The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

Report to

the Honorable John Polanowicz, Secretary, MA Dept. of Health and Human Services and
the Honorable Coleman Nee, Secretary, MA Dept. of Veterans’ Services

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Executive Summary

Introduction

In June 2013, the Commonwealth of Massachusetts (State) commissioned a group of researchers from the Massachusetts Institute of Technology (MIT) to examine the present and future long-term care (LTC) of the State’s veteran population. This document represents the results of this commission. 1

This study is divided into three parts. In Part I, we contextualize the current system through which the State provides LTC to State veterans. This contextualization is necessary because any discussion of transforming existing State facilities must take into account the larger trends surrounding LTC need, the specific LTC needs of veterans, the processes through which the State has provided LTC services to veterans, and the projected future LTC needs of the State’s veteran population. In large part, the findings we present in Part I are based on field research. This field research included interviews with staff at the State’s two soldiers’ homes (Homes), State Department of Veterans’ Services (DVS) staff, professionals at the VA Medical Center located in Northampton, MA (Northampton VAMC), program administrators in the State Executive Office of Health and Human Services (EOHHS), as well as representatives of soldiers’ homes located across the country. In Part II, we describe and explore the demographic and geographic characteristics of the State’s veteran population. This section includes a detailed set of visualizations that describe the State’s current veteran population, both in terms of geographic and demographic characteristics. Additionally, we present veteran population estimates based on the U.S. Department of Veterans Affairs (VA) 2011 Veteran Population Model (VetPop 2011 Model), an actuarial projection model developed by the VA, in an effort to describe what the State’s veteran population will likely be in the years to come. Our primary goal in Part II is to evaluate whether the spatial configurations of the State’s LTC delivery system align with both the current demand and likely future demand for such services.

Lastly, in Part III, we outline our recommendations to the State as it attempts to enhance the LTC services that it currently provides to State veterans. The recommendations that we propose are purposely broad in scope and meant to help guide a collaborative planning process that will involve the many stakeholders who have a substantial interest in how the State provides LTC to veterans. Absent a comprehensive planning process that (1) incorporates meaningful stakeholder participation and input and (2) engenders broad support across the spectrum of interested parties, any recommendation offered herein are likely to be both hollow and ineffective.

Key Findings

Having outlined the structure of this report, we will now provide a short summary of this study’s key findings.

Key Findings: Demand for LTC Services

- The demand for LTC services reflects a cycle of care-need. Not all persons who need LTC services are elderly; however, those over 65 make up the vast majority of care-seekers. The cycle of LTC care-need typically begins with care provided in the home by a family member. As the care-seeker’s LTC needs increase, the ability of family to provide care is frequently outstripped. Care then proceeds towards more formal and or institutionalized LTC services. Although at the far extreme of LTC services typically occurs in a 24-hour health care facility. In light of this fact, the question is not whether such facilities are needed but rather when a person should be placed in such a setting.

Key Findings: Financing LTC Services

- Where eligible, families take advantage of insurance programs, both government and private, to finance LTC services. The single largest financing source of LTC services is the federal government. Through the Medicare1 and Medicaid2 programs, the federal government pays for more than 50% of domestic LTC services. Indeed, absent such support, financing of LTC services can place a heavy financial burden on the family of the person in need of care and/or seriously jeopardize the financial security of that person’s spouse.

- In addition to the Medicare and Medicaid programs, the federal government pays for more than 50% of domestic LTC services. Indeed, absent such support, financing of LTC services can place a heavy financial burden on the family of the person in need of care and/or seriously jeopardize the financial security of that person’s spouse.

1 Medicare is a federal insurance program that covers persons over the age of 65, young persons with serious disabilities, and those with end stage renal failure. Medicare coverage does not cover extended LTC services. Although at the far extreme of LTC services typically occurs in a 24-hour health care facility. It is no longer a foregone conclusion that persons further along the spectrum of LTC care-need will necessarily be housed in a 24-hour health care facility nor that LTC services (across the full spectrum of care-need) are primarily delivered in an institutional setting. Day programs and nurses visits to the home are two examples of non-institutional LTC services that have gained prominence in recent decades. That being said, many persons eventually will require the level of LTC services provided by a 24-hour health care facility. In light of this fact, the question is not whether such facilities are needed but rather when a person should be placed in such a setting.
Medicaid programs available to the general population, the VA offers two pension programs that cover certain types of LTC service expenses.

- For many residents of the Homes, the State’s LTC benefits provide a thoughtful, cost-effective, and high “touch” set of LTC services. Given the great sacrifice an individual makes when accepting the call to duty, the State’s LTC benefits are well-earned and justly deserved.

Key Findings: Responding to a Changing Veteran Population

- Like many states around the country, the State faces significant challenges as it repurposes a care delivery system that most recently was designed to serve World War II (WW II) veterans, to one that can meet the needs of younger generations of veterans. In the immediate term, the care delivery system will have to meet the needs of veterans of the Korean and Vietnam War eras. In the longer term, the system will again need to shift to meet the needs of Gulf War era veterans. Each of these populations has unique social and cultural characteristics. Additionally, each of these populations will have unique medical needs which the State’s LTC services will need to respond to. Perhaps the biggest challenge, however, is the fact that it is impossible to predict what the exact social tendencies or medical needs of these populations will be when they require LTC services.

- We believe that veterans of more recent conflicts who are currently entering the LTC system expect that LTC services will better reflect their lifestyle choices, financial circumstances, and health conditions than those available to previous veterans. While the underlying health conditions vary between veterans currently entering the LTC system and those who will eventually enter it, the expectation that the LTC system will be responsive to lifestyle choice will likely remain.

- Post-9/11 Gulf War veterans will likely present an even more complicated set of challenges for the State’s veteran LTC services. Operations Iraqi Freedom and Enduring Freedom, and Operation New Dawn have involved more than 3 million active-duty, guard and reserve forces that were exposed to combat conditions in extremely hostile environs. These three engagements resulted in 6,717 deaths and a staggering 51,000 wounded service persons. The mortality rates due to direct conflict have been comparatively low compared to other conflicts; however, a large number of these soldiers faced extreme conditions due to exposure to environmental hazards, and physical/psychological trauma. Additionally, the existence of sophisticated battlefield medical technology and protective body armor are resulting in soldiers with profound non-lethal injuries returning to civilian life. The long-term consequences of this development will only be known going forward although it is fairly certain that they will place significant demands on the State’s LTC services.

Key Findings: New Models of Care in LTC Services

- Community-based services have evolved to bring LTC services out of nursing homes and into or in close proximity to the patient’s home.

- Driven by (1) relative cost, (2) patient preference, and (3) quality-of-care objectives, the LTC service system is changing from institution-centered LTC services to LTC services delivered in the home or community. This shift represents more than a mere change in the delivery location of LTC services. Rather, the shift in location of LTC services is often accompanied by a deeper adoption of entirely new models of care including patient-centered care.1

- The growth in non-institutional LTC services is changing the demand for traditional institutional LTC services such as nursing homes.

Key Findings: The State’s Two Soldiers’ Homes

- The State operates two Soldiers’ Homes (Homes)—a western Massachusetts location in the City of Holyoke, and an eastern facility in the City of Chelsea. The Homes are intended, at least in part, to respond to the LTC and domiciliary care needs of State veterans.

- Both Homes have a reputation for providing high-quality care. As would be expected of high-quality LTC facilities, the staff and management are extremely engaged and have positive interpersonal relationships with their residents. This is an asset that the State should leverage as it attempts to reconfigure its veteran LTC services delivery system.

- Over the last two decades, the Homes have fallen behind in modernization and, in some cases, repair. In their current state, the Homes do not conform to leading LTC industry standards. While the current state of the Homes poses a challenge to the State, it also presents an opportunity to reimagine and redesign the State’s veteran LTC services delivery system so that it responds better to the needs of present and future elderly veterans in a manner that furthers the State’s goal of providing State veterans with services across a veteran’s lifecycle in a cost-effective and efficacious fashion.

A process of incremental change made in a severely resource-constrained environment is unlikely to be a viable response to the emerging issues the Homes face, namely, a distinctly different (1) client population and (2) set of health care standards than imagined at the Homes’ genesis. Facility upgrades are at least necessary, although not sufficient, to align the Homes with both the needs and wants of future generations of veterans.

Key Findings: The Cost of Care

- The State is unique among its peers in the funding structure of its soldiers’ homes. No other state that we

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1 It is important to note that patient-centered care, at least in this context, has a technical definition. As used, patient-centered care requires a new structuring of resources across a facility from infrastructure to management practices to clinical practice.

2 We do not intend to suggest that the Homes have fallen behind in all modernization efforts or repairs. Rather than referring to particular instances, this statement reflects the overarching opinion of the researchers regarding the modernization and condition of the Homes when the facilities are viewed in their totality.
Key Finding: The Demographics and Geography of Current State Veterans

- The largest number of veterans resides in Middlesex County (78,549), followed by Worcester County (55,760) and Essex County (45,438). Collectively, approximately 45 percent of the State’s veteran population resides in these three counties.

- Veterans 55 or older comprise approximately 74 percent of the overall State veteran population. The spatial distribution of veterans 55 or older roughly mirrors the spatial distribution of veterans in the State. Barnstable County has the highest number of veterans 55 or older, this group is approximately 90 percent of the county’s veteran population.

- Middlesex County has the largest number of veterans who served during wartime (58,722), accounting for 14.8 percent of the total State veteran population. Wartime veterans comprise between 67.8 percent and 74.8 percent of the county veteran populations in all 12 State counties examined.

- Although Middlesex County has the largest number of World War II (WW II) veterans, WW II veterans represent the largest share of the county veteran populations of Berkshire County (16 percent) and Norfolk County (15 percent), Korean War and Vietnam era veterans comprise approximately 44 percent of State veterans and 60 percent of State wartime veterans. Again, although Middlesex County has the largest number of Korean War and Vietnam era veterans, these two groups represent the largest share of the county veteran population in Franklin County (50 percent) and Plymouth County (48 percent).

- Gulf War veterans comprise approximately 12 percent of State veterans and 18 percent of State wartime veterans. Gulf War pre-9/11 veterans comprise approximately 7 percent of State veterans and 9 percent of State wartime veterans. The spatial distribution of this population roughly mirrors the overall State veteran population and the largest number of Gulf War pre-9/11 veterans reside in Middlesex County (5,390). These 5,390 veterans comprise 1 percent of the overall State veteran population. Gulf War pre-9/11 veterans represent the largest share of the county veteran populations in Worcester County (9 percent) and Bristol County (8 percent).

- The largest number of Gulf War post-9/11 veterans reside in Middlesex County (3,834) and Gulf War post-9/11 veterans represent the largest share of the county veteran populations of Suffolk County (8 percent) and Bristol County (6 percent).

- 7 percent of the State veteran population has a service-connected disability. State veterans with a service-connected disability are concentrated in the State’s northeastern counties of Middlesex (11,786), followed by Worcester County (7,157) and Norfolk County (6,315). In Suffolk County, the veteran population with a service-connected disability comprises a higher percentage of the county veteran population (19 percent) compared with other State counties. For instance, veterans with a service-connected disability are 15 percent of the Middlesex County veteran population and only 11 percent of the Franklin County veteran population.

Key Findings: The Predicted Demographics of Future State Veterans

- The VetPop 2011 Model predicts a 37 percent decline in the number of veterans nationally between now and 2040; the State is predicted to experience a 62 percent decline in its veteran population during the same time period. Although this shift might result in a decrease in demand for veteran LTC services, the current supply of such services is so far below demand that it appears unlikely that this reduction in the number of veterans will negatively impact the demand for the Homes’ services.

- The gender distribution of veterans in the State is predicted to change over the next three decades. While the number of female veterans is projected to remain constant, female veterans as a percentage of the total State veteran population is predicted to increase. To the extent that this change marks a departure from past experience, the Homes may require facility and operational alterations in order to provide services in a gender-equitable fashion.

Key Findings: The Population Served by the MA Department of Veterans Services (DVS)

- DVS had approximately 16,670 initial encounters with veteran applicants between 2005 and 2012. The spatial distribution of this population roughly mirrors the overall spatial distribution of State veterans. The largest number of veteran applicant initial encounters during this period was in Middlesex County and Bristol County. If we disaggregate the data by temporal period, this pattern generally remains although we observe that veteran applicants who made initial applications to DVS have become more spatially diversified over time. The overall profile of initial applicants to DVS by veterans roughly reflects the distribution of State veterans along several other dimensions.

Key Findings: The Current LTC Population of the Homes

- The combined draw of the Homes is not aligned with the spatial distribution of State veterans 55 and older. The Homes’ LTC residents are primarily from Hampden County (197) and to a much lesser degree from Middlesex County (50) and Hampshire County (69). About 43 percent of the Homes’ LTC residents are from Hampden County; however, only about 8 percent of the State veteran population 55 or older resides in this county. Although this misalignment exists, it must be

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Key Findings: The Demographics and Geography of Current State Veterans

- The limited extent to which the Homes take advantage of Medicaid or Medicare reimbursement of the LTC services stands in stark contrast to how other states provide LTC services to veterans. There are several grounds for not seeking reimbursement from these programs to a greater extent. However, these grounds must ultimately be balanced against the overall health of the States’ veteran LTC services delivery system. We believe that the best and most effective method to balance these interests is through a collaborative planning process.

- The gender distribution of veterans nationally is approximately 90 percent of the male population. Wartime veterans comprise the largest number of veterans who served during wartime. While the number of female veterans is projected to remain constant, female veterans as a percentage of the total State veteran population is predicted to increase. To the extent that this change marks a departure from past experience, the Homes may require facility and operational alterations in order to provide services in a gender-equitable fashion.

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noted that the supply of LTC services provided by the Homes is far below any reasonable approximation of what the demand for these services is. The observed misalignment should be placed in context by this fact. From a policy perspective, the spatial misalignment of 465 LTC residents when there are currently about 293,000 veterans 55 or older who might use the services of the Homes makes the misalignment appear inconsequential.

Recommendations

As part of our effort to assist the State in achieving the challenging goal of providing effective LTC services to State veterans, we sought to answer the following questions about the State’s veteran LTC services delivery system:

- How can the State provide adequate, modern, state-of-the-market care for elderly State veterans? Are there alternate models of care that should be considered to ensure that the State is providing the best care possible?
- Currently the State operates two homes: one in the western part of the State and the other in the Boston area. Is there a better spatial configuration possible, particularly given the spatial distribution of veterans around the State?
- How can the State fulfill past and future commitments made to veterans for LTC services in a manner that is responsive to the needs of those who served during different periods of conflict?

The State and the Homes should embrace today as an opportunity to plan for the reimagining of the State’s LTC services delivery system into a system more aligned with both modern models of care and the changing spatial distribution and needs of tomorrow’s elderly veterans. We believe that only by reimagining an alternate model of care can the State and the Homes realize the full potential of any facility upgrades. The financial constraints on the State and Homes are real and any facility upgrade will be costly. However, the Homes already possess the most valuable resources for any transformation, namely, staff, management, trustees and volunteers who are passionate about and dedicated to the veterans they serve.

Below, we list recommendations that should serve as a foundation for the transformation of the Homes.

- Invest in the Physical Infrastructure of the Soldiers’ Home in Chelsea

We recommend constructing a new facility onto or near the Soldiers’ Home in Chelsea that can accommodate a significant number of beds and roughly conform to the physical design specifications of the community living model. One-for-one replacement of existing beds may not be possible and any design standard implemented may need to be altered to conform to the realities of the facility and the chosen site. For instance, the replacement ratio may need to be .8 to 1 and/or semi-private quarters might have to involve pods of 4–12 veterans. Any construction or renovations must be scalable and completed in a timely manner. Several recent VA capital improvement projects have been criticized or derailed due to non-timely completion and/or lack of scalability. Engaging in a community support process that includes consultation with stakeholders is one possible way to energize efforts to establish a new facility on the existing site or in a nearby location.

- Create New Options, Establish Partnerships, and Explore Alternate Configurations

We recommend creating two pilot programs designed to increase access to LTC services amongst State veterans through the development of a spatially distributed system of supports for home-based community services from the VA and local nursing homes (e.g., setting up a cohort of veteran suites/wings). The information garnered from these pilot programs should be used to inform the State’s provision of LTC services to veterans moving forward.

- Build upon the Soldiers’ Home in Holyoke’s Unique Location

We recommend that the Soldiers’ Home in Holyoke continue to build its relationship with the Northampton VAMC in order to position itself as a regional service innovator.

- Support Innovative Practice

We recommend that the State support current efforts by the Homes to deliver new types of LTC services. For instance, with a likely modest investment from a capital perspective, supporting Adult Day Health Care at the Soldiers’ Home in Holyoke would help ensure the program’s operational success. State support of innovative practices at the Homes sends a clear message that delivering LTC services to veterans in novel ways is both desired and needed.

- Provide Enhanced Individual and Family-Based Counseling Services

The literature on how families cope with aging veterans indicates a need for additional outreach to support families and spouses, including State veteran families whose loved one does not reside at the Home. This service is both ripe with need and not necessarily dependent on major capital expenditures at the Homes.

- Develop Systems Today that Respond to the Unique Health Care Challenges which Gulf War Era Veterans Will Likely Present When They Require LTC

Compared with veterans of pre-Gulf War era conflicts, current-era veterans are almost twice as likely to be designated with a service-connected disability as those of prior periods of conflict. We recommend that the State work, in coordination with the Department of Defense and the VA, to engage current-era veterans today to ensure they are aware of and are receiving the benefits they deserve and that can help ensure that these veterans are as physically and psychologically fit as possible when they require LTC services. This effort...
should start with coordination with the U.S. Department of Defense (DoD) and VA, including data sharing and record keeping, to help track veterans returning from recent conflicts so that veterans can be engaged and followed post-service separation. While such efforts will help ensure State veteran well-being, they will also likely support the State’s efforts to plan a responsive veteran service system. Planning activities depend on up-to-date and geographically accurate information and this information is currently exceedingly difficult, if not impossible, to obtain.

