

2013-2014 VIREC Database and Methods Cyber Seminar Series

Measuring Veterans Health Services Use in VA and Medicare

January 6, 2014

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Topics for Today

Overview of Medicare Claims

Medicare Claims Data

Identifying Health Care Use in
Medicare Claims

Common Measures and Research
Examples

Data Access and Assistance

Audience Poll

(Heidi convert to poll function)

- **Have you ever used any of the Medicare claims datasets?**
 - Yes
 - No

- **How would you rate your overall knowledge of the Medicare claims datasets?**
 - 1 (No knowledge)
 - 2
 - 3
 - 4
 - 5 (Expert-level knowledge)

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Data Access and Assistance

Why are Medicare Data important?

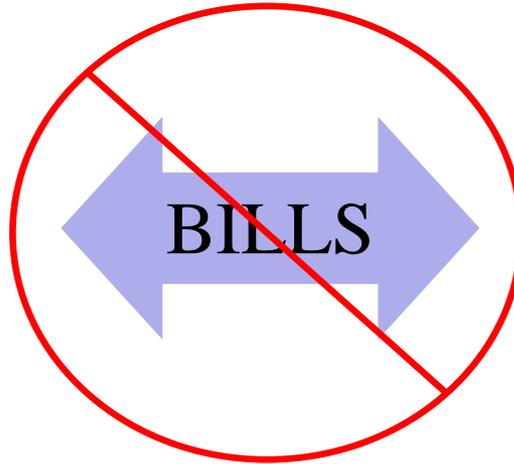
- Many Veterans who use VA health care also obtain care outside VA
- Researchers need full picture of health care use to draw accurate conclusions
- Almost all Veterans age 65 and older are enrolled in Medicare

