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PACKAGING DIAGNOSTIC TEST INTERPRETATION AND SURGICAL PROCEDURES WITH OFFICE VISITS

Final Report

To Kay

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1.0 INTRODUCTION

1.1 Statement of the Problem

Soaring Part B expenditures, even during the Medicare fee freeze, suggest that regulation of price alone is not sufficient to control spending on physician services. As a result, there has been renewed interest in "packaging," in redefining the payment unit from a narrow CPT coded procedure to a more comprehensive bundle of services. The major advantage to packaging is that it encourages the physician to take a broader view of the patient care process and creates incentives to cut back on marginal procedures.

HMOs, by bundling all physician services, represent the ultimate package. There are, however, a number of packaging approaches that are less comprehensive than HMOs but that might be more easily incorporated into the current fee-for-service system. Mitchell et al., (1987) described four general types of physician reimbursement packages: office visit, special procedure, ambulatory condition, and inpatient condition.* In this report, we focus on the first two packages which are based on single physician-patient encounters, rather than episodes of care. Thus office visit and special procedure packages would involve less dramatic changes from the current reimbursement system than would the two condition packages.**

Special procedure packages would combine all services directly related to a procedure into a single bill and make a lump-sum payment to the physician responsible for the procedure. This type of packaging arrangement could be used for all surgical operations, including invasive diagnostic tests, as well

*The paper also describes a fifth approach, collapsing related CPT procedure codes into a single code. Because this approach does not involve bundling together multiple (different) services, we do not discuss it here.

**Under an ambulatory condition package, the physician would be responsible for all (nonhospital) aspects of a patient's treatment for a given condition for a predetermined period of time. Mitchell concludes that the extent of comorbid disease among the elderly, coupled with the incentive for "out of condition" billing, make this approach infeasible for Medicare. Inpatient condition packages are popularly known as "physician DRGs" and have also been analyzed in Mitchell (1985). While physician DRGs would incorporate many advantages, especially the incentive to control inpatient resource use, they have not been considered to be politically viable.

as complex radiological procedures. Special procedure packages would often, but not always, bundle together the services of multiple physicians. A cholecystectomy package, for example, would include the surgeon, an anesthesiologist, any assistant surgeon, and any operative x-rays, while an upper GI endoscopy package would include the endoscopy itself and any associated visit charge by the same physician. In this report, we focus on diagnostic and relatively minor surgical procedures that involve a single physician, do not require general anesthesia, and can be performed outside the hospital. Examples of such procedures include colonoscopy, proctosigmoidoscopy, arthrocentesis, and destruction of skin lesions. The latter two are examples of what are known as starred surgical procedures, so-called because of the asterisk accompanying their procedure codes in the CPT-4 manual. Unlike other surgeries which have global fees, pre- and postoperative services are explicitly excluded from the fees for starred surgical procedures.

An office visit packaging arrangement would base reimbursement on a per visit basis and would include all associated ancillary services (e.g., lab tests, ECGs, injections, etc.). Mitchell concluded that the lack of good ambulatory casemix measures precluded the adoption of office visit packages at this point in time. (Additional problems would also have to be resolved, particularly the incentive to simply increase the number of visits per patient.) Nevertheless, there is another, narrower, way in which office visits and ancillary services could be bundled. Many of the CPT-4 office visit definitions explicitly include interpretation of routine diagnostic tests, yet physicians sometimes may submit separate bills for both the visit and the interpretation. If the level of service described by the CPT-4 code does include such test review, then policymakers may want to disallow separate payment. Interpretation of electrocardiograms (ECGs) are probably the most common test that might be bundled in this fashion, but other services in the 90000 series of CPT-4, like cardiovascular stress tests, spirometry, and allergy sensitivity tests, may also be candidates.

In this report, we seek to examine the feasability of both kinds of packaging arrangements: special procedure packages and a modified version of office visit packages that includes routine test interpretation. Because descriptive data on many of these tests and procedures have not been readily available in the past, we begin with in-depth looks at each of them, and then go on to examine current billing patterns. Specific research questions on special procedure packages include the following:

- What are the most frequently performed starred surgical procedures? Which physician specialties are performing them, and where?
- Are visits commonly billed in conjunction with these procedures? Are there systematic patterns by specialty? By carrier?
- Some carriers state they do not permit same day visit bills when endoscopies are performed. Can we validate this with our claims data? How frequently do we observe double-billing (endoscopy plus visit) among other carriers?
- Are there some starred surgical procedures or some endoscopies for which packaging seems inappropriate on clinical grounds? Many services may be performed during a comprehensive office visit, for example, not just the endoscopy.
- Can we identify other procedures where special procedure packages do seem appropriate? If so, do current billing practices suggest some specialties may be adversely affected compared with others?

Research questions on office visit packages include:

- To what extent is diagnostic test interpretation accompanied by a bill for an office visit? Are there systematic differences by the <u>type</u> of test? By physician specialty?
- In cases of double-billing (visit plus interpretation charge), are physicians using the simplest visit codes (in which case this practice might be justified), or are they billing for the more complex types of visits?
- Should interpretation charges be denied during all visits, or should such policies be test-specific?

These and many other issues are analyzed in the subsequent chapters. A summary of our principal findings is presented in the next section.

1.2 Summary of Findings

We used national Medicare claims data (the 5 percent BMAD beneficiary file) to analyze the feasability of three packaging arrangements:

(1) Redefining office visits to include routine test interpretation;

(2) Packaging office visits with "starred" surgical procedures*; and

(3) Packaging office visits with endoscopies.

Claims for each of these tests and procedures (diagnostic tests from the 90000 series of CPT-4, starred surgeries, and selected endoscopies) were abstracted from the BMAD file. In addition, any claims for office visits or consultations provided on the same day by the same physician performing the study tests and procedures were also abstracted. While basic descriptive tables were prepared for all study services, the feasability of packaging was analyzed only for those provided on an outpatient basis.

Diagnostic Test Interpretation During Office Visits

The CPT-4 visit definitions explicitly state that those coded as "limited" or higher include such services as "the ordering and evaluation of appropriate diagnostic tests." Under these circumstances, policymakers may not want to allow two separate payments: one for the visit and one for test interpretation. We found considerable variation in the frequency with which physicians actually billed for both visits and test interpretation, ranging from only 7 percent of the time for nerve conduction tests to almost two-thirds of all 12-lead ECGs.

*"Starred" surgical procedures are minor procedures, whose CPT-4 codes are accompanied by an asterisk in the coding manual. The asterisk indicates that same day visits may be billed by the physician.

We focussed on two diagnostic cardiac tests for this report: 12-lead ECGs and rhythm ECGs. Both are high-volume Medicare services, and their interpretation fees are relatively low (roughly $12 and $7, respectively), compared with office visit fees. Interpretation of cardiac stress tests, on the other hand, average $60, far more than the typical reimbursement for even a comprehensive office visit; denying payment for interpretation of the stress tests would appear inequitable.

Disallowing payment for ECG interpretation would reduce the effective reimbursement rate by 25 percent for 12-lead, and 28 percent for rhythm, ECGs. That is, the average ECG interpretation charge represents 75 percent of the combined office visit plus ECG interpretation charge; denying the interpretation claim thus would lower the total bill by 25 percent. This reduction rate ranged from 23 percent for internists and cardiologists to 30 percent for general and family practitioners. Once we take into account the relatively low utilization rate of ECGs by GPs and FPs, however, their effective payment reduction is considerably smaller (2.7 percent). By contrast, cardiologists who interpret ECGs in over one-third of <u>all</u> of their ambulatory visits would experience a 10 percent average reduction on all visits.

Denying reimbursement for interpretation of 12-lead and rhythm ECGs would give the Part B program immediate savings of approximately $39 million (based on extrapolation from the 5 percent sample to the Medicare population as a whole). In subsequent years, however, upcoding <u>and</u> downcoding by physicians of their office visits could quickly offset these savings. A cardiologist, for example, currently receives $22 for a limited office visit and $12 for interpretation of a 12-lead ECG, for a total of $34. By downgrading the limited to a brief office visit (with which separate interpretation bills are permitted), the cardiologist could receive total payments of $30 ($18 for the visit plus the $12 interpretation), thus reducing his loss (and Medicare's savings) from $12 to $4. At the other extreme, by upcoding from an extended ($35) to a comprehensive follow-up visit ($49), the cardiologist could more than re-coup the $12 loss associated with the separate interpretation fee.

Other potential changes in the payment system, however, may help attenuate physicians' propensity to alter their coding practices. A resource cost-based fee schedule would dramatically increase current payments for office visits; even after taking into account reductions associated with ECG interpretation, most physicians will experience large net gains. As a result, they may not feel a need to engage in either upcoding or downcoding.

Packaging Office Visits with Endoscopies

We studied two types of special procedure packages, one packaging office visits with endoscopies and the other packaging visits with the "starred" surgical procedures. We found little evidence that physicians currently submit bills for office visits when performing endoscopies, with two exceptions. Bills for office visits or consultations did accompany 18 percent of all proctosigmoidoscopies and 10 percent of all sigmoidoscopies. By contrast, visit bills were submitted for only 2 percent (or less) of the bronchoscopies, upper GI endoscopies, and colonoscopies beyond the splenic flexure.*

The small number of visit bills accompanying bronchoscopy, upper GI endoscopy, and colonoscopy was consistent with clinical expectations. These three endoscopies are almost always performed as separate physician services, after patient evaluation and preparation. In almost all instances, they are the sole or primary reason for the physician visit. It would thus seem reasonable for Medicare to prohibit physicians from billing for visits (or consultations) when performing these endoscopies.

Of course, if visit bills are not being submitted, why bother with any regulations at all? There are two reasons why HCFA may still want to implement such a policy. First, there is a fair amount of carrier variation in double-billing even for these endoscopies, and a national policy would redress these inequities. While physicians nationwide submit office visit

*Visit bills were submitted for 8 percent of the colonoscopies below the splenic flexure. However, since 1986 (the year of our claims data), the CPT-4 manual has reclassified these colonoscopies as sigmoidoscopies.

bills for only 2.4 percent of all upper GI endoscopies, for example, the rate ranges from zero to 23 percent. Second, a Resource Cost-based Relative Value Scale will change the relative prices of endoscopies and visits, and almost certainly increase billing for the latter. A consistent national policy would help prevent this kind of unbundling.

For the two less complex endoscopies, sigmoidoscopy and proctosigmoidoscopy, this policy may not be appropriate, however. The frequency of billed visits with these two endoscopies reflects the fact that physicians may be providing other significant services at the same time, e.g., assessment of chronic disease. These endoscopies are also much more likely to be performed by primary care physicians, and are commonly part of routine health maintenance exams for elderly patients. Attempts to package these endoscopies may simply encourage physicians to unbundle them from the visits, with requests that patients return at a later time for the endoscopy alone.

Instead, a more flexible policy could be used to control double-billing without interfering with valid primary care patterns. Such a policy could:

- advise physicians that other significant services must be well-documented in the patient's record if a visit is billed with a proctosigmoidoscopy or sigmoidoscopy;
- audit the patient records of physicians who frequently bill for visits with these endoscopies to ensure accuracy of billing; and
- impose sanctions on physicians who consistently fail to comply with these billing instructions.

Packaging the Starred Surgical Procedures

The starred surgical procedures are a heterogeneous mix of diagnostic and therapeutic procedures that are performed by physicians of many different specialties. The appropriateness of simultaneous billing for an office visit and one of these procedures depends on whether other significant physician services were provided to the patient at the same time. Examples of high-volume starred surgical procedures are:

- dermatologic procedures, like destruction of skin lesions and cryotherapy;

- orthopedic procedures, like arthrocentesis and injection of tendon sheath; and
- urologic procedures, like catheterization of urethra and dilation of urethral stricture.

This heterogeneity makes it difficult to identify billing patterns among these procedures and hence to generalize to all starred surgical procedures. Bills for office visits or consultations accompanied one-third to two-thirds of the starred surgical procedures, depending on the type of procedure. There were no consistent patterns by physician specialty or by group of procedures (e.g., orthopedic procedures), however.

As was noted for proctosigmoidoscopy and sigmoidoscopy, many of the starred surgical procedures are typically performed as part of broader set of services. An internist, who removes a benign skin lesion, for example, may be evaluating the patient's hypertension or diabetes during the same visit. Given these difficulties, the same policy solution suggested for those two endoscopies may be preferred to packaging. Physicians would be permitted to bill for a visit along with a starred surgical procedure only if other significant services were provided <u>and these other services would have to be documented in the patient's record</u>.

1.3 Overview of Report

The report includes four additional chapters. Chapter 2 describes the data base used to analyze the various packages, including a discussion of file construction and special difficulties encountered in disentangling technical versus professional components for diagnostic tests. Incorporating diagnostic test interpretation into an office visit package is analyzed in Chapter 3. Results for the special procedure packages are presented in two chapters. Chapter 4 includes data on the starred surgical procedures, and the endoscopies are presented in Chapter 5.

2.0 DATA AND METHODS

2.1 Data Source and File Construction

The data source for this study was the 1986 BMAD beneficiary file, which includes all Part B claims for a 5 percent sample of Medicare beneficiaries.* From this sample, we abstracted all paid claims with the following CPT-4 procedure codes:

(1) diagnostic tests and other services in the 90000 series, excluding cardiac catheterization and ophthalmology services;

(2) all starred surgical procedures; and

(3) selected high-volume endoscopic procedures.

More detail on the precise codes is provided in Chapters 3, 4, and 5, respectively.

Each claim contained the following information: procedure code and modifier, place of service, date of services, allowed charges, patient identifier, physician identifier and specialty, and carrier. This detail allowed us to identify visits and consultations provided on the same day as the index test or procedure by the same physician. These visits and consultations were also abstracted from the beneficiary file and appended to the index procedure.

Basic descriptive data are provided on the tests and procedures, regardless of the location of service. However, analysis of same day visits was limited to those tests and procedures performed in ambulatory settings. Such settings included the physicians' offices, hospital outpatient departments, and ambulatory surgical centers. Visits and consultations accompanying inpatient tests and procedures were not studied in this report for two reasons. First, physicians (until at least 1986) were permitted to

*The BMAD beneficiary file contains claims for all end-stage renal disease (ESRD) patients, rather than a sample. In order to obtain a five percent sample of all Medicare beneficiaries, regardless of eligibility status, we used the same sampling critieria employed by carriers

bill for multiple inpatient visits on a single claim by using "from and to" dates (the dates of the first and last visits). Thus a single claim might span a two-week period and request reimbursement for several visits during this time. The number of visits actually billed might be less than the number of days covered by the "from-through" interval, and in these cases we would not know with certainty whether a visit was actually provided on the same date as the index test/procedure. In our 1986 data, use of "from-through" billing for inpatient visits was quite common: 33.6 percent of all claims for inpatient visits were billed using "from-through" dates, while 67.6 percent of all inpatient visits were billed in this manner.

Secondly, even if "from-through" billing were not allowed, it would often be difficult to determine the relationship between inpatient visits and inpatient testing, given the complexity of professional interaction and shared patient responsibility found in many teaching hospitals. In such hospitals, tests are most frequently ordered by housestaff, who are providing most of the direct patient care and making daily patient visits, although these visits are not billed. Furthermore, tests are often ordered in advance. For example, housestaff and attendings often submit slips requesting routine electrocardiograms to be done the following morning. Depending on the availability of hospital resources, many other 90000-series tests in our study may need to be scheduled in advance. Thus, the visit (if it was made by an attending and was billed) and the test that resulted from it may frequently have two different dates of service.

On the day that a particular test is performed, several possibilities exist regarding physician visits:

1. There may be no billed visits on the same day as the test, if the test was ordered by an intern or resident (who cannot bill for services), or if an attending physician scheduled the test in advance after visiting the patient on a preceding day;

2. There may be visits and/or consults from one or more physicians on the same day as the test, but it is not possible to tell from claims data who ordered the test (since claims for tests, prescriptions, and ancillary services do not indicate the identity of the ordering or prescribing physician). In fact, the test might have been ordered by none of the physicians who billed a visit or

consult on the same day, but by another attending or consulting physician or resident who scheduled the test in advance.

