

**2009-2010
VIReC
Database and Methods
Cyber Seminar Series**



2009-2010 VIREC Database and Methods Cyber Seminar Series

Measuring Veterans Health Services Use in VA and Medicare (Part 1)

Session 7
November 2, 2009

Presented by:

Denise M. Hynes, Ph.D., R.N.

Linda Kok, MA



Status of VA/CMS Data for Research

- **October 1, 2009, VA Under Secretary for Health memo outlines the oversight responsibilities for use of CMS data within the VA.**
- **Policies and procedures for release of CMS data to VA researchers are currently under review by leadership, but are not yet approved.**
- **To initiate research requests for use of CMS data, please contact VIREC at (708) 202-2413 or virec@va.gov to request a pre-application form.**
- **Submission of this form will permit VIREC to forward the approved VA/CMS data request packet and instructions to you as soon as available.**



Session Objectives

- **Overview of the Medicare Claims datasets**
- **Locating information on Inpatient and Outpatient services**
- **Measurement strategies for evaluating Medicare healthcare use**
- **Examples of VA studies that have used the Medicare Claims datasets to evaluate healthcare use**
- **Where to go for more help**

Session Objectives

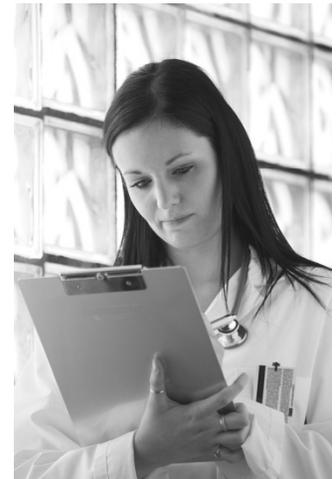
- **Overview of the Medicare Claims datasets**
- **Locating information on Inpatient and Outpatient services**
- **Measurement strategies for evaluating Medicare healthcare use**
- **Examples of VA studies that have used the Medicare Claims datasets to evaluate healthcare use**
- **Where to go for more help**

Overview of Medicare Claims Data

- Medicare claims are submitted to the Centers for Medicare and Medicaid Services (CMS) by healthcare providers and health equipment suppliers to request reimbursement for services and products
- Final adjudicated claims are collected by CMS and entered into datasets for analysis based on:
 - Type of billing form used to gather the original information
 - Type of provider

Benefits of Medicare Claims Data

- Medicare claims data can be linked with VA data using Real or Scrambled Social Security Numbers (SSNs)
- Claims data are useful in evaluating:
 - Mortality rates
 - Length of stay (duration of treatment)
 - Cost of care
 - Diagnosis and Procedure Codes



Limitations of Medicare Claims Data

- **Healthcare information that is not reimbursable may not be captured in the Claims data**
- **Claims data are not useful in evaluating:**
 - Laboratory Results
 - Vital Signs
 - Disease specific symptoms



Data Access

- **The VA/CMS Data for Research project at VIReC provides CMS data to VA researchers with IRB approved projects under an Information Exchange Agreement (IEA) and a Data Use Agreement (DUA) between VHA & CMS, 2009**
- **Medicare and other CMS data are available for VA research only through VIReC – USH memorandum, October, 2009**

Data Access

- Researchers interested in using CMS data should contact VIReC at virec@va.gov to obtain a pre-application form
- Researchers who have already submitted a pre-application do not need to submit additional documents at this time



Sources of Medicare Claims Data

Billing Form	HCFA 1450/UB-92	HCFA 1500
Provider type	Institutional	Non-institutional
Medicare Part	A or B	B
Examples of Providers	Hospitals (In/Out) Nursing Facilities Home Health Hospice	Physicians Suppliers

Medicare Claims Data

- **Institutional Standard Analytic Files (SAF)**
 - Outpatient
 - Home Health Agency (HHA)
 - Hospice
 - Inpatient
 - Skilled Nursing Facility (SNF)
- **Non-institutional Standard Analytic Files (SAF)**
 - Carrier (Physician/Supplier)
 - Durable Medical Equipment (DME)
- **Institutional Stay Level File**
 - Medicare Provider Analysis and Review (MedPAR)