- Begin Implementing LTC Services that are Responsive to Female Veterans

There has been a steep rise in the number of female veterans over the last two decades. As a share of the younger veterans, there are proportionately more women. More than 50 percent of the State’s current female veteran population is under the age of 55 and more than 33 percent is aged 18–34. Male veterans are older than female veterans and 33 percent of male veterans are over the age of 75. While current efforts can focus primarily on providing LTC services to men, this trend will not continue. The homes and the State should implement programs that are responsive to this emerging population both from an equity perspective and to conform to state and federal non-discrimination mandates. As a first step, we recommend that the State study the characteristics and potential needs of this growing population.

- Design and Implement a LTC Services System that is Responsive to the Special Challenges Facing Victims of Sexual Violence

Sexual predation, a high and increasing problem, is evident in the population of women and men leaving the military. One in five women and one in one hundred men screened positively for military sexual trauma, a term referring to sexual assault or rape experienced by military personnel. This trauma requires special planning for facilities and resources to care for the needs of veterans, especially female members of the military. We recommend that the State ensure that resource expenditures for the provision of various services be planned in light of this serious issue and its likely impact on the needs of future elderly veterans.

- Establish a Standardized Means of Acquiring Information about the LTC Needs of Veterans

We recommend that the State maintain current information on the life-course trajectory of Vietnam and pre-9/11 Gulf War veterans and those from the recent conflicts. Research is just beginning to reach a sufficient state of maturity to allow medical professionals to describe the life-course prospects of veterans who served in the wars of the last four decades. These groups will likely present substantially different needs and preferences for LTC services. We recommend explicit coordination with the VA, the DoD, and researchers to ensure that basic information is available about these populations likely to seek care in the future.

- Conduct a Detailed Evaluation of the Homes’ Staffing Both in Light of Current Needs and Alignment with the Desired Future State

Human resource expenditures dwarf the cost of capital improvements when considered from a long-term perspective. Given the cost of human resources and the potential for substantial long-term savings, we recommend that the State conduct a detailed analysis of the Homes’ staffing arrangements. The analysis should consider both the Homes’ current needs and their likely needs should their model of care be altered. Such an analysis could likely quantify answers to questions such as (1) whether the Chelsea facility requires a substantial and costly cohort of medical doctors on staff or (2) what the true cost of a degrading facility are in light of staffing expenditures required to maintain such a facility.

- Implement Standardized Measures and Metrics Across the Homes

We recommend that the Homes agree upon and implement a shared set of performance metrics. While the State has common requirements related to the budgetary process, it does not appear that the Homes have shared evaluation and performance measures and metrics (at least aside from industry operational metrics which are not particularly geared to policy development). We believe that the lack of such measures and metrics substantially impedes the State’s and the Homes’ ability to make planning and management decisions from a systems perspective. Data collection efforts need to be responsive to the fact that the data needs of the various functions of the Homes (operations, management, and policy development) do not necessarily align.

- Implement Systems that Ensure Data Sharing Across Agencies

Several aspects of this study were impeded by a lack of access to reliable and timely geographically detailed data about State veterans. Data sharing among agencies responsible for services for veterans is critical to effective and efficient operation of the State’s veteran LTC services system. We recommend increased coordination among the DoD, the VA, and DVS to ensure that necessary data are available to conduct reasonable and timely planning of service provision.

- Assess and Identify the ‘Level’ of Care Needed by the Residents of the Homes

We recommend that the Homes implement a system to assess (at some regular interval) the level of care needed by their residents. Although Homes already conduct such evaluations, there is substantial room for improvement in terms of cross-facility consistency, the frequency of such evaluations, and the impact such evaluations have on facility operations. The provision of an inappropriate level of care to residents results in either, at the one extreme, service provision contraindicated by medical standards that endanger resident wellbeing or, at the other extreme, the
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expenditure of substantial resources to provide a level of care not needed by the resident. From both resident well-being and safety perspectives and cost-saving perspectives, this recommendation should be implemented.

- **Align Facility Improvement Plans with VA, Federal, and State Priorities**

  We recommend that any efforts to transform the Homes should align with federal, State, and VA priorities in order to increase the likelihood of engendering both institutional and financial support.

- **Further Investigate Identified Best Practices**

  We recommend that the State and the Homes further investigate the best practices identified in this study. In particular, we believe that further investigation of the Colorado, Minnesota, and Rhode Island cases will likely yield useful insights that should inform how the State and the Homes provide LTC services to veterans.

- **Coordination of Actions of the Two Homes Can Lead to Efficiencies, Increased Effectiveness and Better Sharing of Resources**

  The Homes have formally different governance structures and demonstrate limited coordinated planning activities.  

  We recommend that the State explore models of governance and planning used by other states that encourage facility autonomy and facility innovation while incentivizing coordinated behavior that leads to increased system efficiency and effectiveness.

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**Part I. Understanding the Veteran Long-Term Care Services Delivery System**

**1.1 Introduction**

A decade of military conflict and an aging veteran population are placing new demands on the long-term care (LTC) and domiciliary facilities and services for veterans that the Commonwealth of Massachusetts (State) and other states provide. These services are elements of the benefits stream promised to men and women who served our nation. These services meet the needs of two distinct veteran populations: those who served during the Korean conflict or earlier and service persons who served during the Vietnam era or later. The needs of and demand for LTC services that these two populations present or will present differ both in terms of medical conditions presented and level and or type of care expected.

Veterans of more recent conflicts who will eventually enter the LTC system will expect services and resources that reflect their lifestyle choices, financial circumstances, and health conditions. While the underlying health conditions vary between veterans now entering the LTC system and those who will eventually enter it, the expectation that LTC services should be responsive to lifestyle choice will likely persist across these populations.

In terms of responsiveness to lifestyle choices, at least compared to World War II (WW II) veterans, perhaps the most salient expectation is that more recent generations, when given the choice, express their preference to ‘age in place’ until either the veteran or the caregiver is no longer able to manage the required level of support. This fact has two clear implications for the State’s LTC services system. First, the age of future veterans in State LTC facilities will likely increase. Second, due to the desire to ‘age in place’, veterans who do eventually require institutional LTC services will likely present with more acute and complicated health needs. This fact will likely be further magnified by the simple fact that advances in battlefield medicine are resulting in service persons returning to civil society with multiple health issues related to service which, in previous eras, might well have resulted in a battlefield death. Whether due to lifestyle preference or health need profile, we expect that the most recent generation of veterans will require LTC services at a substantially older age than the current LTC service user population and that, when they do require institutional LTC services, they will present with substantially more complicated and varied health needs,
thus likely requiring a higher level of health care service.

Post-9/11 Gulf War veterans will likely present an even more complicated set of challenges for the State’s LTC services system. Operations Iraqi Freedom and Enduring Freedom, and Operation New Dawn have included more than three million active duty, guard, and reserve forces that were exposed to hostile combat zones. These engagements resulted in 6,717 deaths and 51,000 soldiers wounded. The mortality rates due to direct conflict have been comparatively low compared to other previous conflicts. However, a large number of these service persons faced, while in theater, extreme conditions, exposure to environmental hazards, and physical and psychological trauma associated with the signature causes of this war’s wounds: explosive and concussive roadside devices and high intensity weaponry inflicting severe wounds, both physical and psychological in nature (Stiglitz & Bilmes, 2008).

The State commissioned a group of Massachusetts Institute of Technology (MIT) researchers to examine the present and future LTC and domiciliary needs of State veterans relative to the existent LTC and domiciliary service systems operated by the State. As previously alluded to, the State faces an emerging and future population of veteran LTC service users with needs that will differ substantially from its past veteran clients. At the same time, the State must respond to this new demand with an LTC services system that, even for current system users, is out of alignment with certain standards. In light of these two facts, the present study is particularly timely; we hope that it will help inform decisions related to the State’s veteran LTC services system made by policy makers and public servants attempting to align the care provision system with demand in a manner that is responsive to the needs and expectations of future veterans and the fiscal environment in which the care delivery system operates.

The Challenge: Addressing an Immediate Need to Revitalize Massachusetts’ Soldiers Homes

The State operates two Soldiers’ Homes (Homes)—a western Massachusetts location in the City of Holyoke, and an eastern facility in the City of Chelsea. These facilities are intended, at least in part, to respond to the LTC and domiciliary care needs of State veterans. Both Homes are decades old. When the Homes are viewed as a system, over the last two decades, the facilities have fallen behind in repair and modernization. In their current condition, the Homes do not conform to best LTC services standards. While the current state of the Homes represent a problem for the State, it also presents an opportunity to both reimagine and redesign the State’s veteran LTC services system so that it responds better to the needs of both current future elderly State veterans. Simultaneously, this moment should be used by the State and the Homes to (1) implement physical and operational improvements at the Homes that conform to leading industry standards and (2) further integrate the Homes with the State’s broader goal of providing State veterans with services across a veteran’s life cycle in a manner that is both cost-effective and efficacious.

In an effort to assist with achieving these difficult goals, we sought to answer the following set of questions about the State’s veteran LTC services system:

- How can the State support modern, state-of-the-market coordinated care for State veterans in need of long-term care? Are there alternate models of care that should be considered to ensure that the State is providing the best care available?
- Currently the state operates two homes: one in the western part of the State and the other in the Boston area. Are these locations optimal given the spatial distribution of veterans around the State?
- How can the State fulfill past and future commitments made to veterans for LTC services in a manner that is responsive to the needs of veterans who served during different periods of conflict?

Any changes to the existing veteran LTC services system will require (1) resources, (2) a reconfiguration of assets and expenditures, and (3) buy-in from the various care providers and other stakeholders. In terms of resources and a reconfiguration of assets, the relevant questions are simple to state yet surprisingly thorny when considered in context. These questions include: Where will these new resources come from? What tradeoffs will be required? What will be an effective process to achieve the overarching goal of a more responsive LTC services system? While both a single answer to these questions and one that could be settled upon absent a lengthy stakeholder engagement process are unlikely, we attempt to delineate the relevant factors that should be balanced when answering these questions. We hope that, given the researchers’ third-party status and the skillset we bring to bear on the issue, our partial responses can serve as a useful launching pad for discussion about and policy development related to the State’s veteran LTC services system.

Study Purpose & Format

In this study, we present a broad examination of the various dimensions of the challenge before the State of meeting long-standing commitments made to the State’s veterans while achieving safety, financial security, cost effectiveness, and environmental quality for all parties involved.

This study is divided into three parts. In Part I, we contextualize the current system through which the State provides LTC to its veterans. This contextualization is necessary because any discussion of transforming existing State facilities must take into account the larger trends surrounding LTC need, the specific LTC needs of veterans, the processes through which the State has provided LTC services to veterans, and the projected future LTC needs of the State’s veteran population. In large part, the findings we present in Part I are based on field research. This field research included interviews with staff at the State’s two soldiers’ homes (Homes), State Department of Veterans’ Services (DVS) staff, professionals at the VA Medical Center located in Northampton, MA (Northampton VAMC), program administrators in the State Executive Office of Health and Human Services (EOHHS), as well as representatives of soldiers’ homes located across the country.
In Part II, we describe and explore the demographic and geographic characteristics of the State’s veteran population. This section includes a detailed set of visualizations that describe the State’s current veteran population, both in terms of geographic and demographic characteristics. Additionally, we present veteran population estimates based on the U.S. Department of Veterans Affairs (VA) 2011 Veteran Population Model (VetPop 2011 Model), an actuarial projection model developed by the VA, in an effort to describe what the State’s veteran population will likely be in the years to come. Our primary goal in Part II is to evaluate whether the spatial configurations of the State’s LTC delivery system aligns with both the current demand and likely future demand for such services.

Lastly, in Part III, we outline our recommendations to the State as it attempts to enhance the LTC services that it currently provides to State veterans. The recommendations that we propose are purposely broad in scope and meant to help guide a collaborative planning process that will involve the many stakeholders who have a substantial interest in how the State provides LTC to veterans. Absent a comprehensive planning process that (1) incorporates meaningful stakeholder participation and input and (2) engenders broad support across the spectrum of stakeholders. As we demonstrate there is substantial room for creativity and collaboration in response to the care needs of current and future veteran populations.

### 1.2. The Context of LTC Services

In this section, we explicate the contextual information needed to understand, in broad strokes, the outlines of the LTC system, including (1) what LTC is, where LTC is provided, and who needs LTC, (2) how the LTC system is financed, and (3) the LTC needs of veterans.

#### 1.2.1. A Growing Elderly Population

The growing number of elderly Americans has been a significant part of the national human services dialogue. The demand for services, programs, and facilities to address the needs of the nation’s elderly population will increase; the number of persons 65 and older is projected to be 72 million in 2030 and 88 million by 2050 (U.S. Census Bureau, 2010).

While the magnitude of the increase is illuminating, it is perhaps more useful to consider the change in the elderly population relative to the total population. In 2010, persons 65 and older comprised 13 percent of the total population. The number of persons 65 and older is projected to comprise 20 percent of the total population in 2030 and 37 percent by 2050 (U.S. Census Bureau, 2010).

This increase in both the number of persons 65 and older and relative share of this population to the total population will likely result in increased demand for LTC services and a concommitent need to realign the broader LTC services system to meet this new demand.

#### 1.2.2. What are LTC Services?

LTC services are provided to people who must depend on others for help with the “activities of daily living” (ADL). The intensity of LTC need ranges from relatively minor services to services including skilled nursing care and therapy (e.g., physical and psychological therapy). Generally speaking, insurance begins covering LTC services when the insured is unable to perform two of six ADLs without assistance or when LTC is deemed medically necessary. The six ADLs considered are:

1. Eating
2. Bathing
3. Dressing
4. Toileting (i.e., getting on and off the toilet and performing hygiene functions)
5. Transferring (i.e., getting in and out of bed or a chair)
6. Maintaining continence (i.e., controlling bladder and bowel functions)

LTC services vary both in terms of what they provide and where they occur. In Table 1, we list several ‘typical’ locations/types of LTC services and whether the general type of LTC service is typically provided (1) in the home or community or (2) in institutional settings. The types of LTC services listed range from patient oversight with little intervention except to fulfill basic needs

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1 A finding of medical necessity is often either based on a specific physical ailment (i.e. a stroke) or that LTC services would facilitate recovery from a medical procedure (i.e. a hip replacement).
The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

LTC services also vary significantly in cost based on the care provider and where the service occurs. Generally speaking, care provided in the home by a family member is the least costly monetarily, but often has consequences for the family member caregiver, especially as the recipient ages and is less able to take care of themselves or the caregiver must forego economic activities to provide care to a family member. Community LTC services are often relatively inexpensive, though they require transportation services to and from the location, while care services that come to the home vary in price but are significantly less costly compared with institutional care, which tends to be the most expensive type of LTC.

1.2.3 Who Needs LTC Services and What Types of LTC Services Do They Want?

LTC services are needed by people of varying ages and health conditions. According to Georgetown University’s Long-term Care Project, “nearly 10 million people need long-term care—that is, need help with ADLs … Most are age 65 or older, but 37% are under age 65. The risk of needing LTC does, however, rise steeply with age. Among people age 65 or over, 14% need LTC, but 1.4% of people age 65 or older, 50% will need some type of LTC (Georgetown University Long-term Care Financing Project, 2003).

With 10,000 baby boomers turning 65 every day, the demand for LTC services for more than five years during their lifetime (U.S. Department of Health and Human Services, 2008). In addition to this increase in demand, many experts predict that advances in health, technology, pharmacology, and chronic disease management will likely result in baby boomers demanding LTC around the age of 75 and that this population will likely prefer to remain outside of an institutional LTC setting as long as possible (AARP Public Policy Institute, 2009). These facts suggest that the current manner in which LTC services are provided will likely undergo a major restructuring in order to respond to patient demand and need.

With 10,000 baby boomers turning 65 every day, the demand for LTC services (across the full spectrum of LTC service intensity from occasional support to end of life care) is likely to increase. Estimates indicate that approximately 70 percent of people over 65 will require at least some LTC services during their lifetime; 20 percent of persons will need LTC services for more than five years during their lifetime (U.S. Department of Health and Human Services, 2008). In addition to this increase in demand, many experts predict that advances in health, technology, pharmacology, and chronic disease management will likely result in baby boomers demanding LTC around the age of 75 and that this population will likely prefer to remain outside of an institutional LTC setting as long as possible (AARP Public Policy Institute, 2009). These facts suggest that the current manner in which LTC services are provided will likely undergo a major restructuring in order to respond to patient demand and need.
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1.2.4. Where Long-term Care Occurs

Although the majority of LTC services are currently provided in institutional settings such as nursing homes, in the future the share of LTC services provided in institutional settings is likely to diminish relative to LTC services provided in home and community settings. In part, this change will be driven by patient preference. Additionally, medical research and practice is increasingly indicating that better health outcomes are achieved when LTC services are designed to promote independence and occur in a home or community setting. These trends will, if they continue in the current direction, drive a move away from institutional LTC services provided in the coming decades.

The current elderly population, and even baby boomers, may be tolerant of the “old style of care” (i.e. institutional LTC services). However, a growing body of evidence supports the proposition that future generations of elderly Americans will be less so. For instance, a recent study, based on survey research, found that “Gen X” persons, persons born between 1965 and 1974 who are now 36 to 47, have very different expectations about their retirement and LTC medical care which are incompatible with the current mode of institutional LTC services (MetLife Mature Market Institute, 2013). In fact, the private LTC market segment is already in the process of realigning resources to respond to this shift in consumer preferences in the form of developing senior housing with a greater emphasis on comfort, independence, and privacy (National Investment Center, 2013). While it is perhaps easy to dismiss this trend in the private LTC market as inapplicable to veteran LTC services, we believe that the trend reflects a larger shift in the current demand for and tolerance of institutional LTC services.

