

Department of Health and Human Services

**OFFICE OF
INSPECTOR GENERAL**

**A COMPENDIUM OF REPORTS AND
LITERATURE ON CODING OF PHYSICIAN
SERVICES**



JUNE GIBBS BROWN
Inspector General

MAY 1994
OEI-03-91-00921

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EXECUTIVE SUMMARY

PURPOSE

This report is a companion to *Coding of Physician Services (OEI-03-91-00920)*, an evaluation of the American Medical Association's (AMA) Current Procedural Terminology, Fourth Edition (CPT-4) coding system. It lists and summarizes the documents used to develop issues covered in that report.

BACKGROUND

The purpose of *Coding of Physician Services (OEI-03-91-00920)* was to describe vulnerabilities in the maintenance, use, and management of the CPT-4 system, as they relate to Medicare reimbursements. It was part of the Office of Inspector General's (OIG) continuing effort to improve the effectiveness of procedure coding. That report based its findings on both a literature review and structured interviews. During the first phase, we collected documentation from both government and non-government sources to identify key coding issues. In the second phase, we conducted structured interviews to refine these issues.

That report found that incorrect coding can lead to increases in Medicare reimbursement and payment inequities under the Medicare Fee Schedule. Flaws in the CPT-4 codes, guidelines and index contribute to improper coding. In addition the health Care Financing Administration's (HCFA) management of CPT-4 does not ensure appropriate Medicare reimbursement.

Both HCFA and the AMA have taken corrective measures. However, our analysis indicates that additional improvements are needed in the CPT-4 system itself and HCFA's management of the system. See *Coding of Physician Services* for a listing of OIG recommendations.

METHODOLOGY

Documents reviewed in this report were taken from both government and non-government sources dating from 1984, after HCFA started using CPT-4. We chose government agencies which regulate or monitor physician activity under Medicare. In the Department of Health and Human Services (HHS), this includes HCFA and the OIG. In the U.S. congress, it includes the Physician Payment Review Commission (PPRC) and the General Accounting Office (GAO).

We compiled published non-government documents primarily from an on-line search of the database files of the National Library of Medicine's Medical Literature Analysis and Retrieval System (MEDLARS). Non-government documents include studies with developed methodologies which analyzed data and discussions of expert opinion that synthesized personal experience and references to other work. The non-government

documents represent current thought about CPT-4 coding issues. After reviewing each document, we extracted and summarized only that information which related to the CPT-4 system or its application.

We grouped documents according to source and summarized each source's comments. Documents within each agency are in chronological order from most recent to earliest. The numbers of documents reviewed are shown below.

- **U.S. Department of Health and Human Services**

Office of Inspector General - 15 reports

Health Care Financing Administration - 6 reports

- **U.S. Congress**

General Accounting Office - 2 reports

Physician Payment Review Commission - 2 reports

- **Non-Government Sources**

13 documents

This inspection was conducted in accordance with the Quality Standards for Inspections issued by the President's Council on Integrity and Efficiency.

FINDINGS

The following are summaries of the documents from each source.

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES OFFICE OF INSPECTOR GENERAL

The OIG reports identify inappropriate use of CPT-4 in Medicare claims, HCFA's inadequate management of the administration of CPT-4 and flaws within the CPT-4 codes, guidelines, and index which leave the system vulnerable to miscoding.

Findings are based primarily upon reviews of HCFA Part B Medicare Annual Data. Medical reviews, beneficiary histories and literature searches were also included. Focus groups also assisted in analysis and providing background information.

Recommendations include developing computerized edit screens to detect improperly coded claims, suggesting CPT-4 code revisions, and changing major reimbursement policy.

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
HEALTH CARE FINANCING ADMINISTRATION**

Office of Research and Demonstrations

The HCFA contracted with health policy experts to develop optimum strategies for appropriately reimbursing providers and containing rising Medicare costs. One study advocated a uniform procedure coding system whose basis was the CPT-4 system. The resource-based relative value unit (RVU) used in the Medicare Fee Schedule was developed during a Harvard University study. One study examines payment approaches such as "collapsing" and "packaging" codes to reduce Medicare expenditures resulting from improper coding. One study identified flaws with CPT-4's use for outpatient services, while another found tracking of physician coding practice to be an important factor in evaluating coding policy.

**U.S. CONGRESS
GENERAL ACCOUNTING OFFICE**

The GAO reports explored the broader context of fraud and abuse within the health care industry. Fraud and abuse can include practices such as overcharging for services, billing for services not rendered, or billing for unnecessary services. The GAO also cited that HCFA's ineffective management of contractors leaves Medicare exposed to inappropriate reimbursements. As Medicare expenditures continue to soar, the concern for waste and control over HCFA contractors becomes more urgent.

**U.S. CONGRESS
PHYSICIAN PAYMENT REVIEW COMMISSION**

In its role of advising Congress on physician payment and Medicare policy, the PPRC has analyzed various issues in health care cost, quality, and delivery. It concludes that continued attention to coding issues is imperative because of CPT-4's key role in the assignment of RVUs under the Medicare Fee Schedule.

NON-GOVERNMENT SOURCES

Documents gathered primarily from MEDLINE vary in scope. Topics include provider manipulation of codes, flaws in code definitions, preliminary use of the Evaluation and Management codes, and Medicare Fee Schedule issues.

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GOVERNMENT SOURCES

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES OFFICE OF INSPECTOR GENERAL

Draft Survey Review of Inappropriate Laboratory Procedure Codes (A-03-92-00012) July 1992

This review surveyed laboratory procedure code changes initiated by the College of American Pathologists (CAP).

The CAP recommended to the AMA that 99 procedure codes be deleted from the CPT-4 manual. The OIG's initial review found that 62 of the procedure codes should have been deleted, while the remaining 7 codes should be retained with revisions to their descriptors. Thirty additional codes were pending further OIG review but were included in CAP's complete revision of the laboratory codes which premiered in the 1993 CPT-4. The CAP stated that the reasons for its recommended deletions are that these 92 codes represented either machine calculations, procedures that were not clinically useful, or obsolete procedures. The allowed charges for these 92 codes totalled \$109.3 million in 1991.

Liver Biopsies (OEI-12-88-00901) March 1992

This report examined the accuracy of physician and hospital procedure coding for liver biopsies. Findings were based upon a medical review and coding validation of over 300 physician claims for liver biopsies.

The report found that the coding system did not adequately describe open needle biopsies. The CPT-4 described the biopsies as either:

- "percutaneous needle" (or closed needle biopsy where needle is inserted through the skin) under code 47000 or
- "open wedge biopsy" (involving a surgical incision and excision of tissue) under code 47100

No code was available to clearly describe "open needle biopsy," a procedure where after an incision, a needle is used to obtain a specimen for examination. The report stated that this condition necessitated that physicians misstate open needle biopsy under one of these two codes. For example, a staff member coded the open biopsy by using "closed (percutaneous) [needle]," but then added a code stating that the abdomen had been opened.