2.2 Procedure Code Modifiers

Procedure code modifiers are used to modify the standard CPT-4 description of the service performed by the physician. Modifiers typically convey information to the Medicare carrier about unusual circumstances of the service. Often, these unusual circumstances justify greater reimbursement for the physician; occasionally, the modifier is used to describe a more restricted service warranting lower reimbursement. In many instances, however, the information conveyed by the modifier has no effect on the reimbursement; in these instances, the modifier is used for descriptive purposes only.

A number of modifier codes may be used by physicians to modify CPT-4 codes. CPT-4 itself provides approximately twenty different modifiers. Medicare carriers provide many more modifier codes. Information that may be conveyed through modifiers includes:

- region of the body treated during a procedure;
- use of an assistant surgeon during a surgical procedure;
- pre- or post-operative management only.

Since our policy questions concerned the feasibility and advisability of packaging certain tests and procedures with visits, we were most interested in three particular types of modifiers:

- Complete or "global" (including performance and interpretation of the test or procedure);
- Technical component only (performance of the test or procedure, without interpretation);
- Professional component only (interpretation of the test or procedure).

In many cases, therefore, a claim for physician services indicates not the performance of a test or procedure, but simply its interpretation. Modification of a CPT-4 code to indicate this more limited physician service (interpretation only) is an important distinction with several implications

for our study. First, to ignore such modifiers would be to overestimate the actual number of complete tests and procedures being billed to Part B. Second, use of such modifiers would be expected to alter reimbursement significantly, and thus these modifiers must be considered in estimating mean reimbursement for physician services. Lastly, interpretation of many tests and procedures may arguably be considered an expected component of many physician visits, rather than a separately reimbursable service. Claims for interpretation only should therefore be considered separately in any study of packaging of visits with tests and procedures.

For these reasons, we wanted to study the frequency of the use of such modifiers with the physician services examined in this report. This task was somewhat complex, since a number of different systems of modifiers are used by the 55 Medicare carriers. A detailed explanation of our analysis is found in Chapter 3. Appendix 3-2 lists the specific numeric and alpha codes used by CPT-4, by HCPCS, and by Medicare carriers to indicate complete, technical and professional levels of service.

For each of our data bases (tests in the 90000 series, the starred procedures, and endoscopies), we determined the frequency with which these modifier codes were being used on claims for our tests and procedures. From the nature of the services, one would expect that claims for endoscopic and starred procedures would rarely if ever be modified to indicate "interpretation only," and this was in fact the case. Only claims for tests in the 90000 series were frequently modified to indicate this reduced level of service. Use of modifiers for the 90000 series is discussed further in the following chapter.

3.0 90000-SERIES TESTS AND PROCEDURES

3.1 Introduction

The 90000-series is a group of approximately 312 services in CPT-4 with procedure codes ranging from 91000 to 95999. The series contains mostly diagnostic, but some therapeutic, physician services. Examples of diagnostic procedures in the series are electrocardiograms, cardiac stress tests, and audiometric testing. An example of a therapeutic procedure in the series is allergen immunotherapy (part of the "desensitization" process for persons with allergies).

The 90000 series of CPT-4 procedure codes also includes all diagnostic and therapeutic services provided by ophthalmologists. This large group of eye-related services is conceptually distinct from the remainder of the 90000 series, and claims for ophthalmology services were excluded from our study.

Diagnostic procedures in the 90000 series can be distinguished from other diagnostic services such as routine laboratory tests in two ways: first, tests in the 90000 series are usually performed by or under the supervision of a physician; and secondly, the results of these tests are more complex and difficult to interpret than are routine laboratory tests. Interpretation of tests in the 90000 series typically requires more physician time and resources than does the interpretation of routine laboratory data (which may require no more than simple comparison with a normal value). Although part of the test interpretation process may be automated (e.g., computer scanning of an electrocardiogram), final interpretation of the test data usually requires specialized training and skills and experienced judgment. Physician services are thus needed at two stages of tests in the 90000 series: first, to perform the procedure, and secondly, to interpret its results.

3.2 Goals of the Study

Our purposes in studying the 90000 series procedures were similar to those for the endoscopies and the starred procedures. We wanted to provide descriptive information concerning the frequency with which the procedures are performed, the most common specialties and locations associated with the procedures, and the typical range of reimbursement. We also wanted to describe any regional variations in use or reimbursement.

In additional to these descriptive objectives, we also wanted to study whether these procedures could easily be incorporated into packages of ambulatory physician services. Such packaging would most likely mean combining reimbursement for the procedure with reimbursement for a physician visit. Another goal of the study, then, was to determine how frequently physicians submitted claims for visits when performing these procedures in ambulatory settings.

3.3 Packaging 90000-Series Procedures with Ambulatory Services

The issue of packaging the 90000-series procedures with physician visits is complicated by the need for physician involvement at two stages of these procedures (performing the procedure and interpreting its results). Physicians have three options in billing for these procedures: they may submit a claim for the complete or global fee, if they provided both stages of the service; or they may bill a reduced fee for only the technical component (performing the procedure) or the professional component (interpreting the results). There are, then, three different levels of service (complete, technical, or professional) for these procedures which could be considered for packaging with physician visits.

However, the packaging issue is made even more complex by the physician's option to bill for a patient visit when providing any of the three levels of service. For example, a patient with mild chest pain may be examined at a free-standing ambulatory care center. The physician on duty obtains an electrocardiogram, interprets it, and submits bills for a

"complete" electrocardiogram and for a patient visit. At the patient's request, a photocopy of the electrocardiogram is forwarded to the patient's private physician. The following day, the ambulatory care center's consulting cardiologist also interprets the electrocardiogram and submits a bill for "interpretation only," without a patient visit. Two days later, the patient sees his private physician who again interprets the electrocardiogram and submits bills for the patient visit and for the interpretation of the electrocardiogram. Thus, one electrocardiogram potentially was associated with five claims from three physicians: two claims for patient visits, one for a complete electrocardiogram, and two for the interpretation of an electrocardiogram.

The most straightforward packaging issue here is whether it is appropriate to bill for the interpretation of an electrocardiogram (or other test) when billing for a patient visit. Many would argue that it is not, and their argument could be supported by the American Medical Association's description of physician visits. CPT-4, in defining levels of physician office visits, states that these visits include such services as:

- "the ordering and evaluation of appropriate diagnostic tests" [limited visit];
- "the obtaining and evaluation of pertinent history and physical or mental status findings, diagnostic tests and procedures" [intermediate visit];
- "level of service requiring an unusual amount of effort or judgment including a detailed history, review of medical records" [extended visit];
- "complete re-evaluation of medical data" [comprehensive visit].

These descriptions support the view that reimbursement for the visit is intended to cover test interpretation as well, and that separate claims for routine test interpretation in the context of a patient visit is inappropriate.

3.4 The Use of Modifiers with 90000-Series Procedures

As mentioned in Section 2.2, physicians are allowed by Medicare carriers to use procedure code modifiers to clarify the usual description of services associated with a procedure code. The modifier itself is a two-character code that is placed on the claim after the procedure code. A modifier may be used for merely informational purposes, or may be used to indicate that higher or lower reimbursement is warranted in a particular case.

Several systems of procedure code modifiers are used by Medicare carriers. CPT-4 (the American Medical Association's manual of procedure codes) lists nearly two dozen modifiers that are in general use by carriers. HCFA's adaptation of CPT-4 (HCPCS) provides another 33 modifier codes that may be used by carriers. However, carriers may also add to basic HCPCS modifiers their own systems of modifiers to suit regional or local purposes.

For this study, we needed to know the level of service (complete, technical only, or interpretation only) provided by the physician for each claim using a procedure code in the 90000-series. Given the number of systems of modifier codes in use by carriers, this was not a simple task. From the 90000-series claims in our sample, we created a cross-tabulation of procedure code modifiers by carrier. We were then able to use tables of modifiers provided by individual carriers to translate the two-character codes. All modifier codes used to indicate a complete or global level of service were recoded as "blank" (the CPT-4 modifier equivalent to "complete service"). Likewise, all modifiers used to indicate "technical component only" were recoded as "TC" (the HCPCS equivalent, since CPT-4 provides no modifier code for this level of service). All modifiers indicating "interpretation only" were recoded as "26" (the CPT-4 equivalent). A list of modifier codes used to indicate these three levels of service is provided in Appendix A-1.

In addition to multiple systems of modifier codes, a second problem was encountered in attempting to distinguish levels of service in the 90000-series procedures. For most types of physician services, a single procedure code is used to describe the service (such as 92551 - screening audiometry), and modifier codes may be used to describe the service as complete , or as limited

to either the technical (TC) or professional (26) components of the service. However, the CPT-4 descriptions associated with procedure codes for a few high-volume procedures (including electrocardiograms and cardiac stress tests) explicitly state the level of service provided by the physician. That is, there is one procedure code (93015) that should be used when a physician provides a complete cardiac stress test, a separate code (93017) to bill for only the technical component of the stress test, and a third code (93018) to bill for the professional component. For these procedures, the use of modifiers is superfluous and frequently contradictory. For example, we found many claims in which the procedure code stated that a complete stress test had been provided, but a modifier code had been added to indicate that the physician had merely interpreted the stress test. This occurred in 3.9 percent of ambulatory claims for procedure code 93015 (complete stress test). Similar contradictory coding practices were found, although in a much smaller percent of cases, for procedure codes 93000 (complete 12-lead ECG), 93005 (12-lead ECG, tracing only), and 93040 (complete rhythm ECG). Contradictory use of modifiers was found in 0.3, 0.6, and 1.7 percent, respectively, of ambulatory claims for these procedures. We handled these confusing claims by assuming that the modifier accurately reflected the level of service, and the procedure code was recoded to reflect the same level of service as the modifier.

3.5 Findings

3.5.1 Distribution of Procedures by Location

Excluding claims for ophthalmology services, there were 1,001,269 claims for procedures in the 90000 series in our 5 percent sample from calendar year 1986. These procedures were distributed by location as follows:

- 54.7 percent in ambulatory settings (physicians' offices, hospital outpatient departments, and ambulatory surgical facilities);

- 43.3 percent on inpatient services;
- 2.0 percent in other locations (nursing homes, extended care facilities, dialysis centers, hospices, and patients' homes).

3.5.2 Commonly Performed Ambulatory Procedures

Since our policy concerns focussed on packaging of ambulatory services, we confined further analysis to eleven groups of procedures that were the most frequently performed in ambulatory settings. These eleven groups are shown in Table 3-1, along with the range of procedure codes for each group, the total number of claims for all locations, and the percent performed in ambulatory settings.

The total reimbursement for the 436,164 ambulatory procedures in these eleven groups was $15.1 million in 1986. The estimated annual reimbursement for a 100 percent sample would be $302.4 million. Mean reimbursement for these commonly performed ambulatory procedures ranged from $7.36 (for code 95125 - professional services for allergen immunotherapy, multiple antigens) to $190.65 (for code 93309 - echocardiography, M-mode and real-time, with image documentation). A complete table of mean reimbursement by procedure is found in Appendix A-2.

3.5.3 Ambulatory Procedures by Specialty

Many of the procedures in these eleven groups were provided primarily by one or two specialties, as might be expected for such specialized services. Thus, nerve conduction studies were performed mostly by neurologists, and pacemaker analysis was done primarily by cardiologists. Three types of services, however, were performed frequently enough by physicians in several different specialties to allow for meaningful cross-specialty comparisons of reimbursement. These three services are 12-lead and rhythm electrocardiograms, and cardiac stress tests. Reimbursement for these procedures are shown for several specialties in Tables 3-2, 3-3 and 3-4.

TABLE 3-1

PROCEDURE CODES INCLUDED IN ANALYSIS, AND NUMBER OF AMBULATORY PROCEDURES IN EACH GROUP

Procedure Group	CPT-4 Codes	Total Number of Procedures	Number of Ambulatory Procedures	Percent Ambulatory
Electrocardiograms (12-Lead)	93000 to 93010	610,247	283,265	46.4%
Electrocardiograms (Rhythm)	93040 to 93042	22,707	14,299	63.0
Cardiac Stress Tests	93015 to 93018	18,747	14,539	77.5
Echocardiography	93300 to 93320	28,138	9,999	35.5
Pacemaker Analysis	93731 to 93736	13,098	11,860	90.5
Allergen Immunotherapy	95120 to 95125	25,076	24,949	99.5
Audiometric Tests	92551 to 92557	18,240	16,243	89.0
Pulmonary Function Tests	94010 to 94240	32,057	25,211	78.6
Noninvasive Cerebrovascular Arterial Studies	93850 to 93870	20,840	13,118	62.9
Noninvasive Limb Arterial Studies	93890 to 93910	9,210	6,682	72.5
Nerve Conduction Studies	95900 to 95904	21,238	16,346	77.0

Source: 1986 BMAD 5% Beneficiary File, and American Medical Association, Physician's Current Procedural Terminology, Fourth Edition, Chicago, Ill.: AMA, 1984.

TABLE 3-2

AMBULATORY 12-LEAD ELECTROCARDIOGRAM BY SPECIALTY AND LEVEL OF SERVICE, WITH MEAN REIMBURSEMENT

	Complete		Technical Component Only		Interpretation Only	
General/Family Practice	20.1%	$29.93	31.0%	$20.78	7.6%	$12.09
Cardiology	18.1	32.97	6.7	22.06	34.9	11.84
Internal Medicine	49.6	31.64	29.4	20.88	31.5	11.92
Group Practice	6.7	34.03	16.8	18.17	23.9	11.22
All Other Specialties	5.5	32.45	16.1	22.39	2.1	12.37
TOTAL	100.0%		100.0%		100.0%	

Source: 1986 BMAD 5% Beneficiary File.

TABLE 3-3

AMBULATORY CARDIAC STRESS TESTS BY SPECIALTY AND LEVEL OF SERVICE, WITH MEAN REIMBURSEMENT

	Complete		Technical Component Only		Interpretation Only	
General/Family Practice	4.9%	$109.72	4.8%	$39.47	3.0%	$56.19
Cardiology	52.2	131.08	30.2	49.93	45.5	67.03
Internal Medicine	31.8	120.63	36.1	37.64	28.4	63.00
Group Practice	9.3	126.07	27.4	32.57	21.0	54.32
All Other Specialties	1.8	119.84	1.5	39.77	2.1	53.09
TOTAL	100.0%		100.0%		100.0%	

Source: 1986 BMAD 5% Beneficiary File.

TABLE 3-4

AMBULATORY RHYTHM ELECTROCARDIOGRAMS BY SPECIALTY AND LEVEL OF SERVICE, WITH MEAN REIMBURSEMENT

	Complete		Technical Component Only		Interpretation Only	
General/Family Practice	15.1%	$10.66	7.9%	$12.09	32.4%	$7.63
Cardiology	23.5	14.39	50.5	10.19	12.4	7.44
Internal Medicine	38.4	14.88	24.6	8.33	16.7	8.11
Group Practice	13.8	17.63	10.4	12.09	34.7	7.47
All Other Specialties	9.2	16.09	6.6	18.84	3.8	8.40
TOTAL	100.0%		100.0%		100.0%	

Source: 1986 BMAD 5% Beneficiary File.

Reimbursement for 12-lead electrocardiograms did not vary greatly by specialty. Wider differences across specialties was observed for the other two procedures (rhythm electrocardiograms and cardiac stress tests). For example, family and general practitioners received $109.72 for a complete stress test, while cardiologists received $131.08 for the same procedure. Family and general practitioners received $10.66 for a complete rhythm ECG, which was 60 percent of the $17.63 received by cardiologists for this procedure. However, even within this small group of closely related services, no one specialty received consistently higher reimbursement.

