



Sourcebook ★ Vol. 1

Sourcebook: Women Veterans in the Veterans Health Administration

VOLUME 1: Sociodemographic Characteristics and Use of VHA Care

Women's Health Evaluation Initiative (WHEI)
Center for Health Care Evaluation
VA HSR&D Center of Excellence
VA Palo Alto Health Care System
Palo Alto, CA

Women Veterans Health Strategic Health Care Group
Office of Public Health and Environmental Hazards
Veterans Health Administration
Washington, DC

December 2010



WOMEN VETERANS HEALTH CARE

Since the Revolutionary War, America's women have earned America's gratitude and respect for their contributions to the military and to the Nation. VA will continue to improve our benefits and services for women Veterans as we transform into a 21st century organization.

Secretary of Veterans Affairs

Eric K. Shinseki

March 10, 2010

Sourcebook: Women Veterans in the Veterans Health Administration (VHA)

Volume 1. Sociodemographic Characteristics and Use of VHA Care

Prepared for:

Women Veterans Health Strategic Health Care Group

Office of Public Health and Environmental Hazards, Veterans Health Administration
Department of Veterans Affairs
810 Vermont Ave., NW
Washington, DC 20420

Prepared by:

Women's Health Evaluation Initiative (WHEI)

Center for Health Care Evaluation
VA Palo Alto Health Care System
3801 Miranda Ave. (152-MPD)
Palo Alto, CA 94304

Susan M. Frayne, MD, MPH, Director, WHEI
Ciaran S. Phibbs, PhD, Associate Director, WHEI
Sarah A. Friedman, MSPH, Project Manager and Technical Writer
Eric Berg, MS, Senior Data Analyst
Lakshmi Ananth, MS, Senior Data Analyst
Samina Iqbal, MD, Senior Clinical Consultant

Patricia M. Hayes, PhD, Chief Consultant,
Women Veterans Health Strategic Health Care Group
Laura Herrera, MD, MPH, Acting Deputy Chief Officer,
Office of Public Health and Environmental Hazards

Recommended citation: Frayne SM, Phibbs CS, Friedman SA, Berg E, Ananth L, Iqbal S, Hayes PM, Herrera L. *Sourcebook: Women Veterans in the Veterans Health Administration. Volume 1. Sociodemographic Characteristics and Use of VHA Care.* Women's Health Evaluation Initiative, Women Veterans Health Strategic Health Care Group, Veterans Health Administration, Department of Veterans Affairs, Washington DC. December 2010.

Acknowledgements: Kerri Childress, MA, John Finney, PhD, Sally Haskell, MD, Geraldine McGlynn, MEd, John McKellar, PhD, Rudolf Moos, PhD, Maureen Murdoch, MD, MPH, Donna Washington, MD, MPH, Ellen Yee, MD, MPH, and Laurie Zephyrin, MD, MPH, MBA, FACOG, provided valuable editorial input. Kaajal Laungani, BS, Natalia Llarena, BA, and Xiaoyu Bi, PhD, provided key technical assistance.

Our deepest gratitude goes to the women Veterans who have served our country across the generations.

This report is based on program evaluation analyses conducted by the Women's Health Evaluation Initiative at the VA Palo Alto Health Care System in Palo Alto, California. This work was funded by the Women Veterans Health Strategic Health Care Group of the Veterans Health Administration, Department of Veterans Affairs. The findings and conclusions reported in this document are those of the authors who are responsible for its contents, and do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this document should be construed as an official position of the Department of Veterans Affairs.

Table of Contents

EXECUTIVE SUMMARY	1
Key Findings	2
Key Implications for Policy and Practice	3
INTRODUCTION.....	5
Background	5
Methods	6
PART 1: SOCIODEMOGRAPHICS	7
Women Veteran VHA Patient Cohort Size.....	7
Ages of Women Veteran VHA Patients.....	8
Service-Connected Disability Status of Women Veteran VHA Patients.....	10
PART 2: UTILIZATION OF VHA CARE	13
Women Veterans' Utilization in FY09.....	13
Outpatient Care	13
Primary Care.....	15
Specialty Care for Women	19
Mental Health Care	19
Inpatient Admissions	21
Women Veterans' Longitudinal Trends, FY00–FY09.....	22
Outpatient Care.....	22
Mental Health Care	25
Inpatient Admissions	26
PART 3: TECHNICAL APPENDIX.....	27
1. Data Sources.....	27
2. Cohort Creation.....	27
3. Algorithms for Sociodemographic Characteristics.....	29
4. Algorithms for Utilization	31
Outpatient Utilization.....	31
Inpatient Utilization	34
5. Data Quality Control.....	35

Table of Figures

PART 1	
Figure 1. Number of women Veteran VHA patients in each year, FY00–FY09	7
Figure 2. Number of men Veteran VHA patients in each year, FY00–FY09.....	7
Figure 3. Age distribution among women Veteran VHA patients, FY09.....	8
Figure 4. Age distribution of women Veteran VHA patients (#), FY00 and FY09	8
Figure 5. Age distribution of women Veteran VHA patients (%), FY00–FY09.....	9
Figure 6. Age group of Veteran patients, by gender, FY09.....	9
Figure 7. Service-connected disability status among women Veteran VHA patients, FY00 and FY09.....	10
Figure 8. Service-connected disability status among women Veteran VHA patients, by age, FY09.....	11
Figure 9. Service-connected disability status among Veteran VHA patients, by gender, FY09	11

PART 2

Figure 10. Proportion of women Veteran VHA patients by frequency of face-to-face outpatient visits, FY09 13

Figure 11. Proportion of women and men Veteran VHA patients by frequency of face-to-face outpatient visits, FY09..... 14

Figure 12. Proportion of women and men Veteran VHA patients by frequency of face-to-face outpatient visits, by age group, FY09..... 14

Figure 13. Proportion of women and men Veteran VHA outpatients by frequency of total primary care visits, FY09..... 16

Figure 14. Proportion of women and men Veteran VHA outpatients by frequency of total primary care visits, by age group, FY09..... 16

Figure 15. Proportion of women and men Veteran VHA outpatients by frequency of total primary care visits, by service-connected disability ratings, FY09..... 17

Figure 16. Proportion of women Veteran VHA outpatients by frequency of primary care clinic (PC) visits, FY09..... 18

Figure 17. Proportion of women Veteran VHA outpatients by frequency of women’s health clinic (WHC) visits, FY09 18

Figure 18. Proportion of women Veteran VHA outpatients by which primary care clinics they use, FY09..... 18

Figure 19. Proportion of women Veteran VHA outpatients by frequency of women’s health clinic (WHC) visits, by age group, FY09..... 19

Figure 20. Proportion of women Veteran VHA outpatients by frequency of mental health visits, FY09..... 19

Figure 21. Proportion of women and men Veteran VHA outpatients by frequency of mental health visits, FY09..... 20

Figure 22. Proportion of women and men Veteran VHA outpatients by frequency of mental health visits, by age group, FY09..... 20

Figure 23. Proportion of women and men Veteran VHA outpatients by frequency of mental health visits, by service-connected disability ratings, FY09..... 21

Figure 24. Proportion of women and men Veteran VHA patients with at least one inpatient stay, by age group, FY09 22

Figure 25. Proportion of women and men Veteran VHA patients with at least one inpatient stay, by service-connected disability ratings, FY09..... 22

Figure 26. Number of women Veteran VHA patients by frequency of face-to-face outpatient visits, FY00–FY09..... 23

Figure 27. Proportion of women Veteran VHA outpatients by frequency of total primary care visits, FY00–FY09..... 23

Figure 28. Proportion of women Veteran VHA outpatients by frequency of primary care clinic (PC) visits, FY00–FY09 24

Figure 29. Proportion of women Veteran VHA outpatients by frequency of women’s health clinic (WHC) visits, FY00–FY09..... 24

Figure 30. Proportion of women Veteran VHA outpatients by frequency of mental health care visits, FY00–FY09..... 25

Figure 31. Proportion of women Veteran VHA patients with at least one inpatient stay, FY00–FY09..... 26

List of Acronyms

ADUSH..... Assistant Deputy Under Secretary of Health

FY..... Fiscal Year (October 1 to September 30)

HSR&D..... Health Services Research and Development

GAO..... Government Accountability Office

IP..... Inpatient

MH..... Mental Health

PC..... Primary care clinic

PTF..... VHA inpatient stay files

SC..... Service-connected

SE/SF..... VHA outpatient encounter and visit files

VBA..... Veterans Benefits Administration

VHA..... Veterans Health Administration

VIReC..... VA Information Resource Center

VSSC..... VHA Support Services Center

WHC..... Women’s health clinic

WHEI..... Women’s Health Evaluation Initiative

WV..... Women Veterans

WVHSHG..... Women Veterans Health Strategic Health Care Group

Executive Summary

Despite the fact that women have served in every United States military conflict since the American Revolution, they were not recognized as Veterans at the time that President Abraham Lincoln urged Congress to authorize Veterans benefits assistance “to care for him who shall have borne the battle, and for his widow, and his orphan.” Even when Congress granted women eligibility for Veterans Health Administration (VHA) care, women represented an extreme numeric minority group within an organization originally designed to meet the health care needs of men.

Over the past two decades, VHA has rolled out numerous initiatives designed to improve access and quality of care for women Veterans. Since 2008, these efforts have been overseen nationally by the Women Veterans Health Strategic Health Care Group (WVHSHG). Along with clinical advances, VHA women’s health research has accelerated, providing an evidence base that further sharpens the focus on women Veterans.

Although highly informative data on women Veterans are available from the research literature¹ and from various VHA reports (e.g., VHA Office of Policy and Planning, and the searchable VSSC Data Cube), the WVHSHG identified the need for detailed data specifically tailored to its strategic planning objectives. A bridge has been created between clinical leadership and research, linking the WVHSHG with women’s health investigators with expertise in large database research at the Center for Health Care Evaluation, a VHA Health Services Research & Development (HSR&D) Center of Excellence, and the Health Economics Resource Center at VA Palo Alto Health Care System.

This Sourcebook (Volume 1) is the initial result of the collaboration between the WVHSHG and VA Palo Alto Health Care System. The first in a planned series of reports, this volume describes sociodemographic characteristics and health care utilization patterns of women Veteran patients in the VHA. Its primary purpose is to provide data to inform policy and program planning as VHA implements and evaluates new ways of providing care to women Veterans.

All data in this report come from centralized, national VHA administrative databases of enrollment, outpatient care, and inpatient care. The report describes women Veterans receiving VHA care in Fiscal Year 2009 (FY09) overall, and within key subgroups (i.e., within age groups and service-connected disability status groups). It also presents gender comparisons between women and men in FY09. Finally, it presents longitudinal trends over the past decade (FY00–FY09).

The report has several limitations: (1) The data represents only Veterans who chose to use VHA care, rather than all Veterans. The characteristics of Veterans who do not choose to use VHA could differ from the characteristics of those who do. (2) This report does not examine non-Veteran women who use VHA services.² (3) This report

1 Goldzweig CL, Balekian TM, Rolon C, Yano EM, Shekelle PG. *The State of Women Veterans’ Health Research. Results of a Systematic Literature Review.* J Gen Intern Med. 2006;21(s3):S82-S92; Bean-Mayberry B, Batuman F, Huang C, Goldzweig CL, Washington DL, Yano EM, Miake-Lye I, Shekelle PG. *A Systematic Review of the Literature on Women Veterans’ Health 2004–2008 Update*, VA-ESP Project #05-226; 2010, <http://hsrd.research.va.gov/publications/esp/womens-health.pdf>.

2 See Technical Appendix, Section 3, for a more complete explanation of the types of non-Veteran women who use VHA services.

does not include race/ethnicity data among the sociodemographic information due to concerns about the quality of data for the race/ethnicity variable. (4) Utilization data include outpatient and inpatient VHA care, but do not include care provided by VHA through fee basis or contracts, and do not include non-VHA care received privately by women who use VHA. Thus, for women Veterans who use VHA for at least some of their care, total health care utilization across all systems of care is likely to be higher than the VHA-based utilization rates presented in this report.

Key Findings

Rapid Growth of VHA Women Veteran Population, FY00–FY09. The number of women Veterans using VHA has nearly doubled in the past decade, from 159,630 in FY00 to 292,921 in FY09. The rate of growth has been faster in women Veterans than in men Veterans.

Shifting Age Distribution in VHA Women Veterans. In FY00, the age distribution of women showed two main peaks: The tallest peak had a maximum at age 44, and the second peak had a maximum at age 76. By FY09, this pattern had shifted. The peak that had been tallest in FY00 was even taller in FY09 and had its maximum at age 47. The second peak had its maximum at age 85. Meanwhile, a substantial new third peak had appeared, with its maximum at age 27.

High Levels of Service-Connected Disability Status in VHA Women Veterans. As of FY09, more than half of women Veteran patients in VHA had received a service-connected disability rating. The proportion of women Veterans receiving service-connected disability ratings increased over the decade. Further, in FY09, a higher proportion of women Veterans who were 18–44 years old had a service-connected disability rating than women who were 45–64 or 65–110 years old.

Frequent Use of VHA Care by VHA Women Veterans. Among women Veterans who had any face-to-face outpatient visits with a clinician in FY09, VHA provided, on average, 12 face-to-face outpatient visits per woman, not including any services received through fee-basis care.³

Ninety percent of women Veteran VHA patients had at least one primary care visit in FY09. Among primary care patients, women Veterans visited primary care clinics an average of 3.5 times in FY09.

Among women Veteran VHA patients, 37% received mental health services in FY09; women who used mental health services visited mental health clinics an average of nine times in FY09.

Increase in Women Veterans Using VHA Care, FY00–FY09. The proportion of all women Veteran VHA outpatients using primary care increased from 79% in FY00 to 90% in FY09. The proportion of all women Veteran VHA outpatients using mental health services increased from 28% in FY00 to 37% in FY09. However, the average number of visits for primary care and mental health services per women Veteran was relatively constant between FY00 and FY09.

Gender Differences Among Veteran VHA Patients. Nearly 6% were women in FY09. Compared to men, women were, on average, substantially younger: 42% of women and 12% of men were less than 45 years old. Women were more likely than men to carry a service-connected disability status and to have a service-connected disability

³ In all cases, outpatient utilization described in Part 2 of this report does *not* include “fee-basis,” contract care, or pharmacy services. See “Notes to Interpretation” on page 14 for an explanation of how this might underestimate total VHA outpatient utilization by women Veteran VHA patients.

rating of at least 50 percent.⁴ Within every age group, a greater proportion of women than men used face-to-face outpatient services more than six times. Women used more primary care services than did men: 47% of women versus 42% of men had at least three primary care visits, and 15% of women versus 11% of men had at least six primary care visits in FY09. Women used more mental health services than did men. Among mental health clinic patients, 12% of women and 7% of men had more than six mental health visits in FY09.