The traditional model of institutional LTC services and its current dominance is not accidental. Rather, its prevalence can be attributed to history, the disease model of care, and a belief that the traditional model is the most cost-efficient method of providing LTC services. New models of LTC services are based, in part, on a fundamentally different set of values that the LTC system should reflect, namely, self-realization, support, and responsiveness. Rather than providing the type of care people will accept, newer LTC service models center on what residents actually prefer. Rather than privileging end-of-life care and disease management, new LTC services models attempt to respond to the shifting LTC services needs over a patient’s life course.

The stated values of newer LTC services models are laudable. However, such an approach makes little sense if new care models are either too costly or too complicated to be implemented. Fortunately, researchers and experts are verifying that numerous organizational and care design configurations are capable of efficacy and cost-effective provision of humane care based around self-realization. Simply put, institutional LTC is not the only tool available and while it may be appropriate in some contexts, evidence indicates substantial gains in patient outcomes, empowerment, and satisfaction can be achieved using alternate LTC care models and that these LTC care models are both implementable and cost-effective.

1.2.5. Financing LTC

In this section, we briefly outline how LTC services are financed. This information is necessary to understand the existing model of care, the impact of this model on the cost to payees seeking care, and why VA pension programs can be important and, in some cases, essential for individuals to ensure that they can enjoy the latter years in some cases, essential for individuals to ensure that they can enjoy the latter years in some contexts, evidence indicates significant gains in patient outcomes, empowerment, and satisfaction can be achieved using alternate LTC care models and that these LTC care models are both implementable and cost-effective.

Government Health Insurance Programs: Medicare & Medicaid

a. Medicare

Where eligible, families take advantage of insurance programs, both government and private. The single largest source of funds to finance LTC services is from the government. Indeed, more than 50 percent of LTC services are paid for by Medicare or Medicaid. Medicare is a federal insurance program that covers persons over the age of 65, young persons with serious disabilities, and those with end stage renal failure. Medicare coverage does not cover extended LTC and most in-home services are not covered (Medicare.gov, 2013).

b. Medicaid

Medicaid covers a larger variety of LTC services than Medicare but with serious costs. The average annual cost of assisted living care was $42,600 in 2012, compared to $81,030 (semi-private room), $90,520 per year (private room) in a nursing home (MetLife Mature Market Institute 2012). Personal funds are often used to cover in-home care. These resources comprise personal wealth, savings, and income. Eventually a person’s health deteriorates and more care is required. If a person enters an institutional LTC market segment is already in the process of realigning resources to respond to this shift in consumer preferences in the form of developing senior housing with a greater emphasis on comfort, independence, and privacy (National Investment Center, 2013).
1.3. A Changing Culture Away from the Traditional LTC Model of Care

In the previous sub-sections, we discussed what LTC services are, who uses LTC services, and how LTC services are financed. We now turn our attention to the dominant LTC model of care. Although several alternate LTC models of care have been proposed and implemented in recent years, LTC services in particular LTC services provided at the home continue to be defined by a traditional LTC model of care. Most nursing homes were designed for LTC services that aligned with an institutional hospital model of care based on illness and dependency, set patient schedules, and decision-making by staff and management. Over the past fifteen years, providers have moved from the institutional model of care to a person-centric/directed model, which focuses on ‘quality of life’ along with ‘quality of care’. The ‘aging in place’ and ‘culture of change’ movements have further transformed LTC services and elderly programs. This shift is reflected by the continuing increase in the amount of funding for home- and community-based services by increasing the availability of HCBS. Quality-of-life and to be more cost-effective as financial eligibility, veteran service-connected (VA disability) status, insurance coverage, and/or ability to pay may also apply (U.S. Dept. of Veterans Affairs, 2013).

While needs tested, the Aid/Attendance Benefit has several exceptional elements that distinguish it from both other pension benefits and LTC financing mechanisms. Perhaps most importantly, the Aid/Attendance Benefit pays qualifying individuals the difference between their countable income and the MAPR and, generally speaking, countable income for this program is generously defined (Krooks, 2013). For instance, income from welfare benefits and Supplemental Security Income does not count toward the MAPR. Further, unreimbursed medical expenses actually paid by veterans or family members are deducted from a veteran’s income to determine eligibility.

1.3.1. Contemporary Models of LTC Care: From Community-based Services to Person-based Models

Living longer in relatively good health, the rising costs of care, and the service-models of care postpone the need for institutionalized care. As families attempt to maintain elderly members in their own homes as long as possible, community-based services have evolved to bring LTC services out of nursing homes and into close to the patient’s home. Driven by cost, patient preference, and quality-of-care objectives,
The LTC service system is changing from institutional-centered care to care delivered in the home or community. This shift represents more than a mere change in where LTC services are delivered. Rather, the shift in where LTC services are provided is often accompanied by the adoption of entirely new models of care. Here we briefly introduce some of these “new” models of care. While we refer to these models of care as “new”, it must be noted that many are at least ten years old. They are new in the sense that they appear to have gained a critical momentum in the LTC services industry. After laying out the driving forces behind the development of these “new” models of care, we proceed to the primary topic of this report, the State’s Homes and options with regard to revitalizing and aligning them with contemporary practices of care.

1.3. A Changing Culture Away from the Traditional LTC Model of Care

The growth in non-traditional LTC services is changing the landscape for institutional LTC services and it is changing the demand for traditional institutional LTC services, such as nursing homes. David Grabowski, a professor of health care policy at Harvard Medical School, is one of several researchers who have studied the impact of the expansion of ADS and assisted living services on traditional LTC services. He found that a 10 percent increase in a state’s assisted living capacity has led to a 1.4 percent decline in nursing home occupancy and a 0.2–0.4 percent increase in patient acuity. Additionally, he found that assisted living services have the potential to substitute for the care needs of some healthier individuals who can afford deinstitutionalized care (Grabowski, Stevenson, & Cornell, 2012).

1.3.1. Rising Cost of Traditional LTC Services & the Development of New Models of LTC Care

With the cost of long-term care and assisted living increasing steadily over the last decade, consumers have been forced to seek lower cost care alternatives. According to the insurance giant, Genworth:

Nationally, the annual cost of a private nursing home room rose 3.6 percent from 2012 to 2013 to $83,950, and has risen at an annualized rate of 4.5 percent over the past five years. A semi-private room in a nursing home cost an average of $75,556 a year in 2013, up 3.3 percent from 2012 and, on average, up 4.2 percent a year since 2008. Costs in an assisted living facility rose 4.6 percent during the past year to $41,400, and have increased at a 4.3 percent annualized rate during the past five years (Moeller, 2013).

In the same article, U.S. News writer Philip Moeller noted:

In-home expenses, by contrast, rose much less. The 2013 median hourly cost of homemaker services rose about 1.4 percent last year to $18 an hour; these costs have increased at an annualized rate of only 0.84 percent a year during the past five years. For home health aide services, the national median hourly rate was $19 an hour in the 2013 survey, up 2.3 percent from 2012 and up by about 1 percent a year during the past five years. Home health aides include domestic help and aren’t considered personal-care services. Home health aides do provide personal care but not medical care for things such as help with bathing and dressing (Moeller, 2013).

Other care services, including Adult Day Services (ADS), while growing in use, are also rising in cost but to a far lesser degree than institutional LTC services. For instance, the increasing cost of ADS is far less than the 4.3 percent cost growth in institutional LTC services—“the national average cost in 2013 for [ADS] was $65 a day, up 6.6 percent since 2012 but up an average of only 1.6 percent a year since 2008” (Moeller, 2013). Perhaps not surprising given the cost of ADS relative to institutional LTC services, the number of ADS centers has grown substantially in recent years. In 2010 there were 4,600 ADS centers nationwide (a 35 percent increase since 2002).
1.4. The Current State of the Homes

Like some states around the country, the State’s soldiers’ homes were established to meet the needs of past generations of veterans, namely, single men with a specific health profile. Going forward, the population of veterans seeking care from the Homes will be relevantly different from earlier populations of service users. The most cited difference between earlier generations of veterans (in this case, WW II veterans) and younger generations of veterans is the differences in type, variation in, and complexity of their medical conditions and the prospects of their increasing disability over their life course due to exposure to trauma while in theatre (Schneiderman, 2011). Younger veterans may also lack access to employer-provided health care which may impact their likely health condition when they require LTC services (Glasmeier, James, & Carpenter, 2011). Going forward, new models of patient-centered care, different generational preferences, a greater projected need for mental health and possibly homeless services, and the increasing number of women veterans will require that the Homes adapt if they are to meet the needs of tomorrow’s elderly veterans.

A growing body of evidence suggests that current-era veterans will likely present even more complicated health profiles than veterans from the Korean and Vietnam conflicts. Current-era veterans likely experienced a greater number of wartime deployments than past veteran populations, which will likely result in substantially more complex medical, social, and psychological health challenges. The complexity of medical cases is reflected in the different rates of service-connected disability: 21 percent of current-era veterans have a service-connected disability, compared to only 14 percent of non-current-era veterans. Marchione (2012) reported on a 3-month study conducted by the Associated Press which showed that ‘a staggering 45% of Iraq and Afghanistan veterans are seeking disability compensation.’ This more complex health profile coupled with the fact that the trend in favor of LTC services provided in home or community settings is unlikely to change poses a substantial challenge for the Homes. The Homes will face a client population with more complex medical needs and with strong opinions about the LTC services provided there. This last assertion should not be interpreted as a statement against the Homes or the valuable services that the State provides to veterans through them. Rather, the statement is a call, perhaps a necessary call, to ensure that the Homes adapt to meet the needs of the generation of veterans who sacrificed so much for family and country. We strongly believe that this is a task to which the Homes can and should respond.

In this section of the study, we describe the current state of the Homes. We first outline the current state of the Homes’ facilities (1.4.1). We next turn to issues of staffing, environment, and quality-of-care provided there (1.4.2), followed by an attempt to place the cost of care provided by the Homes in context by examining the financing and cost of LTC care provided by similar institutions in other states (1.4.3). Next, we pursue a brief aside to discuss the demand for the type of domiciliary services that the Homes provide (1.4.4). While outside the specific discussion of the Homes, nonetheless, the domiciliary services provided by the State are critical in reducing the State’s homeless veteran population. Any renovation of either facility should incorporate opportunities to modernize and transform this important resource. In the remaining three sections, we discuss potential opportunities for the Homes to serve currently underserved populations (1.4.5), survey alternate models of care used in other states to serve veteran populations, and, lastly, sketch the types of activities and adaptations that would help align the Homes’ LTC services to better meet the needs of future generations of elderly veterans (1.4.6).

1.4.1 The Home’s Facilities

Historically, soldiers’ homes were built in areas of respite and repose such as a beautiful campus, a park-like setting or, like the Chelsea facility, high on a hill. The trend today is to connect veteran LTC facilities with the larger community, whether by locating them adjacent to public or VA facilities, public services and amenities or having the community host programs and activities in local facilities.

The locations of state veteran facilities are critical and not only from the perspective of demographic and geographic population needs but also in terms of enabling a tighter connection with the communities within which such facilities are located. Part of the decision-making and planning of siting and/or re-siting of such facilities requires analyzing the physical location’s attributes and how they embody and underpin the philosophy, psychosocial, psychological, and physical needs of current and future veterans.

The Homes have provided care on the same sites for multiple decades. These facilities’ current missions were shaped, in large part, by the care expectations of earlier generations of veterans. As the Homes’ populations and the respective health care needs of their residents have changed, combined with declining availability of revenue sources, both Homes have sought to diversify programming to include dental, adult day care, and housing support services. Additional changes in both facilities have led to a move away from open wards to the retrofitting of larger rooms into smaller and more private-oriented spaces.

It is unlikely that the past approach of incremental change, severely constrained by available resources, will be a viable response to a distinctly different client population and set of health care standards than imagined at the Homes’ genesis. Key informants with whom we spoke expressed clear generational differences in terms of their acceptance of the Homes’ lack of modern amenities. WW II veterans are tolerant of the Homes’ physical conditions. The same sources anticipated that younger veterans would be more vocal in their dissatisfaction with these facilities’ deficiencies and will likely make demands on the State to improve the physical environment at both Homes. If this supposition is correct, coupled with marked changes
in the physical standards for LTC services provision, it is unclear whether the Homes, even with their passionate and dedicated staff, will be able to provide acceptable LTC services in future decades absent a major improvement of physical infrastructure.

### 1.4.2. Quality-Of-Care, Staffing, and the Environment of Care

Both Homes have reputations for providing high-quality care. As would be expected of high-quality LTC facilities, the staff and management are extremely engaged and have positive interpersonal relationships with the residents and the residents’ families. Both Homes, however, appear to have health care staffing arrangements that are somewhat out of line with normal operating standards. For instance, the Holyoke facility appears to have a gap in registered nursing minutes and a higher than expected average of licensed practitioner nurse minutes per day. At the Chelsea facility, the staffing includes 4 physicians (3.4 + 0.6) and one nurse practitioner. Just how beneficial it is to have employed medical doctors given the LTC services provided at the Chelsea facility is unclear to us, as is the nature of activities that consume their time and how much direct resident medical intervention is needed. Undoubtedly, the number of physicians at Chelsea facility is a function of the facility’s legacy as a non-critical care hospital, a function only recently transformed.

The level of staff and management concern, responsiveness, and competency are not in question. That being said, the Homes’ physical facilities hinder staff in their daily work (rooms with less than half the required clearances between beds, limited bathroom rooms at a prohibitive distance, thereby necessitating bedside commodes). This fact has been extensively documented by studies performed by the State, the VA, and other parties. In Figure 4, we list the various studies that have documented the inadequacy of the Homes’ physical infrastructure. The costs to upgrade and renovate the Homes’ existing physical infrastructure are high and may not either fully address deficiencies nor align the Homes with both the needs and wants of future generations of veterans, nor with federal reimbursement guidelines.

### 1.4.3. The Cost of Veterans’ LTC Services: Massachusetts in Context

The State is unique among states in the funding structure of the operations of the soldiers’ homes. No other state that we examined provided such a rich subsidy to its veterans.

In the State, veterans are eligible for the Homes’ LTC services if they have served for 90 days, with at least one day being during combat, or 180 days, if during peacetime, and are State residents. Both Homes have extensive wait lists, suggesting that demand for services is greater than the supply of beds. Veterans who are admitted into either Home pay no more than $30 per day for long-term care. For those with very low incomes or no income, payments are adjusted.

Except for a small handful of veterans with 70 percent or greater service-connected disability ratings, the State receives approximately $120 per day in reimbursement.

### Figure 4. Studies, Regulations, and Standards related the Homes’ Physical Condition

<table>
<thead>
<tr>
<th>Document Name</th>
<th>Document Type</th>
<th>Author</th>
<th>Date</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copley Building Feasibility Study</td>
<td>Study</td>
<td>Payette</td>
<td>January 2013</td>
<td>The motivation for this 300 page study was to submit an application for approval for capital improvement to the VA by April 2012.</td>
</tr>
<tr>
<td>Holyoke Conceptual Design Study</td>
<td>Study</td>
<td>Payette</td>
<td>August 2012</td>
<td>Study that details infrastructure, building systems (e.g. mechanical) and code compliance (accessibility to life safety).</td>
</tr>
<tr>
<td>Chelsea Facility Condition Analysis</td>
<td>Study</td>
<td>ISES Corporation</td>
<td>February 2012</td>
<td>Study that details infrastructure, building systems (e.g. mechanical) and code compliance (accessibility to life safety).</td>
</tr>
<tr>
<td>VA Compliance Survey</td>
<td>Study/Audit</td>
<td>VA</td>
<td>2010</td>
<td>Identified noncompliance with Uniform Federal Accessibility Standards (UFAS).</td>
</tr>
<tr>
<td>American with Disabilities Act (ADA)</td>
<td>Regulation</td>
<td>United States</td>
<td>2010</td>
<td>Identifying noncompliance with Uniform Federal Accessibility Standards (UFAS).</td>
</tr>
<tr>
<td>Uniform Federal Accessibility Code (UFAS)</td>
<td>Regulation</td>
<td>United States Access Board</td>
<td>Subsequently superseded by the 2010 ADA Standards for Accessibility Design.</td>
<td></td>
</tr>
<tr>
<td>MA Architectural Access Board Regulations</td>
<td>Regulation</td>
<td>MA Architectural Access Board</td>
<td>Massachusetts has stricter regulations than the ADA. For instance, MA requires modestly larger clearances requirements between beds.</td>
<td></td>
</tr>
<tr>
<td>Code of Federal Regulation Title 38, Chapter 1, Part 51</td>
<td>Regulation</td>
<td>United States</td>
<td>These are the most relaxed of all physical environment standards (e.g. allowing 4 people to a room and the bathroom is only required to be located “near” the room). We do not recommend planning for the future using this very outdated physical environment of care requirements particularly as they don’t match The Joint Commission standards.</td>
<td></td>
</tr>
<tr>
<td>The Joint Commission Standards</td>
<td>Standard</td>
<td>The Joint Commission (formerly Joint Commission on Accreditation of Healthcare Organizations)</td>
<td>Standards applicable to (1) beds licensed by the State as nursing home beds, (2) beds, units or facilities certified by Medicare, Medicaid as skilled nursing facility beds, and (3) beds, units or facilities designated as long-term care by a governmental entity such as the Department of Veterans Affairs or a state authority.</td>
<td></td>
</tr>
<tr>
<td>Community Living Center Guidelines</td>
<td>Standard</td>
<td>VA, Office of Facilities Management</td>
<td>2010 Used for VA planning. These guidelines imagine a transformation of the culture of care in nursing homes. These guidelines are relevant to the State decision making process as capital improvement that conform with these standards may be eligible for a 65 percent capital subsidy.</td>
<td></td>
</tr>
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for care that is estimated to cost approximately $400 per day. 