3.5.4 Ambulatory Procedures by Region

Table 3-5 shows the mean reimbursement for several ambulatory procedures (complete level of service) by region of the country. Wide disparities in reimbursement were seen for some procedures. For example, reimbursement for one form of echocardiography was 53 percent higher in the West than in the Northeast ($171.88 versus $112.07). However, systematic differences in reimbursement between the regions were not apparent, and no one region was consistently higher than the others across the range of procedures studied.

3.5.5 Ambulatory Billing Practices by Procedure Group

In order to study the feasibility of packaging some of these procedures with physician visits, we needed to determine the frequency with which physicians billed for the three different levels of service (complete, technical, or professional). Table 3-6 shows the frequency of each level of billing for each of the eleven groups studied. One clear finding was that claims for only the technical component of a service were extremely uncommon for all eleven groups on our study. This finding was expected. In situations where the components of a service (such as a stress test or electrocardiogram) are frequently performed by two different providers, the technical portion of

TABLE 3-6

PERCENT DISTRIBUTION OF AMBULATORY PROCEDURES BY PROCEDURE GROUP AND TYPE OF SERVICE

	Complete	Technical Only	Interpretation Only	Total*
Electrocardiogram, 12-Lead	74.4%	0.7%	25.0%	100%
Electrocardiogram, Rhythm	65.5	2.2	32.3	100%
Cardiac Stress Test	71.5	1.7	26.8	100%
Echocardiography	81.6	0.3	18.1	100%
Pacemaker Analysis	96.9	0.0	3.1	100%
Allergen Immunotherapy	100.0	0.0	0.0	100%
Audiometry	99.9	0.0	0.1	100%
Pulmonary Function Tests	94.1	0.0	5.9	100%
Noninvasive Cerebral Arterial Studies	82.4	0.4	17.2	100%
Noninvasive Peripheral Arterial Studies	90.2	0.1	9.7	100%
Nerve Conduction Tests	91.1	0.0	8.9	100%

*Numbers may not add up to 100% due to rounding.

Source: 1986 BMAD 5% Beneficiary File.

the service is often done by a hospital-employed technician and billed under Part A of Medicare. These claims for the technical level of service would not appear in our data, which is a sample of Medicare Part B claims.

Aside from the lack of claims for technical service, we found that there was considerable variation in physician billing practices for the eleven groups examined here. One group of services, allergen immunotherapy, was billed exclusively at the complete level of service. This finding is intuitively reasonable, since the service consists largely of prescribing and providing the serum used for desensitization injections, and a claim for "interpretation" of this service would have no real meaning.

For several other groups of procedures, more than 90 percent of ambulatory claims were at the complete or global level. These groups included audiometry, pacemaker analysis, noninvasive peripheral arterial studies, pulmonary function tests, and nerve conduction tests. In ambulatory settings, therefore, these tests are typically performed by physicians, or by technicians or other health professionals in the physicians' employ, and the results of the tests are later interpreted by the same physicians.

For five of the eleven groups of ambulatory procedures, more than 10 percent of claims were for the professional component of the service (interpretation only). These five groups were 12-lead and rhythm electrocardiograms, cardiac stress tests, echocardiography, and noninvasive cerebral arterial studies. As indicated above, it is likely that the technical portion of most of these procedures was provided by hospital-employed personnel and billed under Part A of Medicare. The results would then be interpreted by the physician who requested the test, or by a consulting specialist, and billed under Part B.

In order to understand patterns of service for these procedures more completely, we also examined the distribution of procedure for <u>all</u> locations (not just ambulatory sites) by level of service. These data are displayed in Table 3-7. It is interesting to note that, with the exception of echocardiography, the majority of claims for the "complete" level of service for all procedures were submitted from physicians' offices, whereas the

TABLE 3-7

DISTRIBUTION OF SELECTED 90000-SERIES TESTS BY LOCATION AND LEVEL OF SERVICE[a]

	Hospital Inpatient	Physicians' Offices	Outpatient Dept. and Ambulatory Surgical Centers	Other	Total
Electrocardiogram, 12-Lead					
Complete	2.0%	94.9%	1.3%	1.8%	100.0%
Interpretation Only	79.4	2.2	18.0	0.5	100.0
Both[b]	46.8	41.3	10.9	1.0	100.0
Electrocardiogram, Rhythm					
Complete	6.2	82.8	6.8	4.2	100.0
Interpretation Only	49.8	3.7	46.3	0.2	100.0
Both	27.3	44.6	25.9	2.3	100.0
Cardiac Stress Test					
Complete	5.8	84.0	9.4	0.8	100.0
Interpretation Only	45.4	6.8	47.7	0.1	100.0
Both	21.3	53.7	24.4	0.5	100.0
Echocardiography					
Complete	51.4	35.1	11.8	1.7	100.0
Interpretation Only	82.9	3.1	14.0	0.0	100.0
Both	63.3	23.1	12.6	1.0	100.0
Pacemaker Analysis					
Complete	2.1	82.1	10.7	5.1	100.0
Interpretation Only	20.4	4.7	75.0	0.0	100.0
Both	2.7	79.4	12.9	4.9	100.0
Allergen Immunotherapy					
Complete	0.3	99.4	0.2	0.1	100.0
Interpretation Only	--c	--	--	--	--
Both	0.3	99.4	0.2	0.1	100.0
Audiometric Tests					
Complete	0.7	97.4	0.6	1.3	100.0
Interpretation Only	--c	--	--	--	--
Both	0.8	97.2	0.7	1.3	100.0
Pulmonary Function Tests					
Complete	11.2	81.5	6.3	0.9	100.0
Interpretation Only	69.2	4.5	26.3	0.1	100.0
Both	20.0	69.8	9.3	0.8	100.0

TABLE 3-7 (continued)

DISTRIBUTION OF SELECTED 90000-SERIES TESTS BY LOCATION AND LEVEL OF SERVICE[a]

	Hospital Inpatient	Physicians' Offices	Outpatient Dept. and Ambulatory Surgical Centers	Other	Total
Noninvasive Cerebrovascular Arterial Studies					
Complete	24.3%	52.1%	19.5%	4.1%	100.0%
Interpretation Only	58.8	4.0	36.9	0.3	100.0
Both	33.9	38.8	24.3	3.1	100.0
Noninvasive Limb Arterial Studies					
Complete	15.2	65.1	14.6	5.0	100.0
Interpretation Only	59.4	4.5	35.4	0.7	100.0
Both	23.4	53.8	18.5	4.2	100.0
Nerve Conduction Studies					
Complete	13.8	67.0	18.2	0.9	100.0
Interpretation Only	57.5	3.7	38.7	0.1	100.0
Both	20.7	57.0	21.5	0.8	100.0

Source: 1986 BMAD 5% Beneficiary File

[a]Claims for "technical component only" were infrequent and are not shown.

[b]Data for "Both" are weighted by the frequency of claims within the "complete" and "interpretation only" types of service.

[c]Blank rows contained fewer than 100 claims; data were not displayed.

majority of claims for "interpretation only" were submitted by hospital inpatient services, outpatient departments, and ambulatory surgical centers. This supports our assumption that the technical component of many of these procedures is reimbursed through Part A of Medicare, and that often only the interpretation component of the service is seen in Part B claims.

3.5.6 Billing for Visits with Procedures in the 90000 Series

A physician may appropriately bill for a patient visit while performing a procedure in the 90000 series if other significant services are provided to the patient at the time of the visit. These other physician services may be related or unrelated to the health problem that prompted the procedure. Related services would include a history and physical examination directed toward the specific problem at hand. Unrelated services might be follow-up of a pre-existing medical problem. However, many would argue that routine test interpretation is not a distinct and separately reimbursable service when performed during a physician visit. (See discussion in Section 3.3.)

Physician office visits and consultations were billed with varying frequencies with the eleven groups of ambulatory procedures that we studied.* Almost two thirds of claims for 12-lead electrocardiograms (62.9 percent) were accompanied by claims for visits, while only 6 percent of noninvasive cerebral arterial studies had associated bills for visits. Data for all eleven groups are displayed in Table 3-8.

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*Emergency room visits were excluded from our analysis on the grounds that these physician-patient encounters are clinically quite different from those in physicians' offices or outpatient clinics. Generally, bills for these emergency room visits were relatively uncommon, accompanying only 2.5 percent of all 12-lead ECGs, for example. Such bills were observed far more frequently with rhythm ECGs (17 percent of the time), however, which is consistent with suspected cardiac emergencies. Policymakers may not want to package these cases, in order to avoid introducing any incentives to skimp on services provided to emergency room patients. Ideally, we would purge all emergency room ECGs from the sample and not just those with visits. Unfortunately, the claims do not include a seperate code for "location of service-emergency room."

TABLE 3-8

PERCENT OF AMBULATORY PROCEDURES WITH BILLED VISITS BY PROCEDURE GROUP*

Procedure Group	Percent With Visits
12-lead Electrocardiogram	62.9%
Rhythm Electrocardiogram	36.0
Cardiac Stress Test	29.7
Echocardiography	10.4
Pacemaker Analysis	10.8
Allergen Immunotherapy	7.4
Audiometry	55.6
Pulmonary Function Tests	46.0
Noninvasive Cerebral Arterial Studies	5.8
Noninvasive Peripheral Arterial Studies	19.2
Nerve Conduction Tests	7.1

Source: 1986 BMAD 5% Beneficiary File.

Table 3-9 shows the frequency with which physicians in the four major geographic regions bill visits for three of these tests: 12-lead ECGs, cardiac stress tests, and rhythm ECGs. Physicians throughout the country are far more likely to submit a bill when both providing and interpreting the test (complete procedure) than when only interpreting the results. There is considerable regional variation, however, with only one half of all 12-lead ECGs in the North Central region having visit bills, for example, compared with two-thirds or more elsewhere.

Physicians differed by specialty as well as by region in the frequency with which they billed for visits along with tests in the 90000 series. Tables 3-10 and 3-11 show the frequency and type of visit billed by physicians in several specialties when performing two common procedures in the 90000 series: 12-lead and rhythm electrocardiograms. (The tables display data for both complete and professional levels of service.) For 12-lead electrocardiograms, the frequency of billed visits ranged from 35 percent by multi-specialty group practices to 72 percent by general and family practitioners. Although not shown in these tables, there was also a marked difference in frequency of billed visits by location: ambulatory electrocardiograms performed in physicians' offices were far more likely to have associated billed visits than were ECGs performed in outpatient departments.

From Tables 3-10 and 3-11, we also see that relatively few visits were billed as "minimal" or "brief," levels at which test interpretation is <u>not</u> part of the visit code definition. Physicians generally submitted bills coded as "limited" or "intermediate," although internists in particular also submitted many "comprehensive" visit bills. (Initial and established patient visits have been combined for each level of service.)

3.6 Implications for Packaging

The simplest concept of packaging that could be applied to procedures in the 90000 series would be to eliminate reimbursement for interpretation of

TABLE 3-9

PERCENT OF AMBULATORY PROCEDURES WITH ASSOCIATED BILLED VISITS BY TYPE OF ECG

Procedure	Northeast	North Central	South	West
12-Lead Electrocardiogram with Visits				
Complete	84.0%	72.4%	80.1%	80.4%
Interpretation Only	2.8	2.8	3.0	3.4
All*	68.7	50.3	63.8	66.5
Cardiac Stress Test with Visits				
Complete	19.2	25.9	27.4	32.1
Interpretation Only	2.9	4.3	2.3	5.1
All*	14.0	18.1	21.2	27.5
Rhythm Electrocardiogram with Visits				
Complete	40.9	47.0	59.2	67.1
Interpretation Only	8.5	0.6	4.3	1.6
All*	32.1	24.2	46.7	45.4

*"All" refers to the number of technical, interpretation only, and complete tests with associated billed visits.

Source: 1986 BMAD 5% National Sample.

TABLE 3-10

RELATIVE FREQUENCY OF VISIT BILLING FOR 12-LEAD ELECTROCARDIOGRAMS BY SPECIALTY AND LEVEL OF VISIT (percent of ECGs with a visit bill)

	Minimal/Brief	Limited	Intermediate	Extended	Comprehensive	Consult	All Visits
General Practice/Family Practice	6.2%	21.1%	24.5%	7.3%	12.8%	0.3%	72.2%
General Surgery	8.9	17.3	21.8	6.9	11.4	0.4	66.8
Cardiology	2.5	11.3	22.3	6.3	7.5	2.0	52.1
Internal Medicine	3.3	16.9	22.2	7.5	20.1	0.9	70.9
Group Practice	2.4	9.9	9.9	3.8	8.0	0.9	35.0
All Other Specialties	3.0	14.7	20.6	7.4	16.3	1.8	63.8
All Specialties	3.6	15.6	21.3	6.8	14.6	1.1	62.9

Source: 1986 5% BMAD Beneficiary File.

TABLE 3-11

RELATIVE FREQUENCY OF VISIT BILLING FOR RHYTHM ELECTROCARDIOGRAMS BY SPECIALTY AND LEVEL OF VISIT (percent of ECGs with a visit bill)

	Minimal/Brief	Limited	Intermediate	Extended	Comprehensive	Consult	All Visits
General Practice/Family Practice	2.6%	8.9%	8.1%	1.6%	1.9%	0.4%	23.6%
General Surgery	7.0	15.9	10.9	1.6	0.0	0.0	35.3
Cardiology	4.0	15.2	26.3	4.2	1.8	0.7	52.1
Internal Medicine	4.2	18.5	21.6	4.4	3.2	0.3	52.2
Group Practice	1.5	3.1	5.8	0.3	0.6	0.3	11.6
All Other Specialties	3.8	9.4	10.5	3.5	3.5	0.4	31.2
All Specialties	3.3	12.0	15.5	2.8	2.1	0.4	36.0

Source: 1986 5% BMAD Beneficiary File.

these tests, if the interpretation is provided as part of a physician visit. The definitions of physician visits provided by CPT-4 support the argument that routine test interpretation is included in the reimbursement for visits billed at or above the limited level. We decided to model the effect of such packaging on two of the most commonly performed procedures: 12-lead and rhythm electrocardiograms. Tables 3-10 and 3-11 also showed that the majority of visits billed with these types of electrocardiograms are at the limited or higher level. Our packaging model for these procedures, then, assumes that reimbursement for the interpretation of electrocardiograms is included in the reimbursement for most physician visits.

We estimated the amount of money that would be saved by Medicare through such packaging as follows: we assumed that claims for only the professional component (interpretation) of ECGs would be rejected by Medicare carriers if the physician interpreting the ECG had also billed for a visit on the same day for the same beneficiary. The estimated savings from packaging the professional component is simply the total amount of reimbursement for ECG interpretation when this service was performed on the same day as a patient visit. We also assumed that, under this packaging model, Medicare carriers would pay only for the technical component of an ECG if the physician billing the ECG had also billed for a visit with the beneficiary on the same day. The reimbursement for a complete ECG in this case would be reduced by an amount equivalent to the fee for interpreting the ECG; that is, the physician would be reimbursed only for the technical component of the ECG, and reimbursement for the professional component would be assumed to be included in the visit fee. Savings achieved by packaging complete ECGs with visits is thus calculated by multiplying the mean reimbursement for ECG interpretation by the number of complete ECGs associated with same-day, same-physician visits.

Tables 3-12 and 3-13 show the impact of packaging these procedures with visits for several physician specialties. The first column in each table shows the frequency with which each specialty bills ("limited" or higher)

TABLE 3-12

EFFECT OF PACKAGING 12-LEAD ELECTROCARDIOGRAMS WITH VISITS, BY PHYSICIAN SPECIALTY

	Percent of ECGs with Visits[a]	Percent Reduction in Reimbursement[b]	Percent Reduction in Total Reimbursement[c]
General Practice/Family Practice	65.6%	30.4%	2.7%
General Surgery	57.5	25.0	0.7
Cardiology	47.5	23.4	10.4
Internal Medicine	66.7	23.4	4.8
Group Practice	31.7	22.4	2.7
All Other Specialties	58.9	27.2	0.6
All Specialties	58.2	24.6	3.3

[a]Excludes minimal and brief visits, and consultations.

