Introduction to HERC Services

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Poll Question #1

- How often have you used HERC resources (guidebooks, datasets, website, etc.)? (select one)
  - Frequently use
  - Occasionally use
  - Never use
  - Not aware of any HERC resources
Poll Question #2

Which HERC resources have you used? (select all that apply)

– Guidebooks
– Datasets
– HERC Website
– Consulting services
– Not aware of any HERC resources
History

- Health Economics Resource Center (HERC) was created in 1999 as a resource center on health economics to HSR&D
- Located in Menlo Park, CA as part of the VA Palo Alto Health Care System
- Staff:
  - 8 PhD Economists
  - 10 Programmers/Analysts
  - 4 Research Associates/Project Managers
  - 1 Administrative Officer
HERC Mission

- To support the economic research of HSR&D in order to increase health care efficiency and value for Veterans and the nation.
Core Work

A. Train and advise researchers
B. Make VA data sources accessible to researchers
C. Create new economic datasets
D. Disseminate economic methods and findings
E. Help HSR&D identify and answer questions that are important to VHA
Outline

- HERC-Created Datasets
- HERC Documentation of Economics-Related Datasets & Methods
- HERC Cyber Courses & Seminars
- HERC Consulting Service
HERC Datasets
HERC-Created Datasets

- Inpatient average cost
- Outpatient average cost
- Person-level roll-up costs
- MCA discharge with subtotals
- Wage index
- Labor costs
- Nosos risk scores
Inpatient Average Cost

- Cost estimates for inpatient stays in a given FY based on Managerial Cost Accounting (MCA) treating specialty file (TRT) and MedSAS inpatient files
- 3 files per FY (FY1998-FY2015):
  - Medical-surgical file: acute medical-surgical discharges
  - Non medical-surgical file: discharges from rehabilitation, mental health, and long-term care bed sections
  - Discharge file: hospital stays with a discharge in FY
Outpatient Average Cost

- Cost estimate for each outpatient encounter based on MCA outpatient file (OUT) and MedSAS outpatient file
- 3 cost estimates per FY (FY1998-FY2015):
  - *National cost estimate*: national average cost of a visit, given CPT code and clinic type
  - *Local cost estimate*: local cost of visit, based on national cost but adjusted to reflect actual cost of care at the medical center
- Can link to MedSAS outpatient (SE) data to find demographics, location of care, services provided and diagnoses
- Guidebook: [http://www.herc.research.va.gov/include/page.asp?id=guidebooks#AC](http://www.herc.research.va.gov/include/page.asp?id=guidebooks#AC)
Person-level Cost

- Total annual costs for VA care received by each individual who used the VA health care system, (FY1998-FY2015), including:
  - Costs for 5 categories of inpatient care
  - Costs for 4 categories of outpatient care
  - Total pharmacy costs
  - Total non-VA/Fee Basis/Purchased Care/Community Care costs

- Guidebook: http://www.herc.research.va.gov/include/page.asp?id=guidebooks#AC
MCA Discharge with Subtotals

- Identical to MCA Discharge (DISCH) but adds fields for cost and length of stay subtotals for each inpatient category of care (FY2007-present):
  - Acute medicine, Rehabilitation, Blind Rehabilitation, Spinal Cord Injury (SCI), Surgery, Psychiatry, Substance Abuse, Intermediate Medicine, Domiciliary, Nursing Home, PRRTP, ICU

- Guidebook:
  http://www.herc.research.va.gov/include/page.asp?id=guidebook-mca-discharge
MCA cost data

- Reflect local variations in production efficiency and labor cost
- Should be reviewed for abnormalities – rare cases in which costs are not consistent with characteristics of care
- Best data source for studies of VHA efficiency
HERC Cost Data

- Assume outpatient costs are proportional to Medicare reimbursement rates
- Assume acute inpatient costs are proportional to Medicare DRG weight and adjusted for length of stay
- Does not capture cost differences due to local efficiencies
- Standardized to minimize data abnormalities
- May be useful for study findings to be generalizable outside VHA
Top Down versus Bottom Up

