Abstract

The paper summarizes results and ongoing research into the implication of broadband access and utilization as a means to improve veterans’ health care services and coordination. The study examines (a) broadband access, capacity and utilization as it relates to health care providers ability to serve veterans, (b) broadband access, capacity and utilization as it relates to the veteran ability to access and utilize health care services and (c) broadband utilization as it relates to health and behavioral outcomes. The paper also aims to better understand program and policy context that enables or limits utilization of broadband to meet veteran health needs. The project provides critical linkages to how broadband may be utilized as a foundation in veterans’ health care. Moreover, the research identifies needs required to promote program and policy action necessary to leverage and maximize broadband resources to support Virginia veterans’ wellbeing.

Key words: Veterans, Broadband, Healthcare
Executive Summary

This report provides an overview of the context of veterans residing in Virginia, their access to broadband and veteran related health programs, as a first step in providing critical linkages to how broadband may be utilized as a critical foundation in veterans’ health care. The intent of the report is to highlight key information related to veterans’ health needs in Virginia, health care providers who serve veterans, and the intersection of broadband capacity, veterans’ population and service provider location. From this overview the, the research team has identified additional information needs required to promote program and policy action necessary to leverage and maximize broadband resources to support the wellbeing of Virginia veterans.

The primary focus in this phase of the research is to examine the available secondary data to develop a better understanding of the existing context of how broadband access and capacity impacts veteran’s health care access and outcomes. In alignment with the previous work accomplished through the Broadband Mapping Project, application of broadband technologies is considered in three particular contexts – 1) telemedicine, 2) electronic health records and 3) health information exchange.

This inventory and mapping of existing data and information further informs the additional data gathering that will be required to best understand how broadband capacity can be further utilized and expanded to promote the wellbeing of Virginia veterans. Through review of this context the project team has developed an initial list of research questions and information needs, that once addressed will maximize Virginia leaders and policymakers’ ability to target broadband resources to meet the health care needs of veterans. The research questions fall into three categories 1) provider utilization of broadband to meet veterans’ health needs; 2) veterans’ utilization of broadband enabled health services; and 3) the program and policy context that enables or limits utilization of broadband to meet veteran health needs.

The report is concluded with a recommended panel of advisory board members and an updated plan for conducting the proposed research. The intent of the advisory board is to guide the research objectives and use of the resulting findings.
Demographics of Veterans in Virginia

Approximately 12.8% of Virginia’s population are veterans (n=749,609). The distribution of these veterans by county is shown in figure 1 and the distribution by density of census tract is shown in figure 2.

Figure 1. Total Veteran Population in Virginia, by County
Approximately 76% of veterans are White and 89% are male. The service era distribution for Virginia veterans include (figure 3):

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<tr>
<th>ERA</th>
<th>DEFINITION</th>
<th>PERCENT</th>
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<tr>
<td>World War II</td>
<td>Dec. 7, 1941, through Dec. 31, 1946</td>
<td>8%</td>
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<tr>
<td>Korean War</td>
<td>June 27, 1950, through Jan. 31, 1955</td>
<td>10%</td>
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<tr>
<td>Vietnam</td>
<td>Aug. 5, 1964 (Feb. 28, 1961, for veterans who served “in country” before Aug. 5, 1964), through May 7, 1975</td>
<td>35%</td>
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<tr>
<td>Gulf War</td>
<td>Aug. 2, 1990, through a date to be set by law or Presidential Proclamation</td>
<td>47%</td>
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A little over half (55%) of Virginia veterans are 55 years of age or older (2010 U.S. Census). This concentration of older veterans may indicate higher demand for care coordination and specialty services. Younger veterans, primarily Gulf War veterans have reported higher levels of multiple disabilities than veterans of other eras – physical, post-traumatic stress disorder and head injuries. (VWWP 2010) In Virginia, veterans predominately served in the Army, followed by the Navy, Air Force, Marine Corps and Coast Guard (VWWP 2010), aligning with the National distribution of veteran service branches. In Virginia, 8.1% of veterans 25 years and over have less than a high school diploma, 25% have a high school graduate or equivalency, 33% have some college or associate’s degree and 35% have a bachelor’s degree or higher. Additional maps, graphs and charts can be found in Appendix 1 and include total population of veterans in Virginia by Virginia Wounded Warrior Program regions, by race, by age, by cohort, by branch of service and educational attainment. Further research will validate and expand the existing data. Specifically, additional information regarding applications of broadband facilitated services to enhance care for disabled veterans is needed.

I. Health of Veterans in Virginia

In 2010 the Virginia Tech Institute for Policy and Governance completed a study of Veteran health and service experiences and needs. (VWWP Assessment, 2010) The study included an extensive survey of over 2,000 veterans. Survey results were examined by region of the state, era of service, branch of service and age of veteran. According to the VWWP Assessment, many Virginia veterans report significant rates of physical and mental health issues – head injury, loss of consciousness and/or a concussion, post-traumatic stress disorder and depression (figure 4 - 6) (VWWP, 2010).
Figure 4. Percent of respondents reporting head injury, loss of consciousness and/or concussion, by VWWP regions. (VWWP Assessment, 2010).

Indicators of traumatic brain injury, including head injury, loss of consciousness and concussion were reported throughout the state, with high rates reported in rural regions located in far Southwest, Southside and the Northwestern regions of the state.
Veterans are faced with wide-ranging and complex health needs, which are further complicated if they live in rural regions of the Commonwealth. Rural Virginia veterans have higher rates of self-reported depression, traumatic brain injury (TBI), post-traumatic stress disorder (PTSD) and substance abuse than do veterans in general. Virginia rural veterans also have higher rates of chronic health conditions such as diabetes and hypertension. Specifically, Vietnam era veterans self-reported significantly high rates of substance abuse as compared to veterans in general. Also, Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) veterans have higher rates of self-reported depression, TBI and PTSD than do veterans in general.
The National Guard and Reserves have experienced higher rates of deployment, and multiple deployments, during the OIF and OEF conflicts than during any previous conflict. The historically high rate of multiple deployments for members of the National Guard and Reserves cause greater health, financial, employment and personal strain than in their career military counterparts. National Guard and Reserve families have greater stress as a result of fragmented supports between deployments and from being isolated from other military families.

Research to better determine access and utilization of broadband enabled health services to address veterans’ health needs in high demand areas is necessary. Additionally, because there are higher rates of physical and mental issues in rural regions, program and policy issues that impact veterans residing in rural regions need to be explored further.