[b]Calculated by taking the ratio of allowed charges for the professional component to the total of charges for the professional and complete tests (includes ECGs only where limited or higher visits were also billed on the same day).

[c]Calculated by taking the ratio of allowed charges for the professional component to the total of charges for all 12-lead ECGs and visits, regardless of whether visits were billed on the same day.

Source: 1986 5% BMAD Beneficiary File.

TABLE 3-13

EFFECT OF PACKAGING RHYTHM ELECTROCARDIOGRAMS WITH VISITS, BY PHYSICIAN SPECIALTY

	Percent of ECGs with Visits[a]	Percent Reduction in Reimbursement[b]	Percent Reduction in Total Reimbursement[c]
General Practice/Family Practice	20.6%	39.5%	0.0%
General Surgery	28.3	49.9	0.0
Cardiology	47.4	19.6	0.3
Internal Medicine	47.7	30.4	0.1
Group Practice	9.8	31.9	0.1
All Other Specialties	27.0	34.2	0.0
All Specialties	32.3	27.8	0.1

[a]Excludes minimal and brief visits, and consultations.

[b]Calculated by taking the ratio of allowed charges for the professional component to the total of charges for the professional and complete tests (ECGs only where limited or higher visits were also billed on the same day).

[c]Calculated by taking the ratio of allowed charges for the professional component to the total of charges for all rhythum ECGs and visits, regardless of whether visits were billed on the same day.

Source: 1986 5% BMAD Beneficiary File.

visits when providing a complete electrocardiogram or when interpreting the ECG*. The second column shows the estimated reduction in reimbursement as a percent of each specialty's 1986 combined reimbursement, only for cases where an ECG and a visit were billed together. The last column shows the estimated reduction in reimbursement as a percent of each specialty's total reimbursement for all ambulatory ECGs and visits, regardless of whether the ECGs and visits were billed together. Looking at the reduction in all revenue for ambulatory 12-lead ECGs and visits (the last column in Table 3-12), we see that cardiologists would be most affected by such packaging: they would experience a 10 percent decrease in total reimbursement from these two sources. Other specialties would experience less than a 5 percent decrease in reimbursement. The effect of packaging rhythm electrocardiograms with visits would be smaller, since the procedure is performed less frequently. If this procedure were packaged with visits, no specialty would suffer a significant loss of income.

In our 5 percent sample of the claims from 1986, the total savings that would have been realized from this model of packaging is $1.96 million (and slightly more if we were to add in consultations). Estimated savings for the entire population would be $39.1 million. Virtually all (99.0 percent) of these savings would be derived from packaging complete 12-lead electrocardiograms with visits. Claims for complete 12-lead ECGs are not only much more frequent than claims for other forms or levels of ECGs, but are also more frequently associated with billed visits.

The estimated savings produced by this packaging model are significant, and the model's impact on physician specialty groups seems reasonably well distributed. (The one exception is the 10 percent reduction in visit reimbursement for cardiologists from packaging 12-lead electrocardiograms.) However, there are some significant disadvantages to this packaging model that

*We exclude consultations from these tables, as we lacked data on the universe of ambulatory consultations to calculate the percent reductions shown in the third column of each table. Since the number of consultations is relatively small, it would have only a minimal effect on the numbers shown.

need to be considered. The most significant disadvantage is that physicians would find it extremely easy to minimize or negate the expected cost savings by altering their billing practices. A physician could write a formal interpretation of the patient's electrocardiogram in the patient's record on any day except the day of the visit, and might legitimately request separate reimbursement for interpretation of the ECG.

Physicians might also recoup much of the revenue lost through packaging by altering the level of visit billed. For example, without packaging, a cardiologist may typically receive $22 for a limited visit with an established patient, and $12 for interpretation of a 12-lead electrocardiogram. The packaging model discussed here presents the cardiologist with at least two alternatives: bill for only a limited visit at $22 and forego the $12 fee for ECG interpretation, or downgrade the visit to the brief level ($18) and bill for ECG interpretation as well ($12). Downgrading the level of the visit in this case reduces the cardiologist's loss of reimbursement from $12 to $4. At the other extreme, a cardiologist might choose to bill a comprehensive visit for a new patient at $68 if he is prevented from billing an extended visit ($46) with ECG interpretation ($12).

Widespread adoption of packaging schemes such as the one presented here would provide physicians with greater incentive to upgrade or downgrade claims for visits in order to minimize loss of reimbursement. Such changes in billing patterns would be extremely difficult for Medicare carriers to control, and might eliminate most of the savings anticipated from packaging these procedures with visits.

4.0 STARRED SURGICAL PROCEDURES

4.1 Introduction

The starred surgical procedures in CPT-4 consist of a large number of surgical procedures performed by many different specialties in a variety of settings. They are called "starred," because their respective procedure codes are accompanied by an asterisk in the CPT-4 code book. Examples of starred surgical procedures that were studied in this report include incision and drainage of abscesses, removal of skin lesions, aspiration of fluid from infected or inflamed joints, dilation of urethral strictures, and drawing blood from veins (Table 4-1).

What these procedures have in common is that they require variable amounts of physician services before and after the procedure. Such pre- and post-procedure services include evaluation of the patient's symptoms, physical examination, interpretation of laboratory data, and follow-up of healing surgical incisions. Because the need for pre- and postoperative services may vary considerably, the usual concept of global reimbursement for surgical services does not apply to the starred surgical procedures. That is, reimbursement for the starred surgical procedures covers the procedure only. The physician may be reimbursed for other significant services provided at the time of the procedure by submitting a claim for a patient visit as well as for the procedure itself.

The quantity of such services provided with each starred surgical procedure varies greatly, depending not only upon the nature of the procedure, but on other factors as well. For example, arthrocentesis (withdrawal of fluid from an inflamed or infected joint) is likely to be performed in the context of a broader evaluation of the patient for the presence of problems such as gout or blood-borne infection. The frequently sudden appearance of a painful, swollen joint and the relatively minor nature of the procedure (arthrocentesis) increase the likelihood that the physician will obtain the history, examine the patient, order laboratory tests, and perform the

TABLE 4-1

STARRED SURGICAL PROCEDURES STUDIED

CPT-4 CODES	DESCRIPTION
11000	Debridement of extensive eczematous or infected skin; up to 10 percent of body surface
17000	Destruction of single facial lesion
17100	Destruction of non-facial single lesion by any method under local anesthesia
17340	Cryotherapy
20550	Injection tendon sheath, ligament, trigger points of ganglion cyst
20600	Arthrocentesis, small joint, bursa, ganglion cyst
20605	Arthrocentesis, intermediate joint, bursa or ganglion cyst
20610	Arthrocentesis, major joint or bursa
32000	Thoracentesis, puncture of pleural cavity for aspiration, initial or subsequent
36000	Introduction of intravenous needle or intracatheter; unilateral
36415	Venipuncture
36489	Percutaneous catheterization central venous line
36491	Cutdown placement of central venous catheter
36600	Anterial puncture, withdrawal of blood for diagnosis
53600	Dilation of male urethra stricture by passage of sound; initial
53660	Dilation of female urethra including suppository and/or installation: initial
53670	Urethra catheterization; simple
62270	Spinal puncture, lumbar diagnostic
62284	Injection procedure for spinal myelography or CTscan, spinal or posterior fossa
62289	Injection of substance other than anesthetic, contrast or neurolytic solutions; epidural or caudal

Source: 1986 BMAD 5% Beneficiary File.

arthrocentesis, all within a single visit. In this case, the physician would appropriately bill for the starred surgical procedure (arthrocentesis) and for a patient visit.

However, a physician who infrequently performs arthrocentesis may prefer to perform most of the evaluation and to refer the patient to a second physician for the arthrocentesis alone. In this latter situation, the second physician would appropriately bill only for the starred surgical procedure and not for a visit, if no other significant patient evaluation were performed.

Because many of the starred surgical procedures require relatively little time to perform, they may also take place in the context of patient visits in which other significant but unrelated physician services are provided. For example, a physician providing primary care services to a patient may decide to remove a few skin tags during a visit in which the patient's hypertension is re-evaluated. Billing for both the starred surgical procedure (e.g., excision of skin tags) and for the patient visit would be appropriate.

The appropriateness of simultaneous billing for a patient visit and for a starred surgical procedure depends therefore on whether other significant physician services were provided to the patient during the visit. These other services may be related or unrelated to the starred surgical procedure itself. (See below.)

Circumstances Justifying Simultaneous Claim for Visit

	Significant Pre- or PostOperative Care	Significant Unrelated Physician Services	Claim for Visit Appropriate
1.	No	No	No
2.	Yes	No	Yes
3.	No	Yes	Yes
4.	Yes	Yes	Yes

Our purposes in studying the starred procedures were similar to those for the endoscopies and for procedures in the 90000 series. We wanted to learn the frequency with which the procedures are performed, the physician specialties involved, and the usual reimbursement for each procedure. We also

wanted to know how frequently physicians submit claims for visits a with these procedures, and whether the frequency of these billed v significantly by type of procedure, or physician specialty.

The policy question for starred surgical procedures is also simi that for other procedures in this study: whether some of the starred surgical procedures can be "packaged" with visits, so that the physician is allowed to bill for the procedure or for the visit, but not for both. On the surface, the concept of packaging is more difficult to entertain for starred surgical procedures than for endoscopies or the 90000 series services. Some of the endoscopies and 90000 procedures (such as bronchoscopy and audiometry) are more likely to be provided as reasonably well-circumscribed services; that is, these procedures are typically performed after appropriate patient evaluation and referral, and few other significant patient services are likely to be provided at the time of the procedure. The starred surgical procedures, on the other hand, are much more likely to be provided as part of a broader physician service. As the above examples illustrate, many of the starred surgical procedures may require significant pre- or postoperative care at the time of the procedure, or may be performed in conjunction with other significant physician services.

4.2 Distribution and Charges by Location and Specialty

There were 222,769 claims for starred surgical procedures in calendar 1986, accounting for $6.7 million in allowed charges for our 5 percent sample. Extrapolating to the Medicare population as a whole, the total Medicare allowed charges for these procedures could run as high as $134.1 million. This estimate would account for approximately 1.4 percent of all surgical expenditures by Medicare for 1986 (Fischer, 1988).

Table 4-2 indicates that 87.1 percent of the starred surgical procedures are performed on an ambulatory basis with the physician's office being the most frequent site accounting for approximately 80 percent of all claims.

TABLE 4-2

LOCATION OF STARRED PROCEDURES BILLED AND PHYSICIAN SPECIALTY

Specialty		Physician's Office	Outpatient Department[a]	Inpatient	Other	All Locations
General Practice Family Practitce						
	*	76.7%	17.3%	4.9%	1.1%	100.0%
	+	15.6	29.4	6.2	28.3	15.8
General Surgery						
	*	56.1	9.7	32.9	1.3	100.0
	+	4.5	6.5	16.6	13.3	6.2
Dermatology						
	*	99.1	0.4	0.3	0.2	100.0
	+	31.3	1.6	0.7	6.5	24.6
Internal Medicine						
	*	77.1	6.1	16.1	0.7	100.0
	+	12.0	8.1	15.8	15.1	12.1
Orthopedics						
	*	92.2	3.3	4.4	0.1	100.0
	+	11.3	3.4	3.4	2.3	9.5
Urology						
	*	87.1	3.9	8.4	0.6	100.0
	+	10.1	3.8	6.2	8.9	9.0
OB-GYN						
	*	83.4	8.6	7.8	0.2	100.0
	+	1.7	1.4	0.1	0.6	1.6
ENT						
	*	81.3	8.0	10.5	0.2	100.0
	+	1.9	1.5	1.5	0.7	1.8
Group Practice						
	*	51.1	31.6	16.1	1.2	100.0
	+	4.8	24.9	9.6	15.5	7.3
Other Specialties						
	*	44.2	40.1	15.3	0.4	100.0
	+	6.8	19.4	39.9	8.8	12.0
All Specialties						
	*	77.8	9.3	12.3	0.6	100.0
	+	100.0	100.0	100.0	100.0	100.0

Note: Venipuncture procedures have been excluded from the above figures.

*Percents sum across rows.

+Percents sum down columns

[a]Outpatient department includes surgical day care.

Source: 1986 BMAD 5% Beneficiary File.

Also, dermatology is the most frequently represented specialty followed by general and family practice which together account for greater than 40 percent of all claims in all locations.

The most frequent starred surgical procedures are displayed in Table 4-3. These 15 procedures account for 75 percent of claims and 62 percent of allowed charges. Venipuncture represents the most frequent procedure accounting for approximately one-fifth of all starred procedures. The next most commonly performed procedures are arthrocentesis of a major joint and destruction of skin lesions.

The starred procedures vary substantially in their total allowed charges. Arthrocentesis of a major joint or bursa and destruction of a single facial lesion have by far the highest annual charges (each accounting for approximately 12 percent of all charges for starred procedures). Venipuncture represents 20.3 percent of all claims but only 1.9 percent of all allowed charges. Injection for spinal myelography at $170 on average receives the highest reimbursement and venipuncture the lowest at three dollars on average.

These fifteen procedures were analyzed for variations in allowed charges between physician specialties (Table 4-4). To simplify comparisons across specialties, seven procedures were collapsed into three procedure groups: arthrocentesis, dilation of urethral structure, and destruction of single lesion. In the case of selected grouped procedures (e.g., the three arthrocentesis codes), average allowed charges have been adjusted for specialty differences in procedure mix. For example, urologists' average reimbursement for dilation of urethral stricture was computed by standardizing the actual reimbursement for the various dilation codes to the procedure mix for all specialties. For skin debridement, the average reimbursement was highest for general surgeons at $54 and internists at $62, while the average for all general or family practitioners was $24. For intravenous catheterization, radiologists were paid the most $58 on average while the average for all other specialties was nearly 50 percent less.

TABLE 4-3

RELATIVE FREQUENCY OF SELECTED STARRED PROCEDURES FOR CY 1986

CPT-4 CODES	DESCRIPTION	Percent of all Procedures[a]	Mean Allowed Charge	Percent of Total Charges For All Procedures[a]
36415	Venipuncture	19.8%	$ 3.00	1.9%
20610	Arthrocentesis, major joint or bursa	13.3	27.65	12.2
17000	Destruction of single facial lesion	12.3	30.50	12.4
17100	Destruction of non-facial single lesion	6.3	24.31	5.1
20550	Injection tendon sheath, ligament	4.2	22.83	3.1
17340	Cryotherapy	3.6	18.35	2.2
20605	Arthrocentesis, intermediate joint or bursa	2.4	26.32	2.1
53670	Urethra catheterization	2.4	13.47	1.1
36489	Percutaneous catheterization central venous line	1.9	85.14	5.5
53660	Dilation of female urethra	1.7	19.70	1.1
36000	Intravenous needle or intracatheter	1.6	31.30	1.6
32000	Thoracentesis	1.2	61.54	2.4
11000	Debridement of skin	1.2	39.21	1.6
53600	Dilation of male urethra stricture	1.0	24.71	0.8
62270	Spinal puncture	0.8	52.33	1.3
36491	Unilateral venous catheterization	0.6	138.60	2.8
62284	Injection for spinal myelography or CTscan	0.5	169.75	2.7
62289	Spinal injection of substance, epidural or caudal	0.3	137.83	1.6
Total Of Above		75.1		61.5

[a]Percentages are based upon data on all 250 starred procedures.

Source: 1986 BMAD Beneficiary File.