Key Implications for Policy and Practice

- The *number* of women Veterans using VHA services has nearly doubled in the past decade. If growth continues at this pace, and especially if market penetration increases among the large group of women Veterans who currently do not use VHA,⁵ increasing demands upon VHA delivery systems for women are anticipated.
- The number of *young* women in VHA has been growing rapidly in recent years. This rapid demographic shift highlights the need to assure ample capacity for clinical services necessary for women in their reproductive years and to assure that health care providers' knowledge and skills are up to date in this clinical domain.
- The tallest peak in the age distribution of women Veteran patients was at age 47 in FY09. Twenty years from now, this large group of women will be nearing their seventies. These women could require more intensive health care services as they age, including geriatric and extended care services and, where applicable, support for their role as caregivers. Also, as these women become Medicare-eligible, coordination of care across health care systems may become increasingly important.
- The proportion of women Veteran VHA patients with a *service-connected disability rating*, as well as the proportion with ratings of 50 percent or more, has increased over the decade. More than half of women Veterans in VHA now carry a service-connected disability rating, some of whom are very young. These women will be eligible for lifelong VHA care for their service-connected conditions.
- Women Veterans use VHA *primary care* services even more heavily than do men Veterans. Clinicians with a large number of women in their panels may require adjustments in panel size or scheduling profiles to assure that women have sufficient access to care.
- Among those women Veteran VHA patients who have mental illness, many use *mental health services*. Those who use mental health services tend to make many visits, suggesting that mental health care for women often requires high-intensity services.
- The proportion of women Veteran VHA patients who made one or more primary care visits increased between FY00 and FY09. This suggests that the VHA has been successful in its efforts to connect more women Veteran patients with primary care providers. Further, the proportion of women Veteran VHA patients who had one or more mental health visits increased between FY00–FY09. This suggests that VHA innovations in the past 10 years, such as systematic screening for mental illness and embedded mental health providers in primary care settings, appear to have improved access to mental health services for women Veteran VHA patients.

⁴ To enhance the clarity and readability of this report, an editorial decision has been made to spell “percent” in reference to service-connected disability ratings, e.g. “SC disability rating of 70 percent.” In all other measures of percentage, the percent symbol (%) is used.

⁵ In FY09, WHEI data indicate that 292,921 women Veterans received VHA care. In that same year, there were approximately 1,824,000 women Veterans living in the United States (based upon Vetpop data, accessed at <http://www1.va.gov/vetdata/>). Thus, the majority of women Veterans do not receive care in VHA.

Introduction

Background

Despite the fact that women have served in every United States military conflict since the American Revolution, they were not recognized as Veterans at the time that President Abraham Lincoln created the Veterans Administration (VA) “to care for him who shall have borne the battle, and for his widow, and his orphan.” When the congressional Government Accountability Office (GAO) released its first comprehensive report on Veterans Health Administration (VHA) care for women Veterans in 1982, women represented an extreme numeric minority group within an organization originally designed to meet the health care needs of men. Reports by the GAO and the VA Office of Inspector General in the late 1980s and early 1990s documented quality gaps in VHA women’s health care delivery.



By the mid-1990s, major change had begun. Over the past two decades, VHA has rolled out numerous initiatives designed to improve access and quality of care for women Veterans. Among these were Comprehensive Women Veterans Health Centers, Continuing Medical Education offerings in women’s health, post-doctoral Fellowship training programs in women’s health, the Women’s Health Sciences Division of the National Center for Post Traumatic Stress Disorder (PTSD), women’s mental health specialty programs, a national Military Sexual Trauma Support team, and active solicitation of women’s health services research projects.

Building on these earlier achievements, in late 2008, the VHA Women Veterans Health Strategic Health Care Group (WVHSHG) in VA Central Office launched a 5-year plan to redesign the women’s health care delivery system in VHA nationally. A fundamental component of this new vision was assuring that women Veterans receive comprehensive primary care from providers skilled in women’s health care. Every VHA health care system in the country now has a full-time Women Veterans Program Manager tasked with advocating for the health care needs of women using that facility. Mini-residencies in women’s health have been disseminated systemwide to enhance clinician competencies in women’s health. The WVHSHG oversees these efforts nationally.

As part of this dynamic systems redesign, the WVHSHG identified the need for data to inform policy and program planning. While highly informative data on women Veterans are available from the research literature⁶ and from various VHA reports (e.g., VHA Office of Policy and Planning, and the searchable VSSC Data Cube), the WVHSHG identified the need for detailed data specifically tailored to its strategic planning objectives and available to be queried in a timely way as issues emerge in VHA women’s health care delivery.

6 Goldzweig CL, Balekian TM, Rolon C, Yano EM, Shekelle PG. *The State of Women Veterans’ Health Research. Results of a Systematic Literature Review.* J Gen Intern Med. 2006; 21(s3):S82-S92; Bean-Mayberry B, Batuman F, Huang C, Goldzweig CL, Washington DL, Yano EM, Miake-Lye I, Shekelle PG. *Systematic Review of Women Veterans Health Research 2004–2008.* VA-ESP Project #05-226; 2010. <http://www.hsrdr.research.va.gov/publications/esp/womens-health.pdf>.

To address this need, the WVHSHG approached women's health investigators with expertise in large database research at the Center for Health Care Evaluation, a VA Health Services Research & Development (HSR&D) Center of Excellence, and the Health Economics Resource Center at VA Palo Alto Health Care System. The resulting partnership was called the *Women's Health Evaluation Initiative*, or WHEI. Since 2009, WHEI has been conducting analyses in response to queries by the WVHSHG. The analyses that WHEI produces are relevant to groups besides the WVHSHG, including policymakers, clinicians, researchers, advocates, and women Veterans. To facilitate dissemination of major findings to a broader audience, key sociodemographic and VHA health care utilization data have been organized in this Sourcebook. This document is the first volume; subsequent volumes of the Sourcebook are being developed to describe additional characteristics of women Veteran VHA patients and their health care.

Methods

Overview. This report presents the number, age, and service-connected disability status of women Veterans who received medical care in the Veterans Health Administration (VHA) (Part 1), along with information about their utilization of outpatient and inpatient VHA services (Part 2). Data for this report were derived from centralized VHA administrative files (the ADUSH Monthly Enrollment File, the SE Outpatient Encounter File, and the PTF Inpatient File, described in the Technical Appendix) spanning a 10-year period from Fiscal Year 2000 through Fiscal Year 2009 (FY00–FY09). Non-Veterans who use VHA services are not included in this report.

Characteristics examined. Sociodemographic characteristics examined in this report are age and service-connected disability status. Note that race/ethnicity data are not included among the sociodemographic characteristics due to data quality concerns about the race/ethnicity variable.⁷ This report examines several specific types of outpatient utilization: total outpatient utilization, outpatient face-to-face visits with a clinician (i.e., excluding laboratory, radiology, and telephone encounters), primary care visits (total primary care visits as well as visits to primary care clinics and women's health clinics, defined in Part 2), women's specialty care, and mental health care. This report also quantifies the number of women with at least one inpatient stay. (See Technical Appendix for details of the algorithms used to create these variables and the data validity checks completed.)

Analyses. All data in this report are descriptive.

The analyses in the sociodemographics section are organized as follows:

- Number of women Veteran VHA patients
- Age distribution
- Service-connected disability status

The analyses in the utilization section are organized as follows:

- Utilization of VHA services by women Veterans in FY09
 - Overall [by type of care: total outpatient care, face-to-face outpatient care, primary care, women's specialty care⁸, mental health care]
 - Within key sub-populations (i.e., by age group and service-connected disability status) [by type of care]
 - Compared to utilization by men Veteran VHA patients [by type of care]
- Longitudinal trends in the utilization of VHA services by women Veterans, FY00–FY09 [by type of care]

7 The VA Information Resource Center is currently working to identify optimal approaches to identification of race/ethnicity from VHA data sources. It is anticipated that race/ethnicity information will become available in a future volume of the Sourcebook. More information about race/ethnicity data quality and availability in VHA is provided at <http://www.virec.research.va.gov/DataSourcesCategory/DataQuality/Race.htm>. Further observations on how race/ethnicity information in VHA data sources can be improved by linking to Medicare and Department of Defense sources can be found in this study: Stroupe K, Tarlov E, Zhang Q, Haywood T, Owens A, Hynes D. *Utility of Medicare and DoD data for improving VA race data quality*. Journal of Rehabilitation Research & Development. 2010 Nov;47(8):781-96. <http://www.rehab.research.va.gov/jour/10/478/Stroupe.html>

8 This category is separated into two parts: Gynecology and Women's Surgery Clinic.

Part 1: Sociodemographics

Women Veteran VHA Patient Cohort Size

Growth in number of women Veterans using VHA, FY00–FY09. While women Veterans remain a numerical minority group in VHA, the number using VHA services has nearly *doubled* in the past decade, growing from 159,630 to 292,921—an 83% increase—between FY00 and FY09 (Figure 1). In contrast, the number of men Veterans in VHA has grown more slowly, from 3,225,712 to 4,846,869—a 50% increase (Figure 2). The 292,921 women Veterans who used any care at a VHA facility in FY09 represent about 6% of all Veterans using VHA in that year. Since 2004, the annual percent increase in the number of women Veteran VHA patients has been consistently four percentage points higher than the same percent increase for men Veterans.

Figure 1. Number of women Veteran VHA patients in each year, FY00–FY09

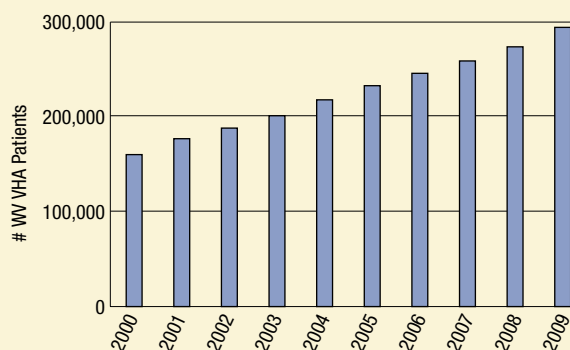
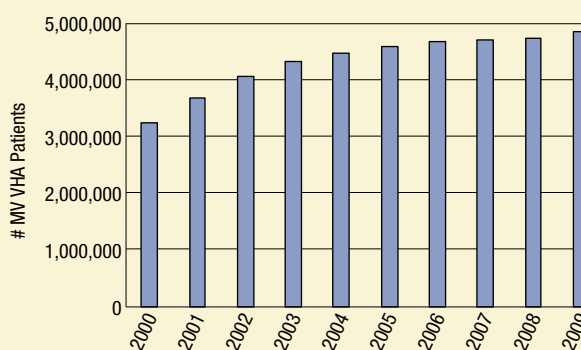


Figure 2. Number of men Veteran VHA patients in each year, FY00–FY09



Key: VHA—Veterans Health Administration; WV—Women Veterans; MV—Men Veterans; FY—Fiscal Year

Notes: Findings portray Veterans who use services at VHA facilities, not the entire Veteran population. See Technical Appendix for an explanation of how women Veterans were identified.

Cohort: Women and men Veteran VHA users in year. Women in FY09: N=292,921; Men in FY09: N=4,846,869.

Source: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09.

Notes to interpretation: These data reflect the VHA system at a national level. Specific geographic regions or individual VHA facilities may have experienced greater or lesser increases in the women Veteran patient population.

Implications The *number* of women Veterans using VHA services has nearly doubled in the past decade. If growth continues at this pace, and especially if market penetration increases among the large group of women Veterans who currently do not use VHA, increasing demands upon VHA delivery systems for women are anticipated.

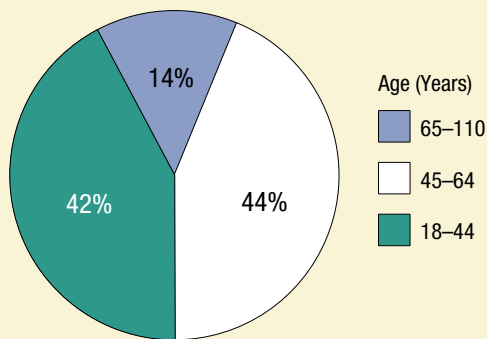


Ages of Women Veteran VHA Patients

Age mix, FY09. Women Veteran VHA patients cross the full adult lifespan, from late teen years to older than 100 years. The history of U.S. military conflicts influences their age distribution; while some women join the military in times of peace, large boluses of women join at the time of major military conflicts. Many of those who join the military are in their late teens or early 20s. Thus, the age distribution of women in part reflects war era cohort effects.

In FY09, the majority of women Veterans in VHA were less than 65 years old, with approximately equal numbers in the 18–44 (42%) and the 45–64 (44%) age groups (Figure 3). Substantial numbers of women were at the age extremes: 5% were younger than 25, and 4% were older than 85.

Figure 3. Age distribution among women Veteran VHA patients, FY09



Key: VHA—Veterans Health Administration; WV—Women Veterans; FY—Fiscal Year

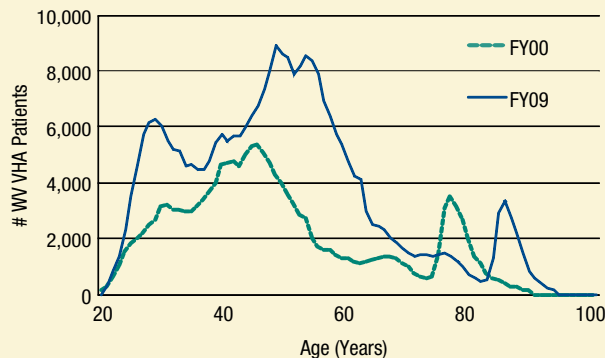
Notes: Findings portray age mix among Veterans who use VHA services and are not necessarily representative of the age mix of Veterans who do not use VHA. See Technical Appendix for an explanation of how women Veterans were identified in data and how age was calculated, and for information on missing age values.

Cohort: Women Veteran VHA users who have non-missing ages between 18 and 110 years old (inclusive) in year. N=159,548 in FY00, N=292,878 in FY09.

Source: WHEI analysis of ADUSH Monthly Enrollment File, FY09.

Changes in age distribution, FY00–FY09. Figure 4 shows the number of women at each age in FY00 (dotted line), and again in FY09 (bold line). In FY00, the distribution had two main peaks: The tallest peak had a maximum at age 44, and the second peak had a maximum at age 76. By FY09, the peaks had shifted forward. The peak that had been tallest in FY00 was even taller and had its maximum at age 47. The second FY09 peak had its maximum at age 85; notably, the number of women in this age cohort did not shrink significantly between FY00 and FY09, despite the potential for attrition (e.g., due to death or transfer to non-VHA long-term care facilities). This suggests that older women have joined VHA at a pace commensurate with their attrition. Furthermore, by FY09 a substantial new third peak had appeared, with its maximum at age 27.

Figure 4. Age distribution of women Veteran VHA patients (#), FY00 and FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; WV—Women Veterans

Notes: Findings portray age mix among Veterans who use VHA services and are not necessarily representative of the age mix of Veterans who do not use VHA. See Technical Appendix for an explanation of how women Veterans were identified in data and how age was calculated, and for information on missing age values.

