

May 1995

# MEDICARE CLAIMS

## Commercial Technology Could Save Billions Lost to Billing Abuse







United States  
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Accounting and Information  
Management Division

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May 5, 1995

The Honorable Pete V. Domenici  
Chairman  
The Honorable James Exon  
Ranking Minority Member  
Committee on the Budget  
United States Senate

The Honorable Tom Harkin  
Ranking Minority Member  
Subcommittee on Labor, Health and Human  
Services, Education, and Related Agencies  
Committee on Appropriations  
United States Senate

Medicare is the nation's largest health insurer, serving almost one in every seven Americans. The Medicare program cost \$158 billion during fiscal year 1994 and is expected to rise to \$286 billion by 2000. Federal outlays for physician services and supplies—one category of Medicare spending—totaled almost \$36 billion in 1994. Given the magnitude of these outlays in a time of budgetary constraint, it is increasingly important to ensure that program funds are not lost to fraud, waste, or abuse. As we recently reported, the Medicare program is plagued by billing abuse due to inadequate funding for fraud and abuse prevention activities, uneven implementation of payment controls, and flawed payment policies.<sup>1</sup> Avoiding these preventable losses would help control Medicare costs without affecting beneficiary services or provider fees.

The Department of Health and Human Services' (HHS) Health Care Financing Administration (HCFA)—the agency responsible for administering Medicare—contracts with 32 insurance companies, called carriers, to process and pay claims for physician services and supplies. A key payment control these contractors use to prevent losses from fraud, waste, and abuse is claims processing computer systems that review claims before payment is authorized. One type of abuse these systems detect is called code manipulation; this occurs when providers submit claims containing an inappropriate combination of billing codes that can, if not detected and corrected, lead to overpayment for the services provided. Many private and some public insurers, following health

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<sup>1</sup>1995 High-Risk Series: Medicare Claims (GAO/HR-95-8, February 5, 1995).

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insurance industry best practices, use specialized commercial computer systems to detect these billing code abuses.<sup>2</sup>

This report responds to your request that we determine whether HCFA should use commercial systems to detect code manipulation rather than continuing to develop its own capabilities in this area.<sup>3</sup> Our objectives were to (1) determine whether commercially available code manipulation-detection systems can reduce Medicare costs, (2) evaluate whether HCFA's development approach is likely to generate savings comparable to that possible with commercial systems, and (3) assess whether commercial systems are cost effective.

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## Results in Brief

Based on a test in which four commercial firms reprocessed samples of over 200,000 paid Medicare claims, we estimate that commercial code manipulation-detection systems could have reduced federal outlays for physician services and supplies, on average, by \$603 million in 1993 and \$640 million in 1994. This represents about 1.8 percent of Medicare payments for such services and supplies, which is consistent with the actual savings achieved by private and public insurers that use commercial systems. Also, because beneficiaries are responsible for about 22 percent of the HCFA-authorized payment amount (in the form of deductibles and copayments), we estimate that they could have saved \$134 million in 1993 and \$142 million in 1994. The test results also indicate that only a small proportion of providers are responsible for most of the abuse: less than 10 percent of providers in the sample had a miscoded claim.

HCFA is enhancing its ability to detect code manipulation, however, our analysis shows that its efforts will not match commercial system capabilities or savings. One reason is that HCFA's approach does not address the types of abuse that accounted for about one-third of the losses commercial systems identified. In addition, the types of abuse that are being addressed will not be fully prevented. Because commercial firms specialize in developing computer systems to detect billing abuse, they are better equipped than individual insurers to develop effective code manipulation-detection capabilities. According to commercial firm officials, the cost to implement and operate commercial systems for 1 year

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<sup>2</sup>These specialized systems supplement rather than replace claims processing systems that perform other important functions, such as determining whether the patient is entitled to Medicare benefits and calculating deductible and coinsurance amounts.

<sup>3</sup>This report does not address other types of abuse, such as billing for inappropriate, unnecessary, or excessive services.

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would range between \$10 million and \$20 million for all 32 Medicare carriers.

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## Background

Authorized in 1965 under title XVIII of the Social Security Act, Medicare provides health insurance for about 33 million elderly people and about 4 million others with disabilities or end-stage renal disease. In fiscal year 1994, HCFA paid about \$100 billion for inpatient, home health, and skilled nursing care, and about \$57 billion for noninstitutional care. Noninstitutional care covers physician services and supplies (\$36 billion); and services at hospital outpatient facilities (\$13 billion), group practices (\$5 billion), independent laboratories (\$2 billion), and some home health agencies (\$120 million). Noninstitutional costs have increased more rapidly than inpatient hospital costs over the past decade, as health care services shifted from primarily an inpatient setting to outpatient and physician's office settings.

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## Physician Services and Supplies Vulnerable to Code Manipulation

Code manipulation is a problem that is faced by all health insurers. Medicare pays health care providers a fee for each covered medical service provided to eligible beneficiaries. Each service is identified using the American Medical Association's uniformly accepted coding system, called the Physicians' Current Procedural Terminology (CPT). Medicare and most private insurers have developed or license fee schedules that use CPT codes and their accompanying narrative descriptions as the basis for paying providers.

However, because the coding system is complicated, providers and insurers often have difficulty identifying the codes that most accurately describe the services provided. The coding system is difficult to use because it attempts to identify codes for all accepted medical procedures, including codes to describe minor procedures that are components of more comprehensive procedures. Payment policies add to the difficulty. For example, the fee for surgery often includes the cost of related services for the global service period, that is, for a set number of days before and after the surgery. To prevent overpayment in these cases, insurers need to identify when claims for surgery include codes that represent related services and reduce the payment accordingly. It is also difficult for providers and insurers to maintain proficiency in proper coding practices because a substantial number of the codes are changed each year.

These complexities can inadvertently lead providers to submit improperly coded claims. They also make insurers vulnerable to abuse from providers or billing services that<sup>4</sup> attempt to maximize reimbursements by intentionally submitting claims containing inappropriate combinations of codes. HCFA has implemented and communicated policies that prohibit common abuses such as unbundling, global service period violations, duplicate procedures, and inappropriate use of assistant surgeons. Table 1 defines these categories of abuse.

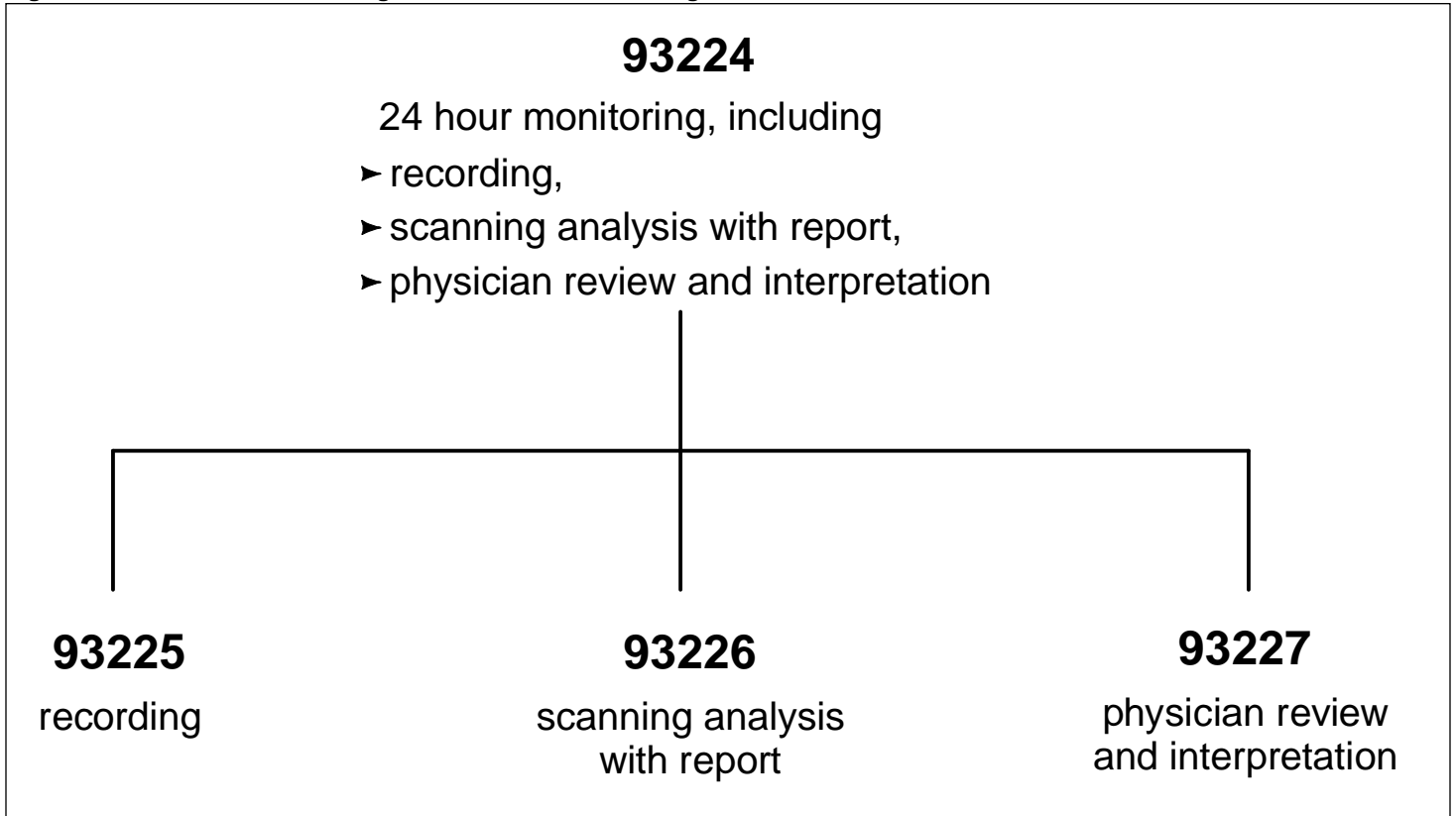
**Table 1: Categories of Abuse**

<b>Category</b>	<b>Description</b>
Unbundling	Billing for two or more codes to describe a procedure when a single, more comprehensive, code exists that accurately describes the procedure
Global service period violations	Billing for a major procedure—such as surgery—and related procedures, when the fee for the major procedure already includes the fee for related procedures provided during a predefined time period (the global service period)
Duplicate procedures	Billing for the same procedure twice although it was only provided once
Unnecessary assistant surgeon	Billing for an assistant surgeon when an assistant was not warranted

Unbundling is a common type of abuse. Figure 1 illustrates how unbundling can lead to overpayment for an electrocardiogram. Using this illustration, a provider would be overpaid if HCFA paid for both the comprehensive service (93224) and one or more of its component parts (93225, 93226, or 93227). Overpayment occurs because the fee for performing the comprehensive service already includes the value of the component parts of the service. A provider would also be overpaid if HCFA paid for all three individual components instead of the less expensive comprehensive procedure, an unbundling practice called fragmentation.