For veterans with a 70 percent disability rating or more, the VA pays the full cost of care, which is $461.89 at the Chelsea facility and $399.17 at the Holyoke facility (U.S. Dept. of Veterans Affairs, 2013).

The rate of $30 per day has remained constant for over a decade. It is not indexed to inflation and language in annual appropriations mandate that the Homes not raise their rates beyond the amount that they charged the prior year. Programs that provide LTC services to veterans run by other states that we examined all charge the patient significantly higher amounts for LTC services. For instance, in Colorado, veterans pay $132.68 per day for institutional LTC services in semi-private rooms and their spouses and Gold Star parents pay $228.50 for such care. Compared to State veterans, veterans in Colorado pay more than 4 times the rate of State veterans. The cost of care in the State is a significant subsidy and one that is only available to a select few (i.e., those veterans who are able to make it off the wait-list at the Homes).

The cost to residents aside, the fact that Medicaid or Medicare reimbursement is not a substantial source of revenue for the Homes is a stark contrast with how other insurances places on both the Homes and the State. While such balancing may seem callous, the State and the Homes are insurances places on both the Homes and quality strain that low usage of public insurances places on both the Homes and the State. While such balancing may seem callous, we examined the Homes for a select group of veterans served by the Homes. However, it is unclear whether this is always the case (i.e., avoiding the ‘spend down’ requirement causes in the best interests of spouses and children but not the veteran). Discussions with veterans and their families are necessary to understand the consequences of this practice at the Homes.

Assuming that it is in a veteran’s best interest to avoid the ‘spend down’ requirement, the benefit to an individual veteran should be balanced against the financial and quality strain that low usage of public insurances places on both the Homes and the State. While such balancing may seem callous, the State and the Homes are tasked with a larger mission of providing quality care to both today’s and tomorrow’s veterans. Serving today’s veterans at the cost of providing inferior care to tomorrow’s veterans raises troubling moral and ethical issues that must be carefully considered when proposing that the Homes continue to operate under a ‘business as usual’ schema. Unlike more restrictive VA programs, as a state, we may decide that all veterans, regardless of disability or income, deserve assistance with LTC services. However, the relevant question that should guide such efforts is how we can target such a subsidy more effectively to ensure that both current service users and future generations of users will receive decent and appropriate care.

1.4.4. Domiciliary Care

In addition to the LTC services available at the Homes, both facilities operate domiciliary programs that provide shelter to homeless veterans. These domiciliary programs focus on providing shelter/housing for single adults, primarily men, who need temporary housing or may have mental health, substance use, or other conditions where they benefit from living in a sober environment and among other veterans. These programs are important contributors to the State’s goal to end veterans’ homelessness by 2015 (Governor’s Advisory Council on Veterans’ Services and Interagency, 2013).

The role of domiciliary care provided at soldiers’ homes varies throughout the country. In both Homes, the domiciliary programs provide housing to honorably discharged veterans who receive basic meals and shelter for no more than $10 per day although some veterans pay nothing at all due to their very low-incomes. The Holyoke facility runs 30 beds and Chelsea facility maintains 305 domiciliary beds, roughly 250 of which were occupied when the team visited. The Homes receive a per diem of $41.90 per veteran from the VA that helps to cover the costs of running the domiciliary programs. The Homes also provide domiciliary residents with a range of services well beyond basic shelter and sustenance. These services range from case management to stabilization/reintegration assistance to dental care.

The path of veterans into the domiciliary program is varied. In the Chelsea facility, roughly two-thirds of residents come from a homeless environment. Conversations with staff suggest that younger veterans have begun to appear in the domiciliary programs and in the offices of the state Veteran Service Officers and that current era veterans are just now beginning to show up in shelter systems and domiciliary care programs.

The increasing share of women veterans has already begun to change the nature of domiciliary services. In the Chelsea facility, for instance, there is a secure female-only domiciliary wing with 13 beds. While this wing provides single women with a home, discussions with the staff indicated that there is demand for temporary housing that can also accommodate single mothers and their children. In the State today, roughly 74,000 children under the age of 18 live with parents who are veterans and 4 percent (over 3,000) of those children live in households at or below the federal poverty line.

1 This estimate is based on VA figures and the estimate of cost and reimbursement tendered by the individual facilities may differ. For more information regarding VA reimbursement rates examine the materials available at http://nonvacare.va.gov/state-homes-payment-rate.asp.

2 The low usage of the female-only wing is perhaps explained by the lack of family shelter services as opposed to being reflective of an underlying lack of need for such services among female veterans.
who are at least in a high-risk category for potentially needing domiciliary services. In addition, over 3,000 veterans are the primary caregivers for their grandchildren. These families may need assistance obtaining shelter, but no units are available at the Homes to accommodate them. Chelsea has opened a special housing unit that allows residents of the domiciliary to host family guests, which helps to facilitate family reunions but does not meet the demand for temporary family housing.

1.4.5. Opportunities to Serve a New Population

The Homes currently serve a fairly homogenous population of male veterans. While older generations of veterans were demographically homogenous, this is not true of younger generations of veterans. Of particular concern is the need to prepare for and extend services now to new populations, including families and women veterans. The increasing share of women in the military force has already led to changes in the nature of health care services demanded by veterans and will likely require changes at the Homes. While the number of female veterans in the State will not increase dramatically, the share of the veteran population that is female will (CNN, 2013). The Homes currently serve a fairly homogenous population of male veterans. While older generations of veterans were demographically homogenous, this is not true of younger generations of veterans. Of particular concern is the need to prepare for and extend services now to new populations, including families and women veterans.

1.4.6. Increasing Costs Aside, a More Modern Model of Care is the Industry Standard

Currently, the majority of LTC services employ a model of care that emphasizes disease and the need for medical care. In such facilities, the recipient of care is assumed to be a passive consumer of services, rarely leaving the confines of their bed and the few square feet surrounding the furniture. Further, according to this model many, if not most, daily living decisions are made by the staff. While efficient, this model is no longer contemporary and is being replaced by a model based on a philosophy of Person-Centered Care (PCC). PCC places the person first and assumes, absent evidence to the contrary, that the patient is able and should be afforded the opportunity to make decisions about their care and daily routine. Implementation of PCC practices requires not only that the client/service provider relationship is transformed but also that there is a transformation of the physical setting in which care is provided. Under the PCC philosophy of care, care is configured around the individual as opposed to the ‘disease’ and relevant staff support varies from nurses who provide medical care oversight to care providers who support patient personal fulfillment and development, companionship, and care. Key characteristics of PCC include environmental enhancements to deinstitutionalize an LTC facility, such as plants and private or two-person rooms, allowing residents to determine when and what they eat, involving residents and staff in decision-making processes, creating continuity of care so that residents are cared for by the same staff, and a host of other management, environmental, and staffing changes (Brownie & Nancarrow, 2012). The PCC model of care is quickly becoming the aspirational industry standard both in the private market and in VA facilities. It appears that the collective desire to implement PCC services is already present at the Homes and in fact, at least in terms of the level of empathy and attention afforded to veterans, elements of a PCC model are already present at the Homes. What is obviously missing, however, are the resources and physical infrastructures needed to realize the promise of PCC practice in the Homes.

1.4.7. Towards New Forms of Veteran LTC Services

While PCC services are becoming the LTC industry standard, other innovations in how LTC services are provided are also transforming the LTC landscape. States are increasingly recognizing the need to align veteran LTC services with civilian, private/public, state and national planning and trends in terms of services provided, quality of care, and how services are financed. A census of states, based on a survey of publicly available websites, suggests that:

- the majority of states offer residential privileges to spouses;
- the majority of states provide semi-private or private rooms;
- about 25 percent of states utilize a PCC model;
- about 50 percent of states have undertaken renovations of their veteran LTC facilities in the last ten years; and
- 25 percent states are currently pursuing one or more renovations of their veteran LTC facilities.

In addition, it appears that several states have experienced similar physical infrastructure issues as the Homes and, in response to various citations, transformed the manner in which care is provided. Upon receiving citations, a number of states undertook full-scale strategic planning, leading to major renovations. Four states now operate their services under a joint contract with a private LTC services provider and another state reformed the governance structure of its soldiers’ homes to enable consistent management and control across its facilities. In Figure 5, we summarize the results of our survey of how states provide LTC services to veterans. In particular, in Figure 5, we list, by state, whether a state’s veteran LTC services are provided to spouses of veterans, the model of care used to direct their LTC services, and the size of the care delivery system. Examining the evidence documented in this figure, we note that many states are shifting the ways in which they provide LTC services to veterans away from the traditional model of care to a more modern model of care. Of the 50 states examined, the veteran LTC facilities of 29 states accepted...
The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

Figure 5. Summary of state provision of veteran LTC services

<table>
<thead>
<tr>
<th>State</th>
<th>Accept Spouses?</th>
<th>Model of Care</th>
<th>Occupancy Model</th>
<th>Number of Facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>AL</td>
<td>No</td>
<td>Traditional</td>
<td>Semi and Priv</td>
<td>4</td>
</tr>
<tr>
<td>MT</td>
<td>Yes</td>
<td>Trad/Mod</td>
<td>Semi and Priv</td>
<td>2</td>
</tr>
<tr>
<td>AK</td>
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<td>Modern</td>
<td>Private</td>
<td>1</td>
</tr>
<tr>
<td>NE</td>
<td>No</td>
<td>Traditional</td>
<td>Semi-Private</td>
<td>4</td>
</tr>
<tr>
<td>AZ</td>
<td>Yes</td>
<td>Traditional</td>
<td>Semi-Private</td>
<td>2</td>
</tr>
<tr>
<td>NV</td>
<td>Yes</td>
<td>Traditional</td>
<td>Semi-Private</td>
<td>1</td>
</tr>
<tr>
<td>AR</td>
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<td>Traditional</td>
<td>Semi-Private</td>
<td>2</td>
</tr>
<tr>
<td>NH</td>
<td>No</td>
<td>Modern</td>
<td>Private</td>
<td>1</td>
</tr>
<tr>
<td>CA</td>
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<td>Trad/Mod</td>
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</tr>
<tr>
<td>NJ</td>
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<td>Modern</td>
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<tr>
<td>CO</td>
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<td>Modern</td>
<td>Private</td>
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<tr>
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<td>NY</td>
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<td>Modern</td>
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<td>5</td>
</tr>
<tr>
<td>DE</td>
<td>Yes</td>
<td>Modern</td>
<td>Semi-Private</td>
<td>2</td>
</tr>
<tr>
<td>NC</td>
<td>Yes</td>
<td>Modern</td>
<td>Semi-Private</td>
<td>4</td>
</tr>
<tr>
<td>FL</td>
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<td>GA</td>
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<td>Traditional</td>
<td>Semi-Private</td>
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</tr>
<tr>
<td>OH</td>
<td>No</td>
<td>Traditional</td>
<td>Semi-Private</td>
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</tr>
<tr>
<td>HI</td>
<td>Yes</td>
<td>Modern</td>
<td>Private</td>
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<tr>
<td>OK</td>
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<td>Trad/Mod</td>
<td>Semi and Priv</td>
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<td>ID</td>
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<td>OR</td>
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<tr>
<td>IL</td>
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<td>Semi-Private</td>
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<td>Traditional</td>
<td>Semi and Priv</td>
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<td>1</td>
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<td>RI</td>
<td>Yes</td>
<td>Modern</td>
<td>Private</td>
<td>1</td>
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<tr>
<td>IA</td>
<td>Yes</td>
<td>Modern</td>
<td>Private</td>
<td>1</td>
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<tr>
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<td>Semi-Private</td>
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<td>KS</td>
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<td>KY</td>
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<td>TN</td>
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<td>Traditional</td>
<td>Semi-Private</td>
<td>4</td>
</tr>
<tr>
<td>LA</td>
<td>Traditional</td>
<td>Semi-Private</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

1. We classified the model of care used in the veteran LTC facilities as modern in 17 states of the 50 states examined.2 There were a total of 153 facilities examined and the average number of facilities per state was 3.4.

In addition to surveying the ways in which states provide LTC services to veterans, we identified several states whose LTC services could be used as examples of ‘best practices’ during the State’s transformation process. Although we are only able to provide concise details about some of these ‘best practices’ cases, each case bears substantial additional research. We highlighted states that we believe are possible ‘best practice’ case in Figure 5 by shading the row in light gray. Additionally, we provide a brief description of 4 of these ‘best practice’ cases below.

**UTAH VETERANS HOMES**

In November 2011, the state of Utah committed to building four new nursing homes for veterans (and spouses and Gold Star parents). In May 2013, Utah opened two of these facilities, each with 108 beds. These two facilities were designed according to CLC Guidelines and have adopted the Eden Alternative Philosophy. They contain private rooms with bathrooms and veterans’ spouses qualify for admission. Management of these facilities was awarded to Avalon Health Care, a group of companies providing health care and ancillary services primarily to elders in

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1. Of the 50 states examined, in six states we were unable to ascertain whether the veteran LTC facilities accepted or did not accept spouses.
2. Of the 50 states examined, in three states we were unable to classify the model of care used in the states veteran LTC facilities.
The Minnesota Veterans Home, 2013. The Colorado State Veterans Homes admit, in addition to veterans, spouses and Gold Star parents. The nursing homes use the performance measurement tool “My InnerView”, a product from the National Research Corporation, to enable effective management and quality control activities. Similar to the State, Colorado’s facilities were established during the turn of the 20th century and had become substantially outdated. Today, Colorado’s veteran LTC facilities have a maximum of two patients per room; all rooms have private bathrooms, and a consistent set of performance measurement tools are used across facilities. In our opinion, Colorado, after the transformation of its soldiers’ homes, has become a field leader in the provision of veteran LTC services.

THE STATE OF MINNESOTA OPERATES FIVE SOLDIERS’ HOMES

The state of Minnesota operates five soldiers’ homes. Each facility has its own organizational structure and care philosophy, influenced either directly or indirectly by the Eden model of care. Each of the facilities accepts spouses in addition to veterans (Minnesota Veterans Home, 2013).

- The Fergus Falls Veterans Home opened a Veterans Village in 2011, which consists of two households of 10 and 11 residents each, designed to offer medical services in a home-style atmosphere. This community approach and design creates a sense of place for dementia residents by providing a familiar, home-like environment.
- The Silver Bay Veterans Home has “four distinct “neighborhood living spaces for residents. Residences are designed to replicate the feel of a single family home.
- Luverne (spans the state border with South Dakota) offers three living spaces to meet each resident-specific needs. The home follows the Eden model of care.
- The Minneapolis Veterans Home contains 291 skilled nursing beds and 50 domiciliary beds in private and semi-private rooms.
- The Hastings facility focuses on rehabilitation, reintegration into the community, and supportive care for optimal enrichment of residents’ lives. The campus has 179 domiciliary beds in private and semi-private rooms.

RHODE ISLAND’S VETERANS HOMES

In January 2013, Rhode Island approved $94 million in funding to construct a new community living center (eligible for 65 percent federal reimbursement) comprised of a new 157-bed facility with Adult Day Care. The Services Strategic Plan taskforce, recommended streamlining the Medicaid process for veterans and increasing community-based services for veterans living at home, and is looking at extending a Veterans Child Care Subsidy Program feasibility study (Boston.com, 2012).

Part II. The Demographic and Geographic Distribution of State Veterans

In 2010, in response to the Legislature’s mandate, the Executive Office of Health and Human Services, the Department of Veterans Services, and the Center for Health Policy and Research conducted a preliminary investigation of Massachusetts’ current capacity to provide appropriate veterans’ health care services. This investigation included an examination of the Homes. We build on this report and pursue further detail on the current and future needs of State veterans.

In this second section of the study, we draw on the American Community Survey (ACS) and other data sources to present a snapshot of the State’s veteran population with regard to its demographic, socioeconomic, family composition, and disability characteristics. To enliven the discussion and animate our points, we have drawn quotes from interviews conducted for the 2010 Massachusetts Veterans: Health Care Needs, Services and Access study (2010 Study), conducted in response to the Legislature’s mandate to the Executive Office of Health and Human Services. The comments offer context for our statistical descriptions and analyses. We also describe the set of LTC service-related facilities in the State.

2.1 Overview of the State Veteran Population

In this study, we use the ACS data to form a picture of the State veteran population. Due to the addition of relevant new questions related to veterans to 2009 and later ACS products, we base the majority of our findings on the three-year 2009-2011 ACS estimates which offer the greatest level of geographic specificity regarding the study population while still allowing us to take advantage of the veteran-related questions added to the ACS in 2009.

2.1.1. State Veterans and Age

Our results reflect comparable trends to those reported in the 2010 Study. At present, there are approximately 400,000 veterans in the State. By era of conflict, Vietnam veterans compose 33 percent of the State veteran population, while Gulf

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1 The ACS data product is produced by the U.S. Census Bureau.
War-era veterans compose 12 percent (see Figure 6). Approximately 45,000 State veterans served since the early 1990s. In the 2010 Study, key informant respondents discussed veterans’ age categories in the context of their service era, stating: “We have a large population of World War II and Korean War veterans who shift our demographics into the elderly population” (Center for Health Policy and Research, 2010, pp. 4).

