

2010 VIREC Database and Methods Cyber Seminar Series



Assessing VA Health Care Use: Outpatient

June 7, 2010

Presented by:
Timothy E. Weddle, PhD, MBA



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Session Objectives

- **How has outpatient healthcare utilization been measured in VA studies?**
- **Overview of Medical SAS Outpatient databases**
- **Finding information in the Outpatient Medical SAS databases**
- **Examples of VA studies that have used the Outpatient Medical SAS databases**
- **Where to go for more help**

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How has outpatient healthcare utilization been measured in VA studies?: Categories of outpatient provider care

- Homaifar, Harwood, Wagner, Brenner. Description of outpatient utilization and costs in group of veterans with traumatic brain injury. *J of Rehab R&D*. 2009; 46 (8): 1003-1010.
- OP utilization as an outcome in four categories of provider care

JRRD Department of Veterans Affairs
Rehabilitation Research & Development Service
Journal of Rehabilitation Research & Development

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Description of outpatient utilization and costs in group of veterans with traumatic brain injury

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Abstract — In an attempt to increase understanding regarding the nonacute healthcare needs of veterans with traumatic brain injury (TBI), we examined the outpatient utilization and cost patterns of 72 patients with TBI who were at least 4 years postinjury. We selected participants from a clinical database of veterans receiving care at a western Department of Veterans Affairs (VA) medical center. We extracted data from national utilization databases maintained by the VA and examined data from primary care and internal medicine, psychiatry and substance use, rehabilitation, and other services (e.g., ancillary, diagnostic, prosthetic, dental, nursing home, and home care). We extracted data for fiscal years 2002 to 2007. In addition to descriptive statistics, we modeled visits per year as a function of time since injury. The data show that this sample of patients with TBI consistently used a wide array of outpatient services over time with considerable variation in cost. Further study regarding economic aspects of care for patients with TBI is warranted.

Key words: aging, costs, Department of Veterans Affairs, healthcare, nonacute care, outpatient services, rehabilitation, traumatic brain injury, utilization, veterans.

Abbreviations: GCS = Glasgow Coma Scale, HERC = Health Economics Resource Center, LOC = loss of consciousness, PTA = posttraumatic amnesia, TBI = traumatic brain injury, VA = Department of Veterans Affairs, VAMC = VA medical center.

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Email: beeta.homaifar@va.gov
DOI:10.1682/JRRD.2008.12.0166

How has outpatient healthcare utilization been measured in VA studies?: Use of Depression and PTSD Diagnosis

- Chan, Cheadle, Reiber, et al. Health care utilization and its costs for depressed veterans with and without comorbid PTSD symptoms. *Psychiatric Services*. 2009; 60 (12): 1612-1617.
- Outpatient utilization used as an outcome in two categories of provider care

Health Care Utilization and Its Costs for Depressed Veterans With and Without Comorbid PTSD Symptoms

Domin Chan, Ph.D. M.H.S.
Allen D. Cheadle, Ph.D.
Gayle Reiber, Ph.D., M.P.H.
Jürgen Untzter, M.D., M.P.H.
Edmund F. Chaney, Ph.D.

Objective: This study examined health care utilization and costs of care among Veterans Affairs (VA) patients with depression and with or without symptoms of comorbid posttraumatic stress disorder (PTSD). **Methods:** Cross-sectional comparisons of health care utilization and costs were conducted with VA administrative data for a sample of veterans from a randomized trial of collaborative care depression treatment in ten VA primary care clinics across five states. Patients with depression or dysthymia were included in the study, and those who were acutely suicidal or had probable bipolar disorder were excluded. The sample of 608 patients was mainly male, white, and aged 55 or older. Health care utilization, costs, and medication data from VA administrative databases were analyzed over 12 months. **Results:** Patients with depression and PTSD (screen score ≥ 3) were more emotionally distressed, had more frequent mental health specialty visits (6.91 versus 1.68, $p < .001$), more total outpatient visits (26.16 versus 19.94, $p < .001$), and correspondingly higher outpatient mental health care costs over the previous 12 months compared with depressed patients without PTSD. Antidepressants were prescribed to a higher proportion of depressed patients with PTSD (61% versus 40%). **Conclusions:** Patients with PTSD and depression had greater utilization of specialty mental health treatments and antidepressant medications and higher mental health care costs in the previous 12 months than depressed patients without PTSD. As military personnel return from Iraq, both VA and non-VA health care providers need to plan for an increase in outpatient mental health services and costs, particularly among depressed veterans who also have PTSD. (*Psychiatric Services* 60:1612-1617, 2009)

Symptoms of depression often co-occur with symptoms of posttraumatic stress disorder (PTSD). Among veterans with PTSD, rates of comorbid major depression range from 29% to 68% (1-4). Among veterans with clinical depression, rates of comorbid PTSD are 36%-51% (5,6). Among depressed female veterans, rates of comorbid PTSD may be as high as 77% (7).

Persons with both depression and PTSD have high levels of symptomatic distress. They have more severe depressive symptoms, a more complicated and persistent history of mental illness (8,9), and higher rates of suicidal behavior than depressed patients without PTSD (10). Patients with both conditions experience greater role impairment and recover more slowly than those with PTSD alone (11). Depression and PTSD are independently associated with higher health care use and costs (12,13).