<sup>4</sup>Many providers use commercial firms, called billing services, to prepare their claims.

Figure 1: Structure of CPT Coding Scheme for Electrocardiogram



This illustration can also be used to describe duplicate procedures. A provider would be overpaid if HCFA paid twice for this service on the same day because the fee for the service covers a 24-hour period.

**Computer Systems Being Used to Detect Abuses**

Due to the large number of claims processed by Medicare carriers—about 500 million claims for physician services and supplies in 1993—and the complexity of the coding system and payment policies, it is not feasible for carrier staff to detect code manipulation by manually examining claims. To implement controls to prevent these abuses, HCFA has directed its carriers to develop computer programs that (1) detect each type of abuse and (2) automatically adjust the payment. HCFA also provides carriers with the specific code combinations that should not be accepted and directs carriers to incorporate the list in their computer systems.

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Because insurers have found it difficult to develop and maintain the specialized capabilities required to detect code manipulation on their own, commercial firms have developed and now market systems that focus on detecting this type of abuse. The complex analysis needed to quickly and accurately (1) detect the numerous code combinations that could result in overpayment, and (2) calculate the proper payment, requires sophisticated computer programs.

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## Scope and Methodology

To determine whether commercially available code manipulation-detection systems would save money, we conducted a controlled test by having four commercial firms reprocess statistically valid samples of over 200,000 claims. Each sample included claims for about 24,000 beneficiaries that had been paid by Medicare during the first 9 months of 1993, the most recent period for which data were available at the time of our review. We controlled the test by ensuring that each system's capabilities were limited to detecting billing code abuses using CPT codes that were valid in 1993. The systems did not, however, exactly match HCFA's current code manipulation-detection rules because we wanted to compare Medicare to private industry practices. We also verified the test results by independently reviewing a random sample of claims each firm identified as having been overpaid. We confirmed that the adjustment made to each claim followed the appropriate system rule and that the rule was supported by medical documentation. The scope of our test was limited to the \$36 billion portion of the program that covers the cost of physician services and supplies.

To evaluate whether HCFA's current development approach would match commercial system savings, we interviewed responsible HCFA officials and reviewed documents describing HCFA's approach, scope, and methodology. We also reviewed documents describing HCFA's preliminary results. We compared these preliminary results to existing commercial capabilities. To assess the cost-effectiveness of commercial systems, we interviewed commercial firm officials who provided cost estimates. We validated the reasonableness of each estimate by comparing it to the cost estimate developed by a federal agency that recently decided to implement a commercial system. We also obtained oral comments on a draft of this report from the Deputy Directors of HCFA's Bureau of Program Operations and Bureau of Policy Development. Their views are summarized in the Agency Comments and Our Evaluation section of this report. Our work was performed at HCFA headquarters in Baltimore, Md.; various Medicare carriers; and offices of the four commercial firms from February 1994



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through April 1995 in accordance with generally accepted government auditing standards. Appendix I includes a detailed discussion of our scope and methodology.

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## Commercial Systems Could Save Over \$600 Million a Year

HCFA could save over \$600 million annually by using commercial systems to detect code manipulation. Also, beneficiaries would save over \$140 million a year. Although losses are substantial, less than 10 percent of the providers in our sample had one or more miscoded claims. Unbundling and global service period violations made up 93 percent of the potential savings. According to several private and public insurers who use commercial systems, our overall savings estimate is comparable to the savings they have actually achieved with commercial systems.

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## Test Results

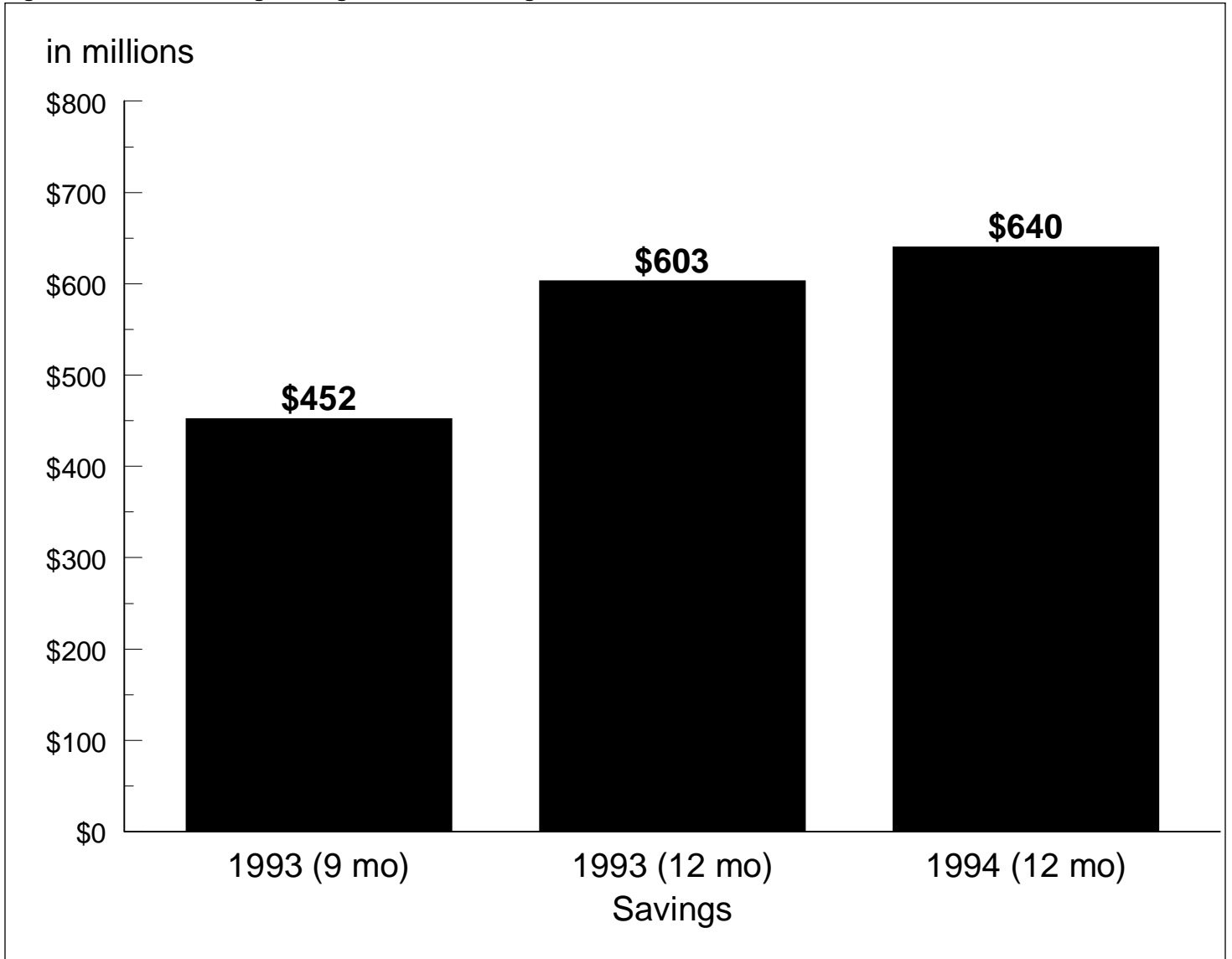
Based on a controlled test conducted by four firms, commercial systems could have reduced costs for physician services and supplies, on average, by about \$452 million during the first 9 months of 1993, or about 1.8 percent of outlays for those services.<sup>5</sup> Extrapolating from those results, figure 2 shows that HCFA could have saved about \$603 million in 1993 and about \$640 million in 1994.<sup>6</sup> Appendix II identifies the participating firms.

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<sup>5</sup>The number of claims included in our sample allows us to be 95 percent confident that actual savings would have been within 5 percent of our estimate.

<sup>6</sup>We believe that our calendar year estimates reasonably approximate the extent of losses that occurred because HCFA did not significantly strengthen its controls during this time. We also compared 11 different claim characteristics, by carrier, to ensure that claims processed during the last 3 months of 1993 had the same characteristics as the claims in our sample. We found no significant differences. This allows us to be confident that seasonal changes, such as (1) a possible shift in the beneficiary population to the South or (2) changes in the types of medical services provided during the last quarter of the year, would not affect the extent of abuse.

