, Community Benefits Committee; NWH Charitable Foundation Board; NWH Board of Trustees; NWH Overseer	Wellesley
McCaffrey, Patricia	Director of Nursing, Waltham Public Schools	Waltham
McDonald, Tim	Director, Health & Human Svcs	Needham
McNeil, Josephine	Executive Director, CAN-DO	Newton
Miller, Erin	Coordinator, Domestic Violence/Sexual Assault Program	NWH
Moloney, Ellen	Chief Operating Officer, NWH	NWH

Last Name, First Name	Role and Organization	Service Area
O'Dea, Brian	Director, Public Affairs & Marketing	NWH
Phull, Tavinder	Director, Community Health Reporting and Compliance	Partners HealthCare
Sanders, Ronnie	Executive Director for Community Health	Partners HealthCare
Steer, Anne	NWH Charitable Foundation Board; NWH Overseer	Weston
Sullivan, Steve	NWH Board of Trustees; NWH Charitable Foundation Board; NWH Overseer	Wellesley
Swick, Susan	Chief, Division of Child & Adolescent Psychiatry	NWH
Tully, Stacey	Executive Director, Healthy Waltham	Waltham
Wallace, Jhana	Executive Director, CHNA 18	West Suburban Area
Walsh, Linda	Asst Commissioner, Newton Health Department	Newton
White, Jim	Director, Public Health, Town of Natick	Natick
White, Jo	Director of Healthcare Partnerships, Springwell, Inc.	Waltham
Youngblood, Deborah	Commissioner, Health & Human Services	Newton
Zuppe, John	Director, Public Health, City of Waltham	Waltham

APPENDIX C: Focus Group Participant Demographics

	n	%
Focus Group Language		
English	34	77.3%
Haitian-Creole	10	22.7%
City/Town of Residence		
Natick	3	6.8%
Needham	2	4.5%
Newton	15	34.1%
Waltham	16	36.4%
Wellesley	1	2.3%
Weston	1	2.3%
*Other**	6	13.6%
Gender		
Female	38	86.4%
Male	6	13.6%
Other	0	0.0%
Age		
Under 18 years old	0	0.0%
18-24 years old	2	4.5%
25-34 years old	4	9.1%
35-44 years old	4	9.1%
45-54 years old	10	22.7%
55-64 years old	12	27.3%
65 years old and over	12	27.3%
Race/Ethnicity		
White, non-Hispanic	15	34.1%
Black or African American, non-Hispanic	20	45.5%
Hispanic/Latino, any roce	7	15.9%
Asian or Pacific Islander	0	0.0%
Other	1	2.3%
More than two roces	1	2.3%
Highest Level of Education		
In high school ar less than high school diploma	7	15.9%
High school diploma or equivalent (e.g., GED)	4	9.1%
Some college, junior college, or vocational school	11	25.0%
College graduate or more	22	50.0%

* Other includes Boston, Carlisle, Framingham, Salem (NH), West Roxbury, and Woburn

APPENDIX D: List of Stakeholder Organizations

Organization	Sector/Population/Topic
Waltham High School	Immigrant/vulnerable populations, youth and education
Metro-Boston Project Outreach	Substance use
Out MetroWest	LGBTQ
Waltham Partnership for Youth	Youth development
NWH Substance Use Services	Substance use
Riverside Community Care	Mental and behavioral health
Healthy Waltham	Health
Springwell, Inc.	Senior/elder services, Transportation
Council on Aging Directors,	Senior/elder services
Myrtle Baptist Church	Faith-based community, African American population, Seniors
School Nurse Leaders	Education, children's health
Charles River Community Health	Community health center patients, Haitian-Creole speaking population
REACH	Domestic violence, Latino community
Waltham Housing Authority, Chesterbrook Gardens Learning Center	Public housing

Attachment/Exhibit

B

NEWTON-WELLESLEY HOSPITAL

Newton-Wellesley Hospital
Community Health Implementation Plan (CHIP)
November 2018

Priority 1: Mental Health
Objective: Increase access and use of mental health services, alleviate the fragmentation of services, and address issues of stigma associated with mental health care.

Strategies	**a. Youth Mental Health** • Under the school-based Resilience Project, conduct site visits to all area high schools that include a psychiatrist and social worker clinical team. Expand The Resilience Project to private schools and middle schools. • Provide professional development for school faculty and staff. Conduct educational sessions for student and parents in various community venues. Expand support outlets for parents and teens as well as community knowledge of mental health through workshops and group sessions. • Address the prevalence of mental health concerns among young adults in the college setting. Convene NWH Health In Higher Education Forums quarterly to bring together hospital and college leadership to collaborate and create processes and work proactively to address campus and hospital concerns. • Collaborate with Waltham Partnership For Youth to address the high percentage of Waltham students reporting self-harm, suicide ideation, and suicide attempts. Promote employment, education, and community involvement with support of the Youth Interpreters Program. **b. Elder Mental Health** • Collaborate with community partners, i.e., Healthy Connections (Waltham), Newton Senior Services, and Jewish Community Housing for the Elderly, to create and conduct programs that address issues of social isolation and frailty. Programs to include Tai Chi, mindfulness, Matter of Balance, and Senior Suppers. • Provide a resource for vulnerable patients to receive custodial care (housekeeping, laundry, grocery shopping, and prescription pick up) upon discharge from the hospital for a safe transition to home. Review data for program effectiveness. • Create an Elder Care Council that focuses on the needs of elders in the NWH community. Participation to include clinical experts, community experts, and interested patients and family members. • Focus on needs of the caregiver in the arena of elder mental health.

	○ Create support programs for caregivers. ▪ Conduct a Caregiver Self-care program in collaboration with community Council on Aging. ▪ Pilot Caregiver mobile app in Waltham. ▪ Offer Savvy Caregiver Training (The Healthy Living Center of Excellence) to NWH community caregivers. **c. Maternal Mental Health** • Implement a clinical tool to identify concerns related to maternal mental health. • Establish social work staffing and launch communication resources to support maternal mental health. **d. Immigrant Mental Health** • Implement cultural considerations when addressing mental health among immigrant populations, in Waltham, in particular.

Priority 2: Substance Use
Objective: Increase access and treatment of substance use disorders, work with providers on the care of substance use patients, educate and collaborate with the community on substance use disorder prevention and treatment.

Strategies	**a.** Expand access to and the resource of the Substance Use Service. Expand participation in support programs through SUS social work and recovery coach. **b.** Educate clinicians on how to best care for patients with substance use disorders and implement safe pain management. **c.** Address the issue of stigma associated with substance use through collaborating with community partners on resource nights (MetroBoston Project Outreach) and other outreach efforts (Newton Health and Human Services - Newton PATH). **d.** Provide education and advocacy in collaboration with the District Attorney's Office through the Charles River Opioid Task Force. e. Provide prevention mechanisms to address substance use. • MedSafe receptacle at NWH. • Supplement care for emergency treatment of overdoses through the distribution of Narcan and training to first responders and community partners. **f.** Grow outreach efforts to address the growing concern in NWH communities around Juuling/Vaping and electronic cigarette use. Create education materials and open forums to expose community health implications.

	g. Address the prevalence of substance use among college age students. Convene NWH Health In Higher Education Forums quarterly to bring together hospital and college leadership to collaborate and create processes that proactively address campus and hospital concerns. h. Work with Massachusetts Health and Hospital Association in the development and promotion of a Community Referral Resources database for use in continuing care for SUD patients.

Priority 3: Access To Care
Objective: Address challenges residents face throughout the NWH service area in accessing and navigating health care needs and services.

Strategies	a. Provide immunizations and primary care to school aged children to facilitate timely entry into school. Expand service to other NWH communities. b. Investigate operationalizing Palliative Care services in outpatient settings. c. Convene Departments of Public Health on a quarterly basis to communicate challenges, share best practices, review services, and strategize solutions on access and care in the hospital and the community. d. Provide provider access to Medicaid and non-insured patients through the Carefinder service e. Expand hospital use of Circulation/Lyft Non-Emergent transport service to enable patients to come to and leave the hospital with greater ease. f. Convene NWH Health In Higher Education Forums quarterly to bring together hospital and college leadership to strategize on access to care of college age patients/students. g. Explore/expand development of "off hours" clinics in areas where patients do not have daytime flexibility for medical visits/treatments.

Priority 4: Social Determinants of Health (SDOH): (Built Environment, Social Environment, Housing, Violence and Trauma, Education, Employment)
Objective: To develop programmatic solutions to address SDOH factors in the overall health of NWH communities

Strategies	**a. Built Environment** • Promote enhanced food access and healthy eating. o Wellness Collaboration with Healthy Waltham to facilitate access to healthy food (mobile food pantry), creating a culture of wellness and healthy living among all populations (across cultures) and age groups (seniors and youth), and policy development o Support the Summer Eats program in Waltham.

	b. Social Environment • Support Waltham Partnership for Youth Transportation study and determine opportunities for actionable outcomes. In collaboration with WPY, and other community partners, determine ways the study findings can be transferred to other populations and services. **c. Housing** • Explore opportunities to engage with housing facilities for educational programming and clinical services. • Provide health programming and support to homeless shelters. • Address the hospital's adequacy in delivering culturally competent care to vulnerable patient populations. **d. Violence and Trauma** • Continue to enhance and expand the NWH domestic and sexual violence program. • Continue the program's work in the areas of counseling, consultation, advocacy, education, and partnerships. • Oversight and participation in the National SANE Telenursing Center at NWH. • Continue expansion of efforts to infuse trauma informed care among healthcare providers. • Address concerns of abuse in vulnerable populations – elders, LGBTQ, immigrant. • Expand services to include a bi-lingual social worker in the Waltham community to address issues of violence. • Convene NWH Health In Higher Education Forums quarterly to bring together hospital and college leadership to address the prevalence of sexual violence within the college age population. • Create a hospital council focused on domestic and sexual violence. **e. Employment and Education** • Participate in Waltham Partnership For Youth and Newton Health and Human Services Internship programs. Expand participation to additional high school students. • Provide healthcare career exposure to student and adult populations through fairs, internships, and career-focused opportunities. • Explore the potential for the creation of a NWH Workforce Development Council. • Provide work-skill based opportunities for individuals (student and adult) through the NWH vocational volunteer program.

Priority 5: Chronic Disease Management and Prevention
Objective: Provide programs, education and preventive care to address prevalent on-going health concerns in NWH communities.

Strategies	a. Conduct community- based outreach with screenings, clinics, and educational forums. b. Provide programs related to mobility function and fear of falling among seniors. c. Provide home care services to vulnerable populations to promote home safety and safe care through partnerships with Neighbors Who Care (Waltham) and Newton At Home (Newton). d. Cardiovascular: Offer support programming to patients and caregivers to address issues associated with cardiac care. e. Cancer Care: provide greater awareness of cancer through education and screening options to at-risk populations with high incidences of cancer. Focus on populations and/or cancers of high risk Waltham.

Priority 6: Other Community Needs Identified
Objective: Collaborate with community partners to react to and improve identified health concerns.

Strategies	a. Be an active participant in community Emergency Preparedness through leadership for convening exercises, creating emergency plans and being a resource for partners. **b.** Develop partnerships and collaborations to address community health needs. **c.** Explore effective ways to train and educate providers in health equity when providing care to vulnerable populations.

Attachment/Exhibit

C

Partners HealthCare System, Inc.
Newton-Wellesley Hospital Community Health Initiative Narrative

A. Community Health Initiative Monies

The breakdown of Community Health Initiative ("CHI") monies for the Proposed Project at Newton-Wellesley Hospital ("NWH") is as follows:

- Maximum Capital Expenditure: $58,394,045.00
- Community Health Initiative: $2,919,702.25 (5% of Maximum Capital Expenditure)
- CHI Administrative Fee to be retained by NWH: $87,591.07 (3% of the CHI monies)
- Overall CHI Money – less the Administrative Fee: $2,832,111.18

- CHI Funding for Statewide Initiative: $708,027.80 (25% of CHI monies – less the administrative fee)
- CHI Local Funding: $2,124,083.38 (75% of CHI monies – less the Administrative Fee and the Evaluation Monies)
- Evaluation Monies to be retained by NWH: $212,408.34 (10% of the CHI Local Funding)
- CHI Local Funding to be disbursed: $1,911,675.04 (CHI Local Funding – Evaluation Monies)

B. Overview and Discussion of CHNA/DoN Processes

The Community Health Initiative ("CHI") processes and community engagement for the proposed Determination of Need ("DoN") Project[1] will be conducted by community benefit staff at Newton-Wellesley Hospital ("NWH"). NWH is a 273-bed comprehensive medical center affiliated with Partners HealthCare System, Inc. In January 2018, NWH engaged Health Resources in Action ("HRiA"), a non-profit public health organization in Boston, to conduct its triennial community health needs assessment ("CHNA"). In addition to fulfilling the requirement by the IRS Section H/Form 990 mandate, the NWH CHNA process was undertaken to:

- Identify and provide an update on the health needs and assets of the NWH service area (Natick, Needham, Newton, Waltham, Wellesley, and Weston), including information on social determinants of health;
- Identify the NWH service area's community needs for cancer prevention and screening; and
- Understand how outreach activities may be more effectively coordinated and delivered across the institution and in collaboration with community partners

The CHNA used a participatory, collaborative approach and examined health in its broadest context. As part of this assessment, NWH sought input and was provided oversight by its Community Benefits Committee ("CBC") to inform the methodology, including recommendation of secondary data sources, and identification of key informants and focus group segments. The

[1] This Application requests approval for the following projects (collectively, the "Proposed Project"): (1) renovation to establish an observation unit; (2) renovation and expansion of endoscopy unit; (3) renovation to expand special care nursery; (4) renovation to inpatient adult psychiatric units; (5) acquisition of a cardiac computerized tomography ("CT") unit; and (6) conservation projects.

assessment process included synthesizing existing data on social, economic, and health indicators from various sources, as well as, conducting eight interviews and six focus groups to explore perceptions of the community, health and social challenges for community members, and recommendations for how to address these concerns. In total, over 50 individuals were engaged in the 2018 assessment process. Consequently, the CHNA report provides key findings of the needs assessment process, which explored a range of health behaviors and outcomes; social and economic issues; including the social determinants of health; health care access and gaps; and strengths of existing resources and services.