TABLE 4-4

AVERAGE ALLOWED CHARGES FOR SELECTED STARRED PROCEDURES BY PHYSICIAN SPECIALTY

Procedure		SPECIALTIES									
		General And Family Practice	General Surgery	Dermatology	Internal Medicine	Orthopedics	Urology	Obstetrics/ Gynecology	Radiology	ENT	All Specialties
Skin Debridement	%	20.7	36.70	23.2	6.3	3.8	0.4	0.2	0.0	1.2	100.0
	$	23.90	54.34	29.04	61.61	36.00	25.37	22.70	--	31.0	40.20
Injection of Skin Lesion	%	4.6	0.7	90.5	1.6	0.5	0.0	0.0	0.0	0.2	100.0
	$	19.05	21.64	17.49	21.05	21.84	--	--	--	14.7	17.80
Destruction of Single Lesion (facial/nonfacial)	%	8.1	3.2	85.2	1.6	0.0	0.0	0.1	0.0	0.2	100.0
	$	24.55	26.90	28.71	26.66	--	--	29.62	--	33.76	28.30
Cryotherapy	%	14.4	2.3	78.9	3.5	0.0	0.0	0.0	--	0.3	100.0
	$	15.35	16.18	18.68	20.42	--	--	--	--	20.92	18.2
Injection of Tendon Sheath	%	27.3	2.8	.2	27.5	34.8	0.0	0.7	0.0	0.1	100.0
	$	20.41	23.45	13.98	23.5	23.12	--	31.49	--	25.45	22.60
Arthrocentesis	%	22.8	4.0	--	33.6	36.4	0.0	0.2	--	0.1	100.0
	$	24.9	27.79	--	27.16	27.8	--	24.86	--	21.74	26.90
Thoracentesis	%	8.2	9.0	0.0	37.5	0.0	0.3	0.2	0.0	0.0	100.0
	$	44.61	59.51	--	60.10	--	75.8	54.62	--	--	61.30
Intra-Venous Catheterization	%	47.3	3.9	0.0	18.5	0.0	0.4	0.2	18.51	0.0	100.0
	$	24.73	28.02	--	25.26	--	19.42	29.69	58.08	--	32.43
Percutaneous Venous Line	%	5.8	32.7	0.0	16.1	0.0	0.1	0.4	0.0	0.0	100.0
	$	77.52	89.57	--	80.98	--	95.13	67.66	--	--	86.41
Arterial Puncture	%	44.6	1.5	0.0	25.1	0.3	0.1	0.0	0.0	0.3	100.0
	$	15.03	18.88	--	16.55	24.02	33.76	--	--	15.7	16.60
Dilation of Ureth. Stricture	%	6.0	1.7	0.0	1.0	0.0	89.7	1.3	0.0	0.0	100.0
	$	20.49	19.97	--	18.60	--	21.72	--	--	--	21.62
Urethral Catheterization	%	17.1	2.0	0.0	5.3	0.1	72.9	1.4	0.0	0.0	100.0
	$	13.72	11.11	--	13.94	16.00	13.3	10.5	--	--	13.38

Note: Percents are calculated across rows and may not sum to 100 percent due to other specialties that are not shown in the table. The average allowed charges for grouped procedures (e.g., Arthrocentesis, Dilation of Urethral Stricture, Destruction of Single Lesion) are adjusted for procedure mix.

Source: 1986 BMAD Beneficiary File.

4.3 Regional Variation in Utilization

Fifteen frequent or costly procedures were analyzed for regional variations in use rates (Table 4-5). There was wide regional variation in dermatologic procedures, such as removal or destruction of benign skin lesions. For example, for destruction of facial skin lesions, the Western region has a rate 3.8 times greater than the Northeast or 2.9 times greater than the North Central states. The difference in the rate of these dermatologic procedures may reflect, in part, environmental differences or other regional differences. For example, the Southern or Western states may have a higher incidence of sun-induced skin lesions. An alternative explanation may be that the regions having a higher procedure rate may also have a higher ratio of dermatologists to the population. In 14 out of 16 procedures, the Northeast tended to have higher costs on average, but this may reflect carrier specific reimbursement policies or variability in the mix of specialties performing the procedures across regions.

4.4 Billing for Same Day Ambulatory Visits

We wanted to determine how widespread the practice of billing for a patient visit was when a starred surgical procedure was also billed. According to the CPT-4 manual, visits are allowed to be billed in accordance with the following rules when a starred surgical procedure is also billed:

- When the starred surgical procedures is the major service at the time of a new patient visit (initial), the visit should be billed as 99025 (i.e., special services),
- When a starred surgical procedure is performed during a visit involving significant additional services, the appropriate visit code is billed (e.g., removal of a small skin lesion at the time of comprehensive history and physical exam),
- When a starred surgical procedure is carried out during a follow-up visit (i.e., for the established patient) and it is the major service at that visit, the service visit should not be billed.

TABLE 4-5

REGIONAL VARIATION RATES OF SELECTED STARRED PROCEDURES

Procedure	Region	Mean Allowed Charge	Utilization Rate Per 100,000 Enrollees
Arterial Puncture	Northeast	$20.89	334.0
	North Central	18.09	533.1
	South	13.71	135.2
	West	12.13	284.8
Arthrocentesis of Intermediate Joint	Northeast	31.66	328.7
	North Central	28.26	328.6
	South	21.80	335.1
	West	25.63	393.6
Arthrocentesis of Major Joint	Northeast	31.10	2,014.4
	North Central	29.20	1,647.2
	South	23.20	2,013.8
	West	31.10	1,995.4
Arthrocentesis of Small Joint	Northeast	28.01	220.6
	North Central	26.56	193.8
	South	19.70	250.0
	West	23.20	189.0
Catheterization of Urethra	Northeast	19.07	165.8
	North Central	11.72	381.2
	South	13.35	439.3
	West	13.18	358.7
Cryotherapy	Northeast	45.09	344.3
	North Central	14.99	499.6
	South	12.03	642.1
	West	15.57	618.6
Destruction of Single Facial Lesion or any Premalignant Lesion	Northeast	40.90	870.2
	North Central	26.07	1,137.5
	South	26.18	2,147.4
	West	34.84	3,279.2
Destruction of Single Lesion (non-facial)	Northeast	37.89	497.2
	North Central	23.80	752.5
	South	20.57	1,017.0
	West	23.93	1,520.4
Dilation of Female Urethral Stricture	Northeast	21.78	226.2
	North Central	18.65	195.1
	South	17.80	337.5
	West	24.69	200.1
Dilation of Male Urethral Stricture	Northeast	30.71	168.5
	North Central	21.07	160.5
	South	20.34	129.4
	West	29.12	124.2

TABLE 4-5 (continued)

REGIONAL VARIATION RATES OF SELECTED STARRED PROCEDURES

Procedure	Region	Mean Allowed Charge	Utilization Rate Per 100,000 Enrollees
Injection Intralesion	Northeast	27.21	118.7
	North Central	17.01	130.9
	South	11.42	132.4
	West	19.93	223.8
Injection of Tendon Sheath or Ligament	Northeast	25.87	396.7
	North Central	19.87	328.4
	South	20.21	614.7
	West	25.38	1,272.1
Intravenous Catheterization	Northeast	59.28	187.2
	North Central	18.71	467.3
	South	40.46	107.2
	West	31.23	175.2
Percutaneous, Central Venous Catheterization	Northeast	112.20	231.5
	North Central	74.73	295.8
	South	89.64	296.1
	West	66.58	307.0
Skin Debridement	Northeast	95.99	140.9
	North Central	30.58	198.3
	South	23.99	169.0
	West	28.13	192.0
Thoracentesis	Northeast	81.66	163.5
	North Central	55.54	149.6
	South	56.38	187.0
	West	56.37	187.4

Note: Data exclude Travelers Railroad claims.

Source: 1986 5% BMAD Beneficiary File.

Ambulatory starred surgical procedures that were performed frequently were analyzed to determine the frequency of billing for a visit (or consultation) on the same day as the procedure was performed by the physician (Table 4-6). For this analysis, visits were categorized into five groupings: all initial visits (i.e., all level of visits for new patients), minimal and brief established patient, limited and intermediate established patient, extensive and complex established patient, and lastly, all consults. We were especially interested in follow-up visits that were billed along with the procedure, because our expectation in the case of minimal to limited visits at least is that the starred procedure was likely to be the primary reason for the follow-up visit.

In general, physicians who submitted bills for an office visit (in addition to the procedure) were more likely to bill for a limited or intermediate visit than for any other type of visit. Consults by the same physician were rarely billed. The frequency of billing for visits varied by type of procedure and by physician specialty. For the two orthopedic procedures (arthrocentesis and injection of tendon sheath), visits were commonly billed for 59.1 percent and 68.4 percent of the time, respectively, whereas visits were less commonly associated with two of the dermatologic procedures: destruction of skin lesion and cryotherapy (22 and 25 percent of the time, respectively). One possible explanation for this difference between orthopedic specialists and dermatologists is that the specific orthopedic procedures studied here are more likely to require significant pre-operative evaluation of the patient. For example, a patient presenting with a swollen, painful joint or with an acute tendonitis will need to be evaluated for a history of trauma, infection, and systemic illnesses, and will need to undergo a physical examination that includes more than the affected joint or tendon. A physician will want to look for other evidence of trauma, infection, or systemic illnesses such as arthritis. These tasks may well be carried out by the orthopedic specialist before performing the indicated procedure. The two dermatologic procedures considered here are less likely to require extensive history-taking or physical examination for proper diagnosis or treatment, and it is therefore less likely that the dermatologist would submit separate

TABLE 4-6

FREQUENCY OF AMBULATORY VISITS BILLED ON SAME DAY AS PROCEDURE

	NEW PATIENT	ESTABLISHED PATIENT				
Specialty	All Initial Patient Visits (90000-90020)[a]	Minimal to Brief Visits (90030-90040)[a]	Limited to Intermediate Visits (90050-90060)[a]	Extensive to Comprehensive Visits (90070-90080)[a]	All Consults (90600-90654)[a]	All Visits and Consults
			Arthrocentesis			
General/Family Practice	2.2%	4.5%	26.9%	2.8%	0.1%	36.5%
General Surgery	1.8	8.7	33.1	4.8	0.1	48.5
Internal Medicine	4.2	4.8	49.1	7.5	2.0	67.6
Orthopedics	16.6	8.2	33.2	6.3	1.7	66.0
Group Practice	3.0	9.9	34.7	5.7	3.0	56.3
All Specialties	2.0	7.3	41.9	6.4	1.5	59.1
			Injection of Tendon Sheath			
General/Family Practice	3.6	8.2	46.2	7.6	0.2	65.8
General Surgery	3.3	7.0	43.1	4.6	0.4	58.4
Internal Medicine	4.0	4.2	52.0	9.1	2.9	72.2
Orthopedics	17.2	11.9	34.7	7.1	1.9	72.8
Group Practice	4.4	6.2	43.9	6.9	4.8	66.2
All Specialties	8.2	7.9	42.7	7.6	2.0	68.4
			Dilation of Urethra Stricture (Male or Female)			
General/Family Practice	0.3	3.2	43.9	6.1	0.9	54.4
General Surgery	0.0	8.0	17.3	6.9	0.0	32.2
Urology	3.9	5.4	23.2	3.7	1.2	37.4
Internal Medicine	2.9	14.3	14.3	5.7	0.0	37.2
Group Practice	1.3	2.6	13.5	2.6	1.7	21.7
All Specialties	3.5	5.3	24.0	3.9	1.1	37.8

TABLE 4-6 (continued)

FREQUENCY OF AMBULATORY VISITS BILLED ON SAME DAY AS PROCEDURE

Specialty	NEW PATIENT	ESTABLISHED PATIENT				
	All Initial Patient Visits (90000-90020)[a]	Minimal to Brief Visits (90030-90040)[a]	Limited to Intermediate Visits (90050-90060)[a]	Extensive to Comprehensive Visits (90070-90080)[a]	All Consults (90600-90654)[a]	All Visits and Consults
			Urethral Catherization			
General/Family Practice	3.7%	3.5%	31.6%	6.0%	0.3%	45.1%
General Surgery	2.2	6.7	35.6	8.9	2.2	55.6
Internal Medicine	1.8	4.8	44.1	7.9	0.4	59.0
Urology	10.5	11.8	35.7	3.8	2.8	64.6
Group Practice	3.6	7.6	8.8	0.7	1.0	21.7
All Specialties	8.3	9.5	33.0	4.3	2.1	57.2
			Destruction of Lesion			
General/Family Practice	1.0	6.4	25.6	4.3	0.2	37.5
General Surgery	1.1	2.5	9.6	24.6	0.2	38.0
Internal Medicine	2.4	4.0	33.4	5.9	0.2	45.9
Dermatology	3.1	1.7	8.8	0.9	0.2	14.7
Group Practice	1.2	2.8	8.1	1.7	0.8	14.6
All Specialties	2.8	2.2	10.5	1.3	0.2	22.0
			Cryotherapy			
General/Family Practice	1.2	6.5	31.1	4.4	0.0	43.2
Dermatology	2.9	1.7	15.5	1.2	0.2	21.5
Internal Medicine	3.8	4.1	40.6	6.4	0.4	55.3
Group Practice	2.6	6.0	16.8	2.2	0.0	27.6
All Specialties	2.6	2.8	18.1	1.9	0.1	25.5

TABLE 4-6 (continued)

FREQUENCY OF AMBULATORY VISITS BILLED ON SAME DAY AS PROCEDURE

	NEW PATIENT	ESTABLISHED PATIENT				
Specialty	All Initial Patient Visits (90000-90020)[a]	Minimal to Brief Visits (90030-90040)[a]	Limited to Intermediate Visits (90050-90060)[a]	Extensive to Comprehensive Visits (90070-90080)[a]	All Consults (90600-90654)[a]	All Visits and Consults
			Skin Debridement			
General/Family Practice	3.4%	4.9%	29.2%	7.7%	0.2%	45.4%
General Surgery	1.7	3.0	12.8	0.9	1.3	19.7
Dermatology	2.9	2.7	27.4	2.5	0.4	35.9
Group Practice	1.0	3.9	9.8	0.5	1.0	16.2
All Specialties	2.7	4.1	22.8	3.4	0.6	33.6
			Injection of Lesion			
General/Family Practice	4.0	43.4	23.2	5.0	0.0	75.6
Dermatology	5.1	5.1	36.6	4.1	0.3	51.5
Group Practice	1.1	4.4	51.6	1.1	2.2	60.4
All Specialties	5.1	6.6	35.9	4.0	0.3	51.9

[a]CPT-4 Codes for visits or consults

Note: Percents sum across rows.

Source: 1986 BMAD 5% Beneficiary File.

claims for the patient visit in addition to the procedure. For arthrocentesis and injection of tendon sheath, orthopedists billed initial visits often (16.6 percent and 17.2 percent of the time, respectively) which could mean that orthopedists are not billing initial visits under the recommended 99025 code. Thus, the reported percent of initial visits may be lower than expected for the other specialties, because visits billed as special services, under the 99025 code, were not included in our analysis. Also, minimal or brief visits associated with dilation of urethral stricture are more frequently billed by internists than by urologists who tend to bill for limited to intermediate visits.

Based upon this analysis, a pattern of billing for visits along with the starred procedure for any one specialty was not evident from this data. Rather it seems to depend on the nature of the procedure (i.e., whether significant pre- or postoperative services are needed) and whether it was likely that other physician services were also provided during that visit. Alternatively, the interpretation of frequent billing for minimal or brief visits under these circumstances may be that physicians are inappropriately billing for these visits when the procedure is the sole reason for the visit. In the case of some starred procedures, billing of visits may be justified by primary care physicians but prohibiting visit billing to only certain specialties would be inequitable. Elimination of payment for only minimal and brief visits would most likely result in physicians billing for the next higher visit code. In addition, elimination of payment for the visit when a starred procedure is billed could result in internists and general practitioners referring the patient for the starred procedure, since the Medicare allowed charge for an accompanying visit may be as high as that for many of the starred procedures themselves.