Figure 2: Estimated Average Savings for Medicare Program



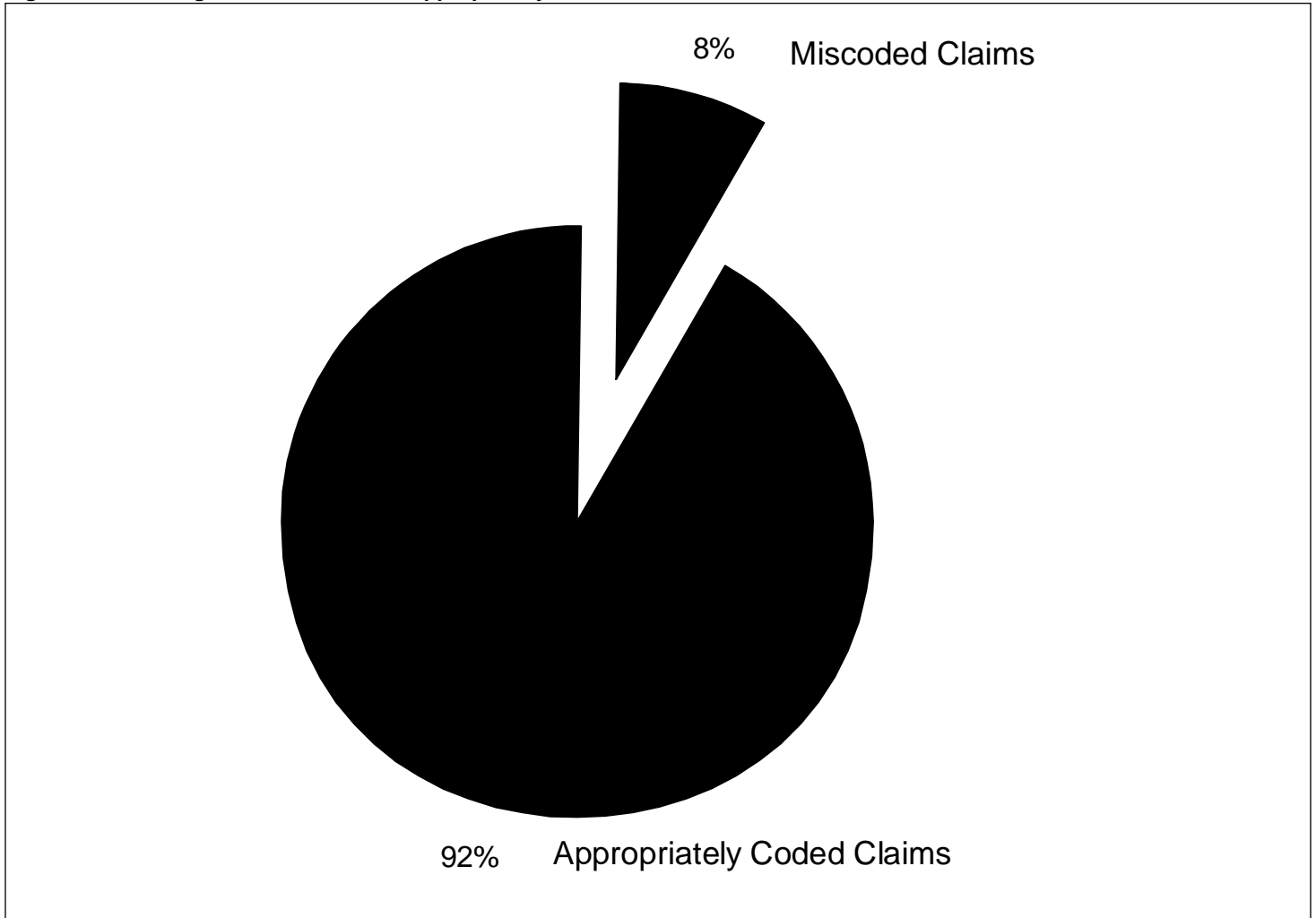
The savings estimates for the four firms were reasonably consistent, ranging between 1.4 and 2.2 percent of outlays. Medicare beneficiaries would have saved \$100 million during the first 9 months of 1993, which extrapolates to \$134 million in 1993 and \$142 million in 1994.

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Savings would vary from our estimate for several reasons. First, savings could be diluted somewhat by the results of provider appeals to have payment reductions reconsidered. For example, some adjustments will be due to coding errors which, when corrected, would result in payment. On the other hand, it is likely that commercial systems would generate more savings than identified through the narrowly defined scope of our test. To ensure that savings were not overstated, we did not test some features of commercial system that are designed to generate savings. These features include (1) ensuring that procedures are appropriate to the beneficiary's age and sex and (2) analyzing historical claims to identify patterns of coding abuse.

Although the potential savings are large, 92 percent of the providers in our sample billed correctly. Only 4 percent of the claims reviewed by the four commercial firms required adjustment. As shown in figure 3, fewer than one in 12 providers had one or more claims adjusted by the commercial systems. This is an important fact because, since most providers bill correctly, most would not be affected by better controls to identify these abuses.

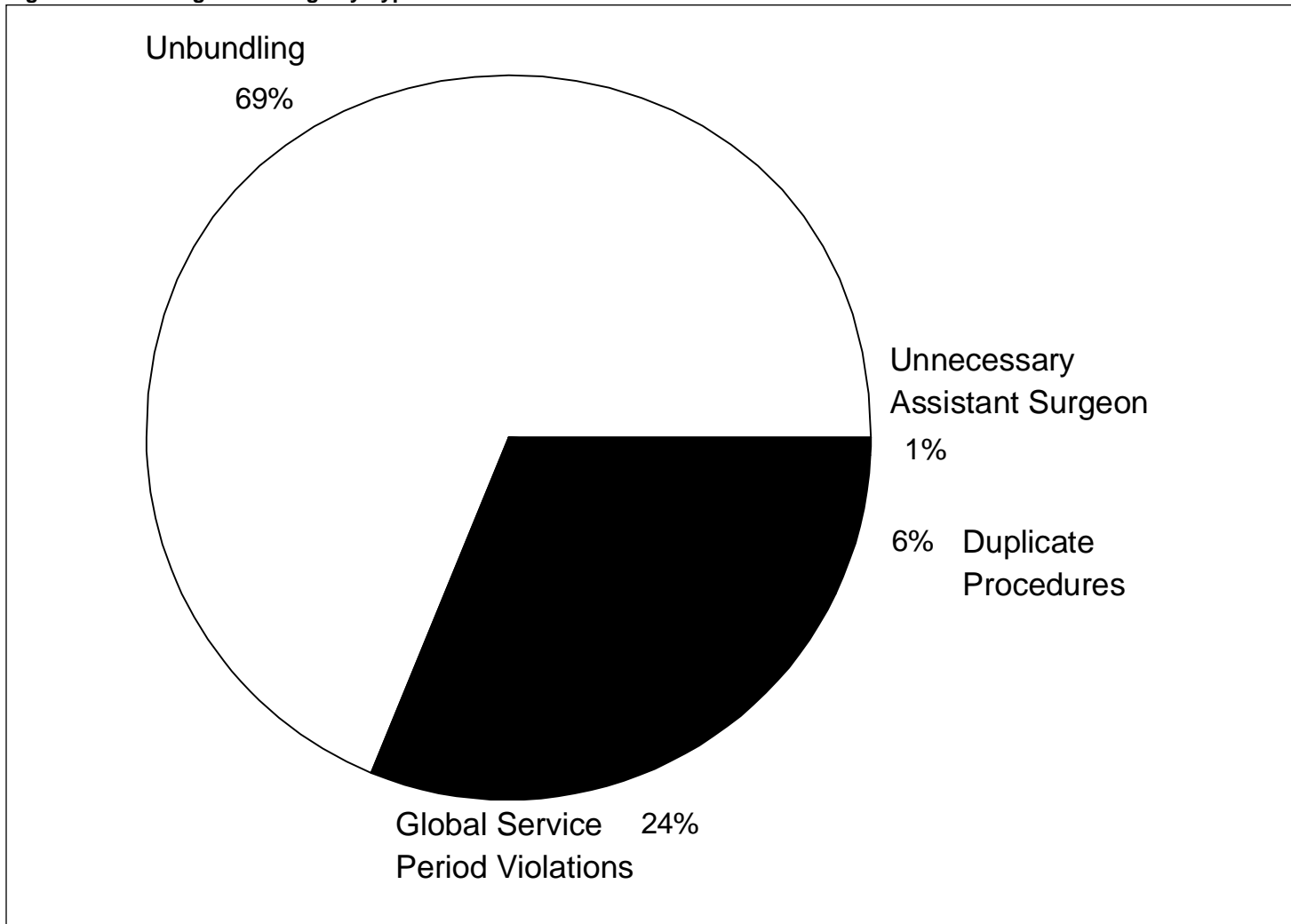
Figure 3: Percentage of Providers With Appropriately Coded and Miscoded Claims



**Types of Abuse Detected**

The commercial systems found abuse in each of the four categories. Two categories, unbundling and global service period violations, accounted for 93 percent of the savings in the claims sample. Figure 4 shows the proportion of savings in sampled claims by abuse type from two of the commercial firms. These were the only firms that categorized savings by abuse type.

Figure 4: Percentage of Savings by Type of Abuse



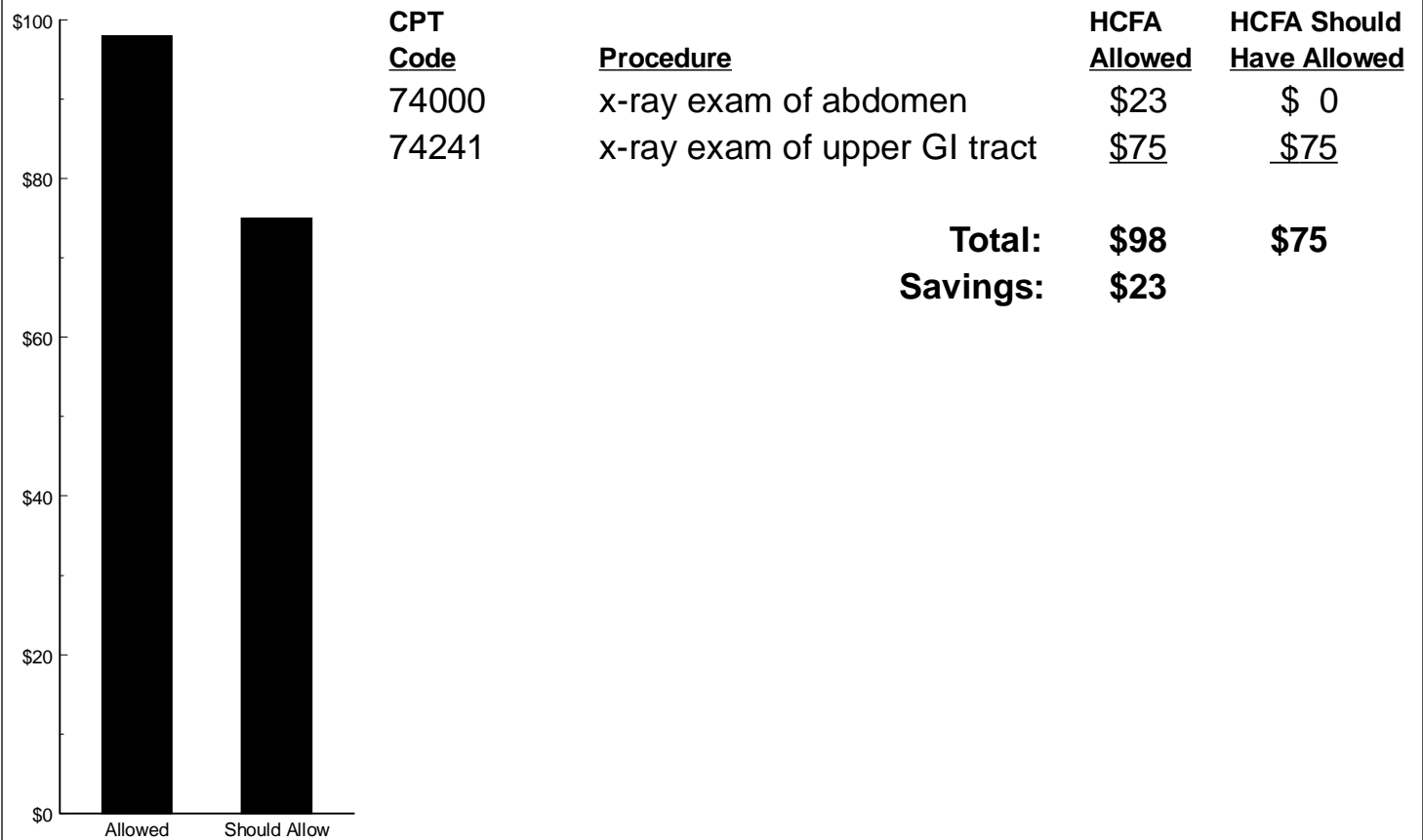
The following examples, drawn from the sampled claims, illustrate (1) the numerous and complex ways that procedure codes can be manipulated to increase reimbursement and (2) the difficulty involved in detecting abuse. To protect against these abuses, computer systems must quickly compare millions of possible code combinations that can be abused.