C. Oversight of the CHI Process

NWH's CBC will continue to provide oversight on community benefits processes. However, the group will now formally be known as the Community Advisory Committee ("CAC"). This continued oversight will ensure that the CHI processes are guided by a diverse group of individuals aware of the health and social determinant of health issues facing the local communities.

D. Advisory Committee Duties

Given that this is a Tier 2 CHI, the scope of work that the CAC will carry out includes:

- Ensuring appropriate engagement with residents from targeted communities and community partners around the CHI.
- Determining the Health Priorities for CHI funding based upon the needs identified in the 2018 NWH CHNA/CHIP. The CAC will ensure that all Health Priorities are aligned with the Department of Public Health's Health Priorities and the Executive Office of Health and Human Services' Focus Areas.
- Providing oversight to the evaluator that is carrying out the evaluation of CHI-funded projects.
- Conducting a conflict of interest disclosure process to determine which members also will comprise the Allocation Committee (a Conflict of Interest Form has been developed).
- Reporting to the Department of Public Health on the DoN – CHI.

E. Allocation Committee Duties

The Allocation Committee is comprised of individuals from the CAC who do not have a conflict of interest in regard to funding. The scope of work that the Allocation Committee will carry out includes:

- Selecting Strategies for the noted Health Priorities.
- Completing and submitting the Health Priorities and Strategies Selection Form for approval by the Department of Public Health.
- Carrying out a formal request for proposal ("RFP") process (or an equivalent, transparent process) for the disbursement of CHI funds.
- Engaging resources that can support and assist applicants with their responses to the RFP.
- Disbursement of CHI funding.

- Providing oversight to a third-party vendor that is selected to carry out the evaluation of CHI-funded projects.

F. Timeline for CHI Activities

Upon a Notice of Determination of Need being issued by the Public Health Council, the CAC will commence meeting and begin the CHI Process. The timeline for CHI activities is as follows:

- Six weeks post-approval: The CAC will begin meeting and reviewing the 2018 CHNA/CHIP to commence the process of selecting Health Priorities.
- Three – four months post-approval: The CAC has determined Health Priorities for funding.
- Four – five months post-approval: The Allocation Committee is selecting strategies for the Health Priorities and will submit the Health Priorities and Strategies Form to the Department.
- Five – six months post-approval: The Allocation Committee is developing the RFP process and determining how this process will work in tandem with NWH's current grant efforts.
- Five – six months post-approval: NWH will commence working with the evaluator that will serve as a technical resource to grantees.
- Nine months post-approval: The RFP for funding is released.
- Ten months post-approval: Bidders conferences are held on the RFP.
- Twelve months post-approval: Responses are due for the RFP.
- Fifteen months post-approval: Funding decisions are made, and the disbursement of funds begins.
- Eighteen months to two years post-approval: Evaluator will begin evaluation work.

The aforementioned process is longer than the process outlined in the DoN Guidelines for Tier 2 projects. However, given the Applicant's and NWH's previous experience with RFP processes, staff feel strongly that it will take nine months to develop an RFP process that is transparent, fair and appropriate.

G. Request for Additional Years of Funding

NWH is seeking additional time to carry out the disbursement of funds for CHI. Based on NWH's 2018 CHNA, as well as previous experience with providing grant funding, NWH will offer larger, potentially multi-year grants with CHI funding. Consequently, NWH is seeking to disburse these monies over a 3-5-year period to ensure the greatest impact for the largest number of individuals.

H. Evaluation Overview

NWH is seeking to use 10% of local CHI funding ($212,408.34) for evaluation efforts. These monies will allow NWH to engage a third-party evaluator to carry out technical assistance and ensure appropriate evaluation of the CHI-funded projects.

I. Administrative Monies

Applicants submitting a Tier 2 CHI are eligible for a three percent (3%) administrative fee. Accordingly, NWH is requesting $87,591.07 in administrative funding. These monies are critical in developing a sound CHI process that complies with the Department of Public Health's expectations as administrative funding will be used to hire additional support staff, as currently Lauren Lele facilitates all engagement and community benefit activities with the CBC. These monies will also pay for reporting and dissemination of promising practices and lessons learned, facilitation support for the CAC and Allocation Committee, costs associated with the development of communication materials and placement of procurement information in community newspapers. Finally, these monies will help to offset the costs of the development and implementation of the RFP process.

Attachment/Exhibit

D

Community Engagement Plan Form Section 3 Supplement

Newton-Wellesley Hospital ("NWH") completed its most recent Community Health Needs Assessment ("CHNA") in 2018. This CHNA covers the hospital's catchment area of Natick, Needham, Newton, Waltham, Wellesley and Weston. To facilitate the CHNA process, NWH hired Health Resources in Action ("HRiA"), a public health consulting firm with expertise in conducting needs assessments and engagement processes. The 2018 CHNA was overseen by NWH's Community Benefits Committee ("CBC") with Lauren Lele, NWH's Director of Community Benefit ensuring that the CBC has a strong voice in the process. To ensure a robust community health initiative ("CHI") engagement process, NWH will carry out the following activities:

1. Development of a Determination of Need ("DoN") Community Advisory Committee: NWH has developed a Community Advisory Committee ("CAC") based on its Community Benefits Committee ("CBC"). The new CAC is comprised of members from the Community Benefits Committee, as well as representatives from the noted constituencies listed in the *Community Engagement Standards for Community Health Planning Guideline* (please see the CHNA/CHIP Self-Assessment Form for a list of members). These individuals work with local residents in NWH's service area on various social determinant of health issues. Consequently, these representatives have a deep understanding of the barriers to care that many local residents face, as well as the necessary social supports that are needed to ensure each resident has equal access to healthcare and other support services. The CAC will be tasked with selecting the health priorities for the CHI based on key themes from the 2018 CHNA process, as well as feedback from engaged residents and key informants. It is anticipated that the CAC will meet at least three times to select DoN health priorities (using the 2018 CHNA as the basis for all decisions). Once health priority decisions have been made, the CAC will engage in a conflict of interest process to determine which members of the group are eligible for participation in the Allocation Committee. The Allocation Committee is then tasked with determining the health strategies for the CHI and submitting the necessary Health Priorities and Strategies Form to the Department of Public Health. Post-approval of the Health Priorities and Strategies Form, the Allocation Committee develops the request for proposal ("RFP") for CHI funding and the allocation of all CHI monies.

2. Development of a DoN Allocation Committee: As discussed, this Committee is charged with determining the strategies that will be employed based on the health priorities selected by the Advisory Committee and feedback from local residents and key informants. This Committee is also charged with facilitating a transparent RFP process (or an equivalent transparent process) and allocating funds to selected organizations.

3. Assessing Needs and Resources: To commence the hospital's 2018 community health needs assessment ("CHNA") process, Lauren Lele worked with the hospital's Community Benefits Committee ("CBC") at length. CBC members were asked to provide feedback on the following: 1) Identification of potential key informant interviewees and focus groups; 2) Recruitment and/or partners to host focus groups; and 3) Review and comment on the following draft documents: a) List of secondary data indicators; b) Interview guide; c) Focus group guide; d) An outline of the CHNA Report; e) How feedback should be received on the CHNA Report and the CHNA Key Findings.

Focus Groups: Based on feedback from the CBC, in May 2018, six focus groups were conducted with 44 individuals from across the NWH service area. Focus groups were conducted with representatives of priority populations or sectors, including: faith-based community

members, Haitian-creole speaking population, domestic violence front line staff, school nurses, affordable housing residents, and Council on Aging staff. Focus group participant demographic characteristics can be found in Appendix C of the CHNA.

While all NWH service area cities/towns were represented in focus groups, focus group participants most often resided in Newton or Waltham (34.1% and 36.4%, respectively). The majority of participants were female (86.4%) and 45 years or older (77.3%). Almost half of participants self-identified as Black or African American (45.5%), followed by about a third of participants who self-identified as White (34.1%). Three-fourths of participants had at least some college education (75%).

Focus group discussions explored participants' perceptions of the community, priority health concerns, and suggestions for future programming and services to address these issues. A semi-structured moderator's guide was used across all focus groups to ensure consistency in the topics covered. The moderator's guide was translated to Haitian-Creole for one focus group. Each focus group was facilitated by a trained moderator, and detailed notes were taken during each discussion. On average, focus groups lasted 90 minutes and included 5-10 participants. As an incentive, focus group participants received a $30 stipend to compensate them for their time. (See Appendix D of the CHNA for a list of participating organizations).

Key Informant Interviews: In April 2018, HRiA conducted eight interviews with community stakeholders to gauge their perceptions of the community, health concerns, and what programming, services, or initiatives are most needed to address these concerns. Interviews were conducted by phone with eight individuals representing a range of sectors including education, social services, and health care, among others (See Appendix D of the CHNA for a list of participating organizations). A semi-structured interview guide was used across all discussions to ensure consistency in the topics covered. Each interview was facilitated by a trained moderator, and detailed notes were taken during conversations. On average, interviews lasted approximately 30-60 minutes.

The key informant interviews, as well as the CBC serving as an advisory body overseeing the CHNA and representing various community perspectives, allowed NWH to reach a higher level of engagement, "Involve," for the Assess Needs and Resources Phase of engagement.

4. Focusing on What's Important and the Choosing Effective Policies and Procedures: NWH presented the key findings and themes from the 2018 CHNA to the CBC for feedback on July 12, 2018. During this discussion HRiA shared with CBC members central and key themes from the CHNA and similar needs throughout each of the towns within NWH's service area. Moreover, in September 2018, Lauren Lele presented a high level overview of the CHNA process, as well as additional information on key themes discussed throughout the CHNA to the NWH Board of Directors, so they could offer feedback and ask additional questions. The Community Advisory Committee will utilize these key findings and the completed CHNA to determine health priorities for the CHI process. Moreover, the Allocation Committee will utilize the key findings from the CHNA to develop health strategies and potential procedures for developing the CHI RFP process. Overall, these activities will allow NWH to reach the "Collaborate" level of engagement for these phases through the work of the Community Advisory and Allocation Committees, including their consensus building efforts and participatory decision-making in determining health priorities and strategies for the CHI.

5. Act on What's Important: The Allocation Committee will develop a transparent funding and allocation process. This Committee is tasked with developing a sound solicitation process (or an equivalent, transparent process) including a Bidders Conference that allows potential grantees to inquire about questions on the request for proposal ("RFP"). Additionally, the Allocation Committee will ensure that technical assistance resources are available during the RFP process, so as many applicants as possible may submit viable proposals. The Allocation Committee also will ensure there are no conflicts of interest with the distribution of funds. For the procurement process aspect of this phase, NWH will reach the "Involve" level of engagement. Additionally, for the CHI implementation aspect of this phase, where CHI funds are distributed to organizations and CHI projects are implemented, NWH will reach the "Consult" level of engagement.

6. Evaluate Actions: In September 2018, NWH released a targeted RFP to consultants and evaluators to obtain assistance in carrying out a previous DoN CHI solicitation process, as well as evaluating the impact of CHI investments. For this CHI, the hospital will continue to work the same evaluator. This group will be tasked with monitoring and evaluating the community partners on an ongoing basis and reporting progress to NWH on CHI activities on an annual basis. Post-review, these reports will be submitted to the Department of Public Health. Consequently, for this phase, NWH will reach the "Consult" level of engagement.

An overall note, NWH staff have learned a number of lessons through the MG Waltham DoN – CHI process and will use these best practices to facilitate this DoN – CHI.