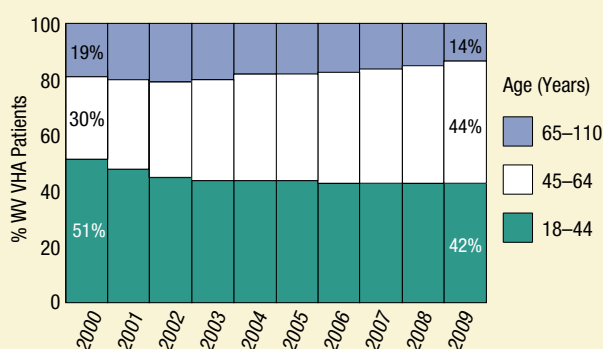
Cohort: Women Veteran VHA users who have non-missing ages between 18 and 100 years old (inclusive) in year. N=159,548 in FY00, N=292,878 in FY09.

Source: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09.

Even though the total *number* of women under age 45 increased from 81,745 in FY00 to 123,797 in FY09, the *proportion* of women under age 45 actually decreased, from 51% in FY00 to 42% in FY09 (Figure 5). This is because the *total* number of women using VHA increased rapidly over this period. Similarly, although the number of 18–34 year olds also increased over the decade (from 36,354 in FY00 to 67,219 in FY09), this age group did not increase as a *proportion* of the total women Veteran patient population: 18–34 year olds comprised 23% of the population in FY00 and 23% of the population in FY09.

Over this same period, the 45–64 year old cohort became much larger, both numerically (47,320 in FY00, 128,178 in FY09) and as a proportion of all women patients (30% in FY00, 44% in FY09) (Figure 5).

Figure 5. Age distribution of women Veteran VHA patients (%), FY00–FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; WV—Women Veterans

Notes: Findings portray age mix among Veterans who use VHA services and are not necessarily representative of the age mix of Veterans who do not use VHA. See Technical Appendix for an explanation of how women Veterans were identified in data and how age was calculated, and for information on missing age values.

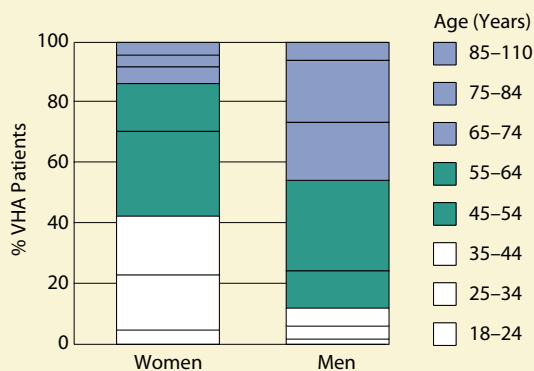
Cohort: Women Veteran VHA users who have non-missing ages between 18 and 110 years old (inclusive) in year. N=292,894 in FY09.

Source: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09.

Changes in age distribution, FY00–FY09 (continued). Compared with the numbers of women in the 18–44 and 45–64 age groups, relatively fewer women were 65–110 years old. Between FY00 and FY09, the number of women in this age cohort grew from 30,488 to 40,919, but this group decreased as a proportion of all women Veteran VHA patients, from 19% to 14% (Figure 5).

Women compared to men, FY09. Figure 6 indicates that, compared to men Veteran VHA patients in FY09, the population of women is substantially younger: 86% of women compared to 54% of men are less than 65 years old, and 42% of women compared to 12% of men are less than 45 years old.

Figure 6. Age group of Veteran patients, by gender, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year

Notes: Findings portray age mix among Veterans who use VHA services; they are not necessarily representative of Veterans who do not use VHA care. See Technical Appendix for an explanation of how Veterans were identified in data and how age was calculated, and for information on missing age values.

Cohort: Women and men Veteran VHA users who have non-missing ages between 18 and 110 years old (inclusive) in FY09. Women: N=292,894; Men: N=4,846,792.

Source: WHEI analysis of ADUSH Monthly Enrollment Files, FY09.

Implications The number of *young* women in VHA has been growing rapidly in recent years. This rapid demographic shift highlights the need to assure ample capacity for clinical services necessary for women in their reproductive years and to assure that health care providers’ knowledge and skills are up to date in this clinical domain.

The tallest peak in the age distribution of women Veteran patients was at age 47 in FY09. Twenty years from now, this large group of women will be nearing their seventies. These women could require more intensive health care services as they age, including geriatric and extended care services and, where applicable, support for their role as caregivers. Also, as these women become Medicare-eligible, coordination of care across systems may become increasingly important.



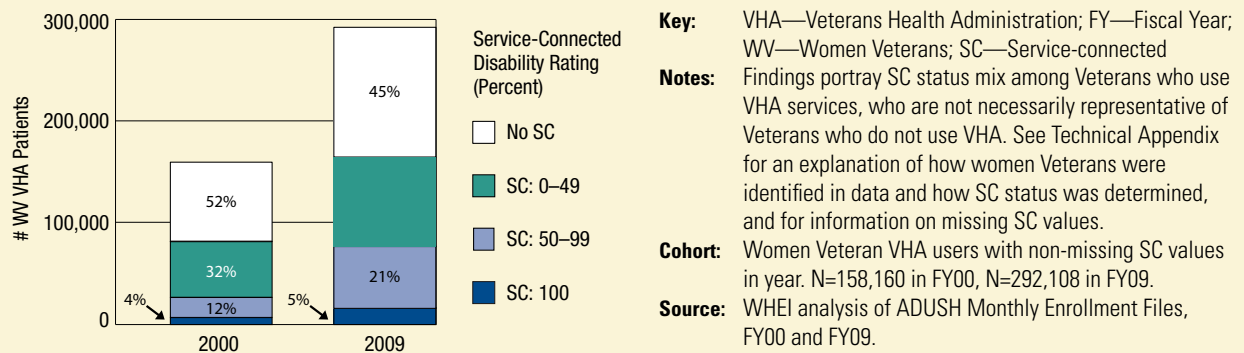
Service-Connected Disability Status of Women Veteran VHA Patients

Service-connected status indicates an injury or illness that was incurred or aggravated while serving in the armed forces. The Veterans Benefits Administration (VBA) reviews disability compensation claims using a multi-step process. VBA first determines whether the disability was incurred or aggravated during active military service—if so, the Veteran receives “service connected” (SC) disability status. The Veteran’s SC disability is then assessed and rated for severity from 0 to 100 percent.⁹ Finally, VBA calculates disability compensation benefits based on the SC disability rating as well as other factors, such as dependents.

Service-connected status, FY09. More than half (55%) of women Veteran VHA patients in FY09 had an SC disability rating (Figure 7).

Among all women Veterans using VHA in FY09, 14,309 (5%) had an SC disability rating of 100 percent. About a quarter of women (26%, or 75,272 women) had an SC disability rating of 50 percent or higher.

Figure 7. Service-connected disability status among women Veteran VHA patients, FY00 and FY09



Changes in proportion of women with service-connected disability status over time, FY00 vs. FY09. Also seen in Figure 7, the proportion of women Veteran VHA patients with any SC disability rating had increased, from 48% in FY00 to 55% in FY09 (representing a numeric increase from 76,377 women to 161,543 women). The

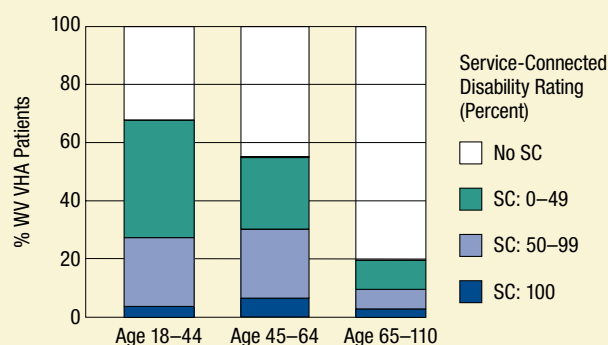
⁹ To enhance the clarity and readability of this report, an editorial decision has been made to spell “percent” in reference to service-connected disability ratings, e.g. “SC disability rating of 70 percent.” In all other measures of percentage, the percent symbol (%) is used.

proportion of women Veterans with SC disability ratings of 50 percent or higher increased over this 10-year period as well: Those with ratings of 50–99 percent increased from 12% to 21%, and those with a rating of 100 percent increased from 4% to 5%.

Service-connected disability status by age, FY09. Figure 8 shows that 68% of women Veteran VHA patients who are 18–44 years old had an SC disability rating, compared with 55% of those who are 45–64 years old and 19% of those who are 65–110 years old. More women Veteran VHA patients in the 45–64 age group had an SC disability rating of 100 percent (7%) than in the other age groups (4% of 18–44 years; 3% of 65–110 years).

Women compared to men, FY09. A higher proportion of women Veteran VHA patients than men had SC disability ratings (Figure 9). Fifty-five percent of women Veterans had any SC disability rating, compared with 41% of men. Among these Veteran VHA patients, 26% of women and 19% of men had an SC disability rating higher than 50 percent.

Figure 8. Service-connected disability status among women Veteran VHA patients, by age, FY09



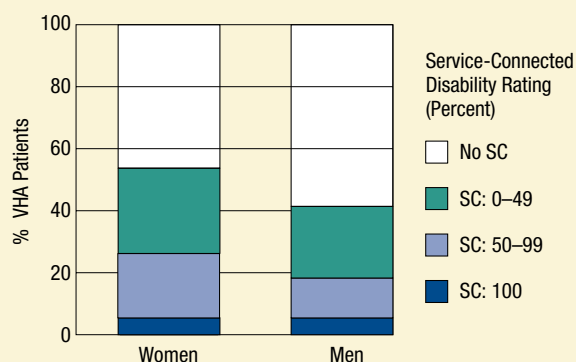
Key: VHA—Veterans Health Administration; FY—Fiscal Year; WV—Women Veterans; SC—Service-connected

Notes: Findings portray SC and age status among Veterans who use VHA services, who are not necessarily representative of Veterans who do not use VHA. See Technical Appendix for an explanation of how women Veterans were identified in data and how age and SC status were calculated, and for information on missing age and SC values.

Cohort: Women Veteran VHA users who have non-missing ages between 18 and 110 years old (inclusive) in FY09 and who also have non-missing SC values. N=292,081.

Source: WHEI analysis of ADUSH Monthly Enrollment File, FY09.

Figure 9. Service-connected disability status among Veteran VHA patients, by gender, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; SC—Service-connected

Notes: Findings portray SC status among Veterans who use VHA services, who are not necessarily representative of Veterans who do not use VHA. See Technical Appendix for an explanation of how Veterans were identified in data and how SC status was calculated, and for information on missing SC values.

Cohort: Women and men Veteran VHA users with non-missing SC values in FY09. Women: N=292,108; Men: N=4,838,232.

Source: WHEI analysis of ADUSH Monthly Enrollment File, FY09.

Notes to interpretation: First, SC disability status can result from a variety of exposures including, but not limited to, combat. The administrative data used for this report do not indicate the diagnoses associated with an individual’s SC disability rating. Second, these data show the proportion of women and men VHA patients who carry SC disability status. These data do not show the total number of Veterans nationally who carry SC disability status: Veterans who do not use VHA care are not included in the cohort examined here. Therefore, no conclusions can be drawn about what proportion of all women and men Veterans in the U.S. population carry an SC disability status. Third, these data only identify Veterans who have been formally granted SC disability status; VHA patients who have a military service-related illness or disability, but who have not applied for SC disability status, are not identified in these data as having an SC disability rating. Higher proportions of VHA patients with SC disability

status in one group compared to another group (e.g., women versus men) could imply either that the proportion of Veterans in that group applying for and being granted SC disability status is greater, or that Veterans in that group who have SC disability status are more likely to be using VHA services. Similarly, higher proportions of VHA patients in one group compared to another group carrying higher SC disability ratings could imply either that the proportion of Veterans in that group applying for and being granted higher SC disability ratings is greater, or that Veterans in that group who have higher SC disability ratings are more likely to be using VHA services. Finally, Veterans who have only recently applied for SC disability status will appear in the database as “non-SC” until the time, if any, that they are granted SC disability status and VHA is updated regarding this change.

Implications

The proportion of women Veteran VHA patients with a service-connected disability rating, as well as the proportion with SC disability ratings of 50 percent or more, has increased over the decade. More than half of women Veterans in VHA now carry an SC disability rating, some of whom are very young. These women will be eligible for lifelong VHA care for their service-connected conditions.



Part 2: Utilization of VHA Care

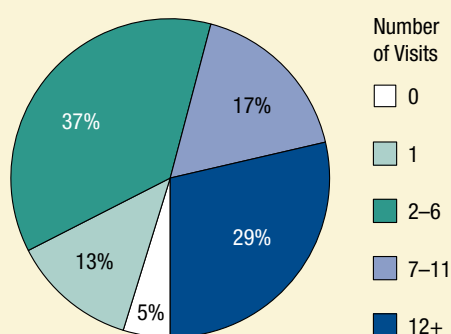
Women Veterans' Utilization in FY09

Outpatient Care

Definition of terms used. When describing all outpatient care combined, *Total Outpatient Care* refers to any type of outpatient care (i.e., all clinic types and all other encounter types appearing in the SE Outpatient Encounter File are considered outpatient care). In contrast, *Face-to-Face Outpatient Care* represents face-to-face care with a clinician (such as primary care visits, mental health visits, specialty care visits, rehabilitation care visits, etc.). Other types of encounters that do not involve a face-to-face visit with a clinician (such as lab tests, radiology tests, and telephone encounters) are not included in face-to-face care. Outpatient care may occur at a major VHA facility or at a VHA community-based outpatient clinic.

Total Outpatient Care. Among the 292,921 women Veterans who used any VHA care in FY09, about 98% (287,447) had at least one outpatient encounter of any kind in FY09. This indicates that only a very small proportion of women used inpatient care, fee-basis care, contract care, or pharmacy services as their exclusive type of VHA care in FY09.^{10, 11} Among women who had any outpatient encounters in FY09, VHA provided, on average, 19 outpatient encounters per woman.

Figure 10. Proportion of women Veteran VHA patients by frequency of face-to-face outpatient visits, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: Multiple face-to-face visits with different clinic stop codes can occur on the same day. See Technical Appendix for an explanation of how women Veterans were identified in data. Percentages do not sum to 100% due to rounding.
Cohort: Women Veteran VHA users in FY09. N=292,921.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA Outpatient Utilization File (SE), FY09.

Face-to-Face Outpatient Care. Among all women Veterans who used any VHA care in FY09, about 95% had at least one outpatient encounter that involved a face-to-face visit¹² with a health care provider (Figure 10). A small group of women Veterans (13%) had only one visit in the outpatient setting. About 83% of women Veteran VHA

¹⁰ Fee-basis care and contract care are services provided by non-VHA providers but paid for through VHA.

¹¹ In FY09, approximately 0.1% of women Veteran VHA patients had inpatient care but no VHA-based outpatient care; about 0.8% had fee-basis outpatient care but no VHA-based inpatient or outpatient care; and 1.0% had neither VHA-basis inpatient/outpatient care nor fee-basis outpatient care (and likely had prescription care, contract care, or fee-basis inpatient care only).

¹² Henceforth in this report, the term “visit” refers to an encounter with a clinician. For the purposes of this report, more than one visit can occur on a single day.

