Chapter 5

Health and Healthcare for Older Veterans in VHA

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Section I: Significance & Background

The Department of Veteran Affairs (VA's) commitment to serve Veterans continues throughout each Veteran's lifespan. In 2014, 45% of Veterans were age 65 and older, and the percentage is projected to increase over the next decade.[1] This older adult population is heterogeneous. Although some Veterans maintain health and function well into their 80s and 90s, many Veterans experience age-associated sensory, cognitive and physical decline. As a group, Veterans age 65 and older face an increased burden of chronic disease and associated polypharmacy, functional decline, and geriatric syndromes such as falls and cognitive impairment. These older Veterans are also more likely to rate their health as fair or poor[2]. At the same time, the barriers to care faced in general by older adults (e.g., frailty, transportation issues, social isolation) may set older adult Veterans apart from younger Veterans in terms of patterns of access to care and utilization of services. These aging and access challenges also may serve to exacerbate difficulties faced by Veterans experiencing disability or homelessness, or who are members of ethnic and racial minorities. Understanding the distinct characteristics and healthcare needs of older adult Veterans, and planning services to best address these needs, is a VA priority.

The likelihood of decline increases in older ages. Persons over age 85 are at particularly high risk for institutionalization and other poor outcomes.[3] In the United States, this population has increased over the last decade from 400,000 in 2000 to 1.3 million in 2010. This burgeoning population is particularly important for the VA: in 2010, Veterans accounted for 68% of men who were age 85 and older.[2]

Functional disability, highlighted as an important health outcome in the VA's Blueprint for Excellence, increases in prevalence with aging and is an important component of health that influences levels of need and access to services.[4] Functional limitations are associated with increased risk of decline, death, resource use, and poorer outcomes from medical interventions.[3, 5, 6, 7, 8] Overall, Veterans living in the community have higher rates of disability than non-Veterans. For the over 19 million Veterans age 18 and older in the community, 29% have a disability. The comparable rate in the non-Veteran population is 13%.[9] Although the challenges of disability are experienced by Veterans in all age groups, disability does increase with age. Of those community-dwelling Veterans with disabilities, 34% are age 18-64, and 66% are age 65 and older.[9] These proportions are projected to increase as the cohort of Vietnam-era patients, who are disproportionately represented among Priority 1a enrollees, will be aging into the 65 and older population. The effect of disability extends beyond restricted access and poor health outcomes: Veterans age 18-64 with disabilities are more likely to live in poverty compared to similar age Veterans without disability (17.3% vs. 7.5%).[9]

Understanding the interaction of age-associated sensory, cognitive, physical and functional decline in the populations that are a traditional focus of equity measures will be increasingly important over the coming decades, as the older adult population is expected to become more diverse in the coming years. In 2010, 20% of persons age 65 and older were a race or ethnicity other than non-Hispanic White and this number is projected to

1 Department of Veterans Affairs, Veterans Benefits Administration Annual Benefits Reports, 1985-2014; Office of Policy & Planning, Office of the Actuary, Veteran Population Projection Model (VetPop), 2014. Prepared by the National Center for Veterans Analysis and Statistics.
2 http://www.agingstats.gov/docs/PastReports/2012/OA2012.pdf. Accessed August, 2015
3 Saliba D, Elliott M, Rubenstein LZ, et al. The vulnerable elders survey (VES-13): A tool for identifying vulnerable older people in the community. *J Am Geriatr Soc*. 2001;49(12):1691-9.
4 Iezzoni LI. Eliminating health andhealthcare disparities among the growing population of people with disabilities. *Health Affairs*. 2011;30(10):1947-1954.
5 Min L, Yoon W, Mariano J, et al**.** The vulnerable elders-13 survey predicts 5-year functional decline and mortality outcomes among older ambulatory care patients. *J Am Geriatr Soc*. 2009;57(11):2070-6. PMID: 19793154
6 Min L, Ubhayakar N, Saliba D, et al. The vulnerable elders survey-13 predicts hospital complications and mortality in older adults with traumatic injury. *J Am Geriatr Soc.* 2011;59(8):1471-6. PMID: 21718276
7 McGee HM, O'Hanlon A, Barker M, et al. Vulnerable older people in the community: Relationship between the vulnerable elders survey and health service use. *J Am Geriatr Soc*. 2008;56: 8-15.
8 Spyropoulou D, Athanasios GP, Leotsinidis M., Kardamakis D. Completion of radiotherapy is associated with the vulnerable elders survey-13 score in elderly patients with cancer. *J Geriatr Oncology.* 2014;5:20-5.
9 http://disabilitycompendium.org/compendium-statistics/Veterans. Accessed August, 2015.

increase to 42% by 2050, with the largest increases among older adults who identify as Hispanic or Asian. This increase includes the oldest old, and it is projected that, by 2050, 33% of adults older than 85 will be from racial or ethnic groups other than non-Hispanic white.[10, 11]

Age is an increasingly important factor for other Veteran populations with recognized access and health challenges. The number of older Veterans at risk for homelessness is projected to increase over the next decade.[12] One factor contributing to this projected increase is military era: the largest group of homeless Veterans are those who served in the Vietnam War.[13] Members of this "Baby Boomer" generation started turning 65 in 2011, and aging- associated declines in sensory, cognitive and physical function can only exacerbate the challenges faced by this population.

With increasing levels of functional dependency and disability, the need for long-term services and supports will likely increase. Less than 15% of the older adult population has private insurance to cover community or institutional-based long-term services and supports.[14] A limited range of long-term services and supports are available for those persons who qualify for Medicaid, however, this varies widely depending on state of residence. As a result, Veterans with these needs may increasingly turn to the VA for assistance. The VA provides, if clinically needed, institutional long-term services and supports for Veterans who are at least 70% service-connected (SC), 60% SC and unemployable, or SC for a condition that makes long-term services and supports necessary. It also provides community based long-term services and supports for all Veterans who have a clinical need for services.

This chapter begins to describe additional characteristics of Veterans age 65 and older who received VA services in 2013. This type of analysis aims to contribute to laying the groundwork for meeting the first strategy of the VA's Blueprint for Excellence, namely to "operate a healthcare network that anticipates and meets the unique needs of enrolled Veterans, in general, and the service disabled and most vulnerable Veterans, in particular." Specifically, this chapter highlights differences in the socio-demographics, health diagnoses, and outpatient utilization across patient age groups. Information on how these patterns vary with age, and identification of important gaps in our understanding of these patterns, will be the foundation for subsequent work examining variations in quality of care for Veteran patients of different age groups. In this chapter, we focus on describing the characteristics of older adult patients age 65 and older, relative to patients age 45-64, and patients age 18-44. For specific characteristics, we highlight differences within the population of older patients, in particular for the oldest old (age 85 and older). All tables in this chapter include: (a) three mutually-exclusive age groups covering the entire Veteran VHA population (18-44; 45-64; and 65+); (b) for the 65 and older group, three subgroups as defined by age (65-74; 75-84; 85+); (c) the total for the three mutually exclusive age groups (18-44; 45-64; and 65+).

10 The Next Four Decades: The Older Population in the United States: 2010 to 2050. https://www.census.gov/newsroom/releases/archives/aging_population/cb10-72.html

11 http://www.agingstats.gov/docs/PastReports/2012/OA2012.pdf. Accessed August, 2015.

12 Culhane D, Metraux S, Byrne T, Stino M, & Bainbridge J. The age structure of contemporary homelessness. *Analyses of Social Issues and Public Policy.* 2013;12(1):228-244.

13 National Coalition for Homeless Veterans. Background and Statistics: FAQ About Homeless Veterans. Accessed August, 2015.

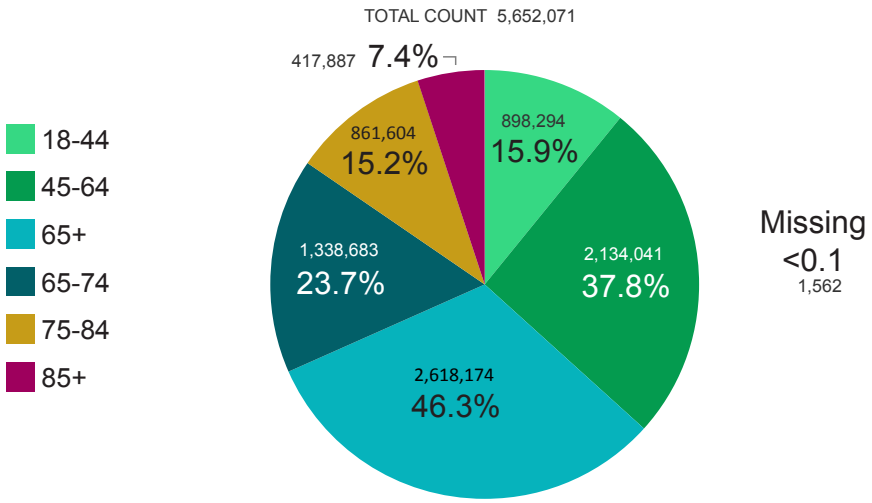
14 Brown JR, Goda GS, McGarry K. Long-term care insurance demand limited by beliefs about needs, concerns about insurers and care available from family. *Health Affairs.* 2012;31(6):1294-1302.

