



VA HEALTH ECONOMICS BULLETIN

Volume I, Issue 1
January 2001

Special Event:

VA Health Economics Meeting at
the HSR&D 19th Annual Meeting
Renaissance Washington DC Hotel
February 14, 2001
2:00—5:00 p.m.

Inside this Issue:

Decision Support System
National Extracts

VA Compliance Officers Meet to
Improve VA Data Quality

New Medicare Payment Rates will
Help VA Cost Studies

HERC Offers Resources

Health Economics Seminar Series

Health Economics Resource Center
VA Palo Alto Health Care System
795 Willow Road (152 MPD)
Menlo Park, CA 94025
(650) 617-2630
fax: (650) 617-2639
herc@med.va.gov
www.herc.research.med.va.gov

The HERC Average Cost Dataset

Todd H. Wagner, Ph.D.

What does a day of psychiatric care cost in the VA? This question has not been easy to answer for VA managers and researchers because the VA does not routinely prepare patient bills. In response to an increased desire for patient-level cost information, the Health Economics Resource Center (HERC) has developed a dataset for every VA patient care encounter in fiscal year 1998. The HERC average cost dataset for FY98 will be unveiled in early 2001 and the hope is to make the FY99 data available in Spring 2001.

We expect interest in the HERC average cost dataset to grow as more people find out about its availability. While we are pleased to make the data available at Austin, we hope that users will take a moment to familiarize themselves with the methods used to calculate the costs. This article briefly reviews our methods and describes how the datasets can be accessed.

Methods:

The goal was to assign a cost to every VA encounter starting with FY98. The utilization data, from the VA Patient Treatment File (PTF) and the National Patient Care Database Outpatient Procedures File, were merged with department-level cost data from the VA Cost Distribution Report (CDR). Since the accuracy of the estimates depends on the level of detail, we used the greatest level of detail in the centralized VA databases for which we felt comfortable identifying costs. In the end, we mapped the bedsections into 11 different categories of care (see *Table 1*).

Table 1: Categories of inpatient care used for the average cost dataset

Acute medicine	Rehabilitation	Blind rehabilitation
Spinal cord care	Surgery	Psychiatry
Substance abuse	Intermediate medicine	Domiciliary
Long-term care	PR RTP*	

* Psychosocial Residential Rehabilitation Treatment Programs (PR RTP)

The categories in *Table 1* are quite broad. But even at this level of detail, we found instances where medical centers had costs but no utilization or utilization without costs. Therefore, when we merged the CDR and the utilization database using these 11 categories, we had to perform some additional reconciliation. For instance, one medical center that had mostly long-term care patients had a few days listed in rehabilitation bedsections. However, there were no costs in the rehabilitation cost distribution account. In this case, we recoded the rehabilitation days as long-term care days. When the reconciliation

continued on page 2

continued from page 1

The HERC Average Cost Dataset

was done, we had total costs and total number of days for each of these categories at each medical center.

Inpatient non-acute Stays:

To find the cost of inpatient stays in rehabilitation, blind rehabilitation, spinal cord injury, psychiatry, substance abuse, intermediate medicine, domiciliary, and psychosocial residential rehabilitation treatment, we calculated a cost per day of stay. This was done by dividing all CDR costs by the total number of days in the category. Once we had an average daily cost, we multiplied it by the length of stay in FY98 to estimate the cost of each stay. This makes the assumption that every day of stay has the same cost, that is, that costs are proportionate to the length of stay.

Acute Inpatient Care:

2 We differentiated between acute hospitalization and non-acute hospitalizations. For acute hospitalization, we used additional utilization detail that we used to make more accurate cost estimates. To find the cost of acute hospital care, we relied on clinical information, such as the diagnostic related group (DRG), which is a set of 511 categories based on primary diagnosis. Medicare uses DRG-based relative value units (i.e., DRG weight) to pay hospitals for acute inpatient care. By analyzing Medicare and Health Care Cost and Utilization (HCUP) discharge data, we developed a complex, nonlinear cost function using DRG weight, length of stay, other clinical information, and demographics. We then ran the VA data through this cost function to generate VA patient-level costs.

