Have Accreditation Council for Graduate Medical Education initiatives improved the education of cardiology fellows?

Recent Accreditation Council for Graduate Medical Education Initiatives Have Not Been Shown to Improve the Education of Cardiology Fellows

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The best lad schemes o’ mice an’ men
Gang aft agley,
An’ lea’e us nought but grief an’ pain,
For promis’d joy!
–Robert Burns

The “Best Lad Scheme”
Before formal training programs in medicine, physician trainees learned at the feet of established physicians. Although formal training programs in internal medicine and surgery had been around for many years, the Flexner report in 1910 fundamentally changed how training was performed.1,2 Flexner described the mediocre quality of medical education at the turn of the century, noting the poor facilities, the profit motives, and the inadequate curricula. To reform medical education, he envisioned academically oriented hospitals where clinical observations drove research questions and advancements in patient care. Postgraduate trainees were indeed “residents”; they lived at the hospital, allowing the closest observation of their patients and a continuity of inpatient care that was unmatched. Indeed, in this setting, a night off duty was characterized, without a lack of sarcasm, as a lost opportunity to learn.

Response by Kuvin p 537
In the 1950s, Residency Review committees were created for many specialties to set standards for and to evaluate residency programs in those specialties. In contrast to specialty boards that examined trainees at the completion of residency training, the review committees evaluated and accredited programs within individual specialties. In 1965, with the US Congress approval of the Medicare Bill and public support for graduate medical education (GME), the door was opened for GME policies to be subject to public policy. In 1972, the Coordinating Council on Medical Education (CCME), charged with approving and coordinating all areas of medical education, was born from 5 organizations: the American Medical Association, the American Board of Medical Specialties, the American Hospital Association, the Association of American Medical Colleges, and the Council of Medical Specialty Societies. The goals of the CCME were not achieved because of the multiple levels of bureaucracy with challenging reporting and approval processes. Despite, or perhaps because of, this bureaucracy, regulatory efforts were generally directed at program organization, and the
oversight was usually cordial, mutual, and not very intrusive; most programs were allowed to function with minimal regulations as long as it was perceived that acceptable training was being accomplished. In 1981, CCME was disbanded, and the Accreditation Council for Graduate Medical Education (ACGME) was created, whose stated mission is, “We improve health care by assessing and advancing the quality of resident physicians’ education through accreditation.”

After the formation of the ACGME, however, certain events have led GME “gang aft agley.” First, in 1984, the unfortunate death of a young woman, Libby Zion, was blamed on a medical error by a resident in internal medicine who had prescribed meperidine (Demerol) for rigors related to fever. The drug resulted in a serious interaction with the monoamine oxidase inhibitor that she had been taking for depression. This medical misstep was attributed to the resident’s fatigue and inadequate sleep at New York Hospital. A grand jury trial recommended limiting resident work hours to improve patient care, and in 1987, the New York State Commissioner appointed a committee that recommended major regulatory changes in residents’ duty hours. New York adopted the Bell Commission’s regulations that limited resident work hours to 80 per week beginning in July 1989.

The ACGME followed this lead. Facing a threat to their own authority from the Occupational Safety and Health Administration (OSHA), from legislation proposed by Michigan congressman John Conyers, Jr, based on the Libby Zion case, and a potential lawsuit from residents who were organizing unions at the time, the ACGME stepped in and limited work hours. In July 2003, the mandate became effective despite a lack of any data that such a limitation would prevent medical errors. Because the loss of accreditation of a training program meant that its trainees were not eligible to take the certifying examination for the specialty, programs were forced to comply. In addition, programs that lost ACGME accreditation were not considered eligible for Medicare GME funding. Thus, the ACGME gained enormous clout over training programs and had the teeth to enforce compliance.

A second seminal event occurred in 1999 when the ACGME sought to improve GME by standardizing outcome measures and endorsed 6 general core competencies as part of the Outcomes Project: patient care, medical knowledge, practice-based learning and improvement, professionalism, interpersonal and communications skills, and system-based practice. Paraphrasing the Burns’ poem above, “promised joy,” in the eyes of the ACGME, is to “improve health care by assessing and advancing the quality of resident physicians’ education through accreditation.” The ACGME’s path to this well-intentioned goal is based on achieving physician competence, defined as the “habitual demonstration of the 6 competences in actual daily life.”