II. Health Services Specifically Targeting Veterans: Care & Service Type
Nationally, VA operates 152 medical centers and more than 800 community-based outpatient clinics. For Virginia specifically, the composition of the five VWWP Planning Regions, distribution of veteran population across Virginia by region and locality and state/federal veteran services and programs are identified in figure 7.
Figure 7. Health service locations by VWWP regions

The distribution of healthcare facilities or service locations that target veterans include VA facilities, VISN 5, 6 & 9 and VWWP regional programs (figure 8) (U.S. Census 2010). Veterans are additionally served by the 40 community service boards around the state.
Veteran’s ability to qualify for available health services is dependent upon a range of factors and must be considered on a case by case basis. Eligibility determination factors include nature of a veteran’s discharge from military service (e.g., honorable, other than honorable, dishonorable), length of service, VA adjudicated disabilities (commonly referred to as service-connected disabilities), income level, and available program resources among others. Further research to identify Virginia veterans
III. Health Access: Insurance, Payer and Employment

The type and amount of VA benefits are affected by a variety of factors. Two of the most important factors are (1) whether the veteran has wartime service and (2) the length of the veteran’s military service. (U.S. Dept. of Veterans Affairs) **Only active duty service during an official period of war counts as wartime service for the VA aid and attendance period.** According to the Federal Benefits for Veterans, Dependents and Survivors, 2011 Edition, a person who served in the active military, naval, or air service and who was discharged or released under conditions other than dishonorable may qualify for VA health care benefits. Reservists and National Guard members may also qualify for VA health care benefits if they were called to active duty (other than for training only) by a Federal order and completed the full period for which they were called or ordered to active duty.¹ Medical Benefits Package is administered by the VA through a patient enrollment program. During enrollment, each veteran is assigned to a priority group (Appendix 2). Once enrolled, veterans can receive health care at VA health care facilities (e.g. primary or specialty care clinics, Community Based Outpatient Clinic, Health Care Center, Community Living Center – formerly known as a VA nursing home, residential care facility) anywhere in the country - some veterans are required to make copays to receive VA health care and/or medications. Services include primary care, health promotion, disease prevention, diagnosis, palliative care, surgery, prescription for medications, prosthetics, critical care, mental health care, women’s health care, orthopedics, radiology, physical therapy and rehabilitation.²

Veterans, active duty Service members, their dependents and caregivers, who have internet access, have access to My HealtheVet, VA’s online Personal Health Record to help better manage their health care and facts about other VA benefits and services to which they may be entitled. My HealtheVet helps users to partner with their health care teams and provides them opportunities and tools to make informed decisions. Users can record and track health information and history for their family and themselves, enter past and present military service events, keep activity and food journals, record, track, and graph vital signs and maintain other health measures. Veterans enrolled at a VA health care facility can also access advanced features of My HealtheVet and can link their Personal Health Record with information from their VA electronic health record.³

Moreover, TRICARE is a regionally managed health benefit program for all seven uniformed services (Army, Navy, Marine Corps, Air Force, Coast Guard, Public Health Service and the National Oceanic and Atmospheric Administration). VA bills TRICARE for Nonservice-connected medical treatment. To use TRICARE, veterans must be listed in the Defense Enrollment Eligibility Reporting System (DEERS) as being eligible for military health care benefits. In addition to Active duty service members, other persons who meet certain requirements are also eligible for TRICARE.² Veterans who are using

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¹ Minimum Duty Requirements: Veterans who enlisted after Sept. 7, 1980, or who entered active duty after Oct. 16, 1981, must have served 24 continuous months or the full period for which they were called to active duty in order to be eligible. This minimum duty requirement may not apply to veterans discharged for hardship, early out or a disability incurred or aggravated in the line of duty.

² Activated National Guard or Reserve Members, spouses and unmarried children of active duty service members, uniformed service retirees, their spouses and unmarried children, Medal of Honor recipients and/or their families, un-remarried former spouse and unmarried children of active duty or retired service members who have died, spouses and unmarried children of reservists and National Guard who are ordered to active duty for more than 30 consecutive days or of reservists and National Guard who die on active duty, spouses and unmarried children of reservists and National Guard who die as a result of a line of duty condition may be eligible, persons who have received the Medal of Honor, and their family members, who are not otherwise TRICARE eligible, unmarried children up to age 21, children placed in the custody of a service member or former member, by a court of law, or by a recognized adoption agency, children of current or former service members or their spouses born out of wedlock may be eligible, certain abused family members.
TRICARE Standard and Extra, TRICARE Standard Overseas or TRICARE For Life (must have Medicare Part A & B) are automatically enrolled, as long as they are registered in the DEERS. Active duty service members must enroll in one of the TRICARE Prime options and all others have the option to enroll or use TRICARE Standard and Extra or TRICARE Overseas. Figure 9 provides a summary of TRICARE plan options. Each option has specific benefits, exclusions, co-pay and deductible requirements.
### TRICARE Prime Options

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<tr>
<th>TRICARE Prime Options</th>
<th>Description</th>
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<tr>
<td>TRICARE Prime</td>
<td>Available in the North, South and West Regions in Prime Service Areas to all beneficiaries who are not entitled to Medicare due to age (65). No enrollment fees for active duty families.</td>
</tr>
<tr>
<td>TRICARE Prime Remote</td>
<td>Available to active duty service members and their eligible family members who live and work in designated remote duty stations in the United States (50 miles or an hour drive time from a military treatment facility). There are no enrollment fees.</td>
</tr>
<tr>
<td>TRICARE Prime Overseas</td>
<td>Available to active duty service members and their command-sponsored family members living together in non-remote overseas locations. There are no enrollment fees.</td>
</tr>
<tr>
<td>TRICARE Prime Remote Overseas</td>
<td>Available to active duty service members and their command-sponsored families living together in designated remote overseas locations. There are no enrollment fees.</td>
</tr>
<tr>
<td>US Family Health Plan</td>
<td>Veteran must live in the one of the designated US Family Health Plan service areas to enroll. The US Family Health Plan is the only TRICARE Prime program that offers benefits to beneficiaries age 65 and over, regardless of whether or not they have Medicare Part B. Active duty service members may not enroll in this plan.</td>
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### Purchased Health Plan Options

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<th>Purchased Health Plan Options</th>
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<tr>
<td>TRICARE Reserve Select</td>
<td>A premium-based worldwide health plan that qualified Selected Reserve members may purchase. Veteran must qualify and pay monthly premiums to participate.</td>
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<tr>
<td>TRICARE Retired Reserve</td>
<td>A premium-based, worldwide health plan that qualified Retired Reserve members and survivors may purchase. Veteran must qualify and pay monthly premiums to participate.</td>
</tr>
<tr>
<td>TRICARE Young Adult</td>
<td>A premium-based, worldwide health plan that qualified adult children may purchase. Veteran must qualify and pay monthly premiums to participate.</td>
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<tr>
<td>Continued Health Care Benefit Program</td>
<td>Offers temporary transitional health coverage for 18-36 months after TRICARE eligibility ends. If a veteran qualifies, he/she may purchase CHCBP within 60 days of loss of eligibility.</td>
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### Dental Options

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<th>Dental Options</th>
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<tr>
<td>TRICARE Dental Program</td>
<td>A premium-based dental plan for active duty family members, family members of National Guard/Reserve members and non-activated National Guard Reserve members and transitional survivors. Veteran may enroll in the plan at any time. Sponsors must have at least 12 months remaining on his or her service commitment. The program offers worldwide dental coverage.</td>
</tr>
<tr>
<td>TRICARE Retiree Dental Program</td>
<td>A premium-based dental plan for retired service members and their families, retired National Guard/Reserve members and their families, Medal of Honor recipients and their families and survivors. The program offers worldwide dental coverage.</td>
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Any other health insurance (e.g. private or employer based health care) the veteran has in addition to TRICARE coverage is considered the primary health insurance, except supplemental insurance policies (offered for purchase by some military associations and private companies) and Medicare, like TRICARE, is a federal entitlement.