Distribution of Veteran VHA Patients by Age

Overall, 46.3% of Veteran VHA patients were age 65 and older in 2013, 37.8% were age 45-64, and 15.9% were 18-44 *(Exhibit 5-1)*. Among older adult patients, 23.7% were 65-74, 15.2% were 75-84, and 7.4% were 85 and older.

EXHIBIT 5-1

DISTRIBUTION OF AGE AMONG VETERAN VHA PATIENTS, FY13



Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS The proportion of the older adults in the VA Veteran patient population reflects the percent of older Veterans who live in the community. This is despite having access to other Medicare providers.

Demographic changes, both in the VA and in the US overall, create an urgent need for understanding and addressing the health challenges of an aging society that uses VA services despite having access to other healthcare providers. Longer life spans and aging "Baby Boomers" (adults born between 1946 and 1964) will combine to double the population of Americans age 65 years or older during the next 25 years.[15]

15 Centers for Disease Control and Prevention. The State of Aging and Health in America 2013. Atlanta, GA: Centers for Disease Control and Prevention, US Dept of Health and Human Services; 2013.

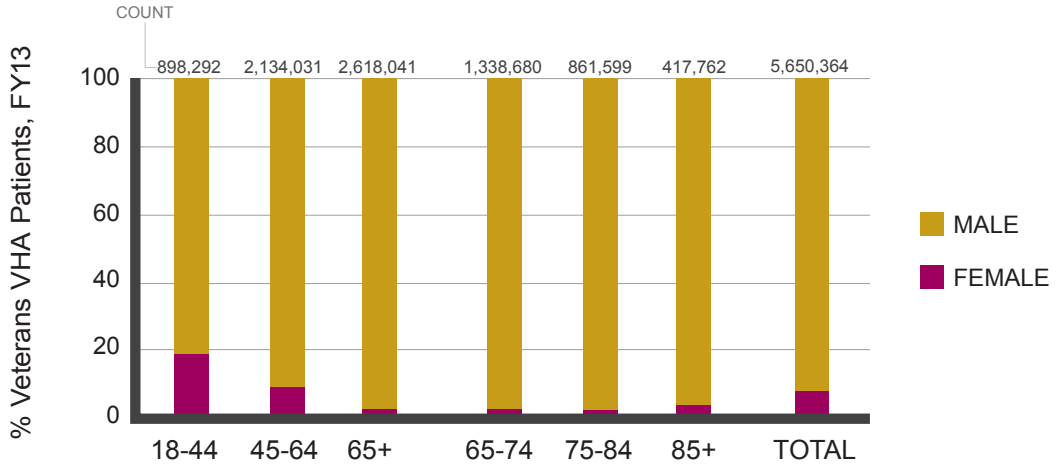
Section II: Sociodemographics

Gender by Age

The overall Veteran patient population was predominantly male (93.2%), but the composition of the patient population differed dramatically across age groups *(Exhibit 5-2)*. Whereas women were only 1.7% of patients age 65 and older, they constituted 8.2% of patients 45-64 years of age and 18.1% of patients age 18-44.

EXHIBIT 5-2

PERCENT DISTRIBUTION OF GENDER BY AGE AMONG VETERAN VHA PATIENTS, FY13



Note: The VHA databases available in FY13 did not include fields to distinguish between transgender and cisgender Veterans.

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS VA care for older patients will need to adapt to address the healthcare needs of both men and women Veterans. As the younger cohorts age, VA needs to expand the availability and range of services to address the health concerns of older women.

Race/Ethnicity by Age

In 2013, among Veteran patients overall, non-Hispanic Whites were the majority racial/ethnic group *(Exhibit 5-3)*. Among older Veterans age 65 and older, 85.0% were non-Hispanic White, whereas non-Hispanic Whites were 63.4% of patients age 45-64 and 60.5% of patients age 18-44. The younger age cohorts had greater racial/ethnic diversity: In the 45-64 year age group, 22.1% were Black/African American, 5.3% were Hispanic, 0.7% were Asian, 0.7% were Native Hawaiian/Other Pacific Islander, and 0.6% were American Indian/Alaskan Native while in the 18-44 year age group, 18.9% were Black/African American, 10.2% were Hispanic, 1.7% were Asian, 0.8% were Native Hawaiian/Other Pacific Islander, and 0.8% were American Indian/Alaska Native.

EXHIBIT 5-3

PERCENT DISTRIBUTION OF RACE/ETHNICITY BY AGE AMONG VETERAN VHA PATIENTS, FY13

	Age at Beginning of FY13						
	18-44	45-64	65+	65-74	75-84	85+	Total
Count	898,294	2,134,041	2,618,174	1,338,683	861,604	417,887	5,650,509
Race/Ethnicity	%	%	%	%	%	%	%
American Indian/Alaska Native	0.8	0.6	0.4	0.5	0.3	0.2	0.6
Asian	1.7	0.7	0.6	0.5	0.5	0.8	0.8
Black/African American	18.9	22.1	8.9	10.9	7.4	5.7	15.5
Native Hawaiian/Other Pacific Islander	0.8	0.7	0.5	0.6	0.5	0.5	0.6
Multi-race	1.0	0.7	0.4	0.5	0.4	0.3	0.6
Hispanic	10.2	5.3	3.7	3.9	3.8	3.0	5.4
Unknown	6.2	6.5	0.4	0.5	0.3	0.4	3.6
White	60.5	63.4	85.0	82.6	86.8	89.1	73.0

Missing = 1,562

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS This distribution for older adults reflects the composition of a pre-All-Volunteer Force and societal demographics. Although the younger groups have greater diversity when viewed by percentages, it is important to note that a significant number (15%) of current older Veterans do not self-report as non-Hispanic White. In 2011, the median age of Asian Veterans and of American Indian, Alaskan Native Veterans (AI/AN) was 57.[16] In addition, it is important to view these data from a life-course trajectory.[17] These proportions are expected to shift significantly as more diverse Veteran and All-Volunteer Force populations age, pointing to the need to ensure that future long-term services and supports be designed to meet the needs of a more culturally diverse population. Addressing the healthcare needs of patients who may face healthcare disparities due to both age- and racial/ethnic factors, may require additional efforts to develop and deliver culturally-sensitive care models.

Racial/ethnic differences in care may have particular impact for select care settings and may interact with functional limitations or chronic conditions to decrease access to appropriate services. For example, further research is needed to explore possible disparities in inpatient hospitalization rates by race/ethnicity to understand whether racial/ethnic minority older adults are disproportionately represented in the inpatient population. Another avenue for future research is understanding whether racial/ethnic differences exist in access to long-term services and supports.

16 U.S. Census Bureau, American Community Survey, Public Use Microdata Sample, 2011, as cited by the National Center for Veterans Analaysis and statistics http://www.va.gov/vetdata/docs/SpecialReports/Minority_ Veterans_2011.pdf.

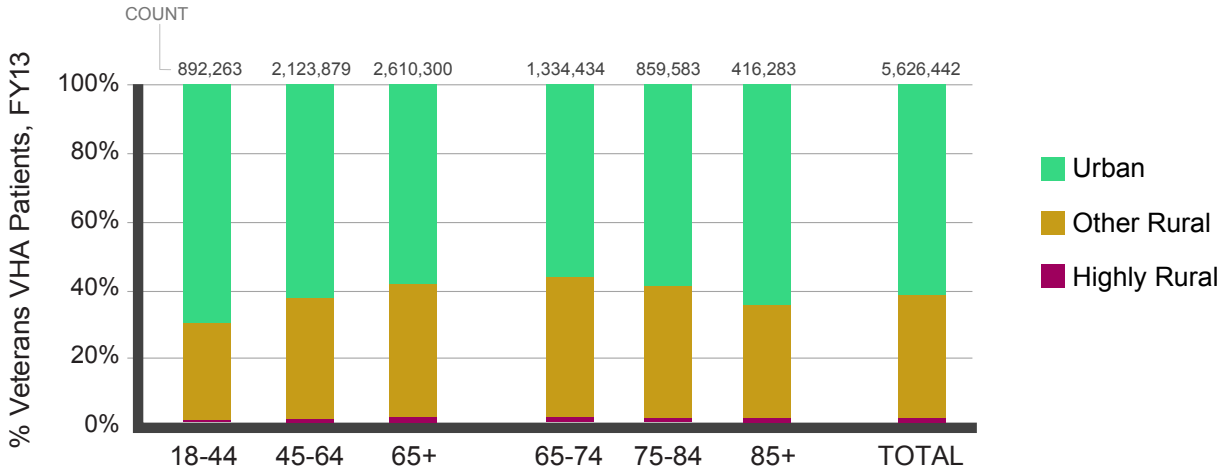
17 Wilmouth JM, London AS. Chapter 28 Aging Veterans: Needs and Provisions in Handbook of Sociology of Aging, Settersen RA and Angel JL editors. Pages 445-461. Springer, LLC 2011.