Approximately 25 percent of State veterans are ages 18-54 and 25 percent are approaching retirement age (see Figure 7). More than 50 percent of the State veterans are 65 or older; 22 percent are between 65 and 75 and nearly 29 percent are over 75 (see Figure 7). Going forward, according to the VA’s demographic projections, the State veteran population will substantially decline over the next 25 years (see Figure 17). From a high of almost 400,000 veterans in the State, by 2030 this figure is expected to decline to less than 200,000 (see Figure 17).

It is important to note that the VA’s demographic projections are based on past trends, including the life course of individuals who served in the wars prior to the end of the 20th century. At present we know little of the life course trajectory of Gulf War era veterans. Research is just beginning to reach a sufficient state of maturity to allow medical professionals to describe life course prospects for those who served in the wars of the last two decades.

The State’s current veteran population is predicted to ‘age in place’ and the overall number of State veterans is going to decline in numbers over the next 25 years. Interviews with service providers conducted as part of the 2010 Study generally support this prediction: “Our average age is about 60 years old. We have another large cohort of Vietnam Era veterans and a smaller cohort of Gulf War veterans.” Another stated, “For the long-term care population (served in the Soldiers’ Homes), it’s mostly World War II and/or Korea, mostly men but a few women, and maybe one or two younger veterans over there. We have about 167 (older veterans) in the LTC unit, primarily World War II” (Center for Health Policy and Research, 2010, pp. 4).

Given the near-term demographic outlook of State veterans, the wars of the last decade have brought a change in the gender breakdown of the military. There has been a steep rise in the number of female veterans over the last two decades. As a share of the younger veterans, proportionally women are larger in number and younger than their male counterparts. More than 50 percent of the state’s current female veteran population is under the age of 55 and more than one third is between the ages of 18-34 (see Figure 8). Male veterans, as a group, are older than female veterans with a third over the age of 75 (see Figure 8).

Specific characteristics of women veterans call for programmatic responses. Using

![Figure 7. State veterans by age](source: 2009-2011 ACS, Public Use Microdata)

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 to 34</td>
<td>23,731</td>
<td>6.0%</td>
</tr>
<tr>
<td>35 to 54</td>
<td>80,561</td>
<td>20.3%</td>
</tr>
<tr>
<td>55 to 64</td>
<td>92,558</td>
<td>23.2%</td>
</tr>
<tr>
<td>Over 75</td>
<td>114,551</td>
<td>28.8%</td>
</tr>
<tr>
<td>Total</td>
<td>397,395</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

![Figure 8. State veterans by age and gender](source: 2009-2011 ACS, Public Use Microdata)

<table>
<thead>
<tr>
<th>Gender</th>
<th>18 to 34</th>
<th>35 to 54</th>
<th>55 to 64</th>
<th>65 to 75</th>
<th>Over 75</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>19,757</td>
<td>72,444</td>
<td>88,277</td>
<td>94,752</td>
<td>109,607</td>
<td>374,937</td>
</tr>
<tr>
<td>Female</td>
<td>3,974</td>
<td>8,117</td>
<td>3,761</td>
<td>1,642</td>
<td>4,944</td>
<td>22,458</td>
</tr>
<tr>
<td>Total</td>
<td>23,731</td>
<td>80,561</td>
<td>92,038</td>
<td>101,394</td>
<td>114,551</td>
<td>397,395</td>
</tr>
</tbody>
</table>

Male Female Total
18 to 34 19,757 5.3% 3,974 17.7% 23,731 6.0%
35 to 54 72,444 19.3% 8,117 36.1% 80,561 20.3%
55 to 64 88,277 23.6% 3,761 16.8% 92,038 23.2%
65 to 75 94,752 22.6% 1,642 7.3% 86,394 21.7%
Over 75 109,607 29.2% 4,944 22.0% 114,551 28.8%
Total 374,937 100.0% 22,458 100.0% 397,395 100.0%

2.1.2. State Veterans and Gender

War-era veterans comprise 12 percent (see Figure 6). Approximately 45,000 State veterans served since the early 1990s. In the 2010 Study, key informant respondents discussed veterans’ age categories in the context of their service era, stating: “We have a large population of World War II and Korean War veterans who shift our demographics into the elderly population” (Center for Health Policy and Research, 2010, pp. 4).

Approximately 25 percent of State veterans are ages 18-54 and 25 percent are approaching retirement age (see Figure 7). More than 50 percent of the State veterans are 65 or older; 22 percent are between 65 and 75 and nearly 29 percent are over 75 (see Figure 7). Going forward, according to the VA’s demographic projections, the State veteran population will substantially decline over the next 25 years (see Figure 17). From a high of almost 400,000 veterans in the State, by 2030 this figure is expected to decline to less than 200,000 (see Figure 17).

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Specific characteristics of women veterans call for programmatic responses. Using

![Figure 6. State veterans by service era](source: 2009-2011 ACS, Public Use Microdata)

<table>
<thead>
<tr>
<th>Service Era</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gulf War 2001 or later only</td>
<td>19,551</td>
<td>5%</td>
</tr>
<tr>
<td>Gulf War 1990 to 2001 only</td>
<td>28,867</td>
<td>7%</td>
</tr>
<tr>
<td>Vietnam era only</td>
<td>125,044</td>
<td>31%</td>
</tr>
<tr>
<td>Korean war only</td>
<td>49,317</td>
<td>12%</td>
</tr>
<tr>
<td>World War II only</td>
<td>49,083</td>
<td>12%</td>
</tr>
<tr>
<td>Served in multiple wars</td>
<td>17,750</td>
<td>4%</td>
</tr>
<tr>
<td>Other service*</td>
<td>107,783</td>
<td>27%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>397,395</td>
<td>100%</td>
</tr>
</tbody>
</table>

* OTHER SERVICE IS SERVICE DURING PEACETIME OR PRIOR TO WW II.

Source: 2009-2011 ACS, Public Use Microdata

![Figure 8. State veterans by age and gender](source: 2009-2011 ACS, Public Use Microdata)

<table>
<thead>
<tr>
<th>Age</th>
<th>Count</th>
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Source: 2009-2011 ACS, Public Use Microdata
The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

Women veterans are more apt to be partners in dual-service marriages (both spouses are in the military): 51 percent of married women vs. eight percent of married men (The Center for Health Policy and Research, 2010, pp. 6). While nearly 38 percent of women in the active duty force have children, compared to 44 percent of active duty men, women are much more likely than men to be single parents; approximately 11 percent of women in the military are single mothers compared to four percent of single military fathers (Center for Health Policy and Research, 2010, pp. 8).

The demand for services by female veterans on the VA is driving changes to the VA system. This is especially true of VA health care. Approximately 50 percent of female veterans of the Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) conflicts have enrolled with the VA health care (Center for Health Policy and Research, 2010, pp. 5). It is impossible to predict the long-term effect of sexual predation on veterans. It is, however, clear that the State’s LTC services will eventually have to serve veterans whose health issues, at least in part, can be traced back to service-related sexual predation and that these veterans will need services that are responsive to the underlying sexual trauma.

The disability reports of State veterans reflect a pattern of general aging, including difficulty with ambulation and hearing or vision—common afflictions of aging (see Figure 9).

Women, and to a lesser extent men, face special issues related to sexual predation during service. According to the VA, sexual predation is a significant and increasingly visible issue in the military (U.S. House of Representatives, 2011). One in five women and one in one hundred men screened positive for military sexual trauma, a term referring to sexual assault or rape experienced by military personnel. Though rates of military sexual trauma are higher among women due to the disproportionate ratio of men to women in the military, the VA sees only slightly fewer men than women who have experienced military sexual trauma. “There are a large percentage of women who seek care in the VA who have had military sexual trauma. Some women are not comfortable receiving care in areas where there are men so we have protected enclaves where…the waiting rooms are all women and employees are women” (The Center for Health Policy and Research, 2010, pp. 5). It is impossible to predict the long-term effect of sexual predation on veterans. It is, however, clear that the State’s LTC services will eventually have to serve veterans whose health issues, at least in part, can be traced back to service-related sexual predation and that these veterans will need services that are responsive to the underlying sexual trauma.

2.1.3. State Veterans and Disability Status

The disability reports of State veterans reflect a pattern of general aging, including difficulty with ambulation and hearing or vision—common afflictions of aging (see Figure 9).

The majority of veterans do not report a disability related to actions experienced during their time in service (see Figure 10). With regard to service-connected disabilities, ACS data indicate that the majority of all veterans reported no disability rating. 4 percent of State veterans indicated a 50 percent or higher disability rating (see Figure 11). Veterans of current era conflicts report a higher level of service connected disability above 50 percent (see Figure 11). Compared with veterans of pre-Gulf War era conflicts, however, current era veterans are almost twice as likely to be designated...
as having a disability than those from prior periods of conflict. Differences are statistically significant (see Figure 12). Again, while a service-connected disability does not predict the type of LTC services needed by the younger generation of veterans, the prevalence of relatively severe service-connected disabilities among the younger generation of veterans at least suggests that they may need different LTC services when and if they eventually rely on the State for LTC services.

2.1.4. State Veterans and Family Composition

<table>
<thead>
<tr>
<th>Disability Rating</th>
<th>Current Era</th>
<th>Not Current Era</th>
<th>All Veterans</th>
</tr>
</thead>
<tbody>
<tr>
<td>No rating</td>
<td>21,969</td>
<td>318,186</td>
<td>340,155</td>
</tr>
<tr>
<td>0%</td>
<td>307</td>
<td>4,867</td>
<td>5,194</td>
</tr>
<tr>
<td>10 or 20%</td>
<td>1,883</td>
<td>20,560</td>
<td>22,443</td>
</tr>
<tr>
<td>30 or 40%</td>
<td>1,412</td>
<td>6,567</td>
<td>7,979</td>
</tr>
<tr>
<td>50 or 60%</td>
<td>567</td>
<td>3,691</td>
<td>4,258</td>
</tr>
<tr>
<td>70% or higher</td>
<td>1,120</td>
<td>10,834</td>
<td>11,954</td>
</tr>
<tr>
<td>Has disability rating, not reporting</td>
<td>443</td>
<td>4,969</td>
<td>5,412</td>
</tr>
<tr>
<td>Total</td>
<td>27,701</td>
<td>369,694</td>
<td>397,395</td>
</tr>
</tbody>
</table>

chi²(6) = 82.1255
Design-based $F(5.45, 88279.82) = 6.7559$ $P = 0.0000$

**Figure 12. State Veterans by disability rating by current era veteran status**

<table>
<thead>
<tr>
<th>Relationship to the Head of Household</th>
<th>Count</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head/Householder</td>
<td>270,154</td>
<td>68%</td>
</tr>
<tr>
<td>Spouse</td>
<td>72,667</td>
<td>18%</td>
</tr>
<tr>
<td>Child</td>
<td>12,523</td>
<td>3%</td>
</tr>
<tr>
<td>Child-in-law</td>
<td>856</td>
<td>0%</td>
</tr>
<tr>
<td>Parent</td>
<td>6,493</td>
<td>2%</td>
</tr>
<tr>
<td>Parent-in-Law</td>
<td>1,625</td>
<td>0%</td>
</tr>
<tr>
<td>Sibling</td>
<td>2,820</td>
<td>1%</td>
</tr>
<tr>
<td>Sibling-in-Law</td>
<td>309</td>
<td>0%</td>
</tr>
<tr>
<td>Grandchild</td>
<td>303</td>
<td>0%</td>
</tr>
<tr>
<td>Other relatives</td>
<td>1,845</td>
<td>0%</td>
</tr>
<tr>
<td>Partner, friend, visitor</td>
<td>13,576</td>
<td>3%</td>
</tr>
<tr>
<td>Other non-relatives</td>
<td>6,567</td>
<td>2%</td>
</tr>
<tr>
<td>Institutional inmates</td>
<td>7,865</td>
<td>2%</td>
</tr>
<tr>
<td>Total</td>
<td>397,395</td>
<td>100%*</td>
</tr>
</tbody>
</table>

*Parts may not sum to whole due to rounding.

Source: 2009-2011 ACS, Public Use microdata

2.1.5. State Veterans and Poverty

A substantial number of State veterans are currently low-income. Approximately 20 percent of State veterans live at or below 250 percent of the federal poverty level (see Figure 16). These numbers have two implications relevant to the LTC services provided at the Homes. First, at least some portion of State veterans are or will be unable to pay for LTC services and will likely end up relying on public insurance or some other subsidy stream to finance LTC services. Second, the incidence of low-income veterans suggests that a substantial portion of persons who will eventually require LTC services will present a health profile impacted by living with income insecurity.

Most State veterans are heads of households; 18 percent are spouses. 4 percent of State veterans are family members, either sibling or child (see Figure 13). Most veterans are married and low rates of divorce characterize this population (see Figure 14). Veterans of the recent era of conflict were more likely to be married as compared with past conflicts such as the Vietnam era. Perhaps in light of this fact, a growing amount of evidence is emerging of the significant need to extend veterans services to family members. This need is perhaps exemplified by one 2010 Study respondents statement about how veteran health issues affect family: “I see a high need for family oriented work. Traumatic Brain Injury and post traumatic stress disorder affect the family far greater than most people realize – there’s a lot of anger management issues related to both disorders” (Center for Health Policy and Research, 2010, pp. 5).

**Figure 13. State veterans by relationship to head of household**

*Parts may not sum to whole due to rounding.

Source: 2009-2011 ACS, Public Use Microdata

**Figure 14. State Veterans by marital status**

*Parts may not sum to whole due to rounding.

Source: 2009-2011 ACS, Public Use Microdata
The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

### Figure 15. State Veterans by Poverty Status

<table>
<thead>
<tr>
<th>Ratio of Income to the Federal Poverty Line</th>
<th>Count</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>At or below 100 percent poverty line</td>
<td>29,636</td>
<td>7%</td>
<td>7%</td>
</tr>
<tr>
<td>100 to 150 percent</td>
<td>22,252</td>
<td>6%</td>
<td>13%</td>
</tr>
<tr>
<td>150 to 200 percent</td>
<td>28,029</td>
<td>7%</td>
<td>20%</td>
</tr>
<tr>
<td>200 to 250 percent</td>
<td>30,160</td>
<td>8%</td>
<td>28%</td>
</tr>
<tr>
<td>Above 250 percent of poverty line</td>
<td>287,318</td>
<td>72%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>397,395</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: 2009-2011 ACS, Public Use Microdata*

### Figure 16. State Veterans by Number of Children with Parent Who is a Veteran by Poverty Status

<table>
<thead>
<tr>
<th>Ratio of Income to the Federal Poverty Line</th>
<th>Count</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>At or below 100 percent poverty line</td>
<td>3,278</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>100 to 150 percent</td>
<td>2,833</td>
<td>4%</td>
<td>8%</td>
</tr>
<tr>
<td>150 to 200 percent</td>
<td>5,379</td>
<td>7%</td>
<td>15%</td>
</tr>
<tr>
<td>200 to 250 percent</td>
<td>4,897</td>
<td>7%</td>
<td>22%</td>
</tr>
<tr>
<td>Above 250 percent of poverty line</td>
<td>57,380</td>
<td>78%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>73,767</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: 2009-2011 ACS, Public Use Microdata*

2.2 Demographic Projections for the State’s Veteran Population

With the statistical overview presented in the previous section in hand, we now examine the State veteran population projections and describe projected demographic trends for State veterans. This information is provided as a first-level look at how the State veteran population might change between today and 2040.

We used the VA VetPop 2011 actuarial population projection model (VetPop 2011 Model) to generate the presented demographic profile of State veterans. Absent constructing and testing an alternate model, we believe that the VetPop 2011 Model is the most reliable (and only) model through which to generate outputs related to the projected demographic distribution of State veterans. Despite multiple communications, we were unable to ascertain the actual computational underpinnings of the model and, at the time this study was written, the VA had not released any technical documentation for the VetPop2011 Model. Thus, we can only refer interested readers to the VA’s website that contains a description of the VetPop 2011 Model and has links to previous veteran population projection models.

The VetPop 2011 Model predicts that the overall number of State veterans will decrease over the next three decades. The decrease in the State is markedly more severe than that predicted for the nation. The VetPop 2011 Model predicts a 37 percent decrease in the number of veterans nationally. In contrast, the VetPop 2011 Model predicts a 62 percent decline in the State veteran population. In Figure 17, we graph the predicted change in the number of State veterans between 2010 and 2040. Like many states, the State veteran population is predicted to decline over the next 25 years. The pattern for the State mirrors that found in other Northeastern and Midwestern States where population dynamics have been largely static, reflecting low levels of new births and low rates of immigration. Without these two stimulants of growth, such states see their populations aging in place and thus placing pressure on health care and LTC services.

The gender distribution of State veterans will modestly change relative to the total State veteran population over the next three decades (see Figure 18). In general, the number of female veterans will remain constant over the projected time period (see Figure 19). However, the share of State veteran who are female will increase (see Figure 18). This trend will be driven by a substantial decrease in the number of male veterans, with the number of female veterans remaining relatively constant (see Figure 19).

As of 2010, the State veteran population was substantially older than the national veteran population. The VetPop2011 Model predicts that the share of State veterans between 17 and 44 years old will increase between 2010...
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and 2040 while the share of all other age groups will decrease (see Figure 20). This predicted shift in the age demographic of the state veteran population will result in the state Veteran population more closely resembling the national veteran age demographic (see Figure 20; see Figure 21; see Figure 22; see Figure 23).