The VWWP Assessment measured the proportion of veterans in Virginia that have insurance and type of insurance. The proportion of veterans who have VA benefits, TRICARE, Medicaid, Medicare, Medicare Supplement, Private/Employer benefits or other, by county can be found in Appendix 2. The data can be better understood by VWWP regions and by era. According to the VWWP Assessment, in Virginia, 8% of veterans do not have health insurance. As noted higher rates of uninsured veterans reside in Southwest and Central Virginia and are more likely to have served as National Guard and Reserves that as Career Military (figure 10).

![Bar chart showing the percentage of veterans in Virginia with insurance by region.](VWWP Assessment, 2010)

Figure 10. The percent of veterans in Virginia that has or does not have insurance, by VWWP regions. (VWWP Assessment, 2010)

The type of insurance veterans have in the different VWWP regions do not follow a trend. Most veterans in most regions carry TRICARE, followed by employer/private insurance and Medicare. The Southwest region stands out as having the opposite trend, with more employer and Medicare insurance than TRICARE. (figure 11)
When insurance is examined by era served, approximately 10% of those veterans who were never deployed do not have health insurance of any kind, followed by 9% of Vietnam veterans (figure 12).

When examining the type of insurance veterans have by era served, those who were never deployed have significantly higher rates of employer/private insurance than those who have been deployed. Veterans who have served in the Gulf War (Iraq & Afghanistan) have the highest rate of TRICARE usage (figure 13).
In addition to earned military benefits, employment is a primary gateway to healthcare access, especially for younger Gulf War veterans. In Virginia, approximately 82.3% of veterans 18-64 years of age are employed or are participating in the labor force. Of those who are employed the median income in the past 12 months is $48,371 (males) and $38,556 (females) (2010 inflation-adjusted dollars). On the contrary, approximately 4.1% of veterans 18-64 years of age are unemployed. (Appendix 2) To understand this information as it relates to different regions of Virginia, the ratio of unemployment was calculated for each county (figure 14). The VWWP Assessment specifically shows the percent of Virginia veterans employed full time, part time, retired, a homemaker, other or not employed, by VWWP regions (figure 15).
Figure 14. Percent of veteran population unemployed, by County

Figure 15. Percent of Virginia veterans employed full time, employed part time, retired, homemaker, other, or not employed, by VWWP regions. (VWWP Assessment, 2010)
To begin to better understand health and health services targeted to veterans, information on state expenditures (total, insurance and indemnities, compensation and pension and medical care) were examined (Appendix 2). Virginia had a total expenditure of almost $4 billion dollars for veterans. This included expenditures of approximately $60 million dollars in insurance and indemnities, $2 billion dollars compensation and pension and $1 billion dollars for medical care. Further research on insurance qualification rules, benefits and utilization rates are necessary. For example, the research team will examine what specific telehealth services are provided at VA health care facilities and under TRICARE. Although it may be difficult to obtain systemic information on what services are covered under private insurance, a baseline level of definitions of services and how they are reimbursed are necessary.

An important piece of the ongoing project work will include identifying and tracking local, state and federal policies and programs that impact the veterans’ health care, especially those utilizing technology to expand or improve services. These data will allow us to determine and understand the possible and existing levels of utilization.

IV. Broadband

Center for Innovative Technology (CIT), Virginia Geographic Information Network (VGIN) and Center for Geospatial Information Technology (CGIT) collected information from a variety of providers in Virginia to assess broadband coverage and service\(^3\) and created the Virginia Broadband Database.

Wired broadband service as advertised, including terrestrial fixed wireless coverage in Virginia is shown in figure 16.

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\(^3\) For this purpose, "broadband service" is "available" at an address if the provider does, or could, within a typical service interval (7 to 10 business days) without an extraordinary commitment of resources, provision two-way data transmission to and from the Internet with advertised speeds of at least 768 \text{Kbps}.\)
Figure 16. Advertised wired broadband service coverage, including terrestrial fixed wireless. This map also excludes satellite and mobile wireless.

Because the data shown here is advertised speed, the actual downstream speed and coverage is expected to be even lower. Additionally, Broadband defines coverage to be downstream speed\(^4\) over than 768 kbps.\(^5\) Therefore, many rural regions of the state that have lower downstream or no downstream speed capability would not meet the requirements to advertise broadband capability.

Next, wired and wireless broadband service as advertised in Virginia is shown in figure 17.

\(^4\) Downstream speed is the speed at which users can download data from the Internet. In other words, downstream speed refers to the speed at which users view information on the Internet and download web pages.

\(^5\) Kilobits per second (kbps)
Wireless broadband service enhances coverage to rural regions of the state, but does not cover the entire state. There are still rural regions of Virginia that lack broadband coverage. Again, because the data shown here is advertised speed, the actual downstream speed and coverage is expected to be even lower.

To better understand how broadband coverage relates to where veterans reside in Virginia, the proportion of veterans in areas without wired broadband and the density of veterans in areas without wired broadband were examined (figure 18 & 19). Wireless was not included in this primary analysis since according to research conducted by BroadAxe, the majority of telehealth is commonly used for educational/distance learning purposes than ‘real-time’ clinical purposes, which is predominately done using wired broadband. Since Telehealth is still in early stages of adoption and providers expect to use video consultation and remote patient monitoring services more in the next three years, further analysis to include wireless coverage and capability is needed.
Figure 18. Proportion of veterans in areas without wired broadband.
Dunkenberger, Lo, and White, 2013, Veterans and Broadband Access, 6

Both figures show many veterans residing in areas lacking wired broadband. This is a concern as broadband is increasing being utilized to meet and improve veteran mental and physical health needs. Further research is needed to understand who the veterans are who do not have wired broadband coverage. This information will enable community and policy leaders to target care to these veterans in an efficient and effective way. Additionally, further analysis of broadband capacity as it relates to health care service locations that are most likely used by veterans are necessary. Specifically, the research should identify ways to increase access for disabled veterans through broadband.

Figure 19. Density of veterans in areas without wired broadband.
V. Health Care Utilization
Nationally, VA inpatient facilities treated more than 690,000 patients, while outpatient clinics registered more than 79 million visits in the last year. In Virginia specifically, 131,322 veterans received treatment at a Virginia based VA health care facility in 2011. The distribution of these veterans is shown in figure 20. However, this information does not provide enough detail to draw conclusions about how veterans are utilizing services, gaps between services needed and those available, and how veterans’ insurance source affect the location and types of services they are accessing. Moving forward, additional information is needed on per capital expenditures (e.g. health), Telehealth, Electronic Health Records and Health Information Exchange services, initiatives by location and type of provider, and insurance payer sources used by veterans (e.g. TRICARE) and whether veterans are assisted with services that utilize broadband.