Unbundling includes several related abuses. Simple unbundling occurs when a provider charges a comprehensive code as well as one or more component codes. Because thousands of comprehensive codes exist with

one or more component codes, numerous combinations of comprehensive and component codes can be submitted on a claim. To identify unbundling, the computer must be able to determine whether each code submitted is a component of one or more comprehensive codes. Figure 5 shows how an x-ray examination was unbundled.

**Figure 5: Example of Unbundling**

A physician was paid for two x-ray exams of the abdominal region on the same date of service. According to CPT code descriptions, the x-ray of the upper gastrointestinal tract includes the x-ray of the abdomen.

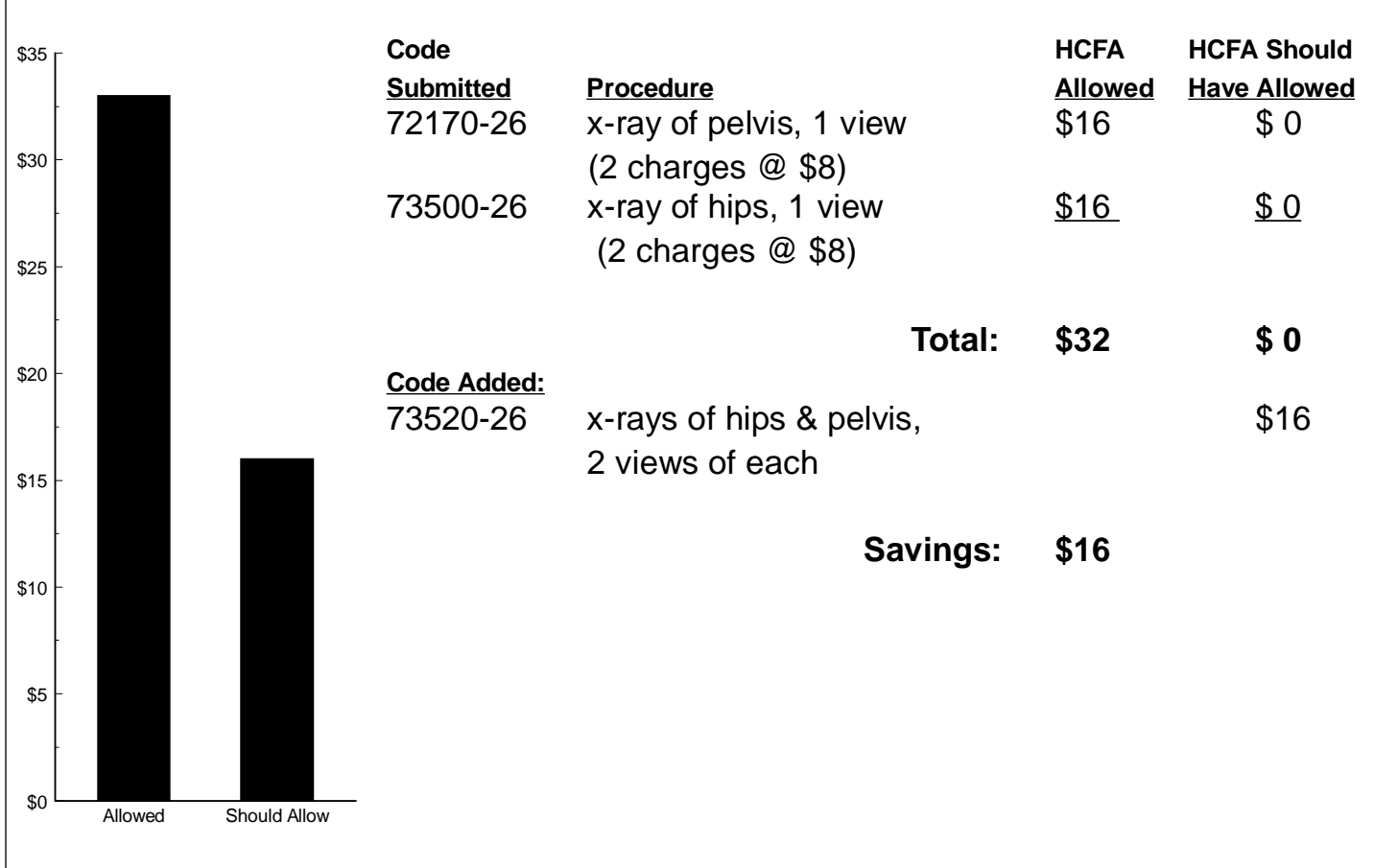


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Fragmentation is a more complex and difficult-to-detect form of unbundling. In this case, the provider bills for several component codes instead of the more comprehensive code, which is normally less expensive than the sum of the individual components. These abuses are difficult to detect because the computer must be able to recognize which combinations of component procedures equal a comprehensive procedure and then substitute a new code that was not included on the original claim. Figure 6 shows how an x-ray examination was fragmented.

**Figure 6: Example of Fragmentation**

A physician was paid for interpreting two x-rays of the pelvis and two x-rays of the hip. According to CPT code descriptions, there is a more comprehensive CPT code -- 73520 -- that describes the four separate procedures as one.



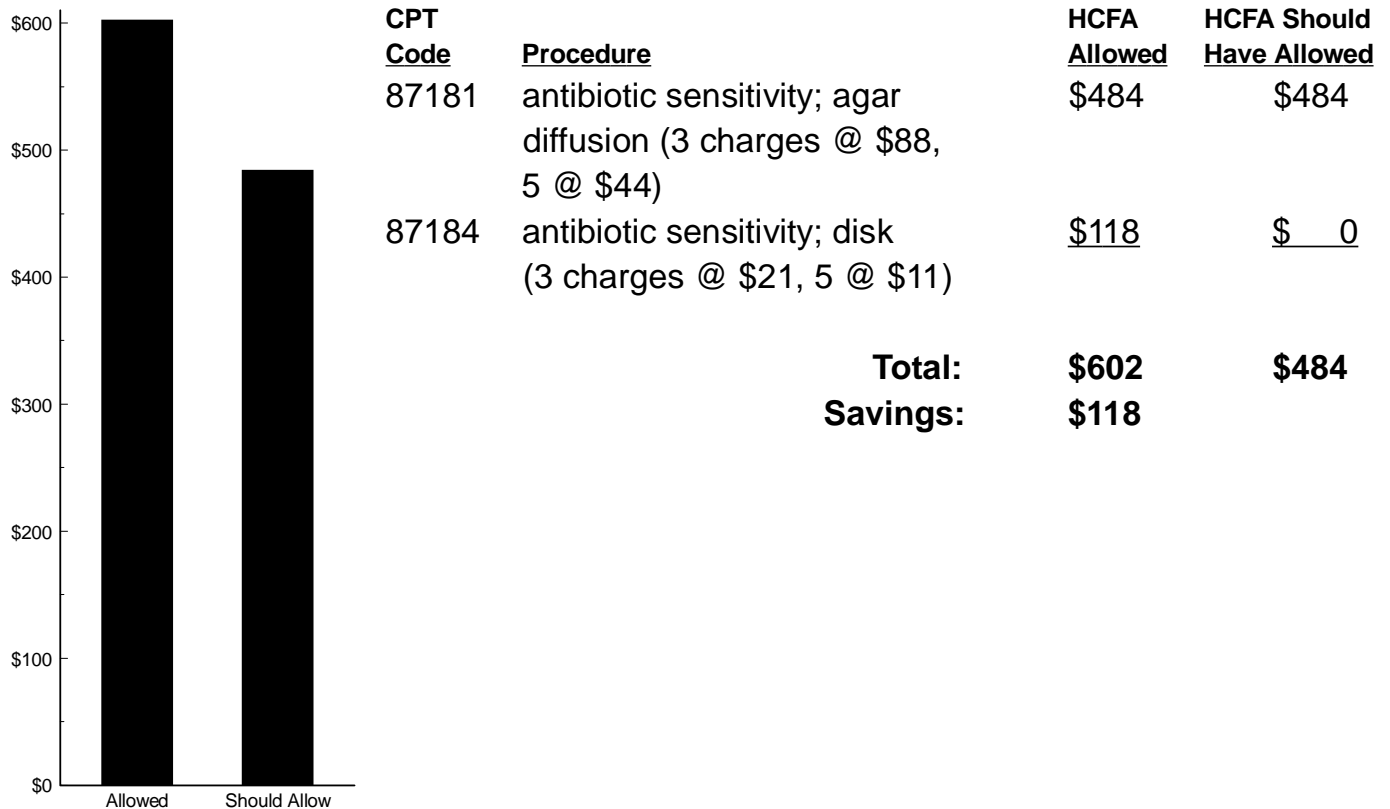
Mutually exclusive procedures—another form of unbundling—are those that are either impossible to perform together or, by accepted clinical practice standards, should not be performed at the same time. There are, however, caveats since, in some cases, a physician may try one approach and in mid-operation decide on another approach. The accepted payment practice in such circumstances is to pay for the more clinically intense procedure, not for both. To detect these abuses, the computer must be



able to recognize which combinations of procedures either (1) should not be performed together or (2) represent alternative approaches to deal with the same problem. Figure 7 shows mutually exclusive laboratory tests.

