Dedicated to improving the quality of health economics research

A VA Health Services Research & Development Resource Center

HERC
Health Economics Resource Center

Volume I, Issue 2
December 2001

VA HEALTH ECONOMICS BULLETIN

Outpatient Average Cost Estimates:

HERC Releases Files with Estimated Cost for Outpatient Encounters

The Health Economics Resource Center (HERC) is pleased to announce the release of a series of files with estimates of the cost of every VA outpatient encounter. These outpatient average cost files have one record for each visit in the VA outpatient events files, some 60 million visits per year. These files may be linked to the outpatient database to obtain information on the location of care, services provided, patient diagnosis, and patient demographics. The first file covers the year that began on October 1, 1997.

HERC estimated the cost of care using non-VA reimbursement rates. VA clinicians characterize outpatient care with Current Procedural Terminology (CPT) codes. Each year appoximately 10,000 different codes are used to represent the 100 million services and procedures provided by VA. Because CPT codes are also used by non-VA providers, HERC used the codes to determine the hypothetical reimbursement by non-VA payers. We call this the *HERC value*.

The HERC value is based primarily on Medicare reimbursement rates. Rates from other payers were used for VA services not covered by Medicare. Therefore, the HERC value will be useful for studies that estimate costs from the perspective of Medicare or other nationwide health care payers.

The HERC value includes both provider and facility components. The provider payment is largely composed of physician reimbursement. Most VA care is provided in a setting that meets the Medicare definition of a facility, so we assigned a facility payment to every visit and included this in the HERC value. (Medicare defines a facility as a hospital-based clinic, a skilled nursing facility, a free-standing surgery center, a comprehensive outpatient rehabilitation facility, or a community mental health center.) Facility payments were estimated using the new Medicare prospective payment system which bases payments on Ambulatory Payment Categories. Facility payments are substantial; they are approximately equal to the provider payment.

Using the HERC value, we estimated a national and a local visit cost. These cost estimates are proportionate to the HERC value. They were adjusted to reflect actual VA expenditures for ambulatory care, as reported in the Cost Distribution Report. We defined 13 categories of VA outpatient care and found the total VA costs for each. The national visit cost is the HERC value adjusted so that the total costs in each category of care sum to actual VA expenditures in the same category, as reported in the Cost

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Special Event:

VA Health Economics Meeting at the HSR&D 20th Annual Meeting

Renaissance Washington DC Hotel
February 13, 2002
2:00—5:00 p.m.

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Distribution Report. The national visit costs are generally lower than the corresponding HERC values.

Likewise, HERC created *local* visit costs for each VA medical center by adjusting the national visit costs so that they sum to the total outpatient expenditures at each center. Like the national costs, the local visit costs are generally lower than the corresponding HERC values. They will be useful for analyses that incorporate local variations in wage and supply costs.

HERC staff made a number of analytic assumptions to create the payment and cost estimates. We assumed that the CPT codes recorded in VA outpatient data accurately reflect the outpatient care VA provided and that no additional undocumented services were provided by VA. We assumed that every code used by VA clinicians represented a service that should be assigned a cost. Therefore, we assigned a payment to codes that were obsolete, to codes that were not specific enough to be accepted by third-party payers, and to inpatient codes used to characterize outpatient visits. We also assigned costs to other services that would have been rejected for reimbursement by many third-party payers, such as telephone care and follow-up surgical visits.

The HERC database does not include pharmacy utilization, payments, or costs. There was no easily accessible national database with this information. Economists can turn to the Pharmacy Benefits Management system or the Decision Support System national extracts to get estimates of pharmacy cost.

We believe that VA utilization files underreport services provided in prosthetics clinics. The HERC values, national visit costs, and local visit costs are the same for all services provided in prosthetics clinics.

Detailed information on the HERC outpatient files is provided in the publication, *HERC'S Outpatient Average Cost Dataset for VA Care: Fiscal Years 1998-2000.* This manual may be downloaded from the HERC web site. Users will need to pay special attention to the methods for combining this file with the VA outpatient events file. Patient demographics, diagnosis, and services provided during the visit are found only in the events file.