Figure 20. Unique patients: patients who received treatment at a VA health care facility
VI. Literature Review

The literature review of health needs, service availability, primary providers, and method of delivery of health services targeted for veterans, and programs and policies that impact veteran utilization and access to health care is an on-going process. The ability of veterans to access broadband has been recognized by the Department of Veteran Affairs, the Department of Defense and by state governments as an essential communication and service tool for veterans. Veteran Affairs and the Department of Defense have implemented or are in the process of implementing programs and services for veterans, which rely on the availability of broadband. In 2011 the Department of Veteran Affairs issued Directive 6515 endorsing the use of Web-based and social media tools to “enhance communication, stakeholder outreach collaboration, and information exchange; streamline processes; and foster productivity improvements.” VA Secretary Eric Shinseki stated this new policy would lay the groundwork for veterans to have convenient access to VA information in real time using social media.

In addition to federal initiatives several states have broadband initiatives focused on the needs of veterans and their families. The Commonwealth of Massachusetts is working with the Massachusetts Department of Veterans’ Services and the Home Base Program to build a web portal for veterans and their families to access one web site that will serve as a link to federal, state, and local veteran benefits. Alabama which has the largest per-capita National Guard organization in the nation has recognized that the veterans and their dependents who reside in the more rural areas of the state do not have access to the internet. Jeff Hester of the Birmingham Veterans Affair Medical Center states that telemedicine and Internet-based resources have improved access to quality care but there is a gap within the state of areas with access to Internet and those without. Those veterans and their dependents who reside in areas without Internet access cannot take advantage of these resources. In Texas the Internet Innovation Alliance (IIA) is requesting expanded broadband to enable military families to stay in touch with troops as they serve overseas which is essential for troops to maintain good mental health and morale.

Individuals residing in rural regions have traditionally been underserved by health care services; rural barriers to health care vary by regions and locality, but generally result from long distances to health care facilities, lack of health insurance, lack of specialized care, and an inadequate number of health care providers. As a result, rural populations tend to be in poorer health, resulting in higher rates of chronic health conditions. The health status of rural veterans is often influenced by complications associated with service related conditions such as Post Traumatic Stress Disorder (PTSD), depression, and traumatic brain injury (TBI).

A study by the VA Office of Rural Health found distance to health care services as the most significant barrier for rural veterans seeking care. The study further finds that rural veterans’ access to centralized services at the VA and other large medical centers is compromised by service related disabilities for all veterans, and age related limits to mobility and travel associated with Vietnam, Korean and World War II veteran populations. These factors point to a tension between committing resources to providing community-based services or bringing services to the veterans via electronic means.

In 1998 the VA initiated the development of a network of CBOCs to address the needs of the largely rural, aging veteran population. Since 2003 the needs of returning Gulf War veterans have spurred the growth of the CBOC network to nearly 800 clinics nationally, 12 of which are in Virginia, to provide rural veterans primary care, mental health care, and some limited specialty care. Some CBOC locations use telehealth for consultation with specialty care providers making the availability of this service contingent on the appropriate broadband connectivity.
The Department of Veterans Affairs Health Services Research and Development Services (2011) compared the health status of veterans enrolled in the VA health care system according to where the veterans resided based on urban vs. rural designations. Of the 3 million veterans enrolled in the VA health care system 40% live in rural areas contrasting with the general population with only 17% living in rural areas. The goal of the study was to determine 1) if a health care disparity exists across the urban-rural spectrum and 2) and to identify interventions if disparities existed. One area of study reviewed the differences in the availability of health care providers in rural areas as compared to urban areas with rural populations noted as having less access to specialty health care and lower rates of mental health care. The provision of specialty treatment is an area, which may be addressed by the provision of off-site consultation through telehealth services which has been implemented in some CBOC locations.

Some of the current information related to health care for the veteran population is highlighted below. Further research will be necessary to determine if the programs and policies that have been implemented by the U.S. Department of Veteran Affairs, the Department of Defense and the Virginia Department of Veteran Services have improved health care access and utilization in the more rural areas of the Commonwealth.

The VA is also piloting the Virtual Lifetime Electronic Record (VLER) enabling the sharing of aspects of a veteran’s health record between the VA, Department of Defense (DOD), and selected private providers the Nationwide Health Information Network. VLER creates a unified lifetime health record for service members and veterans with the goals of keeping health care providers informed, improve continuity and timeliness of care, and eliminate gaps in healthcare information. The veteran’s participation in the program is on a voluntary basis. The Hampton VA Medical Center is the second location in the country to pilot VLER and has participated in VLER since fall 2010.

The use of telemedicine technologies has been expanded by the VA for the provision of behavioral health and chronic disease case management for conditions such as pulmonary and cardiac needs, and diabetic care. Clinical Video Telehealth (CVT) - The VA has implemented CVT services to improve veteran health care services for veterans who reside in more remote locations by linking the veteran to the professional health care provider via video technologies. If a veteran is obtaining services at a CBOC and needs specialty services the veteran would be referred to a VA medical center. The use of CVT reduces the need for a veteran to travel to a VA medical center to receive specialty care. CVT uses telehealth technologies to make diagnoses, manage care, perform check-ups and provide care. The CVT services that are available to the veteran will vary according to where the veteran resides.

There is limited information linking employment opportunities to broadband coverage as it related to veterans. This area will be explored further in an effort to determine if employment programs have been implemented that specifically target the veteran population. Also, the area of telecommuting for veterans with disabilities will be explored as this would be dependent solely on the availability of broadband for the veteran.

There are currently employment education and training programs that are specifically targeted for veterans and have been expanded through the use of web based technologies. The New York State Department of Labor through the One-Stop Career Centers located across the state offer video-conferencing to occupational skills training and career planning services. The video-conferencing network allows people to access training programs and to interview for jobs remotely. These centers offer services which are especially designed for veterans. Veterans receive priority in all New York state employment and training programs. The University of Wisconsin-Extension oversees the Building Community Capacity through Broadband (BCCB) project. The BCCB project held free computer training sessions for veterans. The sessions provided information for veterans on email, the Internet, and
VII. Previous Research

**Virginia Tech Institute for Policy and Governance: Virginia Wounded Warrior Program.** The Virginia Wounded Warrior Program (VWWP) is charged with coordinating and facilitating critical services that are needed by Virginia’s veterans who have served in the United States military. A particular emphasis of the program is to facilitate services for Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) veterans with mental and behavioral health and traumatic brain injuries (TBI) resulting from their military service. In 2010 the VWWP commissioned a needs assessment of Virginia’s veterans. The research study assessed and stratified veterans’ service experiences, needs and gaps of veterans by the VWWP planning regions, age groups, conflict eras, branch of service, income, education and other designations. The following are the determined priority needs of veterans as it relates to the current broadband project:

- **Inclusiveness and accessibility of health care:** Access to quality care in a veteran’s community, for both the veteran and his/her family, is a key concern of veterans and their advocates. Access to primary and specialty health care services in Virginia remains limited by geography, insurance coverage, VA health care coverage and the availability of local health resources and specialty services. The VWWP study found that for Virginia veterans residing in rural communities, financial resources, time constraints and distance are primary barriers to travel to a VA health care center for treatment.