The report also found Medicare overpaid \$1.2 million to physicians for liver biopsies in 1986. It revealed that physicians billed for both a biopsy and a "laparotomy with or without biopsy(s)."

The laparotomy code includes all biopsies performed in that episode, so it was not necessary to bill for another biopsy alone. In addition, some physicians billed twice for performing a biopsy for one piece of tissue, while others billed for the biopsy when it was incidental to a more major procedure.

The OIG recommended that CPT-4 code revisions be made so all biopsies could be appropriately classified. Carriers should adhere to CPT-4 guidelines which provide for the exclusion of biopsies when performed as part of a more major procedure.

Coding revisions in the 1992 CPT-4 added codes to indicate whether a biopsy was done separately or done during a major procedure. In its comments to this draft report, HCFA stated that it could issue guidelines which may supersede those in CPT-4 when it felt CPT-4 was unclear. The HCFA's instructions may differ from or elaborate on instructions from CPT-4.

**Manipulation of Procedure Codes by Physicians to Maximize Medicare and Medicaid Reimbursements: A Management Advisory Report
(A-03-91-00019) August 1991**

This audit presented the preliminary results of a review of the physician practice of manipulating CPT-4 procedure codes to maximize reimbursement from Medicare and Medicaid. The OIG had conducted this audit in cooperation with Gabrieli Medical Information Systems, Incorporated (GMIS), a company with its own copyrighted, fully-automated cost containment software. Findings were based upon a computerized review of claims billed over a 2 week period from Pennsylvania Blue Shield and the Pennsylvania Department of Public Welfare.

Findings revealed that physicians manipulated CPT-4 to drain Medicare and Medicaid of millions of dollars annually. During the 2 week period, the GMIS edit system detected overpayments totalling almost \$500,000. Annualized, this figure totaled an estimated \$12.9 million in overpayments for this carrier and State Medicaid agency. Surgical codes comprised half of the Medicare overpayments. About 78 percent of the overpayments resulted from unbundling.

The OIG contended that in light of the Medicare Fee Schedule, physicians facing sharp payment cuts would compensate by increasing manipulative coding practices. The OIG stated that a "comprehensive and effective pre-payment edit system is the key to detecting procedure code 'gaming' by physicians." Although HCFA had just mandated 68 new prepayment screens, a more sophisticated system may be needed to detect code manipulation. The OIG urged HCFA to mandate the use of prepayment edit screens for Medicare and State Medicaid agencies.

Zero Crossers
(OEI-03-91-00460) August 1991

This report quantified Medicare reimbursements for in-office diagnostic vascular tests using devices known as "zero crossers." Findings were based upon a sample of Medicare Part B Annual Data, containing services under four commonly used procedure codes used for billing diagnostic tests.

The report found that zero crossers accounted for about 17 percent of frequently performed ultrasound tests in 1988. Four different codes were used to bill for zero crossers, and the reimbursement for zero crossers and more sophisticated equipment were similar. The CPT-4 codes failed to distinguish zero crossers from more complicated testing devices which produced more sophisticated test results.

The OIG recommended that CPT-4 code revisions be made to reflect the different levels of sophistication of these tests and that HCFA align its reimbursement rates accordingly. Payment options ranging from a \$100 allowance to non-coverage for zero crossers could save between \$24.9 million to \$124.5 million over a 5 year period. In response, the vascular specialty societies initiated CPT-4 revisions, which first appeared in the 1992 CPT-4.

Low Cost Ultrasound Equipment
(OEI-03-88-01401) July 1991

This report reviewed the appropriateness of Medicare reimbursements for low-cost ultrasound equipment. Findings were based upon a review of information on ultrasound tests from medical diagnosticians, equipment manufacturers, technical journals, and physiological testing experts. The OIG obtained statistical data and corresponding procedure codes from HCFA's Part B Medicare Annual Data system.

The report found that an array of ultrasound equipment exists with a variety of complexities. The selection ranged from simple hand-held devices, such as the Pocket Doppler, to state-of-the-art equipment that performed sophisticated tests. The CPT-4 codes used to bill for ultrasound equipment, however, failed to distinguish between test types or results. These codes did not adequately differentiate these tests or their results. Consequently, reimbursement for any particular ultrasound test was paid at the same rate without regard to the intensity of the test or the quality of the data produced. A physician who performed a diagnostic test using a "Pocket Doppler" could conceivably claim the same reimbursement as someone who conducted a more extensive test producing more sophisticated results.

To address this vulnerability to inappropriate billings, the OIG recommended revisions in the CPT-4 codes and reimbursement rates to reflect the different levels of sophistication in ultrasonic vascular testing. The OIG also recommended prohibiting payment for tests for pocket dopplers (see Pocket Dopplers: A Management Advisory Report, OEI-03-91-00461). In response, vascular specialty societies initiated CPT-4

code revisions and HCFA incorporated the use of pocket dopplers into the fee for physician office visits.

**Pocket Dopplers: Management Advisory Report
(OEI-03-91-00461) June 1991**

This management advisory report quantified the amount Medicare reimbursed for a hand-held vascular ultrasound device known as the pocket doppler, and estimated potential savings if the Medicare discontinued payment for this test. To determine how often this test was performed, the OIG consulted 1988 Part B Medicare Annual Data.

The report found that pocket dopplers accounted for 7 percent of frequently performed in-office ultrasound services in 1988. If HCFA were to deny reimbursement for this device, Medicare would save an estimated \$30 million over 5 years. The important coding issue was that this simple diagnostic test could be billed under four codes which covered a variety of tests. Similar to the zero crosser, the codes used to bill Pocket Dopplers and other ultrasound devices did not distinguish test types or quality of data results. The Pocket Doppler, a simple diagnostic test, could be billed with a variety of codes which covered an array of diagnostic ultrasound tests.

The vascular medical specialty societies initiated code changes which premiered in the 1992 CPT-4. The HCFA instructed its carriers not to reimburse for Pocket Doppler tests, but to include them as part of the physician office visit.

**Ensuring Appropriate Use of Laboratory Services: A Monograph
(OEI-05-89-89150) October 1990**

This inspection examined the factors that affect the use of diagnostic clinical laboratory services. Findings were derived from a compilation of previous Government and private sector studies, HCFA's Part B Medicare Annual Data files, and the OIG's studies of physician office laboratories (POLs) and physician financial arrangements.