Rural/Urban Status by Age

Overall, the majority of Veteran patients lived in urban areas, however older (age 65+) Veteran patients were more likely to live in rural locations (40.7%) compared to their younger counterparts (36.8% among 45-64 year olds; 29.4% among 18-44 year olds) *(Exhibit 5.4)*.

EXHIBIT 5-4

PERCENT DISTRIBUTION OF RURAL/URBAN STATUS BY AGE AMONG VETERAN VHA PATIENTS, FY13



Missing = 25,629

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS Rural Veterans face unique healthcare delivery challenges including transportation barriers, poverty and limited access to health professions and community-based programs.[18, 19, 20] Older rural Veterans may be especially vulnerable to these challenges because of social isolation, frailty and disability. Past studies have documented that older rural Veterans' healthcare needs have not been adequately met.[21] Older rural Veterans may face additional challenges when health problems in later life are compounded by circumstances that require a substantial outlay of social or emotional resources. For example, when older rural Veterans develop Alzheimer's disease or other serious neurocognitive or mental health conditions, or when they develop progressive or debilitating manifestations of their underlying chronic illnesses, they or their caregivers often do so with little to no access to formal

18 Basu J, Mobley L. Illness severity and propensity to travel along the urban-rural continuum. *Health and Place.* 2007;13:381-399.
19 Chan L, Hart L, Goodman D. Geographic access to healthcare for rural medicare beneficiaries. *Journal of Rural Health.* 2006;22(2):140-146.
20 Gillanders W, Buss T. Access to medical care among the elderly in rural northeastern Ohio. *Journal of Family Practice.* 1993;37:349-355.
21 Weeks W, Kazis L, Shen Y, Cong Z, Ren X, Miller D et al. Differences in health-related quality of life in rural and urban Veterans. *Am J Public Health.* 2008;24:337-344.

Continued from previous page
supports.[22] Innovative healthcare delivery strategies are needed to address the physical and mental health needs of older rural Veterans. For example, the VA is engaged in work to partner with the Indian Health Service to increase access to home-based primary care for frail older Veterans living on reservations. This program aims to bring the highly successful home-based primary care program to a particularly vulnerable rural population.[23] Other studies suggest that care coordination home telehealth could be a feasible, appropriate and cost-effective approach to serving medically-complicated older Veterans in rural settings.[24] Further work is needed to evaluate the efficacy and quality of programs such as these among older rural Veterans, especially those with severe physical and/or cognitive impairments.

22 Kosberg J, Kaufman A, Burgio L, Leeper J, Fei Sun M. Family caregiving to those with dementia in rural Alabama: racial similarities and differences. *Journal of Aging and Health.* 2007;1:3-21.

23 Kramer BJ, Creekmur B, Cote S, Saliba D. Improving access to institutional long-term care for american indian Veterans. *J Am Geriatr* Soc. 2015;63(4):789-96.

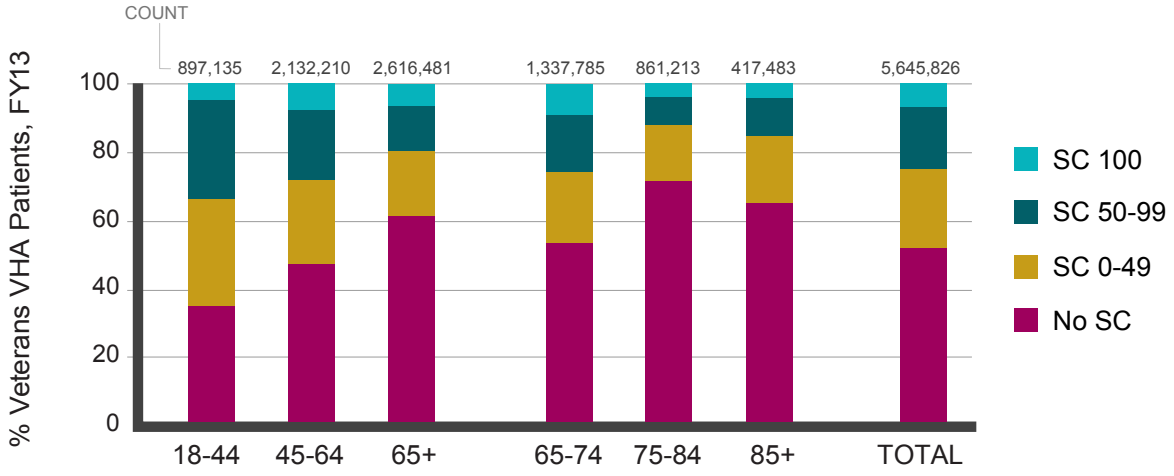
24 Luptak M et al. The care coordination home telehealth (CCHT) rural demonstration project: a symptom-based approach for serving older Veterans in remote geographical settings. *Rural and Remote Health.* 2010;10:1375.

Service-Connected Disability Rating Status[25] by Age

The majority of age 65+ patients did not have a service-connected disability during FY13 (60.9%), compared to only 34.3% and 46.9% of their counterparts age 18-44 and 45-64, respectively *(Exhibit 5-5)*. *Among those with documented service-connection status*, a higher proportion of patients age 45-64 had 50% or greater service connection (53.7%) compared to 51.9% of patients 18-44 and 50.6% of patients 65 and older.

EXHIBIT 5-5

PERCENT DISTRIBUTION OF SERVICE-CONNECTED DISABILITY RATING STATUS BY AGE AMONG VETERAN VHA PATIENTS, FY13



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Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

25 Service-connected (SC) disability rating indicates an injury or illness deemed to have been incurred or aggravated while serving in the armed forces. Disability is rated for severity from 0 to 100 percent; "0 percent" refers to a patient who does have SC disability status, but whose severity rating is 0 (zero) percent; this is distinct from a patient who has no SC disability status. A SC disability rating can result from a variety of exposures including, but not limited to, combat; causes of SC disability are not included in this report. The proportion of Veterans with a SC disability rating refers to VHA patients and not to all Veterans nationally.

IMPLICATIONS The reasons for the differences in service-connection assessment are likely varied, but the differences in service connection across age groups, though not large in magnitude, may signal that younger Veterans are more likely to use VA services if they have a service-connected disability, whereas older patients may need care for a variety of conditions that are not necessarily related to their military service. This may reflect a survival effect. In addition, growth in the number of persons receiving disability is highest among Gulf War Veterans. It may also reflect changes in policies surrounding assignment of service-connected status as well as disparities in approaches to case finding for particular conditions over time.[26]

Temporal policy changes and differences in case finding hinder the interpretation of these findings. Further work to understand how the need for service-connected care varies across the life course is needed.