PTSD among veterans is a growing problem, and its care has significant consequences for staffing levels and budgets within the U.S. Department of Veterans Affairs (VA) mental health system. Depression has been consistently associated with higher health care costs and utilization in both veteran and general populations (12,14,15). Most studies have also shown that PTSD patients have higher medical and surgical inpatient and outpatient utilization for physical and mental health problems than non-PTSD patients (7,16-19). Depression and

Dr. Chan, Dr. Untzter, and Dr. Chaney are affiliated with the Department of Psychiatry and Behavioral Sciences and Dr. Cheadle and Dr. Reiber are with the Department of Health Services, all at the University of Washington, Seattle. Dr. Reiber and Dr. Chaney are also with the Health Services Research and Development Center of Excellence, Veterans Affairs Puget Sound Health Care System, Seattle. Send correspondence to Dr. Chan, Department of Psychiatry and Behavioral Sciences, University of Washington, Box 356500, Seattle, WA 98195-7000 (e-mail: dominc@u.washington.edu). This study was presented at the American Public Health Association annual meeting, November 6, 2007, Washington, D.C.

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PSYCHIATRIC SERVICES • ps.psychiatryonline.org • December 2009 Vol. 60 No. 12

How has outpatient healthcare utilization been measured in VA studies?: Veteran and non-Veteran Status

BRIEF REPORT

Gender Disparities in Veterans Health Administration Care *Importance of Accounting for Veteran Status*

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Lakshmi Ananth, MS,** Victor Y. Chiu, BA,* and Claran S. Phibbs, PhD*‡****‡‡

Background: In an effort to assess and reduce gender-related quality gaps, the Veterans Health Administration (VHA) has promoted gender-based research. Historically, such appraisals have often relied on secondary databases, with little attention to methodological implications of the fact that VHA provides care to some nonveteran patients.

Objectives: To determine whether conclusions about gender differences in utilization and cost of VHA care change after accounting for veteran status.

Design: Cross-sectional.

Subjects: All users of VHA in 2002 (N = 4,429,414).

Measures: Veteran status, outpatient patient utilization and cost, from centralized 2002 administrative files.

Results: Nonveterans accounted for 50.7% of women (the majority employees) but only 3.0% of men. Among all users, outpatient and inpatient utilization and costs were far lower in women than in men, but in the veteran subgroup these differences decreased substantially or, in the case of use and cost of outpatient care, reversed. Utilization and cost were very low among women employees; women spouses of fully disabled veterans had utilization and costs similar to those of women veterans.

Conclusions: By gender, nonveterans represent a higher proportion of women than of men in VHA, and some large nonveteran groups have low utilization and costs; therefore, conclusions about gender disparities change substantially when veteran status is taken into account. Researchers seeking to characterize gender disparities in VHA care should address this methodological issue, to minimize risk of underestimating health care needs of women veterans and other women eligible for primary care services.

Key Words: veterans, women's health, utilization, cost of illness, health services research

(*Med Care* 2008;46: 549-553)

Women's health care delivery in the Veterans Health Administration (VHA) has received increased scrutiny in recent years. As an extreme minority group within a system historically oriented toward the care of men, women are at risk for receiving lower quality care; indeed, quality gaps have been identified in the past.¹⁻³ With propagation of new women's health clinical programs designed to address these gaps,⁴ a parallel literature base assessing quality of care provided to women is emerging.⁵ However, an infrequently discussed methodological issue may limit interpretation of some of this new work. Specifically, accounting for veteran status might change conclusions about gender disparities in VHA.

Why might this be so? VHA's National Patient Care Database (NPCD) contains administrative and clinical records for all enrollees. Enrollees include veterans, but also some nonveteran groups. For example, family members of veterans may receive comprehensive care in VHA if they are enrolled in Civilian Health and Medical Program of the Department of Veterans Affairs (CHAMPVA) (for family of veterans who died or were disabled from military service) or Tricare (for military families). Limited services are available to spouses of veterans treated as "collaterals" (for care related to the veteran's health, such as family counseling). VHA enrolls employees in its system so as to record receipt of employee health services like influenza vaccines, tuberculosis testing, or first aid for on-the-job injuries. Some nonveterans are also eligible to receive care through "sharing agreements"; for example, Medicaid might pay for VHA to provide a specialized procedure not available in the community. Department of Defense likewise enters into sharing agreements with VHA for some active duty military. If nonveterans use VHA services

■ Frayne, Yano, Nguyen, et al. Gender disparities in Veterans Health Administration care: importance of accounting for veteran status. *Med Care*. 2008;46:549-553.

■ OP primary care utilization used as an outcome of Veteran status, gender, eligibility

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How has outpatient healthcare utilization been measured in VA studies?: Colorectal cancer screening identified

■ Walter, Lindquist, Nugent, et al. Impact of age and comorbidity on colorectal cancer screening among older veterans. *Ann Intern Med.* 2009;150:465-473.

■ OP utilization used in cohort selection and also as a predictor variable

Annals of Internal Medicine

ARTICLE

Impact of Age and Comorbidity on Colorectal Cancer Screening Among Older Veterans

Louise C. Walter, MD; Kara Lindquist, MS; Sean Nugent, BA; Tammy Schult, MS; Sei J. Lee, MD, MAS; Michele A. Casadei, BS; and Melissa R. Parlin, PhD

Background: The Veterans Health Administration, the American Cancer Society, and the American Geriatrics Society recommend colorectal cancer screening for older adults unless they are unlikely to live 5 years or have significant comorbidity that would preclude treatment.