VA and Medicare Billing

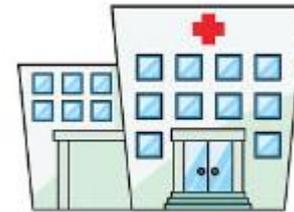
VA Medical Center



VA pays



Community Hospital

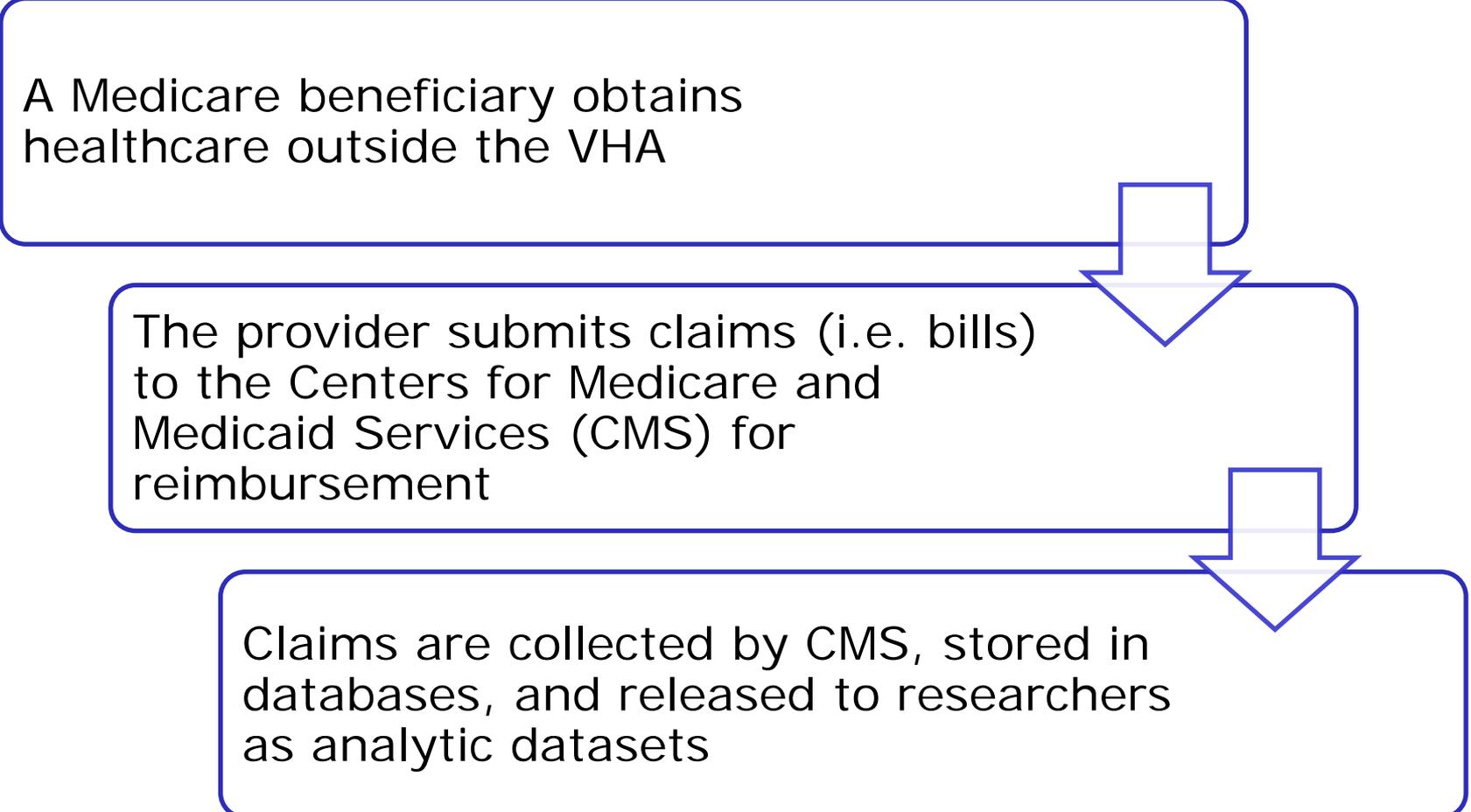


Medicare pays

- **The VA does NOT bill Medicare for services provided at a VA facility.**
- **In most situations, Medicare providers can NOT bill the VA for services provided**

How the data get from ”Bedside to Bench”

A Medicare beneficiary obtains healthcare outside the VHA



The provider submits claims (i.e. bills) to the Centers for Medicare and Medicaid Services (CMS) for reimbursement

Claims are collected by CMS, stored in databases, and released to researchers as analytic datasets

Strengths of Medicare Claims Data

■ Data directly related to billing is likely to be accurate

- SSN (or scrambled SSN)
- Charge and payment amounts
- Dates
- Diagnosis codes
- Procedure codes
- Provider information



Limitations of Medicare Claims Data

■ No/Limited data on:

- Data not needed for billing
 - Demographics (Marital Status, Education, Income)
 - Clinical Data (Lab Results, Vital Signs, Symptoms)
- Services not billed (non-covered services)
- Managed care (HMO) enrollees

■ Care-to-claim relationship can be complicated

One Event, Multiple Claims

- Long stays may not be contained in one claim

Stay	Claim	
Admit: December 15 Discharge: January 15	Claim 1	From: Dec 15 Thru: Dec 31
	Claim 2	From: January 1 Thru: January 15

- Events may have 2 types of claims
 - Facility charges
 - Physician charges

Multiple Events, One Claim

- **Many Medicare services are paid using Prospective Payment System (PPS)**
 - Single payment is made to cover all services
 - Providers often not required to itemize all services provided
 - Levels of detail vary
 - PPS used is based on provider type

PPS Examples

■ Hospice

- Per diem rate based on category of care

■ Skilled Nursing Facility

- Per diem rate based on patient's Resource Utilization Group (RUG)

■ Acute Inpatient

- Based on patient's Diagnostic Related Group (DRG)

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Bills & Providers

- Two types of bills are used to submit claims
- Type of bill used is determined by type of provider

Types of Providers	Examples	Bill	Medicare Coverage
Institutional	Hospitals Skilled Nursing Facilities Home Health Agencies Hospices	CMS 1450/ UB-04	Part A or Part B
Non-institutional	Physicians, Clinical Labs, Ambulance, Suppliers	CMS 1500	Part B

Medicare Claims Files

■ Institutional Files

- Inpatient
- Skilled Nursing Facility (SNF)
- Hospice
- Home Health Agency (HHA)
- Outpatient

■ Institutional Stay Level File

- Medicare Provider Analysis and Review (MedPAR)

■ Non-institutional Files

- Carrier (Physician/Supplier)
- Durable Medical Equipment (DME)

Inpatient File

- **Includes services provided by short and long-term hospitals**
 - 90% short-term (acute) hospitals
 - Rehab, psych, other long-term hospitals
- **Includes facility charges**
- **A stay may involve one or multiple claims**