For the fellow training in any specialty, including cardiovascular medicine, the 4 assessment tools that “should dominate the model [are]: portfolios of clinical experience, direct observation of the trainees, cognitive tests, and assessments by patients, peers, and professional associates (a 360-degree evaluation).” Thus, these assessment tools were instituted as the means to build the competence of the practicing cardiologist. The ACGME began to add considerable additional requirements to each training program in the hope of improving the educational experience, physician competence, and ultimately patient outcomes. Unfortunately, despite grumbling from program directors that the mountains of work needed to accomplish some of this seemed without demonstrable merit, there was little any specialty and certainly no individual program could do except comply.

At the same time the ACGME began requiring more and more documentation, academic medical centers were evolving and responding to the additional documentation requirements heaped on them by both the research industry and the clinical practice of medicine. In the last couple decades, professional dollars have dwindled, forcing clinical teachers to ramp up the business of medicine to pay the bills. This shift has resulted in a steadily progressive tsunami of paperwork now required to document every clinical decision. In the setting of greater clinical demands and increased requirements for documentation, the time and energy dedicated to teaching trainees and assessing competence have become increasingly limited.

“Grief an’ Pain for Promised Joy?”

What is the evidence that the ACGME is on the right track with all the new rules and regulations? Is all the “grief and pain” of the endless documentation worthwhile in the end? Let us take the issue of limiting duty hours and examine whether it has delivered the “promised joy” of improved patient outcomes and better fellow education. The idea of limiting work hours certainly seems reasonable at first glance, particularly in light of studies suggesting that house-staff fatigue contributes to medical errors and increases the time to complete tasks and that sleep-deprived junior physicians do worse on testing. Resident fatigue also may lead to more motor vehicle accidents and the long hours presumably contribute to a poorer quality of life.

As stressed by Ciolli, there are 3 reasons that reducing the house-staff work hours may be beneficial: patient safety, house-staff health and quality of life, and quality of education. But what is the evidence that the 80-hour workweek results in improvement in any of these areas? There is certainly a widely held belief that better-rested physicians provide better care; however, this is balanced by the fact that there is less patient continuity when caregivers change frequently. Each handoff increases the possibility of miscommunication errors. One study indicated that an effect of the 1989 New York regulations restricting work hours was a delay in
ordering tests and increased rates of hospital complications.12
Another study suggested an increase in potentially prevent-
able adverse events associated with resident physicians unfamiliar with the patients.13 Spending fewer hours with patients makes it difficult to observe and respond to changes in a patient’s condition. In a survey of trauma physicians in which shift work has been required to comply with the mandate, 54% of respondents thought that resident education had suffered, and 45% believed that patient care had wors-
ened with the advent of the 80-hour work week.14 There are many similar reports such as these in other subspecialties.15,16
The loss of the number of hours worked by residents and fellows has shifted the burden to attending physicians. Attending physicians must spend more time gathering data, reviewing records, completing progress notes and discharges, arranging follow-up, etc—work previously performed by house staff. This has resulted in attending physicians spending more time tracking things down or reducing their patient load.17 Because this is simply a shift in the workload, there is little to support that the move has necessarily resulted in improving patient care.
In a recent observational study of Medicare patients, neither a reduction nor an increase in 30-day mortality rates was found in the first or second year after institution of the residents’ duty hour limits among either medical or surgical conditions.18 After surveying the literature, Fletcher and others,19 in fact, concluded that there are no convincing data that the reduction in work hours has improved patient safety.
It is even murky as to whether the fellow’s quality of life is better. In a study that evaluated residents’ sleep hours in the year after implementation of the work hour limitation, the mean nightly sleep duration increased only 22 minutes (6.1%), from 5.91 to 6.27 hours, while nightly sleep during extended work shifts decreased only 4.5%, from 2.69 to 2.57 hours.20
In the absence of any evidence that these mandates have improved the outcome of patient health or of fellow education, is the “grief an’ pain” in the process all for naught? If considered in the parlance of clinical trial design (something with which most cardiologists can relate), the interventions of duty hour limitation and focusing on core competencies represent only surrogate markers for the desired end point of improved patient outcome and a more competent cardiology fellow. Valid surrogate markers, however, must fully correlate with the desired outcome to capture the net effect of treatment.21
Multiple interventions in medicine that have targeted such surrogate end points have subsequently been found to have either a neutral or an adverse effect on the clinically meaningful end point when the appropriately powered and designed study was performed. These same principles of clinical trial design could be applied to ACGME interventions, but to date they have not. Analysis of meaningful end points is particularly urgent now because there is a serious discussion about reducing house-staff duty hours in the United States even further. The British Medical Association and the European Parliament and Council of Min-
isters already developed a European Working Time Directive that mandated a 56-hour workweek that began in August 2007 and a 48-hour workweek beginning August 2009.22,23 The impact of similar changes in the United States would be profound.

So Why Have the ACGME Interventions Created Some Much Frustration When the Intentions Seem So Worthy?