Objective: To determine whether colorectal cancer screening is targeted to healthy older patients and is avoided in older patients with severe comorbidity who have life expectancies of 5 years or less.

Design: Cohort study.

Setting: Veterans Affairs (VA) medical centers in Minneapolis, Minnesota; Durham, North Carolina; Portland, Oregon; and West Los Angeles, California, with linked national VA and Medicare administrative claims.

Patients: 27 068 patients 70 years or older who had an outpatient visit at 1 of 4 VA medical centers in 2001 or 2002 and were due for screening.

Measurements: The main outcome was receipt of fecal occult blood testing (FOBT), colonoscopy, sigmoidoscopy, or barium enema in 2001 or 2002, on the basis of national VA and Medicare claims. Charlson-Deyo comorbidity scores at the start of 2001 were used to stratify patients into 3 groups ranging from no comorbidity (score of 0) to severe comorbidity (score ≥ 4), and 5-year mortality was determined for each group.

Results: 46% of patients were screened from 2001 through 2002. Only 47% of patients with no comorbidity were screened despite having life expectancies greater than 5 years (5-year mortality, 19%). Although the incidence of screening decreased with age and worsening comorbidity, it was still 41% for patients with severe comorbidity who had life expectancies less than 5 years (5-year mortality, 55%). The number of VA outpatient visits predicted screening independent of comorbidity, such that patients with severe comorbidity and 4 or more visits had screening rates similar to or higher than those of healthier patients with fewer visits.

Limitations: Some tests may have been performed for nonscreening reasons. The generalizability of findings to persons who do not use the VA system is uncertain.

Conclusion: Advancing age was inversely associated with colorectal cancer screening, whereas comorbidity was a weaker predictor. More attention to comorbidity is needed to better target screening to older patients with substantial life expectancies and avoid screening older patients with limited life expectancies.

Primary Funding Source: VA Health Services Research and Development.

Ann Intern Med. 2009;150:465-473.
For author disclosures, see end of text.

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Colorectal cancer screening guidelines recommend screening older adults who have substantial life expectancies according to age and comorbid conditions (1). For example, the U.S. Preventive Services Task Force recommends routine screening until age 75 years, whereas the Veterans Health Administration, the American Cancer Society, and the American Geriatrics Society (2–5) recommend colorectal cancer screening for older adults unless they are unlikely to live 5 years or have significant comorbid conditions that would preclude treatment. Targeting screening to healthy persons who are likely to live at least 5 years is recommended because randomized trials of fecal occult blood testing (FOBT) suggest that a difference in colorectal cancer mortality between screened and unscreened persons does not become noticeable until at least 5 years after screening (6–8). Therefore, persons with a life expectancy of 5 years or less are not likely to benefit from screening but remain at risk for harms that may occur immediately, such as complications from procedures and the treatment of clinically unimportant disease (9, 10). However, it remains unclear whether screening is being targeted to healthy older persons with substantial life expectancies and avoided in older persons with significant

comorbidity, for whom the risks of screening outweigh the benefits.

Previous studies of associations among age, comorbidity, and receipt of cancer screening have found that age is a stronger determinant of screening than comorbidity. For example, whereas advancing age is consistently associated with lower screening rates, worsening comorbidity has had little effect on the use of screening mammography, Papanicolaou smears, or prostate-specific antigen screening (11–13). Previous studies of the relationship between colorectal cancer screening and comorbidity have been limited by small sample size, short follow-up times, and focus on FOBT rather than all types of colorectal cancer screening

See also:

Print
Editors' Notes 466
Summary for Patients 142

Web-Only
Conversion of graphics into slides

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How has outpatient healthcare utilization been measured in VA studies?:

- **Homaifar & colleagues**
 - Counts of Encounters
 - Primary Care, Psych/SUD, Rehab, Other
- **Chan & colleagues**
 - Diagnoses
 - Depression/PTSD, Depression w/o PTSD
- **Frayne & colleagues**
 - Eligibility (Veteran and Non-veteran)
- **Walter & colleagues**
 - Procedures (Colorectal screening)

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- **Overview of Medical SAS Outpatient databases**
- Finding information in the Outpatient Medical SAS databases
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Audience Poll

(Molly to convert using poll function)

- **What is your PRIMARY interest in attending today's session?**
 - VA Research;
 - VA Other;
 - Non-VA Research
 - Non-VA Other
- **How would you rate your overall knowledge of the VA Outpatient data?**
 - 1 (Never Used);
 - 2;
 - 3;
 - 4;
 - 5 (Used Frequently, Very familiar)

Two Groups of Medical SAS Datasets

■ Inpatient Care SAS Datasets

■ Outpatient Care SAS Datasets

- Frequently referred to as
 - OPC (Outpatient Clinic File) or
 - NPCD (National Patient Care Database)
 - PCE (Patient Care Encounter)
 - MedicalSAS Outpatient Datasets
- Records generated for each encounter for ambulatory care and ancillary services recorded in VISTA

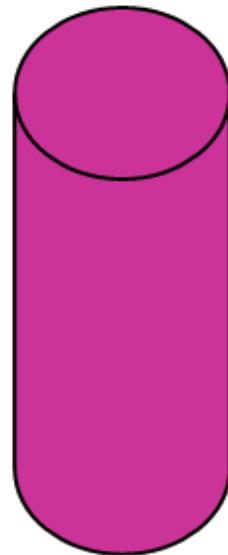


VA Outpatient Data Flow to the Medical SAS Datasets

Data Flow from the VHA Medical Centers to the AITC to the Medical SAS Outpatient Datasets and Inpatient Encounters Dataset