- HERC data use relative value weights to estimate cost per encounter (top down)
- MCA costs are based on activity-based costing methods (bottom up)
MCA versus HERC Costs

- See HERC seminar on MCA and HERC costs:
  
Wage Index

- Combines Medicare wage index and VHA Support Service Center (VSSC) data to provide wage adjustments for VA facilities in each geographic wage area (FY2000-FY2017)

- Use for determining cost of providing a new intervention based on time/type of staff

- Guidebook & Dataset: http://www.herc.research.va.gov/include/page.asp?id=guidebook-wage-index
Labor Costs

- Combines VHA labor costs (salary+benefits) from MCA Account Level Budgeter Cost Center and the Financial Management System for different types of VA staff, as denoted by Budget Object Code (FY2000-FY2014)

- Guidebook & Dataset: http://www.herc.research.va.gov/include/page.asp?id=guidebooks#DIRECT
Nosos Risk Scores

- Based on CMS version 21 (V21) Hierarchical Condition Categories (HCCs) which uses only age, gender, diagnosis codes (ICD-9/ICD-10)
- Adapted to VA with inclusion of mental health/substance use disorder diagnoses, VA pharmacy use, VA priority, VA registry, insurance and total MCA/Fee Basis costs
- Risk scores can adjust for individual patient risk when comparing treatments or health outcomes
Want to use HERC data?

Request process described on the VHA Data Portal (VA intranet only):

http://vawww.vhadataportal.med.va.gov/Data Sources/HERCCEstimatedCostData.aspx

Research & Operations data requests only. No Preparatory to Research requests.
HERC Documentation
Navigating the HERC Website

Internet:  http://www.herc.research.va.gov/
Intranet:  http://vawww.herc.research.va.gov/
Data Types
Data Sources
Methods
Document Economics-Related Datasets & Methods

- Guidebooks on economics-related data/methods
  - Microcosting methods
  - MCA cost NDEs
  - Fee Basis data

- Technical Reports
  - Updating mental health/SUD groupers for ICD-10
  - Instrumental variables with VA data
  - Using VA health factors data for research
HERC Guidebooks

CDW Disclaimer
VA data, including HERC data, are currently in transition to the VA Corporate Data Warehouse (CDW), a national VA data repository. The National Data Systems (NDS) oversees the request and approval process through the Data Access Request Tracker (DART) system. For more information on data available at CDW and the current request procedures, please see the VHA Data Portal (VA intranet site - contact HERC for the url).

HERC guidebooks are grouped by the following categories:

- HERC Average Cost Datasets
- Managerial Cost Accounting System
- Stallion-Level Cost Data
- Resources for Direct Measurement of Intervention Cost
- Provider Data
- Other Data Sources

HERC Average Cost Datasets
HERC's Average Cost Datasets for VA Inpatient Care for FY1998-FY2015
Wagner TH, Chow A, Su P, Barrett PG
Health Economics Resource Center, June 2016 | View

The U.S. Department of Veterans Affairs (VA) provides health care to Veterans at more than 120 inpatient facilities. In 1999, the VA funded the Health Economics Resource Center (HERC) to adapt existing cost methodologies and to expand methods to estimate costs of health care encounters. This guidebook describes HERC's method for estimating the cost of VA inpatient stays back to fiscal year 1998. It discusses methods in building the dataset, assumptions underlying the dataset, and how to use the dataset.
Technical Reports

CDW Disclaimer

VA data, including HERC data, are currently in transition to the VA Corporate Data Warehouse (CDW), a national VA data repository. The National Data Systems (NDS) oversees the request and approval process through the Data Access Request Tracker (DART) system. For more information on data available at CDW and the current request procedures, please see the VHA Data Portal (VHA Intranet site - contact HERC for the url).


Health Economics Resource Center, #33, December 2015 | View »

We developed ICD-9-CM and ICD-10-CM definitions for 34 different chronic conditions, and we compared the prevalence rates of these chronic conditions from federal fiscal year (FY) 2014 to FY2016 in a large sample of VA patients in order to measure the changes before and after transition to ICD-10-CM.