Attachment/Exhibit

6

Legal Notices

NEWTON-WELLESLEY HOSPITAL

LEGAL NOTICE

Public Announcement Concerning a Proposed Health Care Project

Partners HealthCare System, Inc. ("Applicant") located at 800 Boylston Street, Suite 1150, Boston, MA 02199 intends to file a Notice of Determination of Need ("Application") with the Massachusetts Department of Public Health for a substantial capital expenditure and substantial change in service by Newton-Wellesley Hospital located at 2014 Washington St, Newton, MA 02462. This Application includes the following (collectively, the "Proposed Project"): (1) renovation to establish an observation unit; (2) renovation and expansion of endoscopy unit; (3) renovation to expand special care nursery; (4) renovation to inpatient adult psychiatric units; (5) acquisition of a cardiac computerized tomography ("CT") unit; and (6) conservation projects. The total value of the Proposed Project based on the maximum capital expenditure is $58,394,045. The Applicant does not anticipate any price or service impacts on the Applicant's existing Patient Panel as a result of the Proposed Project. Any ten Taxpayers of Massachusetts may register in connection with the intended Application by no later than October 23, 2019 or 30 days from the Filing Date, whichever is later, by contacting the Department of Public Health, Determination of Need Program, 250 Washington Street, 6th Floor, Boston, MA 02108.

AD#13830538
MWDN 9/9/19

LIC/110 CHURCH STREET
LEGAL NOTICE

received until **11:30 AM on** Wednesday, 18 September 2019 and

las 9:00 a.m. y las 3:30 p.m. Por favor traiga una identificación al recoger los registros. Si alguien diferente a la persona que aparece en el archivo va a recoger los registros, por favor traiga un permiso escrito firmado por la persona que aparece en el registro.

DESTRUIÇÃO DE ARQUIVO DO ALUNO

Em 27 de Setembro de 2019, o Escritório de Serviços aos Alunos das Escolas Públicas de Hudson estará destruindo os arquivos de alunos que se graduaram entre os anos de 2012 a 2013. Os alunos que se mudaram, saíram ou não se encontraram elegíveis durante os anos letivos de 2012 a 2013 também terão seus arquivos destruídos.

Os distritos escolares são obrigados a destruir esses registros no prazo de 7 anos após a transferência do aluno, graduação ou saída do sistema escolar.

Se você deseja obter o seu arquivo temporário de educação especial, pode fazê-lo ligando para o Escritório de Serviços aos Alunos no número 978-567-6100 (ramais 42119 ou 42120), para marcar um horário para retirar os arquivos nos dias 25 e 26 de Setembro de 2019 entre as 9 da manhã e as 3:30 da tarde. Por favor, traga identificação ao vir buscar os arquivos. Se alguma

ing, non-conforming lot, as shown on the plans submitted. The property in question is located at **4 Garfield Street, Natick, MA**, Assessors Map 44, Lot 55. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-059

Per order of the ZBA Chair

AD#13830358
MWDN 9/9, 9/16/19

ZBA/86 EVERGREEN ROAD
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Edward and Karen Carr of**

Department, City Hall, 150 Concord St., Suite B3, Framingham, MA 01702 or by e-mail at CommunityDevelopment@framinghamma.gov. Access and accommodations are available for persons with disabilities. Translation provided with advance notice.

For questions or concerns, please contact the Community Development Department at (508) 532-5457.

AD#13829125
MWDN 9/9/19

ZBA/15 FLORENCE STREET
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Kenneth and Kathleen Leip of Natick, MA**, requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing two family dwelling and construct a two family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at 15 Florence Street, Natick, MA

STATE & REGION

LOTTERY

MASS. DAILY NUMBERS

EVENING DRAWING
Saturday: 0-3-9-4
EXACT ORDER
All 4 digits $4,910
First or last 3 $687
Any 2 digits $59
Any 1 digit $6
ANY ORDER
All 4 digits $205
First 3 digits $114
Last 3 digits $114
MIDDAY DRAWING
Saturday: 3-5-6-6
EXACT ORDER
All 4 digits $7,133
First or last 3 $999
Any 2 digits $86
Any 1 digit $9
ANY ORDER
All 4 digits $594
First 3 $166
Last 3 $333
LUCKY FOR LIFE
Thursday: 05-20-32-38-47
Lucky Ball: 15
MEGABUCKS DOUBLER
Saturday: 03-04-05-09-16-43
Estimated jackpot: $4.7 million
MEGA MILLIONS
Friday: 04-11-13-19-31
Megaball: 10
Megaplier: 4
Estimated jackpot: $139 million
POWERBALL
Saturday: 11-20-41-42-56
Powerball: 6
Power Play: 2
Estimated jackpot: $40 million
MASS CASH
Saturday: 01-07-11-13-27

RHODE ISLAND DAILY NUMBERS

Saturday
Midday: 7-9-4-1Evening: 9-5-9-5

CORRECTION

The article, "Sherborn mulls 50K sustainability grant," that ran in Sunday's Daily News stated the wrong month when referencing the date that Sherborn held its annual town meeting. It was held on April 23.

CORRECTION POLICY

The Daily News corrects errors of fact in stories, whether printed or published online. If you notice an error, please contact an editor at the news desk by calling 508-626-4412.

[illegible]

Trash collection contractor strike spreads on South Shore

By Erin Tiernan and May Whitfill
The Patriot Ledger

MARSHFIELD — Workers striking against the trash collection contractor of three South Shore towns extended their picket line to Fall River early Friday morning, the ninth day of demonstrations against Republic Services. Members began picketing outside 1080 Airport Road in Fall River after Republic moved trucks and equipment from the Marshfield yard to Fall River yard, the union said.

Two dozen employees of Republic Services, a waste disposal contractor that handles trash pickup in Marshfield, Rockland and Abington, walked off the job on Aug. 29 and have been on the picket line in front of the company's Route 139 location ever since. The workers are determined not to walk away until they are promised better wages and benefits.

The workers, who are members of Teamsters Local 25, unionized six months ago. On Thursday, members resumed negotiations with Republic Services but discussions lasted only two hours before breaking down again due to "company stonewalling," union representatives said.

Members of Teamsters Local 350 began picketing outside the Republic Services location in San Jose, California, on Thursday, Sept. 5.

"When faced with a greedy company such as Republic Services, Teamsters take the fight to the streets from Boston to San Jose and now to Fall River," Sean O'Brien, Teamsters Local 25 president, said in a statement. "Greedy, cynical companies such as Republic have to learn when they take on Teamsters in one city, they are taking on the entire Teamster Union."

The strike has meant irregular trash pickups for residents in all three South Shore towns. A statement from Republic Services blamed Teamsters Local 25 for gaps in service.

"The Teamsters' conduct has been aimed at preventing collection service for these local communities over the past few days," the statement said.

On Thursday, officials in Marshfield and Rockland said they were looking into whether Republic Services was meeting its contractual obligations.

"It's upsetting that Republic is putting my community at risk. I'm upset with Republic's misinformation and their failure to make promises and deadlines," Rockland Health Agent Delshaune Flipp said.

Flipp added that Rockland's contract with Republic Services extends another two years, but indicated she was meeting with the town's lawyer to see if the town can get out of the agreement.

A Marshfield resident brings his trash to the transfer station on Clay Pit Road on Wednesday, Sept. 4. [GREG DERR/THE PATRIOT LEDGER]

On Friday, Marshfield Town Administrator Michael Maresco said trash pickup continues to run 48 hours behind schedule in the town. He said he is continuing to monitor pickups to ensure the conditions of Marshfield's contract are being met. So far, he said, they are not.

"We want to work with them. They started picking up trash Tuesday, but if they are unable to fulfill their contract after five business days, which was (Wednesday), then the town can certainly bring someone else in," he said. "But we'd prefer to see a quick resolve to the labor strike."

Abington, Marshfield and Rockland have all expanded hours at trash drop-off centers in their communities to accommodate residents who want to support striking workers and not use the services of temporary workers.

NEWS IN BRIEF

UMass to replace 2 aging student apartment complexes

AMHERST — The University of Massachusetts-Amherst is moving ahead with a $200 million project to replace two aging student apartment complexes with more modern units.

The university says it will seek proposals from private developers to construct the new housing at the site of the current 115-unit Lincoln Apartments and the 170-unit North Village apartments. North Village is occupied mostly by graduate students with families.

The university said because of their age and condition, neither complex could be renovated.

The Lincoln Apartments on Massachusetts Avenue will be replaced by housing for about 730 undergraduate and 165 graduate students.

Both complexes are scheduled to close in the middle of next year. The university says it will work with current tenants to find them new housing.

Bill would let some cats, dogs used in testing be adopted

BOSTON — A bill aimed at giving cats and dogs that have been subjects in research institutions and product testing facilities a second shot at life is set to come up at a public hearing.

The bill would require that research labs spare animals from automatic euthanasia and instead use animal rescue organizations to help get the dogs and cats adopted.

The bill was approved by the Massachusetts Senate last session, but failed to become law. It's set for a public hearing Tuesday at the Massachusetts Statehouse.

Animals that pose a risk to public health are exempted.

Tens of thousands of cats and dogs are used for research and experimentation in the U.S. each year. Many of them are beagles.

Activists say nine states have approved similar bills, including California, New York and Rhode Island.

The Associated Press

Forecast for MetroWest

AccuWeather DOWNLOAD THE FREE APP

TODAY HIGH: 74° LOW: 51°
Pleasant with partial sunshine
RealFeel: 79° / 51°

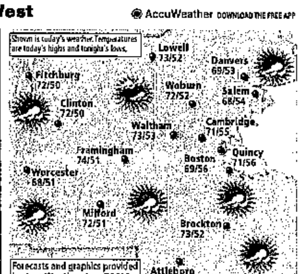
TUESDAY HIGH: 75° LOW: 61°
Delightful with partial sunshine
RealFeel: 79° / 60°

WEDNESDAY HIGH: 87° LOW: 64°
Mostly cloudy and more humid with a shower
RealFeel: 88° / 65°

THURSDAY HIGH: 81° LOW: 57°
Variable cloudiness with a passing shower
RealFeel: 84° / 57°

FRIDAY HIGH: 67° LOW: 56°
Nice with times of clouds and sun
RealFeel: 70° / 55°

The patented AccuWeather.com RealFeel Temperature® is an exclusive index of effective temperature based on eight weather factors.



LOCAL ALMANAC
Statistics through 5 pm yesterday

High / Low temperatures	76° / 53°
Precipitation 24 hrs. through 5 pm yest.	0.00"

SUN & MOON

	Today	Tuesday
Sunrise	6:19 am	6:20 am
Sunset	7:07 pm	7:05 pm
Moonrise	5:04 pm	5:43 pm
Moonset	1:42 am	2:38 am

MOON PHASES

Full	Last	New	First
Sep 14	Sep 21	Sep 28	Oct 5

The METROWEST DAILY NEWS

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Registration starts Monday for the 2020 Boston Marathon

Registration for the 2020 Boston Marathon opens on 10 a.m. Monday.

The B.A.A. states that it will use the same process to register qualified participants as in recent years, allowing the fastest qualifiers to register first.

Registration will be online at www.baa.org and qualifying performances achieved on or after Sept. 15, 2018, may be submitted for entry.

The 124th annual marathon will be held on April 20, 2020.

1st para athletes division

For the first time in the Boston Marathon's history, the 2020 marathon in which there will be a Para Athletics Divisions and Adaptive Programs.

Registration for these divisions and programs will open on Sept. 9 and follow the same procedures. Registration for Para Athletics Divisions and Adaptive Programs will occur on a "rolling admission" schedule, and will remain open until the maximum field size is reached or until Oct. 27.

Runners who need more information on the Para Athletics Divisions and Adaptive Programs eligibility requirements and entry procedures can visit, baa.org/races/boston-marathon/para-athletes.

Dates to know:

Monday, Sept. 9, at 10 a.m.: Participants who have met the qualifying standard by 20 minutes or more may apply for entry.

Wednesday, Sept. 11, at 10 a.m.: Participants who have met the qualifying standard by 10 minutes or more may apply for entry (if space remains).

Friday, Sept. 13, at 10 a.m.: Participants who have met the qualifying standard by 5 minutes or more may apply for entry (if space remains).

Saturday, Sept. 14, at 5 p.m.: Registration closes for the first week.

Monday, Sept. 16, at 10 a.m.: All participants who have met the qualifying standard may apply for entry (if space remains).

Wednesday, Sept. 18, at 5 p.m.: Registration closes for the second week.

Monday, Sept. 23, at 10 a.m.: Registration will reopen to anyone who meets the qualifying standards on a first-come, first-served basis. Registration will remain open until the maximum field size is reached.

Qualifying Standards

Applicants for the 2020 Boston Marathon must meet the designated time standard that corresponds with their age group and gender in a certified marathon on or after Sept. 15, 2018.

The B.A.A. requires proof of qualification with each athlete's application and participants are required to be 18 years or older on race day. All standards below are based on official submitted net time and age groups are determined based on a participant's age on Boston Marathon race day.

18-34: Men: 3 hours; **Women:** 3 hours 30 minutes

35-39: Men: 3 hours 5 minutes; **Women:** 3 hours 35 minutes

40-44: Men: 3 hours 10 minutes; **Women:** 3 hours 40 minutes

45-49: Men: 3 hours 20 minutes; **Women:** 3 hours 50 minutes

50-54: Men: 3 hours 25 minutes; **Women:** 3 hours 55 minutes

55-59: Men: 3 hours 35 minutes; **Women:** 4 hours 5 minutes

60-64: Men: 3 hours 50 minutes; **Women:** 4 hours 20 minutes

65-69: Men: 4 hours 5 minutes; **Women:** 4 hours 35 minutes

70-74: Men: 4 hours 20 minutes; **Women:** 4 hours 40 minutes

75-79: Men: 4 hours 35 minutes; **Women:** 5 hours 5 minutes

80 and over: Men: 4 hours 50 minutes; **Women:** 5 hours 20 minutes

Carol McSweeney, of Carver, competes in the 2015 Boston Marathon. (COURTESY PHOTO)

EDUCATION ACHIEVERS

Bob Jones University

Isaac Landry, of ASHLAND, was named to the BOB JONES UNIVERSITY Bruins men's soccer team roster for the 2019-20 academic year. Landry is a senior majoring in middle school education

Abigail Colledge, of ASHLAND, was named to the BOB JONES UNIVERSITY Bruins women's cross-country team roster for the 2019-2020 academic year.

