

Inpatient, Outpatient, and Pharmacy Costs from the Decision Support System (DSS)

Jean Yoon

October 3, 2012

Outline

- HERC Average Cost vs Decision Support System (DSS) cost data
 - How DSS gets costs
 - DSS National Data Extracts
 - Inpatient data
 - Outpatient data
 - Intermediate product department data
 - Pharmacy data
 - Using DSS data for research
 - HERC-created files (Station Level, Discharge with Subtotals)
 - Comparison with Medicare costs
 - Advantages of using DSS
 - Merging with clinical records, outliers, other issues
-

Overview of VA Cost Data Sets

- Two possible sources:
 - DSS cost
 - Activity-based, managerial cost accounting system
 - Implemented on a local level
 - HERC average cost
 - Assigns costs for each VA encounter based on diagnoses, length of stay, procedures
 - Directly comparable to Medicare and other payers

Q&A Panel

**What do you want to use DSS
data for?**

HERC Average Costs Datasets

HERC Average Cost Datasets

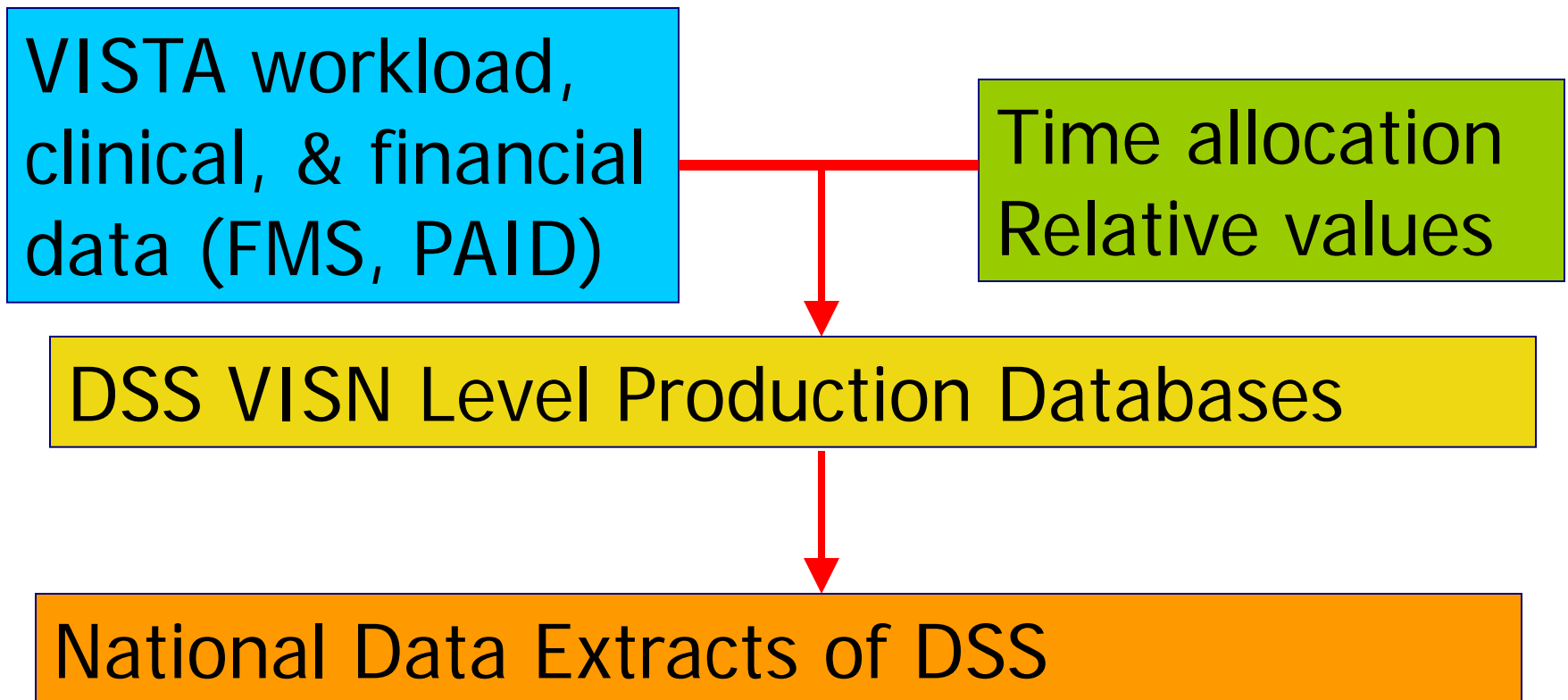
- HERC method of distributing costs to hospital stays and outpatient visits
 - Created to merge easily with clinical files
 - 1) Acute medical surgical stays
 - Estimate of what stay would have cost in a Medicare hospital, based on a regression model
 - 2) Other inpatient care
 - Length of stay
 - 3) Outpatient care
 - Hypothetical Medicare payment based on procedure codes assigned to visit
-