Health Economics Resource Center, #32, October 2015 | View »

The Health Economics Resource Center (HERC) of the U.S. Department of Veteran Affairs (VA) reviewed peer-reviewed publications to determine the methods and data sources used in studies of VA health care costs between 1980 and 2012. The review identified the number of published papers that used four principal methods of costing available to VA researchers and examined how practices differed in the last five years of the research that was reviewed. The review generated a bibliography of publications that used each of the four methods. The goal of this review was to identify priorities for HERC strategic planning.
HERC Cyber Courses & Seminars
Poll Question #3

Have you ever attended one of the HERC cyber courses or seminars? Select all that apply.

- Cost-effectiveness analysis course
- Econometrics course
- Monthly HERC cyber seminar
- Never attended a HERC course or seminar
Cyber Courses

- Cyber courses
  - Econometrics with Observational Data
  - Cost-Effectiveness Analysis with VA Data
# Econometrics with Observational Data

<table>
<thead>
<tr>
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<th>Presenter</th>
<th>Title</th>
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<tr>
<td>1</td>
<td>02/01/17</td>
<td>Todd Wagner</td>
<td>Econometrics Course: Introduction &amp; Identification</td>
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<tr>
<td>2</td>
<td>02/08/17</td>
<td>Christine Pal Chee</td>
<td>Research Design</td>
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<td>3</td>
<td>02/22/17</td>
<td>Todd Wagner</td>
<td>Propensity Scores</td>
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<tr>
<td>4</td>
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<td>Natural Experiments and Difference-in-Differences</td>
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<tr>
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<td>Instrumental Variables</td>
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<tr>
<td>6</td>
<td>03/22/17</td>
<td>Josephine Jacobs</td>
<td>Fixed Effects and Random Effects</td>
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<td>7</td>
<td>03/29/17</td>
<td>Ciaran Phibbs</td>
<td>Specifying the Regression Model</td>
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<td>04/05/17</td>
<td>Ciaran Phibbs</td>
<td>Limited Dependent Variables</td>
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<td>9</td>
<td>04/12/17</td>
<td>Paul Barnett</td>
<td>Cost as the Dependent Variable (Part I)</td>
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<td>10</td>
<td>04/26/17</td>
<td>Paul Barnett</td>
<td>Cost as the Dependent Variable (Part II)</td>
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Econometrics Course

Winter 2017: Econometrics with Observational Data Course
This course is intended to provide an introduction to econometric methods used to analyze data in health services research. Topics will include: linear regression; research design; propensity scores; instrumental variables; quasi-experiments and difference-in-differences; mixed effects modeling; specifying the regression model; limited dependent variables; and cost as a dependent variable. Course material will assume knowledge of basic probability and statistics and familiarity with linear regression. Lectures are held on Wednesdays, with each hour session beginning at 11:00AM Pacific/2:00PM Eastern time, unless otherwise noted.
Register »

Target audience: Researchers who would like an introduction to econometric methods for observational studies in health services research. Course material will assume knowledge of basic probability and statistics and familiarity with linear regression.

If you are unable to enroll in a HERC course, it may be possible to view a recorded archive of each lecture. Some archived course content is limited to VA employees, other content is available to a broader audience. Please see the HSR&D training page for details.