University of Minnesota Crookston

Vijayaditya Sankara, of WESTBOROUGH, graduated with a Bachelor of Science in software engineering from the UNIVERSITY OF MINNESOTA CROOKSTON in Crookston, Minnesota.

Western New England University

The following local students were named to the spring 2019 dean's list at WESTERN NEW ENGLAND UNIVERSITY: Ethan Kagno, of HOLLISTON; Susan Rambridge, of MARLBOROUGH; Charles Jones, of NORTHBOROUGH; and Michael Benjamin, of WESTBOROUGH.

The following local students were named to the spring 2019 president's list at WESTERN NEW ENGLAND UNIVERSITY: Trevor Gustavson, of ASHLAND; Joseph Wright, of FRAMINGHAM; Tyler Olsen, of NATICK; and Meredith Smith, of NORTHBOROUGH.

Legal Notices

NEWTON-WELLESLEY HOSPITAL

LEGAL NOTICE

Public Announcement Concerning a Proposed Health Care Project

[illegible]

AD#13830538
MWDN 9/9/19

UC/110 CHURCH STREET
LEGAL NOTICE
TOWN OF HOLLISTON
NOTICE OF HEARING

Notice is hereby given under Chapter 138 of the General Laws of Massachusetts that a public hearing will be held by the Holliston Board of Selectmen on Monday, September 16, 2019, at 7:30 p.m. in the Selectmen's Meeting Room, Room 105, Holliston Town Hall, 703 Washington Street, to consider an application from Depot Package to transfer a license for all alcoholic beverages not to be consumed on the premises located at 110 Church Street.

Board of Selectmen
Christina Hein, Clerk

AD#13828105
MWDN 9/9/19

BOA/1 OAKHURST ROAD
LEGAL NOTICE
TOWN OF HOPKINTON
NOTICE OF PUBLIC HEARING

The Board of Appeals will hold a public hearing on **Wednesday, September 25, 2019, at 7:00 P.M.**, at the Town Hall, 18 Main Street, Hopkinton, MA, to hear all persons interested in the Application for Special Permit and/or Variance filed by **Gary McLaughlin, 5 Oakhurst Road, Hopkinton, MA.** The Applicant seeks relief from the Hopkinton Zoning Bylaws to replace an existing structure with a new single family home at **1 Oakhurst Road, Hopkinton, MA** that does not meet the minimum setback requirements. The property is owned by Joyce Stephansky, 2312 Lakeshire Drive, Alexandria, VA, and is shown on Assessors Map R28 Block 132 Lot 0. The Application is available for review at the Department of Land Use, Planning and Permitting at the Town Hall during regular office hours. The Town Hall is handicapped accessible. This legal notice is also posted on the Massachusetts Newspaper Publishers Association (MNPA) website at http://masspublicnotices.org.

Margaret Shaw
Clerk

Re: 20-004

AD#13830283
MWDN 9/9, 9/16/19

BOA/3 OAKHURST ROAD
LEGAL NOTICE
TOWN OF HOPKINTON
NOTICE OF PUBLIC HEARING

The Board of Appeals will hold a public hearing on **Wednesday, September 25, 2019, at 7:00 P.M.**, at the Town Hall, 18 Main Street, Hopkinton, MA, to hear all persons interested in the Application for Special Permit and/or Variance filed by **Gary McLaughlin, 5 Oakhurst Road, Hopkinton, MA.** The Applicant seeks relief from the Hopkinton Zoning Bylaws to replace an existing structure with a new single family home at **3 Oakhurst Road, Hopkinton, MA** that does not meet the minimum setback requirements. The property is owned by Joyce Stephansky, 2312 Lakeshire Drive, Alexandria, VA, and is shown on Assessors Map R28 Block 131 Lot 0. The Application is available for review at the Department of Land Use, Planning and Permitting at the Town Hall during regular office hours. The Town Hall is handicapped accessible. This legal notice is also posted on the Massachusetts Newspaper Publishers Association (MNPA) website at http://masspublicnotices.org.

Margaret Shaw
Clerk

Re: 20-005

AD#13830285
MWDN 9/9, 9/16/19

IFB - ROOF REPLACEMENT & BALCONY/EXTERIOR CONCRETE & MASONRY REPAIRS
LEGAL NOTICE
MARLBOROUGH COMMUNITY DEVELOPMENT AUTHORITY-HOUSING DIVISION

INVITATION FOR SEALED BIDS
ROOF REPLACEMENT &
BALCONY/EXTERIOR CONCRETE &
MASONRY REPAIRS

The Marlborough Community Development Authority-Housing Division ("MCDA"), the awarding authority, is inviting electronic sealed bids from Contractors for the 667-1 Roof Replacement and Balcony/Exterior Concrete and Masonry Repairs, #170081 in Marlborough, Mass., in accordance with the documents prepared by Nault Architects Inc. The project consists of: This project includes envelope repairs at MCDA's Pleasant St Development. All four apartment buildings on site are receiving the following work scope: Replacement of shingle roofs and associated work (FSB), Repair/repointing at chimneys and brick facades, Replacement of damaged fascia's and rakes, Raising of problematic weep courses, Replacement of balcony railing, Replacement of an entry canopy, Select re-painting (FSB) and Cleaning of building facades. The work is estimated to cost $530,000. Bids are subject to M.G.L. c149 §44A-J to minimum wage rates as required by M.G.L. c149 §§26 to 27H inclusive. Pre-bid conference: 9/11/19 at 9:00 AM at 29 Pleasant St. at the Community Building. **THIS PROJECT IS BEING ELECTRONICALLY BID AND HARD COPY BIDS WILL NOT BE ACCEPTED.** General bids will be received until **11:30 AM on Wednesday, 25 September 2019** and publicly opened online, forthwith. Filed Sub-bids for Section 07 50 00-Roofing & flashing and Section 09 90 00-Painting will be received until 11:30 AM on Wednesday, 18 September 2019 and publicly opened online, forthwith. DCAMM Certificate is required. Plans/Specifications available September 4, 2019 after noon at Nashoba Blue, Inc., 433 Main St., Hudson, MA 01749 978-568-1167 or online at www.biddocsonline.com (may be viewed electronically and hardcopy requested). There is a plan deposit of $50.00/set (refundable). Mailing fee is $40.00 (non-refundable).

AD#13830338
MWDN 9/7, 9/8, 9/9, 9/10, 9/11, 9/12, 9/13, 9/14/19

ZBA/14 WEST CENTRAL STREET
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Abhishek Jain of Natick, MA,** requesting a Modification of an existing Variance granted on November 21, 1950 in order to allow the existing Professional Office be renovated to be used as a Dental Office. The property in question is located at **14 West Central Street, Natick, MA,** Assessors Map 43, Lot 262. The use of the premises is Commercial.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-054

Per order of the ZBA Chair

AD#13830373
MWDN 9/9, 9/16/19

ZBA/39 FOREST AVENUE
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Nardone Corp. of Marlborough, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to construct a second story addition on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at **39 Forest Avenue, Natick, MA,** Assessors Map 51, Lot 153. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-061

Per order of the ZBA Chair

AD#13830354
MWDN 9/9, 9/16/19

STUDENT RECORD DESTRUCTION
LEGAL NOTICE

STUDENT RECORD DESTRUCTION

On September 27, 2019, the Office of Student Services for Hudson Public Schools will be destroying student files of students who have graduated between the years of 2012 to 2013 and graduates of 2019. Additional files that will be destroyed are those of students who have moved, withdrawn or found not eligible during the 2012 to 2013 school years.

School districts are required to destroy these materials no later than 7 years after the student transfers, graduates or withdraws from the school system.

Should you wish to obtain your special education temporary record, you may do so by calling the Office of Student Services at 978-567-6100 (ext. 42119 or 42120) to arrange a time to pick up the records on September 25, 2019 and September 26, 2019 between 9:00 am and 3:30 pm. Please bring identification when picking up records. If someone other than the person named in the file is picking up the records, please bring a letter of signed permission by the person named in the records.

DESTRUCCIÓN DE ARCHIVOS DE LOS ALUMNOS

El 27 de septiembre de 2019, la Oficina de Servicios Estudiantiles de las Escuelas Públicas de Hudson destruirá los archivos de estudiantes que se han graduado entre los años 2012 a 2013 y los graduados en el 2019. Los archivos adicionales que se destruirán son los de los estudiantes que se mudaron, se retiraron o no fueron elegibles durante los años escolares 2012 a 2013.

Se requiere que los distritos escolares destruyan estos materiales a más tardar 7 años después de que el estudiante se transfiere, se gradúa o se retira del sistema escolar.

Si desea obtener su registro temporal de educación especial, puede hacerlo llamando a la Oficina de Servicios Estudiantiles al 978-567-6100 (extensión 42119 o 42120) para concertar una cita y así recoger los registros el 25 o 26 de septiembre del 2019 entre las 9:00 a.m. y las 3:30 p.m. Por favor traiga una identificación al recoger los registros. Si alguien diferente a la persona que aparece en el archivo va a recoger los registros, por favor traiga un permiso escrito firmado por la persona que aparece en el registro.

DESTRUIÇÃO DE ARQUIVO DO ALUNO

Em 27 de Setembro de 2019, o Escritório de Serviços aos Alunos das Escolas Públicas de Hudson estará destruindo os arquivos de alunos que se graduaram entre os anos de 2012 a 2013. Os alunos que se mudaram, saíram ou não se encontraram elegíveis durante os anos letivos de 2012 a 2013 também terão seus arquivos destruídos.

Os distritos escolares são obrigados a destruir esses registros no prazo de 7 anos após a transferência do aluno, graduação ou saída do sistema escolar.

Se você deseja obter o seu arquivo temporário de educação especial, pode fazê-lo ligando para o Escritório de Serviços aos Alunos no número 978-567-6100 (ramais 42119 ou 42120), para marcar um horário para retirar os arquivos nos dias 25 a 26 de Setembro de 2019 entre as 9 da manhã e as 3:30 da tarde. Por favor, traga identificação ao vir buscar os arquivos. Se alguma outra pessoa, que não esteja listada nos registros, vier buscá-los, por favor traga uma carta de permissão assinada pela pessoa nomeada nos registros.

AD#13829082
MWDN 9/8, 9/9, 9/10, 9/11, 9/12, 9/13/19

ZBA/7 HUDSON STREET
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Dan Brown of Natick, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing single family dwelling and reconstruct a single family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at **7 Hudson Street, Natick, MA,** Assessors Map 49, Lot 34A. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-056

Per order of the ZBA Chair

AD#13830363
MWDN 9/9, 9/16/19

SIECK-ROBINSON NAME CHANGE
LEGAL NOTICE
Commonwealth of Massachusetts
The Trial Court
Probate and Family Court
Middlesex Probate and Family Court
208 Cambridge Street
Cambridge, MA 02141
(617) 768-5800
Docket No. MI19C0464CA

CITATION ON PETITION TO CHANGE NAME

In the matter of: Alanna Rose Sieck-Robinson

A Petition to Change Name of Adult has been filed by **Alanna Rose Sieck-Robinson of Hudson MA requesting** that the court enter a Decree changing their name to: **Alanna Rose Robinson**

IMPORTANT NOTICE

Any person may appear for purposes of objecting to the petition by filing an appearance at: Middlesex Probate and Family Court before 10:00 a.m. on the return day of 09/16/2019. This is NOT a hearing date, but a deadline by which you must file a written appearance if you object to this proceeding.

WITNESS, Hon. Maureen H Monks, First Justice of this Court.

