

The Use of Relative Value Scales for Provider Reimbursement in State Workers Compensation Programs

A Report to the

**Industrial Medical Council
California Department of Industrial Relations**

By the

UCLA Center for Health Policy Research

Gerald F. Kominski, Ph.D.

Naderah Pourat, Ph.D.

Jeanne T. Black, M.M.

August 1999

Table of Contents

Executive Summary

Chapter 1. California's Official Medical Fee Schedule (OMFS)

1.1 Historical Evolution

1.2 Rationale for Change

Chapter 2. The Resource-Based Relative Value Scale (RBRVS)

2.1 Rationale for Development

2.2 Steps in Development

2.3 Use in the Medicare Fee Schedule

2.4 Maintenance and Updating

2.5 Modifications by the U.S. Department of Labor (DOL)

Chapter 3. Use of RVS Fee Schedules in State Workers Compensation Programs

3.1 Reasons for Adopting RVS Fee Schedules

3.2 Implementation Strategies

3.3 Maintenance and Updating of Fee Schedules

3.4 States Using RBRVS

3.5 States Using Other Relative Value Scales

Chapter 4. Technical Issues in Adopting a New RVS System in California

4.1 How Does the RVS Define Codes and RVUs for All Services Covered by Workers Compensation?

4.2 Should the RVUs Be Resource-Based or Charge-Based?

4.3 Should Payments be Adjusted for Geographic Differences?

4.4 How Should Conversion Factors Be Determined?

4.5 How Should the Fee Schedule Be Updated and Maintained?

Executive Summary

Although the last revision to the Official Medical Fee Schedule (OMFS) used by the state of California was in 1999, the Industrial Medical Council (IMC) is currently advising the Administrative Director on possible major revisions to the OMFS to be implemented in 2001. This report provides information on how other states are using Relative Value Scales, including the Resource-Based Relative Value Scale (RBRVS) used by Medicare, as part of their workers compensation programs.

We conducted telephone surveys with officials from 20 state agencies currently using either the Medicare RBRVS or the major commercial alternative known as Relative Values for Physicians (RVP). The primary goal of the surveys was to obtain information about: (1) the state's goals in adopting a RVS, (2) why it chose a particular RVS, (3) how the RVS was implemented, and (4) if the RVS appears to have achieved its goals.

Our survey of states indicated that states adopted the Medicare RBRVS to: (1) control costs; (2) make their workers compensation program more consistent with other major payers, including Medicaid and private insurers who have adopted the RBRVS; and (3) provide a simple administrative mechanism for updating the fee schedule by linking updates to the annual updates published by the Health Care Financing Administration for Medicare. States adopted the RVP to: (1) also control costs; (2) address gaps in the Medicare fee schedule for services not covered by Medicare or for services such as laboratory that are paid according to a distinct fee schedule; (3) reduce the redistributive effects of the Medicare fee schedule by using multiple charge-based conversion factors for categories of CPT codes more closely aligned with clinical specialties, and (4) provide a simple administrative mechanism for updating the fee schedule by using the updates provided quarterly or annually by the RVP vendor.

We found no difference between states adopting the RBRVS or the RVP in their satisfaction with these systems or their perceptions about the success of these systems.

Based on the experience of other states, and the U.S. Department of Labor, which has adopted and modified the Medicare Fee Schedule for use in federal workers compensation programs, California will need to address several key technical decisions if it undertakes a major revision to its fee schedule:

- (1) How does the RVS define codes and RVUs for all services covered by workers compensation?
- (2) Should the RVUs be resource-based or charge-based?
- (3) Should payments be adjusted for geographic differences?
- (4) How should conversion factors be determined?, and
- (5) How should the fee schedule be updated and maintained?

Our findings indicate that a major determinant of how other states have dealt with these issues depends primarily on how much they were willing to accept the redistributive effects of the Medicare RBRVS. States that were willing to accept large redistributions adopted the RBRVS with little modification. Other states adopted the RBRVS, but mitigated the redistributive impacts by adopting multiple conversion factors, in some cases substantially above Medicare's. Finally, other states adopted the RVP instead of the RBRVS because it does not explicitly attempt to redistribute revenues, and because it is not explicitly tied to a federal program that is viewed as fundamentally different from workers compensation.

This study was supported by Interagency Agreement #588388035 between the Industrial Medical Council and the UCLA Center for Health Policy Research.

Chapter 1. California's Official Medical Fee Schedule (OMFS)

1.1 Historical Evolution

California was one of the first states to use a relative fee schedule for physicians. Fee schedules generally consist of two components: a Relative Value Scale (RVS) containing Relative Value Units (RVUs), which reflect relative differences in work, resource use, or charges for individual services; and one or more conversion factors. Payment for a service is thus calculated by multiplying the RVU for a particular service by the relevant conversion factor.

The California Relative Value Study (CRVS) was developed in the 1950s and updated periodically through the 1970s. Use of the CRVS by private physicians was struck down in 1979 by a ruling from the Federal Trade Commission, which found that the CRVS violated provisions against price fixing. This ruling did not prevent the use of the CRVS by payers, including state workers compensation programs. The CRVS continued to be used by the state of California through the 1980s until major changes were made in the Official Medical Fee Schedule (OMFS) starting in the late 1980s and early 1990s.

In 1994, California adopted major changes in its OMFS. These changes included replacing the CRVS codes with 1994 Current Procedural Terminology, 4th Revision (CPT) codes defined by the AMA and used for physician payment by most private insurers and the Medicare and Medicaid programs. Another was the partial adoption of a relative value scale (RVS) based on a database of physician charges provided by a commercial vendor, Medicode, Inc.

1.2 Rationale for Change

The California Industrial Medical Council (IMC) is responsible for advising the Administrative Director who is charged with updating the OMFS every two years. Although the last update to the OMFS was in 1999, IMC is investigating possible major revisions to the OMFS to be effective in 2001. Medical care in California has been dramatically affected by three major developments since the last major update to the OMFS. First, the adoption of the RBRVS as the basis for the Medicare Fee Schedule has accelerated the adoption of RBRVS-based fee schedules by many private insurers. Second, the rapid growth of managed care in California and the use of discounted fee-for-service (FFS) payment systems and capitation by managed care firms suggests that the current OMFS is based on charges that are no longer representative of the California market. Finally, workers compensation expenditures have declined substantially through the 1990s, magnifying the importance of accurate relative prices for services.

The RVUs contained in the OMFS also merit updating because they are based on a variety of different sources. Many RVUs are still based on the 1974 CRVS, while others are based on values supplied by a commercial vendor in 1993 and 1999 or on values assigned by the states (e.g., for physical therapy). The current OMFS thus represents an amalgam of values from disparate sources spanning several decades of medical practice.

Chapter 2. The Resource-Based Relative Value Scale (RBRVS)

This chapter reviews the rationale for the development of the Resource-Based Relative Value Scale (RBRVS) and the steps involved in its construction. This is followed by a brief discussion of how the RBRVS is used along with other elements of the Medicare Fee Schedule (MFS) to determine physician payment, and how the RBRVS is maintained and updated. The chapter closes with a description of how the MFS and the RBRVS have been adapted by the U.S. Department of Labor for payment under the federal workers compensation system.

2.1 *Rationale for Development*

During the late 1970s and early 1980s, policy makers and researchers became increasingly concerned about the limitations of the usual, customary, and reasonable (UCR) payment system used by Medicare for physician payment. In general, UCR was viewed as inflationary and inequitable. Specific criticisms were that it distorted the relationship between resources used to treat patients and the payment for those services, and overvalued surgical services relative to primary care and preventive services.

The Medicare Fee Schedule (MFS) was implemented in January 1992 to address these criticisms of the UCR system, replacing it with one based on the RBRVS. The RBRVS was developed by a research team at the Harvard School of Public Health to measure the relative work effort of physicians for a wide range of services. The Harvard study was conducted in three phases, and produced Relative Value Units (RVUs) for the highest-volume Current Procedural Terminology (CPT) codes used by physicians for billing.

The Physician Payment Review Commission (PPRC) also played a central role in the development of the MFS; it was created in 1986 to advise Congress concerning the elements of a RBRVS-based payment system. PPRC developed a detailed proposal for an RBRVS-based fee schedule in its 1989 Report to Congress, which served as the primary blueprint for the actual MFS implemented in 1992.

2.2 *Steps in Development of the RBRVS*

As mentioned above, the Harvard study was conducted in three separate phases. Phase I of the Harvard study developed the basic methodology for obtaining estimates of physician work using telephone surveys and magnitude estimation. Phase II was undertaken to obtain data from specialties not included from Phase I and to refine some of the methods used to calculate relative work values in Phase I. Phase III produced estimates of total work for almost 2,000 low-volume codes not directly surveyed in the first two phases.