The report found that the use of lab services has been steadily rising. The sheer volume (19 billion diagnostic tests per year) made carrier monitoring of lab service billings difficult. The report found that manipulative billing practices, such as fragmentation and upcoding or procedure inflation, caused inappropriate payments. Fragmentation occurred when physicians ordered specific tests they had used most often in the form of "customized" packages for their individual needs. Medicare prefers these packages billed as a single item. There would never be enough CPT-4 codes to describe every single customized package for each individual physician. In 1987, only 2 million lab tests billed to Medicare were comprehensive profiles, while the projections estimated that 55 million should have been billed as less expensive profiles, rather than as individual tests. Upcoding occurs because multiple procedure

codes exist which essentially define the same lab procedure.

The report recommended the use of laboratory roll-ins (LRIs) as a promising method of controlling the use of lab services. Under LRIs, Medicare would no longer reimburse for lab services. Instead, lab services would be bundled into Medicare's payment for a physician office visit.

**Problems with Coding of Physician Services: Medicare Part B
(OAI-04-88-00700) February 1989**

This inspection examined the lack of uniformity in the coding of physician office and inpatient visits. It attempted to determine whether any problems with the codes for physicians office and hospital visits exist and to identify the causes for these coding problems. The OIG based its analysis on information from Part B Medicare Annual Data for a 2 year period. Experts in provider billing habits, including physicians, carriers and HCFA officials, were consulted to assist in statistical analysis.

The OIG concluded that wide variations in coding of office and hospital visits existed, due primarily to differences in the interpretation of the services each code represented. The report found confusion about what correctly constitutes a physician consultation as defined by Medicare. In addition, the availability of too many codes to describe office and hospital visits had contributed to the uncertainty about the distinction between the levels of codes.

The report recommended that HCFA work with the AMA to reduce the number of codes to prevent the incidence of inappropriate coding. The OIG supported providing fewer code choices and greater distinction between code levels to clear the confusion surrounding the visit codes. The HCFA should designate what is meant by "routine" visit code and ensure consistent interpretation of these codes. In addition, the OIG recommended HCFA inform providers of the proper use and interpretation of CPT-4.

**Medicare Physician Consultation Services
(OAI-02-88-00650) June 1988**

This report assessed HCFA's effectiveness in assuring appropriate reimbursement for physician consultation services in a hospital setting. The OIG conducted discussions with Medicare carriers, Medicaid State agencies, hospital administrators, and physicians representing several specialties. A sample of inpatient consultation claims were reviewed with the corresponding medical records and beneficiary histories.

The review found that the definition of a physician consultation differed among respondents and that carrier interpretation and use of consultations varied considerably. Seventy-one percent of respondents felt that the five levels of CPT-4 codes overlapped and that it was difficult to decide where one code level ended and another code level began. Because of this overlap, Medicare overpaid \$73 million for physician consultations.

The OIG recommended HCFA develop a definition of a consultation which specifically addresses conditions for that particular code. The HCFA should also collapse the numerous codes into fewer, more comprehensive codes to minimize the confusion between definitions.

The AMA revised the visit codes and developed the Evaluation and Management codes which premiered in the 1992 CPT-4.

**Coronary Artery Bypass Graft Surgery
(OAI-09-86-00070) August 1987**

This report documented medical practice in delivering quality coronary artery bypass graft surgery (CABG), obtained expert opinion on the most efficient and economic delivery of CABG, and determined the actual Medicare hospital and physician insurance allowances for beneficiaries who underwent the surgery. Working closely with surgeons, cardiologists, private business, and Medicare carriers, the OIG evaluated and verified the pertinent issues on CABG.

The OIG analyzed a random sample of Medicare beneficiaries' billing data and reviewed patient histories provided by carriers.

The report found that the existence of six codes to bill for CABG might encourage abuse by reimbursing for additional and unnecessary grafts. Before HCFA mandated the use of CPT-4 codes, many carriers relied on only three codes for this procedure under the California Relative Value Studies. When HCFA implemented the CPT-4 based Common Procedural Coding System, three additional codes were used to describe CABG. The report stated that "the three codes that were added when HCPCS was implemented have resulted in increased CABG expenditures by most Medicare carriers." The OIG found that only 8 of the 38 carriers surveyed restricted payments to a fixed amount if the surgery included three or more arteries. One of these carriers allows the same amount if two or more arteries are involved. In addition, "six carriers made no pricing distinctions among four or more arteries."

The report stated that "over 60 percent of the surgeons interviewed agreed that the same payment for three or more grafts is appropriate." Also 50 percent of those thoracic surgeons did not object to the same payment for all CABG surgeries regardless of the number of grafts involved. Some surgeons thought that allowing higher payments for more grafts would provide an economic incentive for abuse.

The OIG recommended consolidating the CABG codes and limiting payment to a maximum of three grafts. This coding revision would save \$5 million. The 1993 edition of CPT-4 still contains six codes for CABG.

The OIG also recommended that Medicare consolidate all physician fees for CABG, eliminating separate bills for the assistant surgeons and anesthesiologist, and develop

utilization screens to eliminate payments for fragmented services and post-surgical services which should be included in a global fee.

**Review of Radiology Services Paid by Empire Blue Cross/Blue Shield Under Title XVIII of the Social Security Act
(A-02-86-02022) April 1987**

This audit examined one carrier's claims processing controls for radiology services. Findings were based upon a thorough examination of carrier claims processing controls and a computerized analysis of a sample of claims.

The review found that the computer edits were inadequate in detecting multiple radiology tests which should have been paid under one bundled procedure code. As a result, physicians received a higher reimbursement for billing under several codes instead of using the bundled procedure code. The carrier overpaid \$1.3 million in radiological services. The edits were inadequate in detecting unbundled comprehensive codes because:

- the prepayment edits were established for only three bundled radiology codes and
- the edit was too narrowly defined and was only able to detect two individual services.

The OIG recommended that the carrier recover the overpayments, develop and install more edits to identify unbundled radiology tests, and continue to monitor the effectiveness of these edits.

**Review of Multichannel Laboratory Claims Process by Empire Blue Cross/Blue Shield Under Title XVII of the Social Security Act
(A-02-85-02030) March 1985
(A-02-86-02013) June 1986
(A-02-87-01026) September 1987
(A-02-88-01001) October 1988**

These audits evaluated the procedures and controls over claims processed for laboratory services provided by independent clinical laboratories and physician providers. On-site reviews of lab and providers' facilities were also conducted.

The reviews revealed a pattern of overallowances due to a lack of controls on payment of profiles and individual lab services. The initial audit of March 1985 found overpayments in claims from calendar year 1982. It found that physicians billed for a number of individual laboratory tests instead of a lower-priced, comprehensive profile of tests. These overpayments resulted from a lack of adequate prepayment edit screens to detect multiple bills. Claims examiners failed to convert individual tests to profile codes, due in part to unclear written instructions. The follow-up audits

confirmed the continuing existence of these weaknesses despite efforts to review the computer edits and reeducate claim examiners. And although the carrier had implemented computerized edit screens to detect these multiple billings, not all necessary codes were identified. The audits found the carrier overpaid approximately \$2.6 million between calendar years 1984 to 1986.

