

WORKING GROUPS

Working Group 1: How to Increase the Output of Cardiologists

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OBJECTIVE/SCOPE

Working Group 1 was asked to evaluate ways to increase the number of cardiologists trained annually in the U.S. The working group considered several factors that influence the production of new cardiovascular specialists and evaluated various ways to increase the number of cardiology trainees. Throughout, we emphasized solutions that would increase the output of new cardiologists while preserving the high standards of U.S. training programs. We also considered how senior cardiologists might be encouraged to delay retirement, especially early retirement.

As discussed in the introduction to this Bethesda Conference report, compelling evidence points to a growing shortage of cardiovascular specialists to care for our aging U.S. population. This conclusion, reached by the participants in the Bethesda Conference, is very significant because before we encourage cardiology training programs to consider increasing the number of fellows they produce, we had to demonstrate significant unmet demand now and in the future for cardiovascular specialists. This is important, because just a decade ago cardiology division and training program directors, like everyone interested in health care delivery, were told the U.S. was producing too many specialists.

Most cardiology training program directors are acutely aware of the strong and growing demand for cardiologists because they receive inquiries from practitioner cardiologists and recruiting firms regularly. Moreover, the ACC Cardiology Workforce Study 2002 (hereafter the ACC workforce survey) demonstrated that cardiology training program directors perceived a dramatic increase in demand for their graduating fellows since 1997. In the ACC workforce survey 83% of program directors believed cardiology job opportunities for trainees were excellent whereas only 36% believed this was true in 1997 (Fig. 1) (1).

As we consider ways to increase the number of cardiology trainees, one important issue is whether the applicant pool is of sufficient size and quality to support adding more fellowship positions. The ACC workforce survey provides evidence that this is the case. Of the training directors, 61% believed they had many more qualified applicants than approved positions. This is in contrast to the situation in thoracic

surgery, where the ratio of applicants to available training slots is almost 1 to 1 (2). When cardiology training program directors were asked how many additional fellows their institution could train annually (assuming adequate staff and other resources and Accreditation Council for Graduate Medical Education [ACGME]-approval), 77% of them thought they could add an average of 1.8 first-year positions.

If each of the nation's 173 cardiology training programs increased their first-year positions by 1.8 trainees, this could theoretically result in an additional 311 cardiologists completing training annually. This represents a 44% increase over the current output of approximately 706 cardiologists each year. This scenario is very unlikely, however, because a complex series of decisions would be required at the local institutional and federal levels to operationalize such an ambitious growth plan. The two major rate-limiting steps for many institutions are 1) obtaining approval from the ACGME to increase the number of cardiology training positions and 2) finding funds to support additional positions.

The ACGME is a private professional organization that accredits approximately 7,800 residency training programs in 110 specialty and subspecialty fields of medicine. The accreditation process is carried out by ACGME's 27 Residency Review Committees (RRC). These committees write the ACGME specialty-specific requirements and periodically review each program to assure its compliance with their standards. The Internal Medicine RRC is responsible both for general internal medicine residencies and for all internal medicine subspecialties, including cardiovascular disease. The Internal Medicine RRC includes five representatives each from the American Board of Internal Medicine (ABIM), the American College of Physicians (ACP), and the Committee on Medical Education of the American Medical Association. In addition, the Internal Medicine RRC includes one resident physician representative.

The RRC, as part of the accreditation process, must approve the number of training positions for each program. Its decisions are not influenced directly by perceived workforce shortages or surpluses. The number of approved training positions is determined by a program's educational resources (e.g., number of patients, procedural volumes, and faculty commitment). Many cardiology programs have the educational resources to accommodate more trainees. Be-