VHA Medical Centers
(Local VistA system)



Tables at AITC
(Relational database)



Visit Dataset

Event Dataset

Inpatient Encounters
Dataset

Medical SAS
Outpatient Datasets

VA Medical SAS Outpatient Datasets

- Datasets at AITC are named:

MDPPRD.MDP.SAS.XXyy

XX = the two letter reference code below; **yy** = two digit FY

File	Reference	Dates
Visit	SF	1980 - present
Event	SE	1998 – present
Inpatient Encounters	IE	2005 - present
Diagnosis	SG	1997 – 2001
Procedure	SC	1990 - 2001

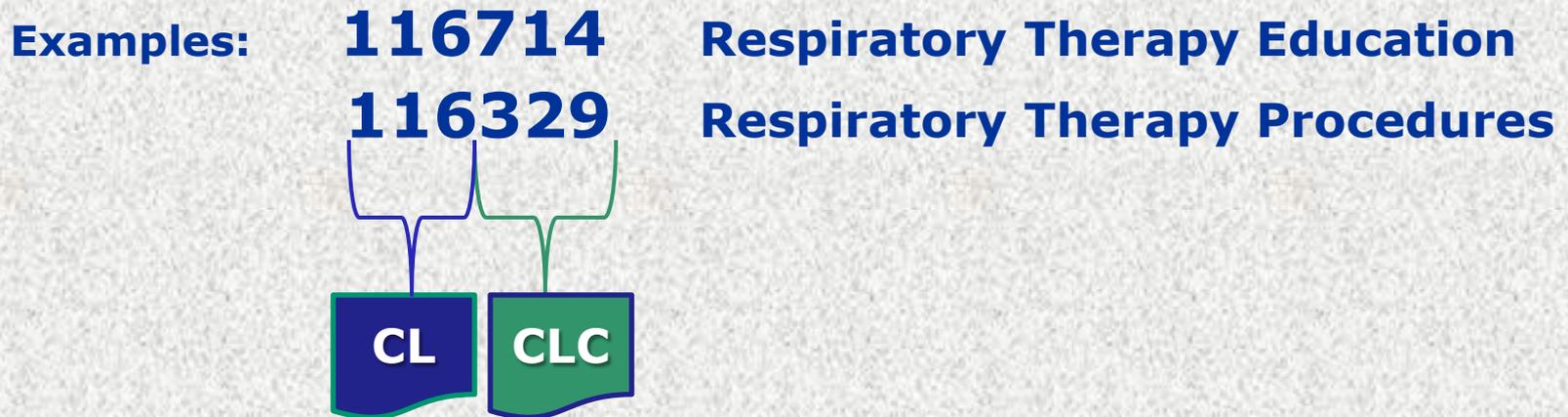
Clinic Stops

- Clinics are identified using **Clinic Stop Codes** also called **DSS Identifiers**.



Clinic Stops

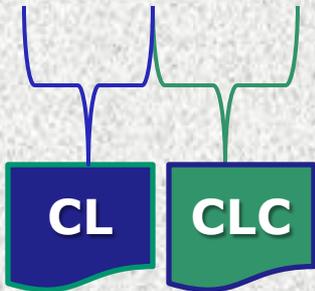
- **Clinic stops identified using two variables. (sometimes referred to as “clinic stop code”)**
 - **Primary Clinic Stop (CL)**
 - Used to identify the production units or the revenue centers for outpatient care
 - **Secondary Clinic Stop (CLC)**
 - Further specifies the team, service, or funding



Clinic Stops

■ Another clinic stop code example

- **323117** Primary Care/MED, Nursing (2nd Only)
- **323185** Primary Care/MED, Phys Extnd NP (Nrs Prcnr) 2nd
- **323187** Primary Care/MED, Phys Extnd CNS (Cln RN Spc) 2nd
- **323710** Primary Care/MED, Flu/Pneumococcal Vaccination



Outpatient Visit File (SF)

- **Each Record =**
One day's encounter(s) for a patient at a station
- **One record per visit**
- **Up to 15 primary clinic stops per visit**
(CL1-CL15)
- **No diagnosis or procedure information**



Outpatient Visit File (SF)

- **Up to 15 Primary Clinic Stops (CL1-CL15)**
- **Top 5 Primary Clinic Stop values from 1st 3m records in FY2009 Visit file:**
 - 108 Laboratory (18%)
 - 323 Primary care/ Med (17%)
 - 502 Mental Health-IND (4%)
 - 103 Telephone Triage (4%)
 - 147 Telephone/Ancillary (3%)



Outpatient Event (SE) File

- **One record per clinic stop**
- **No limit on number of encounter records per day**
- **Combines diagnostic and procedural info in one dataset**



Outpatient Event (SE) File

- **ICD-9 Codes: Up to 10 diagnoses per record**
- **CPT-4 Codes:**
 - Until FY2003: 15 procedures, no repeats allowed
 - Since FY2004: 20 procedures, repetition allowed
- **Since FY2003, Encounter ID**
 - Links Event dataset with HERC Outpatient Average Cost Dataset



Outpatient Event (SE) File

- **One Secondary Clinic Stop per record (CLC)**
- **Top 5 in 1st 3m records in FY2009 Event file:**
 - (none) (70%)
 - 117 Nursing (2nd only) (7%)
 - 125 Social Work SVC (3%)
 - 185 Phys Extnd NP (NRS PRCNR) 2nd (3%)
 - 160 Clinical Pharmacy (2%)