Rates of billing for ambulatory visits in addition to the procedure were analyzed by carrier to determine if this practice varies across the 55 carriers studied (Table 4-7). Generally, carriers paid for visits associated with the orthopedic procedures such as arthrocentesis and injection of tendon sheath. For all eight starred procedures, visits were paid more than 50 percent of time by some carriers (Arizona, Puerto Rico, Virgin Islands,

TABLE 4-7

AMBULATORY STARRED PROCEDURES AND RATE OF ASSOCIATED VISIT BILLS

	Arthrocentesis	Injection of Tendon Sheath	Destruction of Lesion	Cryotherapy	Injection of Lesion	Skin Debridement	Urethral Catherization	Dilation of Urethral Stricture
Alabama	69.8%	70.7%	1.8%	3.3%	11.8%	8.3%	61.7%	26.4%
Alaska	0.0	33.3	0.0	--	--	--	0.0	--
Arizona	68.1	80.2	34.1	73.8	65.0	50.0	59.1	27.9
Arkansas	75.2	89.6	32.6	53.7	55.6	81.8	71.6	35.6
California (Northern)	50.2	48.7	10.9	31.5	42.0	25.7	4.7	1.7
California (Southern)	68.7	69.4	19.3	59.1	58.2	42.7	63.3	46.7
Colorado	67.2	69.1	27.4	26.7	61.5	11.1	71.1	26.1
Connecticut	80.2	71.4	3.6	23.1	69.2	10.3	62.5	34.4
Delaware	30.7	80.0	0.0	0.0	0.0	--	6.7	0.0
District of Columbia	70.2	72.0	1.5	0.0	0.0	--	52.8	46.4
Florida	63.5	66.2	26.6	32.4	70.1	42.9	48.8	40.8
Georgia	75.9	78.1	12.6	31.2	15.8	32.3	56.4	39.3
Hawaii	26.0	38.6	4.2	0.0	0.0	20.0	35.7	5.3
Idaho	66.1	64.6	26.8	17.7	0.0	60.0	88.9	66.7
Illinois	72.2	64.7	13.1	33.3	79.6	22.3	41.5	29.8
Indiana	57.6	78.6	12.5	17.8	50.0	23.9	45.7	22.8
Iowa	56.8	64.6	11.2	38.3	8.7	9.6	60.8	32.3
Kansas (Except Kansas City)	39.9	56.4	8.8	20.5	0.0	25.0	43.5	8.0
Kansas City	75.0	78.0	18.1	33.3	92.3	31.6	53.2	39.1
Kentucky	63.5	47.6	31.9	19.8	71.8	34.8	64.8	53.0
Louisana	77.0	75.6	16.7	21.0	79.2	50.0	66.2	56.5
Maine	74.8	70.0	15.9	33.3	0.0	0.0	50.0	47.4
Massachusetts	28.4	30.6	2.6	1.9	42.9	0.0	12.7	5.6
Michigan	24.7	17.8	6.5	0.0	3.1	3.1	45.5	5.9
Minnesota (Rural)	55.8	58.6	44.6	40.0	80.0	20.0	71.4	55.9

TABLE 4-7 (continued)

AMBULATORY STARRED PROCEDURES AND RATE OF ASSOCIATED VISIT BILLS

	Arthrocentesis	Injection of Tendon Sheath	Destruction of Lesion	Cryotherapy	Injection of Lesion	Skin Debridement	Urethral Catherization	Dilation of Urethral Stricture
Minnesota (Minneapolis & Surr. Area)	71.6%	77.3%	27.3%	44.1%	75.0%	50.0%	40.4%	39.5%
Mississippi	78.0	84.2	17.6	21.2	62.5	50.0	55.9	79.6
Missouri (Except Kansas City)	78.0	70.0	25.1	32.1	38.5	46.2	70.9	40.7
Montana	61.4	66.7	16.0	50.0	50.0	--	76.9	22.2
Nebraska	68.0	61.0	24.9	79.2	41.7	54.5	40.0	40.0
Nevada	73.3	63.6	37.0	66.7	27.4	28.6	77.4	70.0
New Hampshire	50.8	62.5	3.7	0.0	33.3	0.0	0.0	14.3
New Jersey	80.1	72.5	16.1	12.1	41.9	24.6	33.7	35.1
New Mexico	75.0	77.6	19.8	56.1	23.1	40.0	71.4	66.7
New York	41.4	46.3	2.2	--	33.3	7.8	--	18.7
New York (Queens)	63.7	61.8	22.0	50.0	68.8	37.5	42.1	31.7
New York City & Suburbs (Except Queens)	44.0	25.3	18.0	13.3	22.7	17.4	--	21.5
North Carolina	81.5	82.8	14.1	19.6	70.3	37.3	58.3	34.4
North Dakota	42.8	65.5	21.5	42.9	100.0	25.0	65.4	35.7
Ohio	73.4	76.9	23.8	38.2	68.5	22.0	29.9	47.4
Oklahoma	63.0	52.5	20.9	42.8	60.0	35.7	57.3	31.4
Oregon	27.0	28.1	8.1	32.7	0.0	20.0	76.4	11.1
Pennsylvania	68.2	70.0	2.4	4.5	11.1	0.0	39.6	47.7
Puerto Rico/Virgin Islands	80.3	72.7	80.6	66.7	87.3	79.2	80.0	69.0

TABLE 4-7 (continued)

AMBULATORY STARRED PROCEDURES AND RATE OF ASSOCIATED VISIT BILLS

	Arthrocentesis	Injection of Tendon Sheath	Destruction of Lesion	Cryotherapy	Injection of Lesion	Skin Debridement	Urethral Catherization	Dilation of Urethral Stricture
Rhode Island	33.8%	75.0%	28.9%	17.9%	100.0%	0.0%	0.0%	100.0%
South Carolina	42.3	49.0	6.8	63.6	63.6	48.7	56.4	18.8
Tennessee	75.9	65.1	24.0	36.1	86.4	42.9	53.8	41.4
Texas	73.7	77.6	12.5	28.9	68.1	33.3	54.5	34.2
Travelers Railroad	66.6	74.8	18.3	43.2	68.3	20.3	60.0	30.7
Utah	48.8	52.2	4.3	50.0	4.5	9.1	60.0	21.1
Virginia	68.0	76.3	19.3	14.8	39.1	37.0	65.3	37.7
Washington	38.1	31.2	8.7	22.7	20.0	28.6	47.8	13.2
West Virginia	63.9	63.3	39.4	5.0	83.3	40.9	68.8	31.7
Wisconsin	10.5	16.2	5.6	5.5	5.6	5.6	17.7	8.3
Wyoming	53.6	50.0	7.7	100.0	0.0	0.0	57.1	33.3

Note: (-) represents absence of the procedure.

Source: 1986 BMAD 5% Beneficiary File.

Minnesota, Arkansas, Louisiana, and New Jersey). Conversely, some carriers (Hawaii, Kansas, New Hampshire, Alaska, and Delaware) rarely or infrequently paid for associated visits, with the exception of visits associated with the two orthopedic procedures. Thus, the probability that a visit bill is submitted appears to be a function both of the type of procedure (e.g., orthopedic) and of carrier policies. A limitation of our analysis was that we were not able to determine whether differences in the frequency of billing for associated visits among carriers may represent, to some extent, the practice of billing for associated visits on a different day than when the procedure was billed.

4.5 Conclusion

Our analysis of claims for starred procedures demonstrates a wide variability by procedure and by specialty in the billing of visits with these procedures. If we assume that physicians' billing practices on the whole provide a reasonably accurate measure of the services provided to patients, then it appears that significant other services are more likely to be provided with the starred procedures than with some procedures in the 90000 series or with some forms of endoscopy. For example, for the starred procedures, the lowest frequency of same-day, same-physician visits was 22 percent (for destruction of skin lesion). In contrast, only 11 percent of echocardiographies and 1.4 percent of colonoscopies beyond the splenic flexure had associated billed visits. (Cf. Tables 3-7 and 5-8.)

If we accept that, in the aggregate, billing practices are a reasonable reflection of physician services, then we can attempt to explain some of the variability in the frequency of billed visits for the starred procedures. The first source of the variability is the nature of the procedure itself. Some starred procedures with a high frequency of billed visits (such as arthrocentesis and injection of tendon sheath) are likely to pose greater diagnostic problems. The physician performing these two procedures may also need to obtain a history of the immediate problem, perform a physical examination of the affected area and related body systems, and obtain

appropriate laboratory studies. Other starred procedures with a high frequency of billed visits (such as urethral catheterization) may typically be performed as part of broader ambulatory or primary care services to a patient with chronic urinary tract problems.

However, most of the common starred procedures examined here are performed by many types of physicians, some of whom provide primary care services, others of whom are highly specialized. Therefore, the amount of other physician services provided with a starred procedure depends not only on the nature of the procedure, but on the physician who performs the procedure. An internist or family practitioner, when removing a benign skin lesion, may attend to other primary care issues such as hypertension, diabetes, or smoking. A dermatologist is less likely to do so.

The varying contexts in which these procedures are performed make it difficult to package these procedures with visits. For example, dermatologists submit 85 percent of claims for destruction of (benign) skin lesion, but bill for visits only 14 percent of the time (Tables 4-4 and 4-6). Most of the remaining 15 percent of claims for this procedure are submitted by general and family practitioners and by internists, who are much more likely to bill for visits as well as for the procedure. Again, if billing patterns are accurate reflections of practice patterns, the majority of patients undergoing this procedure receive no other significant physician services at the time of the procedure.

Consider, however, the effects of a policy that prohibited the billing of visits with this procedure. Internists and general and family practitioners would be likely to either stop performing these procedures themselves and to refer patients to dermatologists, or would unbundle the procedure from other services by requiring patients to make a separate visit for the skin procedure. Either behavior would constrain access to this service for Medicare patients.

A second policy alternative would be to prevent certain specialties from billing visits with some starred procedures. For example, dermatologists might be prohibited from billing visits when performing cryotherapy or when removing a benign skin lesion, on the assumption that they are unlikely to be

providing other significant services during the same visit. Such a policy of selective billing prohibitions by specialty would be politically unpopular with physicians, who would see it as discriminatory and as a dangerous precedent. Furthermore, the policy could not be enforced effectively or equitably by Medicare carriers, since many dermatologists bill for services as part of physician groups, and thus are identified on their claims not as dermatologists but simply as members of a group practice.

An alternative to selective and nonselective prohibitions on billing visits would be to make no change in the current rules for reimbursement of starred procedures, but to monitor physician billing practices agressively at the carrier level. This would mean that physicians are allowed to bill for a visit with a starred procedure if other services are provided at the time of the visit, but that these other services must be documented in the patient's record. Carriers could remind physicians of the need to document these services in a provider bulletin, and at the same time notify physicians that billing practices will be monitored through the auditing of patient records. Carriers might select specific starred procedures or physician specialties for auditing on a rotating schedule, targeting those areas where the suspicion of abuse is greatest.

This approach acknowledges that the concept of packaging the starred procedures with visits is difficult because of the variable amount of physician services required at the time of the procedure. Eliminating the option to bill for simultaneous patient visits ignores this important distinguishing characteristic of the starred surgical procedures. The approach outlined above in essence calls for effective enforcement of current guidelines for billing visits with starred procedures. If carriers are able enforce these guidelines through effective claims payment edits and other mechanisms, significant savings should be realized.

A word of caution should be added here. We examined in detail only those starred procedures which had the highest frequency in ambulatory settings. As stated above, for none of these procedures did there seem to be a consensus by physicians (as reflected by billing patterns) that claims for visits were unwarranted. The extent and pattern of billing for visits appear

to be justified by the nature of these services and the circumstances in which they are performed. However, it is possible that a detailed review of all starred procedures might reveal some services for which billed visits appear to be uncommon and unjustified. Even if such instances are found, however, it is unlikely that significant savings could be achieved by altering reimbursement policies for these less frequently performed minor surgical procedures.

5.0 ENDOSCOPIC PROCEDURES

5.1 Sample

The sample consists of 148,951 pulmonary and gastrointestinal endoscopic procedures performed during 1986. These procedures are from the BMAD file (all Medicare Part B claims for a 5 percent sample of beneficiaries) for 1986, and include all endoscopies in the following categories: bronchoscopies, upper GI endoscopies, proctosigmoidoscopies, sigmoidoscopies, and colonoscopies. The CPT-4 codes used to define these groups of procedures are given in Table 5-1. Although many other types of endoscopies exist (such as laryngoscopy, laparoscopy, cystoscopy, and arthroscopy), this study focused on pulmonary and gastrointestinal endoscopies because these procedures represent the most frequent forms of endoscopy under Medicare.

5.2 Description of Endoscopic Procedures

Although the range of endoscopies considered in this study may seem narrow, these procedures actually differ in a number of respects. They may be performed for diagnostic, therapeutic, or preventive purposes. Some procedures require more patient preparation than others, and some procedures require more physician training and skill than others.

Bronchoscopies are usually performed to diagnose illnesses of the lower respiratory tract when direct visualization or biopsy of a lesion is necessary. Since the patient must have been fasting (usually overnight) prior to the procedure, bronchoscopy is nearly always performed on a scheduled basis. Therefore, other components of patient evaluation (including history, physical examination, and laboratory tests) have usually been performed at a separate visit prior to the bronchoscopy. Bronchoscopy is performed only when a diagnosis or strong suspicion of lower respiratory illness exists, and is never performed as part of routine health maintenance on a general population.

TABLE 5-1

CPT-4 CODES FOR PULMONARY AND GASTROINTESTINAL ENDOSCOPIES

BRONCHOSCOPY	31620 TO 31659
UPPER GASTROINTESTINAL ENDOSCOPY (Excludes ERCP, 43260 to 43272, and small intestinal endoscopy, 44360 to 44393)	43234 TO 43258
PROCTOSIGMOIDOSCOPY	45300 TO 45321
SIGMOIDOSCOPY	45330 TO 45336
COLONOSCOPY BELOW THE SPLENIC FLEXURE	45355 TO 45372
COLONOSCOPY BEYOND THE SPLENIC FLEXURE	45378 TO 45385

Source: 1986 BMAD 5% Beneficiary File, and American Medical Association, Physicians' Current Procedural Terminology, Fourth Edition. Chicago, Ill.: AMA, 1984)

Like bronchoscopy, upper GI endoscopy requires the patient to have fasted for several hours. However, this form of endoscopy is more likely to be performed for emergent reasons such as bleeding, and the opportunity for patient evaluation prior to the procedure in these cases is diminished. Nevertheless, the majority of upper GI endoscopy is performed on a scheduled basis for evaluation of known or suspected disease of the esophagus, stomach, and small intestine, and never for routine health maintenance. As with bronchoscopy, most components of patient evaluation are performed prior to the procedure.

The remaining endoscopies in this study (proctosigmoidoscopy, sigmoidoscopy, and colonoscopy below or above the splenic flexure) are performed on the lower GI tract. The procedures involve inspection of the rectum and colon to progressively higher levels, with proctosigmoidoscopy being the simplest of the four and colonoscopy above the splenic flexure the most difficult and invasive. Procedures involving higher levels of the intestinal tract require more physician skill and training, and more prolonged patient preparation.

Of these four endoscopies, the least invasive procedure (proctosigmoidoscopy) is the most likely to be performed in a primary care setting for health maintenance purposes. The majority of cancers of the colon and rectum occur in the lowest portions of the GI tract and should be detectable through routine tests including digital exam, tests for occult blood, and inspection of the bowel through proctoscopy or proctosigmoidoscopy. Many physicians perform this procedure as part of routine health maintenance for adults over age 40 or 45. The procedure itself is relatively brief, and requires less patient preparation and physician training than other forms of endoscopy. Of all of the forms of endoscopy considered in this study, proctosigmoidoscopy is the most likely to be performed by a primary care physician, and the most likely to take place during a visit where other patient evaluation (such as follow-up of chronic illnesses) is performed.

Sigmoidoscopy involves inspection of the portion of the colon just beyond the rectum. The procedure may be performed by primary care physicians for health maintenance purposes (like proctosigmoidoscopy). It may also be used by GI specialists (in place of full colonoscopy) to follow known disease of the lower colon. When performed for health maintenance in a primary care setting, it is likely to be done with little or no patient preparation during a visit when other primary care health problems may also be addressed.