Our focus today

- **Institutional Standard Analytic Files (SAF)**
 - Outpatient
 - Home Health Agency (HHA)
 - Hospice
 - Inpatient
 - Skilled Nursing Facility (SNF)
- **Non-institutional Standard Analytic Files (SAF)**
 - Carrier (Physician/Supplier)
 - Durable Medical Equipment (DME)
- **Institutional Stay Level File**
 - Medicare Provider Analysis and Review (MedPAR)



Session Objectives

- **Overview of the Medicare Claims datasets**
- **Locating information on Inpatient and Outpatient services**
- **Measurement strategies for evaluating Medicare healthcare use**
- **Examples of VA studies that have used the Medicare Claims datasets to evaluate healthcare use**
- **Where to go for more help**

Outpatient Services

- **Outpatient services may be provided:**
 - **Within institutions (UB-92)**
 - Hospitals (Radiology, lab, etc.)
 - **Within non-institutional settings (HCFA 1500)**
 - Within physician offices
 - Within stand-alone emergency facilities
 - Within stand-alone labs or pharmacies
 - By ambulance companies

Which files contain outpatient services?

- **Some outpatient services are billed by the physician, supplier or other provider, and some by the facility**
- **Use both Outpatient and Carrier files for:**
 - Laboratory
 - Radiology
 - Ambulance
 - Emergency Department visits
 - All other outpatient procedures and services

Inpatient Services

■ Inpatient services

- Occur within a hospital or other facility
- Some are billed by the facility (UB 92)
 - Room charges
 - Physician & staff charges – when these providers are employed by the facility
 - Pharmacy charges
- Some are billed by individual providers (HCFA 1500)
 - Services performed by physicians not employed by the hospital

Which files contain inpatient services?

- **Inpatient** and **SNF** contain claims for services provided within the hospital, including those by physicians or staff who are employed by the hospital
- **MedPAR** files contain a summary of claims for a given hospital stay
- **Carrier** files contain claims for services provided to inpatients within the hospital by physicians not employed by the hospital
 - In 2004, 16.5% of Carrier claims occurred in an inpatient hospital

Session Objectives

- **Overview of the Medicare Claims datasets**
- **Locating information on Inpatient and Outpatient services**
- **Measurement strategies for evaluating Medicare healthcare use**
- **Examples of VA studies that have used the Medicare Claims datasets to evaluate healthcare use**
- **Where to go for more help**

Measuring Medicare Healthcare Use

- Metrics used to study healthcare use include:
 - **Claims**
 - **Costs**
 - **Stays**
 - **Procedures**
 - **Dates**



Claims

- **Each claim is the result of a bill (UB 92 or HCFA 1500) submitted to obtain payment for services to a Medicare beneficiary**
- **Contents of datasets are based on type of service and type of bill**
- **Data directly related to billing is most accurate**
- **No/Limited data on:**
 - Data not needed for billing
 - Marital Status, Education, Income, Lab Results
 - Services not billed
 - Prospective Payment System (PPS), Managed Care (HMOs)

Claims

- **Claims data elements used to measure healthcare use:**
 - The fact that a claim has been submitted
 - The number of claims that have been submitted
- **Benefits of measuring use with claims**
 - Allows categorization of types of care



Claims

■ Caveats

- One event may be recorded in multiple claims
 - E.g., Radiology services – a facility claim & a radiologist's claim
- One claim may contain more than one service
 - E.g., Multiple pharmacy charges in a single claim
 - Occurs less often in outpatient files
- No claim submitted: services billed prospectively
 - E.g., Some long term care services, HMO services

- **Remember Inpatient and SNF claims are claims level -- not stay level data—multiple claims may exist for one stay**

Cost

- **Cost data elements used to measure healthcare use:**

- Charges submitted to Medicare
- Payments made by Medicare
- Payments made by beneficiaries (deductibles & co-payments)
- Payments made by primary payers (other insurance)



Cost

- **How is cost used to measure healthcare use?**
 - Total payments made
 - Compare costs for different treatments for the same disorder
 - Payments by Diagnostic Related Group (DRG)
 - Used in calculating facility payments for inpatient stays

Stays

- **Stay data elements used to measure healthcare use:**

- The fact that there is a hospital/SNF stay
- Length of the stay
- Number of stays
- Time between stays



- **Which dataset should I use to look at stays?**

- MedPAR is a stay level file (claims summary)
- Inpatient and SNF are not stay level files