Skilled Nursing Facility File

- **Includes services provided by a skilled nursing facility**
 - Skilled nursing and rehabilitation care
 - Does not include custodial care
- **Includes facility charges**
- **A stay often involves multiple claims**

MedPAR File

- **Created from Inpatient and Skilled Nursing Facility (SNF) claims**
- **Claims are “rolled up” to the stay level**
 - Eliminates need for researchers to do this manually
- **Contains many summary variables**
- **Does not contain all variables from Inpatient/SNF files**
- **Only diagnosis and procedures codes from last Inpatient/SNF claim**

Hospice File

- **Includes services provided when doctor has certified life expectancy of 6 months or less**
 - Care at home (80-90%) or as inpatient

Home Health Agency File

- **Includes services provided by Medicare-certified home health agencies:**
 - Skilled nursing
 - Physical/occupational/speech therapy
 - Home health aide
- **Up to 60 days of care on one claim**

Outpatient File

- **Includes services provided by institutional facilities (mostly hospitals)**
 - Laboratory
 - Radiology
 - Physical therapy
 - Dialysis
 - Emergency room
- **Includes facility charges**

Carrier File

- **Previously known as Physician/Supplier File**
- **Includes:**
 - Physician services
 - Outpatient setting: Office visits, procedures
 - Inpatient settings: Consultations, services in hospitals & nursing facilities
 - Emergency room
 - Ambulance providers
 - Clinical laboratories

Durable Medical Equipment File

■ Includes:

- Wheelchairs and hospital beds
 - Rental or purchase
- Prosthetics and orthotics
- Oxygen
- Diabetic testing supplies
- Drugs (limited coverage) provided in outpatient setting

Part D Data

- **About a third of VHA/Medicare enrolled Veterans are enrolled Part D**
- **Different than Medicare Parts A & B**
 - Claims for drugs are paid for by insurance companies, not CMS
 - Insurance companies submit data to CMS on all prescription fills
- **Data for research use**
 - Prescription Drug Event (PDE)
 - Drug, Pharmacy, Prescriber, Plan Characteristics
 - Slim File is subset of PDE data

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Identifying Inpatient/SN Services

- **Inpatient/Skilled Nursing care are provided by institutional providers**
 - And often non-institutional providers too

Types of Providers	Examples	Dataset
Institutional	Hospitals/SNF	Inpatient/SNF or MedPAR files
Non-institutional	Physicians	Carrier file

What File(s) Should I use when Studying Inpatient/SNF Stays?

■ Choose MedPAR when studying:

- Number of stays
- Length of stay
- Total cost

■ Choose Inpatient or SNF when studying:

- Detailed charges
- All diagnosis & procedure codes

■ Add Carrier when studying:

- Consults
- All procedures

Identifying Outpatient Services

- **Outpatient services may be provided by both institutional and non-institutional providers**

Types of Providers	Examples	Dataset
Institutional	Hospitals	Outpatient File
Non-institutional	Physicians	Carrier File

What File(s) Should I use when Studying Outpatient Events?

- **In most cases, use both Outpatient and Carrier**
- **Some events will have claims in both files**
 - Emergency room
- **Add HHA when studying services that could be provided at home**
 - Physical/occupational/speech therapy

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**Common Measures and Research
Examples**

Data Access and Assistance

Measures Using Medicare Claims

- **Four common ways of measuring healthcare use using Medicare data:**

1. Procedures
2. Costs
3. Inpatient Stays
4. Outpatient Visits



Measures: Examples from Four Research Studies

■ Procedures:

- Walter L, et al. Impact of age and comorbidity on colorectal cancer screening among older veterans. *Ann Intern Med.* 2009 April 7; 150(7):465-473.

■ Cost:

- Hubbard Winkler S, et al. Cost, Utilization, and Policy of Provision of Assistive Technology Devices to Veterans Poststroke by Medicare and VA. *Med Care.* 2010; 48:558-562.

■ Inpatient Stays:

- Weeks W, et al. Do older rural and urban veterans experience different rates of unplanned readmission to VA and non-VA hospitals? *J Rural Health.* 2009 Winter; 25(1):62-9.

■ Outpatient Visits:

- Liu C-F, et al. Reliance on Veterans Affairs outpatient care by Medicare-eligible veterans. *Med Care.* 2011 Oct; 49(10):911-7.