The one added wrinkle with this approach, however, is that the cost function required us to reorganize the VA data so that each record was an acute stay. In the PTF bedsection file, the VA distinguishes

transfers between bedsections. For instance, if a patient is admitted to the intensive care unit, then is transferred to a medicine bedsection, the PTF will have two records. However, outside the VA, transfers between acute bedsections (or wards) are all counted as part of the same stay. To make the VA data equivalent to stays outside the VA, we aggregated transfers from one acute bedsection to another. Whenever one or more non-acute care stays separated two acute bedsection stays, we treated the two acute stays as separate hospitalizations.

We should also note that the method we employed makes the following assumptions: (1) the relative value units (e.g., DRG weights and length of stay), based on non-VA costs, reflect the relative costs of VA hospital stays and (2) all stays with the same characteristics have the same cost. When we finally estimated the costs for each acute care stay, we adjusted these estimates with data from the Cost Distribution Report. This was done to ensure that the sum of estimated costs at each VA medical center was equal to the CDR costs.

Long-Term Care:

To find the cost of long-term stays, we incorporated relative values for resource utilization from Resource Utilization Groups (RUGs). This allowed us to adjust the average cost by case-mix. We used the biannual nursing home patient assessment files to assess RUGs, making the assumption that the cost of long-term care is proportionate to the RUG relative value.

Outpatient Visits:

To find the cost of outpatient visits, we used the relative values of all Current Procedures and Terminology (CPT) codes assigned to each visit. We used relative values from the Resource Based Relative Value System (RBRVS), which is used to

reimburse providers for services provided to Medicare patients. RBRVS is analogous to the DRG weight for inpatient care. We assigned every VA visit to one of 12 different categories of outpatient care. For each category, we found a specific factor to convert the relative value to a VA cost estimate. We assumed that the resources used to provide VA outpatient care were proportionate to the relative values assigned in the Medicare reimbursement. We also calculated facility fees using the Medicare ambulatory care group payment method. (see article on page 5)

Outpatient Pharmacy:

A centralized database on outpatient prescriptions filled by VA is not available. For this reason, the HERC estimates cannot reflect the cost of prescriptions provided to individual outpatients. We have prepared two estimates of outpatient cost: one estimate excludes pharmacy cost, and the other assigns pharmacy costs by assuming they are proportionate to the CPT relative values. The latter assumption may be quite inaccurate; we are hopeful that the release of the new VA Pharmacy Benefit Management database will allow us to improve upon our estimates in the future.

Data availability:

For fiscal year 1998, the inpatient average cost dataset is available at Austin. The outpatient average costs dataset should be available by the end of the year. In addition, documentation that describes the data methods, limitations and appropriate use is available from HERC's web site:

www.herc.research.med.va.gov. Our hope is to generate the average cost dataset for FY99 by Spring 2001. We also expect to improve the methods over time. User comments and suggestions are welcome and appreciated.

Decision Support System National Extracts:

An Exciting New Source of Data for VA Health Care Costs

Wei Yu, Ph.D.

Paul G. Barnett, Ph.D.

VA has implemented the Decision Support System (DSS) at all of its medical centers. This system of computer software and databases can provide VA managers with clinical and cost data that can be used to improve the quality and efficiency of patient care. Recently created national extracts of DSS cost data will provide researchers and national managers with access to these data.

Three DSS national extracts are being created. They are an outpatient extract, an inpatient discharge extract, and an inpatient treating specialty (TRT) extract. These extracts are being created by staff of the DSS Bedford Technical Support Office, the VISN Service Support Center, and Eclipsis Corp., the private firm that created DSS.

The DSS outpatient extract includes the cost of every VA outpatient encounter. It also contains pharmacy costs. The DSS inpatient discharge extract reports the cost of all inpatient stays that ended in the fiscal year, including any prior years' cost. The DSS treating specialty extract contains the cost of all hospital stays that took place during the fiscal year, including stays that were not yet over by the end of the year. This file also distinguishes costs incurred in the different inpatient units. It tallies the cost of each stay on each bedsection (the VA ward, also called treating specialty) during each month of the fiscal year. These files are SAS datasets stored at the Austin Automation Center.

HERC staff Paul Barnett, Patricia Lin, and Wei Yu, have evaluated DSS national

extracts for the 1998-1999 fiscal year. Since the extracts do not contain detailed information about diagnoses and utilization, researchers will need to merge DSS files with VA utilization files.