Procedures

- **ICD-9 Procedure codes**

- Institutional files only
 - Inpatient file
 - Outpatient file



- **HCPCS - Healthcare Common Procedure Coding System**

- CPT procedure codes + CMS developed codes
- Identifies: procedures, supplies, products and services
- Non-Institutional files only
 - Carrier
 - DME

Procedures

- **Procedure data elements used to measure healthcare use:**
 - The fact that a procedure was done, e.g., as an indicator of a disease or disorder
 - The number of occurrences of a procedure, e.g., as an indicator of prevalence or level of care provided
 - Related groups of procedures

Procedures

■ **Benefits of Procedure codes:**

- Claim types where procedure codes are required for billing are likely to be complete and accurate
- One example: HCPCS in Carrier File

■ **Limitations of Procedure codes:**

- May be incomplete for some types of care
 - E.g., maximum of 6 procedures allowed on inpatient claims



Dates

- **Data elements containing dates used to measure healthcare use - examples:**
 - Dates of service (From and Thru dates)
 - Discharge dates
 - Claim or billing dates
- **How are dates used to measure healthcare use? Examples:**
 - Time between diagnosis and treatment
 - Healthcare use during first year of eligibility



Dates

- **Benefits of using dates**

- Easy to calculate

- **Disadvantages of Using Dates**

- Different meanings in VA vs. Medicare

- VA – often multiple “events” in one day
 - Medicare – often different day for one “event”

Dates

■ Caveats:

- Facilities may submit claims before discharge date
 - E.g., half of all SNF claims
 - For these claims you may want to use admission & discharge dates instead of claim dates
- Claim “from” and “thru” dates are not always the same as admission and discharge dates

Session Objectives

- **Overview of the Medicare Claims datasets**
- **Locating information on Inpatient and Outpatient services**
- **Measurement strategies for evaluating Medicare healthcare use**
- **Examples of VA studies that have used the Medicare Claims datasets to evaluate healthcare use**
- **Where to go for more help**

Measuring Medicare Healthcare Use: Examples from Three Research Studies

■ Measuring outpatient use using claims

- Weeks WB et al. 'Veterans Health Administration and Medicare Outpatient Health Care Utilization by Older Rural and Urban New England Veterans' *Journal of Rural Health*, 167-171, Spring 2005

■ Measuring outpatient use using cost

- Hynes D, et al. Veterans' Access to and Use of Medicare and VA Health Care. *Medical Care*, 2006

■ Measuring healthcare use using procedures

- Halanych JH et al. 'Racial/Ethnic Differences in Diabetes Care for Older Veterans: Accounting for Dual Health System Use Changes Conclusions' *Medical Care*, 44(5):439-445, 2006.

Measuring outpatient use using claims

Weeks et al, Journal of Rural Health, 2005

■ Goal

- Compare outpatient medical health care utilization for urban and rural Medicare enrolled veterans

■ Cohort

- New England VHA users (1995-1999) 65 years and over, enrolled in Medicare Fee for Service

Measuring outpatient use using claims

Weeks et al, Journal of Rural Health, 2005

■ Methods

- Claims files – Outpatient and Carrier files
- Categorized outpatient use using
 - Medicare “Type of Service” Codes
- Number of outpatient visits assigned to primary care, mental health, other specialty, emergency room care, and other outpatient care

Measuring outpatient use using claims

Weeks et al, Journal of Rural Health, 2005

■ Selected Results

- All veterans obtained 2-3 times more primary care in Medicare as VHA
- Urban veterans had more specialty care visits in VHA than in Medicare
- Urban and rural veterans had more mental health visits in VHA than in Medicare

Measuring Outpatient Use Using Cost

Hynes et al, Medical Care, 2007

■ Goals

- To measure VA and Medicare reliance among dually eligible veterans

■ Cohort

- 2.6 million veterans in VHA cohort enrolled in Medicare Fee-for-Service in 1999

Measuring Outpatient Use Using Cost

Hynes et al, Medical Care, 2007

■ Methods – Measuring Outpatient Cost

- Claims files: Outpatient, Carrier, Home Health
- Calculated percent reliance on VA health care as a percentage of total VA and Medicare costs
- Outpatient categories were defined based on proportion of costs attributable to VA and Medicare:
 - Medicare-only users (100% Medicare)
 - Mostly Medicare users (75-99% Medicare)
 - Equally dual users (26-76% Medicare)
 - Mostly VA users (1-25% Medicare)
 - VA-only users (0% Medicare)