Recommendations advised the carrier to recover the overpayments and continue to revise the computerized payment screens to include claims containing group procedures (profiles) billed in conjunction with one or two individual tests.

**DEPARTMENT OF HEALTH AND HUMAN SERVICES
HEALTH CARE FINANCING ADMINISTRATION**

Office of Research and Demonstrations

**Medicare Visits to Medicare Patients: Physician Coding Practices conducted by Sally Trude in cooperation with the RAND Corporation.
(HCFA Contract #99-C-98489/0-08) May 1992**

This study presented evidence that physicians do not uniformly or accurately code their visit services. Findings were based on an analysis of 1986 Medicare claims, specifically Part B physician services and the Medicare Provider Analysis and Review file.

The report showed that a high percentage of physicians used one code to describe their practice. The level of service varied from carrier to carrier which suggests that these variations in code levels are due to individual coding practice rather than patient caseload.

Although this study could not definitively link physician upcoding to economic factors prior to the Medicare Fee Schedule, policy makers are still interested in improving the coding system. Using three alternative coding systems based upon three different assumptions of physicians' upcoding behavior, the study evaluated the effect of the number of code levels on expenditures. These "models assume that physicians face less risk of detection or may feel justified, and they therefore upcode." From these models, costs from upcoding are higher within a five-level code system and lower in a three-level system. The three-level system has larger differences in reimbursement between codes and would provide less opportunity for upcoding. Assuming that physicians continue to code as they did before the Medicare Fee Schedule, differences in dollar amount of physician reimbursement increase as the number of the levels of services decrease.

A trade-off exists between improving the precision of codes and their ease of use. A coding system with fewer level of codes becomes easier to use, while one that incorporates the time element and more codes is more complex. With fewer code

levels, descriptions of services become less concise. Nonetheless, policy makers must consider the benefits and drawbacks of each coding alternative.

**Final Report: A Study of Coding Accuracy in Outpatient Care Facilities conducted by Aspen Systems Corporation
(no report identification number) March 1992**

This study determined the degree of accuracy of ICD-9 and CPT-4 coding of procedures in hospital outpatient departments and ambulatory surgical centers. It identified sources of miscoding and determined the existence of coding guidelines and standards. Findings were based upon an extensive literature search, as well as consultation with private and public health care organizations and coders.

The report found little quantitative data on the error rate of hospital outpatient coding. It found that new procedures and services lacked codes and that the coding systems were "too rigid/narrow" for coding legitimate procedures and diagnoses. A lack of uniformity existed in coding guidelines, advice, and application among payers and Peer Review Organizations (PROs). Many respondents stated that they had no systematic measurement of coding accuracy for both ICD-9 and CPT-4 systems. Respondents advocated a uniform coding system for both inpatient and outpatient services, a clearinghouse or centralized body for information on both systems, standardization of guidelines across payers, and more education in proper coding.

**Report to Congress: Medicare Physician Payment--Volume and Intensity of Physician Services, Relative Value Scales for Physician Services, Implementation of a National Fee Schedule.
(HCFA Publication #03287) October 1989**

This report discussed the factors that affect the volume of physician services and the growth of expenditures under Medicare Part B. It was based upon an HHS analysis of national trends in charges for physician services, discussions with health research experts, and data from other health care studies.

Medicare expenditures for physician services grew from \$15.1 billion to \$26.6 billion between 1982 and 1987. Forty percent of this growth can be attributed to inflation and technology, while another 15 percent was due to an increase in the number of beneficiaries.

Part of the remaining 45 percent was due to payment mechanisms, such as fee-for-service arrangements with separate payments for each service rendered and higher remuneration for specialists. The way in which physicians define and report their services to Medicare also affected reimbursement amounts. Coding practices such as "upcoding" (assigning a more expensive code for services performed), and "unbundling" (billing separately for procedures which could fall under one comprehensive code), affects reimbursement amounts.

Medicare Part B payment system data showed sharp increases in expenditures for physician services by specific area. The total allowed charges for surgery and associated services grew 85 percent and accounted for over 40 percent of the overall spiraling physician fees. Medicare visits increased by over 50 percent, and consultations multiplied by 127 percent. Lab services rose by 84 percent, accounting for 11 percent of overall growth.

Attempts at controlling Medicare expenditures for physician services included aggregating payments, influencing physician and beneficiary behavior, and establishing growth targets. Creating capitated payments, where physicians were paid a predetermine amount to cover some or all of Medicare services was one option. An alternative similar to the hospital diagnostic related group (DRG) system could pay a single amount for all related-physician procedures. A less drastic bundling approach to rein in costs was to redefine packages of services. One example was to design and price an office visit which would include all related ancillary services (lab tests, x-rays). This method would collapse many services into one comprehensive service package. Including the office charge with a minor surgical procedure or diagnostic test was another bundling option. More exact coding rules and definitions of services could also reduce both upcoding and unbundling.

**A National Study of Resource-Based Relative Value Scales for Physician Services
conducted by the Harvard University School of Public Health
under William C. Hsaio, Ph.D
(HCFA Contract #17 C-9-8795/1-03) 1988 and 1990**

This study developed resource-based relative value scales (RBRVS) for most medical procedures and formulated RVUs to be consistent in value across all medical specialties.

The study constructed RVUs for procedures listed in the CPT-4 coding system. To establish actual work values, the study team worked with physicians representing medical specialty societies, statisticians, and evaluators to array services and determine the resources and difficulty involved for each service. A small number of services performed in each medical specialty were chosen since the coding system contains about 7,000 services. The measurements established for these services were then extrapolated to a larger group of services, grouped into homogenous families categorized by specialty, setting, anatomic part and other factors.

The study found limitations with CPT-4 when developing RVUs and adopting them into the RBRVS. The studies stated that the CPT-4 coding system assigned ambiguous descriptions to the codes classifying physician office services. Although CPT-4 included global codes for surgical procedures, services varied between surgical specialties. The CPT-4 coding system did not adequately specify services to be included in each global bill. This shortcoming in CPT-4 precludes generating accurate RVUs for services billed globally unless each global package is well defined.