Procedures

- **Two types of procedure codes in Medicare claims data**
 - ICD-9 procedure/surgery codes
 - MedPAR and Inpatient files

 - Healthcare Common Procedure Coding System (HCPCS)
 - CPT procedure codes + CMS developed codes
 - CMS developed codes are alpha-numeric
 - Outpatient, HHA, Carrier, DME files

Example: Using Procedures

Walter L, et al, Ann Intern Med, 2009

■ Goal

- To determine whether colorectal cancer screening is targeted to healthy patients and is avoided in patients with severe comorbidity

■ Cohort

- VHA outpatient users at 4 VAMCs during 2000
- 70+ years old
- Due for a screening
- Not enrolled in Medicare managed care
- N= 27,068

Example: Using Procedures

Walter L, et al, Ann Intern Med, 2009

■ Methods

- Used diagnosis codes found in 2000 VA and Medicare inpatient and outpatient data to calculate Charlson-Deyo co-morbidity score
- Searched for procedure codes indicating colorectal cancer screening during 2001-2002
 - VA outpatient data - CPT codes
 - Medicare Outpatient and Carrier files – HCPCS codes

Example: Using Procedures

Walter L, et al, Ann Intern Med, 2009

Selected Results

- Overall, 46% of patients received colorectal cancer screening
 - 33% of screenings were in the Medicare system

Characteristic		Adjusted Colorectal Cancer Screening 2-Year Cumulative Incidence
Age	70-74	47.2%
	75-79	46.3%
	80+	43.9%
Charlson Score	0 (best health)	47.0%
	1-3	45.8%
	4+ (worst health)	40.7%

Costs

- **Charges submitted to Medicare**
- **Payments made to providers by**
 - Medicare
 - Beneficiaries (deductibles & co-payments)
 - Primary payers (some insurance)
- **Claims do not include payments made by secondary payers (some insurance and Medigap)**



Example: Using Costs

Hubbard Winkler et al., Medical Care, 2010

■ Goal

- Compare purchases of assistive technology devices (ATDs) in Medicare and VA

■ Cohort

- Veterans who were hospitalized in a VA hospital for stroke during FY01-02
- Age 65+ at time of stroke
- N=12,046

Example: Using Costs

Hubbard Winkler et al., Medical Care, 2010

■ Methods

- 2-year study post-stroke
- Compared 6 products in VA and Medicare data
- Used HCPCS codes to identify products
- Data on ATDs obtained from:
 - VA National Prosthetic Patient Database
 - Medicare Durable Medical Equipment file

Example: Using Costs

Hubbard Winkler et al., Medical Care, 2010

Selected Results

Device	HCPCS	Median Medicare Purchase	Median VA Purchase
Walker-folding	E0135	\$67	\$29
Walker-wheeled/folding	E0143	\$95	\$48
Commode chair	E0163	\$90	\$33
Wheelchairs-power	K0011	\$4,650	\$3,421
Ankle Foot Orthotic, standard	L1930	\$188	\$35
Ankle Foot Orthotic, custom	L1970	\$598	\$599

Inpatient Stays

Measure	Data Elements
Days	<ul style="list-style-type: none">• Admission & discharge dates• Procedure dates
Provider information	<ul style="list-style-type: none">• Facility number• Attending physician UPIN/NPI
Types of care provided	<ul style="list-style-type: none">• ICD-9 procedure/surgery codes• Revenue center codes• Diagnostic Related Group (DRG)
Patient condition	<ul style="list-style-type: none">• ICD-9 diagnosis codes• Diagnostic Related Group (DRG)
Outcome at discharge	<ul style="list-style-type: none">• Discharge status/destination

Inpatient Stays: VA vs. Medicare

■ VA facility

- Acute care
- Rehab

■ 1 stay



■ Medicare

- Acute care facility
- Rehab facility

■ 2 stays



Example: Using Stays

Weeks W, et al., J Rural Health, 2009

■ Goal:

- To determine whether rural Veterans have higher rates of hospital readmission than urban Veterans

■ Cohort

- Admissions in VA hospitals OR paid by Medicare Fee-for-Service from 1997-2004
- Discharged to home
- Age 65+
- Living in rural or urban areas
- 2,810,067 Veterans