HERC Average Cost Datasets

- Directly comparable to non-VA providers (Medicare)
- Costs identical for all encounters with same characteristics
- HERC has file with average cost for each person in each fiscal year

DSS National Data Extracts

How Does DSS Provide VHA Cost Data?



DSS Determines Costs of Products

- Products are components of encounter
 - Cost assigned to cost center (corresponding department)
 - Staff labor mapping and financial data
 - Cost of overhead distributed to direct care departments
 - Products in each department tabulated
 - Relative values assigned to products
 - Unit cost of each product determined
-

DSS Assigns Cost to Encounters

$$\sum \text{Intermediate Product (IP)} \quad \times \quad \text{IP Cost} \quad = \quad \text{Total cost of encounter}$$

DSS National Data Extracts

- Inpatient (Treating Specialty, Discharge)
- Outpatient Encounter
- Intermediate Product Department
- Pharmacy
- Account Level Budget Cost Center
- Clinical

DSS Cost File: Inpatient Discharge File

- Care of patients discharged in each fiscal year
- One record per discharge
- May include cost incurred in prior fiscal years

DSS Data Only in Discharge File

- Discharge day
- Total days of stay
- Discharge bedsection

Discharge example

Patient	ADMITDAY	DISDAY	FP	LOS	DBEDSECT	TOT
A	24SEP05	01OCT05	1	7	Gen Acute Med	9824.24
A	31OCT05	11NOV05	2	11	Gen Acute Med	4673.01
A	04AUG06	21SEP06	12	48	Rehab	81868.77

DSS Cost File: Inpatient Treating Specialty File

- Treating specialty
- One record per treating specialty per month
 - More than one record in a month if more than one treating specialty in a month
 - All care provided during fiscal year
 - Include stays not yet over

DSS Data Only in Treating Specialty File

- Treating specialty
- Census indicator
- Date of entry and exit from treating specialty
 - No discharge date
- Treating specialty length of stay
 - No total length of stay

DSS Treating Specialty File Example

Patient	TRTIN	TRTOUT	TR SP	TR SP LOS	FP	TCST_TOT
A	01OCT05	01OCT05	15	1	1	350.01
A	31OCT05	11NOV05	15	1	1	544.24
A	31OCT05	11NOV05	15	10	2	23787.22

DSS Data in Both Inpatient Files

- Admit day
- Admitting diagnosis related group (DRG)
- Principal diagnosis
- Admitting diagnosis

Comparison of Record Structure

Discharge– 1 record in FY 04



ADMITDAY 3/15/04

DISDAY 4/12/04

Treating Specialty- 3 records



March
General Medicine

March
Rehabilitation

April
Rehabilitation

ADMITDAY 3/15/04

TRTIN 3/15/04

TRTOUT 3/22/04

FP 6

ADMITDAY 3/15/04

TRTIN 3/22/04

TRTOUT 4/12/04

FP 6

ADMITDAY 3/15/04

TRTIN 3/22/04

TRTOUT 4/12/04

FP 7

Comparison of Record Structure

(Overlapping fiscal year)