26 Congressional Budget Office. Veterans Disability Compensation: Trends and Policy Options. Publication no. 4617 August 2014

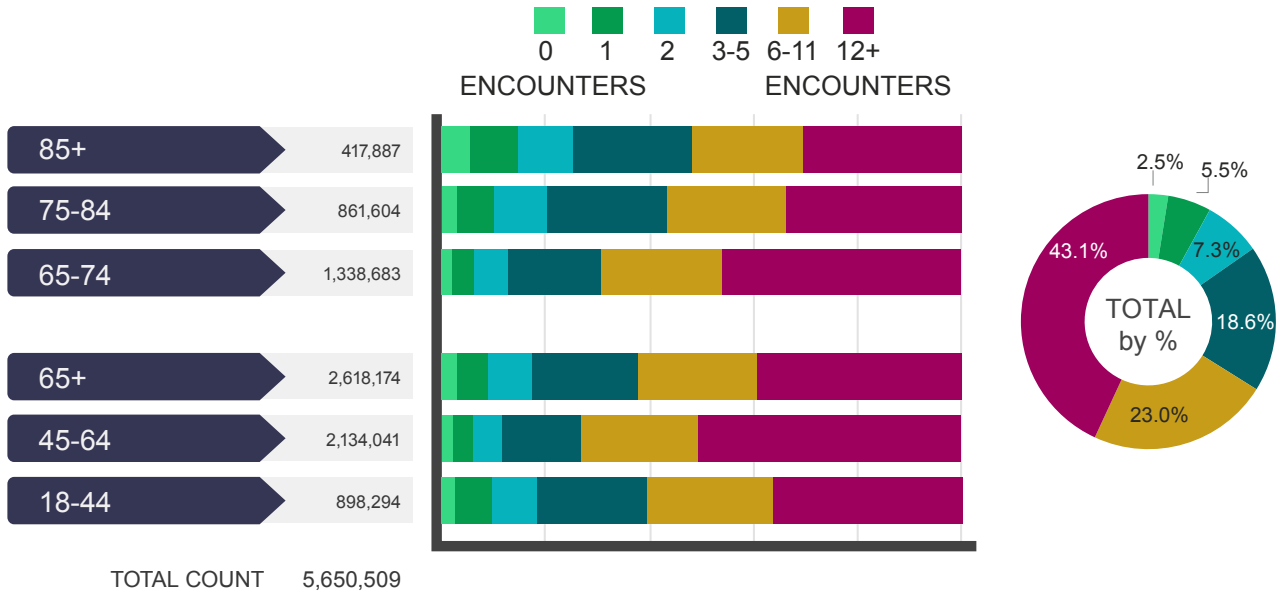
Section III: Utilization

VHA Outpatient Encounters[27] by Age

Most patients, regardless of age, had outpatient encounters in FY13 (>94% across all age groups) *(Exhibit 5-6)*. High outpatient utilization (12+ encounters in FY13) was most common among 45-64 year olds (50.6%) compared to either younger (36.4%) or older (39.3%) patients.

EXHIBIT 5-6

PERCENT DISTRIBUTION OF VHA OUTPATIENT ENCOUNTERS BY AGE AMONG VETERAN VHA PATIENTS, FY13



Missing = 1,562.

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS Among the oldest old (patients age 85 and older), about 5% had no outpatient encounters, which may reflect exclusive use of inpatient care or long-term care. High utilization among the 45-64 year age group may reflect use of care related to the onset of chronic conditions in a population not yet covered by Medicare.

These data do not include details on the use of inpatient care or long-term services and supports. These data also do not allow for a full assessment of the types, intensity, or costs of care patients are using. Some types of care that may be particularly important for aging patients (i.e., long-term care) are not captured in these tables. Future analyses could consider relationship of the number of outpatient visits to service-connected status.

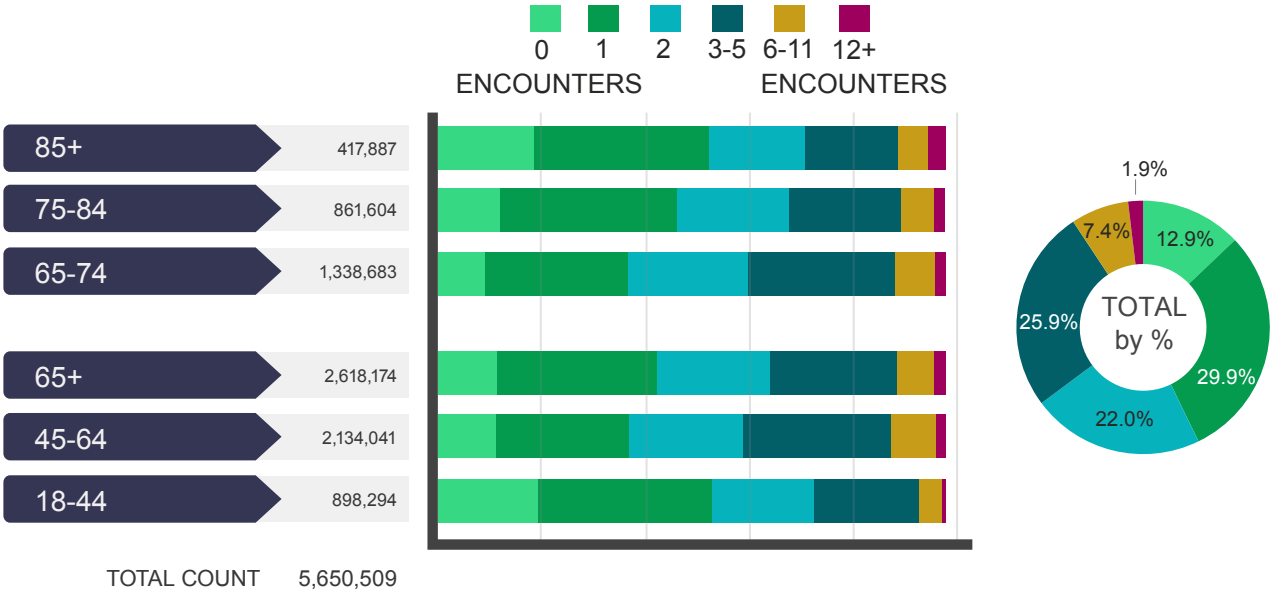
27 Patients in the "None" group used no VHA outpatient services, but used other types of VHA care (e.g., inpatient care, Non-VA [Fee] Medical Care, pharmacy, etc.)

Primary Care Encounters by Age

Younger patients were more likely than older patients to have no primary care visits (19.7% of patients age 18-44 had no primary care visits, compared to 11.4% among patients age 45-64 and 11.7% among patients age 65 and older); notably, in the oldest-old age group (age 85 and older), 19.0% had no primary care visits. High utilization of primary care (12+ visits) increased across older age groups *(Exhibit 5-7)*.

EXHIBIT 5-7

PERCENT DISTRIBUTION OF PRIMARY CARE ENCOUNTERS BY AGE AMONG VETERAN VHA PATIENTS, FY13



Missing = 1,562.

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS About one-fifth of the younger and oldest-old patients had no primary care, which may reflect fundamental differences in the reasons for using VA care across the age groups (e.g., specialty services for younger patients and long-term services and supports for older patients). Efforts to increase access or acceptability of primary care for these patients require a better understanding of what types of care these patients are using or may need.

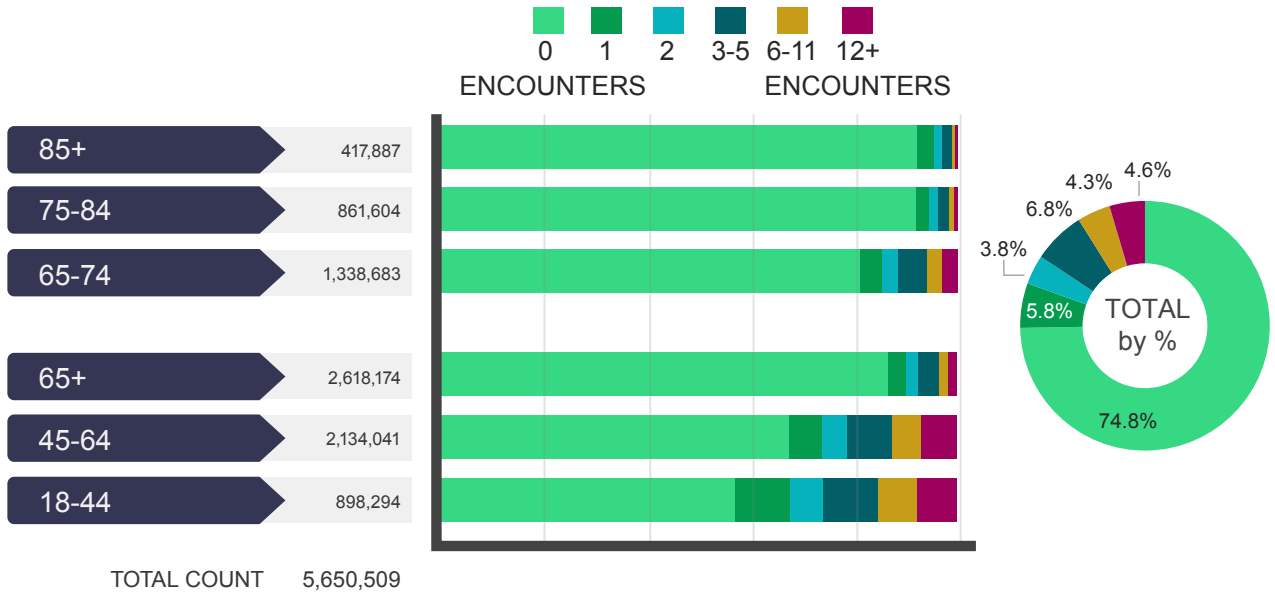
A more detailed assessment of the care patients are receiving (e.g., an evaluation of use of specific types of services) was beyond the scope of this chapter. Assessments of need for care, and determinations of where there are gaps in access, will require more information and research on the specific needs of patients across the life course, particularly among older adult patients.