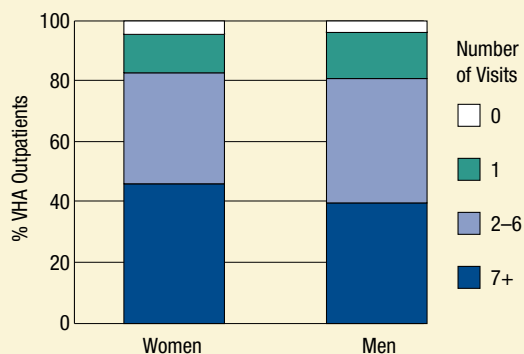
patients had at least two face-to-face visits. A substantial number of women Veteran VHA patients used VHA care heavily in FY09: 29% made more than 12 visits. Among Veterans who had any face-to-face outpatient visits in FY09, VHA provided, on average, 11.9 face-to-face outpatient visits per woman.

Figure 11 compares women Veterans' utilization of face-to-face outpatient services to that of men Veterans, for FY09. Among Veteran VHA patients, a greater proportion of women than men had more than six face-to-face visits (46% vs. 40%) as well as 12+ face-to-face visits in FY09 (29% vs. 24%).

Use of any face-to-face care by women Veteran outpatients in FY09 varied little by age group: 95% of 18–44 year olds, 96% of 45–64 year olds, and 94% of 65–110 year olds used face-to-face care. The highest intensity of utilization was seen in the 45–64 year old age group: Among them, 53% had more than six face-to-face visits in FY09, compared with 42% of 18–44 year olds and 37% of 65–110 year olds (Figure 12).

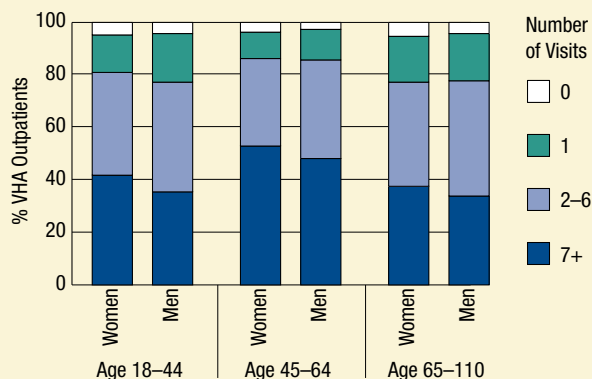
Figure 12 also shows that within each age group, about the same proportion of women and men Veterans used face-to-face care at least once in FY09. However, heavier levels of utilization were more common in women than in men, especially below age 65: Among 18–44 year old Veterans, 42% of women vs. 35% of men had more than six face-to-face outpatient visits in the year; among 45–64 year olds, 53% (women) vs. 48% (men) had more than six visits; and among 65–110 year olds, 37% (women) vs. 34% (men) had more than six visits.

Figure 11. Proportion of women and men Veteran VHA patients by frequency of face-to-face outpatient visits, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: Multiple face-to-face visits with different clinic stop codes can occur on the same day. See Technical Appendix for an explanation of how Veterans were identified in data.
Cohort: Women and men Veteran VHA users in FY09. Women: N=292,921; Men: N=4,846,869.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Figure 12. Proportion of women and men Veteran VHA patients by frequency of face-to-face outpatient visits, by age group, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: Multiple face-to-face visits with different clinic stop codes can occur on the same day. See Technical Appendix for an explanation of how Veterans were identified in data, and for information on missing age values.
Cohort: Women and men Veteran VHA users who have non-missing ages between 18 and 110 years old (inclusive) in FY09. Women: N=292,894; Men: N=4,846,792.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Notes to interpretation: In all cases, outpatient utilization described in Part 2 does *not* include “fee-basis” care. While both women and men may receive fee-basis services, some facilities may rely heavily on fee-basis care for some gender-specific women’s health services that are not available onsite. Therefore, this issue has the potential to be of particular relevance to women. In fact, exploratory analyses indicate that a greater proportion of women than

men received fee-basis services in FY09.¹³ This preliminary finding raises the possibility that the gender differences described above (that is, that women tended to use more care than men) would be even more pronounced if fee-basis care were added to the VHA outpatient care presented here.

Outpatient utilization in Part 2 also does not include use of contract care or pharmacy services.

It is important to recognize that some women and men Veterans split their care between VHA and non-VHA providers (e.g., Medicare, Medicaid, private insurance, or self-pay). The frequency of visits presented in this report represents *VHA care* only, and may underestimate the total care women Veteran VHA patients receive from all health care sources combined.

When interpreting gender differences, it is important to recognize that these analyses present raw results, without adjustment for patient characteristics such as number of medical conditions, which can influence conclusions about gender differences in use of VHA services.¹⁴

Primary Care

Definition of terms. This report uses the term *Total Primary Care* to refer to care received in either of the following two settings in which women may receive VHA primary care services:

- *Primary Care Clinic (PC)* refers to primary care provided in a general medical clinic (although sometimes it refers to care provided in a women's health clinic as well). Such clinics provide preventive care and care for a wide range of gender-neutral conditions (such as diabetes or upper respiratory tract infections). Such clinics may additionally provide gender-specific care to women (such as cervical cancer screening and breast exams), or may refer women to a different clinic for such gender-specific services.
- *Women's Health Clinic (WHC)* refers to primary care services provided in a clinic designed specifically for women. Such clinics sometimes provide comprehensive primary care services to women (i.e., preventive health care for gender-neutral conditions, and care for gender-specific conditions), and sometimes provide care only for gender-specific conditions (such as cervical cancer screening and breast exams for women who get most of their primary care in a general medical clinic). Note: There is substantial variability in how different VHA facilities code primary care for women. Prior work has quantified this variability by examining the percent of women at a facility who had at least one WHC visit (stop code 322). Some facilities known to have WHCs had no patients with 322 coded, suggesting variability in how the code was used and interpreted.¹⁵ This is consistent with the fact that, since 2005, a number of facilities are known to have started coding primary care received in WHCs with codes that fall under the PC definition used in this report. This leads to an important caveat about WHC data in this report: *While estimates of "Total Primary Care" (the sum of PC and WHC) are reliable, the proportion of that care occurring in WHCs cannot be estimated with confidence at present.* Planned changes in coding procedures for WHC are expected to improve the interpretability of future data for this specific type of care.



13 34% of women Veteran VHA patients had at least one record in VHA's FY09 outpatient fee-basis files, compared to 16% of men.

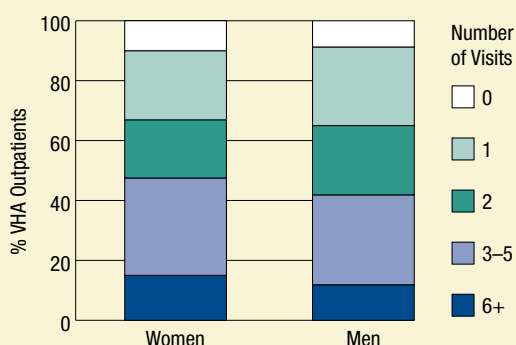
14 Frayne SM, Yu W, Yano EM, et al., *Gender and use of care: planning for tomorrow's Veterans Health Administration*. J Women's Health. Oct 2007;16(8):1188-1199.

15 Herrera L, Iqbal S, Hayes PM, Phibbs CS, Friedman SA, Laungani L, Berg E, Frayne SM. *Can Stop Codes Identify Women's Health Care?* Poster Presentation at VA HSR&D Women's Health Services Research Conference in Washington D.C., July, 2010.

Total Primary Care (PC and WHC combined). Among women Veterans who used VHA outpatient care in FY09, 90% have been seen by a VHA primary care provider in a PC setting and/or in a WHC setting (see the Technical Appendix, Section 4, for clinic code specifications). Regarding Total Primary Care, in FY09, 23% of women Veterans had exactly one primary care visit in VHA, 57% had 2–6 primary care visits, and 10% had more than six primary care visits. Among women Veterans who used any VHA primary care in FY09 (PC and WHC combined), the average number of visits to any primary care clinic was 3.5 visits per woman.

Figure 13 compares women Veterans’ utilization of total primary care services to that of men Veterans for FY09. Among both women and men Veteran VHA outpatients, about 90% had any primary care visits in FY09. Among Veteran primary care patients, a greater proportion of women than men had at least three primary care visits in FY09 (47% vs. 42%), and a greater proportion of women than men had at least six primary care visits (15% vs. 11%).

Figure 13. Proportion of women and men Veteran VHA outpatients by frequency of total primary care visits, FY09

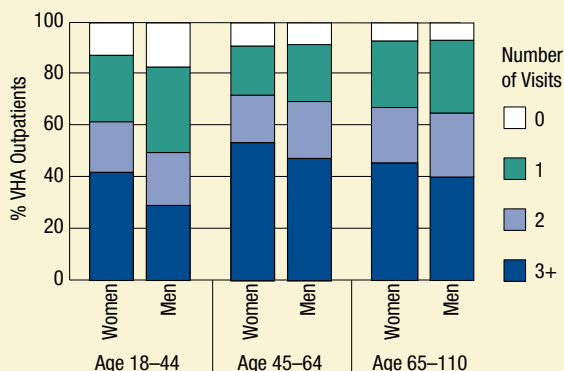


Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: Total primary care stop codes include 170, 171, 210, 301, 310, 319, 323, 348, 350, 394, 322, and 704. See Technical Appendix for descriptive stop code names, and for an explanation of how Veterans were identified in data.
Cohort: Women and men Veteran VHA outpatients in FY09. Women: N=287,447; Men: N=4,747,050.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Figure 14 demonstrates that, among women Veterans, primary care use (PC and WHC combined) varies by age group. Regular use was most common in the middle age group: Among women in the 45–64 age group, 72% had two or more total primary care visits in FY09, compared with 61% of 18–44 year olds and 67% of 65–110 year olds.

Figure 14 also compares women to men. Within each age group, more women Veterans than men Veterans were regular users of primary care (i.e., having at least two primary care visits in FY09), with the difference being most pronounced in the 18–44 year old age group (61% vs. 50%), but still marginally present among 45–64 year olds (72% vs. 70%) and 65–110 year olds (67% vs. 65%). Similarly, within each age group more women than men were frequent users of primary care (i.e., at least three visits in FY09); this was seen among 18–44 year olds (42% vs. 29%), 45–64 year olds (53% vs. 47%), and in 65–110 year olds (46% vs. 40%).

Figure 14. Proportion of women and men Veteran VHA outpatients by frequency of total primary care visits, by age group, FY09

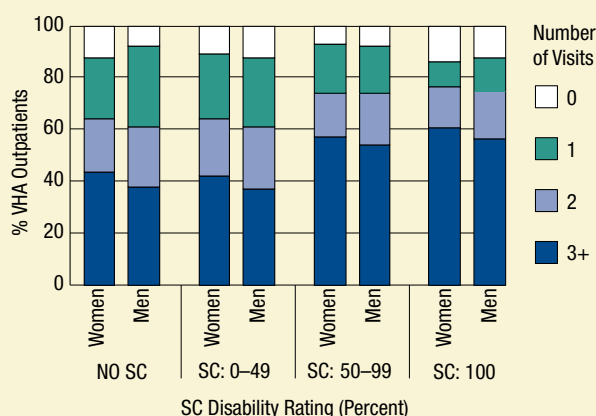


Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: Total primary care stop codes include: 170, 171, 210, 301, 310, 319, 323, 348, 350, 394, 322, and 704. See Technical Appendix for descriptive stop code names, for an explanation of how Veterans were identified in data, and for information on missing age values.
Cohort: Women and men Veteran VHA outpatients who have non-missing ages between 18 and 110 years old (inclusive) in FY09. Women: N=287,436; Men: N=4,747,995.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09 outpatient utilization file (SE), FY09.

Figure 15 examines associations between primary care use, service-connected (SC) disability status, and gender. Focusing first on the women Veterans shown in this figure, those with SC disability ratings of 50 percent or higher tended to be regular primary care users (at least two primary care visits in FY09) or frequent primary care users (at least three primary care visits in FY09). Eighty-eight percent of women Veteran outpatients identified as not having an SC disability rating used any primary care services in FY09, compared with women Veterans with SC disability ratings of 0–49 percent (89%), 50–99 percent (93%), and 100 percent (91%). Forty-four percent of women Veteran outpatients identified as not having an SC disability rating visited primary care clinics three or more times in FY09, compared to women with SC disability ratings of 0–49 percent (44%), 50–99 percent (57%), and 100 percent (61%).

Figure 15 also compares women to men. Within most SC disability rating categories (0–49 percent, 50–99 percent, and 100 percent), the proportion of women and men Veteran VHA outpatients who used one or more VHA primary care services in FY09 is similar. The exception is that, within the group of Veterans identified as not having an SC disability rating, a slightly lower proportion of women than men used primary care services in FY09. Within every SC disability rating category, more women than men used primary care three or more times in FY09.

Figure 15. Proportion of women and men Veteran VHA outpatients by frequency of total primary care visits, by service-connected disability ratings, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; SC—Service-connected
Notes: Total primary care stop codes include: 170, 171, 210, 301, 310, 319, 323, 348, 350, 394, 322, and 704. See Technical Appendix for descriptive stop code names, for an explanation of how Veterans were identified in data, and for information on missing SC values.
Cohort: Women and men Veteran VHA outpatients with non-missing SC values in FY09. Women: N=286,653; Men: N=4,739,888.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Implications Women Veterans use VHA *primary care* services even more heavily than do men Veterans.

Clinicians with a large number of women in their panels may require adjustments in panel size or scheduling profiles to assure that women have sufficient access to care.

Primary Care Clinic (PC). Figure 16 shows that more than 75% of women Veteran VHA patients received at least some of their primary care in a PC in FY09. Although 26% of women Veterans only visited a PC once in FY09, 52% returned at least twice, and 34% returned at least three times. Among women Veterans who received primary care in a PC in FY09, the average number of PC visits was 3.0 per woman.

Women’s Health Clinic (WHC). Figure 17 shows that, compared to use of PC clinics, fewer women received any of their primary care in WHCs: 37% of women Veteran VHA patients received at least some of their primary care services in FY09 in a WHC. (See Definition of Terms, page 15, for limitations of WHC data.) Among all women Veteran VHA outpatients, 20% had exactly one WHC visit. Among women Veterans who received any primary care in a WHC in FY09, the average number of WHC visits was 2.1 per woman.

