



## Database & Methods Cyberseminar Series

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# Measuring Veterans' Medicare Health Services Use

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VA Information Resource Center



# Database & Methods Cyberseminar Series

*Informational seminars to help VA researchers access and use VA databases.*

## Topics

- VA data sources & data access systems
- Application of VA data to research and quality improvement questions
- Limitations of secondary data use
- Resources to support VA data use



## FY '17 Database & Methods Schedule

First Monday of the month\* | 1:00pm-2:00pm ET

Date	Topic
10/3/16	Overview of VA Data & Research Uses
11/7/2016	Requesting Access to VA Data
12/5/2016	Healthcare Utilization with MedSAS & CDW
<b>1/9/2017*</b>	<b>VA Medicare Data (VA/CMS)</b>
2/6/2017	Measuring & Assessing Utilization
3/6/2017	Mortality Ascertainment & Cause of Death
4/3/2017	Assessing Race & Ethnicity
6/5/2017	Pharmacy Data
7/10/2017*	CAPRI/VistAWeb for EHR Access
8/7/2017	Comorbidity Measures Using VA and CMS Data
8/21/2017	Advanced Topics in Comorbidity Measures
9/11/2017*	CDW microbiology, lab, & pharmacy domains

Visit our Education page for more information & registration links.

[www.virec.research.va.gov](http://www.virec.research.va.gov)



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### Session #4: Measuring Veterans' Medicare Health Services Use

## Why is it important to know about Medicare when studying Veterans?

- Researchers need knowledge of health care use to draw accurate conclusions
- Many Veterans who use VA health care also obtain care outside VA
- Almost all Veterans 65+ are enrolled in (and many use) both VA and Medicare

# Poll #1: Your experience with Medicare Data

Have you ever used Medicare data for a VA project?

- Yes
- No



## Poll #2: Your knowledge of Medicare Data

How would you rate your overall knowledge of Medicare data?

- 1 (No knowledge)
- 2
- 3
- 4
- 5 (Expert-level knowledge)

*The purpose of this cyberseminar is to*

*demonstrate how researchers can obtain  
information on Veterans' healthcare use  
received through Medicare*











































































# Session roadmap

- Medicare 101
- Types of Medicare Data
  - Enrollment
  - Claims
  - Annual Summary
  - Utilization in Managed Care
- Using Medicare Data in Research
- Research Examples
- Data Access and Assistance

# HEDIS

- Healthcare Effectiveness Data and Information Set
- Tool used by health plans to measure quality of care
- Can be used to approximate amount and types of utilization
  - One record per person, per plan, per calendar year

# Examples of HEDIS Measures

- Preventive care
- Medication management
- Comprehensive Diabetes Care
- Surgeries & major procedures
- Hospitalizations
- Antibiotic use

# Limitations of HEDIS data

- No data on:
  - Dates
  - Diagnosis or procedure codes
  - Provider
- Quality of data? <sup>1</sup>

<sup>1</sup> Landon BE, et al. Analysis of Medicare Advantage HMOs Compared with Traditional Medicare Shows Lower Use of Many Services during 2003-09. *Health Affairs*. 2012; 31: 2609-17.

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# Using Medicare Claims

Common techniques for using Medicare data in research:

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



# Procedures

Two types of procedure codes in Medicare claims data

1. ICD-9 & ICD-10 procedure/surgery codes
  - MedPAR and Inpatient files
2. Healthcare Common Procedure Coding System (HCPCS)
  - CPT procedure codes + CMS developed codes
  - CMS developed codes are alpha-numeric
  - Outpatient, HHA, Carrier, DME files

# Diagnoses

- Medicare claims data contain ICD-9/ICD-10 diagnosis codes
  - No diagnosis codes in Part D data
- Inpatient/MedPAR claims include Diagnostic Related Group (DRG)



# Using Procedures & Diagnoses in Research

- Inclusion or exclusion criteria
- Outcome measure
- Risk adjustment
  - Comorbidity index

# Costs

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



# Inpatient/Skilled Nursing Stays

- Common measures:
  - Number of stays
  - Length of stay
  - Readmissions
  - Facility, type of facility
  - Within the stay:
    - Procedures
    - Diagnoses
    - Costs