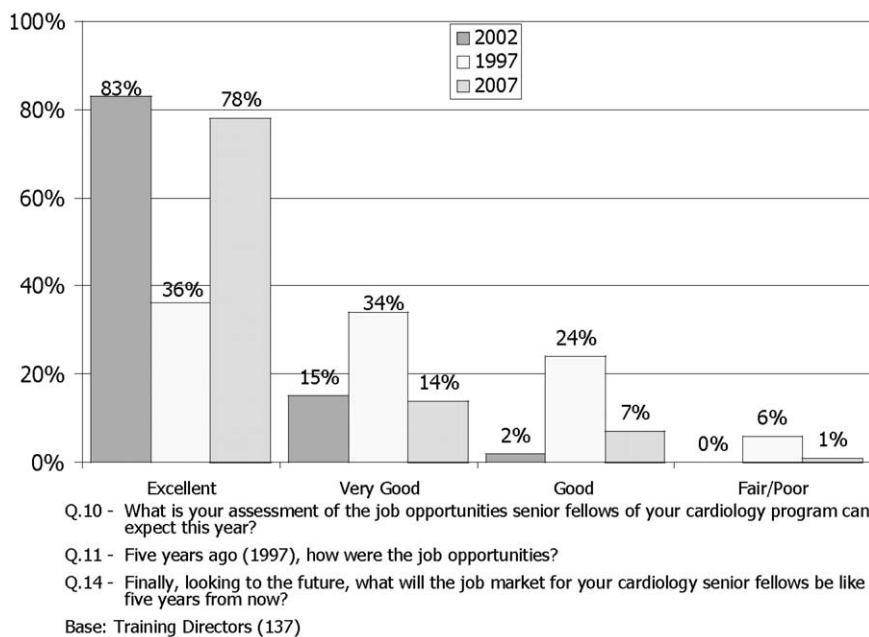


Figure 1. Job opportunities for senior fellows now, five years ago (1997), and in the future (training directors). Source: ACC Cardiology Workforce Study, 2002.

fore an application to expand the number of cardiology trainees can be forwarded to the RRC, however, it must be approved by the training director of the parent internal medicine residency program. It is also important to have the support from the chair of the internal medicine department. Unfortunately, even with RRC approval, many institutions do not have the funds to expand their cardiology training programs.

Fellowship funding is one of the most important factors that will determine how many more trainees can be accommodated in our nation's cardiology fellowship programs. For several decades graduate medical education (GME) in the U.S. has been funded mainly by two types of government payments made to teaching hospitals as part of the Medicare reimbursement system. These federal funds help support the training of internal medicine residents, cardiology fellows, and trainees in other approved medical and surgical specialties and subspecialties. They consist of direct medical education (DME) payments and indirect graduate medical education (IME) payments.

The DME payments are provided to help cover the direct costs of post-medical school education and training of physicians, such as salaries, benefits, supervisory faculty, and hospital overhead expenses related directly to the training program. The IME payments are meant to compensate teaching hospitals for costs they incur as a result of their training programs. This acknowledges that teaching hospitals are often referral centers or inner-city institutions that provide care to patients with complicated health conditions or who are poor and uninsured. Although Medicare DME and IME payments to teaching hospitals represent the major source of training program funding, states also provide funds through Medicaid reimbursement or other mechanisms.

According to the Council on Graduate Medical Education (COGME) Medicare spent \$6.8 billion for GME in 1997, the year that Congress passed the Balanced Budget Act (BBA) of 1997. This law restricted the growth of GME (including internal medicine residencies and cardiology training programs). The BBA also placed a cap on the number of residents enrolled in hospital programs and reduced payment adjustment factors for IME. Meanwhile, it is important to note that the payments for clinical fellows (such as cardiology trainees) are only one-half that of an internal medicine resident. The average cost per cardiology trainee is in the range of \$70,000 to \$100,000 per year (3). It has been estimated that additional indirect costs related to increased overhead costs incurred as the result of a training program can increase the total cost per fellow to nearly \$180,000 (4). Although some positive changes in the IME payment system have occurred since the BBA of 1997, there appears to be little support for increasing overall Medicare expenditures for GME significantly. A sustained advocacy effort will be necessary to accomplish this goal.