Mental Health/Substance Use Disorder Encounters[28] by Age

Older adult patients age 65 and older were less likely to have any mental health/substance use disorder (MH/SUD) outpatient visits (13.4%) compared to younger patients (32.4% for patients age 45-64 and 42.7% among patients age 18-44) *(Exhibit 5-8)*. In the oldest age groups (75-84 and age 85 years and older), only 7.9% and 7.6%, respectively, had any MH/SUD visits. High MH/SUD utilization (12+ visits) decreased with age (7.6% among 18-44 year olds, 6.9% among 45-64 year olds, and 1.7% among patients age 65 and older).

EXHIBIT 5-8

PERCENT DISTRIBUTION OF MENTAL HEALTH/SUBSTANCE USE DISORDER ENCOUNTERS BY AGE AMONG VETERAN VHA PATIENTS, FY13



Missing = 1,562.

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

28 Not all patients receiving mental health care services have a mental health condition; for example, patients receiving smoking cessation counseling, bereavement care, or screening for a mental health condition may be seen in mental health clinics.

IMPLICATIONS Recognizing and appropriately managing depression and other mental health disorders, in primary care or in specialty settings, are critical for both mental and physical health. The pattern of lower MH/SUD utilization among older Veterans, relative to their younger counterparts, may reflect the true prevalence of these conditions. For example, NHANES data show lower depression prevalence in older adults compared to younger community dwelling populations. The prevalence of schizophrenia are generally lower in community dwelling older adults when compared to younger adults. Incidence is concentrated in younger ages.

The differences in MH/SUD utilization may also reflect differences in detection rates or in preferences for place of treatment. Approximately 10% of older adults seen in primary care settings have clinically significant depression,[29] and prevalence is higher in persons with chronic illness, social isolation, or loss. Comorbid depression has shown a strong association with increased morbidity and mortality, delayed recovery, poor adherence to treatment, and negative prognosis among those with medical illness.[30] The observed pattern may also reflect unmeasured care preferences for MH/SUD treatment among older Veterans. Studies have shown that few older adults with late-life depression see a mental health specialist.[31, 32] Older adult patients who seek help for depression are likely to go to their regular primary care physician rather than a mental health specialist.[33] Alternatively, the observed pattern may reflect what has been extensively reported in the literature, namely that among older adults, late-life depression is often undetected, undiagnosed, untreated, or undertreated.[34]

The data on MH/SUD utilization reflects care delivered in mental health settings and, importantly, does not reflect care for MH/SUD conditions that are delivered in other settings, such as primary care or long-term services and supports. Other significant cognitive and behavioral challenges, including dementia associated behaviors, may not be treated in specialty mental health. Whether the levels of specialty care utilization match the underlying MH/SUD needs are unclear; other evaluations of MH/SUD utilization should incorporate data on utilization of care for MH/SUD conditions in other settings and data on the underlying prevalence of these conditions among patients.

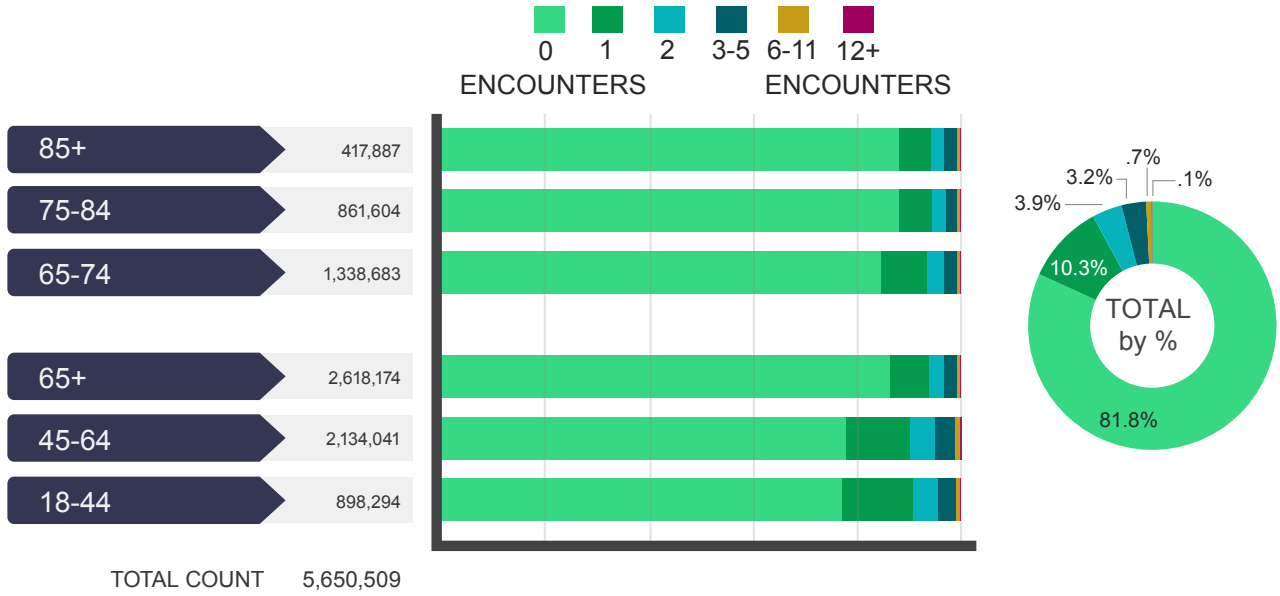
29 Lyness JM, Caine ED, King DA, Cox C, Yoediono Z. Psychiatric disorders in older primary care patients. *J Gen Intern Med.* 1999;14(4):249-54.
30 Park M, Unutzer J. Geriatric depression in primary care. *Psychiatr Clinics of North America.* 2011;34(2):469-487.
31 Shapiro S, Skinner EA, Kessler LG et al. Utilization of health and mental health services. Three ECA Sites. *Arch Gen Psychiatry.* 1984;41:971-978.
32 Goldstron ID, Burns BJ, Kessler LG et al. Mental health services use by elderly adults in a primary care setting. *J Gerontol.* 1987;42:147-153.
33 German PS, Shapiro S, Skinner EA. Mental health of the elderly: use of health and mental health services. *J Am Geriatr Soc.* 1985;33:246-252.
34 Unutzer J. Diagnosis and treatment of older adults with depression in primary care. *Biol Psychiatry.* 2002;52(3):285-292.

Emergency Department Encounters[35] by Age

Any use of emergency department visits was more common among younger patients (22.8% for 18-44 year olds, 22.0% for 45-64 year olds vs 13.6% for 65 and older) *(Exhibit 5-9)*. Frequent use of the emergency department (2+ encounters in FY13) was more common among younger patients (9.2% among 18-44 year olds and 9.8% among 45-64 year olds, compared to 6.2% among 65 and older).

EXHIBIT 5-9

PERCENT DISTRIBUTION OF EMERGENCY DEPARTMENT ENCOUNTERS BY AGE AMONG VETERAN VHA PATIENTS, FY13



Missing = 1,562.

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS The relatively lower rates of emergency department utilization among older patients may reflect that they are successfully accessing primary care or other outpatient care and are thus less likely to progress to a state or condition where they need to access urgent care. Conversely, it is also possible that older patients may be less likely to seek urgent care, at least at a VA facility, when they need it.

These data do not include emergency department use in non-VA settings and thus may not necessarily reflect actual need.[36] The interpretation of these emergency department utilization data is particularly complicated for older patients who are eligible for Medicare. Medicare coverage may be associated with an increased tendency to use emergency departments closer to place of residence. An analysis of

35 In some cases, emergency department care may include some urgent care visits.

36 Hynes DM, Koelling K, Stroupe K, Arnold N, Mallin K, Sohn M, Weaver FM, Manheim L, Kok L. Veterans' access to and use of medicare and Veterans Affairs healthcare. *Medical Care.* 2007;45(3):214-223.