The HERC value and cost estimates do not reflect the effects of VA practice patterns and productivity on the resources used in VA outpatient visits. Analysts who need cost estimates that reflect variations in practice patterns and provider productivity will need to undertake staff activity analysis, a method sometimes referred to as micro-costing. Information on this method is available from HERC.

HERC Staff Update

Frank Lynn, MA, is the new technical writer and editor for HERC. Formerly, he served as a technical writer and project manager for California's Healthy Families Program and worked on a variety of legislation in the California state senate.

Arliene Ravelo, MPH, graduated from Yale University in May. Since joining HERC as a research associate she has worked with economist Wei Yu to determine the cost of providing care to chronically ill veterans.

Mark Smith, PhD, began work in July after three years in Washington, DC, as an economist with The MEDSTAT Group. His research focuses on medical outcomes research and the economic effects of trauma and mental illness.

Three staff members have left to pursue further education in the Bay Area and Los Angeles. Research associate Aman Bhandari has enrolled in the Health Services and Policy Analysis doctoral program at UC-Berkeley. Technical writer Sally Hui is earning a Masters degree in TESOL at Biola University, while research assistant Anne Marie Cruz has begun the MPH program at UCLA. Best wishes to Aman, Sally and Anne Marie in their new endeavors!

April VA DSS User Conference

A VA conference on the Decision Support System (DSS) will be held April 22-25 in Austin, Texas. VA is using DSS to estimate the cost of its health care services. VA clinicians, researchers, and financial staff are invited to attend the meeting.

It will feature lectures, hands on training sessions, poster presentations, and the opportunity to network with the VA DSS community. Contact HERC for meeting details.

HERC Releases Hospital Cost Data:

How HERC Uses the Average Cost Method to Determine the Cost of Hospital Stays

Until recently, researchers haven't known the cost of VA hospital stays. HERC has estimated the cost of all VA hospital stays that started since October 1, 1997. Cost estimates for three years are now available at the VA Austin Automation Center.

There are three datasets for each fiscal year (Table 1). These datasets can be merged with the VA hospital utilization database, the Patient Treatment File (PTF). Cost estimates are based on VA utilization data, the VA Cost Distribution Report (CDR), and non-VA measures of relative value.

VA provides a wide range of inpatient care. We categorized VA inpatient care into eleven categories: acute medicine, rehabilitation, blind rehabilitation, spinal cord injury rehabilitation, surgery, psychiatry, substance abuse care, intermediate medicine, domiciliary, nursing home care, and Psychosocial Residential Rehabilitation programs (PRRTP).

We estimated the relative cost of acute medical-surgical stays by analyzing Medicare data on veterans' stays in non-VA hospitals. Our estimate of nursing home costs reflected the case-mix measures gathered in a biannual assessment of VA nursing home patients. We estimated the cost of other types of stays using an average daily cost for the category of care. This daily cost was calculated by dividing the costs in the CDR by the days of stay in the PTF.

The HERC cost estimates only include the costs reported in the CDR. Costs such as the financing of capital expenditures and malpractice costs are excluded. Our average cost estimates do include indirect costs and physician costs. Table 2 shows included and excluded costs.

Discharge dataset

The HERC discharge dataset has the cost of each VA hospital stay that began and ended in the same fiscal year. It can be easily merged to the PTF main files (PM, XM and PMO). The HERC discharge file is organized like the PTF, with stays reported in the fiscal year in which the patient was discharged. It was not feasible to estimate costs of stays that began before October 1, 1997, as some of these stays are many years in length. These stays were excluded from our estimates. The impact of this exclusion is fairly small; for example, it affected only 0.03% of the patients discharged in Fiscal Year 2000. HERC has separate information on VA hospitals costs of earlier years (Barnett, Chen, & Wagner, 2000).