The more invasive procedures (colonoscopy above or below the splenic flexure) are usually done for further evaluation of symptoms or abnormal findings (such as occult bleeding), or for following previously diagnosed abnormalities (such as colonic polyps) at regular intervals. Patients scheduled for either form of colonoscopy must undergo complete bowel cleansing, beginning about 24 hours before the procedure, and thus colonoscopy is always performed on a scheduled basis after appropriate evaluation of the patient has been completed. Colonoscopy requires more physician training and skill than the other procedures that examine the lower GI tract; however, the procedure provides the most complete evaluation of the colon. Physicians skilled at this form of endoscopy may also obtain tissue specimens for diagnosis, or may perform therapeutic procedures (such as removal of polyps).

5.3 Research Questions and Policy Issues

The purpose of the study was to provide descriptive information concerning endoscopic procedures, such as frequency and location of endoscopies, the medical specialties of physicians performing endoscopies, and the mean reimbursement for these procedures.

A second goal was to determine the frequency with which physicians bill for visits or consults (as well as for endoscopies) at the time that endoscopies are performed. The issue for a payor such as Medicare is whether the physician should be reimbursed for a visit as well as for a procedure, if the procedure was the primary or only significant service delivered during the visit.

It is difficult to consider this issue for endoscopies performed in inpatient settings, where the physician performing the endoscopy may have responsibilities as attending or consulting physician, and might therefore legitimately bill for a visit or consult on the same day as the endoscopy. For example, a gastroenterologist may be the attending physician for a hospitalized patient with a non-healing gastric ulcer. The physician would want to perform endoscopy to visualize and perhaps biopsy the ulcer. As the patient's attending, the physician would also want to visit the patient on the hospital ward and review all other aspects of the patient's medical problems. It would be reasonable for the physician under these circumstances to submit separate claims for the endoscopy and for the hospital visit.

For ambulatory patients, however, it is often the case that the endoscopy was the primary or exclusive reason for the physician visit. This seems more likely to be true with more complex endoscopies such as bronchoscopy and colonoscopy, which are almost always performed on a scheduled basis after appropriate patient evaluation and preparation. For these complex endoscopies, the physician performing the endoscopy may well provide other services to the patient, but (as described above) these services are likely to have been performed during a previous visit.

For less complex procedures (such as proctosigmoidoscopy), the endoscopy may not have been the primary or exclusive reason for the patient visit. Other significant physician services may be provided during the same visit, and it may be appropriate for physicians to bill for both the procedure and the visit. However, the distribution of Medicare reimbursement for these procedures may be altered by the extent to which individual physicians exercise this option for simultaneous billing.

In summary, the relevant policy question is whether simultaneous billing for visits with some endoscopic procedures is appropriate, or whether in some situations it represents a form of double billing. The data were analyzed therefore to see whether there were differences, by physician specialty or by type of procedure, in the frequency with which visits are billed with ambulatory endoscopies. (Ambulatory consults were very infrequent in this sample, and data for consults are not presented in the findings.)

5.4 Findings

5.4.1 Endoscopic Procedures by Physician Specialty

Although physicians in nearly every specialty performed these types of endoscopic procedures at times, more than 90 percent of the procedures were performed by physicians in only seven specialties: general practice/family practice, general surgery, gastroenterology, internal medicine, proctology, pulmonary medicine, and thoracic surgery.

Some of these specialists performed one or two types of endoscopies almost exclusively. However, no endoscopic procedure appeared to be the exclusive domain of a single specialty. For example, over 95 percent of endoscopies performed by pulmonary specialists were bronchoscopies; yet, only 38 percent of bronchoscopies were performed by pulmonary specialists, the remainder being done by internists, thoracic surgeons, and general surgeons (Tables 5-2 and 5-3).

5.4.2 Endoscopic Procedures by Location

Overall, 37 percent of all endoscopies were performed on inpatient services, 39 percent were done in physicians' offices, and 23 percent in hospital outpatient departments, with less than one percent in other locations. However, usual location differed markedly by type of endoscopy. More than four-fifths percent of bronchoscopies were done on inpatients services, while 80 percent of proctosigmoidoscopies were done in physicians offices (Table 5-4).

The usual location of endoscopies also varied by the specialty of physician: more than 70 percent of endoscopies performed by family practitioners and proctologists were performed in the physicians' offices, whereas pulmonologists and thoracic surgeons performed more than 70 percent of their endoscopies on inpatient services (Table 5-5). Most of this variation in typical location by specialty can be explained by the casemix of endoscopies performed by each specialty. However, even within a single type

TABLE 5-2

DISTRIBUTION OF ENDOSCOPIES BY PHYSICIAN SPECIALTY (ALL LOCATIONS)

	Bronchoscopy	Upper Gastrointestinal Endoscopy	Proctosig-moidoscopy	Sigmoidoscopy	Colonscopy Below Splenic Flexure	Colonscopy Beyond Splenic Flexure	Total
General Practice, Family Practice	0.6%	5.6%	33.5%	33.3%	22.0%	5.0%	100.0%
General Surgery	5.3%	16.9%	31.3%	15.9%	13.4%	17.2%	100.0%
Gastroenterology	0.0%	43.0%	3.8%	14.8%	8.1%	30.3%	100.0%
Internal Medicine	6.4%	25.2%	21.0%	19.7%	11.8%	15.9%	100.0%
Proctology	0.0%	0.1%	51.2%	17.9%	12.5%	18.2%	100.0%
Pulmonary Medicine	95.3%	0.3%	2.0%	1.7%	0.5%	0.2%	100.0%
Thoracic Surgery	6.4%	25.2%	21.0%	19.7%	11.8%	15.9%	100.0%

Source: 1986 BMAD 5% Beneficiary File.

TABLE 5-3

DISTRIBUTION OF PHYSICIAN SPECIALTY BY TYPE OF ENDOSCOPY (All LOCATIONS)

	Bronchoscopy	Upper Gastrointestinal Endoscopy	Proctosig-moidoscopy	Sigmoidoscopy	Colonscopy Below Splenic Flexure	Colonscopy Beyond Splenic Flexure
General Practice, Family Practice	0.6%	1.7%	12.6%	14.0%	14.9%	2.1%
General Surgery	9.9%	10.3%	23.5%	13.4%	18.2%	14.3%
Gastroenterology	0.0%	45.5%	5.0%	21.6%	19.0%	43.7%
Internal Medicine	25.7%	32.7%	33.5%	35.3%	34.0%	28.2%
Proctology	0.0%	0.0%	12.9%	5.1%	5.7%	5.1%
Pulmonary Medicine	38.0%	0.0%	0.3%	0.3%	0.1%	0.0%
Thoracic Surgery	12.9%	0.5%	0.5%	0.3%	0.5%	0.2%
Other	12.9%	9.2%	11.6%	10.2%	7.6%	6.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 1986 BMAD 5% Beneficiary File.

TABLE 5-4

DISTRIBUTION OF ENDOSCOPIES BY LOCATION, ALL SPECIALTIES

	Bronchoscopy	Upper Gastrointestinal Endoscopy	Proctosig-moidoscopy	Sigmoidoscopy	Colonscopy Below Splenic Flexure	Colonscopy Beyond Splenic Flexure
Office	3.6%	11.0%	79.6%	66.1%	55.9%	13.3%
Inpatient	82.2%	59.2%	11.8%	19.1%	25.0%	39.1%
OPD	13.5%	27.6%	8.4%	14.6%	18.7%	47.2%
Other	0.7%	2.2%	0.2%	0.2%	0.4%	0.4%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: 1986 BMAD 5% Beneficiary File.

TABLE 5-5

LOCATION OF ENDOSCOPIES BY PHYSICIAN SPECIALTY

	Office	Inpatient	OPD	Other	Total
General Practice, Family Practice	70.5%	13.5%	15.8%	0.3%	100.0%
General Surgery	38.6%	34.9%	26.1%	0.4%	100.0%
Gastroenterology	20.6%	48.6%	30.2%	0.7%	100.0%
Internal Medicine	45.3%	33.9%	20.5%	0.4%	100.0%
Proctology	76.5%	8.8%	14.5%	0.2%	100.0%
Pulmonary Medicine	7.0%	81.4%	11.3%	0.3%	100.0%
Thoracic Surgery	9.4%	75.8%	14.6%	0.2%	100.0%

Source: 1986 BMAD 5% Beneficiary File.

of endoscopy, differences by location were noted. Internists were more likely to perform colonoscopies (below the splenic flexure) in the office, whereas gastroenterologists were more likely to perform these procedures on inpatient services.

It is possible, of course, that this difference between internists and gastroenterologists reflects a difference in billing patterns as well as in practice patterns. A significant number of the internists' ambulatory colonoscopies may have been sigmoidoscopies billed as colonoscopies below the splenic flexure. The difference between these two procedures is one of degree: both involve inspection of the lower part of the colon, but the CPT-4 codes for colonoscopy specify a greater degree of penetration than for sigmoidoscopy. The 1988 edition of CPT-4 eliminates separate codes for colonoscopy below the splenic flexure, implying recognition that the distinction between these codes and those for sigmoidoscopy had become blurred in practice.

5.4.3 Reimbursement for Endoscopic Procedures

Total Medicare allowed charges for the endoscopic procedures examined in this study were $33.4 million for all locations, and $17.8 million for ambulatory procedures alone (in physicians' offices and hospital outpatient departments). Extrapolation from our 5 percent sample indicates that the annual Medicare expenditure for these procedures was approximately $669 million for all locations in 1986. These allowed charges represented 7.1 percent of all physician surgical charges in 1985 (Fisher, 1988). For outpatient endoscopies alone, extrapolated total charges for 1986 are $355 million, or 3.8 percent of all physician surgical charges in 1985.

As expected, mean reimbursement for endoscopic procedures varies considerably by type of endoscopy, from a mean of $42.62 for all proctosigmoidoscopies to a mean of $454.05 for all colonscopies beyond the splenic flexure. There was less, but still considerable, variation in mean reimbursement by specialty and by location within type of endoscopy. Table 5-6 shows the mean reimbursement by specialty and type of endoscopy.

TABLE 5-6

MEAN REIMBURSEMENT FOR AMBULATORY ENDOSCOPIES BY SPECIALTY

	Bronchoscopy	Upper Gastrointestinal Endoscopy	Proctosig-moidoscopy	Sigmoidoscopy	Colonscopy Below Splenic Flexure	Colonscopy Beyond Splenic Flexure
General Practice, Family Practice	---	$289.30	$36.87	$85.11	$175.06	$373.21
General Surgery	$249.85	$286.17	$49.50	$96.38	$222.01	$441.76
Gastroenterology	---	$303.63	$44.57	$99.02	$255.94	$481.48
Internal Medicine	$267.07	$281.08	$36.41	$88.11	$186.00	$429.77
Proctology	---	---	$48.07	$91.48	$201.78	$470.49
Pulmonary Medicine	$295.47	---	---	---	---	---
Thoracic Surgery	$274.82	---	$48.06	---	---	---
All Specialties	$286.16	$303.11	$42.62	$91.88	$216.61	$454.05

Note: A blank cell indicates that the data showed fewer than 100 claims for that specialty and type of endoscopy.

Source: 1986 BMAD 5% Beneficiary File.

Differences in reimbursement were most marked for the two forms of colonoscopy, with price differentials of over $100 for colonoscopies beyond the splenic flexure.

Some of this variation by specialty might be explained by a difference in complexity of procedures. For example, gastroenterologists and proctologists might be more likely than general internists to perform biopsies during lower GI endoscopies. To facilitate comparisons between specialties, the mean reimbursement for the single most common procedure within each endoscopic group was calculated for each specialty. The results are presented in Table 5-7. Although differences between specialties are diminished, they are still notable. General and family practitioners tend to receive lower reimbursement than other physicians for these common procedures, receiving roughly 80 to 90 percent of the reimbursement of the highest paid specialties.

Mean allowed charges varied not only by specialty but by region. Table 5-8 shows casemix-adjusted mean allowed charges by region for each type of endoscopy, as well as regional utilization rates.

5.4.4 Simultaneous Billing for Visits with Ambulatory Endoscopies

Table 5-9 gives the percent of ambulatory endoscopies in each group for which a visit was billed on the same day by the physician performing the endoscopy. This figure ranged from 18.3 percent for proctosigmoidoscopies to only 1.4 percent for colonoscopies beyond the splenic flexure. Intuitively, the percent of ambulatory endoscopies with associated billed visits seems to vary with the complexity of the endoscopic procedure. That is, the least complex form of endoscopy studied here (proctosigmoidoscopy) is the most likely to be done as part of a routine office visit or general physical examination, and to be billed as a separate procedure in addition to the more encompassing visit. The more complex endoscopies (such as bronchoscopy and colonoscopy beyond the splenic flexure) are more likely to be the primary reason for the physician visit and less likely to have an associated billed visit.

TABLE 5-7

MEAN REIMBURSEMENT BY SPECIALTY FOR COMMON ENDOSCOPY CODES (AMBULATORY PROCEDURES ONLY)

PROCEDURE CODE	31625 Rigid Bronchoscopy With Biopsy	43235 Diagnostic Upper GI Endoscopy	45300 Diagnostic Proctosigmoid-oscopy	45330 Diagnostic Sigmoidoscopy	45360 Diagnostic Colonoscopy Below Splenic Flexure	45378 Diagnostic Colonoscopy Beyond Splenic Flexure
General Practice/ Family Practice	---	$272.15	$36.04	$83.30	$178.39	$309.94
General Surgery	$268.41	$269.98	$45.51	$90.22	$201.40	$376.89
Gastroenterology	---	$288.54	$43.59	$93.64	$216.59	$401.98
Internal Medicine	$282.19	$266.98	$35.94	$85.37	$178.58	$364.90
Proctology	---	---	$44.12	$88.07	$177.51	$387.50
Pulmonary Medicine	$292.11	---	---	---	---	---
Thoracic Surgery	$264.42	---	$42.57	---	---	---
All Other Specialties	$295.53	$328.14	$41.05	$83.32	$194.08	$395.17

Note: A blank cell indicates that the data showed fewer than 100 claims for that specialty and type of endoscopy.

TABLE 5-8

UTILIZATION RATES AND MEAN ALLOWED CHARGES* FOR ENDOSCOPIC PROCEDURES (ALL LOCATIONS) PER 100,000 MEDICARE BENEFICIARIES, BY REGION

	North	North Central	South	West
Bronchoscopy	670 $326.20	720 $261.54	850 $266.87	780 $312.06
Upper GI Endoscopy	2,254 $337.89	2,279 $278.64	2,537 $289.88	2,177 $325.89
Proctosigmoidoscopy	2,065 $48.08	1,826 $41.20	1,882 $38.70	1,906 $43.94
Sigmoidoscopy	1,564 $94.56	1,848 $84.51	1,799 $91.77	1,575 $99.64
Colonoscopy Below Splenic Flexure	1,220 $266.41	928 $190.42	1,005 $193.44	1,148 $219.34
Colonoscopy Beyond Splenic Flexure	1,897 $502.56	1,646 $393.15	1,811 $440.53	1,459 $510.79

*Mean allowed charge for each procedure group was derived by:

1) multiplying regional mean allowed charge for each procedure code by proportion of cases in procedure code in national data, and

2) summing the products within procedure group and region.

Source: 1986 BMAD 5 Percent Beneficiary File.

TABLE 5-9

AMBULATORY ENDOSCOPIES WITH ASSOCIATED BILLED VISITS

	Percent
Bronchoscopy	1.9%
Upper Gastrointestinal Endoscopy	2.4
Proctosigmoidoscopy	18.3
Sigmoidoscopy	9.9
Colonoscopy Below the Splenic Flexure	8.1
Colonoscopy Beyond the Splenic Flexure	1.4
All Endoscopies	11.3

Source: 1986 BMAD 5% Beneficiary File.

Within type of endoscopy, physician specialties differed in the frequency with which they billed for visits in addition to the endoscopies. Table 5-10 summarizes these differences by specialty for proctosigmoidoscopies and sigmoidoscopies, the two forms of endoscopy that most frequently had associated billed visits. General surgeons were least likely to bill visits with either procedure, whereas internists were most likely to bill visits. To some extent, this difference may reflect the surgical tradition of global reimbursement for procedures, and the lack of such a tradition among medical specialists.