- **Availability of health care:** Availability of healthcare services in a veteran’s community is a key determinant in whether veterans will seek care. In the VWWP study, Veterans identified a range of services including mental health, dental and family therapy as either not available in a community or inconvenient.

- **Coordination of health care services:** Care coordination for veterans is critical to successful delivery of health care services. Lack of coordination and partnerships between agencies and service providers, lack of insurance coverage and availability of providers, and gaps in the system of care between VA system and other health care providers are seen as resulting in limiting both access and quality of care in Virginia.

- **Cultural competency of health care providers serving veterans:** The VWWP study emphasized the critical need for community providers to have an understanding of military culture and issues of relevance to the veteran. The VWWP substantiated that a number of veterans did not seek care from community providers as result of the providers not having an understanding of the military culture.

- **Obtaining and maintaining eligibility for services:** Obtaining and maintaining eligibility for services, healthcare coverage, job training, education and employment assistance is important for veterans transitioning from military to civilian life. Additionally, utilizing these services has been shown to enhance resiliency among OIF and OEF veterans. The VWWP study showed critical needs to include: (1) job training and employment support, (2) educational program support, (3) evidence-based therapies and treatments for substance abuse, PTSD and TBI and (4) peer-to-peer support programs for mental and behavioral health, employment and education.
Implications:

- Improved virtual and real information systems and networks that provide easy, accessible information on veteran services and eligibility requirements are needed for veterans, families and service providers. In addition to better information regarding how to access healthcare and mental health services, this resource needs to extend to employment services.

- Improved service provider coordination and partnerships among existing providers would greatly reduce barriers to and gaps between services. A centralized case managers and one-stop resource centers for veterans would better assist veterans with accessing health care, employment, financial and other services. Additionally, the project highlighted veteran’s desire that case managers be peers or specialist that are well trained and experienced with veteran and military services.

- The VWWP study highlighted the need to develop:
  - Electronic Health Records (EHR) for veterans to help facilitate case management across VA, state and local systems.
  - Virtual Lifetime Electronic Record (VLER) to create a unified lifetime health record for service members and veterans with the goals of keeping health care providers informed, improve continuity and timeliness of care, and eliminate gaps in healthcare information.
  - Clinical Video Telehealth (CVT) to improve veteran health care services (e.g. make diagnoses, manage care, perform check-ups and provide care) for veterans who reside in more remote locations by linking the veteran to the professional health care provider via video technologies. The use of Telemedicine technologies has been expanded by the VA for the provision of behavioral health and chronic disease case management for conditions such as pulmonary and cardiac needs, and diabetic care.

- Improved cultural competence of service providers through in-service training programs would help service providers gain awareness and knowledge of military culture. Specifically, veterans participating in the VWWP study desire peer-to-peer (veteran-to-veteran) services and programs.

- Improved mechanisms to help veterans obtain and maintain eligibility for services, healthcare coverage, job training, education and employment assistance. Additionally, training, employment and educational opportunities need to be better matched and leverage military competencies for transitioning from military to civilian life and job market. These opportunities also need to be made more widely available. Support is also needed for employment training programs and employer incentives to employ rural veterans in jobs with health care benefits, and where veterans may work in health related fields as providers.

Additionally, the VWWP research project provided a wealth of knowledge of the following health/wellness areas - life status satisfaction – health and services, life status satisfaction – relationships, daily living and financial, mental health characteristics, head injury, behavioral health statistics, general health conditions/pain, health care utilization and access, health care access – insurance, health care access – disability, veterans claims and veteran services, veteran service utilization – veteran services, unmet medical and service needs, education and employment and demographics and family status.
**Implications:**

**Findings:**

- **Broadband:** Providers in the Commonwealth believe broadband is critical for Health IT priorities, and most segments have substantial broadband capability. Broadband speeds across key segments have increased substantially. At the end of 2010, Virginia ranked in the top third (#17) against other U.S. states in median Broadband Download Speed. Virginia ranked more highly (#10), however, with respect to % of Connections that exceeded 10Mbps, indicating higher-quality connections to support key sectors like Healthcare. The Commonwealth was ahead of the U.S. national average in hospital use of telehealth in 2011 (54% vs. 42%), but somewhat lower in physician use (19% vs. 27%)

- **Electronic Health Records:** Adoption of Electronic Health Records continues to grow steadily. Anticipated readiness to meet Meaningful Use requirements by 2015, while still high, has leveled, most likely due to new criteria that have been communicated.

- **Health Information Exchange:** Participation in Health Information Exchange has increased significantly, due to increased attention to EHR adoption and Meaningful Use requirements.

- **Telehealth:** Telehealth, broadly defined, is used by well over half of respondents, though more commonly for educational/distance learning purposes than ‘real-time’ clinical purposes. Key barriers of not having telehealth are cost-related, especially a lack of reimbursement. Telehealth is still in early stages of adoption but nearly 50% of providers expect to be using Telehealth services within 3 years: use of both Video Consultation and Remote Patient Monitoring services is increasing.

**Implications:**

- Broadband continues to be well-deployed in the Commonwealth, supporting key Health IT priorities. Eligible providers largely believe they are on track to achieve Meaningful Use objectives and incentives

- EHR adoption has accelerated in anticipation of achieving Meaningful Use incentives, and appears to have increased significantly in the physician community since 2010.

- HIE awareness and participation is clearly increasing, most likely in conjunction with increased EHR adoption: Statewide HIE award will help to accelerate progress.

- Increasingly favorable regulatory environment for Telehealth, both in Virginia and at a national level, promises increased focus and adoption similar to EHR. Numerous providers are actively pursuing local Telehealth initiatives that support care coordination, lower hospital readmissions and improved patient access to specialty care in response to regulation changes and major new funding from CMS, NIH and others.
Additionally, BroadAxe’s research provided an in depth analysis of providers’ broadband capacity and their utilization of telehealth, electronic health records and health information exchange, but did not specify veteran specific providers. Some future research priorities include (1) expanding survey participation with additional key segments, including pharmacies, assisted living, nursing homes, (2) tracking statewide HIE development and its impact on other HIT adoption and utilization rates and (3) creating Telehealth benchmarks and comparisons with other states in the Mid-Atlantic region and nationally.