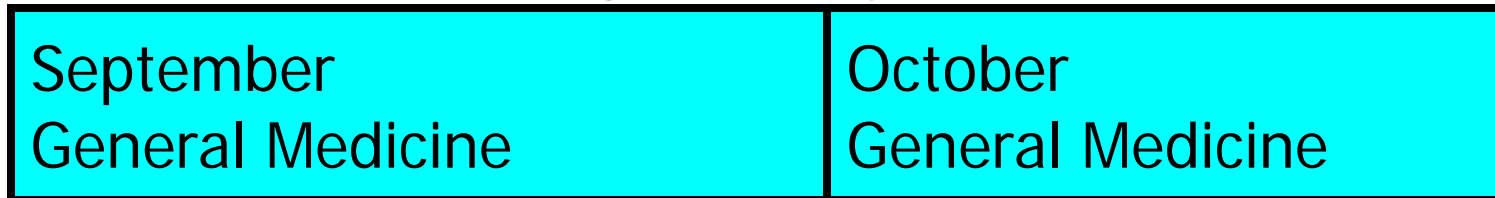
Discharge– 1 record in **FY 04 file**



ADMITDAY 9/22/03

DISDAY 10/8/03

Treating Specialty- 2 records



ADMITDAY 9/22/03

TRTIN 9/22/03

TRTOUT 9/30/03

FP 12 CENSUS=Y

In FY03 File

ADMITDAY 9/22/03

TRTIN 9/22/03

TRTOUT 10/8/03

FP 1 CENSUS=N

In FY04 File

DSS Cost Files: Outpatient Files

- One record per patient per day per clinic stop
 - National Patient Care Database (NPCD) events file allows more than 1 record per clinic stop per day
 - DSS includes care not in NPCD events file, e.g., prosthetics
 - Primary DX and CPT codes
-

DSS Data Only in Outpatient Files

- Date of encounter
- DSS identifier (clinic stop)
 - DSS uses “pseudo stop” code for prosthetics, pharmacy, etc.
- Flag variables identifying data source
 - NPCD, pharmacy, prosthetics, Vast CBOC, etc

DSS Outpatient Example

Patient	VIZDAY	CLSTOP	OCST_TOT
A	20051018	411	34.10
A	20051018	108	24.33
A	20051018	306	25.20

DSS Cost Variables in All Files

- Fixed direct
- Fixed indirect
- Variable direct
- Variable supply
- Total
- Variable labor category 4 & 5

Additional Cost Variables in Inpatient Files

- Separate costs for lab, nursing, pharmacy, radiology, surgery, all other
 - Variable, fixed direct, fixed indirect, supply (where applicable)

DSS Intermediate Product Department Files

- IPD inpatient and outpatient files released 2005
- Multiple product departments per encounter
- Cost incurred in each product department
- Inpatient: monthly record per patient per inpatient product department
- Outpatient: one record per patient per outpatient product department

Inpatient (TRT) IPD Example

Patient	TRTIN	TRTOUT	IPD_NUM	IPD_TOT
A	06-07-22	06-07-27	psychiatry MD bedday	471.11
A	06-07-22	06-07-27	psychology & neuropsychology lab	1.08
A	06-07-22	06-07-27	occupational therapy	1985.01

DSS Pharmacy

- In the DSS Pharmacy Extract file
 - For outpatient records, there is one record
 - Per prescription or supply per person per day
 - For inpatient records, there is one record
 - Per person per day
- DSS sometimes groups two prescriptions into one record if they are for the same NDC and the same person on the same day

DSS Pharmacy Variables

- Medication: drug name, NDC, formulary indicators, VA drug class
- Dispensing: fill date, quantity dispensed, days supplied
- Patient: SCRSSN, date of birth, gender, age
- Ordering provider: provider ID, provider treating specialty
- Note: Clinical information on related visits/stays can be linked to Rx data using SCRSSN.
- Cost: VA cost including direct labor, indirect costs of the pharmacy department, and supplies
 - Total VA cost prescription = ACT_COST + DISPCOST
 - Costs can be negative, ex: return to pharmacy

Pharmacy Copayments

- VA charges some copayments.
 - Depends on income, disability percentage
 - Rules & eligibility levels change year to year
 - Rules available on VA internet
- DSS does not show copayments; they show VA's expense.
- Medical Care Cost Recovery (MCCR) files could show reimbursement from private insurance, if collected

Using DSS for Research

HERC-Created DSS Files

DSS Station Level Cost Data Set beginning 2002

- Annual costs and total utilization (inpatient days or outpatient visits) in HERC-designated service categories (13 inpatient categories, 12 outpatient categories)
- One record per service per station (STA3N) per fiscal year

HERC DSS Discharge Dataset with Subtotals

- DSS Discharge NDE only discharge bed section but not other treating specialties
- HERC DISCH file beginning FY 2007 functionally identical to the DSS DISCH NDE with additional fields for cost and length of stay subtotals for each inpatient category of care, e.g., acute medicine, psychiatry, nursing home, etc.