Date: August 19, 2019

Tara E. DeCristofaro,
Register of Probate

AD#13830597
MWDN 9/9/19

ZBA/12 EAST EVERGREEN ROAD
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Trask, Inc. of Natick, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing single family dwelling and reconstruct a single family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at **12 East Evergreen Road,** Natick, MA, Assessors Map 12, Lot 199. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-060

Per order of the ZBA Chair

AD#13830357
MWDN 9/9, 9/16/19

ZBA/4 GARFIELD STREET
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Paul and Patricia Cutler of Natick, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing single family dwelling and reconstruct a single family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at 4 Garfield Street, Natick, MA, Assessors Map 44, Lot 55. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-059

Per order of the ZBA Chair

AD#13830356
MWDN 9/9, 9/16/19

ZBA/86 EVERGREEN ROAD
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Edward and Karen Carr of Natick, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing single family dwelling and reconstruct a single family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at **86 Evergreen Road, Natick, MA,** Assessors Map 4, Lot 58. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-058

Per order of the ZBA Chair

AD#13830360
MWDN 9/9, 9/16/19

ZBA/7 ALDEN STREET
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **D.A Farve Builders, Inc. of Shrewsbury, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing single family dwelling and reconstruct a single family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at 7 Alden Street, Natick, MA, Assessors Map 4, Lot 58. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-057

Per order of the ZBA Chair

AD#13830361
MWDN 9/9, 9/16/19

ZBA/7 SYLVESTER ROAD
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Aaron and Amy Forte of Natick, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing single family dwelling and reconstruct a single family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at **7 Sylvester Road, Natick, MA,** Assessors Map 58, Lot 49. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-055

Per order of the ZBA Chair

AD#13830364
MWDN 9/9, 9/16/19

9/10/19 COMMUNITY DEVELOPMENT HEARING
LEGAL NOTICE
CITY OF FRAMINGHAM
COMMUNITY DEVELOPMENT PROGRAM
Notice of Public Hearing and
15 - Day Comment Period

DATE: September 10th, 2019
TIME: 7:00 P.M.
PLACE: Memorial Building
Executive Conference Room
150 Concord St.
Framingham, MA 01702

PURPOSE: The City of Framingham's Community Development Department will hold a public hearing to present its 2019 HUD Consolidated Annual Performance Evaluation Report (CAPER) and launch a 15-day comment period for citizens to provide input. The CAPER is a report that highlights how the department allocated and expended its Community Development Block Grant (CDBG) funds, addressing progress achieved or setbacks encountered in meeting priorities.

A 15-day public comment period begins on Wednesday, September 11 and ends on Wednesday, September 25. Stakeholders are encouraged to submit written comments or questions regarding the draft CAPER to Eliot Yaffa, Community Development Department, City Hall, 150 Concord St., Suite B3, Framingham, MA 01702 or by e-mail at CommunityDevelopment@framinghamma.gov. Access and accommodations are available for persons with disabilities. Translation provided with advance notice.

For questions or concerns, please contact the Community Development Department at (508) 532-5457.

AD#13829125
MWDN 9/9/19

ZBA/15 FLORENCE STREET
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on Monday, September 23, 2019, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Kenneth and Kathleen Leip of Natick, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing two family dwelling and construct a two family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at **15 Florence Street, Natick, MA,** Assessors Map 36, Lot 83. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-052

Per order of the ZBA Chair

AD#13830368
MWDN 9/9, 9/16/19

ZBA/5 NORTH PLEASANT STREET
LEGAL NOTICE
TOWN OF NATICK
ZONING BOARD OF APPEALS

The Natick Zoning Board of Appeals will hold a Public Hearing on **Monday, September 23, 2019**, at 7:00 pm in the Board of Selectmen's Meeting Room, 2nd Floor, Natick Town Hall, 13 East Central Street, Natick, MA, to hear the petition of **Ryan Yurewicz of Natick, MA,** requesting a Finding per Chapter 40A, Section 6 of the Massachusetts Zoning Act and Section IV-B and V-A.2 of the Natick Zoning Bylaws, in order to demolish the existing single family dwelling and reconstruct a two family dwelling on the pre-existing, non-conforming lot, as shown on the plans submitted. The property in question is located at **5 North Pleasant Street, Natick, MA,** Assessors Map 26, Lot 187. The use of the premises is residential.

All are invited and encouraged to review applications and plans prior to the meeting, which are available for viewing in the Community & Economic Development Department, Natick Town Hall, 13 East Central Street, Natick MA, during regular Town Hall business hours. Reasonable accommodations and audio-visual aids and services will be available upon request.

This notice may also be viewed at www.masspublicnotices.org.

Case #2019-053

Per order of the ZBA Chair

AD#13830370
MWDN 9/9, 9/16/19

VINYL REPLACEMENT WINDOW BIDS
LEGAL NOTICE
BID ADVERTISEMENT

The Framingham Housing Authority, the Awarding Authority, invites sealed bids for the purchase and delivery of Vinyl Replacement Windows (materials only) in accordance with the Bid Documents prepared by Derby Square Architects, Inc. of Salem, MA.

Bids will be received until Wednesday, 9/25/2019 at 2 PM and publicly opened, forthwith.

Mailed Bids should be sent to the Framingham Housing Authority, 1 John J. Brady Drive, Framingham, MA 01702, Attn: Paul Landers, and received no later than the date & time specified above.

Bids are subject to MGL c.30 sec.39M. Vendors are required to use the Form for Bid provided by the Framingham Housing Authority and may be found in the bid documents.

Bid Forms and Contract Documents will be available for pick-up at 26 Rear Arsenal Road, Framingham, MA 01702 starting on Wednesday, September 4th at 9 AM. For an appointment, call Kristin Davis at 508-879-7562, Ext. 235.

The Bid Documents may be seen, but not removed at:

Framingham Housing Authority
26 Rear Arsenal Road
Framingham, MA 01702

AD#13830551
MWDN 9/9/19

Attachment/Exhibit

7

The Commonwealth of Massachusetts
HEALTH POLICY COMMISSION
50 MILK STREET, 8TH FLOOR
BOSTON, MASSACHUSETTS 02109
(617) 979-1400

STUART H. ALTMAN
CHAIR

DAVID M. SELTZ
EXECUTIVE DIRECTOR

December 29, 2017

Sree Chaguturu
Partners HealthCare System, Inc.
800 Boylston Street, 11th Floor
Boston, MA 02199

RE: ACO Certification

Dear Dr. Chaguturu:

Congratulations! The Health Policy Commission (HPC) is pleased to inform you that Partners HealthCare System, Inc. meets the requirements for ACO Certification. This certification is effective from the date of this letter through December 31, 2019.

The ACO Certification program, in alignment with other state agencies including MassHealth, is designed to accelerate care delivery transformation in Massachusetts and promote a high quality, efficient health system. ACOs participating in the program have met a set of objective criteria focused on core ACO capabilities including supporting patient-centered care and governance, using data to drive quality improvement, and investing in population health. Partners Healthcare System, Inc. meets those criteria.

The HPC will promote Partners HealthCare System, Inc. as a Certified ACO on our website and in our marketing and public materials. In addition, a logo is enclosed for your use in accordance with the attached Terms of Use. We hope you will use the logo to highlight the ACO Certification to your patients, payers, and others.

The HPC looks forward to your continued engagement in the ACO Certification program over the next two years. In early 2018, HPC staff will contact you to discuss any updates to your submission and to plan a site visit for later in the year.

Thank you for your dedication to providing accountable, coordinated health care to your patients. If you have any questions about this letter or the ACO Certification program, please do not hesitate to contact Catherine Harrison, Deputy Policy Director, at HPC-Certification@state.ma.us or (617) 757-1606.

Best wishes,

David Seltz
Executive Director

Attachment/Exhibit

8

Examiner

Name Approved

The Commonwealth of Massachusetts

OFFICE OF THE MASSACHUSETTS SECRETARY OF STATE
MICHAEL J. CONNOLLY, Secretary
ONE ASHBURTON PLACE, BOSTON, MASSACHUSETTS 02108

ARTICLES OF ORGANIZATION

(Under G.L. Ch. 180)

ARTICLE I

The name of the corporation is:

MGH/BRIGHAM HEALTH CARE SYSTEM, INC.

ARTICLE II

The purpose of the corporation is to engage in the following activities:

(i) To organize, operate and support a comprehensive health care system, including without limitation hospital and other health care services for all persons, and education and research for the prevention, diagnosis, treatment and cure of all forms of human illness; (ii) to improve the health and welfare of all persons; (iii) to operate for the benefit of and to support The Massachusetts General Hospital, The Brigham Medical Center, Inc., their respective affiliated corporations and such other charitable, scientific or educational organizations which are or are affiliated with teaching hospitals in the Greater Boston Area; and (iv) to carry on any other activity that may lawfully be carried on by a corporation formed under Chapter 180 of the Massachusetts General Laws which is exempt under section 501(c)(3) of the Internal Revenue Code.

93-349060

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R.A. ☐

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Note: If the space provided under any article or item on this form is insufficient, additions shall be set forth on separate 8½ x 11 sheets of paper leaving a left hand margin of at least 1 inch. Additions to more than one article may be continued on a single sheet so long as each article requiring each such addition is clearly indicated.

ARTICLE III

If the corporation has one or more classes of members, the designation of such classes, the manner of election or appointments, the duration of membership and the qualification and rights, including voting rights, of the members of each class, may be set forth in the by-laws of the corporation or may be set forth below:

The designation of classes of members, if any, the manner of election or appointment, the term of office, and the qualifications and rights of members are set forth in the by-laws of the Corporation.

ARTICLE IV

* Other lawful provisions, if any, for the conduct and regulation of the business and affairs of the corporation, for its voluntary dissolution, or for limiting, defining, or regulating the powers of the corporation, or of its directors or members, or of any class of members, are as follows:

See Continuation Sheets IV-A through IV-D attached hereto and incorporated herein by reference.

* . If there are no provisions, state "None".

Note: The preceding four (4) articles are considered to be permanent and may ONLY be changed by filing appropriate Articles of Amendment.

IV. Other Lawful Provisions for Conduct and Regulation of the Business and Affairs of the Corporation, for its Voluntary Dissolution, and for Limiting, Defining and Regulating the Powers of the Corporation and of its Trustees and Members.

4.1. The corporation shall have in furtherance of its corporate purposes all of the powers specified in Section 6 of Chapter 180 and in Sections 9 and 9A of Chapter 156B of the Massachusetts General Laws (except those provided in paragraph (m) of said Section 9) as now in force or as hereafter amended, and may carry on any operation or activity referred to in Article 2 to the same extent as might an individual, either alone or in a joint venture or other arrangement with others, or through a wholly or partly owned or controlled corporation; provided, however, that no such power shall be exercised in a manner inconsistent with said Chapter 180 or any other chapter of the Massachusetts General Laws or which would deprive it of exemption from federal income tax as an organization described in Section 501(c)(3) of the Internal Revenue Code.

4.2. The by-laws may authorize the trustees to make, amend or repeal the by-laws in whole or in part, except with respect to any provision thereof which by law, the articles of organization or the by-laws requires action by the members.

4.3. Meetings of the members may be held anywhere in the United States.

4.4. No trustee or officer of the corporation shall be personally liable to the corporation or its members for monetary damages for breach of fiduciary duty as such trustee or officer notwithstanding any provision of law imposing such liability, except to the extent that such exemption from liability is not permitted under Chapter 180 of the Massachusetts General Laws.

4.5.(a) The corporation shall, to the extent legally permissible, indemnify each person who serves as one of its members, trustees or officers, or who serves at its request as a member, trustee or officer of another organization or in a capacity with respect to any employee benefit plan (each such person being called in this Section 4.5 a "Person") against all liabilities and expenses, including amounts paid in satisfaction of judgments, in compromise or as fines and penalties, and

counsel fees, reasonably incurred by such Person in connection with the defense or disposition of any action, suit or other proceeding, whether civil or criminal, in which such Person may be involved or with which such Person may be threatened, while in office or thereafter, by reason of being or having been such a Person, except with respect to any matter as to which such Person shall have been adjudicated in any proceeding not to have acted in good faith in the reasonable belief that his or her action was in the best interests of the corporation or, to the extent that such matter relates to service at the request of the corporation for another organization or an employee benefit plan, in the best interests of such organization or of the participants or beneficiaries of such employee benefit plan. Such best interests shall be deemed to be the best interests of the corporation for the purposes of this Section 4.5.

(b) Notwithstanding the foregoing, as to any matter disposed of by a compromise payment by any Person, pursuant to a consent decree or otherwise, no indemnification either for said payment or for any other expenses shall be provided unless such compromise shall be approved as in the best interests of the corporation, after notice that it involves such indemnification, (a) by a disinterested majority of the trustees then in office; or (b) by a majority of the disinterested trustees then in office, provided that there has been obtained an opinion in writing of independent legal counsel to the effect that such Person appears to have acted in good faith in the reasonable belief that his or her action was in the best interests of the corporation; or (c) by a majority of the disinterested members entitled to vote, voting as a single class.

(c) Expenses, including counsel fees, reasonably incurred by any Person in connection with the defense or disposition of any such action, suit or other proceeding may be paid from time to time by the corporation in advance of the final disposition thereof upon receipt of an undertaking by such Person to repay the amounts so paid if such Person ultimately shall be adjudicated to be not entitled to indemnification under this Section 4.5. Such an undertaking may be accepted without reference to the financial ability of such Person to make repayment.

(d) The right of indemnification hereby provided shall not be exclusive. Nothing contained in this Section shall affect any other rights to indemnification to which any Person or other corporate personnel may be entitled by contract or otherwise under law.

(e) As used in this Section 4.5, the term "Person" includes such Person's respective heirs, executors and administrators, and

a "disinterested" member, trustee or officer is one against whom in such capacity the proceeding in question, or another proceeding on the same or similar grounds, is not then pending.