Example: Using Stays

Weeks W, et al., J Rural Health, 2009

■ Methods

- Inpatient care obtained from
 - VA Patient Treatment File (aka Inpatient Medical SAS datasets)
 - Medicare MedPAR file
- Identified readmissions occurring within 30 days of being discharged

Example: Using Stays

Weeks W, et al., J Rural Health, 2009

Selected Results

Place of Index Adm.	Total Admissions		Place of Re-admission	Readmission Rate	
	Rural	Urban		Rural	Urban
VA	296,324	854,476	VA	17.2%	18.5%
			Non-VA	3.5%	2.7%
Non-VA	698,126	1,664,986	Non-VA	15.4%	14.9%
			VA	1.4%	1.2%
Any	994,450	2,519,462	Any	17.96%	17.86%

Outpatient Visits

Measure	Data Elements
Days	<ul style="list-style-type: none">• Claim from and thru dates• Expense dates (non-inst)• Revenue center dates (inst)
Provider information	<ul style="list-style-type: none">• UPIN/NPI number• Place of service (non-inst)• Facility number (inst)
Types of care provided	<ul style="list-style-type: none">• HCPCS procedure codes• BETOS code (non-inst)• Type of Service code (non-inst)• Revenue center Codes (inst)
Patient condition	<ul style="list-style-type: none">• ICD-9 diagnosis codes

Outpatient Visits: VA vs. Medicare

■ VA (same day)

- Primary care
- Specialist
- Therapy

■ 1 visit, 3 events

■ 1 day of care

■ Medicare

- Primary care
- Specialist
- Therapy

■ 3 visits/claims

■ 1, 2, or 3 days of care



Example: Using Visits

Liu C-F, et al. Medical Care, 2011

■ Goal

- Examine longitudinal changes in Medicare-eligible veterans' reliance on VA outpatient care

■ Cohort

- Medicare-eligible Veterans who used VA primary care in FY2000
- Not enrolled in Medicare managed care
- N=15,520

Example: Using Visits

Liu C-F, et al. Medical Care, 2011

■ Methods

- Measured co-morbidity based on diagnosis codes from 2000 VA and Medicare data
- Tracked outpatient utilization in VA and Medicare from FY2001-2004
- Developed algorithm to classify VA and Medicare visits
 - Primary, specialty, mental health, other
 - Using provider specialty and CPT/HCPCS procedure codes
- Calculated proportion of primary and specialty care occurring in the VA

Example: Using Visits

Liu C-F, et al. Medical Care, 2011

Selected Results

		FY01	FY04
Primary Care Visits	VA	2.4	1.9
	Medicare	1.3	1.6
	Total	3.7	3.3
Specialty Care Visits	VA	4.1	3.7
	Medicare	3.7	8.8
	Total	10.8	12.4
Reliance on VA primary care		68%	57%
Reliance on VA specialty care		50%	31%

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Data Access

- **VIReC is the data steward for CMS (Medicare) data used for VA research**
- **Researchers can request data from VIReC's VA/CMS Data Repository**
- **CMS data are available to VA researchers with projects approved by:**
 - VA Research & Development (R&D) Committee
 - Institutional Review Board (IRB)
- **VA researchers may not obtain CMS data directly from CMS/ResDAC**

- **Description of CMS data available**
- **Documentation:**
 - Data dictionaries
 - SAS Proc Contents
 - Variable frequencies
- **Description of cohorts**
- **Links to download Public Use Files**
- **Request Process and Forms**
- **www.virec.research.va.gov/Index-VACMS.htm**



■ **VIREC Help Desk**

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

■ **HSRData Listserv**

- Join at the VIREC Intranet web site
- Discussion among 800+ data stewards, managers, and users
- Past messages archived on intranet

■ **www.virec.research.va.gov**



- **CMS contractor based at the University of Minnesota**
- **Provides free assistance and training to researchers using CMS data**
 - Help desk
 - Knowledge base
 - Webinars
 - In-person workshops
- **www.resdac.org**

Chronic Conditions Data Warehouse

Your source for national CMS Medicare and Medicaid research data



- **Run by Buccaneer, a CMS contractor**
- **Source of most CMS data that VHA receives**
- **Documentation**
 - Data dictionaries
 - Summary tables
 - User guides & technical guides
 - White papers & presentations
- **www.ccwdata.org**

Questions?

Upcoming Seminars

February 3, 2014

Pharmacy Data and Medicare Part D

Kevin Stroupe, PhD