**Figure 17. Predicted change in the number of State veterans between 2010 and 2040**

![Graph showing predicted change in the number of State veterans between 2010 and 2040](source: VetPop2011 Model)

**Figure 18. Projected change in the State veteran population by gender as a percentage of the total State veteran population between 2010 and 2040**

![Graph showing projected change in the State veteran population by gender between 2010 and 2040](source: VetPop2011 Model)

**Figure 19. Projected change in the State veteran population by gender between 2010 and 2040**

![Graph showing projected change in the State veteran population by gender between 2010 and 2040](source: VetPop2011 Model)

**Figure 20. Projected change in the State veteran population by age between 2010 and 2040**

![Graph showing projected change in the State veteran population by age between 2010 and 2040](source: VetPop2011 Model)
Figure 21. Projected change in the national veteran population by age between 2010 and 2040

In summary, the VetPop2011 Model predicts that the national and State veteran populations are projected to decline over the next 25 years. The proportion of State female veterans is projected to rise and, over the next 25 years, the proportion of the veteran population that fought during the Gulf War conflicts is predicted to increase as a share of the overall State veteran population.

With this statistical backdrop as a base, in the next section of the report we examine the spatial distribution of veterans in the State. This analysis is unique and offers the reader an ability to see the location of veterans by gender, age, and year of military service.
2.3. The Geography of State Veterans, Active-Duty Military Personnel, Wounded OEF/OIF Veterans, the Homes’ LTC Populations, and DVS Clients

In this section we describe the spatial distribution of (1) State veterans, (2) active-duty service persons who are stationed in the State, (3) wounded State veterans, and the Homes’ LTC populations. These descriptions provided a first-level look at the number of persons who might need LTC or domiciliary services from the State in the years to come. The spatial scale of our descriptions of these populations is the county. After providing this information, we proceed to (4) present a finer-grained but limited assessment of DVS clients.

We drew on five distinct data sources to describe these three populations (veterans, active-duty service persons, and wounded veterans), namely, (1) the 2009-2011 ACS, (2) administrative data from the Massachusetts Department of Veterans Services (DVS) covering the period of 2005-May 2013, (3) data from the Chelsea and Holyoke Soldiers’ Homes related to where their current LTC residents are from, (4) manpower data from the U.S. Department of Defense covering fiscal years 2005-2009, and (5) a database of wounded OEF/OIF veterans created by Dr. Glasmeier. We believe that these five data sources are the most reliable available to describe State veterans, active-duty service persons, wounded veterans, and the LTC populations of the Homes.

On its face, the use of the 2009-2011 ACS to describe these populations may appear problematic given the current calendar year (2013). However, for the reasons we detail below, the 2009-2011 ACS is the most current Census Bureau product that describes these populations at the county scale. In 2009, the ACS changed the questionnaire they used and added several questions related to veteran status. As such, we are only able to use ACS estimates that are 2009 or later. In the instance that a multi-year estimate is used (for instance, the 2009 – 2011 ACS) the earliest year in the estimate can be no earlier than 2009. Unlike the decennial census, which the ACS in part replaced, the geographic resolution of ACS products varies by whether the product is a single year, 3-year, or 5-year estimate. Sub county population estimates are generally only available using 5-year estimates. 3-year estimates generally provide county estimates with the exception that counties with small populations are not captured in this product. In the case of the State, Duke County and Nantucket County population estimates are not reported in current 3-year products. Unfortunately, due to the fact that the more detailed veteran status question was not added to the ACS questionnaire until 2009, the ACS product that has the more detailed veteran status questions and provides the highest spatial resolution is the 2009-2011 ACS.

2.3.1. Geographic Visualization Method

In this subsection, we describe the State veteran population using data from the 2009-2011 ACS. The maps presented here generally have one main map panel and two map insets. We designed these maps so that readers can understand, at a glance, the overall spatial distribution while also contextualizing this distribution relative to the veteran population in a county (veterans with a specific attribute as a share of all veterans in county) and the overall State veteran population (veterans with a specific attribute who reside in the county as a share of all veterans in the State) population. In Figure 24, we provide the general layout of the maps presented in this section.

On the left of the layout, in the Main Map Panel, we visualize the magnitude or number of State veterans with a particular attribute (for instance, male veterans or veterans 55 years old or older). The Main Map Panel uses a blue/yellow color ramp and counties with higher numbers of veterans with a given attribute are shaded a darker blue/yellow and counties with lower number of veterans with a given attribute are shaded a lighter blue/yellow. On the upper right of the layout, in the Inset Map 1 panel, we visualize the percentage of veterans with the attribute relative to the total veteran population who...
resides in the county. Inset Map 1 visualizes the spatial distribution of the intensity of a given veteran attribute in a county’s veteran population. For instance, the most female veterans (magnitude) might live in one county but another county might have the highest percentage of female veterans (intensity) relative to the county veteran population. Inset Map 1 uses a green color ramp and counties with a greater intensity of veterans with a given attribute are shaded darker green while counties with a lesser intensity of veterans with a given attribute are shaded a lighter green. On the bottom right of the layout, in the Inset Map 1 panel, we visualize the percentage of veterans with the attribute visualized in the Main Map Panel as a percentage of the State veteran population. For instance, if the Main Map Panel visualized the number of Gulf War post-9/11 veterans (magnitude), Inset Map 1 would show what percentage of the statewide veteran population that the Gulf War post-9/11 veterans in each county represented (intensity). Inset Map 2 uses a red color ramp and counties with a larger share of veterans with a given attribute relative to the statewide veterans population are shaded darker red while counties with a lesser share of veterans with a given attribute are shaded a lighter red. Taken together, the three map panels of the maps presented in this section show the magnitude of the population (Main Map Panel), the intensity of the population relative to the county veterans population (Map Inset 1), and the share of the overall State veteran population which exists in the county (Map Inset 2). Although the design and shading of the maps presented in this section are the same, the maps do not share a common legend. Thus, the value represented by the darkest blue/yellow in the Main Map Panel will likely be different between maps. Please refer to the legends provided with each map for a description of what values the various shadings represent. Lastly, we can provide full size versions of all maps presented in this section upon request.

### 2.3.2. The Geography of State Veterans

In Figure 25, we visualize the spatial distribution of State veterans. State veterans are concentrated in the State’s northeastern counties. The largest number (magnitude) of veterans resides in Middlesex County (78,549), followed by Worcester County (55,760), and Essex County (45,436). Collectively, approximately 45 percent of the State’s veteran population resides in these three counties. However, in the State’s western counties, the veteran population comprises a larger percentage of the county population (intensity) than it does in the State’s northeastern counties. For instance, veterans are only 4 percent of the Middlesex County population. In contrast, veterans are 9 percent of the Hampden and Worcester county populations and 10 percent of the Franklin and Berkshire county populations (see Figure 25).

#### 2.3.2.1. MALE AND FEMALE STATE VETERANS

In Figures 26 and 27, we visualize the spatial distribution of the State veteran population by gender. Generally speaking, the spatial distribution of female and male State veterans mirrors the overall spatial distribution of State veterans. Middlesex County has the largest numbers of female and male veterans. Several State counties have a veteran population that is over 94.5 percent male (Berkshire County, Essex County, and Barnstable County). The male veteran population in Middlesex County accounts for 18.6 percent of the total State veteran population. In regard to female veterans, 8.2 percent of the Hampden County veteran population is female. This share of the county veteran population is substantially greater than in other counties. Middlesex County has the highest number of female veterans (4,379); however, Middlesex County female veterans represent only 5.5 percent of the county veteran population and 1.1 percent of the total State veteran population.
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2.3. The Geography of State Veterans

**Figure 26. Male veterans by county**

- Male Veterans as a Percentage of the County Veteran Population (All Genders)
  - Number of Male Veterans
    - 5,505 - 10,237
    - 10,238 - 25,820
    - 25,821 - 37,286
    - 37,287 - 52,628
    - 74,170
    - No Data

**Figure 27. Female veterans by county**

- Female Veterans as a Percentage of the County Veteran Population (All Genders)
  - Number of Female Veterans
    - 281 - 407
    - 408 - 687
    - 688 - 1,951
    - 1,952 - 3,132
    - 3,133 - 4,379
    - No Data
2.3.2.2. 55 OR OLDER STATE VETERANS

Veterans 55 or older comprise the majority of persons who use the LTC services of the two Soldiers’ Homes. For instance, in the Holyoke Soldiers’ Home, over 92 percent of the LTC population is 55 or older (Holyoke Soldiers, 2013). The spatial distribution of veterans 55 or older roughly mirrors the spatial distribution of veterans in the State. Barnstable County has the highest intensity of veterans 55 or older; this population group is approximately 90 percent of the county’s veteran population (see Figure 28). Veterans 55 or older comprise approximately 74 percent of the total State veteran population. In Figure 28, we visualize the spatial distribution of veterans who are 55 or older.

**Figure 28. Veterans 55 or older by county**

2.3.2.3. STATE VETERANS AND PERIOD OF SERVICE

The majority of State veterans served in World War II or a later period of conflict. Approximately 73 percent of State veterans served during a war or period of conflict that was World War II or later. Middlesex County has the largest number of veterans who served during wartime (58,722). Wartime veterans comprise between 67.8 percent and 74.8 percent of the county veteran populations in all 12 State counties examined. Wartime veterans are concentrated in Middlesex County and these veterans account for 14.8 percent of the total State veteran population (see Figure 29). In Figure 29, we visualize the spatial distribution of wartime and peacetime veterans.

**Figure 29. Wartime veterans by county**
World War II veterans comprise approximately 12 percent of the total State veteran population and 17 percent of the State wartime veteran population. The spatial distribution of this population roughly mirrors that of the overall State veteran population with the largest number of World War II veterans residing in Middlesex County (10,431). These 10,431 veterans comprise 5 percent of the overall State veteran population. Although Middlesex County has the largest number of World War II veterans, this veteran group represents the largest share (intensity) of the county veteran population in Berkshire County (16 percent) and Norfolk County (15 percent) (see Figure 31). In Figure 31, we visualize the spatial distribution of World War II veterans.

Korean War and Vietnam era veterans comprise approximately 44 percent of State veterans and 60 percent of State wartime veterans. This finding is important given the likelihood of the need for LTC services associated with illnesses and disabilities due to having served in an era of conflict and the fact that this population is now beginning to require LTC services. Again, the spatial distribution of this population roughly mirrors the overall State veteran population, with the largest number of Korean War and Vietnam era veterans residing in Middlesex County (35,625). These 35,625 veterans comprise 9 percent of the overall State veteran population. Although Middlesex County has the largest number of Korean War and Vietnam Era veterans, Korean War and Vietnam era veterans represent the largest share of the county veteran popula-
The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

Gulf War veterans comprise approximately 12 percent of State veterans and 16.4 percent of State wartime veterans. Three facts regarding this population are important to note as we proceed. First, Congress has not set the end of the Gulf War. At the moment, Gulf War veterans include any veterans who served from August 1990 to some future date to be determined by Congress. Second, the Gulf War population is typically divided into two categories that capture veterans who served during the Gulf War pre-9/11 and those who served during the Gulf War post-9/11. Pre- and post-9/11 Gulf war veterans need not actually have been stationed in Iraq or Afghanistan to be counted as a Gulf war veteran. The term is temporally bounded (i.e., person served during a specific time period and not geographically bounded (i.e., person could be stationed anywhere). Lastly, as the Gulf War has not ended yet, the number of Gulf War post-9/11 veterans will likely substantially grow as service persons cycle out of active duty and become veterans.

Gulf War pre-9/11 veterans comprise approximately 7 percent of State veterans and 9.4 percent of State wartime veterans. Again, the spatial distribution of this population roughly mirrors the overall State veteran population with the largest number of Gulf War pre-9/11 veterans residing in Middlesex County (5,390). These 5,390 veterans comprise 1.4 percent of the overall State veteran population. Although Middlesex County has the largest number of Gulf War pre-9/11 veterans, Gulf War pre-9/11 veterans represent the largest share of the county veteran population in Worcester County (9 percent) and Bristol County (8 percent) (see Figure 33). In Figure 33, we visualize the spatial distribution of Gulf War pre-9/11 era veterans.

Figure 32. Korean War and Vietnam Era veterans by county

Figure 33. Gulf War pre-9/11 veterans by county
Gulf War post-9/11 veterans comprise approximately 5 percent of State veterans and 6.8 percent of State wartime veterans. Again, the spatial distribution of this population roughly mirrors the overall State veteran population with the largest number of Gulf War post-9/11 veterans residing in Middlesex County (3,834). These 3,834 veterans comprise approximately 1 percent of the overall State veteran population. Although Middlesex County has the largest number of Gulf War post-9/11 veterans, Gulf War post-9/11 veterans represent the largest share of the county veteran population in Suffolk County (8.4 percent) and Bristol County (6.4 percent) (see Figure 34). In Figure 34, we visualize the spatial distribution of Gulf War post-9/11 veterans.

**Figure 34. Gulf War post-9/11 veterans by county**

In this sub-section we describe the State’s disabled veterans. In Figure 35, we visualize the spatial distribution of veterans with a service-connected disability. These veterans are concentrated in the State’s northeastern counties. The largest number of veterans with a service-connected disability reside in Middlesex County (11,786), followed by Worcester County (7,157) and Norfolk County (6,315). Collectively, these veterans account for approximately 7 percent of the State veteran population. In Suffolk County, the veteran population with a service-connected disability comprises the largest percentage of the county veteran population (18.6 percent) and veterans with a service-connected disability comprise 15 percent of the Middlesex County veteran population; veterans with a service-connected disability are only 11 percent of the Franklin County veterans population (see Figure 35).

**Figure 35. Service-connected disabled veterans**

2.3.2.4. STATE VETERANS AND DISABILITY STATUS

In this sub-section we describe the State’s disabled veterans. In Figure 35, we visualize the spatial distribution of veterans with a service-connected disability. These veterans are concentrated in the State’s northeastern counties. The largest number of veterans with a service-connected disability reside in Middlesex County (11,786), followed by Worcester County (7,157) and Norfolk County (6,315). Collectively, these veterans account for approximately 7 percent of the State veteran population. In Suffolk County, the veteran population with a service-connected disability comprises the largest percentage of the county veteran population (18.6 percent) and veterans with a service-connected disability comprise 15 percent of the Middlesex County veteran population; veterans with a service-connected disability are only 11 percent of the Franklin County veterans population (see Figure 35).
The largest number of veterans with a service-connected disability and a disability rating of 70 percent or higher reside in Middlesex County. These veterans comprise approximately 2.8 percent of the State veteran population. In Figure 36, we visualize the spatial distribution of service-connected disabled veterans with a service-connected disability rating of 70 percent or higher.

Figure 36. Service-connected disabled veterans with disability rating of 70 percent or higher

2.3.3. Massachusetts Department of Veterans Services Administrative Data

In addition to using the 2009-2011 ACS, we evaluated the spatial distribution of veterans in the State using administrative data maintained by DVS. These data were used to ‘ground truth’ our general conclusions from the 2009–2011 ACS although the analysis of this data also has the potential to shed light on the operations of DVS. Before we proceed, a key difference between the 2009–2011 ACS and the DVS administrative data should be noted. The 2009–2011 ACS is a statistical sample of the State’s population which is then used to estimate population distributions in the State. In contrast, the MA DVS administrative data are encounter data relating to people who seek assistance. They do not represent a statistical sample of the State’s veteran population and cannot support any inferences about the State’s veteran population. Nonetheless, we would generally expect the MA DVS administrative data to roughly mirror the spatial distribution of State veterans.

We examined DVS administrative data that captured information on persons seeking benefits from DVS between January 1, 2005 and May 31, 2013. Although a range of individuals other than a veteran can seek services from DVS, we only examined applications for DVS benefits made by veterans. Additionally, we only looked at initial encounter data or, put differently, the first time the veteran contacted DVS for aid. A brief example may help to explain the import of this decision. A veteran might come ask DVS for benefits multiple times over the course of several years but we only examined the first time the veteran applied for DVS services. This approach avoids counting the same veteran multiple times but also obscures issues related to encounter duration and problem severity.

DVS had approximately 15,670 initial encounters with veteran applicants between 2005 and 2012. The spatial distribution of this population roughly mirrors the overall State veterans population previously described. The largest number of initial encounters by veteran applicants during this period was in Middlesex County (2,363). In Figure 37, we visualize the spatial distribution of DVS initial applications between 2005 and 2012 that were made by veterans.

The majority of DVS initial applications by veterans over this period were by veterans who resided in Middlesex County or Bristol County. If we disaggregate the data by temporal period, this pattern generally remains although we observe that requests for DVS assistance represent a wider range of counties from which veteran applicants make initial applications. In Figure 38, we visualize the spatial distribution of initial DVS applications by veterans between 2005 and 2012, disaggregated into 2-year temporal periods as a percentage of total initial applications made by veterans in the applicable temporal period.

The overall profile of veterans’ initial applications to DVS roughly reflects the distribution of State veterans along several other dimensions. In Figure 39, we present the number initial applicants to DVS by veterans between 2005 and 2012 by branch of service. In Figure 40, we present the number of initial applications to DVS by...
veterans between 2005 and 2012 by gender. In Figure 41, we present the number of initial applications to DVS by veterans between 2005 and 2012 by period of service. One item stands out—the share of initial requests made by Vietnam veterans relative to initial applications made by veterans of other service periods. Over the seven-year period, 44 percent of new claims were made by Vietnam veterans. Another 30 percent of new claims were made by Gulf War era veterans. Another point worth noting is the number of claims made by female veterans. Women represent 5 percent of the initial application to DVS made between 2005 and 2012.