4.6.(a) No person shall be disqualified from holding any office by reason of any interest. In the absence of fraud, any trustee, officer or member of this corporation, or any concern in which any such trustee, officer or member has any interest, may be a party to, or may be pecuniarily or otherwise interested in, any contract, act or other transaction (collectively called a "transaction") of this corporation, and

(1) such transaction shall not be in any way invalidated or otherwise affected by that fact; and

(2) no such trustee, officer, member or concern shall be liable to account to this corporation for any profit or benefit realized through any such transaction;

provided, however, that such transaction either was fair at the time it was entered into or is authorized or ratified either (i) by a majority of the trustees who are not so interested and to whom the nature of such interest has been disclosed, or (ii) by vote of a majority of each class of members of the corporation entitled to vote for trustees, at any meeting of members the notice of which, or an accompanying statement, summarizes the nature of such transaction and such interest. No interested trustee or member of this corporation may vote or may be counted in determining the existence of a quorum at any meeting at which such transaction shall be authorized, but may participate in discussion thereof.

(b) For purposes of this Section 4.6, the term "interest" shall include personal interest and also interest as a trustee, officer, stockholder, shareholder, director, member or beneficiary of any concern; and the term "concern" shall mean any corporation, association, trust, partnership, firm, person or other entity other than this corporation.

(c) No transaction shall be avoided by reason of any provisions of this paragraph 4.6 which would be valid but for such provisions.

4.7. No part of the assets or net earnings of the corporation shall inure to the benefit of any member, officer or trustee of the corporation or any individual; no substantial part of the activities of the corporation shall be the carrying on of propaganda, or otherwise attempting, to influence legislation except to the extent permitted by Section 501(h) of the Internal Revenue Code; and the corporation shall not participate in, or

intervene in (including the publishing or distributing of statements), any political campaign on behalf of (or in opposition to) any candidate for public office. It is intended that the corporation shall be entitled to exemption from federal income tax as an organization described in Section 501(c)(3) of the Internal Revenue Code and shall not be a private foundation under Section 509(a) of the Internal Revenue Code.

4.8. If and so long as the corporation is a private foundation (as that term is defined in Section 509 of the Internal Revenue Code), then notwithstanding any other provisions of the articles of organization or the by-laws of the corporation, the following provisions shall apply:

A) the income of the corporation for each taxable year shall be distributed at such time and in such manner as not to subject the corporation to the tax on undistributed income imposed by Section 4942 of the Internal Revenue Code, and

B) the corporation shall not engage in any act of self dealing (as defined in Section 4941(d) of the Internal Revenue Code), nor retain any excess business holdings (as defined in Section 4943(c) of the Internal Revenue Code), nor make any investments in such manner as to subject the corporation to tax under Section 4944 of the Internal Revenue Code, nor make any taxable expenditures (as defined in Section 4945(d) of the Internal Revenue Code).

4.9. Upon the liquidation or dissolution of the corporation, after payment of all of the liabilities of the corporation or due provision therefor, all of the assets of the corporation shall be disposed of pursuant to Massachusetts General Laws, Chapter 180, Section 11A, to The Massachusetts General Hospital and The Brigham Medical Center, Inc. if exempt from taxation as organizations described in Section 501(c)(3) of the Internal Revenue Code or, if both are not, to one or more organizations with similar purposes and similar tax exemption.

4.10. All references herein: (i) to the Internal Revenue Code shall be deemed to refer to the Internal Revenue Code of 1986, as now in force or hereafter amended; (ii) to the General Laws of The Commonwealth of Massachusetts, or any chapter thereof, shall be deemed to refer to said General Laws or chapter as now in force or hereafter amended; and (iii) to particular sections of the Internal Revenue Code or said General Laws shall be deemed to refer to similar or successor provisions hereafter adopted.

MGH/BRIGHAM HEALTH CARE SYSTEM, INC.

Continuation Sheet VII(b)

	Name	Residence or Post Office Address
Officers		
Vice-President	J. Robert Buchanan, M.D.	25 Commonwealth Avenue Boston, MA 02116
President	H. Richard Nesson, M.D.	565 Boylston Street Brookline, MA 02146
Treasurer	Richard A. Spindler	210 Schoolmaster Lane Dedham, MA 02026
Clerk	David M. Donaldson	22 Weston Road Lincoln Center, MA 01773
Trustees	W. Gerald Austen, M.D.	163 Wellesley Street Weston, MA 02193
	Eugene Braunwald, M.D.	75 Scotch Pine Road Weston, MA 02193
	J. Robert Buchanan, M.D.	25 Commonealth Avenue Boston, MA 02116
	Francis H. Burr	44 Prince Street Beverly, MA 01915
	Ferdinand Colloredo-Mansfeld	Winthrop Street Hamilton, MA 01982

MGH/BRIGHAM HEALTH CARE SYSTEM, INC.

Continuation Sheet VII(b)

Name	Residence or Post Office Address
John H. McArthur	Fowler 10 Soldiers Field Boston, MA 02134
H. Richard Nesson, M.D.	565 Boylston Street Brookline, MA 02146
Richard A. Spindler	210 Schoolmaster Lane Dadham, MA 02026

ARTICLE V

By-laws of the corporation have been duly adopted and the initial directors, president, treasurer and clerk or other presiding, financial or recording officers, whose names are set out below, have been duly elected.

ARTICLE VI

The effective date of organization of the corporation shall be the date of filing with the Secretary of the Commonwealth or if a later date is desired, specify date, (not more than 30 days after date of filing).

The information contained in ARTICLE VII is NOT a PERMANENT part of the Articles of Organization and may be changed ONLY by filing the appropriate form provided therefor.

ARTICLE VII

a. The post office address of the initial principal office of the corporation IN MASSACHUSETTS is:

c/o Ropes & Gray, One International Place, Boston, MA 02110

b. The name, residence and post office address of each of the initial directors and following officers of the corporation are as follows:

	NAME	RESIDENCE	POST OFFICE ADDRESS
President:	See Continuation Sheet VII(b) attached hereto and incorporated herein by reference.		
Treasurer:			
Clerk:			

Directors: (or officers having the powers of directors).

NAME	RESIDENCE	POST OFFICE ADDRESS
See Continuation Sheet VII(b) attached hereto and incorporated herein by reference.		

c. The fiscal year of the corporation shall end on the last day of the month of: September

d. The name and BUSINESS address of the RESIDENT AGENT of the corporation, if any, is:

I/ We the below-signed INCORPORATORS do hereby certify under the pains and penalties of perjury that I/ We have not been convicted of any crimes relating to alcohol or gaming within the past ten years. I/ We do hereby further certify that to the best of my/our knowledge the above-named principal officers have not been similarly convicted. If so convicted, explain.

IN WITNESS WHEREOF and under the pains and penalties of perjury, I/WE, whose signature(s) appear below as incorporator(s) and whose names and business or residential address(es) ARE CLEARLY TYPED OR PRINTED beneath each signature do hereby associate with the intention of forming this corporation under the provisions of General Laws Chapter 180 and do hereby sign these Articles of Organization as incorporator(s) this 9th day of December, 19 93

David M. Donaldson

David M. Donaldson

Ropes & Gray
One International Place
Boston, MA 02110

NOTE: If an already-existing corporation is acting as incorporator, type in the exact name of the corporation, the state or other jurisdiction where it was incorporated, the name of the person signing on behalf of said corporation and the title he/she holds or other authority by which such action is taken.

SECRETARY OF STATE
RECEIVED
1993 DEC 15 PM 1:39
CORPORATION DIVISION

449104

THE COMMONWEALTH OF MASSACHUSETTS

ARTICLES OF ORGANIZATION

GENERAL LAWS, CHAPTER 180

I hereby certify that, upon an examination of the within-written articles of organization, duly submitted to me, it appears that the provisions of the General Laws relative to the organization of corporations have been complied with, and I hereby approve said articles; and the filing fee in the amount of $35.00 having been paid, said articles are deemed to have been filed with me this 15TH day of December 1993.

Effective date

Michael Joseph Connolly

MICHAEL J. CONNOLLY
Secretary of State

A PHOTOCOPY OF THESE ARTICLES OF ORGANIZATION SHALL BE RETURNED

TO: David M. Donaldson, Esq.
Ropes & Gray
One International Place, Boston, MA 02110

Telephone: (617) 951-7250

FEE: $15.00

The Commonwealth of Massachusetts

MICHAEL J. CONNOLLY

Secretary of State

ONE ASHBURTON PLACE, BOSTON, MASS. 02108

FEDERAL IDENTIFICATION NO. 000449104

ARTICLES OF AMENDMENT

General Laws, Chapter 180, Section 7

This certificate must be submitted to the Secretary of the Commonwealth within sixty days after the date of the vote of members or stockholders adopting the amendment. The fee for filing this certificate is $15.00 as prescribed by General Laws, Chapter 180, Section 11C(b). Make check payable to the Commonwealth of Massachusetts.

We, H. Richard Nesson, President/~~Vice President~~, and David M. Donaldson, Clerk/~~Assistant Clerk~~ of

MGH/BRIGHAM HEALTH CARE SYSTEM, INC.

(Name of Corporation)

located at One International Place, Boston, MA 02110

do hereby certify that the following amendment to the articles of organization of the corporation was duly adopted at a meeting held on March 14, 19 94, by vote of all members/

[illegible]

That the Articles of Organization of this corporation be and they hereby are amended to change the name of the corporation to "Partners HealthCare System, Inc."

Examined

Name Approved

C

P.C.

Note: If the space provided under any article or item on this form is insufficient, additions shall be set forth on separate 8½ x 11 sheets of paper leaving a left hand margin of at least 1 inch for binding. Additions to more than one article may be continued on a single sheet so long as each article requiring each such addition is clearly indicated.

The foregoing amendment will become effective when these articles of amendment are filed in accordance with Chapter 180, Section 7 of the General Laws unless these articles specify, in accordance with the vote adopting the amendment, a later effective date not more than thirty days after such filing, in which event the amendment will become effective on such later date.

IN WITNESS WHEREOF AND UNDER THE PENALTIES OF PERJURY, we have hereto signed our names this 18th day of March, in the year 1994

H. Richard Nesson ..... President/~~Vice President~~

..... Clerk/~~Assistant Clerk~~

459052

SECRETARY OF STATE
RECEIVED

1994 MAR 18 PM 4:10

CORPORATION DIVISION

THE COMMONWEALTH OF MASSACHUSETTS

ARTICLES OF AMENDMENT

(General Laws, Chapter 180, Section 7)

I hereby approve the within articles of amendment and, the filing fee in the amount of $ 15 having been paid, said articles are deemed to have been filed with me this 18th day of March, 1994

Michael Joseph Connolly

MICHAEL J. CONNOLLY

Secretary of State

TO BE FILLED IN BY CORPORATION

PHOTO COPY OF AMENDMENT TO BE SENT

TO: John E. Beard

Ropes & Gray

One International Place, Boston 02110

Telephone 617-951-7411

Copy Mailed

FEDERAL IDENTIFICATION NO. 04-2335
Fee: $15.00

Examiner

The Commonwealth of Massachusetts

William Francis Galvin
Secretary of the Commonwealth
One Ashburton Place, Boston, Massachusetts 02108-1512

Name Approved

ARTICLES OF AMENDMENT
(General Laws, Chapter 180, Section 7)

We, Samuel O. Thier, M.D., *President / ~~Vice President~~,

and Ernest M. Haddad, Secretary ~~Assistant Clerk~~,

of Partners HealthCare System, Inc.,
(Exact name of corporation)

located at 800 Boylston Street, Suite 1150, Boston, MA 02199,
(Address of corporation in Massachusetts)

do hereby certify that these Articles of Amendment affecting articles numbered:

II and IV
(Number those articles 1, 2, 3, and/or 4 being amended)

of the Articles of Organization were duly adopted at a meeting held on May 4, 1998, by vote of:

277 members, ~~of the directors; or of shareholders~~

being at least two-thirds of its members/directors legally qualified to vote in meetings of the corporation ~~(or of the holders of at least two-thirds of the shares of stock having the right to vote)~~:

1. Delete Article II and insert in place thereof the following:

Article II

(i) To organize, operate and support a comprehensive health care system, including without limitation hospital and other health care services for all persons, and education and research for the prevention, diagnosis, treatment and cure of all forms of human illness: (ii) to improve the health and welfare of all persons: (iii) to operate for the benefit of and to support The Massachusetts General Hospital, The Brigham Medical Center, Inc., The North Shore Medical Center, Inc., their respective affiliated corporations, such other hospitals, charitable, scientific or educational organizations, and their affiliated corporations that become affiliated with Partners HealthCare System, Inc.

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M ☐
R.A. ☐

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P.C.

*Delete the inapplicable words.
Note: If the space provided under any article or item on this form is insufficient, additions shall be set forth on one side only of separate 8 1/2 x 11 sheets of paper with a left margin of at least 1 inch. Additions to more than one article may be made on a single sheet so long as each article requiring each addition is clearly indicated.

(collectively, the "Partners Affiliated Corporations") and such other charitable, scientific or educational organizations which are or are affiliated with teaching hospitals in the Greater Boston Area; and (iv) to carry on any other activity that may lawfully be carried on by a corporation formed under Chapter 180 of the Massachusetts General Laws which is exempt under Section 501(c)(3) of the Internal Revenue Code; and in furtherance of the foregoing purposes to:

(a) Serve as the controlling and coordinating organization for the Partners Affiliated Corporations in order to assure the consistency and appropriateness of their respective missions, activities, governance and administration;

(b) Solicit and receive devises of real property and grants, donations and bequests of money and other property to be used to further the foregoing purposes and those of the Partners Affiliated Corporations; and

(c) Support the Partners Affiliated Corporations by loan, lease or donation of funds or other assets, by guaranty of obligations or by other action.