VIII. Gaps & Needs in Research

Both the VWWP Needs Assessment research and BroadAxe research project results complement and enhance our understanding of broadband access and capacity as it relates to veteran’s health access and outcomes. In examining both research projects, it becomes clear that there are three levels to furthering the work in the interest of veterans’ health as it relates to broadband. These levels include:

A. Broadband access, capacity and utilization as it relates to health care providers ability to serve veterans

B. Broadband access, capacity and utilization as it relates to the veteran ability to access and utilize health care services

C. Broadband utilization as it relates to health and behavioral outcomes

To obtain the necessary data for these three layers of information, it becomes apparent that the following research study will need to identify and query veteran health care providers and veterans themselves. Additionally, the research study will need to identify, understand and validate policy and programs that impact services offered, accessed and utilized.

IX. Primary Research Questions

The research project examines broadband initiatives, specifically in the contexts of telemedicine, electronic health records and health information exchange that impact Virginia veteran’s health care access and services, its adoption and utilization and improvement of veterans’ health outcomes. Primary research questions focus on providers’ of veterans’ health care services, veterans themselves and policies/program structures that influence utilization rates.
Research questions focused on providers’ of veterans’ health care services will include:

1. What are veteran providers’ knowledge, understanding and perception of broadband applications to health care?
2. What are veteran providers’ broadband access and capacity of healthcare services that target veterans?
3. What are the utilization/application rates of broadband health care services for veterans?
4. What are veteran providers’ barriers to utilization and application of broadband to health care technologies, including program and policy limitations?
5. What are the health and behavioral outcomes of veterans who consume health care services that utilize broadband?

Research questions focused on veterans will include:

1. What are veterans’ knowledge, understanding and perception of broadband in the provision of health services? What are their preferences and attitudes regarding use of broadband in health services?
2. What is veterans’ ability to access healthcare, specifically care that utilizes broadband?
3. What are veterans’ utilization rates of broadband health care services?
4. What are veterans’ barriers to utilization of broadband health care services?
5. What are the health and behavioral outcomes of veterans who consume health care services that utilize broadband?

Research questions focused on understanding policies and program data that influence services offered, accessed and utilized, will include:

1. What local, state and federal policies and programs impact veteran healthcare services in Virginia?
2. What services are covered under public and private insurances for veterans’ health care? What are the insurances definitions of services and how are they reimbursed?
X. Recommended Governance of Project Scope

The research team proposes two levels of governance groups for the project – 1) a planning group comprised of VCIT/VT, BroadAxe, and an 2) advisory group comprised more broadly of health care organizations focused on veterans’ healthcare.

1. Planning Group

<table>
<thead>
<tr>
<th>Name</th>
<th>Agency</th>
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<tbody>
<tr>
<td>Caroline Stolle</td>
<td>VCIT</td>
</tr>
<tr>
<td>Kirby Farrell</td>
<td>BroadAxe Technology Partners</td>
</tr>
<tr>
<td>Peter Sforza</td>
<td>VTCGIT</td>
</tr>
<tr>
<td>Mary Beth Dunkenberger</td>
<td>VTIPG</td>
</tr>
<tr>
<td>Suzanne Lo</td>
<td>VTIPG</td>
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The planning group will be charged with oversight of design, coordination and execution of the research plan and scope of work. The planning group will conduct preliminary review of project reports and deliverables.

2. Advisory Group

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Karen Jackson</td>
<td>VCIT</td>
</tr>
<tr>
<td>Matt Wade</td>
<td>VWWP</td>
</tr>
<tr>
<td>Barbara Freeby or Dr. Gianola</td>
<td>VA (McGuire) – LVER Project</td>
</tr>
<tr>
<td>Kathy Hsu Wibberly, PhD and David Cattell-Gordon</td>
<td>Director, Mid-Atlantic Telehealth Resource Center at University of Virginia</td>
</tr>
<tr>
<td>Jeff Odell</td>
<td>Cenvanet</td>
</tr>
<tr>
<td>Lee Tinsley</td>
<td>Department of Veteran Services</td>
</tr>
<tr>
<td>To be determined</td>
<td>Department of Behavioral Health</td>
</tr>
<tr>
<td>(Karen Jackson to identify)</td>
<td>Secretary of Veterans Affairs</td>
</tr>
<tr>
<td>Beth O’Conner</td>
<td>Virginia Rural Health Association</td>
</tr>
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</table>

The advisory group will be requested to provide guidance on the overall goal of the research and the research questions as a means to best inform program and policy action directed at improving health care services to veterans through leveraging broadband resources. The advisory group will be asked to counsel on gaps that may exist in the research questions and scope of work.
XI. Revised Scope and Timeline for Project

<table>
<thead>
<tr>
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<tbody>
<tr>
<td><strong>Project Deliverable:</strong> A preliminary summary report of administrative data and literature review correlated with broadband access to include the primary research questions</td>
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<tr>
<td>• Literature review of national studies on impact of technology on health</td>
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<tr>
<td>• Evaluate data (VTIPG, VTCGIT &amp; National) to determine target areas for research</td>
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<tr>
<td>• Conduct in depth secondary data research on policy/program and health access data</td>
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<tr>
<td>• Develop 3-5 research questions in coordination with project partners to guide content development of primary research instruments</td>
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<td>• Recruit advisory group</td>
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<tr>
<th>Component II: Health Service Provider Survey</th>
<th>July – November, 2012</th>
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<tbody>
<tr>
<td><strong>Project Deliverable:</strong> Development of surveys and survey pretest report</td>
<td></td>
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<tr>
<td>• Pre-Survey administered in one locality</td>
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<tr>
<td>• Survey modification based on pre-survey feedback</td>
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<tr>
<td>• Determination of survey numbers for statistically valid response rates</td>
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<td>• Determination of survey dissemination method (mail/online)</td>
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<tr>
<td>• Option 1 (VT Center for Survey Research) – Would involve a phone interview survey of a representative sample of Virginia veterans. A phone survey is preferred as it assures the most accurate data at the consumer level, however the project budget does not currently include sufficient funds for a survey. Action steps will be determined by option selected</td>
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<tr>
<td>• Option 2 (Qualtrics) – If additional funds cannot be procured for the telephone survey and online, electronic survey will be utilized. Action steps will be determined by option selected</td>
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<tr>
<td>• Synthesize findings from provider and veteran surveys</td>
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<tr>
<td>• Identify and survey experts: validate and clarify original findings and expand on policy/program</td>
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</tr>
<tr>
<td><strong>Project Deliverable: Comprehensive summary report of research findings and recommendations for program and policy action</strong></td>
<td></td>
</tr>
<tr>
<td>• Analysis of the survey and secondary data to inform program and policy development</td>
<td></td>
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<tr>
<td>• Provide a summary of policy and administrative data that was collected through literature and date review</td>
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<tr>
<td>• Provide a summary of the survey group results to include statistical analysis of frequency of responses, regressions and an analysis of frequency of key word in open-ended responses</td>
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<tr>
<td>• Develop a summary analysis and recommendations on service enhancement based on the results of the comprehensive survey &amp; policy/best practice reviews</td>
<td></td>
</tr>
<tr>
<td>• Final report with policy and program recommendations &amp; next steps for continued applied research</td>
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**Project Deliverable: Monthly update reports detailing progress toward deliverables and objectives (1-page email)**
Authors

Suzanne Lo is a research faculty with Virginia Tech Institute for Policy and Governance. She is an established public health researcher, who has served the federal, state, local and non-profit sectors. Suzanne’s areas of expertise include bridging basic, clinical, public health and communications research and methodologies to effectively address public health issues. She has worked on numerous topics and is currently working on a project on veterans’ healthcare and broadband access in Virginia, and its implications for healthcare planning and policy. Suzanne is the author of several manuscripts, has helped journals review manuscripts, and has presented her work for national audiences. She holds a Bachelor of Arts in Psychology from Marist College and a Master of Public Health from Johns Hopkins School of Public Health.