We found that the inpatient extracts for FY1999 do not contain exactly the same hospital stays that are in the VA discharge database, the patient treatment file. There are also discrepancies between the DSS outpatient file and the outpatient databases. Some of these differences are due to medical centers that had incomplete data in DSS at the time the national extracts were created.

Most costs reported in the national extracts were similar to costs that could be expected for the same services provided by non-VA providers; however, we did discover several examples where cost estimates were unexpectedly high. This appears to stem from errors in calculating the unit cost in the DSS production system.

We are now examining DSS data from FY2000; our preliminary evaluation suggests that programming changes and other improvements have resulted in a higher quality dataset. VA intends to use FY2000 DSS data to allocate funds to regional networks for the 2001-2002 fiscal year. HERC is working with the DSS extract design team to document these files so that they may be used by researchers.

VA policy governing access to DSS data requires users to protect patient confidentiality, and to refrain from making public data on the cost of specific health

care products, as this might compromise the agency's ability to contract with the private sector.

Four new national extracts are now being developed:

- (1) the national general ledger extract, with the cost of individual patient care departments;
- (2) the national pharmacy extract, with information on individual prescription fills;
- (3) the national radiology extract; and
- (4) the national laboratory extract, with both cost data as well as the result of selected tests.

HERC will provide detailed information about these new datasets when it becomes available.

HERC Staff

Director

Paul G. Barnett, Ph.D.

Associate Director

Ciaran S. Phibbs, Ph.D.

Health Economists

Todd H. Wagner, Ph.D.

Wei Yu, Ph.D.

Research Associates

Shuo Chen, Ph.D.

Aman Bhandari, M.P.H.

Anne Marie Cruz, B.S.

Technical Writer/Administrator

Sally S. Hui, B.A.

Expert Panel

Ann M. Hendricks, Ph.D.

Denise M. Hynes, Ph.D.

Terri J. Menke, Ph.D.

VA Compliance Officers Meet to Improve VA Data Quality

by Aman Bhandari, MPH

Compliance Officers from VA Medical Centers throughout the country met September 27-28, 2000 in New Orleans to discuss their efforts to improve the quality of VA health care data.

“Compliance Officers have been appointed at 68% of all VA Medical Centers,” said Jimmy Norris, Chief Finance Officer for the Veterans Health Administration (VHA). He told the group that all medical centers have been asked to appoint a Compliance Officer, and that a 5-member staff has been appointed to the VA Compliance Headquarters Office in Washington, D.C. The new compliance staff is

involved in improving the quality of VA health care bills, particularly, VA bills for care provided to patients who have private insurance. Past audits have found some coding to be inaccurate, and potentially fraudulent.

Gail Graham, Health Information Director for VA, reported that data quality is an important issue for facility budgets. She reported that “between 2% and 10% of the encounters that occur in VA are never reported in the VA databases in Austin [Automation Center].” Also reported were the methods by which VA budget allocation reflects the workload reported in VA databases.

Several Compliance Officers presented the results of their efforts to improve data quality at individual medical centers. Charles Haskell, MD, Chief Compliance Officer, reviewed the transfer of information from patient charts to coded data at one medical center, and determined that in 40% of the cases, the

encounter had been “overcoded”—it had been assigned a code for care that was more complex than what was actually delivered. Undercoding errors occurred in another 9% of the cases.

The meeting heard of the difficulty in applying Evaluation and Management (E&M) Codes to VA encounters. These are the codes that are applied to routine outpatient visits. The codes were designed to be used for services provided by physicians; however, at many VA sites, E&M codes are being used by non-physician providers, including social workers and chaplains.

Researchers who are interested in learning more about the quality of data from a particular site should consider contacting their site’s Compliance Officer. Information about data quality from these new VA data experts has not yet been centralized.

4

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 providers. HERC’s initial focus is to help 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. Also available in PDF format is the special VA Supplement to the April 1999 issue of the journal, *Medical Care*, entitled, “Developments in Cost Methodology: Lessons from VA Research.” It includes nine papers that describe the state of the art methodology for researchers seeking to conduct economic research in VA. 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!**

New Medicare Payment Rates will Help VA Cost Studies

Paul G. Barnett, Ph.D.

Medicare has adopted a new method of paying ambulatory care facilities, including surgery centers, hospital clinics, and emergency rooms. The new payment schedule provides important new information to researchers who use Medicare reimbursement rates to estimate the cost of outpatient care.