There were also carrier-specific differences in the frequency of associated billed visits for endoscopies. These differences are displayed in Table 5-11. In general, there were more visits associated with proctosigmoidoscopies than with sigmoidoscopies or other forms of endoscopies (See Table 5-9). However, carriers that frequently paid for visits with proctosigmoidoscopies tended to have a high frequency of visits for sigmoidoscopies and other endoscopic procedures as well.

In 1985, HCFA conducted a survey of Medicare carriers to determine carrier policy regarding simultaneous billing for visits with several kinds of procedures, including endoscopies. Of the 38 carriers responding to the question regarding visits with endoscopies, 26 percent said they did not pay for visits with proctosigmoidoscopies, and 29 percent did not pay for visits with sigmoidoscopies. Despite these stated policies, however, it appeared that no carrier was able to enforce these prohibitions. All carriers had paid for visits associated with proctosigmoidoscopy; the carrier with the lowest frequency had paid for visits in only 7.4 percent of proctosigmoidoscopies. Observations from claims data did not seem to correlate well with carriers' stated policies regarding billed visits with endoscopies: one carrier that allowed such billing had paid for visits for less than 15 percent of proctosigmoidoscopies, while another carrier whose policy prohibited such billing had in fact paid for visits in almost a quarter of cases.

It is probable that some of these differences among carriers represent actual differences in policies regarding physician billing. It seems clear, however, that no carrier was able to enforce its prohibitions effectively, and

TABLE 5-10

PERCENT OF SELECTED AMBULATORY ENDOSCOPIES WITH ASSOCIATED VISITS BY SPECIALTY

	Proctosigmoidoscopy	Sigmoidoscopy
General/Family Practice	19.9%	8.7%
General Surgery	9.9	4.8
Gastroenterology	22.5	9.0
Internal Medicine	29.6	13.6
Proctology	14.6	13.1
All Other Specialties	21.3	15.3

Source: 1986 BMAD 5% Beneficiary File.

TABLE 5-11

PERCENT OF CASES WITH VISITS BY CARRIER, ENDOSCOPIES

	Broncho-scopy	Upper GI Endoscopy	Procto-sigmoid-oscopy	Sigmoid-oscopy	Colonoscopy Below the Splenic Flexure	Colonoscopy Beyond the Splenic Flexure	All Groups
Alabama	6.7	3.2	19.4	17.4	3.7	0.8	9.5
Alaska	0.0	9.1	14.3	29.4	16.7	0.0	15.4
Arizona	1.8	5.5	27.6	14.0	9.7	1.5	12.8
Arkansas	6.5	4.2	28.0	7.8	7.7	3.2	8.5
California (Northern)	6.3	3.5	19.8	12.0	10.3	1.9	10.8
California (Southern)	9.6	5.8	26.1	17.0	15.4	3.0	15.5
Colorado	0.0	6.5	16.4	8.8	5.0	2.3	7.7
Connecticut	0.0	2.1	33.5	18.7	15.2	1.8	16.8
Delaware	0.0	0.0	25.4	13.8	8.8	1.6	11.6
Florida	1.5	0.8	21.6	1.7	1.8	1.0	7.2
Georgia	2.8	2.8	34.2	16.9	15.3	0.4	19.2
Hawaii	0.0	0.0	22.9	3.8	5.8	0.0	9.0
Idaho	16.7	7.0	28.2	16.0	6.3	5.3	17.3
Illinois	12.7	4.6	16.9	9.3	8.2	3.2	9.8
Indiana	2.9	3.1	15.8	9.9	5.4	1.9	8.1
Iowa	13.6	5.4	13.1	7.2	5.1	6.3	8.2
Kansas	0.0	1.5	15.3	3.0	2.9	0.0	5.2
Kentucky	2.4	3.6	20.6	15.0	7.6	0.5	10.0
Louisiana	11.8	4.5	12.0	7.6	1.9	2.7	6.9
Maine	0.0	3.0	9.6	6.7	3.7	0.0	4.1
Massachusetts	0.0	2.7	14.8	5.8	1.2	0.5	6.8
Michigan	0.6	2.1	18.6	13.2	5.0	1.0	8.6
Minnesota Travelers	10.0	1.0	30.6	25.9	9.1	8.5	20.2
Mississippi	0.0	3.0	21.8	9.2	14.6	2.1	9.3
Missouri (Excluding Kansas City)	27.8	4.7	24.7	13.7	11.4	3.7	11.9
Missouri (Except KA)	2.9	4.1	23.6	12.5	10.6	2.1	11.6
Montana	0.0	2.8	16.1	9.8	12.7	1.1	10.1

TABLE 5-11 (continued)

PERCENT OF CASES WITH VISITS BY CARRIER, ENDOSCOPIES

	Broncho-scopy	Upper GI Endoscopy	Procto-sigmoid-oscopy	Sigmoid-oscopy	Colonoscopy Below the Splenic Flexure	Colonoscopy Beyond the Splenic Flexure	All Groups
Montana	8.3	12.9	27.2	11.5	5.4	0.0	14.6
Nebraska	0.0	6.2	20.2	13.3	12.0	3.8	12.4
Nevada	0.0	5.8	24.5	9.4	0.0	2.6	9.6
New Hampshire	6.7	1.9	9.3	4.4	8.1	0.0	4.5
New Jersey	0.0	2.4	7.3	9.0	6.2	3.0	6.1
New Mexico	0.0	1.5	16.3	12.4	7.0	0.0	7.9
New York (Queens)	0.0	22.6	38.4	39.1	34.9	25.4	33.7
North Carolina	6.8	4.7	23.6	12.6	8.8	1.9	11.0
North Dakota	7.1	4.8	11.4	11.4	6.2	1.1	8.6
Ohio	2.9	3.2	23.1	15.7	18.2	1.9	13.2
Oklahoma	5.3	3.2	15.4	7.1	6.7	3.2	7.8
Oregon	4.3	8.6	25.1	13.9	15.3	1.5	14.9
Pennsylvania	2.2	4.6	16.9	13.3	10.8	2.0	10.6
Puerto Rico/Virgin Islands	0.0	10.3	24.0	15.4	10.1	13.9	13.1
Rhode Island	0.0	0.0	7.4	13.2	0.0	0.0	5.5
South Carolina	13.6	1.2	21.2	11.3	8.5	0.0	9.0
Tennessee	0.0	9.6	26.0	19.3	19.8	9.4	16.5
Texas	2.9	4.6	17.0	8.6	6.9	2.7	9.0
Travelers Railroad	7.1	4.8	18.9	17.4	13.5	2.1	11.9
Utah	0.0	2.5	21.2	7.1	10.8	0.0	7.8
Virginia	2.7	3.8	14.0	7.7	9.2	2.0	7.3
Washington	2.3	8.9	22.0	11.0	5.5	3.5	13.0
Washington D.C.	0.0	0.0	35.4	30.3	20.4	1.7	26.2
West Virginia	0.0	2.4	31.7	14.5	5.4	0.0	11.8
Wisconsin	3.4	4.6	10.5	16.6	1.5	2.6	10.0
Wyoming	0.0	0.0	22.6	0.0	9.5	0.0	10.1

Source: 1986 BMAD 5% Beneficiary File.

that carrier policy is not the only factor influencing the frequency of billing visits with endoscopies, since even carriers which allowed such billing often had a lower frequency of billed visits than those which prohibited this type of billing. Other factors which might influence such differences in billing patterns by carrier are:

- The specialties of the physicians who typically perform the procedure may vary from one region to another. (Surgeons are accustomed to the concept of global fees and may tend to bill for visits less often than physicians in medical specialties.)
- Carriers' stated policies may not be vigorously enforced in practice, either because of inadequacies in the carriers' claims processing software, or because of administrative decisions not to enforce such prohibitions in order to increase physician participation.
- Prices paid for endoscopies may be lower in those areas where physicians more frequently bill visits with these procedures. That is, this pattern of simultaneous billing may be an attempt to compensate for what physicians perceive as inadequate reimbursement for the endoscopy.

5.5 Conclusions

Endoscopic procedures are performed by many physician specialties in a variety of settings. Despite differences in physician specialties, reimbursement, or frequency of billing for visits, there are some consistencies worth noting.

First, the observation that very few bronchoscopies and colonoscopies have associated billed visits (1.9 and 1.4 percent, respectively) is consistent with the earlier characterization of these forms of endoscopy as highly specialized procedures that are performed after thorough patient evaluation and preparation. Physicians performing these endoscopies do provide other patient services, but these are likely to be provided before or after the procedure itself. It is true that carriers more frequently prohibit billing of endoscopies with bronchoscopies and colonoscopies than with other forms of endoscopy. Still, the majority of carriers who responded to HCFA's 1985 survey allowed physicians to bill for visits with both bronchoscopies (55 percent of carriers) and colonoscopies (61 percent). Thus, carrier policies do not account for the very low incidence of billed visits with these

forms of endoscopies, and it is likely that the the observed low frequency is in great part a reflection of physicians' assessment that other services are rarely provided at the time of these procedures. It would seem reasonable, therefore, for HCFA to prohibit all physicians from billing for patient visits when performing these two endoscopic procedures.

It is less clear what policy should be adopted for upper gastrointestinal endoscopy. Like bronchoscopies and colonoscopies, this procedure is performed by well-trained specialists for evaluation of known or suspected disease, and never for routine health maintenance in a healthy population. Therefore, like bronchoscopy and colonoscopy, it will almost always be performed as a separate physician service, after appropriate patient evaluation and preparation. In most cases, then, separate billing for a patient visit would not be warranted. However, upper GI endoscopy is more likely than bronchoscopy or colonoscopy to be performed under emergent or urgent conditions. In a small proportion of cases, a physician performing upper GI endoscopy might legitimately request reimbursement for a visit (for patient evaluation) on the same day that the procedure is performed. It is likely that a ban against billing visits with upper GI endoscopy would have to allow exceptions if the physician is able to document unusual circumstances.

Proctosigmoidoscopies and sigmoidoscopies, on the other hand, are less specialized procedures that are more likely to be performed by primary care physicians. The higher incidence of billed visits with these procedures reflects the greater probability that physicians are providing other significant services (such as assessment of health status or chronic disease) at the time that these endoscopies are performed. Attempts to package these two forms of endoscopies with visits (by denying reimbursement for either the visit or the procedure) is likely to increase two forms of physician behavior:

- Some physicians will stop performing these endoscopies, and will refer patients to other, perhaps more specialized, physicians;
- Some physicians will "unbundle" the endoscopy from more comprehensive visits, and will request that the patient return at a different time for the endoscopy alone.

These behaviors are both likely to result in a decrease in the availability of these important (and sometimes lifesaving) health maintenance procedures for Medicare patients.

However, the great differences seen among carriers in the frequency of of billed visits with these procedures (from 7.4 percent to 35.4 percent for proctosigmoidoscopy, and from 0 to 30.3 percent for sigmoidoscopy) implies that factors other than primary care practice patterns may be involved, and that the high frequencies of billed visits under some carriers represents to some extent a form of double billing. A reasonable approach to controlling double billing, without interfering with valid primary care patterns, would be to:

- advise physicians that other significant services must be well-documented in the patient's record if a visit is billed with a proctosigmoidoscopy or sigmoidoscopy;
- audit the patient records of physicians who frequently bill for visits with these endoscopies to insure accuracy of billing;
- impose administrative sanctions or fines on physicians who consistently fail to comply with these billing instructions.

Such an approach would certainly not prevent all double billing of the type described here. However, it is clear that carriers are currently unable (or unwilling) to enforce blanket prohibitions against billing for visits with these forms of endoscopies. The more flexible policy outlined above is likely to have a reasonably large sentinel effect on the practice of double billing, without interfering with the delivery of needed primary care.

REFERENCES

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APPENDIX A

TABLES

APPENDIX A-1

MODIFIERS USED TO INDICATE LEVEL OF SERVICE

Level of Service	CPT-4	HCPCS	Carrier-Specific Codes	
Complete	Blank modifier field indicates complete level of service	No code provided		
			California (Northern)	AP
			California (Southern)	AP
			Florida	WW
			Missouri (Except Kansas City)	WP
			New Hampshire/Vermont	W2 W9 XE YG
			Texas	W4
Technical Only	No Code Provided	TC	Texas	WB
Professional Only	26	No Code Provided	Texas	W5

APPENDIX A-2

MEAN REIMBURSEMENT FOR MOST COMMON AMBULATORY PROCEDURES IN 90000 SERIES

	Complete	Technical[a]	Professional
Electrocardiogram, 12-Lead			
93000 Complete	$30.80		
93005 Tracing only		$22.85	
93010 Interpretation and report only			$11.19
Electrocardiogram, Rhythm			
93040 Complete	14.27		
93041 Tracing only		13.69	
93042 Interpretation and report only			7.46
Cardiac Stress Test			
93015 Complete	120.22		
93017 Tracing only		40.32	
93018 Interpretation and report only			58.95
Pulmonary Function Tests			
94010 Spirometry	27.43	--	16.00
94060 Before and after bronchodilator	55.61	--	22.90
94070 Prolonged evaluation of bronchospasm	66.94	--	32.99
94150 Vital capacity, total	9.99	--	8.26
94160 Vital capacity screening tests	14.24	--	9.69
94200 Maximum breathing capacity	15.55	--	11.87
94240 Functional residual capacity or volume	28.21	--	14.23
Allergen Immunotherapy			
95120 Professional services, single antigen	7.86	--	--
95125 Professional services, multiple antigens	7.36	--	--
Audiometry			
92551 Screening test, pure tone, air only	12.56	--	--
92552 Pure tone audiometry (threshold), air	13.46	--	--
92553 Air and bone	21.22	--	--
92555 Speech audiometry; threshold only	11.97	--	--
92556 Threshold and discrimination	19.59	--	--
92557 Basic comprehensive audiometry	38.76	--	--

APPENDIX A-2 (continued)

MEAN REIMBURSEMENT FOR MOST COMMON AMBULATORY PROCEDURES IN 90000 SERIES

		Complete	Technical	Professional
Echocardiography				
93300	Echocardiography, M-mode; complete	101.26	--	54.05
93305	Limited (eg, follow-up or limited study)	61.50	--	30.31
93307	Echocargiography, real-time (2D); complete	146.36	--	76.13
93308	Limited	64.68	--	52.39
93309	Echocardiography, M-mode and real-time	211.11	--	108.33
93320	Doppler echocardiography	93.40	--	55.86
Non-Invasive Cerebrovascular Arterial Stuides				
93850	Cerebral arteries other than carotid	64.19	--	29.76
93860	Carotid artery, non-imaging	82.97	--	47.79
93870	Carotid artery, imaging	143.49	43.76	72.06
Non-Invasive Peripheral Arterial Studies				
93890	Upper extremity arteries	82.38	--	34.27
93910	Lower extremity arteries	96.94	--	45.16
Nerve Conduction Studies				
95900	Nerve conduction, velocity, and/or latency; motor, each nerve	29.49	--	24.05
95904	Sensory, each nerve	27.96	--	23.55
Pacemaker Analysis				
93731	Dual-chamber internal pacemaker	27.34	--	--
93732	With reprogramming	34.97	--	18.65
93733	Telephonic analysis	28.63	--	20.77
93734	Single-chamber internal pacemaker	26.98	--	--
93735	With reprogramming	32.95	--	15.88
93736	Telephonic analysis	30.01	--	14.42

[a]Hyphenated blank cells indicate that less than 25 claims were available in our BMAD file for these combinations of procedures and modifiers.

Source: 1986 BMAD 5% Beneficiary File.

99-C-98526 Packaging Diagnostic Test Intrepretation and Surgical Procedures with Office visits. J. Bogen, M.S.

99-C-98526 Packaging Diagnostic Test Intrepretation and Surgical Procedures with office visits