**Figure 7: Example of Mutually Exclusive Procedures**

A physician was paid for two different antibiotic sensitivity tests which use different methods to achieve the same objective -- determining how effective an antibiotic is in treating the patient's bacterial infection. These two procedures, therefore, are considered to be mutually exclusive of each other. The physician billed this way eight different times.

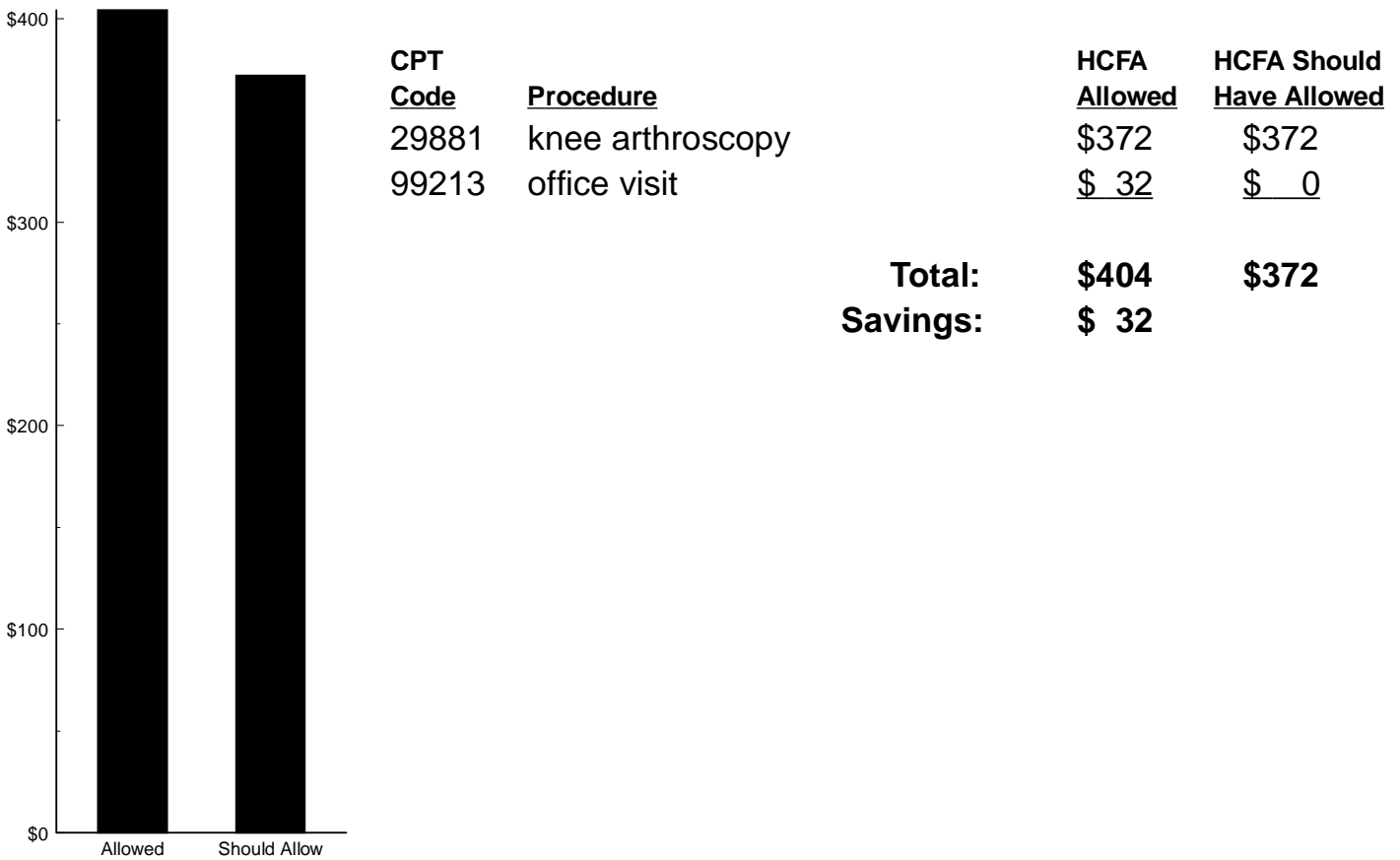


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Global service period violations are possible because the fee for most surgery includes all related services for a set number of days before and after the surgery. Detecting these abuses can be difficult because the computer must be able to determine which services are related to the surgery and which are not. Figure 8 shows a global service period violation.

**Figure 8: Example of Global Service Period Violation**

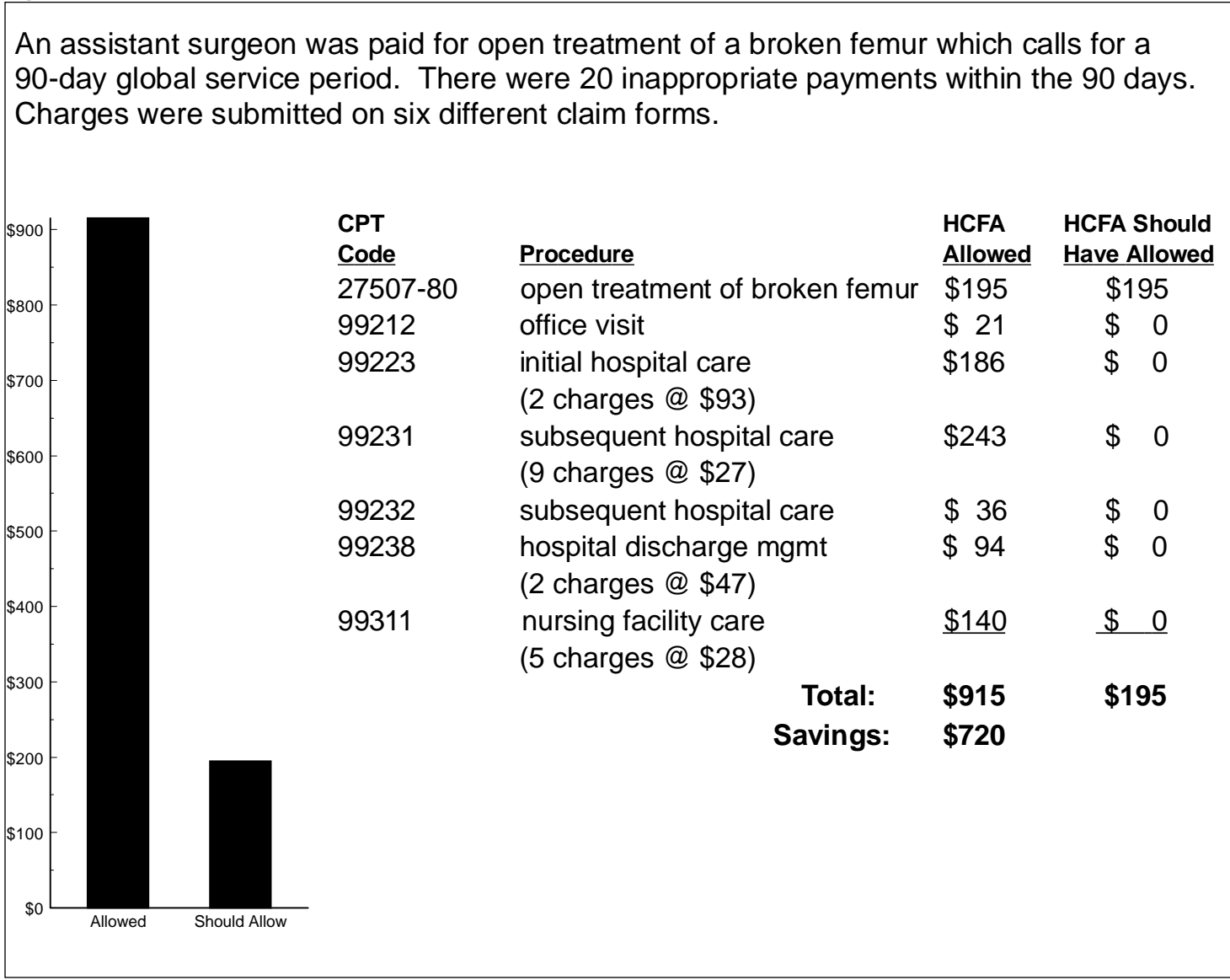
A surgeon was paid for an office visit the day before a major surgical procedure. This visit should not have been paid because the fee for the surgery includes related services provided on the day before the surgery.



The difficulty in detecting global surgery violations is compounded when services are rendered by more than one provider. HCFA payment policy allows the fee to be divided, but does not allow the total payment to exceed the global fee. Figure 9, shows a case in which, because an assistant surgeon was involved, the computer must keep track of charges

being made by the assistant to prevent overpayment. In addition to the payments made to the assistant, a surgeon who performed the operation was paid \$1,219, which includes the value of related services during the global period.

