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ACC NEWS

President's Page: Does It Really Make a Difference?

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The increasing concern about the high cost of medical care prompts an analysis of what we as cardiologists do, the cost of our doing it and, thus, the question, Does it really make a difference? I pose this question only as it relates to clinical decision making. No one can deny the importance of the advances in cardiovascular medicine and surgery that have occurred over the past several decades, but the cost of providing medical services has provoked a societal response that is transforming medical practice.

Examining what we as cardiologists actually do as reflected in the Medicare data base is of great importance to each of us individually, to those responsible for educating physicians and to the ACC as a professional society. Although there are obvious limitations to these data, they provide a perspective on our activities that contributes to the impression society develops about our profession.

Expenditures for services provided by cardiologists. So how do we as cardiologists affect the nation's health care expenditures? According to the Medicare data base, in 1989, of the $28.6 billion in allowed charges for physician services under Medicare, 7.6% ($2.17 billion) went to cardiologists. Table 1 lists, for 1989, the seven highest ranking individual current procedural terminology codes for services performed by cardiologists as well as total Medicare expenditures for each of these services. Also listed in Table 1 are the number of times these seven services were performed in 1989 with the percent change from 1986 to 1989 for both the volume of services performed and expenditures.

Table 1 provides several bases for considering the question, Does it really make a difference? First, the percent increase in volume of services performed far exceeds the estimated 2% annual increase in the number of patients enrolled in Medicare.

Second, the increase in the number of self-designated adult cardiologists in the U.S.—from 14,157 in 1986 to 15,445 in 1989 (1)—is unlikely to account for the increased volume of services. Was there a large previously underserved Medicare population that gained access to care during this period? That is highly unlikely. It seems more probable that we are observing an expansion in availability and utilization of services.

In addition, I suspect that important economic incentives are at work in some of these increases in rate of procedure utilization. Although many adult cardiologists do not acknowledge the reality of potential self-referral bias (an observation based on two ACC Strategic Planning Committee surveys) other segments of the medical profession surveyed believe such a conflict exists. Self-referral bias appears to be a real issue on which the College's Ethics Committee is providing a focus for continuing discussion. Each of us might have additional responses to Table 1. Mine include the following observations.

Left heart catheterization with coronary angiography. Not surprisingly, left heart catheterization with coronary angiography continues to rank highest among the expenditures for services performed by cardiologists, with a 77% increase in volume of procedures as compared with 1986. It would be helpful to know the number of new laboratories that have entered the data base since 1986 and the proportion of patients whose coronary angiographic study is a repeat study after coronary angioplasty or bypass surgery. The number of Medicare patients undergoing one or more of these procedures for the first time is not clear. What proportion had normal coronary arteriograms? What has been the impact of noninvasive testing on the use of coronary arteriography? Coronary arteriography represents one of the major advances in cardiology and we must be vigilant to ensure that it is used appropriately. The ACC/AHA guidelines on coronary angiography were published in the Journal in 1987 (2), but one might speculate that the increase in the number of laboratories performing coronary arteriography overwhelms any impact of those guidelines on decreasing rates of utilization. It is noteworthy that in the 1991 ACC Strategic Planning Committee Survey (unpublished data), 47% of respondents agreed that the ACC should advocate restricting

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Table 1. Medicare Expenditures Billed by Cardiologists*

Service (CPT Code)	Services Performed in 1989		Expenditures in 1989 $	% Change From 1986
	No. of Procedures	% Change 1986–1989		
Lv/Cath/Cor Angio	206,181	77	149,635,525	100
2-D Echo, Complete	918,644	143	126,530,601	236
Hospital Visit, Intermediate	3,413,235	43	118,716,969	57
ECG, Interp & Report, Only	8,252,412	53	114,628,537	74
RV/LV Cath/Cor Angio	109,440	55	101,756,089	75
Office Visit, Estab Interm	2,911,505	51	92,897,545	72
PTCA, Single Artery	59,321	82	91,134,427	166

*From the Medicare BMAD-1 Procedure Files, 1986–1989. CPT = current procedural terminology; ECG = electrocardiogram; Estab = established; Interm = intermediate; Interp = interpretation; LV/Cath/Cor Angio = left heart catheterization with coronary angiography; PTCA = percutaneous transluminal coronary angioplasty; RV/LV Cath/Cor Angio = right and left heart catheterization with coronary angiography; 2-D Echo = two-dimensional echocardiography.

the growth in the number of cardiac catheterization laboratories and 49% agreed that the College should advocate restricting the growth in the number of mobile cardiac catheterization laboratories.

Echocardiographic studies. Another remarkable finding is the increase in the utilization of two-dimensional echocardiographic studies. One must be cautious in interpreting these data because the coding of echocardiographic studies has changed. However, the 143% increase in "2-D Echo, Complete" seems extraordinary and raises several questions. How has the health care of our citizens been improved by this exceptional increase in utilization of echocardiography over a 3-year period? What proportion of these studies truly influenced clinical decision making and actual outcome? How many studies were done as part of a routine follow-up examination, at what intervals and for what reason? As a practitioner, I confess that I share the excitement about the ability to clearly define cardiac structure and function with a noninvasive technique such as echocardiography. Patients are also attracted to this technology and are fascinated to observe their own heart on a television screen. I suspect patient expectations also contribute to the increase in utilization of this technology. However, I fear that at times we all fail to think about what the cost of this marvelous technology adds to the evaluation of our patients. One might conclude that this trend in application of echocardiography reflects a growing dependence on sophisticated imaging technology, even in settings where obtaining a thorough history, physical examination, chest X-ray film and electrocardiogram (ECG) may suffice for clinical decision making.