Packaging Physician Services: Alternative Approaches to Medicare Part B Reimbursement prepared by Janet B. Mitchell, Ph.D. in cooperation with the Center for Health Economics Research (HCFA Contract #500-81-0054) August 1987

This study explained the different factors contributing to the rising expenditures for physician services. From 1965 to 1984, the amount the United States spent on reimbursing physician services increased almost nine-fold. In 1965, the U.S. spent about \$8.5 billion on physician services; this number increased to \$75.4 billion in 1984. Although some of the increase could be attributed to economic factors such as population growth and inflation, the increased intensity of services was also part of the growth. The increased intensity of services was the result of billing methods called "unpackaging" and procedure code inflation and the involvement of multiple physicians."

Unpackaging is the practice of submitting itemized claims for every service performed. When physicians submitted itemized bills, their charges for services were usually higher than charges for services billed in a comprehensive global fee.

Procedure inflation occurs when a physician bills for a more extensive or intensive (therefore, more costly) procedure than what is actually performed. A larger number of codes and uncertainty about the distinction between codes contributes to the likelihood of this practice. Although advances in technology would require more codes, many codes or groups of codes "are simply exceedingly fine variations on a common theme."

For example, the variety and unclear levels of office visit codes leaves them vulnerable to procedure inflation. Physicians can use six different codes for a follow-up office visit. One category for office visits could simplify billing because physicians could only bill under that one code number, making reimbursement clear for a particular visit. .

Expenditures for physician services rose also because of the increased number of physicians and practitioners involved in treating patients for a particular procedure. For a surgical procedure, not only was the primary surgeon involved, but an anesthesiologist, an assistant surgeon, or any number of other specialists could also participate. Each provider could submit a separate bill. Post-operative care or follow-up visits also added to the bills submitted for a procedure.

Strategies to counter unpackaging, such as collapsing procedure codes, could offer an alternative for Medicare billing. Collapsed codes group many generic procedures (office visits, lab services, radiological services) together under a lesser number of codes. Rather than assembling different services, it aggregates them into a CPT-4 code by revising the terminology and definition to include these services.

Packaging, unlike collapsing, involves bundling together a variety of services under one code. A bundled procedure code would define exactly what kinds of services it

includes. Collapsing and repackaging codes have both benefits and disadvantages. Policy makers who want to implement and evaluate these strategies should think about what procedures to include for payment, how much to pay, and whom to pay.

**Analysis of South Carolina Experience in Converting From NABSP to HCPCS
conducted by Moshman Associates
(HCFA Report #7812-4-1) January 1982**

The HCFA commissioned this study to determine if a national uniform coding system would affect total allowed payments under Medicare Part B. In this study, South Carolina Blue Cross Blue Shield (SCBCBS) was allowed to convert from its own coding system (a version of the National Association of Blue Shield Plans or NABSP) to HCFA's Common Procedure Coding System (HCPCS). The study based its findings on analysis of the number of and payments for claims coded in both SCBCBS and HCPCS.

The study concluded that the changeover in SCBCBS to the HCPCS system incorporating the CPT-4 codes had no significant adverse effect on total Medicare outlays. It recommended additional conversion to HCPCS and continued data collection and analysis of the conversion. The study also stated that a unified national medical procedural coding system would reflect changes in medical technology in a uniform manner. A unified system would enable comparison of frequency of services and charges among carriers. The review also contended that if HCFA were to adopt such a system, a body would be need to maintain and update the system and disseminate changes to users.

**U.S. CONGRESS
GENERAL ACCOUNTING OFFICE**

**Medicare: Fraud and Abuse in Medicare Claims Processing
(GAO/HRD-93-6) December 1992.**

The GAO reported that Medicare has lost billions of dollars from waste, fraud, and abuse. The program is highly vulnerable to waste and abuse because of weaknesses in its internal controls.

The potential loss to Medicare can total a significant amount. Medicare expenditures increased by 60 percent from approximately \$70 billion in 1985 to over \$110 billion in 1991. In addition, the number of claims processed has grown 450 percent since 1975.

The GAO stated that HCFA's inadequate management of contractors has left Medicare exposed to fraud and unnecessary payments. A lack of clear guidelines from HCFA to its contractors on combatting fraud and abuse has left Medicare funds vulnerable. As a result, payment enforcement varies among carriers. Beneficiary complaints, a usual source of provider fraud and abuse, go unresolved. Moreover,

carriers fail to recover provider overpayments. Underfunding of tracking systems to catch overpayments also contribute to ineffectiveness.

The GAO found that HCFA has failed to adjust and standardize reimbursement for new technologies. High reimbursement rates for new technologies have encouraged the unnecessary use of radiological technologies in low-volume areas. Even after the cost of a new technology decreases because of increased utilization, wide disparities in reimbursement rates still exist across geographic areas.

The HCFA's ineffective oversight of contractors' billing controls has contributed to overpayments. Lack of control over issuances of billing identification numbers has led to millions of dollars in overpayments for lab services. Ineffective tracking of provider identification numbers has allowed providers to submit fraudulent bills for tests. Lack of system control and the resulting multiple identification numbers made tracking fraudulent providers difficult.

The GAO recommended that HCFA assume greater control in managing its contractors. To coordinate various independent efforts to combat health care fraud, GAO recommended that Congress establish a unified commission to address fraud nationally. The commission could identify issues contributing to fraud and formulate the most effective methods of addressing them. The GAO identified standardization of claims administration and coordinating and sharing information on fraudulent providers as areas for potential evaluation.

Vulnerable Payers Lose Billions to Fraud and Abuse (GAO/HRD-92-69) May 1992

This GAO report explored the nature of fraud and abuse in the health care industry and identified obstacles which hinder insurers from eliminating fraud and abuse. Findings were based upon interviews with private insurers, health care trade groups, Medicare and Medicaid State agencies, and State and Federal investigative agencies. An extensive literature search was also included.

The GAO found several obstacles which hamper efforts to identify fraud and abuse in the health insurance system. The sheer number of payers and claims using different billing guidelines has made detecting fraud cumbersome. It has also hindered identification of physicians' billing patterns. Payers must weigh the benefits of claims review and deterrent efforts against the administrative cost of implementation. Although insurers had some type of prepayment claims edits and reviews, these controls delayed claims processing and payment and added to the "hassle factor" providers face. The laws surrounding physician ownership and referrals also complicated efforts to detect fraud.

Health insurance fraud and abuse could include practices such as overcharging for services, billing for services not rendered, and rendering services that are unnecessary. This report cited previous OIG work which had identified procedure upcoding and

unbundling. The GAO estimated that health care fraud (including manipulative billing practices and physician kickbacks) resulted in 10 percent of the total amount spent on health care or \$70 billion for fiscal year 1992.

The GAO recommended that a national commission devoted exclusively to health care fraud formulate ways to tackle obstacles to eliminating fraud. The commission can develop plans to: standardize claims administration among payers, collectivize various Federal and State regulators and law enforcement officials to construct strategies to detect and eliminate health care fraud and abuse, and review proposed legislation on the subject.