The HERC discharge dataset provides the total cost of each stay. This keeps with the VA convention that treats stays

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Table 1
HERC Average Cost Datasets FY1998-FY2000

File	Cost reported in file	Time period covered	What constitutes a record
Discharge file	Total cost of stay, including both acute medical surgical care and other hospital care	All stays that began after 10/1/97 and ended in the fiscal year	A complete stay as reported in the PTF discharge (main) files
Acute Medical-Surgical file	Cost of acute medical-surgical care	Acute medical-surgical stays that began after 10/1/97 and ended in the fiscal year	Comparable to non-VA data on hospital stays. An acute stay is defined as one or more contiguous medical-surgical PTF bedsection segments
Non Medical-Surgical file	Cost of care other than acute medical-surgical	Cost of all days of stay that took place during the fiscal year, regardless of when patient was admitted or discharged	A single PTF bed-section segment

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HERC Releases Hospital Cost Data

involving both long-term care and acute medical surgical care as a single stay. Non-VA providers would treat an episode involving both long-term and acute hospital care as separate hospital stays. To allow analysts to compare VA data to non-VA data sources, HERC created two additional datasets: one with acute medical-surgical stays, and another with the cost of all other hospital stays.

Acute medical-surgical dataset

We developed a definition of acute medical-surgical care that is comparable to that which is used outside VA. We aggregated records in the PTF bedsection files to define stays. If a patient was transferred from one medical-surgical bedsection to another, we considered both segments as part of the same stay. For example, if a patient went from intensive care to the medical ward, the segments were summed to define a single stay. When a patient was transferred from medicine to another part of the hospital, such as a psychiatric unit or a long-term care facility, we ruled that the acute medical-surgical stay had ended.

Although the HERC discharge file is easier to use, some researchers may need to use the acute medical-surgical dataset. This file can be merged to the PTF bedsection file, but only if the PTF file has been transformed using the HERC definition of an acute stay. Contact HERC for details.

Non-medical-surgical dataset

The non-medical-surgical dataset contains costs of stays in bedsections outside of medicine and surgery. It includes the total cost for days that occurred during the fiscal year. There is one record for each bedsection that the patient stayed in, even if the patient was admitted to or discharged from that bedsection in a different fiscal year. This dataset can be merged with the VA bedsection utilization data; contact HERC for details.

Noteworthy variables

The HERC average cost files contain a national cost estimate (COSTN) and a local estimate (COSTL). The national cost estimate is useful for studies that take the perspective of the VA health care system; it is the national average VA cost for providing the care. The local cost estimate reflects the effect of local productivity and geographic variations in wages. We are less confident in the veracity of local cost estimates, in part because they can reflect accounting idiosyncrasies of specific medical centers. The dataset includes a variable that indicates when the local cost estimate is more than two standard deviations above or below the national cost estimate.

The HERC datasets are a comprehensive and easily accessible source of VA cost data, but they should not be used for every research project. The Alternatives to HERC Average Cost Data article on page five of this bulletin discusses the appropriate use and limitations of these files. Detailed documentation can be found on the HERC web site (http://www.herc.research.med.va.gov/ACM.htm).

References

Barnett, P. G., Chen, S., & Wagner, T. H. (2000). Determining the Cost of VA Care with the Average Cost Method for the 1993-1997 Fiscal Years. HERC Working Paper #2.

Table 2

Costs in HERC Inpatient Cost Datasets

Type of cost	Status in data set
Nursing, surgery, laboratory, pharmacy, radiology, supplies	Included.
Physician services	Included. Assumed to be proportionate to all other cost.
Research & education	Included if supported by VA medical care funds.
Indirect costs	Included. Assumed to be proportionate to direct cost.
Capital financing costs	Excluded; May be substantial (5% of total costs.)
Malpractice expenses	Excluded.
Contract provider costs	Excluded as costs could not be associated with workload.
Community nursing home costs	These stays and their cost are excluded.
Headquarters costs	Excluded.
Prosthetics	Excluded as cost could not be associated with workload.

Alternatives to HERC Average Cost Data:

Choosing the Best Data to Work With

The HERC average cost files are a comprehensive, easily accessible source of data on the cost of nearly every VA health care encounter. Although they are useful for many studies, analysts must be aware of their limitations and be prepared to use alternative methods.