The development of the RBRVS can be separated into five distinct steps, which involved: (1) obtaining raw survey data on physician work separately for each “major” specialty; (2) fitting data from each specialty onto a common relative value scale; (3) calculating total work based on estimates of pre- and post-service work; (4) mapping work values for surveyed services into codes used for payments; and (5) extrapolating work values from surveyed services to non-surveyed services. Each of these steps is described in more detail below.¹

¹ This section is adapted from J.P. Kahan, S.C. Morton, G.F. Kominski, H.H. Farris, A.J. Donovan, and D.L. Bryant, *Issues in Developing a Resource-Based Relative Value Scale for Physician Work*, Santa Monica: RAND Publication R-4130-HCFA, 1992.

2.2.1 OBTAIN SPECIALTY-SPECIFIC WORK VALUES

Magnitude Estimation. The Harvard study employed magnitude estimation as a primary methodology for obtaining physician work values. Magnitude estimation is a well-established psychometric technique that has been employed in the assessment of subjective values in many different settings. Physicians were given a “standard” service they commonly provide (e.g., for general surgeons, an uncomplicated indirect inguinal hernia repair on a 45-year-old male). Then, they were asked to rate the amount of work for other services they commonly provide relative to a work value of 100 for the standard. For example, if a particular service required half the work of the standard, it should be rated 50; if it required three times the work of the standard, it should be rated 300.

Specialty-Specific Telephone Surveys. Survey data were obtained from physicians through specialty-specific telephone surveys (18 specialties in Phase I; 15 in Phase II). A nationally representative sample of about 185 physicians was identified in each specialty and contacted; approximately 100 physicians per specialty participated in the surveys. Furthermore, as part of Phase II, seven specialties included in Phase I were resurveyed because they provided a substantial portion of services paid for under Part B of Medicare or because of the need for a broader representation of subspecialties or services. In total, the telephone surveys produced 40 separate surveys that were used as input in developing the RBRVS.

Physician Services Defined Using Vignettes. Each specialty was asked to provide estimates of intra-service work for about 23 services, presented as “vignettes.” Each vignette was a brief description of a patient and the service provided. Vignettes were selected to cover four broad types of activity: evaluation and management (EM) services, invasive procedures, laboratory work, and imaging and pattern recognition. Although vignettes were defined independently of codes used for billing purposes, the ultimate goal was to match them to billing codes.

The Phase I surveys included all physician responses, regardless of the physician’s experience in performing (i.e., “fitness to rate”) surveyed services. This was a concern because physicians who perform a service infrequently might produce biased estimates of work. To address concern about this potential bias, Harvard conducted regression analyses to determine if work values were systematically related to volume. The results indicated no significant relationship between volume and reported work, although PPRC reported that some services would have had different work values if low-volume providers had been excluded.

The survey methods employed by Harvard raise several fundamental issues about how survey data should be collected from physicians, and whether these methods might be replicated in the future. These issues include: (1) how should panel members be selected, (2) how should standard services be “anchored,” i.e., made less sensitive to individual perceptions of the relative position of the standard, and (3) what is the most appropriate survey format. Specifically, now that the MFS has been in place for more than seven years at the national level, it may be impossible to obtain reliable estimates of physician work using these methods in the future because physician responses would be biased by their understanding of how their responses are likely to affect their payments.

2.2.2 LINK SPECIALTY-SPECIFIC WORK VALUES ON A COMMON SCALE

“Same” and “Equivalent” Links. In Phase I, a multi-specialty panel of 24 physicians identified “same” (i.e., involving identical work) and “equivalent” (i.e., involving similar amounts of work) services to serve as linkages based on intra-service work. The purpose was to use these linkages to combine all of the specialty-specific work values into a common scale, using a least-squares model described below. The process for identifying links was an iterative

one, involving both clinical judgment and empirical evidence. The panel originally identified 159 potential linkages, and reduced the number to 75 after eliminating nonsurveyed specialties and linked services that differed by more than 25 percent in average time. The final number increased to 82 (40 same, 42 equivalent) after a cluster analysis on time and work identified additional potential links for approval by the multi-specialty panel.

Additional links were developed in Phase II for specialties not included in Phase I, as well as for five specialties from Phase I. Multi-specialty panels drawn from 26 specialties developed these links. The concept of “same” and “equivalent” links from Phase I based on intra-service work was expanded to include four types of links, based on: (1) intra-service work; (2) total work; (3) intensity; or (4) intra-to-total work. In five multi-specialty panel meetings, panelists identified 193 pairs of services from 362 potential links. The total number of linkages, therefore, was 275 (82 from Phase I, 193 from Phase II).

Regression Model for Linking Services. The 82 linked services in Phase I were used in a weighted least-squares regression analysis based on intra-service work. The output of this analysis was a set of specialty-specific coefficients that were used as scaling factors to align all vignettes within a specialty survey by a constant amount to produce a final, common scale of work for all specialties. The aligning of work values within a specialty survey was designed to ensure that the original ratios from the telephone surveys were maintained.

The regression analysis to produce a common work scale employed input data from 40 specialty surveys representing 33 distinct specialties (15 from Phase II, 3 from Phase I resurveyed in Phase II, 4 resurveyed as special studies in Phase II, and 11 from Phase I). For specialties surveyed in both Phase I and II, results from each phase were treated as separate inputs into the regression.

2.2.3 CALCULATE TOTAL WORK USING ESTIMATES OF PRE- AND POST-SERVICE WORK

For each service included in the Phase I and II telephone surveys, physicians were asked to estimate their intra-service work and time. In Phase I, estimates of pre- and post-service times were obtained for 55 vignettes in the original telephone surveys. Then, a follow-up telephone survey was conducted among physicians who participated in the original survey for seven specialties to obtain additional estimates of pre- and post-service times. When combined, these surveys produced data on pre- and post-service times for 153 different services. Regression analysis was then used to develop estimates of pre- and post-service times for the remaining surveyed services for which only intra-service work and time had been obtained. The estimates of pre- and post-service time were then multiplied by estimates of work intensity (i.e., work per minute) to obtain final values of pre- and post-service work. This process produced estimates of total work for all 372 distinct services in the original Phase I telephone surveys.

Phase II developed refined estimates of pre- and post-service work by defining intra-service more precisely. Intra-service work was defined as: (1) face-to-face encounter time for office visits; (2) time spent on the floor for a hospital visit; (3) skin-to-skin time for a surgical procedure; and (4) the entire task for laboratory and imaging services.

EM Services. Data from Phases I and II clearly indicated the inadequacy of CPT codes for EM services (i.e., visits). Physician estimates of work for the same service varied widely across specialties, suggesting that a single valid, reliable work value could not be determined for most visit codes. PPRC conducted its own study of visit codes and developed detailed recommendations about how visit codes should be modified. The final authority for revising these codes, however, rests with the CPT Editorial Board. The visit codes developed by the CPT Editorial Board reflect some of the PPRC recommendations (e.g., to include encounter time in

the visit definition). The final visit codes included in the MFS, however, involve many more distinctions and categories than proposed by PPRC.

Surgical (i.e., Invasive) Services and Global Fees. The MFS pays for surgical services according to a global fee policy. This policy bundles payment for surgery plus all post-operative care provided by the primary surgeon into a single, all-inclusive payment. One important goal of the MFS was to establish a national surgical global fee policy to replace carrier-specific global fee payment policies. Therefore, the process of estimating pre- and post-service work for surgical services was a particularly important task in the development of the RBRVS.

The basic approach of both Phases I and II was to build estimates of total work by obtaining estimates of each component of total work. Phase II responded to a major criticism of Phase I, namely, that physicians were not given clear definitions of the pre- and post-service periods. Therefore, in Phase II, pre- and post-service work were first defined conceptually as eight components, including: (1) initial consultation; (2) hospital admission work-up; (3) pre-operative evaluation; (4) other pre-operative work; (5) post-operative follow-up on day of surgery; (6) follow-up visits in intensive care unit after day of surgery; (7) follow-up visits in acute care unit after day of surgery; and (8) post-hospital follow-up visits within 90 days of surgery.

For data collection purposes, this conceptual model was collapsed into three components: (1) pre-operative; (2) same-day post-operative; and (3) office follow-up. Data on work and time for these components were collected for selected services as part of the Phase II surveys, as well as from specialty panels. A fixed value of 0, 15, or 25 minutes was assigned for other pre-operative work, depending on procedure and setting. The initial consultation and hospital admission work-up were excluded.

In Phase III, the conceptual model of pre- and post-service work was further refined into five components: (1) pre-surgical EM; (2) other pre-surgical work; (3) post-operative follow-up on day of surgery; (4) follow-up visits in hospital after day of surgery; and (5) follow-up visits in office. In this phase, direct estimates of work and time during the pre-operative and post-operative periods were obtained for about 300 additional surgical procedures, including the number, duration, and work values of visits before and after surgery. Estimates based on the sum of the five components were to be compared to direct estimates of total work and time for the entire global service. Finally, direct estimates of the two major components of post-service work (e.g., before and after hospital discharge) were obtained.