**U.S. CONGRESS
PHYSICIAN PAYMENT REVIEW COMMISSION**

Annual Report to Congress, 1993

Carrying out its mandate to advise Congress on physician payment and Medicare policy, the PPRC continued to monitor the implementation and evolution of physician payment reform.

The PPRC examined the various aspects of Medicare payment initially affected by the implementation of a resource-based Fee Schedule. With Medicare only beginning its 5 year transition to the Fee Schedule, long-term effects of payment reform cannot be measured. The Commission conducted a survey of physicians to monitor physician "understanding and perceptions of the Medicare program."

The PPRC stated that after 6 months' use of the new Fee Schedule, many physicians still do not understand certain components of the payment system. The topics that the physicians addressed included understanding the Fee Schedule, concerns over the Evaluation and Management (E/M) services, payment packages, and experience with other payers besides Medicare. Physician confusion about major components of payment policy is alarming. The Commission stated that "this widespread lack of understanding of the Fee Schedule threatens the equity and accuracy of payments, detracting from the system's credibility in general."

Physicians specifically raised the issues of imprecise coding of services and administrative burden in dealing with Medicare. The E/M revisions were designed to bring about uniformity to the coding of office visits, which represent one-third of Medicare's payments for physician services. Previously, interpretation of the old visit and consultation codes varied from carrier to carrier. Now with the implementation of a national fee schedule designed to effect payment equity and consistency, coding variation had to be eliminated.

When questioned about their understanding of the new E/M codes, "67 percent of physicians thought they adequately understood how to use the new billing codes."

Eleven percent of physicians stated that the new E/M described their service "very accurately," while 54 percent of physicians thought the codes were "somewhat accurate." The PPRC wrote, "perhaps most telling, those who adequately understood the codes were more likely to think that the codes accurately described their services."

The CPT-4 code defines the physician service to which a RVU is attached. The RVU reflects an average of the amount of work done for a given service. If a CPT-4 code encompasses a very broad range of work, the amount of work performed under that code may vary from physician to physician. The result would be inequitable payment. Codes must encompass an acceptable range of work to generate an accurate work value and facilitate equitable payment.

Addressing CPT-4 coding changes was one of the PPRC's recommendations to ensure credibility and objectivity in the assignment of RVUs. In 1992, HCFA began a process to assign updated RVUs. The values adopted for the Fee Schedule include RVUs initially proposed by the AMA's Relative Value Update Committee (RUC). The HCFA's review panel accepted over half the RUC's recommendations for work values. "The rating of work is inherently subjective," states the PPRC. Hence, decision rules and criteria must be established to ensure consistency of work values to safeguard the equity of the Fee Schedule. Although many improvements in this update process have been made, the PPRC made other recommendations which include:

- a "reference set" which is a range of acceptable values within which the value of given service would fall;
- the availability of "objective data" which includes the time involved in performing a given service;
- the formulation of "decision rules" to guide the addition of supplementary services and to guide when a proposed RVU should be accepted; and
- fair representation, "guidelines for evidence and presentation," and openness to public comment.

Annual Report to Congress, 1992

This report represented a continuation of the PPRC's development and revision of Medicare physician payment reform. The PPRC works within the global context of changing legislation and interrelated policy that all affect the financing, availability, and delivery of health care.

The 1992 report set the historical framework of PPRC's reform effort, which for Medicare, has culminated with the implementation of the Medicare Fee Schedule. The abandoning of the "customary, prevailing, reasonable" (CPR) charge mechanism and the advent of the resource-based payment method is integral to Medicare payment reform.

In the resource-based Fee Schedule, the CPT-4 plays a significant role. The PPRC stated that "coding issues are extremely important because it is not possible to assure equitable payment under a national fee schedule unless each code represents a similar amount of work to all physicians who use it." The PPRC identified several problems which prevent the assignment of accurate and appropriate relative value units to services. Services that may not have procedure codes were one concern. Another was that certain CPT-4 codes may encompass an array of significantly different services and/or different amounts of work.

Although the new Evaluation and Management (E/M) codes have been accepted and are now being used, the PPRC still has reservations about physician interpretation of the E/M codes. Problems with definitions with new codes may cause uncertainty and confusion. For example, uncertainty exists for coding a patient with multiple problems or appropriate coding for patients in nursing home.

Even though all CPT codes encompass a range of work, some codes' ranges of work are defined narrowly, while others encompass a much broader range. For example, a code for the excision of a supratentorial brain tumor includes a procedure lasting from 2 to 10 hours. And when variations in work can fall under one code, it will not be translated into corresponding payment differences in the fee schedule.

Using the CPT-4 as a basis for assigning the relative value and resulting payment brings new challenges to the coding system. The PPRC stated that HCFA, as a participant in the CPT-4 code process, is in an ideal position to articulate its coding concerns for the Fee Schedule. An evaluation of the codes and a discussion for new coding priorities for the Fee Schedule is necessary. The PPRC urged HCFA to maintain its seat on the CPT-4 Editorial Panel and develop and articulate its "coding needs for a resource-based payment system to provide a framework for consistent coding decisions."

NON-GOVERNMENT SOURCES

Non-government documents include studies with developed methodologies which analyzed data and discussions of expert opinion that synthesized personal experience and references to other work. The non-government documents represent current thought about CPT-4 coding issues. We reviewed each document and summarized only that information which related to the CPT-4 system or its application.

The Podiatric Medicare Monitor 1 (Winter 1993): 2-4. The Podiatric Monitor is developed by Foot Health Advocacy and published by Professional Communications, Inc.

Podiatrists and orthopedic surgeons have not reached a consensus on the correct code for the "arthroplasty" procedure of a lesser toe. In coding the removal of the head of the proximal phalanx in the second toe to straighten the toe and relieve dorsal hyperkeratosis, some practitioners use 28153, while others use 28285. The "non-specific CPT definitions" do not lend assistance for providers to use the "absolutely correct code." The 28285 has a higher RVU and reimburses more than 28153 and 28160.

Stevens, Carol. "Avoiding the Most Common Mistakes." Medical Economics 19 October 1992, 101-109.

Physicians are attempting to adjust to the new Evaluation and Management (E/M) codes which premiered in the 1992 CPT-4. The HCFA's early claims review of these codes revealed that approximately 60 percent of physicians are using the new E/M codes correctly. While some criticized the physicians' current accuracy average, the article stated physicians may not receive clear instructions on providing adequate documentation for the correct coding choice. One coding expert stated that the fault lies with the codes themselves.

The most common mistake physicians have made with the E/M codes is attempting to "crosswalk" or equate them with the old visit codes. "Crosswalking" to get the correct code has been a particular problem with the "high end" intensive codes because physicians have not had the proper documentation to support the use of these codes. Lack of proper support for the coding results in an audited or rejected claim.