Looking for the Cost-Effectiveness Analysis Course? »

Econometrics Course Sessions
February 1, 2017
Econometrics Course: Introduction and Identification
Todd Wagner, Ph.D.
The objective of this class is to introduce participants to the course. We start by briefly describing a randomized trial and the leverage of experimental design to understand causation. We then transition into understanding causal pathways.
## Cost-Effectiveness Analysis with VA Data

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<tr>
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<tr>
<td>1</td>
<td>An Overview of Decision Analysis</td>
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<td>2</td>
<td>Recommendations for Conducting Cost-Effectiveness Analysis: Elements of the Reference Case</td>
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<td>Estimating the Cost of an Intervention</td>
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<td>Estimating Transition Probabilities for a Model</td>
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<td>Evidence Synthesis to Derive Model Transition Probabilities (Part I – Systematic Literature Review)</td>
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<td>9</td>
<td>Evidence Synthesis to Derive Model Transition Probabilities (Part II – Quantitative Pooling)</td>
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<td>Sensitivity Analyses</td>
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<td>11</td>
<td>Budget Impact Analysis</td>
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<td>12</td>
<td>How can Cost-Effectiveness Analysis be Made More Relevant to US Healthcare?</td>
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HERC Cost-Effectiveness Course

Cost-Effectiveness Analysis Course

Winter 2016 schedule to be announced. Archived 2016 course materials listed below.

Looking for the Econometrics Course? »

Winter 2016 Cost-Effectiveness Analysis Course

January 6, 2016
An Overview of Decision Analysis
Risha Gidwani, Dr.P.H. | Slides | Video

This lecture kicks off the HERC Cost-Effectiveness Analysis cyber course by providing an introduction to the field of decision analysis. Topics include: why to engage in decision analysis; the difference between cost-effectiveness analysis, cost utility analysis, cost-benefit analysis and budget impact analysis; and the different ways to operationalize a decision analysis (modeling versus measurement alongside a clinical trial). This lecture is aimed at providing a general high-level overview of the field.

January 13, 2016
Recommendations for Conducting Cost Effectiveness Analysis: Elements of the Reference Case
Ciaran Phibbs, Ph.D. | Slides | Video

HERC > Courses & Seminars > Cost-Effectiveness Analysis Course: http://www.herc.research.va.gov/include/page.asp?id=course-cost-effectiveness-analysis
Cyber Seminars

- Monthly economics cyber seminars
  - Register at http://www.hsrdr.research.va.gov/cyberseminars/catalog-upcoming-series.cfm?seriessort=hmcs
# HERC Cyber Seminars

## Upcoming Seminars

### Wednesday, January 10, 2017, 11 AM (Pacific)

**Panel presentation: De-Implementing low value health services**

Paul Barnett, Ph.D. | Slides available on the Intranet

This panel will focus on current and future de-implementation efforts at the Veterans Health Administration (VHA). Panel members will include VHA Health Services Research & Development (HSR&D) researchers David Au, MD, Eve Kerr, MD, MPH, and Paul Barnett, PhD, who are working on studies to promote greater safety and efficiency by reduction of inappropriate care. They will describe current studies, discuss criteria for selecting services for de-implementation, and field questions from participants.

## Archived Seminars

**September 21, 2016**

*Using Harm-based Weights for the AHRQ Patient Safety for Selected Indicators Composite (PSI.90): Does it Affect Assessment of Hospital Performance and Financial Penalties in Veterans Health Administration Hospitals?*

Qi Chen, Ph.D | Video

[HERC > Courses & Seminars > HERC Seminars: http://www.herc.research.va.gov/include/page.asp?id=seminars-herc](http://www.herc.research.va.gov/include/page.asp?id=seminars-herc)
HERC Consulting Service
Consulting Service Requests

■ Yes! We can help.
  – Discussing types of analysis for a future project
  – Answering economic dataset-related questions
  – Providing resources to use economics-related data
  – Discussing potential collaboration on a project with an economist

■ Unfortunately, we cannot help.
  – Running large data analysis for an existing project
So you need a health economist...

- Discuss project specifics with HERC economist before submitting a proposal:
  - Scientific question(s) to be answered and expected outcomes
  - Economic data (collected or requested)
  - Economist time (funding, % effort)
Consulting Service

- E-mail HERC: herc@va.gov
- Expert List:
  http://www.herc.research.va.gov/include/page.asp?id=extended-economist-help
Questions?

Email: herc@va.gov
Phone: (650) 617-2630

HERC Internet: www.herc.research.va.gov/
HERC intranet: vaww.herc.research.va.gov/