Figure 39. Initial applications to DVS by veterans between 2005 and 2012, by branch of service

<table>
<thead>
<tr>
<th>Branch</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Army</td>
<td>7659</td>
</tr>
<tr>
<td>Navy</td>
<td>3551</td>
</tr>
<tr>
<td>Air Force</td>
<td>2138</td>
</tr>
<tr>
<td>Marines</td>
<td>1812</td>
</tr>
<tr>
<td>Coast Guard</td>
<td>298</td>
</tr>
<tr>
<td>National Guard</td>
<td>176</td>
</tr>
<tr>
<td>Merchant Marines</td>
<td>99</td>
</tr>
<tr>
<td>Reserves</td>
<td>27</td>
</tr>
</tbody>
</table>

Figure 40. Initial applications to DVS by veterans between 2005 and 2012, by gender

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>14136</td>
</tr>
<tr>
<td>Female</td>
<td>1538</td>
</tr>
</tbody>
</table>

Figure 41. Initial applications to DVS by veterans between 2005 and 2012, by period of service

<table>
<thead>
<tr>
<th>Period of Service</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peace time</td>
<td>4,657</td>
</tr>
<tr>
<td>Vietnam War</td>
<td>4,575</td>
</tr>
<tr>
<td>Gulf War Post-9/11</td>
<td>1,706</td>
</tr>
<tr>
<td>Korean War</td>
<td>1,565</td>
</tr>
<tr>
<td>Gulf War Pre-9/11</td>
<td>1,327</td>
</tr>
<tr>
<td>World War II</td>
<td>1,282</td>
</tr>
<tr>
<td>Multiple Periods</td>
<td>578</td>
</tr>
</tbody>
</table>

Figure 37. Initial applications for aid from DVS made by veteran applicants between 2005 and 2012, by county

Figure 38. Initial applications for aid from DVS made by veteran applicants between 2005 and 2012 by county and temporal period as a percentage of total initial applications by veterans in the applicable temporal period

<table>
<thead>
<tr>
<th>Period</th>
<th>MA DVS Initial Applicants who are Veterans by Time of Initial Application and County As a Percentage of All Initial Applicants in the Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005 - 2006</td>
<td></td>
</tr>
<tr>
<td>2007 - 2008</td>
<td></td>
</tr>
<tr>
<td>2009 - 2010</td>
<td></td>
</tr>
<tr>
<td>2011 - 2012</td>
<td></td>
</tr>
</tbody>
</table>
In addition to the above descriptive statistics, we analyzed the extent to which DVS applicants clustered in specific towns (i.e., does DVS serve more veterans in certain towns than would be expected by random chance). In particular, we identified two types of town clusters. The first type includes a town with a large number of DVS veteran applicants that is near other towns with a large number of DVS veteran applicants. This cluster is a high-high cluster and can be thought of as a region in which DVS has a relatively significant presence among veterans. The second type of cluster includes a town with a large number of DVS veteran applicants that is near other towns with a small number of DVS veteran applicants. This cluster is a high-low cluster. High value towns in these clusters are an anomaly compared to the larger region.

We identified high-high and high-low clusters using a fixed band local Moran’s I statistic with a 95 percent confidence interval. The local Moran’s I is a statistic used by researchers to identify patterns among features (in our case, towns) which is a function of the aggregation scheme rather than a reflection of the actual spatial distribution of the process being analyzed. We defined clusters as statistically significant based on a 95 percent confidence interval.

1 We conceptualized the spatial relationship between features (i.e., towns) as based on a fixed distance with the distance band being 23,978.4 feet (4.54 miles). We selected this distance band based on our finding that it maximized the observed spatial autocorrelation in the data (Global Moran’s I). We used row standardization for calculation of the Global (used to set the distance band) and Local Moran’s to mitigate bias that might result from the number of neighbors to each feature (i.e., town) which is a function of the aggregation scheme rather than a reflection of the actual spatial distribution of the process being analyzed. We defined clusters as statistically significant based on a 95 percent confidence interval.

2.3.4. Active-duty service persons

There are a small number of active-duty service persons in the State. In fiscal years 2005-2009, the number of active-duty soldiers never exceeded 3,205. Additionally, the percentage of all active-duty service persons in the armed forces located in the State never exceeded one third of one percent. In Figure 42, we offer a count of active-duty service persons located in the State never exceeded one third of one percent. In fiscal years 2005-2009, the number of active-duty service persons in the State. In fiscal years 2005-2009, the number of active-duty service persons.

2.3.5. The Homes’ LTC Populations

In this sub-section we describe the LTC populations of the Chelsea and Holyoke Soldiers’ Homes by a veteran’s county of residence immediately prior admission to the facility. The maps presented here generally have one main map panel and two map insets. We designed these maps so that readers could understand, at a glance, the overall spatial distribution while also contextualizing this distribution relative to the veteran population in a county and the overall State veteran population. The map design principles applied to the maps in this sub-section are the same as used in the previous sub-section on the spatial distribution of State veterans.

2.3.5.1. THE CHELSEA SOLDIERS’ HOME’S LTC POPULATION

In Figure 43, we visualize the spatial distribution of LTC residents at the Chelsea Soldiers’ Home at a single point in time. This facility’s LTC residents are concen-
The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

Figure 43. Chelsea Soldiers’ Home’s LTC Population

<table>
<thead>
<tr>
<th>Number of Chelsea Soldiers’ Home LTC Residents</th>
<th>County of Residence as a Percentage of the Total Chelsea Soldiers’ Home LTC Population</th>
</tr>
</thead>
</table>

2.3.5.2. THE HOLYOKE SOLDIERS’ HOME’S LTC POPULATION

In Figure 44, we visualize the spatial distribution of LTC residents at the Holyoke Soldiers’ Home at a single point in time. LTC residents are concentrated in the State’s western counties. The largest number of LTC residents, prior to admission, resided in Hampden County (197), followed by Hampshire County (59), Franklin County (12), and Worcester County (12). Collectively, LTC residents from these counties comprised approximately 96 percent of the total Holyoke Soldiers’ Home LTC population. An alternate way to examine the Holyoke Soldiers’ Home’s LTC population is to calculate a rate with the base population being an approximation of the potential population who might use the Holyoke Soldiers’ Home’s LTC services, namely, veterans 55 or older. In Hampden County, approximately 8.47 veterans per 1,000 veterans 55 or older utilize the Holyoke Soldiers’ Home’s LTC services and 7.9 in Hampshire County. This rate drops when examining the counties with the next highest counts of Holyoke Soldiers’ Home’s LTC residents. For instance, the rate is 2.67 in Franklin County and only 0.31 in Worcester County.

Figure 44. Holyoke Soldiers’ Home’s LTC Population

<table>
<thead>
<tr>
<th>Number of Holyoke Soldiers’ Home LTC Residents</th>
<th>County of Residence as a Percentage of the Total Holyoke Soldiers’ Home LTC Population</th>
</tr>
</thead>
</table>

2.3. THE GEOGRAPHY OF STATE VETERANS
2.3.5.3. THE COMBINED HOMES’ LTC POPULATION

In Figure 45, we visualize the spatial distribution of LTC residents at the Homes and the spatial distribution of an approximation of potential users of the services that these facilities provide, namely, veterans 55 or older. We draw two primary conclusions from Figure 45. First, the combined draw of the Homes is not aligned with the distribution of State veterans 55 and older. The Homes LTC residents are primarily from Hampden County (197) and to a much lesser degree from Middlesex County (50) and Hampshire County (59). About 43 percent of Homes’ LTC residents are from Hampden County; however, only about 8 percent of the veteran population 55 or older resides in this county. Despite this misalignment, the supply of LTC services provided by the two facilities is far below any reasonable approximation of demand for these services. The observed misalignment should be placed in context by this fact. Indeed, from a policy perspective, the spatial misalignment of 455 LTC residents when there are about 293,000 veterans 55 or older who might use the services makes the misalignment rather inconsequential (see Figure 45).

Figure 45. Combined Homes’ LTC population, by county and by place

2.3.6. Location of Soldiers Wounded in the OEF/OIF Conflicts

We conducted an additional analysis using data provided by the primary author on the location of soldiers wounded in the OEF/OIF conflicts. These data represent the Home of Record (HOR) of soldiers designated by the DoD as experiencing some type of wounding during the OEF/OIF conflicts as of 2009. These data provide a prospective assessment of potential future populations of veterans, should soldiers return to their home of residence after their tour of duty. The HOR is a crude approximation of the location of their potential future residence. These data should be viewed as offering only a rough approximation of potential future patterns rather than a confirmation of an existing or even a future location of veteran residence. With these caveats stated, Figures 46 and 47 suggest that the spatial distribution of potential future veterans is decidedly more spatially dispersed compared with other veteran population groups.
2.3.7. The projected of the spatial distribution of State veterans

In this section we describe the spatial distribution of State veterans as projected by the VetPop 2011 Model. This information serves as a first-level look at how the State veteran population might change between today and 2040. The spatial scale of our description of these populations is the county, the highest level of geographic specificity that the VetPop 2011 Model outputs. At least at the county scale, publicly available VetPop 2011 Model outputs are fairly limited. Despite multiple communications with the VA and individuals responsible for the VetPop 2011 Model, we were unable to ascertain whether the VA releases more detailed model outputs to government actors and/or uses such outputs for its own planning purposes. We strongly encourage the DVS to develop a relationship with the VA Office of the Actuary to both better understand the VetPop2011 Model and to explore whether the model can produce outputs directly relevant to DVS’s activities.

The VetPop 2011 Model predicts that the overall number of State veterans will decrease over the next three decades. The decrease in State veteran population is markedly more severe than that predicted for the nation. The VetPop 2011 Model predicts a 37 percent decrease in the number of veterans nationally. In contrast, the VetPop 2011 Model predicts a 62 percent decline in the State veteran population. In Figure 48, we graph the predicted change in the number of State veterans between 2010 and 2040 by county.

The figure shows a decrease in the number of veterans across all counties, with the largest decrease predicted in the counties with the highest current veteran population densities. The VetPop 2011 Model predicts that the overall number of State veterans will decrease over the next three decades. The decrease in State veteran population is markedly more severe than that predicted for the nation.
The predicted decline in the number of State veterans will mainly be driven by a reduction in the number of male veterans in the State. The number of female veterans will remain fairly constant while the number of male veterans is expected to sharply decline (see Figure 19). By 2040, the largest share of veterans 65 or older as a percentage of the projected State veteran population in 2040 will be in Middlesex County (7 percent) and Worcester County (7 percent) (see Figure 49, see Figure 50). This is a shift from the current spatial distribution of elderly veterans (see Figure 28).

**Figure 49. Projected change in the number of veterans 65 or older**

**Population Estimates for Veterans 65 or Older**

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2020</th>
</tr>
</thead>
</table>

**Figure 50. Projected change in the number of veterans 65 or older as percentage of the projected State veteran population**

<table>
<thead>
<tr>
<th></th>
<th>2010</th>
<th>2020</th>
</tr>
</thead>
</table>

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2.3. The Geography of State Veterans
2.4. The Spatial Distribution of Select State LTC-related Facilities

In this section, we describe the spatial distribution of select Massachusetts health care-related facilities. This information is provided to serve as a first-level look at the LTC-related services that might serve elderly State veterans. In particular, we examine the spatial distribution of hospitals, VA facilities, DoD Military Treatment Facilities (MTF), and Medicare/Medicaid-certified LTC beds. The spatial scale of our description of these facilities was the county. Although a substantial portion of this facility data is available as spatial points, we aggregated these points up to the county scale to create consistency with our analysis of the State veteran population.

We drew on four distinct data sources to describe the various health care-related facilities (hospitals, VA facilities, MTFs, and Medicare/Medicaid LTC beds). In the case of State hospitals, we constructed a spatially located data set of State hospitals using data from the Massachusetts Hospital Association and the Massachusetts Department of Public Health. All address data were geocoded using the Texas A & M geocoding engine. We believe that this data set is more accurate and current than State hospital data sets released by MassGIS or other parties. We obtained the VA health care-related facilities data set from the VA. Facility locations were manually checked against lists of VA facilities provided by other parties to ensure accuracy and we geocoded facility addresses using the Texas A & M geocoding engine. MTF data were acquired from the DoD and geocoded using the Texas A & M geocoding engine. We acquired data on Medicare/Medicaid-certified LTC beds from the Centers for Medicare & Medicaid Services via the data.medicare.gov portal. Address data related to Medicare/Medicaid-certified beds were spatially located using the Texas A & M geocoding engine.

2.4.1. Hospitals in the State

In Figure 51, we visualize the spatial distribution of hospitals in the State. We included two types of hospitals in the visualization: hospitals designated as (1) acute care and (2) non-acute care (i.e., ‘other’ hospitals). Generally speaking, both acute care hospitals and ‘other’ hospitals are clustered in the State’s northeastern counties mirroring the spatial distribution of the State’s population. Additionally, hospitals in Suffolk County (768), Hampden County (797), and Franklin County (852) treat the largest volume of emergency room admissions, measured as a rate per 1,000 persons in the county population.

2.4.2. VA and MTF Healthcare-Related Facilities in the State

In Figure 52, we visualize the spatial distribution of VA health care-related facilities and the one MTF in the State. Three types of VA facilities are visualized: (1) Community-Based Outpatient Clinics (CBOCs), (2) VA Medical Centers (VAMCs), and (3) VA Veterans Centers (VCTRs). There is only one MTF in the State and it is located at the Hanscom Air Force Base. The VA operates 19 CBOCs, 4 VAMCs, and 7 VCTRs in the State. The point location of some of the facilities visualized has been slightly off-set to increase the figure’s legibility.

2.4.3. Certified Medicare/Medicaid LTC Beds in the State

In Figure 53, we visualize the spatial distribution of certified Medicare/Medicaid LTC beds. This map has four panels. In the upper left panel, we visualize the spatial distribution of the 47,862 certified Medicare/Medicaid LTC beds in the State; in the lower left, the spatial distribution of the 5,889 vacant certified Medicare/Medicaid LTC beds in the State in June 2013; in the upper right, the rate of vacant certified Medicare/Medicaid LTC beds per 1,000 persons 55 or older who reside in the county in which the vacant beds are located; and in the lower right, the rate of vacant certified Medicare/Medicaid LTC beds per 1,000 veterans aged 55 and older who reside in the county in which the vacant beds are located. Based on the vacant bed count as...
of June 2013, the highest rates of vacant beds relative to both the overall county population 55 or older and the veterans population 55 or older are located in the eastern counties of Middlesex, Suffolk, and Norfolk.

2.4.4. Quality Ratings of Medicare/Medicaid LTC Facilities and Ownership Type

As part of our investigation we explored differences in the location and ratings of LTC facilities in the State. It is beyond the scope of the present study and the expertise of the research team to address this question in detail. However, we believe that exploring the types of actors that provide the highest quality of care, even at a very high level, is critical since it undergirds much of the discussion around the Homes. Fortunately, the Centers for Medicare & Medicaid Services publicly release both the ownership type of Medicare/Medicaid facilities (i.e., for-profit, government, non-profit) and a five-point quality assessment score for each facility. In Figure 54, we provide a cross-tabulation of the star rating of the 299 nursing home facilities that have certified Medicare/Medicaid LTC beds, by ownership type. In Figure 55, we provide a cross-tabulation of the star rating by ownership type as a percentage of the total facilities in a particular ownership type category. In Figure 56, we provide a cross-tabulation of the star rating by ownership type as a percentage of the total facilities with a specific star rating. 

<table>
<thead>
<tr>
<th>Ownership Type</th>
<th>Quality Rating</th>
<th>For-Profit</th>
<th>Government</th>
<th>Non-Profit</th>
<th>Total Number of Nursing Homes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Star</td>
<td>28</td>
<td>0</td>
<td>1</td>
<td>29</td>
<td></td>
</tr>
<tr>
<td>2 Stars</td>
<td>64</td>
<td>1</td>
<td>19</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>3 Stars</td>
<td>46</td>
<td>0</td>
<td>20</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>4 Stars</td>
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<td>36</td>
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</tr>
<tr>
<td>5 Stars</td>
<td>76</td>
<td>2</td>
<td>41</td>
<td>119</td>
<td></td>
</tr>
<tr>
<td>Total Number of Nursing Homes</td>
<td>299</td>
<td>5</td>
<td>116</td>
<td>420</td>
<td></td>
</tr>
</tbody>
</table>

Figure 52. VA health care-related facilities and MTFs

Figure 53. Certified Medicare/Medicaid LTC beds

Figure 54. Cross-tabulation of nursing home rating by ownership type for the universe of facilities with certified Medicare/Medicaid LTC beds
Part III. Recommendations

The State and the Homes should embrace today as an opportunity to plan for the reimagining of the State’s LTC services delivery system into a system more aligned with both modern models of care and the changing spatial distribution and needs of tomorrow’s elderly veterans. We believe that only by reimagining an alternate model of care can the State and the Homes realize the full potential of any facility upgrades. The financial constraints on the State and Homes are real and any facility upgrade will be costly. However, the Homes already possess the most valuable resources for any transformation, namely, staff, management, trustees and volunteers who are passionate about and dedicated to the veterans they serve.

Below, we list recommendations that should serve as a foundation for the transformation of the Homes.

- **Invest in the Physical Infrastructure of the Soldiers’ Home in Chelsea**

  We recommend constructing a new facility onto or near the Soldiers’ Home in Chelsea that can accommodate a significant number of beds and roughly conform to the physical design specifications of the community living model. One-for-one replacement of existing beds may not be possible and any design standard implemented may need to be altered to conform to the realities of the facility and the chosen site. For instance, the replacement ratio may need to be .8 to 1 and/or semi-private quarters might have to involve pods of 4–12 veterans. Any construction or renovations must be scalable and completed in a timely manner. Several recent VA capital improvement projects have been criticized or derailed due to non-timely completion and/or lack of scalability. Engaging in a community support process that includes consultation with stakeholders is one possible way to energize efforts to establish a new facility on the existing site or in a nearby location.