**Figure 9: Example of a Global Service Period Violation**



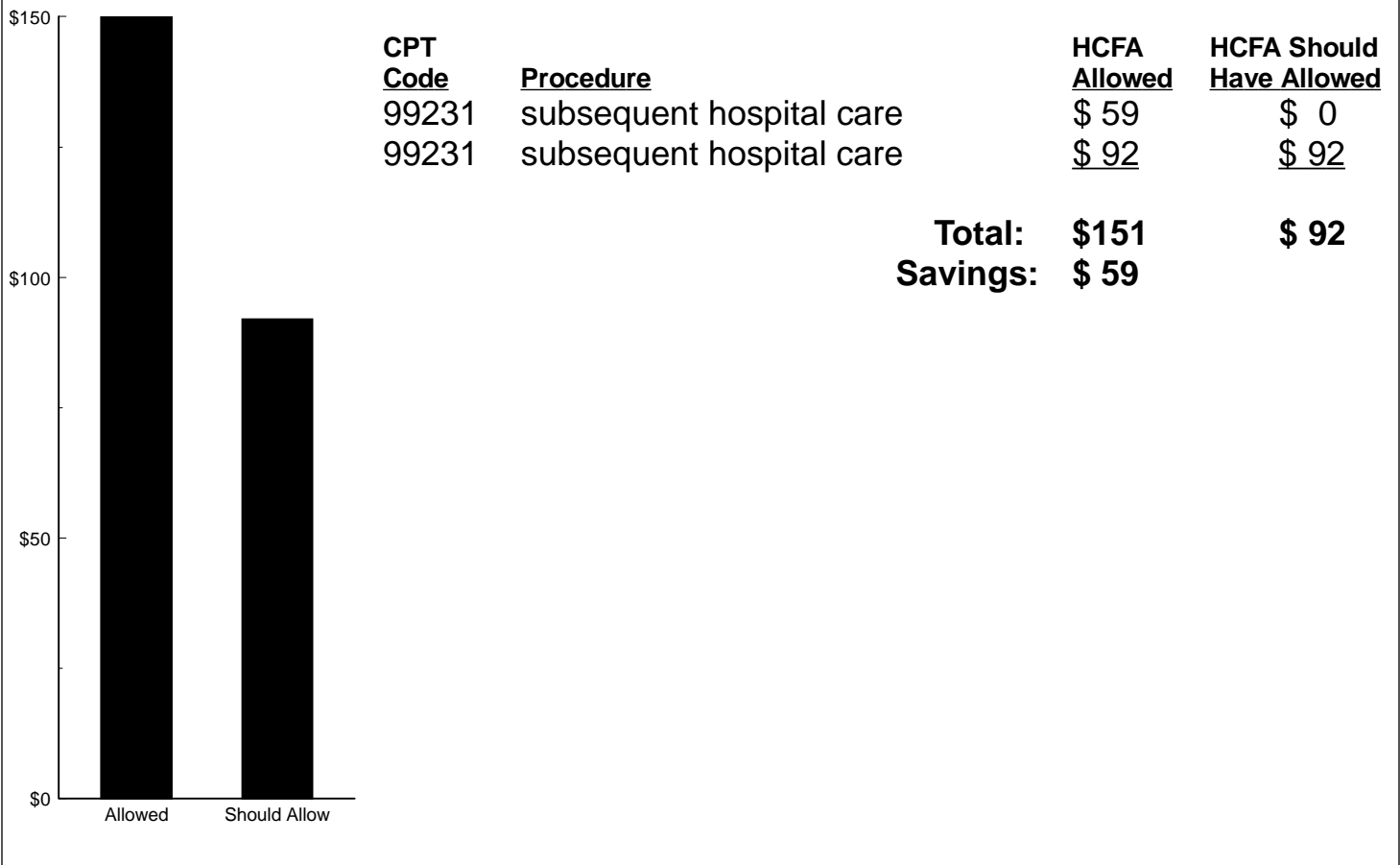
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A HCFA official told us that this example does not reflect existing HCFA payment policy. According to this official, when an assistant surgeon is involved, HCFA allows the assistant to be paid for services that would normally be included in global fee. However, even if HCFA policy allows these payments, the key point illustrated above is that HCFA is losing money by not enforcing global service fee periods for assistant surgeons, as is done in the private sector.

Duplicate procedures also exist in several forms, some of which can be difficult to detect. Simple or exact duplicate procedures involves charging for the same procedure twice when it was only provided once. Even simple duplicate procedures are not always easy to detect because it is sometimes appropriate to pay more than once for the same service on a single day. Therefore, the computer must be able to distinguish between codes that should and those that should not be paid for more than once in a single day. Figure 10 shows duplicate hospital care services.

**Figure 10: Example of Duplicate Procedures—Same Physician, Same Day, Same Site of Care**

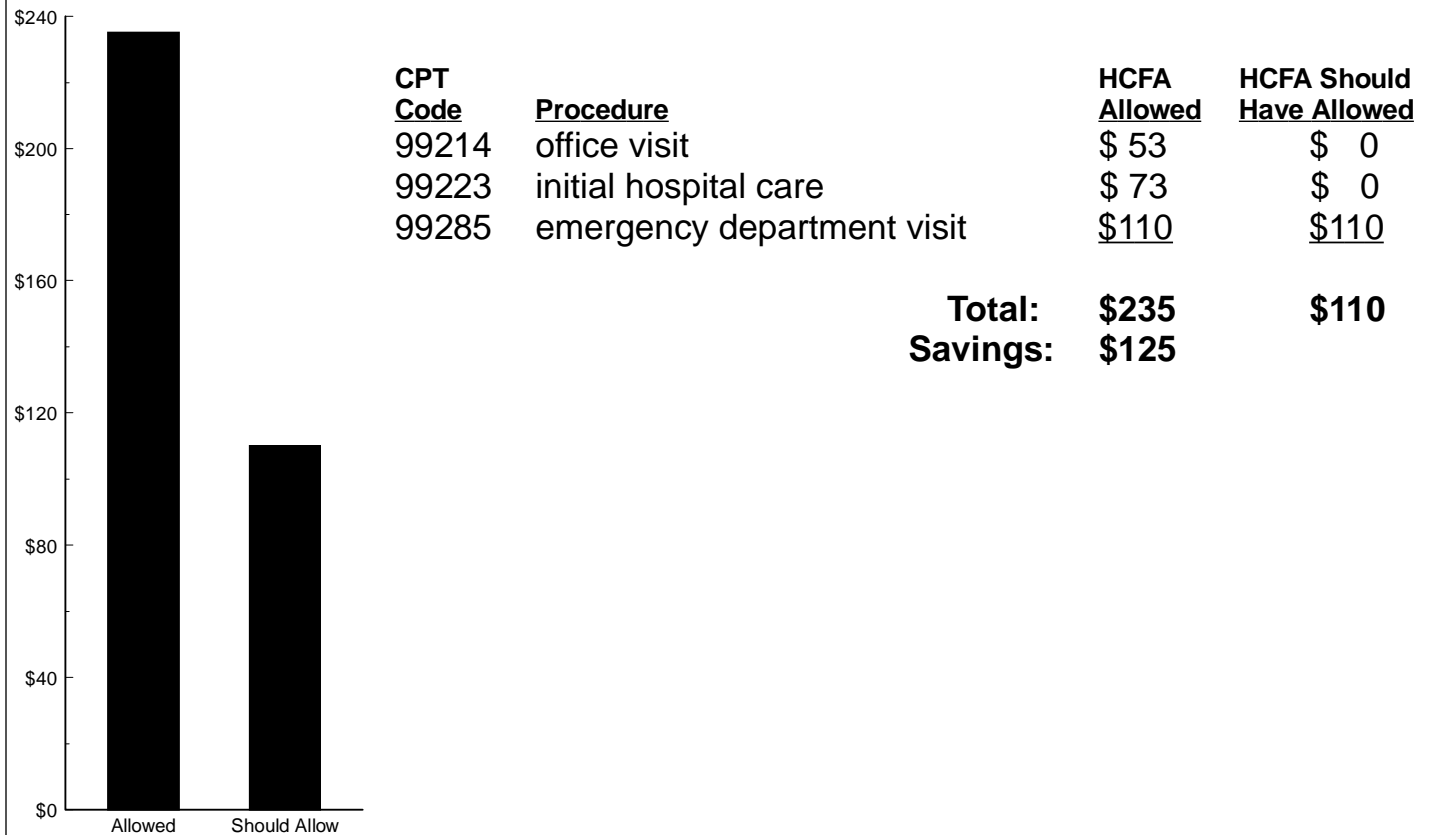
A physician was paid twice for the same procedure -- subsequent hospital care. One claim covered 3 days and the second covered 2 days. The physician was entitled to receive payment for 3 days of care.



Similarly, some procedures cover all services rendered regardless of where the services were provided. Figure 11 illustrates an example of duplicate procedures by charging for the same service provided three times at three different sites of care.

**Figure 11: Example of Duplicate Procedures—Same Physician, Same Day, Different Site of Care**

A physician was paid for 3 separate encounters with a patient for the same day of service for the same condition -- atrial fibrillation -- irregular contractions of the heart. Medicare allows a physician to only be paid for one visit per date of service if all encounters are for the same or related condition, except for critical care services. The charges were billed on three separate claim forms.



**Private and Public Insurers Confirm Commercial System Savings**

Commercial systems are widely used by private and public insurers. Officials we surveyed from both private and public insurers were satisfied with the benefits—both monetary and nonmonetary—generated for their companies by using commercial systems to detect code manipulation. All of the officials also said that Medicare would benefit from using commercial systems.

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Almost 200 private insurers now use commercial systems to detect code manipulation, including 13 of the 20 largest. In addition, several public insurers, such as state Medicaid agencies and Medicare contractors who provide services to beneficiaries enrolled in managed care plans use commercial systems.<sup>7</sup> The Department of Defense's Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), which provides health insurance to dependents of military personnel, has also contracted to use a commercial system. Although 16 of the 32 Medicare carriers use these systems to process claims for their private businesses, none uses a commercial system for its Medicare claims because HCFA directs them to implement HCFA-developed controls.

We contacted 11 officials from private and public insurers that use commercial systems. All of the officials stated they realized substantial savings, although the benefits varied according to how each insurer modified the system and how each estimated savings. Six insurers stated that their savings ranged from 1 to 2 percent of claims payments.<sup>8</sup> The CHAMPUS program, which generally follows Medicare payment restrictions, recently had one commercial firm test a sample of claims. The firm identified potential savings totaling about 2 percent—similar to our estimate of potential Medicare savings.

The officials also cited other benefits of using commercial systems. Nine officials stated that commercial systems provided a clinically sound method for reviewing claims to detect code manipulation. That is, because the systems were developed with the support of physicians, coding determinations are closely tied to CPT code descriptions, and the input from practicing physicians prevents the systems from denying claims for strictly administrative reasons that do not make sense in patient treatment. Two officials added that the commercial firms provide good customer service and support in explaining coding adjustments to providers. One noted that standardized explanations helped providers understand why code determinations were made, reducing the number of appeals. Four officials cited the ability to easily modify the system to fit their unique requirements as another benefit. Four officials said commercial systems also provided more consistent application of rules by eliminating human intervention and judgment.

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<sup>7</sup>Medicare contracts separately for services to beneficiaries who are enrolled in managed care plans. These "risk" contractors agree to provide care to beneficiaries at a fixed fee. Several risk contractors use commercial code manipulation detection systems to control their costs.

<sup>8</sup>The remaining insurers' estimates were not useful as comparisons because they involved estimates of annual monetary savings or of the number or percentage of claims that were adjusted.