It is evident that the ACGME has mandated global changes in the process without demonstrating an improvement in the results. In addition to the concerns about the efficacy of these interventions, training programs are now required to speak the language of the core competencies for all fellow responsibilities. The overarching philosophy of the ACGME is “whatever we measure we tend to improve.” Thus, for every clinical rotation in which a fellow is involved, objectives for the rotation and detailed evaluations of the fellow’s experience and performance must all be formatted on the basis these universal core competencies; distributed to faculty, hospital staff, patients, students, and peer fellows; and collected and synthesized into a unified assessment of “competence.” Ironically, precious time ends up being spent on wording, semantics, organization, and processes related to these forms and procedures, and this has shifted the time available to improve the training program to meet these competencies. Furthermore, the mandates have dramatically increased the need for documentation of every detail. Fellows, to prove compliance with the duty hour limits, must not only log the total number of hours spent at work each week but also specify the type of work performed (direct patient care, conferences, research) and the exact location of the activity within the healthcare system such as the specific inpatient ward. As a result, programs and fellows shift their time and energy toward the basic goal of compliance and documenta-
tion and away from creative, tailored approaches to improve fellow education. Legitimate efforts to comply with everything that is now required have become a hassle for fellows and program directors alike.

Another major issue in dealing with the ACGME is its large size. Currently, there are 28 review committees and 8186 accredited residency and fellowship programs in 120 subspecialties. The total number of trainees under the ACGME umbrella is now well over 103 000. With its 174 general cardiology programs and 2300 general cardiology fellows, cardiology is only a single small subspecialty under the ACGME’s domain. Interventional cardiology and electrophysiology programs are even smaller segments, including <500 fellows. The total number of all cardiology fellows makes up only ≈2% of ACGME trainees. With such a large and diverse group for the ACGME to govern, there can be little room for appeals or requests for modifications to foster improvements that could be beneficial to any particular subspecialty.
Finally, others have noted that although the ACGME has spent years evaluating the quality of residency programs, its process of self-evaluation has not followed suit. Even though some have strongly advocated that the ACGME conduct a thorough internal review and submit to a peer review by an external commission, the ACGME has not done so, and why should it? It has little incentive to do so because it can impose its will on GME without such scrutiny.

So Where Do We Go From Here?
We are not advocating a return to the totally unregulated days before the Flexner report. We do believe that the cardiology community should demand a focus on educational interventions that actually improve training rather than simply adding more documentation. Some efforts have already been quite beneficial. The American College of Cardiology (ACC) began publishing fellow training guidelines in 1995 referred to as COCATS (Recommendations for Training in Adult Cardiovascular Medicine—Core Cardiology Training). Although this effort was greatly needed and well received by the ACGME, it remains focused on specific rotations and numbers of procedures and not on the core competencies sought by the ACGME, even in its most recent update. More needs to be done.

The American Board of Internal Medicine (ABIM), as the certifying organization for the specialty of cardiovascular medicine, is also been an important player, and close partnership with the ABIM is critical. As part of the process of Maintenance of Certification for specialists in internal medicine, physicians are now required to perform a Practice Improvement Module. This practical module entails choosing a disease state (for the cardiologist, this includes conditions such as hypertension and preventive cardiology), surveying patients cared for by the physician, performing a chart review, and submitting the data to the ABIM. A report is generated and returned to the physician with quality improvement goals, and an improvement plan or process must be developed, implemented, and tested. Although a commendable goal, there is as yet no evidence that this is of value for either education or patient care.

In the current environment, there is little leeway for experimentation to test alternative approaches to training cardiology fellows by piloting programs designed for specific training opportunities. For instance, it seems unrealistic for programs designed to produce only outstanding clinical cardiologists to follow the precise training pathway as programs designed to train clinician-researchers and clinician-educators for careers in academic medicine. How much research training does the cardiology trainee. This is particularly true of research training, a major component of training (Eric Williams, MD, personal communication, 2008). Although it is unclear whether this will actually be approved, this type of dialogue between cardiology and the ACGME is precisely what is needed to move forward and improve the system.

2. Before implementing major global changes in cardiovascular training, the ACGME should test the impact of these changes on a small number of volunteer cardiovascular programs. In that manner, they will be able to assess how the modifications affect the various cardiology training programs, including general cardiology and all of the sub-specialties. These include interventional cardiology, electrophysiology, and now the proposed new tracts of heart disease and adult congenital heart disease. Appropriate feedback can be given as to the effectiveness of proposed changes, and data assessing this effectiveness can be collected in a systematic fashion.