Continued from previous page
2006 data reported by the VHA Office for Policy and Planning found that among dual-eligible Veterans, the average age for those who used only Medicare was 75 years.[37] Access to emergency department services is likely impacted by factors that may be particular barriers in older patients (e.g, access to transportation and frailty). Future studies should assess whether decreased emergency department utilization among older adults reflects a beneficial impact of routine outpatient care or barriers to receiving needed urgent care.

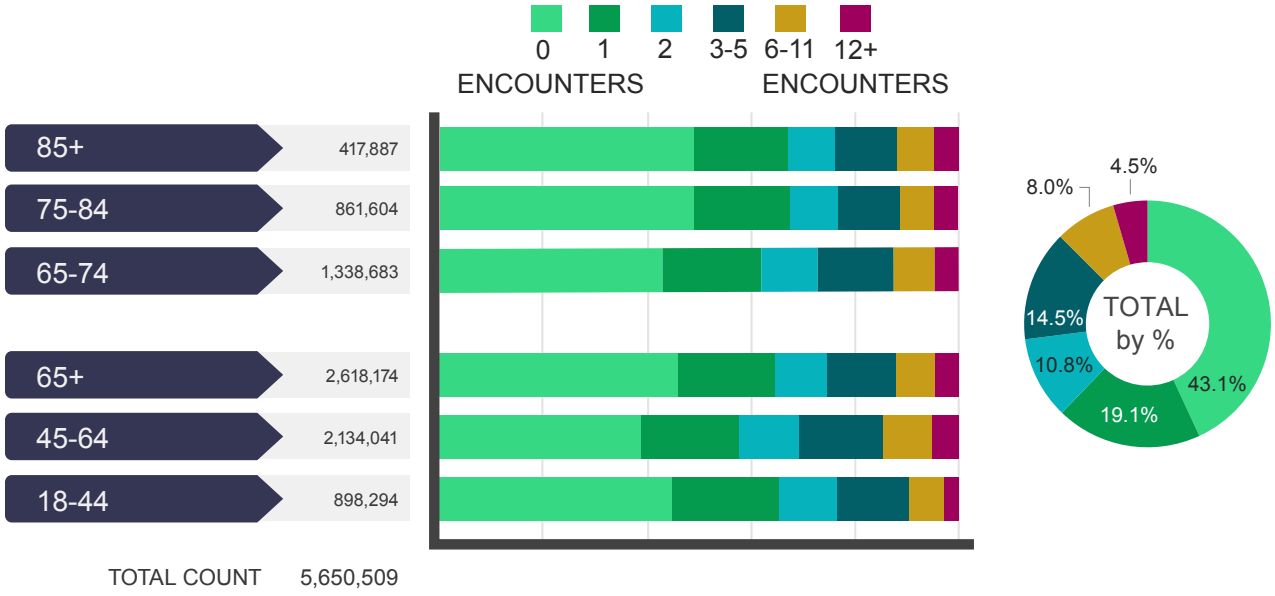
37 Vandenberg P, Uppal G, Barker A, Flemming D. The Impact of the Affordable Care Act on VA's Dual Eligible Population. VA HSR&D Forum. www.hsrd.research.va.gov/publications/forum, May, 2013; pages 1-2. Accessed August 2015.

Telephone Encounters[38] by Age

Use of telephone visits was higher among patients in the middle age group, 45-64 year olds (61.2%), compared to younger patients (55.1%) and older patients (54.0%) *(Exhibit 5-10)*. Frequent use of telephone visits (12+ in FY13) was only slightly more common in the middle age group (5.1%) compared to the 65 and older group (4.6%).

EXHIBIT 5-10

PERCENT DISTRIBUTION OF TELEPHONE ENCOUNTERS BY AGE AMONG VETERAN VHA PATIENTS, FY13



Missing = 1,562.

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS Lower rates of telephone visits, compared with encounter rates for other types of care, may reflect differences in older patients' comfort with technology-driven care. Addressing gaps in the use of telephone visits is particularly important for older patients who, relative to their younger counterparts, are more likely to reside in rural areas and who may have other barriers to accessing face-to-face care (e.g., lack of transportation and physical frailty).

These data capture patients' use of telephone visits, but not other types of telehealth. Telephone visits, and telehealth, may increase access to healthcare for older adults who are frail, have physical health impediments, have limited social support to help them access care, and are more rurally-based. Exploring older patients' perspectives on telephone visits and telehealth, and examining ways to improve the use of telephone visits and telehealth uptake among older patients, is an important area for program development, implementation and evaluation.

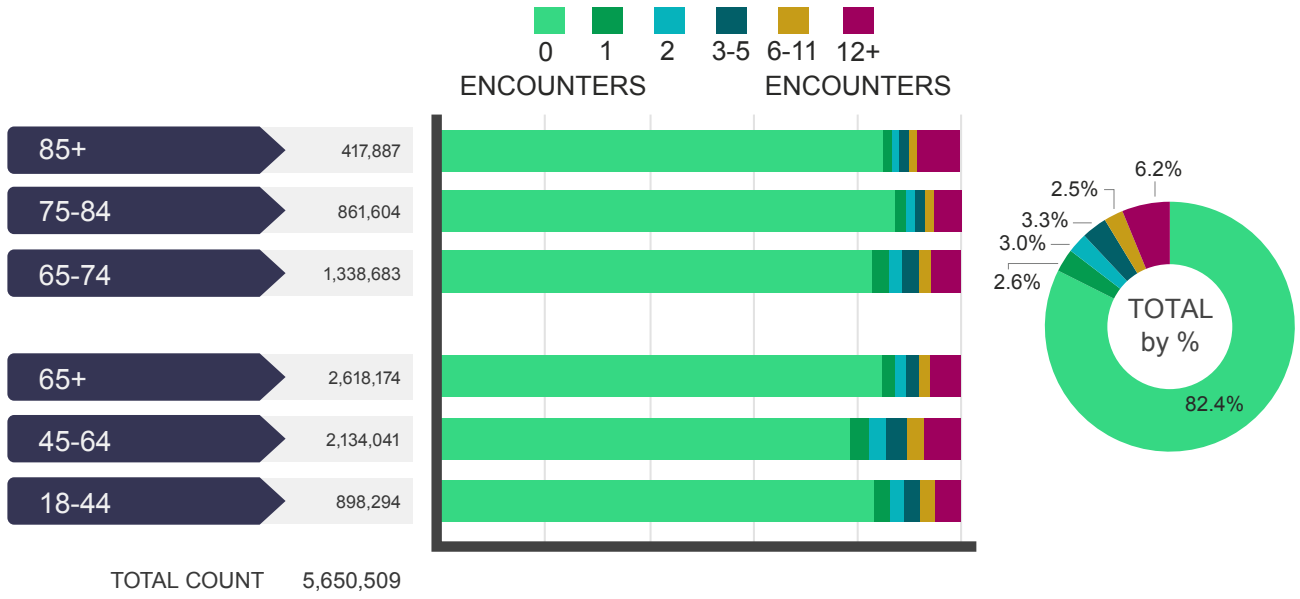
38 Telephone encounters include only encounters over the phone with a clinician, but not formal telehealth encounters.

Fee Outpatient Services[39] by Age

Any use of fee outpatient services was more common among 45-64 year olds (21.1%) compared to younger (16.7%) or older (15.1%) patients *(Exhibit 5-11)*. Frequent use (12+ encounters) was also more common among 45-64 year olds (7.1%) compared to younger (4.9%) or older (5.9%) patients.

EXHIBIT 5-11

PERCENT DISTRIBUTION OF FEE OUTPATIENT SERVICES BY AGE AMONG VETERAN VHA PATIENTS, FY13



Missing = 1,562.

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

39 Non-VA (Fee) Medical Care Outpatient Services estimate the total number of unique outpatient services that patients received through the Non-VA (Fee) Medical Care system in FY13. A "service" is based upon CPT procedure codes in the Non-VA (Fee) Medical Care files, e.g., a clinic visit, a lab test, a radiology study, a surgical procedure, a medication, or a supply. If a patient received multiple services on a single day, each service is counted separately. Non-VA (Fee) Medical Care "services" represent a different unit of care than "encounters", where each VHA encounter encompasses an entire clinical visit, which may include more than one service. Also note that fee care is organized by the fiscal year in which payment was made, rather than the year in which care was delivered.

IMPLICATIONS The relatively higher use of fee outpatient services by middle-aged patients may reflect an increased need for care in a population that is starting to experience the onset of chronic health conditions but does not yet have access to services through Medicare. Coordination of VA and non-VA care is a challenge, and this challenge has become even more important with implementation of the Veterans Access, Choice and Accountability Act of 2014.

These data reflect fee outpatient service use only and do not capture the use of other types of VA outpatient encounters or use of Medicare services, which is likely to be substantial among patients 65 and older.