- **Create New Options, Establish Partnerships, and Explore Alternate Configurations**

  We recommend creating two pilot programs designed to increase access to LTC services amongst State veterans through the development of a spatially distributed system of supports for home-based community services from the VA and local nursing homes (e.g., setting up a cohort of veteran suites/wings). The information garnered from these pilot programs should be used to inform the State’s provision of LTC services to veterans moving forward.
The Current and Future Long-Term Care Needs of Massachusetts’ Veterans

Build upon the Soldiers’ Home in Holyoke’s Unique Location

We recommend that the Soldiers’ Home in Holyoke continue to build its relationship with the Northampton VAMC in order to position itself as a regional service innovator.

Support Innovative Practice

We recommend that the State support current efforts by the Homes to deliver new types of LTC services. For instance, with a likely modest investment from a capital perspective, supporting Adult Day Health Care at the Soldiers’ Home in Holyoke would help ensure the program’s operational success. State support of innovative practices at the Homes sends a clear message that delivering LTC services to veterans in novel ways is both desired and needed.

Provide Enhanced Individual and Family-Based Counseling Services

The literature on how families cope with aging veterans indicates a need for additional outreach to support families and spouses, including State veteran families whose loved one does not reside at the Homes. This service is both ripe with opportunities and geographically accurate information and this information is currently exceedingly difficult, if not impossible, to obtain.

Begin Implementing LTC Services that are Responsive to Female Veterans

There has been a steep rise in the number of female veterans over the last two decades. As a share of the younger veterans, there are proportionately more women. More than 50 percent of the State’s current female veteran population is under the age of 55 and more than 33 percent is aged 18-34. Male veterans are older than female veterans and 33 percent of male veterans are over the age of 75. While current efforts can focus primarily on providing LTC services to men, this trend will not continue. The Homes and the State should implement programs that are responsive to this emerging population from an equity perspective and to conform to state and federal non-discrimination mandates. As a first step, we recommend that the State study the characteristics and potential needs of this growing population.

Design and Implement a LTC Services System that is Responsive to the Special Challenges Facing Victims of Sexual Violence

Sexual predation, a high and increasingly visible problem, is evident in the population of women and men leaving the military. One in five women and one in one hundred men screened positive for military sexual trauma, a term referring to sexual assault or rape experienced by military personnel. This trauma requires special planning for facilities and resources to care for the needs of veterans, especially female members of the military. We recommend that the State ensure that resource expenditures for the provision of various services be planned in light of this serious issue and its likely impact on the needs of future elderly veterans.

Establish a Standardized Means of Acquiring Information about the LTC Needs of Veterans

We recommend that the State maintain current information on the life-course trajectory of Vietnam and pre-9/11 Gulf War veterans and those from the recent conflicts. Research is just beginning to reach a sufficient state of maturity to allow medical professionals to describe the life-course prospects of veterans who served in the wars of the last four decades. These groups will likely present substantially different needs and preferences for LTC services. We recommend explicit coordination with the VA, the DoD, and researchers to ensure that basic information is available about these populations likely to seek care in the future.

Conduct a Detailed Evaluation of the Homes’ Staffing Both in Light of Current Needs and Alignment with the Desired Future State

Human resource expenditures dwarf the cost of capital improvements when considered from a long-term perspective. Given the cost of human resources and the potential for substantial long-term savings, we recommend that the State conduct a detailed analysis of the Homes’ staffing arrangements. The analysis should consider both the Homes’ current needs and their likely needs should their model of care be altered. Such an analysis could likely quantify answers to questions such as (1) whether the Chelsea facility requires a substantial and costly cohort of medical doctors on staff or (2) what the true cost of a degrading facility are in light of staffing expenditures required to maintain such a facility.

Implement Standardized Measures and Metrics Across the Homes

3. Recommendations
We recommend that the Homes agree upon and implement a shared set of performance metrics. While the State has common requirements related to the budgetary process, it does not appear that the Homes have shared evaluation and performance measures and metrics (at least aside from industry operational metrics which are not particularly geared to policy development). We believe that the lack of such measures and metrics substantially impedes the State’s and the Homes’ ability to make planning and management decisions from a systems perspective. Data collection efforts need to be responsive to the fact that the data needs of the various functions of the Homes (operations, management, and policy development) do not necessarily align.

- **Implement Systems that Ensure Data Sharing Across Agencies**

Several aspects of this study were impeded by a lack of access to reliable and timely geographically detailed data about State veterans. Data sharing among agencies responsible for services for veterans is critical to effective and efficient operation of the State’s veteran LTC services system. We recommend increased coordination among the DoD, the VA, and DVS to ensure that necessary data are available to conduct reasonable and timely planning of service provision.

- **Assess and Identify the ‘Level’ of Care Needed by the Residents of the Homes**

We recommend that the Homes implement a system to assess (at some regular interval) the level of care needed by their residents. Although Homes already conduct such evaluations, there is substantial room for improvement in terms of cross-facility consistency, the frequency of such evaluations, and the impact such evaluations have on facility operations. The provision of an inappropriate level of care to residents results in either, at the one extreme, service provision contraindicated by medical standards that endanger resident well-being or, at the other extreme, the expenditure of substantial resources to provide a level of care not needed by the resident. From both resident well-being and safety perspectives and cost-saving perspectives, this recommendation should be implemented.

- **Align Facility Improvement Plans with VA, Federal, and State Priorities**

We recommend that any efforts to transform the Homes should align with federal, State, and VA priorities in order to increase the likelihood of engendering both institutional and financial support.

- **Further Investigate Identified Best Practices**

We recommend that the State and the Homes further investigate the best practices identified in this study. In particular, we believe that further investigation of the Colorado, Minnesota, and Rhode Island cases will likely yield useful insights that should inform how the State and the Homes provide LTC services to veterans.

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1 The location of the facilities undoubtedly hinders the Homes’ ability to conduct coordinated planning activities.
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Figure 23. Projected change in the national veteran population by age as a percentage of the total veteran population between 2010 and 2040.

Figure 24. Map layout used in section 2.3.

Figure 25. Veterans by county.

Figure 26. Male veterans by county.

Figure 27. Female veterans by county.

Figure 28. Veterans 65 or older by county.

Figure 29. Wartime veterans by county.

Figure 30. Peace time veterans by county.

Figure 31. World War II veterans by county.

Figure 32. Korean War and Vietnam Era veterans by county.

Figure 33. Gulf War pre-9/11 veterans by county.

Figure 34. Gulf War post-9/11 veterans by county.

Figure 35. Service-connected disabled veterans.

Figure 36. Service-connected disabled veterans with disability rating of 70 percent or higher.

Figure 37. Initial applications for aid from DVS made by veteran applicants between 2005 and 2012, by county.

Figure 38. Initial applications for aid from DVS made by veteran applicants between 2005 and 2012, by branch of service.

Figure 39. Initial applications to DVS by veterans between 2005 and 2012, by period of service.

Figure 40. Initial applications to DVS by veterans between 2005 and 2012, by gender.

Figure 41. Initial applications to DVS by veterans between 2005 and 2012, by period of service.

Figure 42. Active-duty service persons in the State by location, by fiscal year.

Figure 43. Chelsea Soldiers’ Home’s LTC population.

Figure 44. Holyoke Soldiers’ Home’s LTC population.

Figure 45. Combined Homes’ LTC population, by county and by place.

Figure 45 (cont.). Combined Homes’ LTC population, by county and by place.

Figure 46. Location of wounded OEF/OIF soldiers.

Figure 47. Density map of the location of wounded OEF/OIF soldiers.

Figure 48. Predicted change in number of veterans between 2010 and 2040, by county.

Figure 49. Projected change in the number of veterans 65 or older.

Figure 50. Projected change in the number of veterans 65 or older as percentage of the projected State veteran population.

Figure 51. Acute care and ‘other’ hospitals.

Figure 52. VA health care-related facilities and MTFs.

Figure 53. Certified Medicare/Medicaid LTC beds.

Figure 54. Cross-tabulation of nursing home rating by ownership type for the universe of facilities with certified Medicare/Medicaid LTC beds.

Figure 55. Cross-tabulation of nursing home rating by ownership type as a percentage of facilities with a particular star rating for the universe of facilities with certified Medicare/Medicaid LTC beds.

Figure 56. Cross-tabulation of nursing home rating by ownership type as a percentage of facilities in a particular ownership category for the universe of facilities with certified Medicare/Medicaid LTC beds.
Appendix A. The Governing Structure of the Homes

The primary statute which governs the two Soldiers’ Homes—the Soldiers’ Home in Massachusetts (Chelsea) and the Soldiers’ Home in Holyoke (Holyoke) (Homes)—is Chapter 115A of the Massachusetts General Laws. This statute broadly delineates several aspects of the Homes’ operation and empowers the Homes to adopt, issue, and promulgate “reasonable rules and regulations” related to treatment at, admission to, and hospitalization in the facility (Mass. Gen Laws ch. 115, § 5 (West 2013)).

Chapter 115A also delineates eligibility for the services of the Homes (§§ 1, 2, 3, 4), the powers of each Home’s board of trustees (§ 5), the disposition of patient funds (§ 6, 7), and the use of the Home to train medical professionals (§§10.10A). Chapter 6, sections 40 and 40 of the Massachusetts General Laws define the size, composition, compensation, and term of the board of trustees for Homes (Mass. Gen Laws ch. 6, §§ 40, 60 (West 2013)).

Chapter 6 sections 17 and 40 delineate the relationship of the superintendent/commandant of the Homes to the secretary of health and human services (Secretary) and the Commonwealth’s governor (Governor) (Mass. Gen Laws ch. 6, §§ 17, 40 (West 2013)).

Other than these portions of the Massachusetts General Laws and minimal related legislation (e.g., Chapter 115), the operational and policy regulations of the Homes appears to rest with the individual Homes themselves per the grant of authority stated in Chapter 115A, Section 5 of the Massachusetts General Laws. In the following sections, we provide a brief summary of the Homes functions that are controlled by explicit state statutory law.

Chelsea

The Secretary is required to appoint the Chelsea commandant with the approval of Governor. The Chelsea commandant serves at the Secretary’s pleasure and “may be removed by the [Secretary] at any time, subject to the approval of the [Governor]” (Mass. Gen Laws ch. 6, § 40 (West 2013)).

There are seven members of the Chelsea board of trustees. Five of these seven trustees must be war veterans. Each trustee serves a seven-year term. Service is without compensation although expenses reasonably related to trustee duties are reimbursable. The Secretary appoints each Chelsea trustee, with the approval of the Governor. Additionally, the Secretary designates one Chelsea trustee as the chairperson of the board of trustees (Mass. Gen Laws ch. 6, §40 (West 2013)). The Chelsea board of trustees has control over the facilities property, real and personal, and has the same powers and duties of trustees of state hospitals (Mass. Gen Laws ch. 6, §41 (West 2013)).

The Chelsea board of trustees may adopt, issue, or promulgate any reasonable rules related to the facilities operation, including (1) setting rates and charge subject to the approval of the Secretary and (2) excluding a person who is otherwise eligible but whose conduct impairs the welfare of other patients or who has otherwise received a disciplinary discharge from the Holyoke facility or any Veterans’ Affairs facility (Mass. Gen Laws ch. 115A, §5 (West 2013)).

Holyoke

Unlike at Chelsea, the Holyoke superintendent (commandant equivalent) is appointed by the Holyoke board of trustees (Mass. Gen Laws ch. 6, §§ 7, 71 (West 2013)). The Holyoke board of trustees may remove the Holyoke superintendent for “inefficiency, failure to perform duties properly or ‘other good cause’” provided that the required notice is given and the superintendent is afforded the opportunity to respond to the charges against him (Mass. Gen Laws ch. 6, §71 (West 2013)).

Additionally, a superintendent so discharged may seek the review of the court. Said court shall uphold the decision of the board of trustees unless the termination was made “without proper cause or in bad faith” (Mass. Gen Laws ch. 6, §71 (West 2013)).

There are seven members of the Holyoke board of trustees. The trustees must be residents of Holyoke, Franklin, Hampden, or Hampshire Counties and there must be at least one current trustee from each of these four counties. Each trustee serves a seven-year term. Service is without compensation, although expenses reasonably related to trustee duties are reimbursable. Unlike at Chelsea, the Governor and not the Secretary appoints each Chelsea trustee and designates one Holyoke trustee as the chairperson of the board of trustees (Mass. Gen Laws ch. 6, §70 (West 2013)).

Like in Chelsea, the Holyoke board of trustees has control over the facilities property, real and personal, and has the same powers and duties of trustees of state hospitals (Mass. Gen Laws ch. 6, §71 (West 2013)).
The Holyoke board of trustees may adopt, issue, or promulgate any reasonable rules related to the facilities operation, including (1) setting rates and charges subject to the approval of the Secretary and (2) excluding a person who is otherwise eligible but whose conduct impairs the welfare of other patients or who has otherwise received a disciplinary discharge from the Chelsea facility or any Veterans’ Affairs facility (Mass. Gen Laws ch. 115A, §5 (West 2013)).

CLIENT ELIGIBILITY CRITERIA

The eligibility requirements for both Homes are the same. A veteran is eligible for “outpatient treatment at, admission to, or hospitalization in” the Homes if they meet one of the eight statutorily defined eligibility criteria.

1. A person is eligible if s/he (1) was honorably discharged or released from service with the army, navy, marine corps, coastguard or air force, and (2) served at least 90 days of active service (3) of which at least one day was wartime service as defined by Massachusetts General Laws, Chapter 4, Section 7 (Mass. Gen Laws ch. 4, § 7 (West 2013)).

2. A person is eligible if s/he (1) was honorably discharged or released from service with the army, navy, marine corps, coastguard or air force, (2) served at least 180 days (Mass. Gen Laws ch. 4, § 7 (West 2013)).

3. A person is eligible if s/he (1) was honorably discharged or released from service the national guard, (2) served at least 90 days of full time national guard duty under Titles 10 or 32 of the United States Code or under sections 38, 40, or 41 of chapter 33, and (3) served at least one day which was wartime service as defined by Massachusetts General Laws, Chapter 4, Section 7 (Mass. Gen Laws ch. 4, § 7 (West 2013)).

4. A person is eligible is s/he (1) was honorably discharged or released from service the national guard, (2) served full time national guard duty under Titles 10 or 32 of the United States Code or under sections 38, 40, or 41 of chapter 33, (3) served at least one day which was wartime service as defined by Massachusetts General Laws, Chapter 4, Section 7, and (4) was awarded a service-connected disability or a Purple Heart (Mass. Gen Laws ch. 4, § 7 (West 2013)).

5. A person is eligible if s/he (1) was honorably discharged or released from service with the army, navy, marine corps, coast guard or air force, and (2) was awarded a service-connected disability or a Purple Heart (Mass. Gen Laws ch. 4, § 7 (West 2013)).

6. A person is eligible if s/he (1) was a member of the American Merchant Marine who served in armed conflict between December 7, 1941, and December 31, 1946 and who received an honorable discharge from the army, navy or coast guard (Mass. Gen Laws ch. 4, § 7 (West 2013)).

7. A person is eligible if s/he (1) was honorably discharged or released from service with the army, navy, marine corps, coastguard or air force, and (2) served at least 90 days of full time national guard duty under Titles 10 or 32 of the United States Code or under sections 38, 40, or 41 of chapter 33, and (3) served at least one day which was wartime service as defined by Massachusetts General Laws, Chapter 4, Section 7 (Mass. Gen Laws ch. 4, § 7 (West 2013)).

8. A person is eligible if s/he (1) served in the Polish military while Poland was allied with the United States during World War I, (2) was recruited in the United States for such service, (3) was honorably discharged from the Polish military, and (4) is a resident of the Commonwealth provided that serving said person would not postpone or deny treatment to any person who is eligible for services under any of the seven other criteria (Mass. Gen Laws ch. 115A, § 4 (West 2013)).

In addition to meeting one of the seven criteria above, the veteran must have resided in the Commonwealth continuously for five years preceding the date of application for services (Mass. Gen Laws ch. 115A, § 3 (West 2013)). The five-year residency requirement does not apply to persons who served in the Polish military while Poland was allied with the United States during World War I. Additionally, the Chelsea or Holyoke boards of trustees may authorize their respective facility to (1) provide treatment to persons who are eligible but for the five-year residency requirement provided that said person, at some point, lived in the Commonwealth continually for five years and (2) provide emergency treatment needed due to accident or sudden illness for any person until said person can be transferred to another facility (Mass. Gen Laws ch. 115A, § 5 (West 2013)).

USE OF SOLDIERS’ HOMES FOR MEDICAL PROFESSIONAL TRAINING

The Chelsea commandant may establish a residency program for medical doctors at the facility and may establish an education and training program for practical nurses. The practical nursing program may be subsidized by the State and be of no cost to the participants. A graduate of this program who obtains a practical nursing license from the Commonwealth must agree to employment as a practical nurse at a State-operated facility for 2,000 hours. That statute further specifies various remedies for breach of this employment obligation (Mass. Gen Laws ch. 115A, §10A (West 2013)).

MISCELLANEOUS OTHER

Various regulations govern how the Homes are to deal with patient funds and the unclaimed monies of former patients (Mass. Gen Laws ch. 115A, §§ 6, 7 (West 2013)).

The Homes may, upon approval of their respective board of trustees, lease a portion of their land for the construction and maintenance of a chapel (Mass. Gen Laws ch. 115A, §8 (West 2013)).

The Chelsea facility may admit female veterans who otherwise meet the eligibility requirements (Mass. Gen Laws ch. 115A, § 9 (West 2013)).

The Chelsea board of trustees may insure the facilities building and any property therein in excess of the amount covered by the Commonwealth (Mass. Gen Laws ch. 115A, §11 (West 2013)).