The use of two-dimensional echocardiographic studies is an important issue for the ACC, given our major commitment to the education of cardiologists. We have provided superb materials and programs for achieving high quality in performance and interpretation of these studies while enhancing the training of both the physicians and the sonographers responsible for them. Perhaps the recent ACC/AHA guidelines for utilizing echocardiographic studies (3) will have an effect; if not, additional efforts may need to be made to influence physician behavior in applying this expensive but important technology.

Percutaneous transluminal coronary angioplasty. Another item in Table 1 worth noting is the frequency of "PTCA, Single Artery." Obviously, it is impossible to judge the appropriateness of interventions performed under this code without having detailed clinical data. However, the numbers seem high when one considers data projections from the Coronary Artery Surgery Study (CASS) registry for percutaneous transluminal coronary angioplasty and single-vessel disease (4). Although the proportion of patients with multivessel versus single-vessel disease is not clear from these data, I suspect that most angioplasty procedures are performed in patients with single-vessel disease. Unpublished data (1991) from the participating centers of the Bypass Angioplasty Revascularization Investigation (BARI) indicate that single-vessel angioplasty in the setting of single-vessel disease accounts for approximately 25% of all revascularization procedures, and represents the most common use of coronary angioplasty (4). Does it really make a difference? must be asked again. It certainly should make a difference for patients with severe angina associated with single-vessel disease, but the assumption that angioplasty is the best therapy for patients with single vessel disease is not proved, particularly for patients with proximal left anterior descending coronary artery disease (5).

Does coronary angioplasty really make a difference in mildly symptomatic or asymptomatic patients with single-vessel disease? There are no controlled studies to demonstrate improved survival or reduced rates of myocardial infarction as a result of such an intervention, although the Veterans Affairs ACME trial has reported less ischemia at 6 months follow-up after angioplasty in comparison with that in patients who received medical therapy (6). Even though the data in Table 1 are insufficient to judge the appropriateness or inappropriateness of single-vessel angioplasty, as a profession we need to question the high utilization rates in this setting. New laboratories and the increased number of interventional cardiologists probably contribute to the high rates of angioplasty performed in an environment of increas-

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ing use of coronary arteriography. An unpublished 1990 ACC membership profile indicated that 74% of all Fellows of the College perform invasive procedures and 43% perform angioplasty. The questions about self-referral bias and economic incentives apply here as well.

Right heart catheterization with coronary angiography. To me, the most astounding finding in Table 1 is the continuing increase in the use of right heart catheterization at the time of coronary angiography. This combination ranked fifth in overall expenditures for services performed by cardiologists in 1989, a ranking that seems out of proportion to any clinical findings that would require a right heart catheterization in patients having a diagnostic coronary arteriogram. I have also been told of *routine* temporary pacemaker placements by some cardiologists in the setting of diagnostic coronary arteriography or angioplasty. Unfortunately, I believe that the overwhelming proportion of these additional procedures are performed on the basis of economic incentive to do so and, in most cases, the answer to the question, Does it really make a difference?, is *no* (at least for clinical decision making). The ACC/AHA guidelines on coronary angiography (2) clearly state ". . . right heart catheterization is not routinely part of coronary angiography. . . ." I fully agree with this conclusion.

Finally, it is positive in my view that hospital and office visits rank high on the list of services provided (Table 1), illustrating that cardiovascular specialists perform a great many cognitive services, a point in need of emphasis.

If on further study, the utilization rates are accurate and in part reflect inappropriate use of procedures or other interventions, I believe it is up to us as cardiologists to set our house in order. We should also defend vigorously those interventions that clearly do make a difference. Each of us should think carefully about our utilization of the extraordinary array of services that we can provide our patients and be certain that each service is truly necessary. A challenge to those responsible for educating physicians is how to teach the added value of the new and exciting advances over and above existing, less glamorous, clinical approaches to problem solving. As a major contributor to continuing education, the ACC must continue to strive for high quality programs not only to teach the new technology but also to put in perspective its appropriate utilization. The ACC Database also provides an opportunity to explore the relative contribution of expanding availability of services to the high rate of utilization of coronary arteriography.

In conclusion, more than ever, with respect to all of our diagnostic and therapeutic strategies, we must ask ourselves as *doctors*, Does it really make a difference? Although the increases in expenditures for services performed by cardiologists may seem small in relation to the overall expenditures for health care, we cannot ignore the reality of societal concern about these issues. Reducing utilization of one or another procedure clearly will not solve the overall high cost of medical care, but we have a professional responsibility to provide only those services that are truly in the best interest of the patient.

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