Section IV: Conditions

Categories of Diagnosed Conditions[40] by Age

For most categories, rates of diagnosed conditions in the listed categories varied across age groups (i.e., the difference between the maximum and minimum rates across the three main age groups differed by at least 10 percentage points) *(Exhibit 5-12)*. Among the domains with sizable differences across age groups, for seven domains the rates increased with increasing age (endocrine, cardiovascular, urinary, reproductive health, cancer, hematologic/immunologic, and sense organ). For three domains, the rates were highest in the middle age group (gastrointestinal, musculoskeletal, and other). For one domain (MH/SUD) the rate was highest in the youngest age group.

40 Please see Technical Appendix, Section A.6, for the mapping of each condition to its primary domain and, where applicable, to its secondary domain.

EXHIBIT 5-12

PERCENT IN DIAGNOSED CONDITIONS CATEGORIES BY AGE AMONG VETERAN VHA PATIENTS, FY13

	Age at Beginning of FY13						
Count	18-44 898,294	45-64 2,134,041	65+ 2,618,174	65-74 1,333,683	75-84 861,604	85+ 417,887	Total 5,650,509
Condition	%	%	%	%	%	%	%
Infectious Disease	19.2	25.2	18.7	20.3	16.9	17.6	21.3
Endocrine/ Metabolic/ Nutritional	32.8	65.8	72.4	75.5	72.5	62.5	63.6
Cardiovascular	21.0	60.6	74.2	73.5	76.3	72.2	60.6
Respiratory	21.6	29.5	27.7	29.6	26.7	23.9	27.4
Gastrointestinal	22.8	39.4	35.0	37.7	33.1	29.9	34.7
Urinary	6.3	14.2	21.7	19.2	23.4	26.2	16.4
Reproductive Health	14.1	21.6	30.5	29.4	32.4	30.1	24.5
Breast	1.1	1.0	0.4	0.5	0.4	0.4	0.8
Cancer	1.0	7.3	15.7	14.3	17.6	16.2	10.2
Hematologic/ Immunologic	3.7	9.4	13.6	11.6	14.8	17.2	10.4
Musculoskeletal	52.5	56.4	43.5	47.2	40.4	38.0	49.8
Neurologic	22.4	23.6	25.5	22.8	26.6	31.8	24.3
Mental Health/ SUD	47.6	42.1	21.1	28.1	14.1	13.3	33.3
Sense Organ	20.8	40.8	51.4	50.1	51.9	55.0	42.6
Dental	8.1	10.7	6.2	8.5	3.9	3.8	8.2
Dermatologic	15.5	22.9	23.2	25.1	21.4	20.8	21.9
Other	48.2	55.0	39.6	45.3	34.2	32.8	46.8

Missing = 1,562

Denominator: All Veterans who used any VHA care in FY13 (VHA outpatient care, inpatient care, pharmacy care, or Non-VA [Fee] Medical Care), referred to as "Veteran FY13 VHA patients" (Data source: WHEI Master Database).

Source: VHA National Health Equity Report 2016

IMPLICATIONS Higher rates of many health conditions (e.g., cardiovascular disease, cancer, and urinary conditions including renal failure or nephropathy) among older patients are perhaps to be expected. In comparing across age groups, the frequency in each domain or condition category reflects not only differences in true prevalence, but also variation in utilization of VA care for specific conditions across the age groups and differences in documentation of these conditions across age groups.

Individual Conditions by Age

Rates of diagnosed conditions do not reflect true disease or condition category prevalence among patients. Rather, these figures represent the proportion of patients in each age group who have one or more documented diagnoses within a particular domain or condition category. In addition, we do not have data on the prevalence or diagnosis rates of these conditions in Veterans who do not use VA care or in the general population, limiting our ability to make comparisons across populations. Other studies have reported on assessments of multimorbidity, which is common among Veterans: in 2010, 32% of 18-64 Veterans had over three chronic conditions, and 35% of Veterans age 65 and older had three more chronic conditions. The combination of these conditions can be important for understanding healthcare-related burden and costs. For example, the combination of conditions that was the most costly in the Veterans age 65 and older in 2010 was diabetes, hypertension, and spinal cord injury.[41]

Exhibit 5-13 contains diagnosed conditions by age among Veteran VHA patients and is available in the supplemental materials *(Exhibit 5-13)*.

Infectious Disease The rates of diagnosed infectious disease were 19.2% among patients 18-44, 25.2% among patients 45-64, and 18.7% among patients 65 and older. Among the specific conditions captured in this category, rates of diagnosed mycoses increased with age, whereas rates of diagnosed hepatitis C were highest in the middle age group (5.4% for patients age 45-64 vs. 0.4% for patients 18-44 and 0.8% for patients 65 and older) *(Exhibit 5-13)*.

Endocrine/Metabolic Rates of diagnosed endocrine/metabolic/nutritional conditions increased with age (32.8% for patients 18-44, 65.8% for patients 45-64, and 72.4% for patients 65 and older). Within the group of patients 65 and older, rates were slightly lower among the oldest old, patients 85 and older (62.5%). The pattern primarily reflected the increased rates of diagnosed diabetes mellitus and lipid disorders across older age groups. Rates of diagnosed overweight/obesity, in contrast, were greatest among patients in the middle age group, age 45-64 (19.7% vs. 14.4% for patients 18-44 and 12.3% for patients 65 and older) *(Exhibit 5-13)*.

Cardiovascular Rates of diagnosed cardiovascular disease increased with age: 21.0% for patients 18-44, 60.6% for patients 45-64, and 74.2% for patients 65 and older. Among specific conditions, the most frequently diagnosed conditions overall were hypertension (14.0%, 51.6%, and 63.2% for patients age 18-44, 45-64, and 65 and older, respectively) and other coronary artery disease (0.6%, 11.3%, and 25.0% across the three age groups) *(Exhibit 5-13)*.

Respiratory Rates of diagnosed respiratory disease were 21.6% for patients 18-44, 29.5% for patients 45-64, and 27.7% for patients 65 and older. The most frequently diagnosed conditions varied across age groups, with rates of diagnosed chronic obstructive pulmonary disease being relatively high for the middle-aged and older patients and allergic and other respiratory system infections or chronic sinusitis/rhinitis more frequent among younger patients *(Exhibit 5-13)*.

Gastrointestinal Rates of diagnosed gastrointestinal conditions were 22.8% for patients 18-44, 39.4% for patients 45-64, and 35.0% for patients 65 and older. The high rates of diagnosed conditions in the gastrointestinal domain among patients in the middle age group are due in part to differences in the rates of colorectal polyps, which likely reflects increased screening for the middle age group, consistent with current screening guidelines *(Exhibit 5-13)*.

Urinary Rates of diagnosed urinary conditions were 6.3% among patients 18-44, 14.2% for patients 45-64, and 21.7% for patients 65 and older. For middle-aged and older patients, the condition with the highest diagnosis rate was renal failure or nephropathy, whereas for younger patients, urinary tract infections were the most frequently diagnosed condition *(Exhibit 5-13)*.

41 Yoon J, Zulman D, Scott JY, Maciejewski ML. Costs associated with multimorbidity among VA patients. *Med Care*, 2014;52(3):S31-36.

Reproductive Health Rates of reproductive health conditions were 14.1% for patients 18-44, 21.6% for patients 45-64, and 30.5% for patients 65 and older. The high rates of reproductive health conditions largely reflect male genital disorders (including benign prostate disease) and sexual dysfunction *(Exhibit 5-13)*.

Breast Rates of diagnosed breast conditions were 1.1% for patients 18-44, 1.0% for patients 45-64, and 0.4% for patients 65 and older. The low rates of diagnosed conditions of the breast reflect the relatively low proportion of women among Veterans overall and among older Veterans in particular *(Exhibit 5-13)*.

Cancer Rates of diagnosed cancer were 1.0% for patients 18-44, 7.3% for patients 45-64, and 15.7% for patients 65 and older. The most frequently diagnosed condition in this domain was prostate cancer (2.5% for patients 46-64 and 8.3% for patients 65 and older) *(Exhibit 5-13)*.

Hematology/Immunologic Rates of diagnosed hematologic/immunologic conditions were 3.7% for patients 18-44, 9.4% for patients 45-64, and 13.6% for patients 65 and older. The most frequently diagnosed condition was anemia (2.3% for patients 18-44, 6.1% for patients 45-64, and 9.9% for patients 65 and older) *(Exhibit 5-13)*.