# Identifying Inpatient/SNF Stays

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 payments

Choose **Inpatient or SNF** when studying:

- Detailed charges
- All diagnosis & procedure codes

Add **Carrier** when studying:

- Consults
- All procedures

# Inpatient Stays: VA vs. Medicare

## VA Facility

- Acute care
- Rehab

**1 stay**



## Medicare

- Acute care facility
- Rehab care facility

**2 stays**



# Outpatient Visits

## *Common Measures*

- Dates
- Place of service
- Provider (type, specialty, location)
- Within the visit:
  - Procedures
  - Diagnoses
  - Costs

# 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

# 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**



# Are annual summary files right for me?

## Pros

- Easy to work with, small files
- Beneficial if you have limited resources

## Cons

- Summarized by calendar year, not fiscal year
- Doesn't itemize all types of events/conditions
- Uses CMS's definitions

# Annual summary files: Examples

- Cost and Use
  - How many people in my cohort used Medicare?
  - How many people were hospitalized?
  - Total Medicare payments for dialysis?
- Chronic Conditions
  - Who in my cohort has been diagnosed with lung cancer?
  - How can we exclude all patients who were diagnosed with diabetes prior to 2010?

# What can't be measured using Medicare claims data?

- No data on:
  - Clinical data (Lab Results, Vital Signs, Symptoms)
  - Services not billed
- Limited/incomplete data on:
  - Services of managed care enrollees
  - Details on services billed through prospective payment system

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# Example 1

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Thorpe J, et al. Dual Health Care System Use and High-Risk Prescribing in Patients with Dementia. *Ann Intern Med*. 2016 Dec 6. Epub.

# Overview (Thorpe, 2016)

## **Objective**

To investigate the association between dual health care use (VA and Medicare) and prescribing of potentially unsafe medication (PUM)

## **Cohort**

- VA users with Alzheimer's disease or dementia
- Enrolled in Medicare A & B, FFS continuously 2007-2010
- Age 68+ on 1/1/10
- In 2010, at least
  - 1 VA outpatient encounter
  - 1 Rx through VA or Medicare Part D
- Excluded patients in hospital or nursing home 31+ days
- N=75,829



# Methods (Thorpe, 2016)

## Data Sources

- VA Medical SAS files & PBM
- Medicare enrollment, summary data, MedPAR, Outpatient, Carrier, Part D

## Used VA and Medicare data to

- Exclude Medicare Advantage patients
- Identify patients with dementia (MBSF Chronic Conditions file)
- Identify co-morbid conditions
- Identify medications that may be potentially unsafe
- Define 2 groups based on Rx use (VA only or VA + Part D)

## Selected Results (Thorpe, 2016)

Unadjusted results	VA & Part D Rx use	Only VA Rx use	Difference
Exposure to any PUM	59.0%	39.1%	19.8%
Mean exposure days	159.0	114.3	44.8

VA-Part D Use vs. VA-Only Use	Unadjusted	Adjusted
Difference (% Exposure)	19.8%	19.1%*
Difference (Mean Days)	44.8	44.1*
Odds Ratio	2.2	2.2*

\* p<0.05

## Example 2

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Axon N, et al. Dual health care system use is associated with higher rates of hospitalization and hospital readmission among veterans with heart failure. *Am Heart J*. 2016 Apr; 174: 157-163.

# Overview (Axon, 2016)

## Goal

To determine rates of emergency department (ED) visits, hospitalizations, and hospital readmissions among heart failure (HF) patients

## Cohort

- Veterans who received primary care at a VA Medical Center in South Carolina 2007-2011
- ED visit or hospitalization for HF in VA or non-VA facility
- N=13,977

# Methods (Axon, 2016)

## **Data Sources**

- VA Corporate Data Warehouse
- Medicare inpatient, outpatient, carrier files

## **Used VA and Medicare data to identify**

- Heart failure diagnosis
- ED visits and hospitalizations in VA, Medicare, or both

## Selected Results (Axon, 2016)

Adjusted rate ratios	Only VA users N=2,242	Only non-VA users N=8,825	Dual users N=2910
All diagnoses			
ED visits	Reference	0.62*	1.18*
Hospitalizations		0.98	1.93*
30-day readmission (all)		0.87*	1.82*
HF as primary diagnosis			
ED visits	Reference	0.60*	1.15*
Hospitalizations		0.61*	1.40*
30-day readmission (all)		0.51*	1.46*
30-day readmission (HF)		0.51*	1.46*