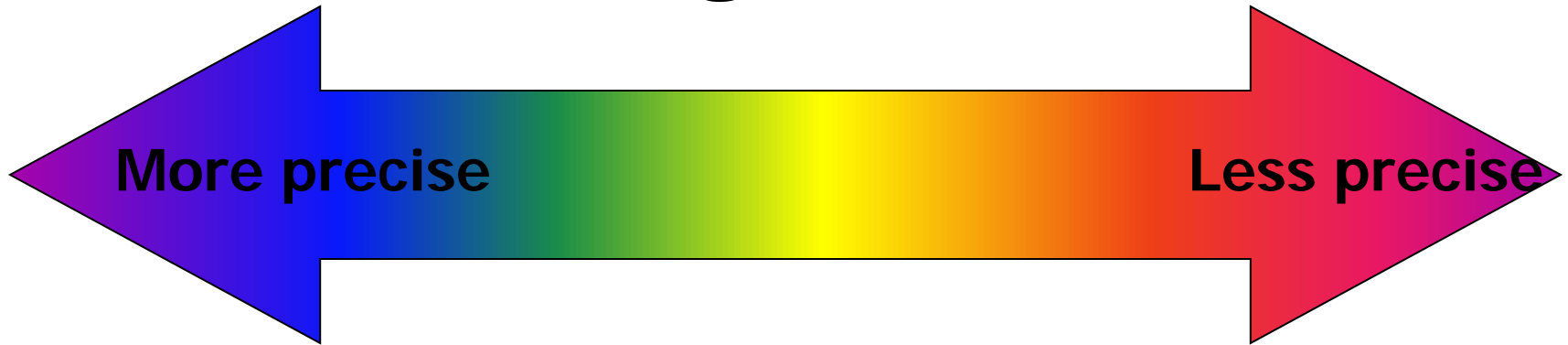
Comparing DSS to Medicare Costs

Cost Type	DSS	Medicare
Physician Services	Included in hospital costs (VL-4 & VL-5)	Excluded from hospital costs
Indirect costs	Includes VA central office and national operation costs plus hospital admin costs	Only hospital admin costs
Capital costs	Financing costs excluded	Financing costs included

Advantages of Using DSS

- DSS costs estimate reflect facility differences in productivity, efficiencies, economies of scale, etc
- DSS has pharmacy data
- DSS has community and state nursing home stays.
- DSS is an activity-based method and is the official cost managerial accounting system for the entire Department of VA