Regression Models for Pre- and Post-Service Work. Regression models were developed in Phase II to estimate the three components of pre- and post-service time defined above as a function of: (1) intra-service work, (2) intra-service time, (3) hospital median length of stay, and (4) category of surgical service. A total of six models were used; three for services primarily performed in inpatient settings and three for services primarily performed in outpatient settings. The predicted values of pre- and post-service time obtained from the regression models were then multiplied by the work intensity values for each component to produce a work value for each component of the service. The total work value, thus, was simply equal to the sum of the work estimates for each component of pre- and post-service work.

2.2.4 MAP WORK VALUES FOR VIGNETTES INTO CPT CODES

After linkage and determination of total work values, some CPT codes had multiple values on the common scale because they were surveyed in more than one specialty. Also, in some specialties, two or more vignettes mapped into a single CPT code. Under the MFS, however, each CPT code can have one, and only one, relative work value. Therefore, an important issue was how to combine work values for the same CPT code within and across specialties.

For 35 services that served as links and were identified as the “same” service by the multi-specialty panel, final work values were calculated on the common scale as the volume-weighted average (using Part B data) of work values from the realigned specialty-specific scales. When multiple vignettes were mapped into the same CPT code within a specialty, the final work value was calculated as the arithmetic mean.

2.2.5 EXTRAPOLATE WORK VALUES TO NON-SURVEYED SERVICES

Extrapolation Using Charge-Based Ratios Within CPT “Families.” Because most services were not part of the original telephone surveys in Phases I and II, the last step in creating the RBRVS was to develop estimates of total work for non-surveyed services. In the first two phases, this step involved extrapolating from surveyed services, which served as “benchmark” services, to non-surveyed services within the same “family” of CPT codes. The extrapolation was based on the ratio of the average allowed charge for each nonsurveyed service to the allowed charge for the “benchmark” service. This ratio was multiplied by the total work value for the “benchmark” service to obtain an extrapolated total work value for each nonsurveyed service. For EM services, extrapolations were specialty-specific, because the same CPT codes had work ratings that varied widely across specialties. In Phase I, this process produced total work values for about 1,400 services, accounting for about 67 percent of total Part B allowed charges and about 80 percent of allowed charges for surgical services.

Phase II refined the definition of CPT families and used more recent data for calculating extrapolation ratios. These steps produced total work values for 2,024 CPT codes (200 surveyed plus 1,824 extrapolated) accounting for about 84 percent of Part B allowed charges for surgical services. When combined with findings from Phase I, total work values were calculated for 2,412 CPT codes in 262 families.

In Phase II, extrapolated values were validated by comparing surveyed values with extrapolated values in families with more than one surveyed service. This involved 104 surgical services in 39 families. After excluding extreme values, the average discrepancy between surveyed and extrapolated work values was 16.2 percent. Only about one-third of the extrapolated values were within 10 percent of the surveyed values. These findings, combined with general concerns about the validity of the extrapolation method, led to a pilot test of small-group, expert panel processes to be used instead of extrapolation. This extrapolation method was made irrelevant by Phase III of the Harvard study, which was designed to directly obtain work estimates using specialty panels for almost all of the services not surveyed in the previous phases.

Replace Extrapolated Work Values With Expert Panel Estimates. The major change in Phase III was the use of expert panels to obtain work estimates for services not surveyed in the first two phases. Phase III established an expert-panel process for replacing extrapolated work values with values obtained through expert judgment.

Expert panels of 15 physicians per specialty were established for 26 specialties. Then, multiple single-round mail surveys of about 50 services asked for estimates of total work for a standard service and other high-volume services in each family, and intra-service work values for all remaining services in each family, as well as for new services and changing technologies or practice patterns. Each expert panel followed the same “modified Delphi” small-group process involving: (1) instructions for the physician leader and project staff concerning the definitions and panel process, (2) use of vignettes for CPT codes within families that represent a “typical” patient, (3) initial round of mailed surveys, (4) follow-up by mail and phone to assure return of all Round 1 surveys, (5) compilation of Round 1 results by project staff, (6) Round 2 surveys, including results from Round 1, to obtain new estimates for low-volume services, and (7) use of national surveys as “gold standards” to validate results from each small group.

The January 1992 deadline for implementation of the MFS did not allow enough time for assigning RVUs for every CPT code using the small-group process. Therefore, the Health Care Financing Administration (HCFA) established its own expert-panel process to assign RVUs to CPT codes with missing values, and to review RVUs disputed during the comment period after the proposed RVUs were issued in June 1991. HCFA's panels consisted of Carrier Medical Directors (CMDs). These CMD panels were conducted according to a modified Delphi process similar to Phase III of the Harvard study, although the panel process was not well documented. Panelists first participated in a mail survey, then in a face-to-face meeting of about 25 members to arrive at final revised RVUs. Panelists were provided with a list of "reference" services, i.e., high-volume, services with RVUs that were not under review, and were asked to provide estimates of total work only.

2.3 Use in the Medicare Fee Schedule

The use of the RBRVS as part of the MFS is illustrated in Figure 1. The RBRVS forms the basis for the physician work RVU component of the fee schedule. Each Medicare service also includes RVUs for office expense and malpractice expense. These RVUs were originally based on charges when the MFS was first implemented in 1992. Medicare is currently in the process of implementing resource-based RVUs for office expense, and has plans to develop resource-based malpractice RVUs within the next two years. Each RVU is adjusted by a separate Geographic Practice Cost Index (GPCI). These GPCIs are best described as relative price indexes that compare the relative costs of each component to a national average cost.

Figure 1: Calculation of Medicare Fee Schedule Allowed Amount

$$\text{MFS Allowed Amount} = [(\text{RVU}_w \times \text{GPCI}_w) + (\text{RVU}_o \times \text{GPCI}_o) + (\text{RVU}_m \times \text{GPCI}_m)] \times \text{CF}$$

where

- RVU = relative value unit
- GPCI = geographic practice cost index
 - w = physician work component
 - o = office expense component
 - m = malpractice expense component
- CF = conversion factor
 - = \$31.00 (CY 1992)
 - = \$34.7315 (CY 1999)

An example of how the MFS allowed amount is calculated for a specific service (i.e., CPT code) in CY 1999 is shown in Figure 2. In this example, an extended office visit for a new patient is provided to a patient in the Los Angeles area. The resulting allowed amount is \$152.56. As shown in the figure, the amount paid to the physician depends upon whether the physician accepts assignment for the services. Physicians are entitled to a larger payment if they do not accept assignment, but they bear greater risk, because they are paid by the patient rather than by the fiscal intermediary.

2.4 Maintenance and Updating

Maintenance and updating of the RVUs for physician work are based on annual recommendations provided by the AMA's Specialty Society Relative Value Scale Update Committee (RUC). RUC makes recommendations to HCFA, which may or may not agree, with Congress as the final arbiter. Other professional groups may also make recommendations to

HCFA. The RUC plays an essential role not only in updating the RVUs, but also in achieving ongoing physician “buy-in” for the MFS.

Figure 2: MFS Payment Example

Service: CPT 99205, Office/outpatient visit, new patient, extended (i.e., 60 minutes face-to-face)

Location: Los Angeles (Carrier 02050, locality 18)

$$\begin{array}{lll} \text{RVU}_w = 2.67 & \text{RVU}_o = 1.26 & \text{RVU}_m = 0.07 \\ \text{GPCI}_w = 1.055 & \text{GPCI}_o = 1.199 & \text{GPCI}_m = 0.846 \end{array}$$

$$\text{MFS allowed amount} = \{[2.67 \times 1.055] + [1.26 \times 1.199] + [0.07 \times 0.846]\} \times \$34.7315 = \$152.36$$

- (1) If physician accepts assignment: FI pays physician 80%, physician bills patient for 20%
- (2) If physician does not accept assignment: physician bills patient up to 109.5%, physician submits bill to FI, FI pays patient 76%

Note: FI = fiscal intermediary. Data for CY 1999.

When it enacted the MFS, Congress also required a mandatory five-year review of the entire set of RVUs, to ensure that they reflected current medical practice and technology. The RUC examined 1,124 services as part of this five-year mandatory review in 1996. As a result of its recommendations, 314 RVUs increased, 135 decreased, 607 were left unchanged, and 68 were referred to the CPT Editorial Board. These revisions resulted in an 8.3-percent reduction in the conversion factor to maintain budget neutrality.