The HERC estimates rely on a number of assumptions. The most important assumption is that VA costs are proportionate to the costs of non-VA providers. For example, we used the Medicare Diagnosis Related Group (DRG) weight to estimate the cost of acute stays in VA medical-surgical wards. Medicare has determined the relative cost of stays in each DRG. We assumed that these relative values apply to VA stays. We rescaled these relative amounts to reflect costs reported in the VA Cost Distribution Report.

To find the cost of outpatient visits, we used Medicare and other payer's rates. We assumed that these payments could be used as relative values to find VA outpatient costs.

Before using the HERC cost files, analysts should consider if the assumptions used to make them are appropriate. These assumptions are described in the HERC average cost documentation. HERC cost estimates do not necessarily reveal VA practice patterns or productivity. They may not reveal the impact of an experimental intervention on cost. The inpatient cost estimates will be sensitive only to interventions that change DRG length of stay, or time in the intensive care unit (ICU). The outpatient cost estimates are sensitive only to interventions that result in the assignment of different procedure codes.

Consider a new method of transfusing blood during a heart transplant. If the new method does not affect the DRG or the length of stay, its adoption will have no effect on the HERC cost estimate. Analysts will need to directly measure the effect of the intervention on cost. Direct measurement methods are sometimes referred to as micro-costing. This method requires detailed information on supplies, facilities, and equipment, and an analysis of staff activities to determine labor cost. HERC can help researchers with micro-costing methods.

Micro-cost methods can be very precise but expensive to employ. Many studies will need multiple methods of determining cost. Analysts may reserve micro-costing methods to estimate the cost of care associated with an intervention or the issue under study, and use HERC average cost estimates for other unrelated care.

The HERC cost files do not include the cost of outpatient pharmaceuticals. This cost may be obtained from the DSS national data extract, or from the Pharmacy Benefits Management system.

Accessing the Data: How to Get Permission to Access HERC Cost Data

HERC average cost data may be accessed by any VA researcher who has a personal timesharing account at the Austin Automation Center (AAC). To obtain access to the HERC data, you must submit a completed *Registration to Use HERC Cost Data* form and fax it to (650) 617-2639, attention "HERC AAC Coordinator." In approximately 2-3 days you will receive the functional task code and instructions for obtaining a permit to access the data.

The HERC Registration form can be directly downloaded from the HERC web site:
http://www.herc.research.med.va.gov
or you may obtain it from HERC at the following address:

Health Economics Resource Center
VA Palo Alto Health Care System
795 Willow Road (152 MPD)
Building 205, Room 128 C
Menlo Park, CA 94025

If you have trouble accessing this form, please call HERC at (650) 617-2630 or e-mail herc@med.va.gov.

HERC Offers Resources

The Health Economics Resource Center is a national center dedicated to improving the quality of health economics research in VA. HERC assists VA researchers in assessing the cost-effectiveness of medical care and evaluating the efficiency of VA programs and the providing of care. HERC's initial focus is on helping researchers determine the costs of VA health care.

Research Consulting Service

HERC's economics research consulting service is accessible via a telephone support line: (650) 617-2630 or the HERC web site: www.herc.research.med.va.gov. Submit a help request or question online and HERC staff will contact you.

HERC Web Site

HERC offers a variety of resources on its web site: www.herc.research.med.va.gov. The site features essays with details of the three cost methods: Average Costing, Micro-costing, and the Decision Support System. HERC is proud to announce that versions of the following user guides are now available in PDF format on the web site:

- HERC'S National and Local Outpatient Average Cost Dataset for VA Care: Fiscal Years 1998-2000
- HERC's Inpatient Average Cost Datasets for VA Care: Fiscal Years 1998-2000

Two additional manuals will be released in the first quarter of 2002. Research Guidelines, documented in "Cost Analysis: Information for Applicants and Reviewers," are also accessible via the HERC web site.

Additional web resources include a searchable database of health economics experts, a form to submit help requests, a Frequently Asked Questions section, and training materials for the Health Economics Seminar Series course. **Please visit us at www.herc.research.med.va.gov soon!**

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