Widespread misuse of the new codes could pose problems for the new Medicare Fee Schedule since E/M codes constitute about 35 percent of all charges.

Jones, Marleeta, ART. "RBRVS is Still Evolving: Seven Issues of Interest to Physicians and Health Information Professionals." Journal of American Health Information Management Association 63 (September 1992): 44-48.

The executive-vice president of Health Care Services at St. Anthony's Publishing, Inc., raised reimbursement concerns under the new Medicare Fee Schedule, including:

- differentiating between specific E/M codes for emergency room visits,
- hospital training in CPT-4 codes for physicians,
- revisions of cardiology codes, and
- use of critical care codes.

Also adding to the complexity of the Fee Schedule are the various carrier interpretations of the codes and payment policy.

"RBRVS Briefs." Texas Medicine 88 (March 1992): 58.

Each Medicare carrier instituted an early claims review program to randomly select 25 claims per week for tracking use of the new Evaluation and Management (E/M) codes. A total of 600 claims were reviewed. The HCFA stated that the review was intended to be informational and not punitive nor burdensome.

Olmstead, Dennis L. "Medicare Monitoring of Payment Reform." Pennsylvania Medicine 95 (March 1992): 16-17.

With the implementation of the new Evaluation and Management (E/M) codes, Pennsylvania Blue Shield began to monitor code usage to identify changes in coding and utilization patterns. The Medicare carrier performed an early claims review to provide HCFA and physicians with information about the appropriate use of the new E/M codes. The claims review began in February 1992 and lasted through to June 1992. A weekly sample of 25 claims containing the new E/M codes were selected. Carrier staff telephoned the physicians whose claims had been pulled. The carrier then reviewed the records to validate the codes used for each claim. If the documentation supported the E/M codes billed, the physician was contacted and told that the code submitted had been confirmed. If the documentation did not support the code submitted, the carrier informed the physician of the correct code that should have been used. The review was for educational purposes only and was not intended as a punitive measure.

Holoweiko, Mark. "Practice Audits Made Perfect." Business and Health (July 1991): 47-53.

In the midst of soaring health care costs, private insurers are looking for ways to cut unnecessary expenditures. In the past, private insurers screened claims with the belief that it was less costly to deny a claim before it was paid than to recover funds in a

post-payment review. While the Federal government can ban a provider from participating in Medicare or Medicaid, private insurers do not have similar leverage.

Taking their cue from the Federal government, private insurers have been using audits to recover overpayments. These postpayment audits result from computer edits which detect inappropriately coded claims. The audits involve reviews of medical records and documentation. Auditors particularly check whether services were billed at their correct level according to CPT-4. Medicare also informed auditors to beware of 38 potentially billing abusive practices such as consistent use of a single procedure code or a constant level of service, upcoding or overuse of office visits, unnecessary diagnostic lab tests, and unbundling. Insurance companies have programmed their software systems to include these practices.

Novack, Janet. "Upgrades." Forbes, 27 May 1991, 125-126.

"Upgrading" procedure codes has contributed to the increase in physician revenues. Between 1985 and 1989, the average physician's income grew approximately 39 percent to \$155,800. At the same time, the nation's total expenditures for physician services grew 59 percent to a staggering \$118 billion.

In reaction to government and employer moves to cut costs and contain budgets, physicians have been finding innovative billing practices to inflate their charges. Some providers have simply raised their rates or performed more (sometimes unnecessary) services. Some physicians "upgraded" bills or charge for a higher level of service than what was performed.

Coding a "limited" office visit as an "intermediate" visit was one example. Between 1985 and 1988, the number of "brief" visits billed under Medicare decreased 8 percent, while bills for more expensive "extended" visits increased 13 percent. According to health payment specialist Dr. Robert Hertenstein at Caterpillar, Inc., overall, physician fees are inflated by 20 percent. In addition, doctors performed procedures, once restricted to hospital settings, in their offices using sophisticated equipment. This practice also inflated costs.

Chang, Sophia W. and Luft, Harold S. "Reimbursement and the Dynamics of Surgical Procedure Innovation." Edited by Gelijns, Annetine C. and Halm, Ethan A., Medical Innovation at the Crossroads-Volume II: The Changing Economics of Medical Technology. Washington, D.C.: National Academy Press, 1991.

Although economic factors have affected the use of new technologies in medical practice, the relationship between the application and dissemination of the technology were also important factors. This paper discussed how payment affects the development and diffusion of a new surgical procedure.

The designation of a new procedure code may impact on the procedure's payment and use. Surgical codes are organized anatomically and are relatively specific. There were

18 specific codes to describe a surgical knee arthroscopy, including "meniscectomy (medial and lateral)," and "with meniscectomy (medial and lateral)," "with meniscus repair (medial or lateral)," and "with meniscus repair (medial and lateral)."

However, codes are not uniformly specific for other procedures. In contrast to arthroscopy, one code exists for a supratentorial craniotomy, which describes a range of neurosurgical procedures that could last anywhere from 1 to 12 hours in length. Also while the existence of a procedure code for a service does not either warrant or guarantee payment for the service, its existence does signal "the recognition of a distinct new procedure and allows the possibility for more generous payment."

Currently there are about 7,000 CPT-4 codes. Most billing is performed by office staff who do not generally have any special training in CPT-4. Miscoding does occur. An official at Blue Shield of California stated that an estimated 15 percent of claims are coded incorrectly. Some of these errors included coding new procedures under old procedure codes. Codes also create other billing concerns. "Upcoding" may occur when physicians choose the most remunerative code among several closely related codes for a basic procedure. "Unbundling" could occur, for example, when carriers allow a separate payment for a Swan-Ganz catheter monitoring during a coronary procedure, while another carrier may think it is inherent to a more major procedure. Although estimates vary as to the number of services that are unbundled, 10 to 20 percent seems to be accepted.

Albertson MD, Peter C. and Kamens MD, Edward A. "Variations in Coding Practices Among Connecticut Urologists for the Medicare Population." Connecticut Medicine. (September 1990): 508-511.

To identify the coding habits of Connecticut urologists, the authors reviewed claims data from fiscal year 1986-1987.

Ninety-nine percent of the claims for cognitive services (evaluation and management services) fell into three types: office visits, hospital visits, and consultations. These three types are further subdivided into "new" or "established" patient. Under each broad category, an average of 82 percent of the claims were filed under one primary practice code. Almost uniformly urologists were consistent in their coding habits within their practices, but the specific practice code varied with each urology practice. There is wide variation in the distribution of claims within the six categories. The average practice coded 13 percent of Medicare claims as a "new patient office visit." However, the use of this code ranged from zero percent to 75 percent. One may presume that some practices see no "new" patients, while in others 75 percent of the patients are "new." The more likely explanation is that urologists have their own subjective interpretation of the CPT-4 code criteria and the relative work value associated with each code. This coding bias results from the imprecise definitions in CPT-4 codes. The Connecticut urologists did not use time or effort to select the appropriate code. Instead, they used another standard for determining the correct code.