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## HCFA's Development Approach Will Not Yield Comparable Savings

HCFA's internal effort to better detect these abuses will not match commercial systems' capabilities or savings. A primary reason is that HCFA is not addressing the types of abuse that accounted for about one-third of the savings identified by commercial firms. HCFA also will not match commercial systems' ability to detect unbundling. Commercial firms are better able to develop code manipulation-detection capabilities than individual insurers because they profit by excelling in their specialty—helping insurers detect billing abuses.

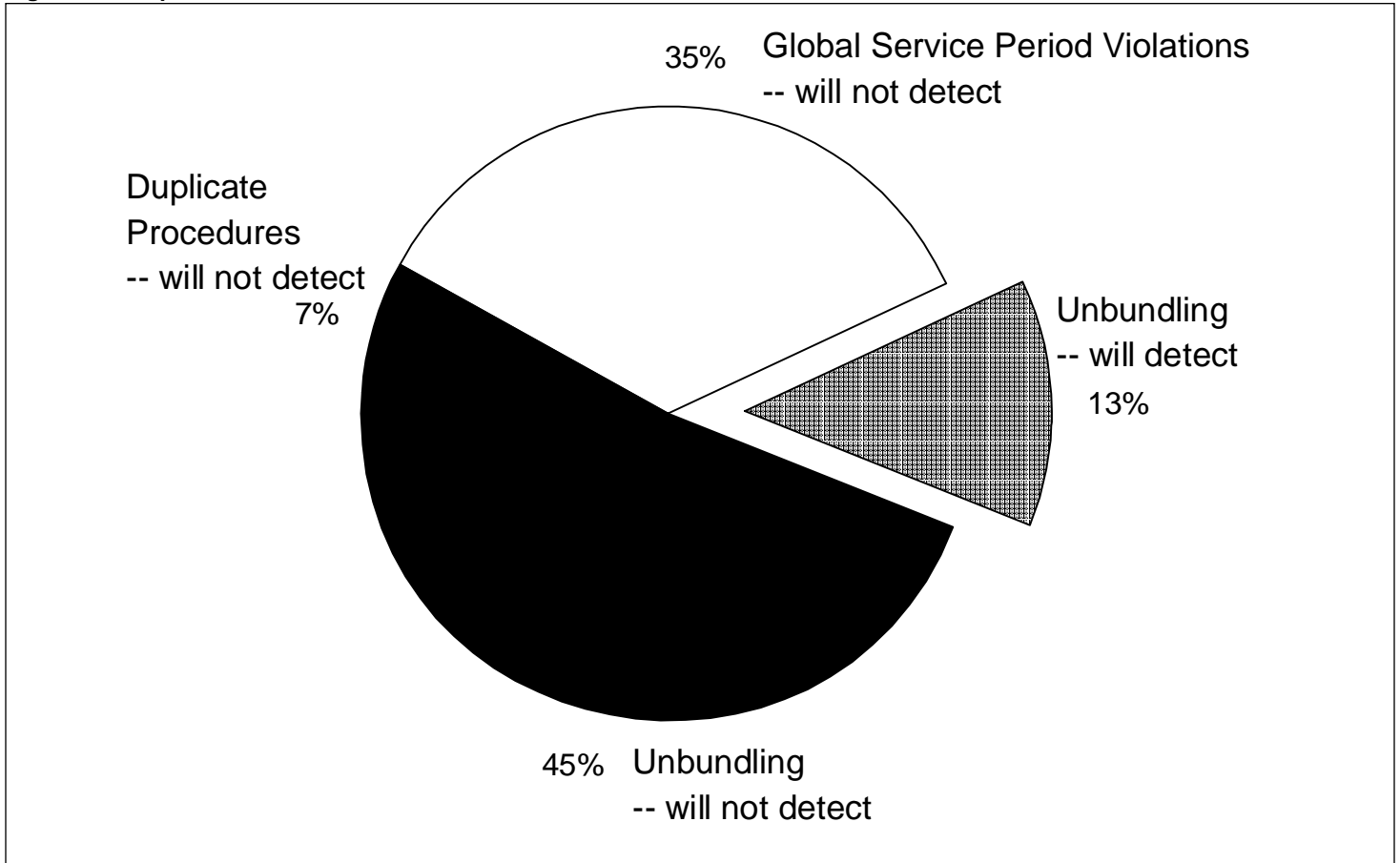
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## Scope of HCFA's Initiative Limits Potential Benefits

In August 1994, HCFA awarded a contract to strengthen its ability to identify unbundling. HCFA's contractor recently identified about 40,000 codes that should be denied when submitted with a another code. After review by medical societies and final approval by HCFA, the new code combinations will be incorporated in carrier claims processing computer systems by the end of this October. However, HCFA's contract does not address two other types of abuse subject to significant losses. Our test results show that significant amounts of global service period violations and duplicate billing are not detected by HCFA carriers. These abuses accounted for about 30 percent of the losses identified in the sample of claims tested by the two commercial firms that categorized savings by type of abuse.

Further, HCFA's contract will not fully correct unbundling deficiencies. In contrast to the 40,000 inappropriate code combinations identified by HCFA's contractor, commercial systems are designed to analyze millions of potential combinations of component and comprehensive codes. To estimate the extent to which HCFA's approach would correct the unbundling deficiencies identified by commercial systems, we compared HCFA's proposed code combinations to faulty claims identified by one commercial firm. First, we identified all inappropriate code combinations detected for a sample of 50 beneficiaries. We then compared these problem codes to HCFA's proposed new code combinations. As shown in figure 12, HCFA's proposed improvements would not have identified any global surgery or duplicate claims. In addition, of 57 unbundled codes identified by the commercial firm, HCFA's proposal would have identified only 13.

Figure 12: Proportion of Abuses Correctable Under HCFA Effort



**Commercial Firms Have an Advantage**

Because commercial firms focus on developing systems to detect code manipulation, and do so as a business concern in a competitive market, they are better equipped to develop effective capabilities than are individual insurers. Commercial firms invest significant full-time resources to identify the relationships among numerous codes and code combinations that are subject to abuse. Commercial firms have multiple physicians on staff and a network of board-certified consulting physicians in specialty areas to analyze all codes and code combinations. Commercial firms also employ computer professionals to develop efficient systems to detect code manipulation. In contrast, HCFA has invested limited resources to identify the numerous codes that can be abused. HCFA's contract called for a single physician and limited support staff to identify new inappropriate code combinations. The contract does not call for any activity to improve computer system capabilities.

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Commercial firms are also better able to maintain up-to-date capabilities, compared with HCFA's development schedule. Maintaining up-to-date abuse-detection capabilities is difficult because a substantial number of procedure codes change each year. The firms received the revised CPT code manual in October 1994 and all provided their customers with system changes that incorporated new code combinations this spring. In contrast, the code combinations identified by HCFA's contractor will not be implemented by Medicare until October 1995—6 months behind the commercial systems. Unless HCFA changes its contract schedule, subsequent changes to maintain current code manipulation-detection capabilities will be similarly delayed.

Commercial firms are also better positioned to develop product improvements to counter new types of abuse because they interact with a large number of insurance clients who demand new capabilities to control newly detected abuses. To remain competitive, commercial firms have an incentive to respond quickly. They do so by issuing annual product improvements. According to one firm, a customer recently identified a potential new abuse: an increasing number of childbirth claims included charges for such physical therapy services as whirlpool baths and massages. Because childbirth is covered under a global service period, related services should not be charged separately. Although the firm's system checked services related to childbirth, it did not check for physical therapy services. The firm's officials explained that the customer added physical therapy services to the system's childbirth checks. The firm is now analyzing claims data and medical literature related to physical therapy and childbirth to determine whether similar checks should be added to its standard system.

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## Commercial Systems Are Cost-Effective

Potential savings of over \$600 million a year, compared with acquisition costs of about \$20 million, make commercial systems a highly cost-effective investment. The four firms that participated in our test estimate that the cost to implement and operate a commercial system for 1 year would range from \$10 million to \$20 million at all 32 Medicare carriers. The actual cost would be subject to formal bids and negotiations with interested firms. One reason for the wide range in estimates is uncertainty about the technical requirements to implement a commercial system with existing carrier computer systems. The \$20-million estimate anticipates unknown problems in attempting to implement a commercial system with the seven different claims processing systems currently used by Medicare carriers.

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The experience of the CHAMPUS program lends credence to commercial firm estimates and the caution that unanticipated problems could occur. CHAMPUS uses five contractors to process its claims. CHAMPUS officials told us that they estimate the annual cost to license and implement a commercial system at all five contractor locations will be under \$2 million. They also noted that careful planning is appropriate because implementation difficulties can occur. The CHAMPUS program encountered unanticipated delays implementing a commercial system. According to program officials, the agency needed to change existing claims processing systems and the commercial system more than expected. These officials stated, however, that implementation delays could be avoided by fully analyzing the required changes when evaluating commercial systems.

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## Conclusions

Fraud, waste, and abuse are problems faced by all health insurers. HCFA, as the agency responsible for administering the nation's largest insurance program, could have been a leader in implementing effective payment controls to prevent losses to billing abuse. However, HCFA has not kept pace with private industry's use of advanced information technology to detect code manipulation, one common form of abuse. As a result, over half a billion dollars is being wasted each year. HCFA's internal efforts to develop code manipulation-detection capabilities are limited and will not fully stem losses from these abuses.

HCFA could benefit from the experiences of private and other public insurers who have turned to commercial systems to enhance their ability to control costs by avoiding payments for faulty claims. Such systems provide a more comprehensive ability to protect Medicare funds. In an era of reinventing government initiatives, existing agency perceptions of opportunities and limitations must be reexamined; bold ways to better accomplish missions and protect government resources can be identified. Acquiring commercial systems represents such bold thinking, and provides an efficient and cost-effective way to reduce Medicare program losses substantially.

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## Recommendations

To better protect Medicare funds from losses due to code manipulation, we recommend that the Secretary, HHS, direct the Administrator of HCFA to require Medicare carriers to use a commercial system to detect code manipulation when processing Medicare claims for physician services and supplies.

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## Agency Comments and Our Evaluation

Senior HCFA officials provided oral comments to our draft report. These officials stated that HCFA supports the use of modern information technology to strengthen payment controls. They also stated that HCFA will fully analyze the feasibility of using commercially available code manipulation-detection software to process Medicare claims.