The MFS began with two conversion factors in 1992, increased to three, and now has reverted to a single conversion factor. The conversion factor is updated annually to account for changes in input prices, measured by the Medicare Economic Index, and changes in the volume of services. When first implemented, a system of Volume Performance Standards was used to set annual targeted increases in service volume, and to offset updates in each conversion factor if actual expenditures exceeded the targets. This system was replaced starting in 1998 with a GDP-based sustainable growth rate system and a single conversion factor for all services. The rationale for the GDP-based system is that growth in the Medicare program should be tied to the growth rate in the general economy, and should not exceed growth in GDP by an amount that is not “sustainable.”

2.5 Modifications by the U.S. Department of Labor (DOL)

The U.S. Department of Labor (DOL) adopted the Medicare RBRVS as the basis for its Office of Workers Compensation Programs (OWCP) Medical Fee Schedule in 1993, with several important modifications. First, DOL establishes RVUs for codes where there are no CPT codes, or where Medicare does not cover the CPT code. Second, DOL makes geographic adjustments based on market areas defined according to Metropolitan Statistical Areas (MSAs). Compared to the 92 payment localities used in the MFS, there are more than 400 geographic areas defined nationwide using MSAs. There are about 370 MSAs, defined as urban areas. Rural areas within in each state are defined as all the counties not included in an MSA. The third major DOL modification is in the conversion factors. DOL has separate conversion factors for: E&M, general medicine, surgery, clinical laboratory, radiology, pathology, rehabilitation, and home health. The conversion factors are updated annually, with a major update every 3 years.

They are based on a variety of publicly available data sources, including CHAMPUS and state-level data, as well as program-specific claims data.

Although DOL publishes proposed changes to its Medical Fee Schedule for public comment, the processes for establishing RVUs for services not covered by Medicare and for establishing and updating the conversion factors are not well documented.

Chapter 3. Use of Relative Value Scale (RVS) Fee Schedules in State Workers Compensation Programs

This chapter summarizes the findings of telephone surveys conducted by the UCLA Center for Health Policy Research during July 1999 with officials from states using Relative Value Scale (RVS) fee schedules in their workers compensation programs. The primary goal of the surveys was to obtain information about: (1) the state's goals in adopting a RVS, (2) why it chose a particular RVS, (3) how the RVS was implemented, and (4) if the RVS appears to have achieved its goals. The chapter begins with a summary discussion of the commercial vendors who provide RVUs and conversion factors, reasons states adopted RVS fee schedules, the implementation strategies employed by states, and the steps involved in maintaining and updating the fee schedule. This is followed by a brief summary of our findings for each state surveyed; 12 that have adopted the RBRVS, and 8 that have adopted other RVS fee schedules.

A summary of the key features of each state's fee schedule is shown in Tables 1-3. The detailed survey results are included in Appendix 1; the survey instrument appears in Appendix 2.

3.1 Vendors Providing Consulting Services for RVS Implementation

Of the 20 state workers compensation agencies interviewed for this study, 10 purchase RVUs for their physician fee schedule from an outside vendor and/or use consulting services to assist in the calculation of conversion factors. All but one of these states uses the products and services of St. Anthony Publishing or Medicode, Inc. (Utah).

It is important to note several recent corporate changes affecting the vendors that provide physician fee schedules and decision support. St. Anthony purchased the rights to publish the RVS formerly known as *McGraw-Hill Relative Values for Physicians* (RVP). It is based on an ongoing national survey of physicians conducted by Relative Value Studies, Inc. (RVSI), of Colorado. Medicode had a similar RVS product, called MDR (formerly Medical Data Research), based on its own provider claims database. Ingenix, Inc., a subsidiary of United Healthcare Group (Minnesota), has recently acquired both St. Anthony and Medicode. The two companies are in the process of aligning their operations, which had included significant overlap in products and services. The names St. Anthony and Medicode are now used for product branding, rather than identifying a vendor. St. Anthony offers two relative values scales: *St. Anthony's RVP*, which is the commercial product most frequently used by states as an alternative to the RBRVS, and *St. Anthony's Complete RBRVS* (described below). Medicode maintains a national database of claims from a number of insurers, and, among other services, provides workers compensation consulting, including conversion factor calculation for states.

States employ a number of approaches in contracting with a vendor. Some merely purchase an RVS, some contract for consulting services only, and others do both. States that purchase the RVS from St. Anthony may calculate their own conversion factors, e.g., based on historical workers compensation payments. Medicode/Ingenix will calculate conversion factors for states that use either RBRVS relative value units or *St. Anthony's RVP*. States can use their own historical charge data; however, most rely on Medicode's database because of the difficulty of independently obtaining market data. A common strategy is to base the conversion factor(s) on a target percentile of prevailing fees in that state. Finally, if the state has an old fee schedule and wants to transition to RBRVS in a budget neutral fashion, Medicode can determine the conversion factor(s) that will be required. In this case, no charge data would be required.

One of the states in this study formerly used conversion factor consulting services provided by Innervation Technology, Inc. (Lilburn, Georgia). This firm also publishes the *Conversion Factor Report* previously published by McGraw-Hill. Another vendor used for

conversion factor consulting is Health Economics Research, Inc. (HER, Waltham, MA and Washington, DC). HER is more of a contract research firm than a vendor of physician data products.

All of the states that base their workers compensation fee schedules on RBRVS report obtaining the RVUs directly from the *Federal Register*. However, it is possible to purchase a commercial version of the RBRVS that includes values for codes not covered in the MFS. St. Anthony/Ingenix offers a product called the *St. Anthony's Complete RBRVS*. In addition, Ingenix purchased the Cambridge Health Economics Group, which was founded by the Harvard University researchers who first developed the RBRVS and owned the rights to the methodology. Another *Complete RBRVS* product is marketed directly by Relative Value Studies, Inc. (RVS), the firm that maintains the database underlying the *St. Anthony's RVP* product. RVS works in partnership with Innervation Technology Corporation.

3.2 Reasons for Adopting RVS Fee Schedules

States adopted RVS fee schedules for two common reasons: to control costs and improve fairness by eliminating reimbursement based on billed charges, and to simplify the administration of workers compensation by establishing a more rational, uniform system of billing and payment consistent with other major payers

States that adopted the RBRVS also sought to remove the inflationary incentives inherent in charge-based payment systems. In addition, they seemed to believe that the administrative burden of maintaining and updating the fee schedule would be minimal, because they were building onto the annual update process conducted by HCFA. However, any reduction in administrative burden was at least partially offset by the increased effort needed to understand the complexity of the federal program and to determine if federal policy changes were appropriate at the state level and for workers compensation

States that adopted the RVP, the most common commercial product, adopted this RVS for similar reasons. In addition, *St. Anthony's RVP* appeared to offer several advantages compared to the Medicare RBRVS. First, and perhaps foremost, St. Anthony updates are issued quarterly and annually, reducing the administrative burden on the state to follow and obtain updates to the RBRVS from the *Federal Register*, a task that even experienced users of the MFS can find daunting. Second, St. Anthony's RVP is intended for use with multiple conversion factors for separate categories of CPT codes that correspond more closely to clinical specialties. Thus, states can avoid some of the more dramatic redistributive consequences of the MFS by adopting the RVP combined with multiple conversions. Finally, a number of states adopted the RVP at a time when RBRVS was in its earliest stages of implementation, and before it became widely used by commercial insurers.

Of course, one major disadvantage of commercially developed RVSs or conversion factors is that the methodology used to develop them has not been externally reviewed or validated, since they are proprietary products. In contrast, the RBRVS and the MFS have undergone extensive national review and scrutiny during the 1990s, with hundreds of published articles evaluating various aspects of the methodology. This disadvantage was not identified as an important consideration by states adopting commercial products, however.

3.3 Implementation Strategies

In contrast to the implementation of the MFS, which was phased-in over a four-year period starting in 1992, most states adopted their RVS fee schedules without a transition period. No states reported significant problems resulting from the lack of a phase-in period. In part, this was attributed to the fact that most states implemented their new fee schedules on a budget-neutral basis or incorporated an overall fee increase into the new schedule.