Mary Beth Dunkenberger has been the Senior Program Director and research faculty at the Virginia Tech Institute for Policy and Governance for the past five years. In her capacity as Program Director, Ms. Dunkenberger provides leadership in aligning research and outreach capabilities with public agency and non-profit need at the local, state and federal level. Ms. Dunkenberger also provides direct research and technical assistance and oversight of projects in the areas of program and policy evaluation, design and implementation.

Projects are undertaken with an understanding of the policy, organizational, business practice and political contexts in which agencies operate. Ms. Dunkenberger has worked in the areas of economic development, work force training, international trade, social welfare programs, transportation planning, public health, citizen involvement and public sector strategic planning. Ms. Dunkenberger’s related academic and outreach interests are focused on developing enhanced connections between social programs and economic and community development in the context of evolving global dynamics. Since 2009, Ms. Dunkenberger has led multiple research and technical assistance projects to advance design and implementation of Veteran support programs on behalf of the Virginia Wounded Warrior Program, The Virginia Department of Veterans Services and the Virginia Center for Innovative Technology.

Ms. Dunkenberger received a Bachelor of Science degree in Commerce from the University of Virginia and a Masters of Business Administration from George Washington University. She is PhD candidate at the Virginia Tech Center for Public Administration and Policy.
References

i US Department of Veterans Affairs. Veterans Health Benefits Guide. February 2012.


vii Brewin, Bob, (2011) Nextgov.com

viii Massachusetts Veterans’ Portal


Appendices

Appendix 1: Context of Veterans in Virginia

a. Population
b. Race
c. Age
d. Cohort
e. Branch of Service
f. Educational Attainment

Appendix 2: Health Access: Insurance, Payer and Employment

a. Health Care Priority Groups
b. Proportion of veterans who have the following benefits: VA benefits, TRICARE, Medicaid, Medicare, Medicare Supplement, Private/Employer benefits, other, by county
c. Median Income in the past 12 months
d. Population of Employed and Unemployed Veterans
e. Expenditures(total, insurance and indemnities, compensation and pension, medical care and education and vocational rehabilitation/employment)
Appendix 1: Context of Veterans in Virginia

a. Veteran Population: by Virginia Wounded Warrior Program Regions

- White: 74%
- Black or African American: 19%
- American Indian and Alaska Native: 1%
- Asian: 1%
- Native Hawaiian and Other Pacific Islander: 3%
- Some other race: 2%
- Two or more races: 0%
- Hispanic or Latino (of any race): 0%


- 18 to 34 years: 15%
- 35 to 54 years: 11%
- 55 to 64 years: 16%
- 65 to 74 years: 24%
- 75 years and over: 34%
Jurisdictional Veteran Population

Number of Veterans: Ages 55-64
- 40 - 199
- 200 - 499
- 500 - 999
- 1,000 - 1,989
- 2,000 - 4,999
- 5,000 - 22,206

Veteran Population Estimate: 2010
Source: 2006-2010 American Community 5-Year Estimates

Created by CGIT @ VT
July 2, 2012
d. Veteran Population in Virginia: by cohort

Veteran Population by cohort shows the number of veterans in Virginia (N=822,300) broken down by cohort. Eras include wartime veterans (n=622,200), Gulf War\(^1\) (n=301,600), Vietnam Era (n=258,200), Korean Conflict (n=63,900), World War II (n=45,900) and peacetime (n=200,100). (2006-2010 American Community Survey 5 Year Estimate)

\(^1\) Note: “Gulf War” refers to veterans who have served since 2001.
e. Veteran Population in Virginia: by branch of service

Veteran Population by branch of service shows the number of veterans in the Nation (N=22,234,242) broken down by branch of service. Branches include Army (n=9,670,948), Navy (n=4,997,160), Air Force (n=4,057,486), Marines (n=2,374,157), non-defense (n=211,454) and Reserve Forces (n=923,037). (2006-2010 American Community Survey 5 Year Estimate)

Veteran Population in Virginia: branch of service and in Virginia Wounded Warrior Program regions (VWWP Assessment, 2010)
f. Educational Attainment: Civilian population 25 years and over (2006-2010 American Community Survey 5 Year Estimate)
**Appendix 2: Health Access: Insurance, Payer and Employment**

a. Health care priority groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
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<tbody>
<tr>
<td>1</td>
<td>Veterans with service-connected disabilities rated 50 percent or more and/or veterans determined by VA to be unemployable due to service-connected conditions.</td>
</tr>
<tr>
<td>2</td>
<td>Veterans with service-connected disabilities rated 30 or 40 percent.</td>
</tr>
<tr>
<td>3</td>
<td>Veterans with service-connected disabilities rated 10 and 20 percent; veterans who are former Prisoners of War (POW) or were awarded a Purple Heart medal; veterans awarded the Medal of Honor (MOH) veterans awarded special eligibility for disabilities incurred in treatment or participation in a VA Vocational Rehabilitation program; and veterans whose discharge was for a disability incurred or aggravated in the line of duty.</td>
</tr>
<tr>
<td>4</td>
<td>Veterans receiving aid and attendance or housebound benefits and/or veterans determined by VA to be catastrophically disabled.</td>
</tr>
<tr>
<td>5</td>
<td>Veterans receiving VA pension benefits or eligible for Medicaid programs, and non service-connected veterans and non-compensable, zero percent service-connected veterans whose gross annual household income and/or net worth are below the VA national income threshold and geographically-adjusted income threshold for their resident area.</td>
</tr>
</tbody>
</table>
| 6     | Veterans of World War I; veterans seeking care solely for certain conditions associated with exposure to ionizing radiation during atmospheric testing or during the occupation of Hiroshima and Nagasaki; for any illness associated with participation in tests conducted by the Department of Defense (DoD) as part of Project 112/Project SHAD; veterans with zero percent service-connected disabilities who are receiving disability compensation benefits; veterans who served in the republic of Vietnam between 1962 and 1975; veterans of the Persian Gulf War that served between August 2, 1990 and November 11, 1998 and veterans who served in a theater of combat operations after Nov. 11, 1998 as follows:  
   1. Veterans discharged from active duty on or after Jan. 28, 2003, who were enrolled as of Jan. 28, 2008 and veterans who apply for enrollment after Jan. 28, 2008, for 5 years post discharge  
| 7     | Veterans with gross household income below the geographically-adjusted income threshold (GMT) for their resident location and who agree to pay copays. |
| 8     | Veterans, enrolled as of January 16, 2003, with gross household income and/or net worth above the VA national income threshold and the geographically-adjusted income threshold for their resident location and who agree to pay copays. 
   Note: Due to income relaxation rules implemented on June 15, 2009 Veterans with household income above the VA national threshold or the GMT income threshold for their resident location by 10 percent or less, who agree to pay copays, are eligible for enrollment in Priority Group 8. |
b. Proportion of veterans who have the following benefits: VA benefits, TRICARE, Medicaid, Medicare, Medicare Supplement, Private/Employer benefits or other, by county.
Veterans’ Health Benefits by County: Medicare Supplement

