Measuring Veterans' Medicare Health Services Use

January 12, 2015

Presented by:

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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

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Audience Poll
(Heidi convert to poll function)

- Have you ever used Medicare data for a VA project?
  - Yes
  - No
- How would you rate your overall knowledge of Medicare data?
  - 1 (No knowledge)
  - 2
  - 3
  - 4
  - 5 (Expert-level knowledge)

Topics for Today

1. Medicare 101
2. Types of Medicare Data
   a. Enrollment
   b. Claims
   c. Summary
3. Using Medicare Data in Research
4. Research Examples
5. Data Access and Assistance

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Eligibility

- Who is eligible for Medicare?
  - ▫ Almost everyone over age 65
  - ▫ Some disabled individuals
  - ▫ Patients with End Stage Renal Disease
- Eligibility not dependent
  - ▫ Income
  - ▫ Other health insurance
  - ▫ VHA coverage

Medicare Parts A & B

- Part A: Hospital Insurance
  - Usually no premium

- Part B: Medical Insurance
  - Monthly premium required
  - 7-8% of Part A enrollees aren't enrolled in Part B

Ways to receive Part A & B coverage

- Fee for Service (FFS)
  - aka Original Medicare
  - Administered by Centers for Medicare and Medicaid Services (CMS)
- Managed Care Plans
  - aka Medicare Advantage, Part C, HMOs
  - Many different types of plans
  - Administered by insurance companies under contracts with CMS
- In 2012, 27% were enrolled in a Medicare managed care plan

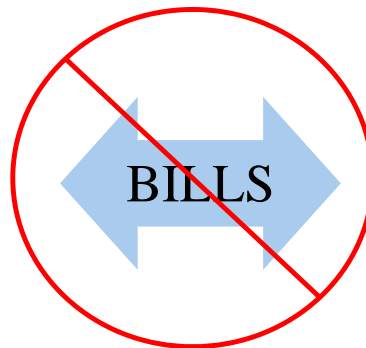**VIReC**
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Part D

- Part D: Prescription Drug Plans
  - New in 2006
  - Administered by insurance companies under contracts with CMS
  - Premiums often required
- Enrollment in 2012
  - 39% of Veterans
  - 65% of non-Veterans

Who pays?

VA Medical Center

VA pays

Community Hospital

Medicare pays

BILLS

- The VA does NOT bill Medicare for services provided at a VA facility.

- In most situations, non-VA providers can NOT bill the VA for services provided

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Enrollment Data

- Data related to administration of Medicare program
- Data elements likely to be accurate and complete:
  - Social Security Number
  - Date of birth, date of death, address
  - Dates of enrollment/disenrollment: Parts A, B, D
  - Managed care dates and contract number
  - Ineligibility due to incarceration
  - Medicaid payment of premiums (State buy-in)
  - Other insurance - primary to Medicare

Limitations of Medicare Enrollment Data

- No/Limited data on:
  - Some demographics (Marital Status, Income)
  - Other insurance – secondary to Medicare (Medigap plans, other supplemental insurance)
  - Details about managed care plans benefits

Managed Care

- Medicare claims (utilization data) contain no/limited data on care provided to managed care enrollees

- Most research project exclude managed care enrollees

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Enrollment & Demographic File

- One record per person, per calendar year
- Monthly indicators for
  - Parts A, B, D
  - Managed care
  - Medicaid premium payment (state buy-in)
- Actual name varies by year
  - Denominator (1997-2008)
  - Beneficiary Summary (2009-10)
  - Master Beneficiary Summary File: Base (2011-12)

EDB Extracts

- Extracts of Medicare's Enrollment Database (EDB)
- Cumulative files; updated annually
  - ▫ Vital Status
  - ▫ Entitlement/Enrollment History
  - ▫ Group Health Organization
  - ▫ Incarceration History
  - ▫ Primary Payer

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How the data get from "Bedside to Bench"