Table 1. States Using Relative Value Physician Fee Schedules: Overview of Policies

State	Fee schedule basis	Implementation	Last update	Update authority	Basis for updates	Vendor?
Ohio	RBRVS	1997	None	No	Negotiated by mandated committee	No
Michigan	RBRVS	1996	None	No	National CPI	No
Pennsylvania	RBRVS	1995	Annual	Yes	% increase in average weekly wage	No
West Virginia	RBRVS	1994	Annual	Yes	Consistency with other state payers	Health Economics Research
North Carolina	RBRVS	1996	None	No	Achieve target discount from billed charges	Medicode
South Carolina	RBRVS	1995	1998	Yes	Negotiated with Occupational Medicine Committee of state medical society	No
Florida	RBRVS	1997	None	No	Limited to growth in national CPI	No
Mississippi	RBRVS	1993	1997	Yes	Percentile of market	Medicode
Washington	RBRVS	1993-1995	Annual	Yes	% change in average weekly wage	No
Minnesota	RBRVS	1993	1995/96	Yes	% change in average weekly wage	No
Oregon	RVRBS	1996	Annual	Yes	No CF updates for past 4 years, use the physician component of CPI when done	No
Hawaii	RBRVS	1995	Annual	Yes	110% x MFS for HI	No
Texas	RVP	1996	None	No	Percentile of market	No, political liability
Colorado	RVP	1995	1997	Yes	Market data	St. Anthony
Oklahoma	RVP	1987	1998	Yes	McGraw-Hill Conversion Factor Report	St. Anthony
North Dakota	RVP	1998	NA	Yes	Market data	St. Anthony/ Medicode
South Dakota	RVP	1994	Annual	Yes	Market data	St. Anthony/ Medicode
Montana	RVP	1993	Annual	Yes	% increase in average weekly wage	St. Anthony/ Medicode
Nevada	RVP	1992	Annual	Yes	Worker's comp and health insurance market, cannot exceed the CPI	St. Anthony
Wyoming	RVP	1991	2 since 1991	Yes in some cases	Benchmarking other St. Anthony clients, Medicare/Medicaid rates	St. Anthony

Table 2. Comparison of Conversion Factors: RBRVS States

STATE	MEDICINE	SURGERY	PHYSICAL MEDICINE	RADIOLOGY	ANESTHESIA	PATHOLOGY
OH	\$44.27	\$97.10	\$55.90	\$56.40	\$37.00	(1)
MI	\$42.94	\$54.09	\$42.94	\$42.94	\$45.00 (2)	(1)
WV	\$45.64	\$45.64	\$45.64	\$45.64	\$44.28	NA
SC	\$54.03	\$54.03	\$54.03	\$54.03	(2)	MFS+64%
FL	\$33.00	\$44.00	\$33.00	\$33.00	\$26.60	\$10.03 (3)
MS	55 th percentile of usual fees (4)	60th percentile of usual fees	(4)	(4)	(4)	(4)
NC	158%	206%	130%	196%	\$233/\$123 (5)	158%
PA	113% of 1995 OH RBRVS for all services, inflated annually					
HI	110% of HI RBRVS for all services, updated annually					
MN	Single conversion factor, \$62.27 will change to \$66.14 as of October 1999					
WA	Single conversion factor, \$47.12					
OR (6)	\$89.43	\$91.53	\$66.42	\$78.17	\$45.42	\$89.43

- (1) Developed own fee schedule based on billed charges
- (2) per ASA unit
- (3) per McGraw-Hill RVUs
- (4) Same factor for all non-surgical
- (5) Flat fee 1st hour/2nd+ hours; CRNAs paid \$155/\$63
- (6) Plus E&M at \$55.70, other at \$9.53

Table 3. Comparison of Conversion Factors: RVP States

STATE	MEDICINE	SURGERY	PHYSICAL MEDICINE	E & M	RADIOLOGY	ANESTHESIA	PATHOLOGY
TX	\$6.44	\$101.16	NA	\$5.29	\$16.79	\$40.00 (1)	\$12.53
CO	\$6.51	\$77.36	\$3.29	\$6.51	\$16.12	\$33.45	\$12.34
NV	\$6.00	\$117.57	NA	NA	\$20.59	\$51.54	\$14.30
ND	\$5.50	\$80.15	\$3.75	\$5.50	\$17.20 (2)	\$35.00	\$15.00
SD	\$5.486	\$98.24	\$5.486	\$5.486	\$22.62	\$39.56	\$17.52
OK	Will not provide conversion factors, proprietary data						
MT (3)	\$4.27	\$91.39	\$6.66	NA	\$17.67	\$32.86	\$15.31
WY	\$5.25	\$96.00	\$4.00	NA	\$20.57	\$30.00	\$13.00

- (1) per ASA unit; CRNAs paid \$30/unit
- (2) Plus additional category for chiropractic radiology at \$13.10
- (3) Plus: acupuncture and chiropractic at \$4.27, dental at \$8.25
- (4) Plus: orthotics and prosthetics at \$50.00

3.4 Maintaining and Updating Fee Schedules

By far, the greatest difference among the 20 states surveyed relates to the methods by which they maintain and update their fee schedules, as shown in Table 1. Percent change in statewide average weekly wage, national CPI, market (variously defined), and negotiation are the most common methods for updating conversion factors. Only 7 states actually update their fee schedule annually, and 5 states have not updated their fee schedules since adopting an RVS.

A second major difference is whether the state workers compensation agency has authority to update the elements of the fee schedule administratively, or whether public hearings and external committee or legislative approval is required to implement updates. State agencies without statutory update authority view this as a major limitation in their ability to administer the fee schedule.

As shown in Tables 2 and 3, most states employ multiple conversion factors. Although we did not have access to the RVUs in each state, the conversion factors in the RVP states vary tremendously compared to the RBRVS states. Unless surgical RVUs are substantially lower in the RVP states, these conversion factors suggest that surgical services receive considerably higher payments in RVP states compared to RBRVS states. To place the conversion factors in Table 2 into context, the national conversion factor for Medicare in calendar year 1999 is \$34.7315, which is lower than every state except Florida, which expressed concern in our interview about how low their fees are relative to other states.

3.5 States Using the RBRVS

3.5.1 Pennsylvania

Pennsylvania adopted the January 1, 1994 Medicare Fee Schedule (MFS) for four Pennsylvania regions as a base, multiplied these fees by 113 percent, and froze them. The philosophy was to use RBRVS as a starting point only for the evolution of a workers compensation fee schedule for Pennsylvania. The state's goals were to cap spiraling medical costs and reduce workers compensation premiums. This was the first reform in 23 years.

By statute, the fee schedule is inflated annually by the percent increase in the statewide average weekly wage. Due to the upturn in the economy, this has resulted in annual increases ranging from 2.8 percent to 4.8 percent. When Medicare adds new CPT codes, Pennsylvania adds these to the fee schedule at then current MFS rates and they become part of the base for subsequent annual increases.

The initial MFS multiplied by 113 percent represented a major decrease in payments from the previous fee-for-service system. There was no phase-in. Overall, the system has achieved the state's goals. Based on a mandated annual survey of all injured workers, worker satisfaction with access and quality has increased since implementation of the fee schedule. However, there is concern that because the annual increases keep compounding, workers compensation is again the most generous payer in the state.

3.5.2 Ohio

Ohio's fee schedule is based on RBRVS and was implemented March 1, 1997. The state's principal goal was cost containment — by 1990, medical payments had started to exceed compensation payments. Previously, a fee schedule based on charge-based RVUs had been adopted, but it proved inflationary. RBRVS was selected to avoid this effect.

There has been no update since the initial implementation. Ohio has maintained the 1997 RVUs and added new CPT codes published in 1998 and 1999. Updates to the conversion factors require consensus agreement of a legislatively mandated committee comprised of

providers, employers, labor, attorneys for injured workers, and workers compensation Bureau staff. The committee has tried to reach agreement a couple of times but has failed to do so. Currently, they are using a consultant to analyze the fee schedule because the Bureau believes the surgery and radiology conversion factors may be too high.

Implementation of the RBRVS fee schedule was budget neutral overall. There was no phase-in. The fee schedule has achieved the state's cost containment goal. In addition, the respondent stated that RBRVS is easier to explain and justify than a purchased fee schedule from a commercial vendor.

3.5.3 West Virginia

West Virginia uses a version of RBRVS that was modified specifically for the state by Health Economics Research, Inc. (HER, Waltham, MA and Washington, DC). Implementation was November 1994. The state's primary goal was to implement a consistent system for all state payers: the Public Employees Insurance Agency, the Medicaid program, and the Workers Compensation program. Cost containment was not an explicit goal for workers compensation; budget considerations are addressed through utilization review, not the fee schedule.

The Division has full statutory authority to create the fee schedule, including any updates. All RVU and CPT updates are handled by HER. The conversion factors are updated annually through negotiation with the other two state payers, with the intent of inflating the factors according to the medical services inflation reported to HCFA. However, budget constraints in the Medicaid program have limited increases in the workers compensation conversion factor.

The fee schedule was implemented on a budget neutral basis with no phase-in. The state used a physician advisory committee that worked with the HER consultants. This provided the physicians the opportunity to discuss their policy issues prior to implementation. West Virginia has handled provider complaints about specific RVUs by referring them to the AMA's RVS Updating Committee (RUC). The rationale is that if the RVUs are truly inappropriate, physicians would be helping their fellow providers throughout the country by providing justification for a modification while enabling the state to maintain the consistency and integrity of the fee schedule. The fee schedule has been successful in achieving consistency among the state payers. It has also saved money, although this was not the primary goal.