Proportion of insured Veterans receiving benefits from a Medicare Supplement:
- 0-4%
- 4.1-13%
- 13.1-25%
- 25.1-50%
- 50.1-100%

Veteran Population Estimate: 2010
Source: 2006-2010 American Community Survey 5 Year Estimate
c. Median income in the past 12 months (in 2010 inflation-adjusted dollars): by gender (2006-2010 American Community Survey 5 Year Estimate)
d. Population of employed and unemployed veterans
e. Expenditures (total, insurance and indemnities, compensation and pension, medical care and education and vocational rehabilitation/employment)
Veterans and Broadband Access in Virginia: Implications for healthcare planning and policy

Virginia Tech Institute for Policy and Governance

Mary Beth Dunkenberger, Principal Investigator
Suzanne Lo, Project Manager
Veterans Applied Research & Support

- **VWWP 2010 needs assessment**
  - Examined the needs and experiences of Virginia Veterans
    - Focus on OIF and OEF veterans
    - Utilized scientific inquiry methods – mixed methods
    - Contextualized for multiple factors

- **VWWP Data Management Support**

- **Participation in SAMHSA Veteran and Military Family Policy Academy**

- **Current Examination of Impact of Broadband on Veterans’ Healthcare**
What is the challenge?

- Veterans are faced with wide-ranging and complex health needs. Veterans residing in rural areas tend to be in poorer health, resulting in higher rates of chronic health conditions, as compared to the general population.

- Broadband is increasingly being utilized to meet and improve Veteran mental and physical health needs.

- Programs and policies remain fragmented and institutionally grounded rather than individually focused.
Broadband-Based Health Services

- Broadband (Wired)
  - Telehealth
  - Telemedicine
- Electronic Health Records
- Health Information Exchange
Research Aim: To examine broadband access and utilization that impacts Virginia Veterans’ health services and access to services.

Research Objective: Enhance Virginia leaders’ and policymakers’ ability to leverage broadband **resources** and **policies** to address the healthcare needs of Veterans

Multiphase Research Process:

1. Secondary Data Gathering
2. Stakeholder Engagement – Validation of Research Questions
3. Primary Data Gathering
4. Stakeholder Engagement – Validation of Recommendations
Veterans comprise 13% of Virginia’s Population
Veteran Population in Virginia, by Cohort

- World War II: 8%
- Korean War: 10%
- Vietnam: 35%
- Gulf War: 47%
Rural Virginia Veterans have:

- higher rates of reported depression, traumatic brain injury (TBI), substance abuse and post-traumatic stress disorder (PTSD).

- higher rates of chronic health conditions such as diabetes and hypertension.

- less access to medical center or specialist care.

Contextual Attributes of Veterans

55% are 55 years of age or older

- Higher demand for care coordination and specialty services

Younger Veterans

- Higher levels of multiple disabilities
  - Physical, mental, head injuries, post-traumatic stress disorder

Health Access: Insurance & Payer Source –
Qualifying for VHA care depends on...

1. whether the Veteran has wartime service
2. service related disability, and/or
3. the length of the Veteran’s military service.

Source: U.S. Dept. of Veterans Affairs
Type of insurance by VWWP region

What kind of insurance do you have?

- VA
- Tricare
- Through employer/private
- Medicaid
- Medicare
- Medicare supplement
- Other
Health facilities/program locations serving Veterans

Veteran Service Locations

Veteran Population By Jurisdiction
- 248 - 999
- 1000 - 4999
- 5000 - 9999
- 10000 - 19999
- 20000 - 49999
- 50000 - 84750

Veteran Population Estimate: 2010
Source: 2006-2010 American Community Survey 5 Year Estimates
Created by CGIT @ VT 5/7/2012
In 2011, 131,322 Veterans received treatment at a Virginia-based VA health facility.
Priority Health Service Needs of Veterans

- Inclusiveness and Accessibility of Healthcare
- Availability of Healthcare
- Coordination of Health Services
- Cultural Competency of Healthcare Providers
- Obtaining and Maintaining Eligibility for Services

Proportion of Veterans in areas **without** wired broadband.

Veteran Population In Unserved Areas

### Number of Veterans

- 1 - 9
- 10 - 49
- 50 - 99
- 100 - 109
- 200 - 209
- 300 - 478

This map shows the approximate number of veterans inhabiting areas lacking wired broadband service. In an analysis of the Virginia state broadband database (eff. date Dec. 31, 2011) CGIT identified unserved areas based on the following criteria:

1. The census block had a population greater than zero
2. The census block contained no wired broadband service offerings as listed in the Virginia state broadband database
3. Broadband was defined as a minimum advertised download speed of 768 kbps

The veteran population in unserved portions of census tracts was computed proportionally to the area of the whole census tract, assuming a uniform veteran distribution.

*Veteran Population Estimate: 2010*  
*Source: 2008-2010 American Community 5-Year Estimates*  
*Created by CGIT @ VT  
June 21, 2012*
Possibilities with Broadband:

- Improved virtual and real information systems and networks
- Improved service provider coordination and partnerships (centralized case managers)
- Electronic Health Records (EHR)
- Virtual Lifetime Electronic Record (VLER)
- Clinical Video Telehealth (CVT)
- Improved Cultural Competence
- Improved mechanisms for services

Ongoing Research

- **Multiple Perspective Approach**
  - Providers of Veterans’ health services
  - Veterans themselves
  - Policies/program structures that influence utilization rates

- **Continuous Learning Loops**
  - Engaged stakeholders, funders and partners
  - Informed discourse – (Dr. Haynie)

- **Bridging the Divide**
  - Identification of program and policy gaps
  - Implementation strategies that are culturally and contextually relevant and appropriate
Services and payer sources remain fragmented for all healthcare – *ACA implementation may worsen in short term*

Critical mass needed for sustained use of Telehealth/Telemedicine

- Demand
- Payer Source

Intrastate licensing of providers a major barrier to care

Interoperability between VA and community providers a challenge

Cost savings and improved access to services to be realized

Digital generation more comfortable with broadband enabled technologies
Project Partners

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