Figure 16. Proportion of women Veteran VHA outpatients by frequency of primary care clinic (PC) visits, FY09

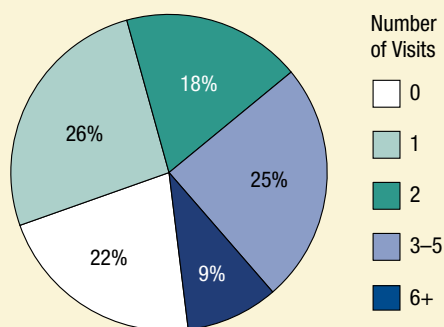
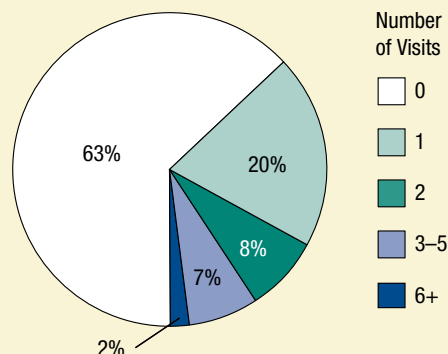


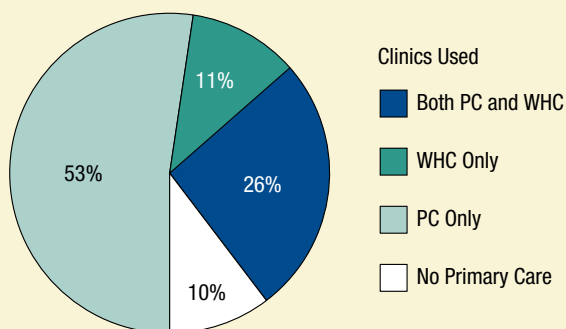
Figure 17. Proportion of women Veteran VHA outpatients by frequency of women's health clinic (WHC) visits, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; PC—Primary Care Clinic; WHC—Women's Health Clinic
Notes: PC stop codes include 170, 171, 210, 301, 310, 319, 323, 348, 350 and 394. WHC stop codes include 322 and 704. Clinic 322 is "Women's Clinic" and clinic 704 (used much less frequently) is "Pap Test Clinic." See Technical Appendix for descriptive stop code names and for an explanation of how women Veterans were identified in data.
Cohort: Women Veteran VHA outpatients in FY09. N=287,447.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Notes to interpretation: The results for PC and WHC should be interpreted with substantial caution, due to variability in the ways different VHA facilities code primary health care for women (see Definition of Terms, page 15, for information about coding variability for women's health care). For example, the fact that so many WHC users made only one visit to a WHC in FY09 may reflect the fact that, at some facilities, WHCs have historically been used (in part or in whole) to provide gender-specific services like Pap smears to women who receive the rest of their primary care in PCs. Likewise, the proportion of women using a WHC may actually be higher than reported here, because some facilities denote care received in WHC with the codes used under this PC definition.

Figure 18. Proportion of women Veteran VHA outpatients by which primary care clinics they use, FY09

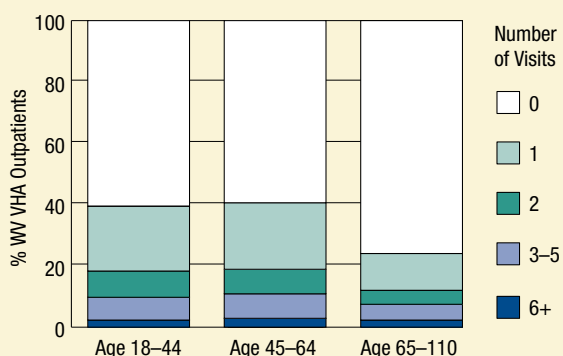


Key: VHA—Veterans Health Administration; FY—Fiscal Year; PC—Primary Care Clinic; WHC—Women's Health Care Clinic
Notes: PC stop codes include 170, 171, 210, 301, 310, 319, 323, 348, 350, and 394. WHC stop codes include 322 and 704. Clinic 322 is "Women's Clinic" and clinic 704 (used much less frequently) is "Pap Test Clinic." See Technical Appendix for descriptive stop code names and an explanation of how women Veterans were identified in data.
Cohort: Women Veteran VHA outpatients in FY09. N=287,447.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

With these caveats in mind, in FY09, among women Veteran VHA patients, 53% received primary care in PC clinics only (and not in WHCs), 11% received primary care in WHCs only, 26% received primary care in both settings, and 10% received no primary care (Figure 18).

The proportion of women Veterans receiving primary care in WHC clinics differs between those who are less than 65 years old and those who are 65–110 years old (Figure 19). Among women Veteran outpatients who are either 18–44 years old or 45–64 years old, about 39% had at least one primary care visit in a WHC in FY09. Among women Veterans who are 65–110 years old, only 23% attended a WHC in FY09.

Figure 19. Proportion of women Veteran VHA outpatients by frequency of women’s health clinic (WHC) visits, by age group, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: WHC stop codes include: 322 and 704. WHC stop codes include 322 and 704. Clinic 322 is “Women’s Clinic” and clinic 704 (used much less frequently) is “Pap Test Clinic.” See Technical Appendix for an explanation of how women Veterans were identified in data, for descriptive stop code names, and for information on missing age values.
Cohort: Women Veteran VHA outpatients who have non-missing ages between 18 and 110 years old (inclusive) in FY09. N=287,436.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Specialty Care for Women

In addition to women’s health clinics, VHA provides gender-specific care to women in two additional settings: gynecology clinic and women’s surgery.

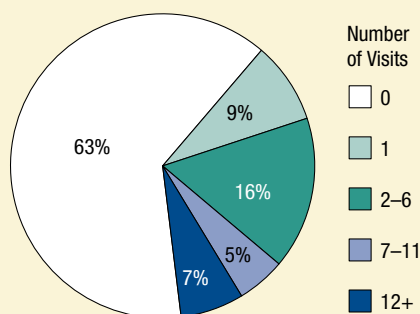
Gynecology Clinic (clinic stop code 404). In FY09, about 15% (41,896 women) of women Veteran outpatients attended gynecology clinic at least once, and 5% attended this clinic at least twice. Those women Veterans who did attend a gynecology clinic attended an average of 1.7 times during FY09.

Women’s Surgery (clinic stop code 426). Far fewer (about 500) women Veterans obtained care in the women’s surgery clinic. Those who did attend women’s surgery attended an average of 1.5 times during FY09.

Mental Health Care

Among women Veteran VHA outpatients, 37% used any mental health service through VHA in FY09. For those who used mental health services, use tended to be moderate or heavy. Among women Veteran outpatients, 9% had one visit, 16% had 2–6 visits, 5% had 7–11 visits, and 7% had 12 or more visits (Figure 20). Those women Veterans who attended VHA mental health clinics in FY09 averaged 8.7 mental health visits during the year.

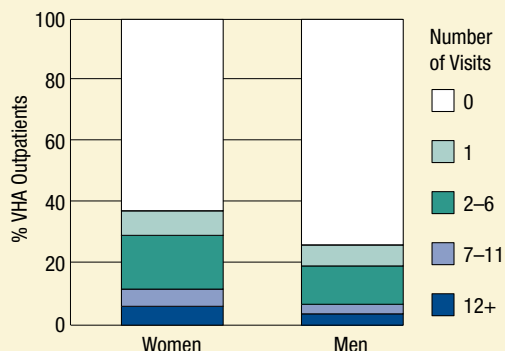
Figure 20. Proportion of women Veteran VHA outpatients by frequency of mental health visits, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: See Technical Appendix for an explanation of how women Veterans were identified in data and how mental health utilization was ascertained.
Cohort: Women Veteran VHA outpatients in FY09. N=287,447.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09

Figure 21 compares mental health utilization levels between women and men Veteran VHA patients in FY09. Overall, a higher proportion of women than men used any mental health services. Among Veteran VHA outpatients, 12% of women and 7% of men had more than six mental health visits in FY09; similarly, 7% of women versus 4% of men had 12 or more mental health visits in FY09.

Figure 21. Proportion of women and men Veteran VHA outpatients by frequency of mental health visits, FY09

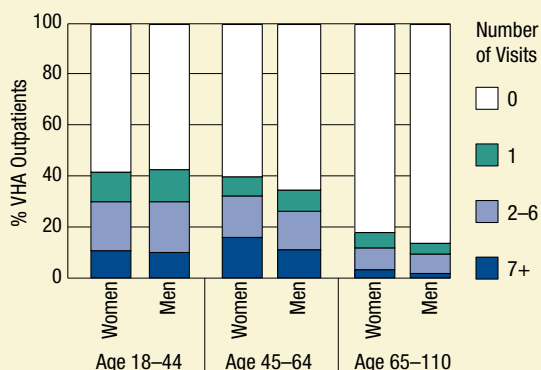


Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: See Technical Appendix for an explanation of how Veterans were identified in data and how mental health utilization was ascertained.
Cohort: Women and men Veteran VHA outpatients in FY09. Women: N=287,447; Men: N=4,748,050.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Among Women Veterans, the middle age group (45–64 years old) tended to use mental health care services more heavily. Among all outpatient women Veterans, 12% of 18–44 year olds, 14% of 45–64 year olds, and 3% of 65–110 year olds had more than six mental health visits in FY09 (Figure 22).

Figure 22 also shows that among the middle and older age groups of Veterans, a higher proportion of women than men had at least one mental health care visit in FY09 (39% vs. 33% in 45–64 year olds and 18% vs. 13% in 65–110 year olds). Within the 18–44 year old age group, a similar proportion of women and men used mental health care (41% vs. 42%).

Figure 22. Proportion of women and men Veteran VHA outpatients by frequency of mental health visits, by age group, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year
Notes: See Technical Appendix for an explanation of how Veterans were identified in data and how mental health utilization was ascertained, and for information on missing age values.
Cohort: Women and men Veteran VHA outpatients who have non-missing ages between 18 and 110 years old (inclusive) in FY09. Women: N=287,436; Men: N=4,747,995.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

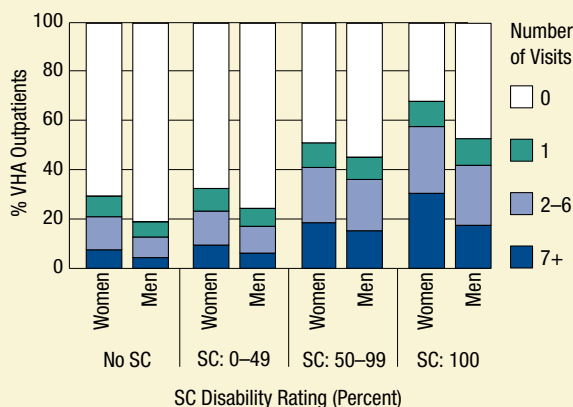
Within each age group, the same or a slightly higher proportion of women than men had more than six mental health visits in FY09. The difference is most pronounced in the 45–64 year old age group: Comparing women to men, more than six mental health visits were seen in 12% vs. 12% of 18–44 year olds, 14% vs. 10% of 45–64 year olds, and 3% vs. 2% of those aged 65 years and older (Figure 22).

Implications Among those women Veteran VHA patients who have mental illness, many use mental health services. Those who use mental health services tend to make many visits, suggesting that mental health care for women often requires high-intensity services.



Figure 23 examines relationships between mental health utilization, service-connected (SC) disability status, and gender. While many women with no SC disability rating, or with an SC disability rating of 0–49 percent, use mental health clinics (30% and 32%, respectively), a substantially higher proportion of women with an SC disability rating of 50–99 percent or 100 percent used mental health clinics (51% and 68%, respectively). Similarly, women with an SC disability rating of 50 percent or higher were more often frequent users of mental health clinics: The proportion of women Veteran outpatients who visited mental health clinics more than six times in FY09 was 8% for those with no SC disability rating, 9% for those with a disability rating of 0–49 percent, 19% for those with a disability rating of 50–99 percent, and 33% for those with a disability rating of 100 percent.

Figure 23. Proportion of women and men Veteran VHA Outpatients by frequency of mental health visits, by service-connected disability ratings, FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; SC—Service-connected
Notes: See Technical Appendix for an explanation of how Veterans were identified in data, and how mental health utilization was ascertained, and for information on missing SC values.
Cohort: Women and men Veteran VHA outpatients with non-missing SC values in FY09. Women: N=286,653; Men: N=4,739,888.
Sources: WHEI analysis of ADUSH Monthly Enrollment File, FY09; VA outpatient utilization file (SE), FY09.

Figure 23 also shows that within each SC disability rating category (No SC, 0–49, 50–99, and 100 percent), a higher proportion of women than men used VHA mental health care in FY09 (No SC: 30% vs. 19%; 0–49 percent: 32% vs. 24%; 50–99 percent: 51% vs. 44%; 100 percent: 68% vs. 52%). Within each SC disability rating category, a higher proportion of women than men had more than six mental health visits in FY09 (No SC: 8% vs. 4%; 0–49 percent: 9% vs. 6%; 50–99 percent: 19% vs. 14%; 100 percent: 33% vs. 18%).

Notes to interpretation: The diagnosis for which the Veteran received an SC disability rating may or may not be a mental health condition; our data indicate only the SC disability ratings and not the diagnosis (es) for which a rating was determined.

Inpatient Admissions

In FY09, 7% of women Veteran VHA patients had one or more inpatient stays (21,632 women). Among men Veteran patients, 9% had one or more inpatient stays (425,271 men).

The proportion of women who had an inpatient stay increased with advancing age. Among women Veteran VHA patients 45–64 years old and among those 65–110 years old, 9% had an inpatient stay (Figure 24).

Overall, a lower proportion of women than men had an inpatient stay in FY09 (7% vs. 9%). However, in the oldest age group (65 years or greater), a slightly higher proportion of women than men had an inpatient stay (9% vs. 8%) (Figure 24).

Inpatient use also varied slightly by service-connected (SC) disability ratings. The proportion of women Veterans with a 100-percent SC disability rating who had an inpatient stay was particularly high (19%), compared to women with other SC disability ratings (Figure 25). The proportion of women and men Veterans with an inpatient stay was the same for patients without an SC disability rating (8%) and for patients with 100-percent SC disability rating (19%). For all other SC disability rating categories, a higher proportion of men used inpatient care in FY09.

Figure 24. Proportion of women and men Veteran VHA patients with at least one inpatient stay, by age group, FY09

		Women	Men
Age (Years)	18–44	5.1%	5.9%
	45–64	8.9%	10.6%
	65–110	9.3%	7.8%

Key: VHA—Veterans Health Administration; FY—Fiscal Year; SC—Service-connected

Notes: Inpatient use was ascertained based on any indication of any inpatient stay in FY09. See Technical Appendix for a complete list of inpatient source files used, for an explanation of how Veterans were identified in data, and for information on missing age values.

Cohort: Women and men Veteran VHA users who have non-missing ages between 18 and 110 years old (inclusive) in FY09. Women: N=292,894; Men: N=4,846,792.

Sources: WHEI analysis of ADUSH Monthly Enrollment Files, FY09; VA inpatient utilization files (PTF), FY09.

Figure 25. Proportion of women and men Veteran VHA patients with at least one inpatient stay, by service-connected disability ratings, FY09

		Women	Men
SC Disability Rating (Percent)	No SC	7.5%	8.2%
	SC: 0	6.6%	9.9%
	SC: 1–49	4.8%	6.5%
	SC: 50–99	7.8%	9.9%
	SC: 100	19.1%	19.0%

Key: VHA—Veterans Health Administration; FY—Fiscal Year; SC—Service-connected

Notes: Inpatient use was ascertained based on any indication of any inpatient stay in FY09. See Technical Appendix for an explanation of how Veterans were identified in data, for a complete list of inpatient source files used, and for information on missing SC values.

Cohort: Women and men Veteran VHA users with non-missing SC values in FY09. Women: N=292,108; Men: N=4,838,232.