2. Delete Section 4.5. of Article IV.

The foregoing amendment(s) will become effective when these Articles of Amendment are filed in accordance with General Laws, Chapter 180, Section 7 unless these articles specify, in accordance with the vote adopting the amendment, a *later* effective date not more than *thirty days* after such filing, in which event the amendment will become effective on such later date.

[redacted]: _____

SIGNED UNDER THE PENALTIES OF PERJURY, this 29TH day of May, 1998.

_____, *President [redacted]

_____, Secretary *[redacted]

*Delete the inapplicable words.

THE COMMONWEALTH OF MASSACHUSETTS

ARTICLES OF AMENDMENT

(General Laws, Chapter 180, Section 7)

S18710

SECRETARY OF THE COMMONWEALTH
98 JUN -2 AM 9:52

I hereby approve the within Articles of Amendment and, the filing fee in the amount of $ 150 having been paid, said articles are deemed to have been filed with me this 2ND day of JUNE 19 98.

Effective date: _____

William Francis Galvin

WILLIAM FRANCIS GALVIN
Secretary of the Commonwealth

TO BE FILLED IN BY CORPORATION
Photocopy of document to be sent to:

Ernest M. Haddad, Esq.
Partners HealthCare System, Inc.
800 Boylston Street, Ste. 1150
Boston, MA 02199

Telephone: (617) 278-1065

AACR.6

FEDERAL IDENTIFICATION NO. 04-3230035 ✓
Fee: $15.00

Examiner

N/A
Name Approved

The Commonwealth of Massachusetts

William Francis Galvin
Secretary of the Commonwealth
One Ashburton Place, Boston, Massachusetts 02108-1512

ARTICLES OF AMENDMENT
(General Laws, Chapter 180, Section 7)

042

We, Samuel O. Thier, M.D. , *President / ~~Vice President~~,

and Ernest M. Haddad , Secretary *~~Clerk / Assistant Clerk~~,

of Partners HealthCare System, Inc. ,
(Exact name of corporation)

located at 800 Boylston Street, Suite 1150, Boston, MA 02199 ,
(Address of corporation in Massachusetts)

do hereby certify that these Articles of Amendment affecting articles numbered:

II
(Number those articles 1, 2, 3, and/or 4 being amended)

of the Articles of Organization were duly adopted at a meeting held on May 3 19 99 , by vote of:

293 members, ~~of the directors, or of the shareholders,~~

being at least two-thirds of its members/directors legally qualified to vote in meetings of the corporation ~~(OR in the case of a corporation having capital stock, by the holders of at least two-thirds of the capital stock having the right to vote thereon)~~:

Delete Article II and insert in place thereof the following:

Article II

The purpose of the corporation is to engage in the following activities:

(i) To organize, operate, coordinate and support a comprehensive integrated health care delivery system (the "System") that provides, without limitation, hospital, physician and other health care services for all persons and education and research for the prevention, diagnosis, treatment and cure of all forms of human illness; (ii) to improve the health and welfare of all persons; (iii) to serve as the controlling and coordinating organization for the System and its member institutions and entities including Brigham and Women's/Faulkner Hospitals, Inc., The Massachusetts General Hospital, The North Shore Medical Center, Inc., Newton-Wellesley Health Care System, Inc., and such other hospital, physician, charitable, scientific, educational,

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R.A. ☐

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*Delete the inapplicable words.
Note: If the space provided under any article or item on this form is insufficient, additions shall be set forth on one side only of separate 8 1/2 x 11 sheets of paper with a left margin of at least 1 inch. Additions to more than one article may be made on a single sheet so long as each article requiring each addition is clearly indicated.

research and other institutions and entities that are controlled, directly or indirectly, through sole corporate membership, stock ownership or otherwise, by the Corporation (collectively, the "Affiliated Organizations"); (iv) to assist and support the Affiliated Organizations in fulfilling their respective purposes, missions and objectives in a manner consistent with the purposes, missions and objectives of the Corporation and the System; and (v) to carry on any other activity that may lawfully be carried on by a corporation formed under Chapter 180 of the Massachusetts General Laws which is exempt under Section 501(c)(3) of the Internal Revenue Code; and in furtherance of the foregoing purposes to:

(a) Solicit and receive devises of real property and grants, donations and bequests of money and other property to be used to further the foregoing purposes; and

(b) Support the Affiliated Organizations by loan; lease or donation of funds or other assets; and

(c) Support the Affiliated Organizations by guaranty of the obligations of the Affiliated Organizations or by other action.

The foregoing amendment(s) will become effective when these Articles of Amendment are filed in accordance with General Laws, Chapter 180, Section 7 unless these articles specify, in accordance with the vote adopting the amendment, a *later* effective date not more than *thirty days* after such filing, in which event the amendment will become effective on such later date.

~~Later effective date: xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx~~

SIGNED UNDER THE PENALTIES OF PERJURY, this 24th day of May, 19 99,

______________________________, *President/~~Vice President~~,

______________________________, Secretary ~~Clerk/Assistant Clerk~~

Delete the inapplicable words.

660922

THE COMMONWEALTH OF MASSACHUSETTS

ARTICLES OF AMENDMENT

(General Laws, Chapter 180, Section 7)

I hereby approve the within Articles of Amendment and, the filing fee in the amount of $ 15.00 having been paid, said articles are deemed to have been filed with me this 26th day of May 19 99.

99 MAY 26 AM 9:24

Effective date: _____

William Francis Galvin

WILLIAM FRANCIS GALVIN

Secretary of the Commonwealth

TO BE FILLED IN BY CORPORATION

Photocopy of document to be sent to:

Mary LaLonde

Partners HealthCare System

Office of the General Counsel
50 Stanford St., 10th floor
Boston, MA 02114

Telephone: 617-726-5315

The Commonwealth of Massachusetts
William Francis Galvin

Minimum Fee: $15.00

Secretary of the Commonwealth, Corporations Division
One Ashburton Place, 17th floor
Boston, MA 02108-1512
Telephone: (617) 727-9640

Articles of Amendment
(General Laws, Chapter 180, Section 7)

Identification Number: 043230035

We, BRENT L. HENRY __ **President** X **Vice President,**

and MARY C. LALONDE __ **Clerk** X **Assistant Clerk ,**

of PARTNERS HEALTHCARE SYSTEM, INC.
located at: 800 BOYLSTON ST., SUITE 1150 BOSTON , MA 02199 USA

do hereby certify that these Articles of Amendment affecting articles numbered:

__ Article 1 X Article 2 __ Article 3 __ Article 4

(Select those articles 1, 2, 3, and/or 4 that are being amended)

of the Articles of Organization were duly adopted at a meeting held on 4/19/2016 , by vote of: 197 members, 0 directors, or 0 shareholders,
being at least two-thirds of its members/directors legally qualified to vote in meetings of the corporation (or, in the case of a corporation having capital stock, by the holders of at least two thirds of the capital stock having the right to vote therein):

ARTICLE I

The exact name of the corporation, ***as amended***, is:
(Do not state Article I if it has not been amended.)

ARTICLE II

The purpose of the corporation, ***as amended***, is to engage in the following business activities:
(Do not state Article II if it has not been amended.)

THE PURPOSE OF THE CORPORATION IS TO ENGAGE IN THE FOLLOWING ACTIVITIES: (I) TO ORGANIZE, OPERATE, COORDINATE AND SUPPORT A COMPREHENSIVE INTEGRATED HEAL TH CARE DELIVERY SYSTEM (THE "SYSTEM") THAT PROVIDES, WITHOUT LIMITATION, HOS PITAL, PHYSICIAN AND OTHER HEALTH CARE SERVICES FOR ALL PERSONS AND EDUCATI ON AND RESEARCH FOR THE PREVENTION, DIAGNOSIS, TREATMENT AND CURE OF ALL FO RMS OF HUMAN ILLNESS; (II) TO IMPROVE THE HEALTH AND WELFARE OF ALL PERSONS A ND TO CONDUCT AND SUPPORT EDUCATION, RESEARCH AND OTHER ACTIVITIES RELATIN G THERE TO, (III) TO SERVE AS THE CONTROLLING AND COORDINATING ORGANIZATION F OR THE SYSTEM AND ITS MEMBER INSTITUTIONS AND ENTITIES INCLUDING BRIGHAM AN D WOMEN'S HEALTH CARE, INC., THE MASSACHUSETTS GENERAL HOSPITAL, NSMC HEALT HCARE, INC., NEWTON WELLESLEY HEALTH CARE SYSTEM, INC., PARTNERS COMMUNITY PHYSICIANS ORGANIZATION, INC., PARTNERS CONTINUING CARE, INC., NEIGHBORHOOD HEALTH PLAN, INC. AND SUCH OTHER HOSPITAL, PHYSICIAN, CHARITABLE, SCIENTIFIC, E

DUCATIONAL, RESEARCH AND OTHER INSTITUTIONS AND ENTITIES THAT ARE CONTROLLED, DIRECTLY OR INDIRECTLY, THROUGH SOLE CORPORATE MEMBERSHIP, STOCK OWNERSHIP OR OTHERWISE, BY THE CORPORATION (COLLECTIVELY, THE "AFFILIATED ORGANIZATIONS"); (IV) TO ASSIST AND SUPPORT THE AFFILIATED ORGANIZATIONS IN FULFILLING THEIR RESPECTIVE PURPOSES, MISSIONS AND OBJECTIVES IN A MANNER CONSISTENT WITH THE PURPOSES, MISSIONS AND OBJECTIVES OF THE CORPORATION AND THE SYSTEM; AND (V) TO CARRY ON ANY OTHER ACTIVITY THAT MAY LAWFULLY BE CARRIED ON BY A CORPORATION FORMED UNDER CHAPTER 180 OF THE MASSACHUSETTS GENERAL LAWS WHICH IS EXEMPT UNDER SECTION 501(C)(3) OF THE INTERNAL REVENUE CODE; AND IN FURTHERANCE OF THE FOREGOING PURPOSES TO: (A) SOLICIT AND RECEIVE DEVISES OF REAL PROPERTY AND GRANTS, DONATIONS AND BEQUESTS OF MONEY AND OTHER PROPERTY TO BE USED TO FURTHER THE FOREGOING PURPOSES; AND (B) SUPPORT THE AFFILIATED ORGANIZATIONS BY LOAN, LEASE OR DONATION OF FUNDS OR OTHER ASSETS; AND (C) SUPPORT THE AFFILIATED ORGANIZATIONS BY GUARANTY OF THE OBLIGATIONS OF THE AFFILIATED ORGANIZATIONS OR BY OTHER ACTION.

ARTICLE III

A corporation may have one or more classes of members. ***As amended,*** the designation of such classes, the manner of election or appointments, the duration of membership and the qualifications and rights, including voting rights, of the members of each class, may be set forth in the by-laws of the corporation or may be set forth below:

ARTICLE IV

As amended, other lawful provisions, if any, for the conduct and regulation of the business and affairs of the corporation, for its voluntary dissolution, or for limiting, defining, or regulating the powers of the business entity, or of its directors or members, or of any class of members, are as follows:
(If there are no provisions state "NONE")

The foregoing amendment(s) will become effective when these Articles of Amendment are filed in accordance with General Laws, Chapter 180, Section 7 unless these articles specify, in accordance with the vote adopting the amendment, a *later* effective date not more than *thirty days* after such filing, in which event the amendment will become effective on such later date.

Later Effective Date:

Signed under the penalties of perjury, this 20 Day of April, 2016, BRENT L. HENRY , its , President / Vice President,
MARY C. LALONDE , Clerk / Assistant Clerk.

THE COMMONWEALTH OF MASSACHUSETTS

I hereby certify that, upon examination of this document, duly submitted to me, it appears that the provisions of the General Laws relative to corporations have been complied with, and I hereby approve said articles; and the filing fee having been paid, said articles are deemed to have been filed with me on:

April 20, 2016 04:09 PM

WILLIAM FRANCIS GALVIN

Secretary of the Commonwealth

Attachment/Exhibit

9

Massachusetts Department of Public Health
Determination of Need
Affidavit of Truthfulness and Compliance with Law and Disclosure Form 100.405(B)

Version: 7-6-17

Instructions: Complete Information below. When complete check the box "This document is ready to print:". This will date stamp and lock the form. Print Form. Each person must sign and date the form. When all signatures have been collected, scan the document and e-mail to: **dph.don@state.ma.us** Include all attachments as requested.

Application Number: PHS-19092711-HE

Original Application Date: 09/27/2019

Applicant Name: Partners HealthCare System, Inc.