Measuring Outpatient Use Using Cost

Hynes et al, Medical Care, 2007

Adjusted Odds Ratios of Using VA or Medicare Outpatient Services

	VA Only, Mostly VA, Equally Dual, and Mostly Medicare vs. Medicare Only	VA Only, Mostly VA, and Equally Dual, vs. Mostly Medicare and Medicare Only	VA Only and Mostly VA vs. Equally Dual, Mostly Medicare, and Medicare Only	VA Only vs. Mostly VA, Equally Dual, Mostly Medicare, and Medicare Only
Age				
66-74	Ref	Ref	Ref	Ref
75-84	0.71	0.70	0.67	0.64
85+	0.40	0.49	0.50	0.50
Race				
Nonblack	Ref	Ref	Ref	Ref
Black	1.85	2.09	2.22	2.32
Distance to Nearest VA Hospital				
0-4.9 miles	Ref	Ref	Ref	Ref
5-9.9 miles	0.73	0.73	0.73	0.73
10-19.9 miles	0.62	0.59	0.57	0.59
20-39.9 miles	0.61	0.54	0.48	0.47
40+ miles	0.54	0.44	0.34	0.30

Measuring Procedures

Halanych et al, Medical Care, 2006

■ Goal

- Compare racial/ethnic disparities in quality of care for VHA patients with diabetes

■ Cohort

- National sample of non-institutionalized VHA patients, 65 years and over, with diabetes
- Diabetes determined from VHA prescription and ICD-9 codes and from Medicare ICD-9 diagnostic codes for FY 1997-1998

Measuring Procedures

Halanych et al, Medical Care, 2006

■ Methods

- Race/ethnicity obtained from both VHA and Medicare data
- Claims files – Inpatient, Outpatient, Carrier
- Care measurements
 - VHA data-- Laboratory result files and CPT codes used
 - Medicare data – CPT/HCPCS codes used (outpatient, carrier)
 - ICD-9 procedure codes (inpatient)
- Three quality of care measures used
 - Annual hemoglobin A1c (HbA1c) test
 - Annual Low Density Lipoprotein (LDL) test
 - Annual Dilated eye examination

Measuring Procedures

Halanych et al, Medical Care, 2006

■ Results

- VHA only data - Rates of receiving three procedures were equal to or higher for Blacks and Hispanics than for white patients (except LDL testing in Black patients)
- VHA + Medicare data – Results were reversed. Rates of receiving procedures were lower in Blacks and Hispanics compared to whites
- More care captured in Medicare for Whites as compared to Blacks and Hispanics

Session Objectives

- **Overview of the Medicare Claims datasets**
- **Locating information on Inpatient and Outpatient services**
- **Measurement strategies for evaluating Medicare healthcare use**
- **Examples of VA studies that have used the Medicare Claims datasets to evaluate healthcare use**
- **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

- **VIREC Help Desk**

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

- **HSRData Listserv**

- Join at the VIREC Web site
- Discussion among >400 data stewards, managers, and users
- Past messages in archive (on intranet)



VIReC's VA-CMS Web Page

- Links to Medicare Files Data dictionaries
- SAS Proc Contents
- Frequencies for selected Medicare variables
- List of source files for VHA cohort
- <http://www.virec.research.va.gov/DataSourcesName/VA-MedicareData/Background.htm>

Research Data Assistance Center (ResDAC)

- **CMS contractor based at the University of Minnesota**
- **Provides free assistance to**
 - Researchers
 - Government agencies
 - Not-for-profit organizations
- **CMS 101: Introduction to the use of Medicare data for research**
- **www.resdac.umn.edu**

CMS and Medicare Websites

- **CMS Home Page**
 - www.cms.hhs.gov
- **CMS Research, Statistics, and Data Systems**
 - www.cms.hhs.gov/home/rsds.asp
- **For Medicare beneficiaries**
 - www.medicare.gov



Upcoming Seminars

- **December 7, 2009**

- Measuring Veterans Health Services Use in VA and Medicare (Part 2)
- Denise Hynes, RN, PhD & Linda Kok, MS