Visit vs. Event File

Patient's Outpatient
Clinic Stops during
One Day



Primary Care
Clinic Stop



Ophthalmology
Clinic Stop



Physical Therapy
Clinic Stop

Event



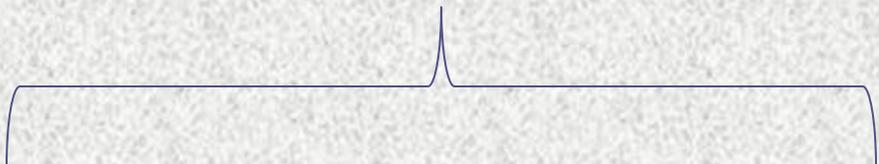
Event



Event



Visit



Data Element Examples: Visit vs. Event File

Visit Variables

- (Up to 15) Primary Clinic Stop Codes
- Religious preference
- Military period of service

Shared Variables

- SCRSSN
- Date of encounter
- VA Facility ID
- Patient demographics
- Purpose of Visit
- Means Test Indicator
- Patient eligibility code

Event Variables

- Primary & Secondary Clinic Stop Code
- Provider ID & Type
- Procedure codes (CPT-4)
- Primary & Secondary Diagnostic codes (ICD-9- CM)
- VA Appointment Type
- Type of Setting
- Homeless code

Inpatient Encounters File

- **Patients in this file had an encounter in one of the VHA outpatient clinics while they had an inpatient status.**
- **Patients with Inpatient Status, e.g.,**
 - hospital
 - nursing home
 - domiciliary



Inpatient Encounters File (IE)

- **The Inpatient Encounters file excludes services that are included in the Outpatient Events files.**
- **Data are available beginning in FY2005.**



Inpatient Encounters File: Select Data Elements

- **SCRSSN**
- **Date of encounter**
- **VA Facility ID**
- **Date and Time of inpatient stay admission**
- **Patient Demographics**
- **Means Test Indicator**
- **Patient eligibility code**
- **Primary & Secondary Clinic Stop Code**
- **Provider Type & ID**
- **Procedure codes (CPT-4)**
- **Primary & Secondary ICD-9-CM Diagnostic codes**

Inpatient Encounters File (IE)

- **One Primary and one Secondary Clinic Stop**
- **Top 5 Primary Clinic Stops in 1st 3m records in FY2009 Inpatient Encounters file:**
 - 105 X-Ray (13%)
 - 166 Chaplain-Ind (9%)
 - 202 Rec Therapy Services (8%)
 - 205 Physical Therapy (8%)
 - 116 Respiratory Therapy (6%)



VA Outpatient Diagnosis (SG) and Procedure (SC) Files

- **Outpatient Diagnosis Dataset (SG)**
 - Contains outpatient ICD-9-CM diagnosis information
- **Outpatient Procedure Dataset (SC)**
 - Contains CPT-4 outpatient procedure information
- **The VA Outpatient Diagnosis (SG) and Procedure (SC) Datasets were discontinued in FY2001.**
 - The information contained in these datasets were folded into the Event (SE) dataset and later included in the Inpatient Encounters (IE) dataset

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- **Where to go for more help**

Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

■ Where do I find **Emergency Department** care?

– Data relevant to Emergency Department care are located in the Outpatient files.

- Before 2007: Clinic Stop Code:
 - 101102
- Since 2007: Primary Clinic Stop Codes
 - 130xxx [Emergency]
 - 131xxx [Urgent Care]



Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

- **If an inpatient was admitted through the ER, how do you identify that it is an ER admission?**
 - VHA has no flag for patients admitted to inpatient stay from ER.
 - Researchers need to compare outpatient ER encounter visit dates to inpatient admission date to determine if inpatient stays followed ER visit.

Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

■ How do I determine **Outpatient Diagnoses**?

- Up to 10 **diagnosis** (ICD-9) codes per record
 - **DXLSF** = Primary Diagnosis for encounter
 - **DXF2 – DXF10** = Secondary diagnoses
- Located in:
 - **Outpatient Event (SE) Dataset**
 - Data available from 1997 to present
 - » only 15% of records in FY99 contained a DXF2
 - **Inpatient Encounters (IE) Dataset**
 - Data available from 2005 to present

Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

Outpatient Diagnoses (cont)

■ Top 5 DXLSF in 1st 3m records in FY 2009 Event file

- 30981 Post traumatic stress disorder (5%)
- 4019 Essential Hypertension Unspecified (4%)
- V6540 Other counseling NOS (4%)
- 25000 Diabetes Melitus (4%)
- V6549 Other specified counseling (3%)

Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

■ How do I identify **Outpatient Procedures**?

- **Outpatient** services and procedures performed by a provider recorded with **CPT-4** codes.

- Variable Names: **CPT1 – CPT20**

– Located in

- **Outpatient Event (SE) Dataset**
- **Inpatient Encounters (IE) Dataset**

- * **Inpatient** procedures in the Medical SAS Inpatient Datasets are recorded with **ICD-9** procedure codes.



Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

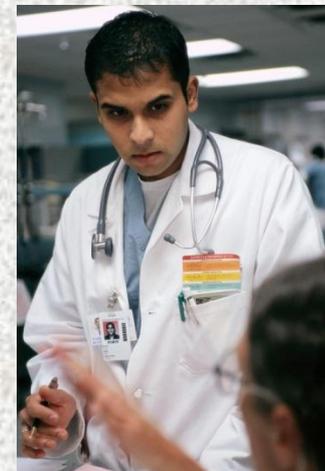
Outpatient Procedures (cont)

- **Top 5 CPT1 of 1st 3m records in FY 2009 Event file**
 - **99213** Moderate severity OP visit for established pt (7%)
 - **98966** Telephone assessment by non-physician (7%)
 - **99211** Minimal severity OP visit for established pt (5%)
 - **85025** CBC (4%)
 - **99214** High severity OP visit for established pt (4%)

Note: no VA format library for CPT codes

Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

- How are **provider types** identified in the outpatient datasets?
 - **Physician Specialty** recorded using CMS Provider Classification System.
 - Variable Name: **PROV1–PROV10**
 - Located in
 - **Outpatient Event (SE) Dataset**
 - **Inpatient Encounter (IE) Dataset**



Assessing Outpatient Healthcare Use: Finding info in Outpatient Medical SAS Datasets

Provider Types (cont)

■ Top 5 Provider Types 1st 3m records in FY 2009 Event file :

- 181000 Internal Medicine (15%)
- 070900 Registered Nurse (8%)
- 115500 Resident (4%)
- 010100 Clinical Social Worker (3%)
- 180700 Family Practice (3%)

■ Please see VIREC's MedSAS Outpatient Research User Guide (Appendix A):

- <http://www.virec.research.va.gov/References/RUG/RUG-Outpatient06ra.pdf>



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Research Example I:

Frayne, Yano, Nguyen, et al. *Med Care*. 2008;46:549-553.

BRIEF REPORT

Gender Disparities in Veterans Health Administration Care Importance of Accounting for Veteran Status

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Lakshmi Ananth, MS,** Victor Y. Chiu, BA,* and Claron S. Phibbs, PhD*††‡‡

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Design: Cross-sectional.

Subjects: All users of VHA in 2002 (N = 4,429,414).

Measures: Veteran status, outpatient/inpatient utilization and cost, from centralized 2002 administrative files.

Results: Nonveterans accounted for 50.7% of women (the majority employees) but only 3.0% of men. Among all users, outpatient and inpatient utilization and cost were far lower in women than in men, but in the veteran subgroup these differences decreased substantially or, in the case of use and cost of outpatient care, reversed. Utilization and cost were very low among women employees; women spouses of fully disabled veterans had utilization and costs similar to those of women veterans.

Conclusions: By gender, nonveterans represent a higher proportion of women than of men in VHA, and some large nonveteran groups have low utilization and costs; therefore, conclusions about gender disparities change substantially when veteran status is taken into account. Researchers seeking to characterize gender disparities in VHA care should address this methodological issue, to minimize risk of underestimating health care needs of women veterans and other women eligible for primary care services.

Key Words: veterans, women's health, utilization, cost of illness, health services research

(*Med Care* 2008;46: 549-553)

Women's health care delivery in the Veterans Health Administration (VHA) has received increased scrutiny in recent years. As an extreme minority group within a system historically oriented toward the care of men, women are at risk for receiving lower quality care; indeed, quality gaps have been identified in the past.¹⁻³ With propagation of new women's health clinical programs designed to address these gaps,⁴ a parallel literature base assessing quality of care provided to women is emerging.⁵ However, an infrequently discussed methodological issue may limit interpretation of some of this new work. Specifically, accounting for veteran status might change conclusions about gender disparities in VHA.

Why might this be so? VHA's National Patient Care Database (NPCD) contains administrative and clinical records for all enrollees. Enrollees include veterans, but also some nonveteran groups. For example, family members of veterans may receive comprehensive care in VHA if they are enrolled in Civilian Health and Medical Program of the Department of Veterans Affairs (CHAMPVA) (for family of veterans who died or were disabled from military service) or Tricare (for military families). Limited services are available to spouses of veterans treated as "collaterals" (for care related to the veteran's health, such as family counseling). VHA enrolls employees in its system so as to record receipt of employee health services like influenza vaccines, tuberculosis testing, or first aid for on-the-job injuries. Some nonveterans are also eligible to receive care through "sharing agreements"; for example, Medicaid might pay for VHA to provide a specialized procedure not available in the community. Department of Defense likewise enters into sharing agreements with VHA for some active duty military. If nonveterans use VHA services

■ This study determined whether gender differences in utilization and cost of VHA care change after accounting for veteran vs non-veteran status.

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Research Example I:

Frayne, Yano, Nguyen, et al. Med Care. 2008;46:549-553.

- **This study conducted a cross sectional analysis of all VHA users in 2002.**
- **There were 4,429,414 VHA users**
 - 4,122,381 veterans
 - 178,849 women
 - 3,943,532 men
 - 307,033 nonveterans
 - 183,722 women (50.7% of female VHA users)
 - 123,311 men (3.0% of male VHA users)
- **Because some nonveteran groups have low utilization and costs, conclusions about gender disparities change substantially when veteran status is taken into account.**

Research Example I:

Frayne, Yano, Nguyen, et al. Med Care. 2008;46:549-553.

Methods:

Data Sources - Utilization

- **Data on inpatient and outpatient utilization were from the Medical SAS Datasets**
 - Outpatient primary care was determined from VA **clinic stop** codes
- **Healthcare costs were determined from HERC Patient-Level Dataset**
- **VA eligibility was determined from **eligibility code** in outpatient data**
 - Non-veteran eligibility categories included: CHAMPVA, TriCare, Employee, Collateral, Sharing

Research Example I:

Frayne, Yano, Nguyen, et al. Med Care. 2008;46:549-553.