A Medicare FFS beneficiary obtains healthcare outside the VA

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

Claims are processed. CMS stores info in databases and creates analytic datasets for researchers

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

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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)
- Part D Files

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 and payments
- A stay may involve one or multiple claims

Example: Splitting stays across claims

Stay	Claims	
Admit: July 10 Discharge: August 8	Claim 1	From July 10 Thru July 31
	Claim 2	From August 1 Thru August 8

Skilled Nursing Facility (SNF) File

- Includes services provided by a skilled nursing facility
  - ▫ Skilled nursing and rehabilitation care
  - ▫ Does not include custodial care

- Includes facility charges and payments

- A stay often involves multiple claims

MedPAR File

- Created from Inpatient and SNF claims
- Claims are "rolled up" to the stay level
  - Eliminates need for researchers to do this manually
- Variables
  - Many stay-level summary variables
  - Doesn't have all variables from IP/SNF files
  - Only diagnosis and procedures codes from last IP/SNF claim

Hospice & Home Health Agency Files

- Hospice
  - Includes services provided by hospice agencies for end-of-life care
  - Care at home (80-90%) or as inpatient
- Home Health Agency
  - Includes services provided by home health agencies:
    - Skilled nursing
    - Physical/occupational/speech therapy
    - Home health aide

Outpatient File

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

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
  - Prosthetics and orthotics
  - Oxygen equipment and supplies
  - Diabetic testing supplies
  - Drugs (limited coverage) provided in outpatient setting

Part D "Claims"

- Part D is administered by insurance companies

- Claims for drugs paid by insurance companies, not CMS

- Insurance companies submit data to CMS on all prescription fills

Part D Data for Research Use

- Prescription Drug Event (PDE), can be linked to characteristics of the:
  - ▫ Drug
  - ▫ Pharmacy
  - ▫ Prescriber
  - ▫ Plan
- Slim File is subset of PDE data, includes
  - ▫ Drug Characteristics

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What are the Summary Data?

- Variables created by CMS, based on the FFS claims
- One record per person, per calendar year
- Two types of summary data
  - ▫ Cost and Use
    - Medicare and Beneficiary payments
    - Number of "events"
  - ▫ Chronic Conditions
    - Uses standard definitions for 27 conditions
    - Disease flags
    - When diagnosed?

Examples of Cost and Use Variables

- Costs
  - ▫ Medicare payments for dialysis
  - ▫ Beneficiary payments for acute inpatient
- Use
  - ▫ Inpatient Stays
  - ▫ Skilled Nursing Facility Days
  - ▫ Emergency Room Visits
  - ▫ Part D Fills

Examples of Chronic Conditions Variables

- First occurrence of chronic kidney disease
  - Calendar year quarter
- Alzheimer's disease mid-year flag
- Colorectal cancer end-of-year flag

Where to find summary variables?

Types of variables	1999-2010	2011- forward
Cost and Use variables	Beneficiary Annual Summary File (BASF)	MBSF: Cost and Use
Chronic Condition variables		MBSF: Chronic Conditions

MBSF = Master Beneficiary Summary File

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2. Types of Medicare Data
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   b. Claims
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3. **Using Medicare Data in Research**
4. Research Examples
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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
  - 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

Diagnoses

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

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Using Procedures & Diagnoses in Research

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

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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

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Identifying Inpatient/SNF Stays

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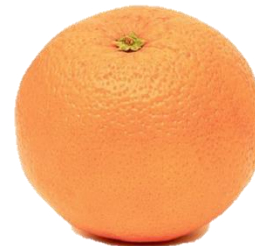 - And often non-institutional providers too

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

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Inpatient Stays: VA vs. Medicare

- VA facility
  - ▫ Acute care
  - ▫ Rehab
- 1 stay

- Medicare
  - ▫ Acute care facility
  - ▫ Rehab 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

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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 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

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?
  - ▫ When was an individual's first lung cancer diagnosis in the Medicare claims data?