ACADEMIC WORK LOAD

One of the factors driving the demand for additional practitioner cardiologists in the U.S. is the increasing volume and complexity of care provided by cardiovascular specialists in private practice. Academic cardiologists, the individuals most responsible for training cardiology fellows, are also working harder providing more clinical care in most teaching institutions (5). This situation (which can compete with the academic mission of education and research) was further aggravated when strict ACGME work hour and on-call guidelines for residents and fellows were implemented

on July 1, 2003. Ironically, these new rules shifted additional clinical responsibilities to cardiology full-time faculty members at a time most of their institutions are prohibited from hiring additional internal medicine residents or cardiology trainees because of the ACGME-RRC caps on training positions. The various philosophical and pragmatic arguments that have been advanced in support of and against these rigid work hour restrictions are beyond the scope of this document. The 80-h workweek and related regulations may encourage some academic cardiology divisions to ask their institutions to hire more non-physician clinicians (e.g., nurse clinicians, nurse practitioners, and physician assistants) to help blunt the impact on the full-time faculty. Team care in cardiology is the focus of Working Group 5 and will not be discussed here.

As cardiology workloads increase, care becomes more complex, and the workforce does not grow to meet demand, it is important to remain focused on three factors: 1) the quality of care provided to patients with cardiovascular disease, 2) the quality of education provided to the trainees who will join the ranks of academic and practitioner cardiologists upon the completion of their fellowships, and 3) the importance of work-life balance for trainees and cardiologists throughout their careers. Moreover, as modifications of the traditional cardiology training program are considered, the trainees' experience must focus on education and the Core Cardiology Training Symposium (COCATS) curriculum rather than the service needs of the hospital, faculty or practice plan to which the training program is attached (6,7).

As each of America's academic medical centers discusses and decides how to respond to the growing national shortage of cardiovascular specialists, they will surely consider the impact their decisions may have on their own institution's cardiology programs. It is important to recognize that one component of the financial health of teaching institutions relates to their ability to compete in the marketplace for cardiology patients and procedures. For decades academic cardiology programs have, in fact, trained their competition. This is one of the ironies of the academic mission of teaching institutions. Another way to look at this dilemma, however, is to see it as an opportunity for enhanced cooperation between academic medical centers and private physicians and groups seeking cost-effective and resource-efficient ways to care for the increasing burden of cardiovascular disease. Moreover, academic cardiology programs function best when they have an adequate number of cardiovascular specialists with sufficient time to pursue their interests in research and education.

FUNDING ADDITIONAL CARDIOLOGY TRAINING POSITIONS

Today, many U.S. teaching hospitals are confronting significant fiscal challenges. The Association of Professors of Cardiology (APC) estimates that approximately 100 major teaching hospitals are stressed financially (8). Very few institutions are in a position to internally fund the additional cardiology training positions necessary to meet the growing

demand for cardiovascular specialists. As noted earlier, most GME funding in the U.S. comes from the federal government, a situation that reflects the high value our nation and its policymakers place on training physicians to care for our population. The Medicare GME funding model has succeeded in helping academic centers produce our nation's superb physician workforce. It is therefore appropriate to advocate for extension of federal funding to cover the entire period of postgraduate training, including the time devoted to cardiology fellowship training.

The current federal GME reimbursement policy provides support to hospitals for postgraduate training only up to the time of the first board certification. This is a major disincentive for hospitals to consider expanding subspecialty training positions such as cardiology fellowships. Deans, chairs of medical departments, and other academics in positions of influence must be informed about the growing shortage of cardiologists and its important implications. Fortunately, a majority of deans already perceive a shortage of some specialists (including cardiologists) and recognize that this can have a negative effect not only on the academic mission of teaching institutions but also on the care of patients (9).

Because changing federal policies dealing with GME funding will take time and effort, deans should be encouraged, wherever possible, to use discretionary dollars to fund an increased number of cardiology training positions in their institutions. This approach may be most appropriate in locales where there is a perceived shortage of cardiovascular specialists in the area or on the faculty. Some state governments may be willing to help fund cardiology training positions if there is a demonstrated shortage of cardiologists in their area. Another possibility is that states could reimburse a cardiology trainee's medical school loans in return for a commitment to provide cardiology services for a specified period of time to patients in an underserved area.