Application Type: Hospital/Clinic Substantial Change in Service and Hospital/Clinic Substantial Capital Expenditu

Applicant's Business Type: (•) Corporation ( ) Limited Partnership ( ) Partnership ( ) Trust ( ) LLC ( ) Other

Is the Applicant the sole member or sole shareholder of the Health Facility(ies) that are the subject of this Application? (•) Yes ( ) No

The undersigned certifies under the pains and penalties of perjury:

1. The Applicant is the sole corporate member or sole shareholder of the Health Facility[ies] that are the subject of this Application;
2. I have ~~read~~* 105 CMR 100.000, the Massachusetts Determination of Need Regulation;
3. I understand and agree to the expected and appropriate conduct of the Applicant pursuant to 105 CMR 100.800;
4. I have ~~read~~* this application for Determination of Need including all exhibits and attachments, and ~~certify that~~** all of the information contained herein is accurate and true;
5. I have submitted the correct Filing Fee and understand it is nonrefundable pursuant to 105 CMR 100.405(B);
6. I have submitted the required copies of this application to the Determination of Need Program, and, as applicable, to all Parties of Record and other parties as required pursuant to 105 CMR 100.405(B);
7. I have caused, as required, notices of intent to be published and duplicate copies to be submitted to all Parties of Record, and all carriers or third-party administrators, public and commercial, for the payment of health care services with which the Applicant contracts, and with Medicare and Medicaid, as required by 105 CMR 100.405(C), et seq.;
8. I ~~have caused~~** proper notification and submissions to the Secretary of Environmental Affairs pursuant to 105 CMR 100.405(E) and 301 CMR 11.00; will be made if applicable
9. If subject to M.G.L. c. 6D, § 13 and 958 CMR 7.00, I have submitted such Notice of Material Change to the HPC - in accordance with 105 CMR 100.405(G);
10. Pursuant to 105 CMR 100.210(A)(3), I certify that both the Applicant and the Proposed Project are in material and substantial compliance and good standing with relevant federal, state, and local laws and regulations, as well as with all ~~previously issued~~ Notices of Determination of Need ~~and the terms and Conditions attached therein~~***;
11. I have ~~read~~* and understand the limitations on solicitation of funding from the general public prior to receiving a Notice of Determination of Need as established in 105 CMR 100.415;
12. I understand that, if Approved, the Applicant, as Holder of the DoN, shall become obligated to all Standard Conditions pursuant to 105 CMR 100.310, as well as any applicable Other Conditions as outlined within 105 CMR 100.000 or that otherwise become a part of the Final Action pursuant to 105 CMR 100.360;
13. Pursuant to 105 CMR 100.705(A), I certify that the Applicant has Sufficient Interest in the Site or facility; and
14. Pursuant to 105 CMR 100.705(A), I certify that the Proposed Project is authorized under applicable zoning by-laws or ordinances, whether or not a special permit is required; or,
    a. If the Proposed Project is not authorized under applicable zoning by-laws or ordinances, a variance has been received to permit such Proposed Project; or,
    b. The Proposed Project is exempt from zoning by-laws or ordinances.

Corporation:

Attach a copy of Articles of Organization/Incorporation, as amended

Anne Klibanski, MD	Anne Klibanski	9/25/19
CEO for Corporation Name:	Signature:	Date
Scott M. Sperling		
Board Chair for Corporation Name:	Signature:	Date

*been informed of the contents of
**have been informed that
***issued in compliance with 105 CMR 100.00, the Massachusetts Determination of Need Regulation effective January 27, 2017 and amended December 28, 2018

Massachusetts Department of Public Health
Determination of Need
Affidavit of Truthfulness and Compliance with Law and Disclosure Form 100.405(B)

Version: 7-6-17

Instructions: Complete Information below. When complete check the box "This document is ready to print:". This will date stamp and lock the form. Print Form. Each person must sign and date the form. When all signatures have been collected, scan the document and e-mail to: **dph.don@state.ma.us** Include all attachments as requested.

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Applicant Name: Partners HealthCare System, Inc.

Application Type: Hospital/Clinic Substantial Change in Service and Hospital/Clinic Substantial Capital Expenditure

Applicant's Business Type: (•) Corporation ( ) Limited Partnership ( ) Partnership ( ) Trust ( ) LLC ( ) Other

Is the Applicant the sole member or sole shareholder of the Health Facility(ies) that are the subject of this Application? (•) Yes ( ) No

The undersigned certifies under the pains and penalties of perjury:

1. The Applicant is the sole corporate member or sole shareholder of the Health Facility[ies] that are the subject of this Application;
2. I have ~~read~~* 105 CMR 100.000, the Massachusetts Determination of Need Regulation;
3. I understand and agree to the expected and appropriate conduct of the Applicant pursuant to 105 CMR 100.800;
4. I have ~~read~~* this application for Determination of Need including all exhibits and attachments, and ~~certify that~~** all of the information contained herein is accurate and true;
5. I have submitted the correct Filing Fee and understand it is nonrefundable pursuant to 105 CMR 100.405(B);
6. I have submitted the required copies of this application to the Determination of Need Program, and, as applicable, to all Parties of Record and other parties as required pursuant to 105 CMR 100.405(B);
7. I have caused, as required, notices of intent to be published and duplicate copies to be submitted to all Parties of Record, and all carriers or third-party administrators, public and commercial, for the payment of health care services with which the Applicant contracts, and with Medicare and Medicaid, as required by 105 CMR 100.405(C), et seq.;
8. I ~~have caused~~** proper notification and submissions to the Secretary of Environmental Affairs pursuant to 105 CMR 100.405(E) and 301 CMR 11.00; will be made if applicable
9. If subject to M.G.L. c. 6D, § 13 and 958 CMR 7.00, I have submitted such Notice of Material Change to the HPC - in accordance with 105 CMR 100.405(G);
10. Pursuant to 105 CMR 100.210(A)(3), I certify that both the Applicant and the Proposed Project are in material and substantial compliance and good standing with relevant federal, state, and local laws and regulations, as well as with all ~~previously issued~~ Notices of Determination of Need ~~and the terms and Conditions attached therein~~***;
11. I have ~~read~~* and understand the limitations on solicitation of funding from the general public prior to receiving a Notice of Determination of Need as established in 105 CMR 100.415;
12. I understand that, if Approved, the Applicant, as Holder of the DoN, shall become obligated to all Standard Conditions pursuant to 105 CMR 100.310, as well as any applicable Other Conditions as outlined within 105 CMR 100.000 or that otherwise become a part of the Final Action pursuant to 105 CMR 100.360;
13. Pursuant to 105 CMR 100.705(A), I certify that the Applicant has Sufficient Interest in the Site or facility; and
14. Pursuant to 105 CMR 100.705(A), I certify that the Proposed Project is authorized under applicable zoning by-laws or ordinances, whether or not a special permit is required; or,
    a. If the Proposed Project is not authorized under applicable zoning by-laws or ordinances, a variance has been received to permit such Proposed Project; or,
    b. The Proposed Project is exempt from zoning by-laws or ordinances.

Corporation:

Attach a copy of Articles of Organization/Incorporation, as amended

Anne Klibanski, MD CEO for Corporation Name:	Signature:	Date
Scott M. Sperling Board Chair for Corporation Name:	Signature:	9/25/19 Date

*been informed of the contents of
**have been informed that
***issued in compliance with 105 CMR 100.00, the Massachusetts Determination of Need Regulation effective January 27, 2017 and amended December 28, 2018

Attachment/Exhibit

10

Attachment/Exhibit

11

Massachusetts Department of Public Health
Determination of Need
Change in Service

Version: DRAFT 6-14-17

DRAFT

Application Number: PHS-19092711-HE Original Application Date: 09/27/2019

Applicant Information

Applicant Name: Partners HealthCare System, Inc.

Contact Person: Andrew Levine Title: Attorney

Phone: 6175986700 Ext: E-mail: alevine@barrettsingal.com

Facility: Complete the tables below for each facility listed in the Application Form

1 Facility Name: Newton-Wellesley Hospital CMS Number: 220101 Facility type: Hospital

Change in Service

2.2 Complete the chart below with existing and planned service changes. Add additional services with in each grouping if applicable.

Add/Del Rows		Licensed Beds	Operating Beds	Change in Number of Beds (+/-)		Number of Beds After Project Completion (calculated)		Patient Days (Current/ Actual)	Patient Days	Occupancy rate for Operating Beds		Average Length of Stay (Days)	Number of Discharges	Number of Discharges
		Existing	Existing	Licensed	Operating	Licensed	Operating		Projected	Current Beds	Projected		Actual	Projected
	Acute													
	Medical/Surgical									0%	0%			
	Obstetrics (Maternity)									0%	0%			
	Pediatrics									0%	0%			
	Neonatal Intensive Care									0%	0%			
	ICU/CCU/SICU									0%	0%			
+ -	Observation	12	8	-4	0	8	8	1,183	2,287	41%	78%	0	1,510	2,920
+ -	Special Care Nursery	12	12	4	4	16	16	3,596	5,059	82%	87%	12.3	293	347
	Total Acute	24	20	0	4	24	24	4,779	7,346	65%	84%	12.3	1,803	3,267
	Acute Rehabilitation			0	0	0	0			0%	0%			
+ -										0%	0%			
	Total Rehabilitation			0	0	0	0			0%	0%			

Add/Del Rows		Licensed Beds	Operating Beds	Change in Number of Beds (+/-)		Number of Beds After Project Completion (calculated)		Patient Days	Patient Days	Occupancy rate for Operating Beds		Average Length of Stay	Number of Discharges	Number of Discharges
		Existing	Existing	Licensed	Operating	Licensed	Operating	(Current/ Actual)	Projected	Current Beds	Projected	(Days)	Actual	Projected
	Acute Psychiatric													
	Adult	45	45	0	0	45	45	9,832	9,832	60%	60%	13.7	718	718
	Adolescent	0	0	0	0	0	0	0	0	0%	0%			
	Pediatric	0	0	0	0	0	0	0	0	0%	0%			
	Geriatric	0		0	0	0	0	0	0	0%	0%			
[+] [-]										0%	0%			
	Total Acute Psychiatric	45	45	0	0	45	45	9,832	9,832	60%	60%	13.7	718	718
	Chronic Disease	0	0	0	0	0	0	0	0	0%	0%			
[+] [-]										0%	0%			
	Total Chronic Disease	0	0	0	0	0	0	0	0	0%	0%			
	Substance Abuse													
	detoxification	0	0	0	0	0	0	0	0	0%	0%			
	short-term intensive	0	0	0	0	0	0	0	0	0%	0%			
[+] [-]										0%	0%			
	Total Substance Abuse	0	0	0	0	0	0	0	0	0%	0%			
	Skilled Nursing Facility													
	Level II	0	0	0	0	0	0	0	0	0%	0%			
	Level III	0	0	0	0	0	0	0	0	0%	0%			
	Level IV	0	0	0	0	0	0	0	0	0%	0%			
[+] [-]										0%	0%			
	Total Skilled Nursing	0	0	0	0	0	0	0	0	0%	0%			

2.3 Complete the chart below If there are changes other than those listed in table above.

Add/Del Rows	**List other services** if Changing e.g. OR, MRI, etc	Existing Number of Units	Change in Number +/-	Proposed Number of Units	Existing Volume	Proposed Volume
[+] [-]	Acquisition of Cardiac CT	0	1	1	0	1,000
[+] [-]	Renovation and expansion of endoscopy unit	8	1	9	13,792	14,526

Document Ready for Filing

When document is complete click on "document is ready to file". This will lock in the responses and date and time stamp the form. To make changes to the document un-check the "document is ready to file" box. Edit document then lock file and submit Keep a copy for your records. Click on the "Save" button at the bottom of the page.

To submit the application electronically, click on the"E-mail submission to Determination of Need" button.

This document is ready to file: ☒ Date/time Stamp: 09/27/2019 1:38 pm

E-mail submission to Determination of Need

Change in Service Form Footnotes

1. Observation Unit – Occupancy Rates for Operating Beds – Current and Projected: In February of this year, Newton-Wellesley Hospital ("NWH") received approval from the Department of Public Health to repurpose its existing postpartum unit in the South Building (specifically, the 4 South floor) of the Hospital's main campus to use this clinical space as a temporary Observation Unit. The temporary Observation Unit allows for 12 beds, with 8 currently in use. Accordingly, the 41% occupancy rate for current beds is for observation patients in the temporary Observation Unit only for the last seven months. If all observation patients at the Hospital are added to this figure, the occupancy rate would be greater than 100%. The proposed project will allow the NWH to shift some observation patients from the inpatient floors to the Observation Unit.

2. Special Care Nursery ("SCN") – Occupancy Rates for Operating Beds – Current and Projected: The current occupancy rate for beds shows 65%; however, as discussed throughout the narrative, at certain times of the day and week, surges occur in the unit. When the census within the unit reaches 9 patients or greater, the SCN defers patients seeking transfer from other area hospitals to ensure NWH patients may be accommodated. Furthermore, if the SCN reaches a census of 12 or greater, obstetrics patients that are less than 36 weeks gestation or those patients deemed "high risk" must be transferred to another hospital to ensure the mother and baby may be properly cared for with the appropriate equipment. Through the Proposed Project, NWH is seeking to add 4 SCN bassinets/beds to accommodate current and projected demand for SCN services. This expansion will allow increased access to SCN services, leading to improved health outcomes and patient experience.