Sources: WHEI analysis of ADUSH Monthly Enrollment Files, FY09; VA inpatient utilization files (PTF), FY09.

Notes to interpretation: As with the outpatient data discussed previously, the data on inpatient care in this section do not include fee-basis inpatient care.

Women Veterans’ Longitudinal Trends, FY00–FY09

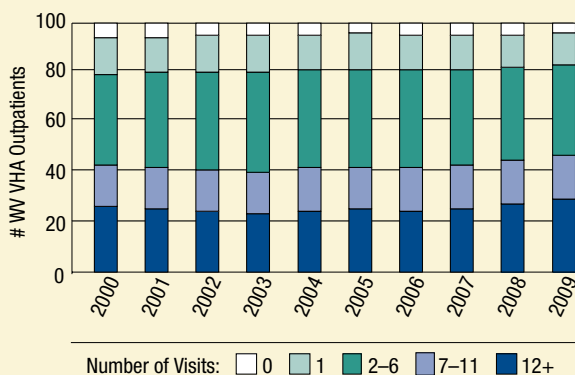
Outpatient Care

Total Outpatient Care. As the number of women Veterans in VHA nearly doubled between FY00 and FY09, the proportion of those who used any outpatient service remained stable at around 98%. However, women Veterans’ average number of VHA outpatient visits per year increased from 16.1 in FY00 to 19.0 in FY09. The rising proportion of women Veterans using VHA outpatient services 12 or more times (40% in FY00 and 48% in FY09) may explain some of this increase.

Face-to-Face Outpatient Care. The number of women Veterans in VHA with any face-to-face outpatient visit increased from 149,007 (FY00) to 278,959 (FY09). Over this period, the proportion of women receiving any face-to-face care varied slightly, between 93% and 95% (Figure 26). Little change occurred in the proportion of women Veterans who had exactly one visit, 2–6 visits, and 7–11 visits. The proportion of women Veterans with

12+ visits increased from 25% in FY00 to 29% in FY09. Likewise, the intensity of face-to-face use among women Veterans did not vary much between FY00 and FY09. Among women Veterans with at least one face-to-face visit, the average number of face-to-face visits was about the same in each year of the decade (11.3 in FY00 and 11.9 in FY09), dipping to a low of 10.2 per woman in FY06.

Figure 26. Number of women Veteran VHA patients by frequency of face-to-face outpatient visits, FY00–FY09



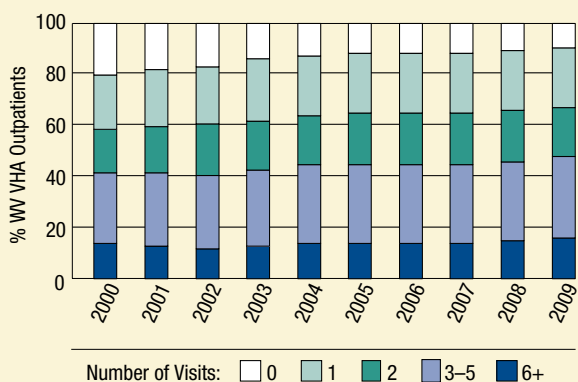
Key: VHA—Veterans Health Administration; FY—Fiscal Year; WW—Women Veterans
Notes: Multiple face-to-face visits with different clinic stop codes can occur on the same day. See Technical Appendix for an explanation of how women Veterans were identified in data.
Cohort: Women Veteran VHA users in year. N=292,921 in FY09.
Sources: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09; VA outpatient utilization files (SE), FY00–FY09.

Primary Care

Total Primary Care (PC and WHC combined). The number of women Veterans using any primary care in VHA increased markedly, from 122,903 in FY00 to 257,705 in FY09. In addition, the proportion of all women Veteran outpatients who had at least one primary care visit increased from 79% in FY00 to 90% in FY09 (Figure 27). The proportion that received primary care at least two times was 58% in FY00 and 67% in FY09. The proportion that received primary care at least three times was 41% in FY00 and 48% in FY09. The proportion that received primary care at least six times was 13% in FY00 and 15% in FY09.

Although more women were receiving care in VHA primary care clinics by FY09, women on average had about the same number of primary care visits in FY09 as in FY00. Among all women Veterans who received primary care, the average number of visits per woman Veteran was 3.5 in both FY00 and FY09.

Figure 27. Proportion of women Veteran VHA outpatients by frequency of total primary care visits, FY00–FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; WW—Women Veterans
Notes: Total primary care stop codes include 170, 171, 210, 301, 310, 319, 323, 348, 350, 394, 322, and 704. See Technical Appendix for descriptive stop code names and for an explanation of how women Veterans were identified in data.
Cohort: Women Veteran VHA outpatients in year. N=287,447 in FY09.
Sources: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09; VA outpatient utilization files (SE), FY00–FY09.

Primary Care Clinic (PC). The number of women Veterans who used primary care clinics (specifically excluding any primary care services received in women’s health clinics) in VHA increased from 104,777 (68% of all women

Veteran outpatient users) in FY00 to 225,560 (79% of all women Veteran outpatient users) in FY09 (Figure 28). The increased proportions occur steadily in each year between FY00 and FY09, and at all levels of care (1, 2, 3–5, and 6+ PC visits per year). Between FY00 and FY09, the average number of PC visits by women Veterans who had at least one PC visit in a given year was constant (3.1 in FY00 and 3.0 in FY09).

Figure 28. Proportion of women Veteran VHA outpatients by frequency of primary care clinic (PC) visits, FY00–FY09

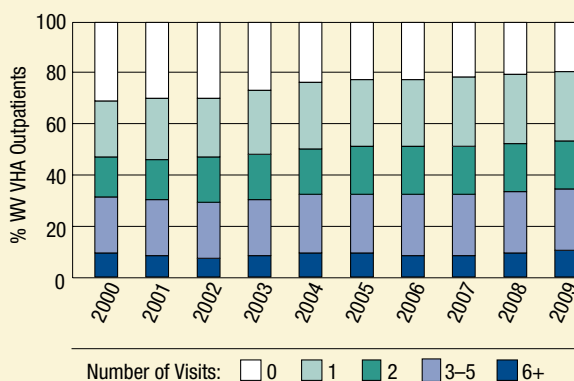
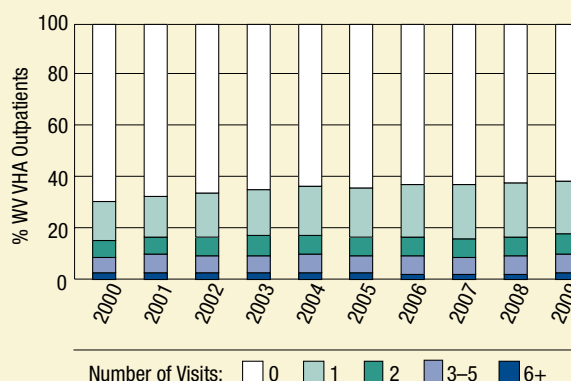


Figure 29. Proportion of women Veteran VHA outpatients by frequency of women's health clinic (WHC) visits, FY00–FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; WV—Women Veterans
Notes: Primary Care (PC) stop codes include 170, 171, 210, 301, 310, 319, 323, 348, 350, and 394. Women's Health Clinic (WHC) includes clinic stop codes 322 and 704. Clinic 322 is "Women's Clinic" and clinic 704 (used much less frequently) is "Pap Test Clinic." See Technical Appendix for descriptive stop code names and an explanation of how women Veterans were identified in data.
Cohort: Women Veteran VHA outpatients in year. N=287,447 in FY09.
Sources: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09; VA outpatient utilization files (SE), FY00–FY09.

Women's Health Clinic (WHC). Over the decade, the number of women Veteran outpatients receiving any primary care in WHCs increased markedly, from 45,827 (30%) in FY00 to 107,196 (37%) in FY09 (Figure 29). The average number of primary care visits in WHCs for women Veterans who had at least one WHC visit in a given year was nearly constant (2.3 in FY00 and 2.1 in FY09).

Notes to Interpretation: As discussed on pages 15 and 18, there is substantial variability in how different VA facilities code primary care for women. Since 2005, a number of facilities are known to have started coding primary care received in WHCs with codes that fall under the PC definition used in this report. Thus, *while estimates of "Total Primary Care" (the sum of PC and WHC) are reliable, the proportion of that care occurring in WHCs cannot be estimated with confidence at present.* Planned changes in coding procedures for WHC are expected to improve the interpretability of future data for this specific type of care.

Specialty Care for Women

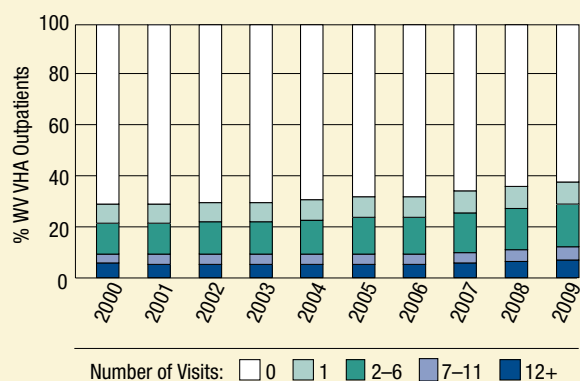
Gynecology (clinic stop code 404). Between FY00 and FY09, the proportion of women Veteran VHA outpatients who used the gynecology clinic varied slightly, ranging from 14% to 15%. The proportion of women Veteran VHA outpatient users who attended exactly one visit to a gynecology clinic was 9% in FY00 and 9% in FY09, with a low of 8% in FY07. Among women Veterans who attended gynecology clinic at least once, the average number of gynecology clinic visits per woman had been about 1.6 in each year, FY00 through FY09.

Women’s Surgery (clinic stop code 426). As a proportion of all women Veteran VHA outpatients, women attending women’s surgery clinics was as small in FY09 as it was in FY00 (0.2% in both years), although the absolute number of women Veteran patients attending these clinics had almost doubled, from 322 women in FY00 to 555 in FY09.

Mental Health Care

The number of women Veterans using any VHA mental health outpatient services increased between FY00 and FY09, from 43,739 to 105,780. This represents a sizable proportional increase among women Veteran outpatients, from 28% in FY00 to 37% in FY09 (Figure 30). The increased proportions occurred steadily in each year between FY00 and FY09, and at all levels of care (1, 2–6, 7–11, and 12+ mental health visits per year). Among women Veteran VHA patients using mental health clinics in a given year, the average number of visits fluctuated around nine visits per woman (9.3 in FY00 and 8.7 in FY09).

Figure 30. Proportion of women Veteran VHA outpatients by frequency of mental health care visits, FY00–FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; WW—Women Veterans

Notes: See Technical Appendix for an explanation of how women Veterans were identified in data and how mental health utilization was ascertained.

Cohort: Women Veteran VHA outpatients in year. N=287,447 in FY09.

Sources: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09; VA outpatient utilization files (SE), FY00–FY09.

Implications

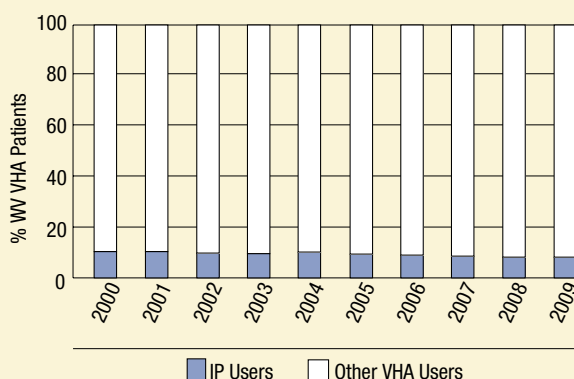
The proportion of women Veteran VHA patients who made one or more primary care visits increased between FY00 and FY09. This suggests that the VHA has been successful in its efforts to connect more women Veteran patients with primary care providers. Further, the proportion of women Veteran VHA patients who had one or more mental health visits increased between FY00 and FY09. This suggests that VHA innovations in the past 10 years, such as systematic screening for mental illness and embedded mental health providers in primary care settings, appear to have improved access to mental health services for women Veteran VHA patients.



Inpatient Admissions

The number of women Veteran VHA patients using VHA for inpatient services has grown from 14,665 in FY00 to 21,632 in FY09. However, growth in the number of inpatient users has not been as rapid as growth in the total number of women Veteran patients over the decade. This means that the *proportion* of women Veteran patients who use inpatient services at least once during each year has decreased over this period, from 9% in FY00 to 7% in FY09 (Figure 31).

Figure 31. Proportion of women Veteran VHA patients with at least one inpatient stay, FY00–FY09



Key: VHA—Veterans Health Administration; FY—Fiscal Year; WV—Women Veterans; IP—Inpatient

Notes: Inpatient use was ascertained based on any indication of any inpatient stay in the FY examined. See Technical Appendix for a complete list of IP source files used, and for an explanation of how women Veterans were identified in data.

Cohort: Women Veteran VHA users in year. N=292,921 in FY09.

Sources: WHEI analysis of ADUSH Monthly Enrollment Files, FY00–FY09; VA inpatient utilization files (PTF), FY00–FY09.

Notes to interpretation: Among women Veteran VHA patients, the proportion using inpatient care decreased between FY00 and FY09. This could reflect the fact that the proportion of women aged 65 or older decreased over the same time interval (Figure 5); as Figure 24 shows, older women Veterans more commonly use inpatient services.

Part 3: Technical Appendix

1. Data Sources

Data for this Sourcebook came from centralized VHA administrative data files spanning a 10-year period from Fiscal Year 2000 through Fiscal Year 2009 (FY00–FY09). The three source files used to create the Sourcebook database are:

ADUSH: Monthly VHA Enrollment data files maintained by the office of the Assistant Deputy Under Secretary for Health, containing records of sociodemographic characteristics and other person-level variables (sex, Veteran status, VHA user status, date of birth, service-connected disability status, etc.).

SE/SF: VHA outpatient encounter files (SAS Medical Dataset from VHA's National Patient Care Database). The SE file contains a record for every encounter the patient makes to VHA (e.g., clinic visits, telephone encounters, lab tests, radiology encounters, etc.); there can be more than one encounter on a given day. The SF file rolls up records of SE file encounters into one record per day of care.

- a. MDPPRD.MDP.SAS.SEyy (SE)
- b. MDPPRD.MDP.SAS.SFyy (SF)

PTF: VHA inpatient stay files, which contain a record for every admission to a VHA facility (SAS Medical Dataset from VHA's National Patient Care Database)

- a. MDPPRD.MDP.SAS.PMyy
- b. MDPPRD.MDP.SAS.PMOyy
- c. MDPPRD.MDP.SAS.XMyy
- d. MDPPRD.MDP.SAS.CENSUS.PMyy
- e. MDPPRD.MDP.SAS.CENSUS.PMOyy
- f. MDPPRD.MDP.SAS.CENSUS.XMyy

All programming was performed using SAS 9.2[®], and all programs were independently validated by at least one other data analyst. Data presented in this report were analyzed for program evaluation purposes.¹⁶

2. Cohort Creation

The Sourcebook reports on characteristics of women and men Veterans¹⁷ who, based on the ADUSH Enrollment File, used VHA for outpatient and/or inpatient care and/or fee-basis services and/or non-VA contract care and/or

¹⁶ These program evaluation analyses are for non-research purposes. Research publications and presentations derived from these data are covered by an approval by the Stanford University Institutional Review Board and the VA Palo Alto Health Care System Research and Development committee.