Results

TABLE 1. Age, Health Status and Primary Care Use in Fiscal Year 2002 for Women Versus Men, Among All Veterans Health Administration (VHA) Users and Among Veterans Only

	All VHA Users		Veterans	
	Women	Men	Women	Men
N	362,571	4,066,843	178,849	3,943,532
Age, yr, mean (SD)	49.0 (15.9)	63.0 (14.3)	50.1 (17.0)	63.6 (13.9)
Any medical condition*, %	47.2	77.2	73.7	79.1
Any mental health condition*, %	22.1	29.2	38.0	29.9
No. of VHA primary care visits in FY02, %				
None	50.4	17.7	16.2	15.7
1-2	25.6	46.5	42.1	47.5
3+	24.0	35.8	41.8	36.8

*Identified in Fiscal Year 2002 (FY02) data.

Research Example I:

Frayne, Yano, Nguyen, et al. Med Care. 2008;46:549-553.
Results

TABLE 2. Health Status, Utilization, and Cost of Care in Fiscal Year 2002 for Non-Veteran Women Veterans Health Administration Users, by Eligibility Type

	CHAMPVA	TriCare	Employee	Collateral	Sharing	Others
N	15,156	10,452	106,006	19,769	25,210	7129
Age, years, mean (SD)	52.7 (9.1)	47.0 (14.2)	45.7 (12.8)	63.1 (13.5)	42.7 (15.9)	50.9 (19.1)
Health status						
Any medical condition, %	83.5	61.3	12.6	5.0	17.8	22.3
Any mental health condition, %	42.6	14.8	1.1	6.0	4.9	6.7
Utilization						
Outpatient visits, no., mean (SD)	15.62 (15.33)	7.70 (10.43)	3.37 (3.77)	2.28 (4.69)	4.14 (8.01)	3.47 (6.41)
Length of stay, days, mean (SD)	0.54 (4.91)	0.15 (1.57)	0.00 (0.15)	0.00 (0.13)	0.15 (2.24)	0.09 (2.40)
Cost						
Total outpatient, \$, mean (SD)	2357 (2874)	890 (1692)	183 (320)	210 (552)	530 (1,787)	517 (1101)
Total inpatient, \$, mean (SD)	785 (5528)	256 (3045)	4 (191)	7 (271)	230 (2,990)	119 (2564)

Research Example II:

Walter, Lindquist, Nugent, et al. *Ann Int Med*. 2009;150:465-73

Annals of Internal Medicine

ARTICLE

Impact of Age and Comorbidity on Colorectal Cancer Screening Among Older Veterans

Louise C. Walter, MD; Karla Lindquist, MS; Sean Nugent, BA; Tammy Schult, MS; Sei J. Lee, MD, MAS; Michele A. Casadei, BS; and Melissa R. Partin, PhD

Background: The Veterans Health Administration, the American Cancer Society, and the American Geriatrics Society recommend colorectal cancer screening for older adults unless they are unlikely to live 5 years or have significant comorbidity that would preclude treatment.

Objective: To determine whether colorectal cancer screening is targeted to healthy older patients and is avoided in older patients with severe comorbidity who have life expectancies of 5 years or less.

Design: Cohort study.

Setting: Veterans Affairs (VA) medical centers in Minneapolis, Minnesota; Durham, North Carolina; Portland, Oregon; and West Los Angeles, California, with linked national VA and Medicare administrative claims.

Patients: 27 068 patients 70 years or older who had an outpatient visit at 1 of 4 VA medical centers in 2001 or 2002 and were due for screening.

Measurements: The main outcome was receipt of fecal occult blood testing (FOBT), colonoscopy, sigmoidoscopy, or barium enema in 2001 or 2002, on the basis of national VA and Medicare claims. Charlson-Deyo comorbidity scores at the start of 2001 were used to stratify patients into 3 groups ranging from no comorbidity (score of 0) to severe comorbidity (score ≥ 4), and 5-year mortality was determined for each group.

Results: 46% of patients were screened from 2001 through 2002. Only 47% of patients with no comorbidity were screened despite having life expectancies greater than 5 years (5-year mortality, 19%). Although the incidence of screening decreased with age and worsening comorbidity, it was still 41% for patients with severe comorbidity who had life expectancies less than 5 years (5-year mortality, 55%). The number of VA outpatient visits predicted screening independent of comorbidity, such that patients with severe comorbidity and 4 or more visits had screening rates similar to or higher than those of healthier patients with fewer visits.

Limitations: Some tests may have been performed for nonscreening reasons. The generalizability of findings to persons who do not use the VA system is uncertain.

Conclusion: Advancing age was inversely associated with colorectal cancer screening, whereas comorbidity was a weaker predictor. More attention to comorbidity is needed to better target screening to older patients with substantial life expectancies and avoid screening older patients with limited life expectancies.

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Ann Intern Med. 2009;150:465-473.
For author affiliations, see end of text.