3.5.4 Michigan

Michigan's system is based on RBRVS and was implemented in 1996. The state's goal was cost containment. No updates have been performed because of the lengthy public hearing process required. It is the Bureau's intention to follow Medicare annual updates for changing RVUs and adding new CPT codes. It is also their intention to use the national CPI increase as an annual inflation factor. However, this is still being negotiated. Initially, they planned to move to a single conversion factor over three years. All of these changes are still being contested and negotiated.

There was no phase-in. The impact of the physician fee schedule cannot be isolated. Overall expenses have gone down, but the state has also seen quicker return to work and improved employer safety.

3.5.5 North Carolina

North Carolina's fee schedule is based on the 1995 Medicare Fee Schedule for North Carolina, using Medicode as a vendor to develop conversion factors. Implementation was January 1, 1996. The state medical society exerted pressure for a system that would be more fair than the prior schedule based on a survey of charges. Any update will require public hearings;

none has taken place since implementation, although new CPT codes are added at current MFS rates.

There was no phase-in. When implemented, the fee schedule was estimated to represent no overall change in reimbursement for general medicine, slightly lower fees for physical medicine, a 23-percent reduction in radiology, and an 8-percent reduction in surgery. The North Carolina Medical Society appointed a Medical Advisory Committee that participated in the development of the fee schedule. The state achieved its goal in that providers and payers view the fee schedule as fair.

3.5.6 South Carolina

South Carolina's fee schedule is taken directly from Medicare, and was implemented in 1995. Previously, the Occupational Medicine Committee of the state medical association set workers compensation fees. The Commission's goals were to remove control of fees from the physicians' committee and to move to a cost-based rather than charge-based system.

The most recent update was in September 1998. The Commission typically releases a new version of their fee schedule every 18 months. In the past update, they used the 1998 RVUs and CPT codes. Once Medicare published the 1999 values, they added the new CPTs with their 1999 values, but left all other codes at the 1998 level. Each year when the RVUs are published, the state collects workers compensation utilization data and analyzes the impact of the new RVUs. This impact is incorporated into the political decision about the overall increase for the current year. For example, in 1998, an overall increase of 2 percent was given, of which 0.5 percent resulted from updates to the RVUs and 1.5 percent from an increase in the conversion factor.

Because this was the first fee schedule change in 5 years, the state allowed a 5-percent increase overall. There was no phase-in. The Commission was able to establish a single conversion factor due to internal medical association politics; their occupational medicine committee favored two conversion factors but the association itself favored one. The state's goals were achieved overall. However, the respondent believes the Commission has been too eager to increase fees every year. Their benchmarking analysis shows that the 1995 rates were 158 percent of Medicare, while the 1999 rates are now 174 percent of Medicare. The state's experience suggests the establishment of a fixed benchmark by which to adjust the fee schedule.

3.5.7 Florida

Florida's fee schedule is based on RBRVS, and was implemented in September 1997. The state's goals were to implement a fee schedule that would contain costs and provide timely access to services for injured workers. Florida explicitly wanted to reallocate resources between surgical and non-surgical services, so that better care up-front would avoid complications. The state also wanted a system that was tied more closely to national standards for easier physician administration, and it chose RBRVS as a fair method that would better reflect costs. However, in 1994, Florida also passed mandatory workers compensation managed care for all employers. Currently, virtually all employers are using managed care that is discounted fee-for-service, not capitated. Insurance companies are not required to follow the fee schedule; most of them use it as a benchmark and negotiate discounts from it.

There has been no update since the initial implementation. By statute, a three-member panel that includes the Insurance Commissioner and two governor's appointees from labor and business must approve all revisions. Staff would like to implement annual RVU and CPT updates based on Medicare; however, the panel has not called a meeting. Implementation of the RBRVS fee schedule included a small overall increase, approximately 2 percent. The phase-in period was supposed to be 4 years, with no change greater than 20 percent in any year for any

particular service; if the change was less than 20 percent, the conversion factor was applied to the Medicare RVU. However, the phase-in was not implemented, again because the panel has not met. The state has achieved its goal of greater fairness in the fee schedule.

3.5.8 Mississippi

Mississippi uses the Medicare RVUs with charge-based conversion factors supplied by Medicode. Implementation was August 1, 1993. This was the state's first physician fee schedule; previously, physicians were paid billed charges. The state's primary goal was cost containment. The state could not find carriers willing to write workers compensation insurance and small businesses could not afford the premiums. RBRVS was chosen as the basis for the fee schedule because the Commission anticipated that an increasing number of private payers would adopt the federal system, and they felt that RBRVS could be defended as fair at public hearings.

The statute provides that the state will review the fee schedule annually but will only revise it as necessary. The initial fee schedule was viewed as quite generous, so the first update after 1993 did not occur until 1997. The Workers Compensation Commission implemented the update as a revision to the existing schedule; a public hearing was not required.

There was no phase-in. Implementation of the fee schedule was roughly budget neutral overall, although there was some shift from surgery to medicine. The state had an advisory panel that grew to 40 physicians and also included physical therapists, chiropractors, pharmacists, and other providers. The Commission held numerous meetings with special interest groups that served a valuable education process.

The state believes its goals have been met. There has been no increase in workers compensation premiums since the fee schedule was implemented. However, the respondent stressed that mandatory utilization review has been more important in controlling workers compensation costs than adopting a fee schedule to cap fees.

3.5.9 Minnesota

Minnesota adopted Medicare's RBRVS system in 1993. The reasons for adoption of a fee schedule were the wildly escalating costs of medical care; particularly workers compensation medical care. An in-depth study conducted in 1990-91 suggested implementation of a fee schedule to control the inflationary manner of reimbursement. A second goal was to include over one half of services that were unregulated since no service codes were assigned to them.

An overall mandated reduction of 15 percent was achieved by manipulating the RVUs rather than the conversion factor at implementation. The update of RVUs is tied to HCFA updates, but it has been completed only twice, in 1995 and 1996. There is only one conversion factor in Minnesota, originally set at \$52.06 in 1993 and increased annually by the percentage increase in the state's average weekly wage. Even though there is only one conversion factor, 4 specialty/service categories are identified (medical/surgical, pathology/laboratory, physical medicine, chiropractic) as the basis of fee differences that are reflected in RVUs. The conversion factor was created based on a database of expenditures from previous years and the distribution of services (claim experience) of the State Fund (which has over 70 percent of claims in the state). After the 15-percent reduction in the overall fees, the existing mix of services was studied and the conversion factor determined accordingly. Conversion factor updates are done through expedited procedure, so no public hearings are conducted, only an approval by a judge. Geographic adjustments are taken directly from the MFS. The fee schedule was implemented without phase-in.

Problems in implementation and update include the time lag in availability of the CPT codes as well as writing and implementing rules for coding updates. At implementation, providers argued against the use of Medicare RBRVS because of a lack of empirical evidence concerning its

effects; nevertheless, the legislature adopted it. The fee schedule is achieving its goals. Currently, premium rates in Minnesota are at 75 percent of 1984 levels.

3.5.10 Oregon

Oregon adopted the Medicare RBRVS in 1996 to accomplish three main goals: simplification of the payment method, compliance with other dominant payment methods, and reduction of costs.

The RVUs are updated in January each year, but not implemented until July, because legislation requires that public hearings be held to discuss the changes. Oregon uses the RBRVS in its entirety except for conversion factors, which are developed by the state. There are 8 conversion factors by specialty. They were updated annually about 3-4 percent based on the physician component of the CPI. However, due to the extremely high reimbursement rates of Oregon (only two states are higher than Oregon) the fees have been frozen for the last four years.

The transition strategy was revenue neutral, paying some providers more than previously and others less, but controlling costs overall. Oregon implemented the new fee schedule without a phase-in period. However, it was a highly politicized process as providers argued for higher conversion factors and insurers for lower conversion factors. The goal of controlling costs appears to have been achieved, although additional savings could be achieved if the high conversion factors were brought into line with other states. The payment system has been well received by providers and insurers.

3.5.11 Washington

Washington adopted the Medicare RBRVS in 1993. This fee schedule was implemented after a 1990 study completed at the governor's request in response to high health care costs in the state. The study recommended combining the efforts of the workers compensation program, Medicaid, and the Health Care Authority representing state employees, which together account for about 20 percent of health care expenditures in the state. The goals were to have a similar fee schedule across these three programs that was administratively simpler and controlled costs.

The RVUs are updated annually based on HCFA's recommendations, unless there are reasons not to accept new codes; for example, codes that do not make sense for workers compensation. The conversion factor is \$47.12 and is updated annually. Physician assistants and nurses receive 90 percent of the fee schedule amount for their services. Each year, the changes in RVUs are taken into account to produce a budget-neutral change in the conversion factor. There is a cost of living increase tied to the percentage increase in the statewide average weekly wage. The last adjustment was a 5.42-percent increase. There are no adjustments for geographic differences.