The officials cautioned, however, that HCFA has a responsibility as a public agency to resolve three important issues before requiring carriers to implement commercial technology. First, to ensure that commercial systems adjust claims appropriately, HCFA needs assurance that commercial system rules match or can be modified to match Medicare payment policies. Second, to ensure that physicians and other affected parties have an opportunity to provide comments on Medicare policies, HCFA needs to determine the extent to which commercial firms would be willing to disclose information about their systems. Third, HCFA needs to analyze the cost and technical feasibility of implementing commercial systems with existing carrier claims processing systems. These officials noted that HCFA has scheduled briefings with each firm to begin addressing these issues.

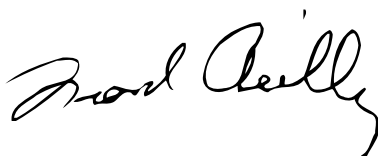
We believe these issues can be resolved. First, commercial firm officials told us that their systems are designed to be easily customized to implement different payment policies. This would also give HCFA the opportunity to reassess its current payment policies when analyzing commercial system capabilities. As noted in this report, a HCFA official indicated that a global surgery period overpayment detected by one commercial firm would not be prevented under current HCFA payment policies. Second, although commercial firm officials consider the details of their computer systems to be proprietary, and not publicly releasable, they told us that within certain parameters, HCFA could obtain input from affected parties. Accordingly, HCFA could continue to release Medicare payment policies and detailed examples of the types of code combinations that are inappropriate based on the policies. Third, as pointed out in this report, the estimated cost to implement commercial systems is from \$10 million to \$20 million. Regarding technical feasibility, commercial firm officials told us that their systems are designed to operate with a wide variety of claims processing systems and to be easily installed. This capability is illustrated by the fact that commercial systems are widely used by private insurers.

HCFA officials also expressed concern that we did not fairly portray HCFA efforts to prevent billing abuse, including code manipulation. They stated

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that HCFA has made significant progress in deterring abusive billing, citing efforts to implement physician payment reforms, including regulations to standardize payment rules and strengthen controls to prevent global surgery period violations. While we applaud these efforts, our test results show that commercial systems provide an opportunity to further strengthen HCFA's ability to deter these abuses.

We are sending copies of this report to the Secretary of HHS, the Administrator of HCFA, the Office of Management and Budget, and Medicare carriers. Copies also will be made available to others upon request. This report was prepared under the direction of Patricia T. Taylor, Associate Director, Information Resources Management/Health, Education, and Human Services. If you have any questions regarding this report, you can contact me at (202) 512-6252 or her at (202) 512-5539. Other major contributors are listed in appendix III.



Frank W. Reilly  
Director, Information Resources Management/  
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**Abbreviations**

AIMD	Accounting and Information Management Division
CHAMPUS	Civilian Health and Medical Program of the Uniformed Services
CPT	common procedural terminology
GAO	General Accounting Office
HCFA	Health Care Financing Administration
HHS	Department of Health and Human Services
SAF	standard analytical file

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# Scope and Methodology

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To determine whether commercial systems would save money, we conducted a controlled test by having four commercial firms reprocess a sample of claims that Medicare paid during the first 9 months of 1993—the most recent time period for which data were available at the time of our review. Although these billing abuses affect the entire \$56 billion part B portion of the Medicare program, the scope of our test was limited to claims for physician services and supplies, which cost \$36 billion in 1994. We did not test other categories of Medicare part B claims because (1) HCFA's claims history file did not maintain the information needed to detect billing abuse on outpatient claims and (2) independent laboratory, prepaid group practice, and home health services account for a relatively small portion of part B costs.

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## Four Commercial Firms Agreed to Demonstrate Their Systems' Capabilities

To determine whether commercial systems are more capable of detecting abuse than systems Medicare uses, we arranged for a controlled test of the capabilities of four off-the-shelf commercial systems that insurers use to detect abuse. To identify which commercial firms market these systems, we (1) reviewed literature describing computer products used in the claims-processing industry, (2) contacted the HHS Office of Inspector General, which had analyzed commercial capabilities, and a Department of Defense health insurance agency, which was considering a commercial system, (3) talked with exhibitors attending a national health care antifraud conference, and (4) contacted companies marketing abuse-detection systems to determine if they would be willing to participate in our evaluation.

All four commercial firms we identified agreed to participate. We held several discussions with each company to determine its product's capability and market penetration and arrange the terms of participation. Two issues were central to these discussions. First, the companies wanted assurances, which we provided, that we would not disclose proprietary information about their systems. Second, we designed the test to avoid a direct or implied comparison of company capabilities because our objectives did not include identifying which system would best meet HCFA's needs. We took several steps to avoid such a comparison, including providing different claims samples to each company, controlling the edits that each company applied, and using average results, rather than each company's results in our report. We documented the study requirements and ground rules in a memorandum of understanding between GAO and each firm. Also, in October 1994, we identified a company that recently

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began marketing a billing abuse detection product. This firm briefed us on its system capabilities but did not participate in the study.

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## We Obtained a Valid Sample of Medicare Claims

To obtain a valid sample of Medicare claims, we reviewed documents describing the contents of HCFA's Medicare databases and held several discussions with responsible HCFA officials about the content and reliability of the data. We then selected the data elements required for the analysis and confirmed that the elements corresponded to the data needed by each company.

We selected HCFA's 5-percent standard analytical file (SAF) as the appropriate source for the sample. The 5-percent SAF contains final action claims—reviewed and validated—for a random sample of 5 percent of Medicare beneficiaries. These claim records are obtained directly from HCFA's common working file system, the system that authorizes claims payments. The 5-percent SAF is also used extensively by HCFA and public policy researchers, and is the primary source of data about the Medicare program. HCFA documents cited controls and quality assurance testing to ensure data reliability. To further verify the reliability of the HCFA data, we analyzed the controls over the process used to convert data from the common working file to the 5-percent SAF, and reviewed the results of HCFA quality assurance assessments.

The data were generally reliable for our purposes, with one exception. The amounts contained in the common working file and 5-percent SAF as being paid did not always reflect the amount that was actually paid. This discrepancy exists because, in some cases, the common working file directed carriers to recalculate the paid amount but did not record the adjustment. This problem has been subsequently corrected. The paid amounts are important to this analysis because they represent the amount of federal outlays for the Medicare program. After discussing this issue with staff from HCFA's Office of the Actuary, we decided, and HCFA agreed, that we could closely approximate the amount of federal outlays by reducing the allowed amount<sup>1</sup> by 22 percent which, according to HCFA actuaries, is the amount beneficiaries actually paid in coinsurance and deductibles.

We confirmed that HCFA's method of selecting the beneficiary sample for the 5-percent SAF was statistically valid, obtained a list of all beneficiaries

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<sup>1</sup>The allowed amount is the amount HCFA authorizes the physician to collect. Federal outlays—reflected in the paid amount—are calculated by deducting beneficiary deductible and coinsurance obligations from the allowed amount.

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included in the 5-percent SAF, and selected a statistically valid random sample of beneficiaries. We asked HCFA to extract all applicable claims processed during the first 9 months of 1993 for the sampled beneficiaries, the most recent data available at the time of our review.

To convert the data into a format that each company could use, we worked directly with each company's technical representatives to understand their data record layout requirements and develop the programs necessary to convert HCFA's data to the required formats. We then divided the claims and converted each group into the format needed by each company.

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## We Controlled the Test and Verified the Results

To ensure that the test was limited to identifying instances of code manipulation, we reviewed each company's user manuals, system manuals, and payment rules to understand the basis for each type of rule and the sequence with which the system executed its analysis. We then discussed the research that went into determining each rule type to ensure, as far as possible, that the test would be limited to clear-cut instances of code manipulation that did not need manual intervention in order for a decision to be made. We divided the rule types into three categories: checks that identify inappropriate payments; other checks that could lead to savings but either involve manual review or could reflect data entry errors; and checks that were outside the scope of our review. Our savings estimates were limited to the first category—inappropriate payments that could be automatically detected and adjusted on the basis of the data contained on the claims. We also controlled the test by ensuring that each system's capabilities were limited to detecting abuses using CPT codes that were valid in 1993. Because we wanted to compare Medicare to private industry practices, the systems were not customized to reflect HCFA payment rules which, in some cases, differ from those of private insurers.

To verify the accuracy of the companies' analyses, we selected and reviewed a random sample of claims that were adjusted by each company. We compared the firms' actions with CPT code descriptions and payment rules used by the system. We met with company representatives to review each claim and verify that the adjustment made was based on a documented rule, supported by medical analysis, and processed accurately by the system.

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**We Evaluated HCFA's  
Effort To Develop Billing  
Abuse-Detection  
Capabilities**

To evaluate whether HCFA's current development approach would match commercial system savings, we interviewed responsible HCFA officials and reviewed documents describing the approach, scope, and methodology being followed. We reviewed the contract HCFA awarded to define additional unbundled code combinations to determine its scope, methodology, resource requirements, and schedule. We compared HCFA's approach with that used by commercial firms. We also reviewed two products of the contract that described the improvements expected. The draft Medicare unbundling policy and new unbundled code combinations provided a basis to estimate the extent to which HCFA's proposed improvements would incorporate capabilities available in commercial systems. We also reviewed the contractor's analysis of existing Medicare computer system limitations and recommendations for near-term and long-term improvements which explained why Medicare computer systems would not be able to match commercial system capabilities.

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**We Assessed the  
Cost-Effectiveness of  
Commercial Systems**

To assess the cost-effectiveness of commercial systems, we interviewed commercial firm officials who provided cost estimates. We validated the reasonableness of the estimate by interviewing officials from the Department of Defense's Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), which provides health insurance to dependents of military personnel. We compared it to the cost estimate developed by a federal agency which recently decided to implement a commercial system.

# Commercial Firms That Participated in This Review

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**GMIS, Inc.**  
5 County View Road  
Malvern, Pennsylvania 19355  
(610) 296-3838



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**Health-Chex, Inc.**  
30 Lift Bridge Lane, East  
Fairport, New York 14450  
(800) 542-9536



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**Health Payment Review, Inc.**  
360 Newbury Street  
Boston, Massachusetts 02115  
(617) 266-2520



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**Value Health Sciences, Inc.**  
2400 Broadway, Suite 100  
Santa Monica, California 90404  
(310) 315-7400



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