Given the growing need for general clinical cardiologists and certain types of cardiology subspecialists such as electrophysiologists, the ACC should explore with medical industry various models that would expand their sponsorship of cardiology fellowships from research positions to selected clinical training positions. One approach might be to use the "matching grant" model, i.e., one-half of the funds for a new cardiology training position would come from a teaching hospital's discretionary funds and the other one-half would come from industry. Philanthropic organizations and grateful patients could also be approached to support the cost of training one or more additional fellows each year in the way that some full-time faculty positions are supported by the "named chair" model. The other potential source of funding for cardiology training positions is third-party payers. As discussed in the introduction to this report, there is compelling evidence that patients with a variety of cardiac disorders have better outcomes if they receive some of their care from a cardiovascular specialist.

Most of the demand for cardiovascular specialists is in the private practice setting. This fact suggests that more atten-

tion should be paid to a funding model (already used in some settings) that addresses the concerns of both the academic institution and the private practice. The most popular cardiology practice model in the U.S. is the single-specialty group. Some private groups may consider it a wise investment to subsidize a cardiology fellow's training in exchange for a commitment to join the practice at the completion of his or her fellowship. It must be acknowledged, however, that a series of significant reductions in reimbursement for cardiology services in recent years makes this model more problematic.

Another possible solution would be to have academic medical centers partner with private practice groups in their community in order to use local facilities and faculty more effectively. This may be particularly applicable to subspecialty training in interventional cardiology and clinical cardiac electrophysiology (EP). One scenario would have the academic medical center be responsible for recruiting the cardiology trainees and for ensuring that all ACGME requirements for training are met. Some portion of the clinical training, however, would be performed at private or affiliated hospitals that have adequate educational resources (e.g., number of patients, procedural volumes, and faculty commitment). Although local affiliated hospitals are now used for adjunctive training in some programs, this concept could be expanded to include hospitals that are further from the sponsoring academic medical center.

Currently, the ACGME requires that a teaching institution must have an approved general cardiology training program before it can apply to offer a subspecialty fellowship in either interventional cardiology or EP. The model we propose would permit selected private hospitals to train interventionalists and electrophysiologists in partnership with an academic medical center without developing a separate general cardiology training program of their own. The financial support for such a program would come from the private hospital (or perhaps partly from a private practice group). These monies could also help support the cardiology training program at the sponsoring academic medical center. In this way, the total number of trainees could be expanded, and both the academic medical center and the private facility would benefit. This arrangement would also have the advantage of providing cardiology trainees with additional exposure to private practice. Many private cardiology groups provide patients for clinical trials and other research endeavors. Patients would also likely benefit from a closer linking of private and academic cardiology practice.

This affiliated institution concept is not new, and many cardiology training programs already use it to some degree. It would be helpful, as academic institutions evaluate their options with respect to increasing the size of their training programs, to have outlines and narrative summaries describing joint programs that have been successful in accomplishing the goal of training excellent general clinical cardiologists using a combination of academic and community hospitals. Rather than large blocks of time, as suggested

above for interventional or EP training, focused rotations at the private facility could be an integral part of the general cardiovascular program. The funding for the fellow's time would be provided by the private facility and would be used to help fund the fellowship program in general, creating an advantage for both.

For decades the part-time medical faculty played a major role in helping to train cardiologists in many institutions (and still do in several settings). There is now an opportunity to reinvigorate this model and employ it in both outpatient and inpatient care. By partnering with the private practice community, the academic institution's cardiology trainees would benefit from a broader experience in varied settings. Moreover, many practicing cardiologists would welcome the intellectual stimulation of helping to train general clinical cardiologists. The importance of producing a larger number of general clinical cardiologists is discussed by Working Group 8.

INCREASING THE NUMBER AND SCOPE OF CARDIOVASCULAR TRAINING PROGRAMS

Although this working group agrees that, in general, it is preferable to increase the size of current ACGME-approved cardiology training programs rather than create new ones, there may be some circumstances that justify establishing a new program or reactivating one that was discontinued during the 1990s, when it seemed the U.S. was training too many specialists. For example, if a cardiology training program was discontinued mainly because it could not provide an adequate research experience, a formal arrangement could be developed with an affiliated academic institution. The trainee could participate in research at one institution and receive the majority of his or her clinical training at another institution.