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

- Hawn M, et al. Risk of Major Adverse Cardiac Events Following Noncardiac Surgery in Patients with Coronary Stents. JAMA. 2013; 310 (14): 1462-1472.

Overview (Hawn, 2013)

- Goal
  - Examine major adverse cardiac events (MACE) in patients who have coronary stents and are undergoing non-cardiac surgery
- Cohort
  - Veterans who received coronary stents in VA facilities between FY2000-2010
  - Non-cardiac surgeries within 24 months
  - N=28,029 Veterans with 41,989 surgeries

Methods (Hawn, 2013)

- Data Sources
  - VA outpatient & inpatient data, CART, VASQIP
  - Medicare inpatient, outpatient, carrier
- Used VA and Medicare codes to identify:
  - Non-cardiac surgery (CPT procedure codes)
  - Cardiac risk index (diagnosis codes)
  - MACE (diagnosis and CPT procedure codes)

Selected Results (Hawn, 2013)

Characteristics		% of surgeries resulting in MACE
Overall		4.7%
Location of non-cardiac surgery	• VA facility (64.2%) • Non-VA facility (35.8%)	4.3% 5.5%
Admission status	• Outpatient • Elective inpatient • Non-elective inpatient	2.4% 7.3% 21.1%
Cardiac risk index	• 1 • 2 • 3+	2.2% 4.4% 8.3%
Time since stent placement	• <6 weeks • 6 weeks - 6 months • 6-12 months • 12-24 months	11.6% 6.4% 4.2% 3.5%

Example 2

- Gellad W, et al. Dual Use of Department of Veterans Affairs and Medicare Benefits and Use of Test Strips in Veterans With Type 2 Diabetes Mellitus. JAMA Intern Med. 2015; 175(1): 26-34.

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Overview (Gellad, 2015)

- Goal
  - Examine patterns of glucose test strip receipt
  - Is receipt of strips from both systems associated with overuse?
- Cohort
  - Community dwelling veterans age 65+ who used the VHA in FY09
  - Received test strips from VA or Medicare in FY09
  - N=363,996

Methods (Gellad, 2015)

- Used VA and Medicare data to:
  - Identify test strips (VA pharmacy & Medicare DME)
  - Adjust for comorbidity and diabetes complications (using DX codes) and prior hospitalizations
  - Categorize patients based on medication (VA pharmacy and Medicare Part D event data)
  - Adjust for number of diabetes related office visits in Medicare

Selected Results (Gellad, 2015)

	Source of Test Strips		
	VA only	**Medicare only**	**VA & Medicare**
Overall	260,688	82,826	20,482
Median number of strips	200	400	600
% with no DM medication	9.8%	23.1%	9.9%
Estimated % of Veterans with excess test strips	15.8%	45.7%	53.5%

An estimated 31.2 million (19.9%) strips were in excess in 1 year

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VA/CMS DATA FOR RESEARCH

- VIReC's VA/CMS Data for Research Project - data steward for CMS (Medicare) data used for VA research

- Data available for VA researchers at no cost

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

Data Access for VA Research

- VA researchers can request CMS data from VIReC
- Projects must be approved by:
  - VA Research & Development (R&D) Committee
  - Institutional Review Board (IRB)
- VA employees may not obtain CMS data directly from CMS/ResDAC

- VIReC Resources:
  - VIReC Help Desk
    - VIReC@va.gov
  - HSRData Listserv
    - Discussion among 1,000+ VHA data stewards, managers, and users

- VHA Medicare and Medicaid Analysis Center (MAC) is the 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/

- 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

- Source of most CMS data that VA receives
- Documentation
  - Data dictionaries
  - Summary tables
  - User guides & technical guides
  - White papers & presentations
- www.ccwdata.org

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Questions?

Upcoming Seminar

February 2, 2015

Assessing Race and Ethnicity

Maria Mor, PhD