The implementation strategy was to use a combination of the old and new method of reimbursement. However, this transition proved to be too confusing and after one year physicians requested that the state go directly to the new system. The state also faced problems with inaccuracies, mistakes or low RVUs assigned by Medicare to some specialties such as orthopedics, psychiatry, and radiology. The fee schedule is considered to be achieving its goals, given that modifications have been adopted.

3.5.12 Hawaii

The state of Hawaii began using the Medicare RBRVS in June 1995. The primary goal of adopting this fee schedule was to reduce costs.

Due to limitations in resources, Hawaii uses the Medicare fee schedule as is without any modifications, except when there is a need for revising codes that prove to be problematic or inappropriate for workers compensation. The RVUs, conversion factors, and geographic

adjustments are directly adopted and revised annually when Medicare revisions are released. The conversion factors were set at 10 percent above Medicare. The geographic adjustments used are those used by Medicare for Hawaii.

The new system was implemented without phase-in. The implementation and updates have been cumbersome and complicated, requiring a full understanding of how RVRBS works and how to keep up with the numerable changes and modifications made by Medicare at any time. However, this system has shifted the burden of doing this complicated task off the state. The Medicare RVRBS has reduced the rates of reimbursement. It also added some complications due to complexity of the system, although it reduced the burden of creating a fee schedule.

3.6 States Using Other Relative Value Scales

3.6.1 Texas

The Texas fee schedule is based on the 1995 McGraw-Hill Relative Values for Physicians (RVP), and was implemented in 1996. The state is in the process of developing an update and will probably use the 1999 St. Anthony's RVP. The state's goal was to update the 1992 fee schedule (based on the California Relative Value Study) and to choose a system that was easier to maintain.

There has been no update since the RVP was implemented in 1996. The Commission intended to review and update the fee schedule every two years, but has been able to do so only twice since 1991 due to lawsuits. Proposed changes must be published in the Texas Register for public comment. There is a Medical Advisory Committee appointed by the Commissioners. Its composition is set by statute: one physician, chiropractor, dentist, pharmacist, employer, employee, DME supplier, nurse, occupational therapist, etc.

The implementation was budget neutral overall; any given CPT code was limited to a reimbursement decrease of 25 percent. It is not clear whether the state's goals were achieved. The state is concerned about a study by the National Council on Compensation Insurance that shows Texas costs to be extremely high on a per case basis. It appears that volume is a significant problem rather than fees. The respondent strongly recommended that the statute include a methodology for updates so that they are not continually subject to challenge.

3.6.2 Colorado

Colorado adopted the St. Anthony's RVP in 1995. The goals were to: (1) create a uniform, complete, easy to read, and current medical billing code system for all providers working in the system, (2) facilitate automation of billing and payment of medical bills, (3) establish a clearly written and less interpretative billing code system to try and minimize coding disputes, (4) adopt an easy to update billing code system, which allows reasonable methods to evaluate and control medical costs in workers compensation.

RVP is updated when St. Anthony releases new updates, however updates are evaluated in terms of fiscal impact and appropriateness of the classification of each code prior to adoption. The conversion factors are developed by the state separately for E&M, medicine, physical medicine and rehab, anesthesia, surgery, pathology, and radiology. The conversion factors were determined based on previous expenditures and mix of services. They were designed to be budget neutral and benchmarked with the 70th percentile as an upper limit and the MFS as a lower limit.

Implementation occurred within a three to four month transition period to allow for the rules to be adopted and to allow the insurance companies to automate their systems. A major implementation problem was timely notification of carriers. Another difficulty has been keeping

up with updates and understanding and analyzing the fiscal impact of changes. RVP is achieving all its goals except for ease of implementation and accessibility.

3.6.3 Montana

Montana has been using St. Anthony's RVP since 1993. This fee schedule was adopted because of the ease of use and because it was the most standardized version being used in the U.S. Cost containment was also a factor. The state's goal for having a fee schedule was to prevent provider-induced demand and higher costs. The state has a legislature mandate to limit fee increases to the percent increase in the average weekly wage index.

The quarterly updates received from RVP are implemented as received. The conversion factors are developed by Montana and follow the general framework of RVP. There are 10 specialty fields, and conversion factors are based on historical costs of the 10 most frequent codes within each specialty. The conversion factors are updated annually based on the percentage increase in the statewide average weekly wage. The updates are mailed to all users.

The fee schedule was implemented without a phase-in. The biggest problem faced in implementation was the unforeseen effects of external factors such as managed care or reductions in benefits. The largest technical problem was lack of a utilization database, so the state had to use data from their state fund, which covered over 70 percent of all cases. The fee schedule is achieving its goals, particularly ease of application and implementation and keeping pace with the updates.

3.6.4 Nevada

The state adopted St. Anthony's RVP in 1992. The fee schedule was adopted to provide a complete and clear schedule that is universal and research based. The costs of workers compensation are tied to the CPI.

The updates are based on those received from RVP. This process is repeated every one to two years. The conversion factors are based on paid data from the previous year, and updated annually. There are separate conversion factors for 5 groups of specialty/services: medicine, surgery, radiology, anesthesiology, and pathology. The conversion factors were based on a survey of group health data in order to remain competitive with the market but cannot exceed the CPI by law. The fee schedule was implemented without a transition period with the help of Milliman and Robertson, a health care consulting firm. The schedule seems to have achieved its goals.

3.6.5 North Dakota

North Dakota implemented St. Anthony's RVP system in January 1998. The fee schedule was adopted so that the medical community would find it easy to understand, and the state would find it easy to manage. Cost containment was also a goal. At the time of implementation, there was an 8.9-percent overall increase in payment rates.

The RVP is revised annually using the updates released by St. Anthony. Medicode developed conversion factors for eight specialty groups: radiology, E&M, surgery, medicine, pathology, physical medicine, anesthesiology, and chiropractic/radiology. The company benchmarked the conversion factor on charges for workers compensation within the state and compared to other states that had similar patterns of charges. Conversion factors are updated annually based on actuarial analysis of the market, but each conversion factor can be updated separately.

The new fee schedule was implemented without phase-in. The state did not encounter any technical or political problems during implementation. Overall provider response has been

positive. The fee schedule is achieving its goals by containing costs and improving the management and acceptability of the system.

3.6.6 Oklahoma

Oklahoma adopted St. Anthony's RVP in 1987, and has updated it four times, including most recently in January 1998. The fee schedule was adopted primarily to reduce costs without reducing quality of care or access. At the time of implementation costs were considered too high by many in the state.

The fee schedule is updated through public hearings and through administrative review. This process may result in some RVUs being adjusted. Oklahoma uses conversion factors based on the Conversion Factor Report published by McGraw-Hill, Inc. but has adapted it by the administrator's decision. There is no requirement to inflate the conversion factors, but they are reviewed every two years. Conversion factors have been held relatively steady by capping services and utilization. If the conversion factors are to be inflated, it may be done selectively through a public hearing process in response to physician complaints.

The fee schedule was implemented without phase-in but with instructions from the legislature to cut fees. The technical problems encountered included unit values errors in RVP, as well as problems with the current electronic version that could not be opened in a spreadsheet format. The fee schedule seems to be achieving its goals. However, the state has not conducted any studies to examine whether costs have truly been reduced.

3.6.7 South Dakota

South Dakota adopted St. Anthony's RVP in 1994 to reduce the medical cost component of workers compensation, which was more than half of workers compensation expenditures. A second goal was to level the playing field for physicians, since some providers' charges were far higher than others.

The RVP is updated annually even though St. Anthony releases quarterly updates. The conversion factors used are based on categories in the RVP, with slight modification. For example, evaluation services are combined with general primary care, but surgery and anesthesiology are separated. There are five categories of conversion factor: surgery, anesthesiology, radiology, pathology/laboratory, and general medicine. Conversion factors are updated annually. However, since the CPT changes are released each January and the development of new prices are not completed for some time, often July, there is a gap during which prices are not available and some interim prices are used.

The fee schedule was implemented without phase-in. Conversion factors were initially set at the 85th percentile of charges prior to RVP. Medicode conducted studies for the state to determine 50th – 90th percentiles. In 1995 payments were reduced to the 80th percentile and in 1996 to the 70th percentile, where they have remained. There was tremendous provider backlash to the RVP system when payments were reduced from the 80th to the 70th percentile. The fee schedule appears to have achieved its goals. The first year produced a significant reduction in costs and the trend data show that reductions are continuing. Since 1994, there has been a 38-percent reduction in workers compensation costs, about half of that attributed to RVP.

3.6.8 Wyoming

Wyoming adopted St. Anthony's RVP in 1991. The reasons for adopting the RVP were to use a non-arbitrary, well-studied, and fair system of reimbursement that was also compatible with other payment methods used by insurance companies. Reduction in medical costs were not a consideration even though they were increasing dramatically (15 percent annually) at the time.