As we reexamined the length and content of the current internal medicine residency and cardiology training, this working group concluded that a new "short track" should be developed. Our conclusions and recommendations regarding this important subject were incorporated into the report of Working Group 8, because this was the focus of its effort. Furthermore, as discussed by that working group, it may not be necessary for every cardiology trainee to have dedicated research time as part of their fellowship if their career goal is to practice general clinical cardiology.

We believe the ACGME, ABIM, and ACC should consider endorsing two separate tracks for cardiovascular training that acknowledge the fact that many trainees choose to use "research" time to gain additional clinical experience that will prepare them for practice or additional subspecialty training. One cardiology training track would be entirely clinical. The other track would include an additional year devoted to research. This would allow those institutions interested in developing a clinical cardiology training program but are unable to provide an adequate research experience to focus on training general clinical cardiologists—the type of cardiovascular specialist in

greatest demand. Meanwhile, teaching institutions should be allowed greater flexibility in the sequencing of the clinical and research years in the case of individuals interested in academic careers that focus on clinical investigation or clinical practice combined with basic cardiovascular research. Currently the ACGME requires that general cardiology fellowship training be completed in three years. This eliminates the option of “sandwiching” two years of research experience between the two clinical years of clinical training.

PROGRAMS TO TRANSFORM GENERAL INTERNISTS INTO CARDIOVASCULAR SPECIALISTS AND TO RETAIN SENIOR CARDIOLOGISTS IN PRACTICE

The professional goals of physicians continue to evolve after they complete their formal training. The demographics of the U.S. population and of physicians dictate that much of the ongoing care of patients with cardiovascular disease is provided by general internists and family physicians. Some experienced internists may want to get additional formal training (beyond attending continuing medical education courses) to better equip themselves to care for cardiac patients. Importantly, some of these practicing internists might want to devote the necessary time and energy to become fully trained, board-certified cardiologists. Those seeking this formal additional training should be encouraged to apply to cardiology training programs.

Our working group also encourages the ACGME and other pertinent organizations to explore models that would allow selected generalist internists to fulfill the requirements for board eligibility in cardiovascular diseases on a part-time basis over a longer time frame. For example, one model might allow an internist to devote half-time to their cardiology training while continuing to practice internal medicine half-time. This approach would be easier to implement if two internists shared each role in one institutional or practice setting. This type of approach might also be applied in select circumstances where a board-certified general clinical cardiologist wants to receive formal training in interventional cardiology or EP. Our goal is not to elaborate specific models. Rather, we hope to stimulate innovation and experimentation with respect to the current rigid approach regarding training cardiovascular specialists.

Much of this Working Group’s report focuses on how to increase the production of newly trained cardiologists. There is another complementary approach that may help to reduce the growing gap between the demand for and the supply of cardiovascular specialists: encouraging cardiologists not to retire early or to consider part-time work as an alternative to total retirement. Several factors contribute to an individual’s decision to retire from medical practice. In some instances the catalyst for retirement is the desire to go “off-call” or to work part-time, but the cardiologist’s institution or group does not allow this degree of flexibility. We

agree with Working Group 2 (which focuses on how to encourage more women to choose a career in cardiology) that greater flexibility in work hours and work patterns is necessary as we confront changing societal expectations with respect to work–life balance in the early 21st century.

Cardiologists are familiar with the physiological concept known eponymically as the “Bowditch all-or-none law of cardiac contraction.” If we hope to optimize and energize our nation’s cardiology workforce we must not have a similar “all-or-none” philosophy when it comes to linking specific responsibilities such as “call” to the ability to remain in practice (either academic or private). Senior cardiologists considering retirement might be encouraged to remain in practice (at least part-time) if their duties were confined to outpatient practice, ECG interpretation, or other scheduled responsibilities.

RECOMMENDATIONS

1. In concert with the APC and other entities, the ACC should advocate to the ACGME and its Internal Medicine RRC for an increase in the number of approved cardiology training positions.
2. Identify additional public and private sources of funding to support an increase in the number of cardiology trainees.
3. Identify and publicize models where academic institutions have partnered with private cardiology groups to enhance the training process.
4. Identify and publicize models that have been successful in encouraging cardiologists to defer retirement.

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