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Colorectal cancer screening guidelines recommend screening older adults who have substantial life expectancies according to age and comorbid conditions (1). For example, the U.S. Preventive Services Task Force recommends routine screening until age 75 years, whereas the Veterans Health Administration, the American Cancer Society, and the American Geriatrics Society (2-5) recommend colorectal cancer screening for older adults unless they are unlikely to live 5 years or have significant comorbid conditions that would preclude treatment. Targeting screening to healthy persons who are likely to live at least 5 years is recommended because randomized trials of fecal occult blood testing (FOBT) suggest that a difference in colorectal cancer mortality between screened and unscreened persons does not become noticeable until at least 5 years after screening (6-8). Therefore, persons with a life expectancy of 5 years or less are not likely to benefit from screening but remain at risk for harms that may occur immediately, such as complications from procedures and the treatment of clinically unimportant disease (9, 10). However, it remains unclear whether screening is being targeted to healthy older persons with substantial life expectancies and avoided in older persons with significant

comorbidity, for whom the risks of screening outweigh the benefits.

Previous studies of associations among age, comorbidity, and receipt of cancer screening have found that age is a stronger determinant of screening than comorbidity. For example, whereas advancing age is consistently associated with lower screening rates, worsening comorbidity has had little effect on the use of screening mammography, Papanicolaou smears, or prostate-specific antigen screening (11-13). Previous studies of the relationship between colorectal cancer screening and comorbidity have been limited by small sample size, short follow-up times, and focus on FOBT rather than all types of colorectal cancer screening

See also:

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Web-Only
Conversion of graphics into slides

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■ This HSR&D IIR studied how clinic utilization (and other predictor variables) affect overall colorectal screening use



Research Example II:

Walter, Lindquist, Nugent, et al. Ann Int Med. 2009;150:465-73

- **This study identified a cohort of the patients of four VA medical centers who were screen-eligible on 1/1/2001**
 - Age 70 or older
 - At least 1 outpatient visit at one of the 4 VA Medical Centers from 1/1/2001 to 12/31/2002
 - At least 1 VA healthcare system outpatient visit or 1 Medicare outpatient visit in CY2000 (to measure comorbidity)
- **27,068 screen-eligible patients identified**
 - 10,091 age 70-74
 - 10,234 age 75-79
 - 6,743 age GE 80

Research Example II:

Walter, Lindquist, Nugent, et al. Ann Int Med. 2009;150:465-73

- **Data sources included National Patient Care Database (OP), IP MedicalSAS data, Fee Basis Files, Medicare claims, Vital Status File**
- **Outcome measures**
 - Colorectal screening within 2 years
 - 5-year mortality

Research Example II:

Walter, Lindquist, Nugent, et al. Ann Int Med. 2009;150:465-73

Methods: Data Sources - Utilization

- **Predictor variables included number of outpatient visits during the 2-year screening interval**
 - Gastroenterology clinic
 - General surgery clinic
 - Primary care
 - General medicine
 - Cardiology
 - Endocrinology
 - Diabetes
 - Hypertension
 - Pulmonary
 - Women's Clinic



Research Example II:

Walter, Lindquist, Nugent, et al. Ann Int Med. 2009;150:465-73
Results

From Table 2: Two-Year Cumulative Colorectal Cancer Screening Incidence Among Persons 70 Years or Older, by Patient Characteristic

Table 2—Continued

Characteristic	Unadjusted Cumulative Incidence (95% CI), %*	Adjusted Cumulative Incidence (95% CI), %†
Number of VA outpatient visits (primary care, GE, or surgery), 2001–2002§		
0	23.7 (22.6–25.0)	23.1 (22.9–23.2)
1	45.5 (44.5–46.6)	44.1 (44.0–44.2)
3	52.5 (51.4–53.6)	52.3 (52.2–52.4)
≥4	55.1 (53.8–56.5)	57.5 (57.3–57.6)
Type of VA outpatient visit, 2001–2002		
Seen in primary care, GE, or surgery clinic	50.1 (50.0–50.3)	50.2 (50.2–50.3)
Never attended primary care, GE, or surgery clinic	23.7 (22.6–25.0)	23.1 (22.9–23.2)

Session Objectives

- **How has outpatient healthcare utilization been measured in VA studies?**
- **Overview of Medical SAS Outpatient databases**
- **Finding information in the Outpatient Medical SAS databases**
- **Examples of VA studies that have used the Outpatient Medical SAS databases**
- **Where to go for more help**

VIREC Help

■ VIREC Webpage

<http://www.virec.research.va.gov>

- Information on VA data sources and how to access data
- Documentation on some VA datasets, i.e., Medical SAS datasets:
 - <http://www.virec.research.va.gov/DataSourcesName/Medical-SAS-Datasets/SASdocumentation.htm>
 - <http://www.virec.research.va.gov/References/RUG/RUG-Outpatient06er.pdf>
 - Includes lists of variables and their dataset locations
 - Descriptions of each of the variables
 - Values for selected variables

VIReC Help (cont'd)

■ HSRData Listserv

- Join at the VIReC Web site (requires valid “va.gov” email address)
- Discussion among >500 research data users, data stewards, managers
- Past messages in archive

■ VIReC Help Desk

- VIReC staff will answer your question and/or direct you to available resources on topics
- VIReC@va.gov
- (708) 202-2413



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Data Access Information

■ Using Data at the Austin Information Technology Center

- <http://www.virec.research.va.gov/index.htm>
- <http://www.virec.research.va.gov/Support/Training-NewUsersToolkit/UsingDataAAC.htm>



Next VIREC Data Bases and Methods Seminar

- **August 2, 2010: “Research Access to VA Data”**
 - Denise M. Hynes, PhD, MPH, RN
 - Linda Kok, MA

Questions?