¹⁷ Non-Veterans who use VHA services are *not* included in the current report. Previous work (Frayne et al., 2008) has found that nearly half the women in the SE data files are non-Veterans, and the majority of these non-Veterans are employees. Employees appear in the database primarily due to their encounters with Employee Health (e.g., for mandatory tuberculosis screening or for influenza vaccines). Other non-Veterans who use VHA services include some active duty military personnel and some eligible spouses of Veterans. They are not a focus of this volume of the Sourcebook.

pharmacy services at least once in the year being examined, from FY00–FY09.¹⁸

Starting with the record-level files cited above, we created person-level analytical files with one observation for each person—identified by scrambled Social Security Number—found in the data sources. Our complete Women’s Health Evaluation Initiative (WHEI) Master database includes the following types of people:

- Users and non-users of VHA care,
- Veterans and non-Veterans, and
- Women and men.

Year-specific variables indicate whether an individual was a VHA user or a Veteran in a given year, since these are characteristics that may legitimately change over time. Single variables were created for sex and date of birth, which are constant across years. Table 2.1 shows the number of people in the WHEI Master database in each year examined: the number within the WHEI Master database who were VHA users (Veterans and non-Veterans combined), and the number within the WHEI Master database who were Veteran VHA users.¹⁹

Table 2.1 Number of people in WHEI Master database (overall, and Veteran VHA users) by year

Fiscal Year	Total in WHEI Master database (women and men, Veterans and non-Veterans, VHA users and non-users)	Total Veteran VHA users*
2000	5,249,069	3,395,205
2001	6,379,138	3,843,832
2002	7,180,757	4,246,084
2003	7,581,489	4,505,433
2004	7,915,775	4,677,720
2005	8,206,947	4,802,582
2006	8,238,168	4,901,827
2007	8,394,406	4,950,501
2008	8,563,192	4,998,184
2009	8,869,648	5,140,379

* These numbers include those with missing sex values. For example, in FY09, there are 5,140,379 Veteran VHA users in the WHEI Master database. This is 589 more people than the 5,139,790 women plus men Veteran users reported in Source Book figures, because of missing data: Gender was not available for 589 Veteran users in FY09.

18 Because the ADUSH file counts use of fee-basis services, non-VA contract care, and pharmacy services as instances of VHA utilization, a small number of patients whose *only* use of VHA services is through fee-basis care, non-VA contract care, or outpatient pharmacy services are included in the cohort examined in this Sourcebook. In FY09, only 1.8% (5,204) of women Veterans who were identified as VHA users by ADUSH had no utilization of VHA outpatient or inpatient care (and thus were presumably VHA users by virtue of fee-basis, contract, or pharmacy services only). Because the analyses in this Sourcebook do not draw upon VHA’s fee-basis, contract care, and pharmacy files, we do not explicitly characterize these types of utilization.

19 The definitions of variables for woman, Veteran, and VHA user are intended to replicate as closely as possible the definitions used by the VHA Support Service Center (VSSC) in their data report cubes, so as to maximize compatibility between data appearing in various VHA reports. There is a slight difference in the number of women Veteran users that we report and the number reported by VSSC (e.g., a difference of approximately 40 women Veteran VHA users in FY09).

3. Algorithms for Sociodemographic Characteristics

The WHEI Master database created for the Sourcebook includes person-level sociodemographic indicators derived from data in the ADUSH Enrollment file (in some cases supplemented with data from the SE/SF files), for each year from FY00–FY09. These variables include use of VHA services, Veteran status, sex, date of birth, and service-connected disability status. Data sources are described in Section 1 of this Technical Appendix.

3.1 VHA Users

VHA users were identified from ADUSH files using a year-specific user variable labeled “FYyy,” and the following cost variables:

2000–2001: CNHCOST; FEECOST; LTCCOST; MEDCOST; NVACOST; OPCCOST; PSYCOST; SURCOST

2002–2007: DSSCNHCOST; DSSFEECOST; DSSLTCCOST; DSSMEDCOST; DSSNVACOST; DSSOPCCOST; DSSPSYCOST; DSSSURCOST; CNHCOST; FEECOST; LTCCOST; MEDCOST; NVACOST; OPCCOST; PSYCOST; SURCOST

2008–2009: DSSCNHCOST; DSSFEECOST; DSSLTCCOST; DSSMEDCOST; DSSNVACOST; DSSOPCCOST; DSSPSYCOST; DSSSURCOST; ARCCNHCOST; ARCFEECOST; ARCLTCCOST; ARCMEDCOST; ARCNVACOST; ARCOCCOST; ARCPSYCOST; ARCSURCOST

A person was considered to be a VHA user in a particular fiscal year if both the following were true:

1. “FYyy=1” for the specified year AND
2. Sum of all cost variables is >0 for the specified year.

All others were non-users (1/0 variable). The term “user” is synonymous with the term “patient” in this report.

3.2 Veterans

Two methods were employed to identify Veterans (1/0 variable) in each year over the 10-year period. Because true changes in Veteran status can occur, we did not require that Veteran status for a given individual be consistent across years.

FY03–FY09: Identified using variables labeled “PRIO1_8” and “ELIG.”

A patient is considered a Veteran if either of the following is true:

1. PRIO1_8 value is NOT missing OR
2. PRIO1_8 value IS missing, AND the first letter of the ELIG variable value is NOT=“N”

FY00–FY02: In these years, the variable PRIO1_8 was not available in the ADUSH file. Therefore, we used variables labeled “MATCH” and “ELIG.”

A patient is considered a Veteran if either of the following is true:

1. MATCH NOT=Cost Only, OR
2. The first letter of the ELIG value is NOT=“N”

3.3 Sex

Creating a definitive sex variable for each person involved three steps.

In Step 1, we created a sex variable for each year. Two different ADUSH variables were employed to identify sex (female/male) in each year over the 10-year period.

FY06–FY09: Identified using variable labeled “SEX_BEST”²⁰

FY00–FY05: In the years prior to “SEX_BEST” becoming available, we used variable labeled “SEX.”

In Step 2, we assigned a single, constant sex value that is applied to each of the 10 years. We did this to address the fact that the sex variable may be missing (not coded) in some years, or that a patient’s sex could be discrepant across years. Specifically, we used the most recent (closest to FY09) non-missing value for sex. This step reduced the number of people who had missing sex values and assured that an individual was assigned the same value for sex in every year. The rationale for using the most recent value is the assumption that more recent values reflect “corrected” values.²¹

In Step 3, we addressed the issue of any remaining instances of missing values for the sex variable. Specifically, for any individuals whose sex value was still missing at the end of Step 2, we assigned the most recent non-missing value of sex from the SF outpatient utilization file.

See Section 5.1 for the proportion of people who had at least one instance of discrepant values across the 10-year period. See Section 5.2 for the proportion of people in each fiscal year who were missing sex values at Step 1, at Step 2, and at Step 3.

3.4 Age

Creating a definitive age variable for each person involved four steps.

In Step 1, we created a date of birth variable for each year using ADUSH data.

FY06–FY09: Identified using variable labeled “DOB_BEST”

FY00–FY05: In the years prior to DOB_BEST becoming available, we used the variable labeled “DOB.”

In Step 2, we assigned a single, constant DOB value that is applied for each of the 10 years. We did this to address the fact that the DOB variable may be missing (not coded) in some years, or that a patient’s DOB could be discrepant across years, or that the patient’s DOB could yield an out-of-range age (while an age of 17 years or 111+ years is theoretically possible, we assumed that the very small number of instances of ages <18 years or >110 years reflected data errors and were thus invalid). Specifically, we used the most recent (closest to FY09) non-missing, within-range value for DOB. This step reduced the number of people who had missing or out-of-range DOB values and assured that an individual was assigned the same value for DOB in every year. The rationale for using the most recent value is the assumption that more recent values reflect “corrected” values.

In Step 3, we addressed the issue of any remaining instances of missing values for the DOB variable. Specifically, for any individuals whose DOB value was still missing at the end of Step 2, we assigned the most recent non-missing, within-range value of DOB from the SF outpatient utilization file.

In Step 4, we calculated age in a given year by subtracting the DOB from the first day of the fiscal year.

20 Since FY06, the VA Information Resource Center (VIREC) Vital Status files include derived sociodemographic variables (SEX_BEST, DOB_BEST, DOD_BEST). These variables incorporate information from multiple data sources and thus represent more complete/accurate variables. ADUSH files use these variables from FY06 onward.

21 There were very few cases of discrepant sex in ADUSH: In only 0.12% of cases was there inconsistency in coding of female/male status across years. Instances of a change in the patient’s sex from one year to another year probably reflect data entry errors: The wrong sex is entered one year, and then the error is corrected in a subsequent year. True changes in the patient’s sex (e.g., through surgery) are likely less common. While these databases do not allow us to distinguish between data entry errors and true changes in sex, in both cases it seems reasonable to assign the last-recorded sex to the patient.

See Section 5.2 for the proportion of people in each fiscal year who were missing DOB value at Step 1, at Step 2, and at Step 3.

3.5 Service-Connected Disability Status

The service-connected (SC) disability status variable is based on the variable “SCPER” in the ADUSH file. Like the Veteran variable, SCPER can potentially change across years for legitimate reasons (i.e., if the individual’s SC disability rating changes). If the SCPER variable was populated in ADUSH, we assigned the ADUSH SCPER value to the individual. If the SCPER variable was missing, we considered the individual as not having an SC disability status (i.e., the individual was either a non-SC Veteran, or a non-Veteran), except in the small number of instances where the ELIG variable in ADUSH indicated that the individual was an SC disability-rated Veteran. In the latter case, we counted the SCPER variable as missing, because true SC status could not be resolved. See Section 5.3.c for data quality control checks supporting this approach.

4. Algorithms for Utilization

Outpatient Utilization

Outpatient utilization variables are derived from the SE outpatient encounter files. Clinic “stop codes” (codes indicating clinic type) identify the clinical setting in which the patient received care.²² This report examines the following specific types of outpatient care:

- **Total Outpatient Care** refers to any type of outpatient care (i.e., all clinic stop codes are considered outpatient care).
- **Face-to-Face Outpatient Care** represents face-to-face care with a clinician (such as primary care visits, mental health visits, other specialty care visits, rehabilitation care visits, etc.). Other types of encounters that do not involve a face-to-face visit with a clinician (such as lab tests, radiology tests, and telephone encounters) are not included in this type of care.
- **Primary Care Clinic** refers to primary care received in a general medical clinic. In addition to providing preventive care and care for gender-neutral conditions, such clinics sometimes provide gender-specific care to women (such as cervical cancer screening and breast exams), and sometimes refer women to a different clinic for such gender-specific services.
- **Women’s Health Clinic** refers to primary care services received in a clinic designed specifically for women. Such clinics sometimes provide comprehensive primary care services to women (i.e., preventive health care, care for gender-neutral conditions, and care for gender-specific conditions), and sometimes provide care only for gender-specific conditions (such as cervical cancer screening and breast exams for women who get most of their primary care in non-gender-specific Primary Care Clinics). *Note:* There is variability in how different VA facilities code primary care for women. Prior work has quantified this variability by examining the percent of women at a facility who had at least one women’s health clinic visit (stop code 322). In FY09, this percent ranged from 0–69% across facilities. Some facilities known to have women’s health clinics had no patients with 322 coded, suggesting variability in how the code was used and interpreted.²³ This is consistent with the fact that, since 2005, a number of facilities are known to have started coding primary

22 “Stop codes” are clinic type codes, which are used to identify outpatient care in VHA. Each type of clinic has a unique three-digit code. The codes are entered into the local VHA VISTA system for each patient encounter (e.g., a clinic visit, a radiology procedure, a clinical telephone encounter). The data gathered through VISTA are aggregated into SE files in the national SAS Medical Datasets.

23 Herrera L, Iqbal S, Hayes PM, Phibbs CS, Friedman SA, Laungani L, Berg E, Frayne SM. *Can Stop Codes Identify Women’s Health Care?* Poster presentation at VA HSR&D Women’s Health Services Research Conference in Washington, D.C., July 2010.

care received in women’s health clinics with codes that fall under the PC definition employed here. This leads to an important caveat about WHC data in this report: While estimates of “Total Primary Care” (the sum of PC and WHC) are reliable, the proportion of that care occurring in women’s health clinics cannot be estimated with confidence at present. Planned changes in coding procedures for women’s health clinic are expected to improve the interpretability of future data for this specific type of care.

- **Women’s Specialty Care** refers to gynecology clinic and ambulatory surgery clinic for women.
- **Mental Health Care** refers to care received in mental health clinics (individual or group mental health settings).

For each type of care, in the WHEI Master database, we created a count of the total number of encounters occurring for a patient in one fiscal year (for each year FY00–FY09), regardless of whether those encounters occurred on the same day. Of note, while we exclude duplicate records (encounters by the same person on the same day at the same facility to the same clinic stop code, representing erroneous double-entry of a record), more than one encounter may legitimately occur on a single day. For example, a patient may visit a primary care clinic, cardiology clinic, podiatry clinic, and the outpatient laboratory all on the same day; using our approach, all but the lab visit would be counted toward the “face-to-face outpatient care” tally, and the primary care visit would be counted toward the “primary care” tally. It is important to capture all visits occurring on each day (rather than simply counting total number of days on which care was received), because some patients intentionally try to consolidate as much care as possible on a single day (e.g., to reduce the need to travel to the VHA or to reduce time away from work or caregiving). The frequency of duplicate records is described in Section 5.4.

Outpatient variables stop codes. The specific clinic stop codes from the SE file used to create counter variables for each type of care are listed here.

4.1 Outpatient care encounters

Any stop code.

4.2 Face-to-face outpatient care encounter

101,102,116,117,118,119,121,122,123,124,125,130,131,144,149,152,153,156,157,159,160,165,170,171, 172,173,174,175,176,177,180,185,186,187,188,190,191,195,196,197,198,201,202,203,204,205,206,209, 210,211,214,215,217,218,219,220,230,290,291,292,293,294,295,296,301,302,303,304,305,306,307,308, 309,310,311,312,313,314,315,316,317,318,319,320,321,322,323,327,328,329,330,331,332,333,334,335, 336,337,348,349,350,351,352,370,372,373,394,401,402,403,404,405,406,407,408,409,410,411,412,413, 414,415,416,418,419,420,422,426,427,429,430,431,432,433,434,435,436,437,438,439,457,480,501,502, 503,504,505,506,509,510,512,513,514,516,519,520,521,523,524,525,529,531,532,533,534,538,540,547, 550,551,552,553,554,556,557,558,559,560,561,562,563,564,565,566,567,568,571,572,573,574,576,577, 578,580,581,582,583,589,590,591,593,594,595,596,602,603,604,606,607,608,610,650,651,652,653,654, 655,656,658,681,691,704,707,708,709,712,713,716,718,725,726,727,728,730,731

In addition, the count of face-to-face encounters excludes records where the CPT code is between 80048 and 89399 (laboratory codes) for all SE variables CPT1 through CPT20.