In the past, ambulatory care facilities submitted itemized bills to Medicare. There was no published data on the average bill, or the average Medicare reimbursement, for different outpatient services. The new fee schedule fills this gap. Medicare studied past payments to set a schedule that pays facilities according to the number and type of procedures performed during outpatient visits.

Facility reimbursements are a significant expense to Medicare. When care is provided in an ambulatory care facility, Medicare spends about as much on facility fees as it does on physician services.

The new rule does not affect physician payments. As before, physicians characterize their work using procedure codes, and they are paid according to the number of relative value units specified in the Resource Based Relative Value System (RBRVS).

Medicare payments for office based physician care are also unaffected by the new rule. Physicians are paid at a higher rate when they provide care in their own office, to reimburse them for their office expense.

The new system uses Ambulatory Payment Categories to determine facility fees. As before, each outpatient service is characterized by a Current Procedures Terminology (CPT) code. Medicare specified facility payments for Ambulatory Payment Group (APG). Each CPT code has been assigned to an APG. The facility bill includes a CPT code and the reimbursement is determined by that code's APG. When a facility submits a bill with several surgical CPT codes, it receives the full rate for the code in the most expensive APG, and half the rate of each of the remaining codes.

The new system will be very helpful to economists who use Medicare payment rates to estimate the cost of care provided by the Department of Veterans Affairs. CPT codes for outpatient services provided by VA are reported in the

VA ambulatory databases located at the Austin Automation Center. VA analysts will need to determine whether a

facility payment is appropriate. For example, VA satellite clinics may not be considered hospital-based under Medicare payment rules. These methods are being documented by HERC and are posted on the HERC web site, under the heading "Micro-costing—Pseudo-bill."

Cost estimates based on Medicare payment rates are useful for generalizing results beyond a particular site. For example, policy makers may wish to know a study's implications for costs in the U.S. health system in general. Medicare pays 33% of the cost of hospital care, and 22% of the cost of physician services provided in the U.S. Medicare rates represent the cost from the payer's perspective. Medicare payment rates should not be used, however, to understand the cost of a particular site, or to determine the effect of an innovation on a particular health care encounter. Note that 80% of Medicare outpatient reimbursements are actually paid by Medicare; the remaining 20% is the responsibility of the patient.

Health Economics Seminar Series

HERC offers training opportunities for VA economists, health services researchers and others who are interested in cost-effectiveness research. In May 2000, HERC launched its Health Economics Seminar Series. The Seminar Series is designed to equip researchers with methods to analyze cost data and conduct cost-effectiveness research in their studies and projects.

Course Description

Seminar topics range from VA financial databases, how to determine the cost-effectiveness of health care interventions, and the methods of determining VA health care costs. Micro-cost methods covered include direct measurement, use of clinical cost function, and pseudo-bill. The course describes how to create average cost estimates by combining VA cost and utilization data with non-VA relative value units. It also provides training in the use of the Decision Support System (DSS) as a research tool. Participants are encouraged to bring examples and questions from current VA projects.

The one-hour seminar sessions are held monthly via the VA teleconferencing system; individuals who do not have access to a teleconferencing system may call a toll-free telephone number and participate by phone.

The course is open to all VA researchers. Registration is required so that we may reserve the appropriate number of conference phone lines and send participants course materials in advance. Course materials are distributed by e-mail one week in advance of each seminar. Seminars begin at 10 a.m. Pacific Time (1 p.m. Eastern Time) on the second Friday of each month.

The Seminar Series mentors researchers in cost methods, and creates opportunities for the presentation of VA economic research. Faculty includes the HERC staff and the HERC Expert Panel members: Ann M. Hendricks, Ph.D., Terri J. Menke, Ph.D., and Denise M. Hynes, Ph.D.

Registration:

To register for the Health Economics Seminar Series, please contact us at (650) 617-2630, or herc@med.va.gov, or visit www.herc.research.med.va.gov for more information.

Upcoming seminars and topics:

January 12, 2001

Other VA Costing Issues—Capital, Malpractice, Administration, Eligibility and Benefits, Home-based, Community-based and Contract Care

February 9, 2001

DSS Production Data

March 9, 2001

DSS National Extract



Health Economics Resource Center

VA Palo Alto Health Care System
795 Willow Road (152 MPD)
Menlo Park, CA 94025