The reimbursement rules are rewritten annually. However, each year the changes in RVP are analyzed to measure the fiscal impact prior to implementation. If the fiscal impact is significant, and it rarely is, there will be deliberation as to whether to adopt the changes. The state uses seven conversion factors for different specialty groups developed by the state but modeled on RVP categories of services. These conversion factors were determined in 1991 based on the analysis of previous year's expenditures with a 15 percent increase. There are no geographic cost differences. Complaints by specialties may result in changes to a conversion factor. There have only been two significant updates since 1991.

The fee schedule was implemented without phase-in. There were no political problems partly because the prior method caused dissatisfaction and partly because the conversion factors chosen were viewed as generous. The major technical problem was related to updating computer systems to handle the new fee schedule. Provider response has been positive with a wait-and-see attitude. The fee schedule is achieving its goals. The state's overall approach has generally been to listen to concerns of physicians and accommodate them where possible by adjusting individual RVUs.

Chapter 4. Technical Issues in Adopting a New RVS System in California

If California decides to move to a RVS fee schedule based on either the RBRVS or the RVP, or some alternative method not examined in this report, there are several important technical issues that will need to be addressed. This section discusses some of the major technical/methodological issues and how these same issues were dealt with by the states surveyed in this study.

4.1 How Does the RVS Define Codes and RVUs for All Services Covered by Workers Compensation?

One of the factors influencing states to adopt the RVP, and one of that system's major marketing advantages, is that it is a "complete" system, i.e., it contains RVUs for services covered by workers compensation but not by Medicare. Furthermore, even for some Medicare covered services, RVUs are not included as part of the MFS, but are contained in a separate database, such as the fee schedules for anesthesia or laboratory services. States that adopted the RVP appear to view the fact that RVUs are available for all workers compensation services from a single vendor as a major advantage. But what do states that adopted the RBRVS do about services not covered in the MFS? While some have developed unique codes for a small number of specific workers compensation evaluations and reports, none of the states surveyed reported difficulties in identifying RVUs for services not covered by Medicare.

4.2 Should the RVUs Be Resource-Based or Charge-Based?

The MFS explicitly combines physician work, office expense, and malpractice expense into a total RVU for each CPT code. Furthermore, each of these components is adjusted by separate price indexes (i.e., GPCIs) under the MFS, reflecting the fact that the relative costs of each component are not necessarily equal across geographic areas. For example, as shown in Figure 2, office expenses in Los Angeles are 19.9 percent higher than the national average, while malpractice expenses are 15.4 percent lower. A commercial product such as the RVP does not necessarily separately identify these three cost components in its RVUs, however. Although the RVP attempts to measure relative physician work in its ongoing physician surveys, it is difficult to determine whether physician responses to those surveys represent "true" estimates of relative work, or preferences for relative payment.

Are there fundamental advantages of resource-based RVUs or charge-based RVUs that are relevant to California? Conceptually, resource-based RVUs are superior because charge-based RVUs evolved under the inflationary incentives of fee-for-service reimbursement. This was the primary reason Congress spent millions to support the development of the RBRVS and other elements of the MFS. Although the MFS originally used charge-based data to determine RVUs for office and malpractice expense, Medicare is currently implementing resource-based RVUs for office expense, and plans to implement resource-based malpractice RVUs within the next few years.

To evaluate the possible impact of using the RBRVS in California, the state should consider a simple side-by-side "impact" analysis of the current RVUs for the highest-volume services in several different categories (e.g., E&M, general medicine, surgery, radiology, etc.) compared to the MFS RVUs for those same services. It is possible to generate a number of conceptual arguments in favor of resource-based RVUs. However, the experience of other states suggests that the "acceptability" of the RBRVS for workers compensation depends on both on

how different the RVUs are and how “generous” the conversion factors are relative to the old system.

4.3 Should Payments Be Adjusted for Geographic Differences?

The rationale for geographic adjustments under a national payment system like the MFS is that physicians in different areas of the country should not be penalized for input price differences that affect the cost of doing business in their market area. For example, office expenses are determined by competitive market conditions that are not directly influenced by individual physicians or by the medical industry, so geographic differences in office expenses are reflected in the payment system. Commercially developed fee schedules, because they are based on claims data, combine input price differences together with all other geographically based cost differences into the conversion factors. Thus, separate conversion factors for each geographic region may accurately reflect the claims experience of providers in different areas of a state. But these geographic differences in the conversion factors may be unrelated to input prices.

In states with a small geographic area, explicit adjustment for geographic cost differences may not be necessary, because the state may in fact represent a single market. But in a state as large as California, multiple market areas are relatively easy to define. Metropolitan areas are typically considered to be distinct markets, and Metropolitan Statistical Areas (MSAs) are used as the basis for geographic adjustments under the Medicare inpatient prospective payment system. The MFS on the other hand uses a smaller number of geographic areas; the number is now less than 100 nationally, down from more than 220 payment localities than were in effect when the MFS was first implemented. California is currently divided into 9 geographic areas under the MFS; 8 metropolitan areas (Anaheim/Santa Ana; Los Angeles; Marin/Napa/Solano; Oakland/Berkeley; San Francisco; San Mateo; Santa Clara; and Ventura), and the rest of the state.

4.4 How Should Conversion Factors Be Determined?

The method for determining conversion factors may be the most difficult issue to address in adopting an RVS fee schedule. In states that maintain comprehensive workers compensation claims data (for example, states that have a single state fund insurer), the task is relatively straightforward. Conversion factors could easily be calculated for categories of CPT codes, and benchmarked against any number of external data sources, or subject to political negotiation.

States with multiple insurers such as California, and where reporting of claims data is not mandatory, present a much more formidable challenge. Without a claims database for which external validity (i.e., generalizability) and reliability have been established, the state has a limited number of options for calculating conversion factors. One option is to adopt the MFS conversion factor, and make plausible state-specific modifications. Another option is to benchmark against another state in the same region with a more comprehensive claims database. Yet another is to negotiate conversion factors that will be “acceptable” to relevant providers, based on current conversion factors already in use.

Another alternative is to purchase data from a commercial vendor such as Medicode, which is the approach used by several of the states that use the RVP. A disadvantage of this approach is that the claims data from commercial vendors is based primarily on group health rather than workers compensation claims. This limitation also raises another important question that has not yet been adequately addressed in the workers compensation literature, namely: What is the “appropriate” relationship between treatment costs for a condition in a group health setting versus the same condition under workers compensation? Another disadvantage of data from commercial vendors is that states are completely reliant on the vendor for information

about the strengths and weaknesses of its data. No independent research has been conducted to verify the marketing claims of any particular vendor.

A related issue is whether to establish conversion factors that are budget neutral. In theory, states that have access to a comprehensive utilization (i.e., claims) database can conduct studies to compare aggregate RVUs before and after adoption of a new RVS. The conversion factors can then be established to maintain constant total expenditures (assuming, of course, no change in the mix of services). But in California, without access to such a utilization database, it is unclear how to achieve budget neutrality, because there is no reliable way of determining the volume of individual services provided under the workers compensation program.

One option for determining budget neutrality would be to use data from several sources to develop plausible estimates of service volume for the highest-volume CPT codes prior to adopting a new fee schedule. These volume estimates could then be used to calculate the impact of changes in the RVUs for those high-volume codes on aggregate expenditures.

4.5 How Should the Fee Schedule Be Updated and Maintained?

This issue includes both updates to the RVUs and to the conversion factors. RVU updates are available from several sources, depending on whether the state chooses to adopt the RBRVS or a commercial system such as the RVP. The major advantage of the RVP is that quarterly and annual updates are supplied directly as part of the vendor's service. The major disadvantage is that the physician surveys conducted to update the RVP may not reflect relative resources, but what surveyed physicians would like to be paid. The major advantage of the RBRVS is that it is updated annually by the RUC and involves multiple specialty panels. The major disadvantage is that the update process focuses on the use of RBRVS for Medicare, which may diminish the accuracy of RVUs for infrequent Medicare services (e.g., obstetrics).

Updates to the conversion factors depend on what goals the state is trying to achieve. Several states use increases in the statewide average weekly wage as the basis for updating their conversion factors. This measure has the advantages that it is easy to obtain and is an appropriate measure for local market conditions. The primary disadvantage is that in contrast to the Medicare Economic Index, which attempts to measure changes in all the components of costs that affect medical practice, the statewide average weekly wage measures general trends in labor costs that may not be closely correlated with changes in medical costs. In theory, once the RVUs and conversion factors are established, conversion factors should only be updated to reflect changes in the input prices of medical practice. In practice, the best measure of input price changes may be a compromise between what is readily obtainable within the state versus what is theoretically ideal.

The state's ability to maintain and update its fee schedule also depends on the extent to which the update criteria and process are spelled out in any enabling legislation. The advantage of specifying the update methodology in advance is that it facilitates regular and timely updates. The other side of this approach, however, is that it may limit the state's flexibility to make future changes in the methodology.