4.3 Primary care clinics (separate variable for each stop code)

170	Home-based Primary Care
171	Nursing (RN or LPN)
210	Spinal Cord Injury
301	General Internal Medicine
318	Geriatric Clinic

- 319 Geriatric E and M
- 323 Primary Care Medicine²⁴
- 348 Primary Care Group
- 350 Geriatric Primary Care
- 394 Med Specialty Group (Primary stop code only)

4.4 Women's health clinics (separate variable for each stop code)

- 322 Women's Clinic²⁵
- 704 Pap Test Clinic

4.5 Specialty care in clinics designed for women (separate variable for each stop code)

- 404 Women's Specialty Care
- 426 Women's Surgery

4.6 Mental health care clinics

- 125 Social Work Svc
- 156 HBPC-Psychologist
- 157 HBPC-Psychiatrist
- 165 Bereavement Counseling
- 173 Home-based Primary Care-Social Work
- 292 Observational Psychiatry
- 501 Homeless Mentally Ill
- 502 Mental Health-Individual
- 503 Mental Health Residential Care
- 504 IPCC Medical Center VI
- 505 Day Treatment-IND
- 506 Day Hospital-IND
- 509 Psychiatry-IND
- 510 Psychology (PSO)-Individual
- 512 Mental Health Consultation
- 516 PTSD Group
- 519 Subst. Abuse / Teams
- 524 Active Duty Sex Trauma
- 525 Women's Stress Disorder Treatment Teams
- 529 Health Care for Homeless Veterans (HCHV)/HMI
- 531 Mental Health Primary Care Team
- 532 Psychosocial Rehabilitation Individual
- 533 Mental Health Intervention Biomedical Care-Individual
- 534 Mental Health Integrated Care
- 538 Psychological Testing
- 540 PTSD Clinical Team (PCT) Post-Traumatic Stress-Individual
- 550 Mental Hygiene-Group
- 551 IPCC Community Clinic
- 552 Mental Health Intensive Case Management
- 553 Day Treatment-Group

²⁴ 323 is the stop code most commonly used for primary care clinics.

²⁵ 322 is the stop code most commonly used for women's health clinic; 704 is rarely used.

554	Day Hospital Group
557	Psychiatry-Group
558	PSYCHOLOGY-GROUP
559	PSY/SOC REHAB-GRP
560	SUBST ABUSE-GRP
561	PCT PTSD-GRP
562	PTSD-INDIVIDUAL
563	MH PRIM CARE TEAM-GRP
564	MH TEAM CASE MGT
565	MH MEDICAL CARE ONLY-GRP
566	MH RISK-FACTOR-REDUCTION ED GRP
567	MHICM GRP
568	MENTAL HEALTH COMPENSATED WORK THERAPY/ SUPPORTED EMPLOYMENT (CWT/SE) Face-to-Face
571	Serv-MH, IND
572	Serv-MH, GRP
576	PSYCHOGERIATRIC CLINIC, IND
577	PSYCHOGERIATRIC CLINIC, GRP
578	PSYCHOGERIATRIC DAY PROGRAM
580	PTSD DAY HOSP
581	PTSD DAY TREAT
582	PRRC IND
583	PRRC GRP
589	NON-ACTIVE DUTY SEX TRAUMA
713	GAMBLING ADDICTION
725/593	RESIDENTIAL REHABILITATION TREATMENT PROGRAMS (RRTP) OUTREACH SERVICES
726/594	RESIDENTIAL REHABILITATION TREATMENT PROGRAMS (RRTP) AFTERCARE–COMMUNITY
727/595	RESIDENTIAL REHABILITATION TREATMENT PROGRAMS (RRTP) AFTERCARE–VHA
728/596	RESIDENTIAL REHABILITATION TREATMENT PROGRAMS (RRTP) ADMISSION SCREENING SERVICES
730	RESIDENTIAL REHABILITATION TREATMENT PROGRAMS (RRTP)–GENERAL CARE [Event Capture System (ECS) USE ONLY]

Inpatient Utilization

The inpatient variable is a yes/no variable that indicates whether the person was on inpatient status at any time during a given year. Note that if a stay extended across fiscal years, the individual would be considered to have been on inpatient status during more than one year. We used the six inpatient data files listed in Section 1 of the Technical Appendix to identify inpatient stays.

5. Data Quality Control

5.1 Consistency

Within-year consistency. We confirmed that ADUSH variables (FYyy, ELIG, MATCH, PRIO1_8, SEX, SEX_BEST, DOB, DOB_BEST, and SCPER) had consistent values for an individual within any given year. This allowed us to create datasets with a single record each year for each person out of multi-record ADUSH files without needing to reconcile discrepant values.

Cross-year consistency of sex variable. Each individual in the database has between 1 and 10 different year-specific sex variables, depending on the number of years in which they were VHA patients (FY00–FY09). We investigated how many people had inconsistent values for sex. We calculated the proportion of all patients in the database (FY00–FY09) whose records were either all consistent (100%), mostly consistent (51–99% of records indicate one sex), or consistent half the time (50% of records indicate one sex).

The results are in Table 5.1. There were very few cases of discrepant sex; in only 0.12% of cases was there inconsistency in coding of female/male status across years. Most instances of a change in the patient’s sex from one year to another year probably reflect data entry errors: The wrong sex is entered one year, and then the error is corrected in a subsequent year. True changes in the patient’s sex (e.g., through surgery) are likely less common. While these databases do not allow us to distinguish between data entry errors and true changes in sex, in both cases it seems reasonable to assign the last-recorded sex to the patient.

Table 5.1 Percent of individuals in database, by cross-year consistency of sex variable, FY00–FY09

	Consistency across 10 years (FY00–FY09)		
	100%	51–99%	50%
SEX	99.87%	0.11%	0.01%

Note: Inconsistency levels of the sex variable reflect the data before a single, cross-year sex variable was created, i.e., this data check occurred at Step 1 of the sex variable creation process (see Table 5.2.a).

Although the proportion of people in the database with inconsistent sex values is small, accurately ascertaining whether patients are female or male is critical to the mission of this report. Section 3.3 describes the algorithm used to improve consistency and completeness in the sex variable.

5.2 Missing Data

Missing data were assessed for all analytical variables. Table 5.2.a and 5.2.b show the proportion of people in the database who were missing data for the final sex and the final age variables. Table 5.2.c shows the proportion of people in the database who were missing data for service-connected disability status. None of the individuals in our cohort of Veteran users of VHA services are missing data for the user or Veteran variables.

Table 5.2.a shows the proportion of observations that are missing sex in each year before we completed steps to supplement from other years of ADUSH data and the SF file (see section 3.3 for more explanation of these steps). These steps reduced the number of people who were missing a sex value in the final analytical variable. It is important to note that the count of women and men in our cohort does not include the small group of patients (589 in FY09) whose sex could not be determined.

Table 5.2.a Number of individuals (among Veteran VHA user cohort—men and women) missing a sex value in each fiscal year, by step of sex variable creation algorithm (see Section 3.3 for complete algorithm)

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Step 1: Year-specific sex value	# missing	325,007	366,838	392,104	66,547	90,840	79,310	243	384	1,521	1,421
	(%)	8.9%	8.8%	8.6%	1.5%	1.9%	1.7%	0.0%	0.0%	0.0%	0.0%
Step 2: Single sex value	# missing	203,739	230,762	213,013	6,816	10,135	7,211	181	275	358	1,414
	(%)	5.6%	5.6%	4.7%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%
Step 3: Supplement with SF	# missing	10,668	4,683	2,918	1,404	3,252	816	180	274	313	589
	(%)	0.3%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

Key: VHA—Veterans Health Administration; SF—NPCD Outpatient utilization file.

Note: In Step 1, we created a sex variable for each year using ADUSH data. In Step 2, for people who were missing a sex value in a given year, we assigned the most recent non-missing sex value from the ADUSH file. In Step 3, we assigned the most recent non-missing sex value from the SF outpatient utilization file. For example, in FY00, 325,007 people (9% of Veteran VHA patients in FY00) were missing sex values in the FY00 ADUSH file. After assigning sex values found in other years of the ADUSH file, 203,739 people still had missing values (down to 6% of Veteran VHA patients in FY00). Extending the search to the SF file reduced the number of people with missing values to 10,668 (0.3% of Veteran patients in FY00).

Table 5.2.b Number of individuals (among Veteran VHA user cohort—women and men) missing a date of birth (DOB) value in each fiscal year, by step of DOB creation algorithm (see Section 3.4 for complete algorithm)

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Step 1: Year-specific DOB value	# missing	87,954	60,531	93,740	66,517	90,863	79,444	213	350	1,494	1,397
	(%)	2.6%	1.6%	2.2%	1.5%	1.9%	1.7%	0.0%	0.0%	0.0%	0.0%
Step 2: Single DOB value	# missing	17,674	12,514	10,093	6,845	10,149	7,235	192	273	375	1,498
	(%)	0.5%	0.3%	0.2%	0.2%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%
Step 3: Supplement with SF	# missing	9,478	3,968	2,368	1,438	3,268	845	190	272	330	670
	(%)	0.3%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%

Key: VHA—Veterans Health Administration; DOB—date of birth; SF—NPCD Outpatient utilization file.

Note: In Step 1, we created a date of birth variable for each year using ADUSH data. In Step 2, for people who were missing a date of birth in a given year, we assigned the most recent non-missing, within-range date of birth from the ADUSH file. In Step 3, we assigned the most recent non-missing, within-range value of DOB from the SF outpatient utilization file. For example, in FY00, 87,957 people (2.6% of Veteran VHA patients in FY00) were missing date of birth in the FY00 ADUSH file. After assigning within-range dates of birth found in other years of the ADUSH file, 17,674 people still had missing values (down to 0.5% of Veteran VHA patients in FY00). Extending the search to the SF file reduced the number of people with missing values to 9,478 (0.3% of Veteran patients in FY00).

Table 5.2.c Number (and proportion) of cohort (Veteran VHA users N=5,140,379 in FY09) missing a service-connected value in each fiscal year (see Section 3.5 for complete algorithm)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
#	34,054	21,719	68,162	58,333	62,705	59,064	66,332	75,583	88,151	9,450
%	1%	1%	2%	1%	1%	1%	1%	2%	2%	0%

Note: After creating a service-connected variable using the SCPER and ELIG variables, there were 9,450 Veteran VHA users missing a service-connected value in FY09.

5.3 Agreement between variables providing similar information

In FY06–FY09, an additional sex variable (SEX_BEST) and additional DOB variable (DOB_BEST) are available in the ADUSH file, derived from Vital Status files. Tables 5.3.a and 5.3.b compare the number of missing observations between the two variables. Table 5.3.c investigates whether individuals missing values of SCPER have ELIG values that are consistent with not carrying a service-connected disability status.

Cross tabulations are provided below:

Table 5.3.a Completeness of SEX vs. SEX_BEST from ADUSH file, among Veterans and non-Veterans, VHA users, and non-users of VHA, FY09

		Variable: SEX_BEST			Total
		Missing	Female	Male	
Variable: SEX	Missing	180,248	60,397	43,219	284,864
	Female	4,361	548,679	1,687	554,727
	Male	31,792	1,685	7,996,580	8,030,057
	Total	217,401	610,761	8,041,486	8,869,648

Note: Missing values include the values “not found” and “unknown.”

Interpretation of 5.3.a: The variable SEX_BEST is missing for fewer people than the variable SEX. Note also that of the 284,864 people who were missing information on whether they were female or male using the SEX variable, 60,397 are identified as women using SEX_BEST. This compares to only 4,361 identified as female using SEX where SEX_BEST is missing.

Table 5.3.b Completeness of DOB vs. DOB_BEST from ADUSH file, among women and men Veteran VHA users, FY09

		Variable: DOB_BEST		Total
		Missing	Present	
Variable: DOB	Missing	529	23,783	24,312
	Present	868	5,115,199	5,116,067
	Total	1,397	5,138,982	5,140,379

Interpretation of 5.3.b: The variable DOB_BEST is missing for fewer people than the variable DOB.

Table 5.3.c Non-service-connected in ELIG vs. missing SCPER among all VHA users (Veterans and non-Veterans), FY09

		Variable: ELIG				Total
		Veteran, service-connected	Veteran, not service-connected*	Non-Veteran**	Value missing	
Variable: SCPER	Value present #	2,103,679	50,498	7,261	0	2,161,438
	Value missing #	9,450	2,959,751	316,132	0	3,285,333
	Total #	2,113,129	3,010,249	323,393	0	5,446,771

* Includes the following values of ADUSH ELIG variable: A2, A4, A5, A6, AN, C2, C5, G5, X4, X5, U5, C, U6, A, C4, C6, G, G2, G4, G6, U, U2, X, X2, X6.

** Includes all ELIG values beginning with N.

Interpretation of 5.3.c: Most (99.0%, or 2,959,751) VHA patients who are missing SCPER have an ELIG value that suggests they do not have a service-connected disability status. This includes people whose ELIG value explicitly indicated no service-connected disability status, as well as those whose ELIG value explicitly indicated that they were not a Veteran.

5.4 Analysis of duplicate stop codes

The counts of stop code utilization excluded duplicate stop codes (see Section 4). Among all FY09 encounters that were duplicates, we examined which stop codes accounted for the highest volume of duplicates. Table 5.4 shows that 8.6% of all outpatient encounters in FY09 were duplicates. Nearly half these duplicates were laboratory (stop code 108). This is not surprising since patients often may have more than one lab service on a given day. The second most common duplicate stop code was primary care encounters (stop code 323).

Table 5.4 Clinic stops with high rates of duplicate records

Stop code	CLINIC STOP	Frequency	Proportion of all duplicates
108	LABORATORY	3,674,844	45.9
323	PRIMARY CARE/MED	871,032	10.9
560	SUBST USE DISORDR GRP	281,066	3.5
502	MENTAL HEALTH-IND	218,652	2.7
105	X-RAY	192,554	2.4
547	INTNSE SUB USE DSRDR GRP	161,366	2.0
130	EMERGENCY DEPT	139,789	1.8
180	DENTAL	130,695	1.6
103	TELEPHONE TRIAGE	117,844	1.5
513	SUBST USE DISORDR IND	111,303	1.4
523	OPIOID SUBSTITUTION	91,972	1.2
407	OPHTHALMOLOGY	83,613	1.0
553	DAY TRMT-GRP	81,527	1.0
408	OPTOMETRY	78,175	1.0
147	TELEPHONE/ANCILLARY	60,412	0.8
202	REC THERAPY SERVICES	55,020	0.7
561	PCT PTSD-GRP	54,930	0.7
559	PSY/SOC REHAB-GRP	52,466	0.7
107	EKG	51,944	0.7
150	COMPUTER TOMOGRAPHY (CT)	51,300	0.6

**Women Veterans Health
Strategic Health Care Group**

www.womenshealth.va.gov

Department of Veterans Affairs
Veterans Health Administration
810 Vermont Avenue, NW
Washington, DC 20420

December 2010