The authors concluded that vague definitions of the cognitive services caused variations in coding. The imprecise definitions lend themselves to individual interpretation, resulting in variations in their use. With the advent of the Medicare Fee Schedule and its link to the CPT-4 code, the authors advocated increased precision in CPT-4 code definitions for cognitive services. Physicians must also actively define and quantify what they do for patients if they want to influence the new reimbursement system.

Coe Bailey, Nancy. "How to Control Overcharging By Physicians." Business and Health (August 1990): 13-14.

In 1989, health insurers overpaid \$5.8 billion in unnecessary claims because of inaccurate coding. Most of the improper coding is difficult to detect because payers and processors do not have the sophisticated means to handle the ever-growing number of claims. According to the U.S. Department of Commerce, in 1989, total health care costs exceeded \$599 billion, with approximately one-fifth or \$119 billion of that amount paid for physician services. Physician charges are predicted to increase by 15 percent in 1990.

Although physician billing has increased, their income has not increased accordingly due to many economic factors: tougher competition for patients, the move to negotiated fees under a managed care plan, resource costs including malpractice insurance and the Federal government's threat of reducing Medicare expenditures.

Because of these pressures that cap physicians reimbursement, physicians have attempted to compensate for their losses by "becoming more aggressive in their billing practices." To help physicians maximize their reimbursement, a "mini industry" of coding consultants advertise that they will optimize physician reimbursement. Seminars teach physicians how to manipulate coding to receive higher reimbursement.

Types of manipulative coding practices include unlikely code combinations, code "creep," or upcoding, and unbundling, according to studies initiated by Boston University's Health Policy Institute.

Health Payment Review president, Marcia J. Radosevich stated, "When you combine deliberate attempts to inflate medical claims with the sheer volume of coding errors that our research has shown to occur, it translates into an estimated \$5.8 billion annually in unnecessary overpayments to physicians."

Computerized code review services can detect abuses, but these reviews can add an additional \$50 in administrative cost every time a claim is evaluated.

Traska, Maria R. "Unbundling Could Be Costing You a Bundle." Business and Health (March 1990): 20-27.

Billing practices such as "fragmentation," "exploding charges," "upcoding," "code creep" and, even multiple coding are examples of physician "gaming." Examples of "gaming" include billing for 17 different lab tests run as part of a single blood screening. Billing for items separately brings a higher reimbursement. Expert estimates of the financial loss due to "gaming" range from negligible to 15 percent of total physician claims.

"Gaming" to increase payment is a way to recoup losses suffered from tightly negotiated fees from managed care and Medicare and Medicaid reimbursement cuts. A growing industry of coding consultants offer to teach physicians to use CPT-4 to maximize their reimbursements. To counter these practices, software consultants promote automated edits to detect and repackage overpaid claims. While these software systems are used by many payers with some success, an automated system will not solve all physician "gaming." Software may not be able to keep track of the continually changing CPT-4. Some codes are also vague or ambiguous. A CPT-4 Editorial Panel member states, "More clarification and standardization won't completely eliminate physician payment disputes, but they will improve matters." Physician education in the appropriate use of CPT-4 codes can also help.

Coopers and Lybrand. Cost-Benefits Analysis of a Uniform Procedural Coding System for Physician Services. The American Medical Association: Privately published, 1989.

Commissioned by the AMA, this study analyzed and compared the costs and benefits of revising the CPT-4 system and with developing a new uniform procedure coding system. Little data exists on the costs of revising and developing uniform coding systems. The methodology used the professional judgment of medical record professionals, physicians, financial analysts, and health economists. Case studies of providers and payers as well as interviews with health information systems also provided a basis for findings.

An analysis of revising the CPT-4 system included a critique of the system's weaknesses. This study cited flaws in the current CPT-4 system:

- definition of terms are subjective, ambiguous and vague,
- variations in specificity, omission of services delivered by other providers, and
- problems with index such as too many elements of reference in the definitions, insufficient eponymic entries, omitted procedures, limited cross referencing.

Problems in the application of CPT-4 also compounded its effectiveness:

- inability to perform trend and historical statistical analysis,
- inconsistent reporting requirements, and
- lack of rules, guidelines, education and information dissemination.

Coopers and Lybrand stated that improvements to an updated CPT-4 system would include:

- use of objective criteria for defining terms,
- redefining ambiguous definitions,
- avoiding combining diagnostic information into procedural codes,
- adding definitions from the introduction into the coding guidelines,
- improving readability and layout, and
- coordinating changes in the text with index entries and providing more cross-referencing.

Recommendations to improve the application of CPT-4 included gathering user input, developing a mechanism for code continuity between updates, and developing a mechanism for addressing user questions. The estimated cost of revising CPT-4 ranged from \$127.9 million to \$139 million.

Analysis showed that developing and implementing an entirely new coding system could cost from \$591.6 million to \$659.7 million.

In response to this study, the AMA conducted a revision and reclassification of the CPT-4 index, and established the *CPT Clearinghouse*, a phone bank to address user inquiries. In addition, the AMA began publication of CPT Assistant, a quarterly newsletter which examines detailed coding questions and acts as the AMA's definitive CPT-4 coding reference.

Part B News 1 (July 1987): 1-2. Part B News is published by United Communications Group in Rockville, MD

Tracking physician actions and documentation and comparing coding estimates was a strategy that gave a \$6 million boost to a group practice in West Virginia. In three specialties, this "physician trailing" technique increased reimbursement about \$1 million merely by restructuring the fee slips "to more effectively use the CPT-4 codes."

A coding consultant reviewed the customary charge of the practice to identify the "different payment possibilities for each diagnosis." The consultant's version of the coding of procedures were compared to the physician's coding to determine which coding scenario was most remunerative. The consultant then pointed out the areas in which the physicians coded incorrectly. From these coding "errors," the consultant restructured a fee slip to provide for more specific codes. This technique, said the CEO of the West Virginia group, is to help physicians use the CPT-4 codes more effectively and accurately, "which often means higher reimbursement."

Physicians and staff must become more meticulous in documenting all procedures performed. Also, instead of having the physician set the fee, staffers now set the fees. This has promoted uniform billing and prevented the physician's subjectivity toward the patient from affecting the fee.

The article also addresses to physicians a list of "common coding pitfalls to watch out for." It explained that stating diagnoses and using more specific codes and modifiers could help physicians avoid "pitfalls" in order "to maximize your coding potential."