\* p<0.05

# Additional Research Examples

- **Fractures (identified using diagnosis codes)**
  - Colon-Emeric C, et al. Correlation of hip fracture with other fracture types: toward a rational composite hip fracture endpoint. *Bone*. 2015 Dec;81:67-71.
- **Incident dementia (identified using diagnosis codes)**
  - Orkaby A, et al. Continued use of warfarin in veterans with atrial fibrillation after dementia diagnosis. *J Am Geriatr Soc*. Epub 2016 Dec.
- **Imaging (identified using procedure codes)**
  - Makarov, et al. Appropriateness of prostate cancer imaging among veterans in a delivery system without incentives for overutilization. *Health Serv Res*. 2016 Jun;51(3):1021-51.
- **Hospice**
  - Mor V, et al. The rise of concurrent care for veterans with advanced cancer at the end of life. *Cancer*. 2016 Mar;122(5):782-90.

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VA/CMS DATA  FOR RESEARCH

- VIREC is data steward for CMS (Medicare) data used for VA research
- Projects must be approved by:
  - VA Research & Development (R&D) Committee
  - Institutional Review Board (IRB)
- Data available for VA researchers at no cost
- VA employees may not obtain CMS data directly from CMS/ResDAC

# VIREC Resources on CMS data

- Website (VA intranet only)
  - [vaww.virec.research.va.gov/Index-VACMS.htm](http://vaww.virec.research.va.gov/Index-VACMS.htm)
- Data Descriptions and Documentation
- Request Process and Forms
- Pre-Request Consultation

# Other VIREC Resources

## HSRData Listserv

- Community knowledge sharing
- ~1,200 VA data users
- Researchers, operations, data stewards, managers
- Subscribe by visiting <http://vaww.virec.research.va.gov/Support/HSRData-L.htm> (VA Intranet)



## HelpDesk

- Individualized support



[virec@va.gov](mailto:virec@va.gov)

(708) 202-2413



- Part of Office of the Assistant Deputy Under Secretary for Health for Policy and Planning
- Data steward for CMS (Medicare) data used for VHA operations
  - VHA Program Offices
  - Quality Improvement/Quality Assurance
- Website (VA intranet only)
  - [vaww.va.gov/medicareanalysis/](http://vaww.va.gov/medicareanalysis/)



- 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](http://www.resdac.org)

# Chronic Conditions Data Warehouse

*Your source for national CMS Medicare and Medicaid research data*

- Source of most CMS data that VA receives
- Documentation
  - Data dictionaries
  - Summary tables
  - User guides & technical guides
  - White papers & presentations
- [www.ccwdata.org](http://www.ccwdata.org)

## Quick links for VA data resources

*Quick Guide: Resources for Using VA Data*

<http://vaww.virec.research.va.gov/Toolkit/QG-Resources-for-Using-VA-Data.pdf> (VA Intranet)

VIReC: <http://vaww.virec.research.va.gov/Index.htm> (VA Intranet)

VIReC Cyberseminars: <http://www.virec.research.va.gov/Resources/Cyberseminars.asp>

VHA Data Portal: <http://vaww.vhadatportal.med.va.gov/Home.aspx> (VA Intranet)

VINCI: <http://vaww.vinci.med.va.gov/vincicentral/> (VA Intranet)

Health Economics Resource Center (HERC): <http://vaww.herc.research.va.gov> (VA Intranet)

CDW: <https://vaww.cdw.va.gov/Pages/CDWHome.aspx> (VA Intranet)

Archived cyberseminar: What can the HSR&D Resource Centers do for you?

[http://www.hsrd.research.va.gov/for\\_researchers/cyber\\_seminars/archives/video\\_archive.cfm?SessionID=101](http://www.hsrd.research.va.gov/for_researchers/cyber_seminars/archives/video_archive.cfm?SessionID=101)

## Contact information

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**Next session:  
February 6, 2017**



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# Measuring & Assessing Utilization

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Center Director, VIREC**