Costing Methods



Direct measurement

DSS

Pseudo-bill

Outpatient
HERC
AC Costs

Clinical cost function

Inpatient
HERC
Med/Surg

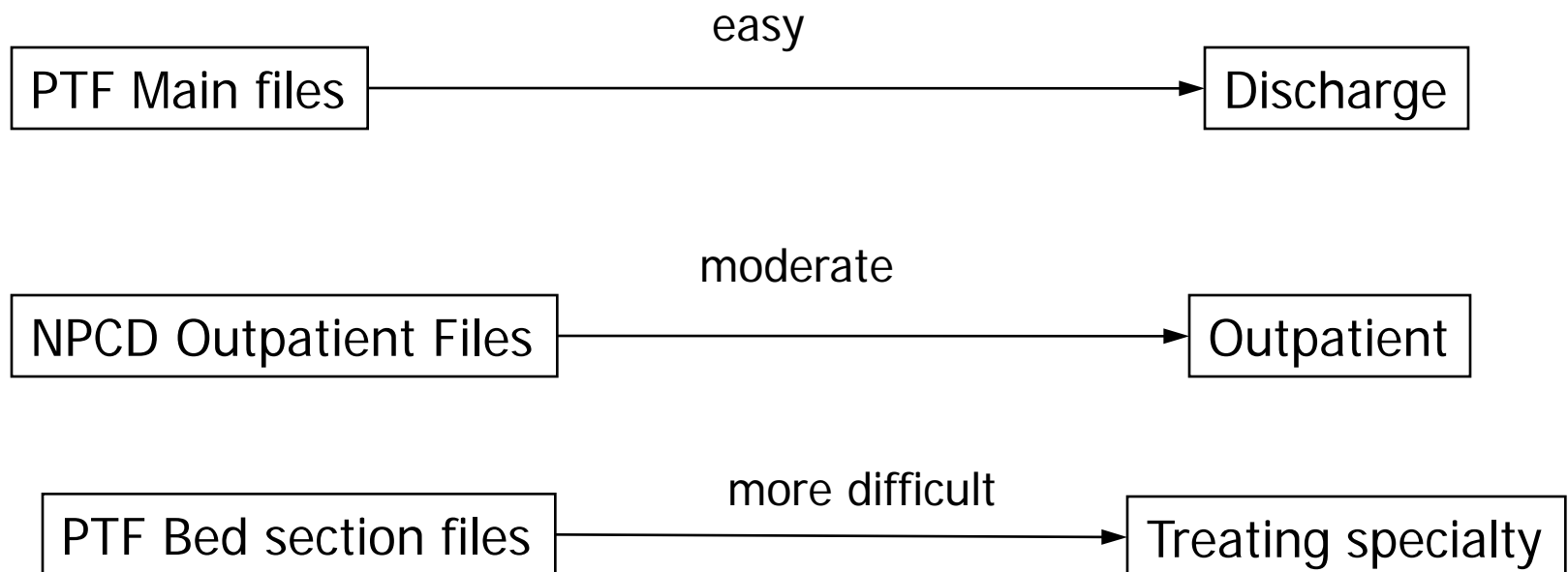
Average cost per visit

Inpt. Rehab, HERC
MH, LTC

Ease of Merging DSS Cost Files with Utilization Files

VA Utilization Data

DSS Cost Data



Cost Outliers in DSS

- Users should look for cost estimates that are unexpectedly high given characteristics of care
- Mismatch of cost and utilization can result in unit costs that are very high cost, or negative
- DSS quality assurance efforts
 - Audit that costs in DSS agree with general ledger
 - Extreme high outliers are identified and corrected when DSS national data extracts (NDE) are built

DSS Resources

DSS Data Access

- See HERC guide on DSS
- DSS Program Office Web Site (VA Intranet DSS web site)
- SAS and SQL files available at Corporate Data Warehouse with FY05 and beyond
- FY12 DSS data will be posted to Austin Center (AITC) but expected that all DSS files removed from AITC in January 2013
- DSS Reports Web Site (VA Intranet VSSC web site)
 - Summaries of DSS data
 - Documentation of DSS and new DSS datasets

HERC DSS Guidebooks

<http://www.herc.research.va.gov/publications/guidebooks.asp>

- Research Guide to Decision Support System National Cost Extracts (updated 2010)
- HERC's Station Level Cost Dataset FY2000 - FY2010
- HERC's DSS Discharge Dataset with Subtotals for Inpatient Categories of Care, Fiscal Year 2010
- Research Guide to the DSS Intermediate Product Department Files

DSS Pharmacy Resources

- VIREC's Pharmacy Prescription Data Guide
 - VIREC research user guide on DSS and PBM pharmacy prescription data
 - <http://www.virec.research.va.gov>
- HERC Technical Report:
 - Comparing Outpatient Cost Data in the DSS National Pharmacy Extract and the Pharmacy Benefits Management V3.0 Database
 - <http://www.herc.research.va.gov/data/dss.asp>

HERC Average Cost Guidebooks

<http://www.herc.research.va.gov/publications/guidebooks.asp>

- HERC's Average Cost Datasets for VA Inpatient Care 1998 - 2011
- HERC's outpatient average cost dataset for VA care: fiscal year 2010 update
- HERC's Annual Person Level Cost Dataset User Guide: Fiscal Years 1998-2010

Next Classes

October 10, 2012

Sources of VA Care Costs and Providers

HERC staff

October 24, 2012

TBA

Jeremy Goldhaber-Fiebert