Musculoskeletal Rates of musculoskeletal conditions were 52.5% for patients 18-44, 56.4% for patients 45-64, and 43.5% for patients 65 and older. The high rates of conditions in the musculoskeletal domain in the middle and younger age groups reflect spine and joint disorders. In these two age groups, musculoskeletal disorders may reflect injuries that are more common in younger or recently-deployed patients and more chronic conditions that arise in working populations, including workers in primarily sedentary occupations *(Exhibit 5-13)*.

Neurologic Rates of diagnosed neurologic conditions were 22.4% for patients 18-44, 23.6% for patients 45-64, and 25.5% for patients 65 and older. Rates of diagnosed traumatic brain injury were highest for patients 18-44 (5.0% vs. 1.3% for patients 45-64 and 0.5% for patients 65 and older). Among the oldest old, patients 85 and older, 12.1% had diagnosed dementia, and 5.6% had diagnoses of other cognitive disorders *(Exhibit 5-13)*.

Mental Health/Substance Use Disorder Rates of diagnosed mental health/substance use disorder (MH/SUD) conditions were 47.6% for patients 18-44, 42.1% for patients 45-64, and 21.1% for patients 65 and older. The high rates of conditions in the MH/SUD domain in the youngest age group is consistent with prevalence data (for both the general population and for patient populations) and is also consistent with the high rates of MH/SUD utilization noted previously. The low documented rates of these conditions for patients 65 and older may belie the health impact of these conditions for older adults. Under-ascertainment or under-documentation of mental health conditions and SUD among older adults is a concern *(Exhibit 5-13)*.

Sense Organs Rates of diagnosed sense organ conditions were 20.8% for patients 18-44, 40.8% for patients 45-64, and 51.4% for patients 65 and older. Patients age 65 and older had high diagnosis rates for a number of sense organ conditions, including cataract (23.6%) and hearing problems (25.5%). Among middle- aged and younger patients, the most frequently diagnosed sense organ conditions were refraction disorders (8.7% for patients 18-44 and 21.9% for patients 45-64) *(Exhibit 5-13)*.

Dental Rates of diagnosed dental conditions were 8.1% for patients 18-44, 10.7% for patients 45-64, and 6.2% for patients 65 and older. The relatively low diagnosis rates for dental conditions (e.g., diagnosis rates of dental caries of 5.2% for patients 18-44, 6.9% for patients 45-64, and 4.0% for patients 65 and older) likely reflect patients opting to receive dental care outside the VA, which our data do not capture *(Exhibit 5-13)*.

Dermatologic Rates of diagnosed dermatologic conditions were 15.5% for patients 18-44, 22.9% for patients 45-64, and 23.2% for patients 65 and older *(Exhibit 5-13)*.

Other Rates of diagnosed conditions in the "Other" domain were 48.2% for patients 18-44, 55.0% for patients 45-64, and 39.6% for patients 65 and older. The high rates of conditions in the "Other" domain among middle-aged patients appear to be largely due to the high rates of sleep apnea and tobacco use disorder *(Exhibit 5-13)*.

Section V: Conclusions

The "Baby Boomers" (those born between 1946 and 1964) started turning 65 in 2011, and the number of older adults will increase dramatically during the 2010–2030 period. The older adult population in 2030 is projected to be twice as large as its counterparts in 2000, growing from 35 million to 72 million, and will represent nearly 20 percent of the total U.S. population.[42] The number of Veterans with service-connected disability has increased 60% since 1990, and much of this growth has been among Veterans with service-connected disability ratings of 50% of higher.[43]

The VA has shown that well-designed programs can improve the health status of older Veterans and decrease costs. Ensuring access to preventive and specialty health services among older adult Veterans may require tailoring the structure of VA care to extend its reach to Veterans who may not be able to travel regularly to a medical center. Such initiatives to date have included home-based primary care and care-coordination home telehealth. Home-based primary care is associated with better access, quality and cost for clinically complex Veterans.[44] Care-coordination home telehealth has been shown to reduce hospital admissions while maintaining high patient satisfaction.[45]

As the proportion of Veterans with service connected disability and disability from chronic disease and aging increases, the need for long-term services and supports is expected to increase. Although these services are vitally important for maintaining autonomy, dignity and quality of life, current payment sources are limited. Specifically, very few adults have private long-term care insurance and the primary payment sources are out of pocket and Medicaid programs. The high costs and potentially extended time of service needs makes full financing from out of pocket an option for very few. At the same time, Medicaid programs are facing significant budget pressures at the state level where large variations are seen in the range and depth of supports available. It is therefore expected that increasing numbers of Veterans with long-term services and supports needs will turn to the VA for assistance for both institutional and community-based long-term services and supports Efforts to forestall disability from chronic conditions and to enhance services that reduce the need for institutional long-term services and supportss will both meet the preferences of individuals and position the VA to better meet the needs of this population.

Data on conditions among older adult Veterans may reflect trends in and estimates of disease prevalence among a general population of older adults. Extant literature describes that 88 percent of older adults have one or more chronic illnesses, with one-quarter of this group having four or more conditions.[46] Among older adults age 65 years or more, degenerative arthritis, particularly osteoarthritis, affects 50%, hypertension 40%, urinary incontinence up to 30%, heart disease 30%, diabetes mellitus 15%, and significant vision impairment up to 15%.[47]

Finally, the demographic data across the different age groups suggests that increasing gender and racial/ethnic diversity will be an increasingly relevant and important consideration to factor into the health and healthcare of future older adult Veterans.

Our current report does not address functional status for older populations or among other groups. This limitation is important for several reasons. Functional limitation may reflect disparities in access to services that

42 http://www.agingstats.gov/docs/PastReports/2012/OA2012.pdf. Accessed August, 2015.
43 Department of Veterans Affairs, Veterans Benefits Administration Annual Benefits Reports, 1985-2014; Office of Policy & Planning, Office of the Actuary, Veteran Population Projection Model (VetPop), 2014. Prepared by the National Center for Veterans Analysis and Statistics.
44 Edes, T et al. Better access, quality and cost for clinically complex Veterans with home-based primary care. *JAGS.* 2014;62:1954-1961.
45 Darkins A et al. Care coordination/home telehealth: the systematic implementation of health informatics, home telehealth, and disease management to support the care of Veteran patients with chronic conditions. *Telemedicine and e-Health.* 2008;14(10):1118-1126.
46 Wolf JL, Starfield B, Anderson G. Prevalence, expenditures, and complications of multiple chronic conditions in the elderly. *Arch Intern Med.* 2002;162(20):2269-2276.
47 Unutzer J, Katon W, Sullivan M, Miranda J. Treating depressed older adults in primary care: narrowing the gap between efficacy and effectiveness. *Milbank Q.* 1999;77(2):225-256.

forestall or prevent decline. In addition, access itself may be significantly limited by functional impairment.[48] VA's Blueprint for Excellence highlights measuring this component of health as a transformational action to deliver high quality Veteran-centered care.

The key limitations to these data for examining differences across age groups are that these utilization data do not capture long-term care, that older patients may be disproportionately represented among inpatient or hospitalized populations whose utilization is not captured, and that the data on conditions and domains do not reflect prevalence but rather the frequency of documenting conditions among patients who elect to use VA care. The distinction between prevalence and rates of diagnosed conditions is particularly important in making comparisons across age groups because the conditions most likely to be documented are the conditions that lead a patient to present for care, and the reasons for seeking VA care likely differ with age. Some conditions, such as MH/SUD or sexual dysfunction, are likely to be under-diagnosed and under-documented, and these data may therefore seriously under-estimate the impact of these conditions overall and among older patients in particular. These data also do not capture multi-morbidity, which can present significant cost, access and quality of life burdens for older and functionally limited Veterans.

There are several important gaps in these data for older Veterans. Most importantly, as outlined above, future work needs to explore functional status, access to long-term services and supports, and multi-morbidity. In addition, the current data only shows patterns of diagnoses and healthcare utilization which may or may not reflect disparities in access or in unmet need. Future work should explore disease clusters, hospital use and overall costs and utilization by population groups. To understand truly the health status of and possible disparities for older Veterans, VA data should be combined with Medicare and Medicaid utilization data. In addition, the current data presentation lacks detail on reproductive health conditions among men. It would be useful in subsequent presentations to break down the figures for benign prostate disease as distinct from other genital disorders. For high impact conditions that are likely to be under-reported or under-documented, such as sexual dysfunction or MH/SUD conditions, primary data collection to collect data on prevalence, or other assessments of need for care, are needed.

48 Iezzoni LI. Eliminating health and healthcare disparities among the growing population of people with disabilities. *Health Aff (Millwood)*. 2011;30(10):1947-1954.