As long as the overall training goals are met, the ACGME should permit some variability in training to allow a highly academic research track to differ from an outstanding clinical track. The specific training institution should make the decision as to what type of training best fits with its specific type of program or what most likely benefits the individual trainee. This is particularly true of research training, a major
focus in some programs and simply not available in others. It seems that each cardiology fellow now wants advanced training in every possible area of clinical cardiology, and there is great concern that we are gradually losing our ability to develop basic and clinical research faculty in a system that continues to add more and more clinical time to the training years. Some flexibility is needed if we are to have any hope of developing the next generation of academic cardiologists in this country.

4. The ACGME and ABIM should focus on patient outcomes and the final “product”—how good a cardiologist we train—rather than on unproven processes or arbitrary numbers. The focus should be on competency and not on the extensive documentation that has produced a cottage industry for form development and tracking. Too much time is currently spent on the process itself. The ACGME should seek the input of and collaborate with the subspecialty societies to review and revise current practices. The emphasis should be on ensuring that the faculty and the facility are optimal for training and that the fellows are receiving the training they need. Processes that do not directly contribute to that ultimate goal should be reexamined and discarded if found unnecessary.

5. Along these lines, the cardiology community needs to reexamine its current training guidelines and align them with the competencies requested by the ACGME. The focus should move away from the current rotation time and procedural number format to the evaluation of competency in each of the various aspects of cardiovascular training to which the fellow is exposed. This will likely require more objective testing along with the current subjective evaluations, but it will increase the flexibility that program directors have in designing schedules that emphasize the goal of training competent cardiologists rather than simply the documentation of how many months were spent on various rotations and how many procedures were accomplished during those months.

Conclusions
It is time for the ACGME to critically examine whether current ACGME mandates improve cardiovascular fellowship training and competence. As a cardiology community, we need to convince the ACGME that programmatic changes should be made only in collaboration with program directors, the relevant professional societies, and certifying organizations. Pilot programs to test new policies should be undertaken before global policies are launched. Serious consideration should be made to allow flexibility within each subspecialty in cardiology if it is clear that the current “one size fits all” policy does not achieve the desired goals. The focus should shift from the process (which includes substantial busywork with little obvious benefit) to the final result: a competent cardiologist prepared for a long career in whatever area is chosen. If this were to happen, “the best laid plans” would no longer be sidetracked, and perhaps the “promised joy” would more likely be accomplished.

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Disclosures
None.

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Drs Bashore and Wang suggest that many of the past and present Accreditation Council for Graduate Medical Education (ACGME) initiatives have been misguided and have left graduate medical education “gang aft agley.” In my opinion, nothing could be further from the truth. Medical training in the United States is the most sought after in the world, in large part because trainees and others acknowledge the rigorous structure and adherence to guidelines that have proved successful in educating physicians over many years. The ACGME, along with other groups, has contributed significantly to the success of training highly competent physicians. Although not perfect, ACGME initiatives provide standardization and time-tested oversight of a complicated system of postgraduate medical training in cardiology and other specialties. Rather than a “one size fits all approach,” the ACGME sets a minimum level of expectation, allowing programs to then create their own unique training environments. Drs Bashore and Wang extensively discuss the effect of duty hours on medical training. Certainly, strict adherence to present (and future) regulations regarding time spent in the hospital requires complicated scheduling and coverage. Limiting duty hours affects continuity of care and uninterrupted learning, and it is difficult to discern whether duty hour restrictions have actually enhanced patient safety or physician quality of life. It is clear, however, that the ACGME is not the only force behind restricting duty hours. Public opinion, the US Occupational Safety and Health Administration, and state, national, and international medical associations are increasingly recognizing that long hours in the hospital may be counterproductive. Thus, rather than fight the uphill battle regarding limitations on work hours, I suggest we focus our efforts on ensuring that the time spent in the hospital “on duty” is well-structured, efficient, educational, and productive for trainees, and the ACGME is committed to this effort. I concur with the authors’ suggestion to initiate pilot programs for new projects with clear measurement of impact and outcomes, and I fully agree that less bureaucracy and paperwork would be beneficial. In addition, I welcome the idea of collaboration with other organizations such as the American Board of Internal Medicine, American College of Cardiology, American Heart Association, and subspecialty groups. Clearly, the ultimate goal of all programs is to provide top-notch training and to produce highly educated and competent physicians. The direction, oversight, and leadership provided by the ACGME have favorably contributed to a “promised joy” for cardiovascular trainees and their programs. Change is constant in medical education, and as the noted historian Henry Steele Commager said, “Change does not necessarily assure progress, but progress implacably requires change. Education is essential to change, for education creates both new wants and the ability to satisfy them.”
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