

FELLOWS-IN-TRAINING & EARLY CAREER PAGE

ABIM/ACC Competency-Based Education Pilot in Internal Medicine-Cardiology



A Fellow's Perspective

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The traditional cardiology training pathway has entailed 3 years of internal medicine (IM) residency followed by 3 years of cardiology fellowship with optional additional training. The rationale behind 6 years of training in this traditional pathway has never been rigorously tested or clearly articulated. Concerns about the significant burden of student loans and the inordinate time it takes to train have been recognized (1). The need for an innovative competency-based training track in cardiology was recognized 2 decades ago by Fuster and Nash (2), but the efforts to introduce newer, nontraditional models for training have been few and far between. However, the American Board of Internal Medicine's (ABIM's) competency-based pilots have challenged the traditional structure of residency and fellowship training (3). In 2014, the ABIM's competency-based pilot in IM and cardiology (Pilot) was started with 4 participating institutions (Icahn School of Medicine at Mount Sinai, Indiana University School of Medicine, University of Oklahoma College of Medicine, and Vanderbilt University School of Medicine), each supporting 1 Pilot resident/fellow each academic year (4). Incorporation of core competency requirements in graduate medical education and the publication of cardiovascular-specific milestones by the American College of Cardiology provided the necessary momentum for the Pilot (5).

At the core of the Pilot is the creation of a blended third year of IM residency with 4 unique cardiology experiences in echocardiography, vascular medicine,

preventive cardiology, and stress testing (Figure 1). Pilot trainees are selected during their second year of IM residency, and the Pilot requires that IM residency and cardiology fellowship take place in the same institution. The total duration of IM and cardiology training remains unchanged in the Pilot at present; however, it does allow for early cardiology-focused training during the third year of IM residency while still preserving the core IM rotations. The 4 clinical rotations mentioned above, unlike electives during IM residency, fulfill ABIM requirements for both IM and cardiovascular board certification (Figure 1B).

Recently published preliminary results of the Pilot appear promising in both confirming the benefits of earlier cardiology-focused training and initiating discussions to potentially shorten the training required to become a practicing cardiologist (6). However, assessment of any nontraditional training pathway should include feedback from multiple stakeholders. Therefore, we present our perspectives and experiences as first-year (Z.A.) and second-year (C.T.) cardiology fellows enrolled in the Pilot.

THE APPLICATION PROCESS

Unlike the traditional cardiology fellowship, the application process for the Pilot started in the middle of the second year of IM residency. Similar to the standard cardiology fellowship application process, we were required to submit letters of recommendation and personal statements before a formal interview process.

There were unique aspects and challenges to the pilot application process. First, the accelerated application timeline, which was 6 to 8 months in

advance of the National Residency Match Program application submission deadline, required an earlier commitment to cardiology fellowship. This also required earlier engagement in research activities and outreach for letters of recommendation. This accelerated pace did not pose significant difficulties for us, as our strong interest in cardiology had developed very early during IM residency. However, we realize that the process could be challenging for those who make fellowship training choices relatively late. Second, the Pilot's structure required both IM residency and cardiology fellowship to take place within the same institution, precluding consideration of other fellowship programs. Because both of us wanted to enter the cardiovascular fellowship at our parent institution of IM residency, the Pilot was a good option for us and our families. We were also spared from the expensive hassles of traveling for interviews and taking time out of educational rotations.

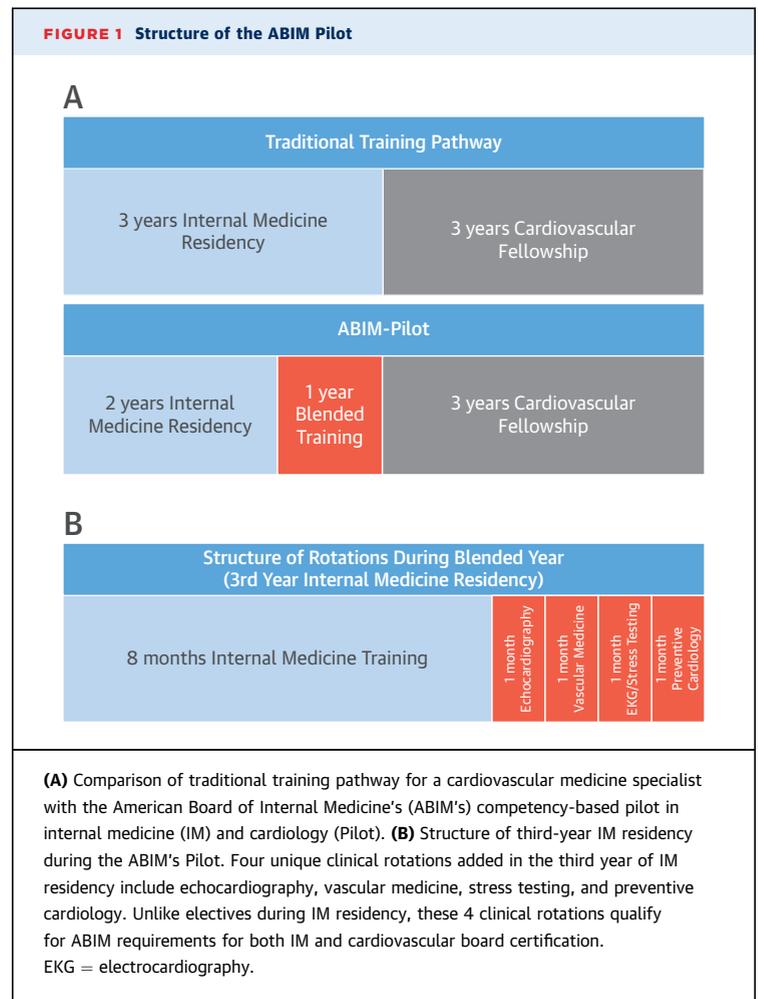
THE PILOT "BLENDED" IM YEAR

Transition periods in training are stressful due to high expectations regarding knowledge, competencies, and decision-making skills. The Pilot allowed us to gradually assume a higher level of responsibility during the blended third year, which helped make the Resident-to-Fellow transition easier. Carefully structured rotations in the Pilot prepared us effectively for direct patient responsibility and honed our theoretical knowledge. These included:

1. Rotations involving interpretation of diagnostic studies without significant direct patient care responsibility (echocardiography and stress testing).
2. Rotations with heavy cardiovascular and IM crossover (vascular medicine and preventive cardiology) with direct patient management and clinical decision making.

During these rotations, our assignments were that of the first-year cardiology fellows, including reporting echocardiograms. Thereby, the Pilot was instrumental in facilitating a smoother and more confident transition for us to first-year fellowship.

At the start of the blended rotations, we were concerned about finding the right balance between being a third-year IM resident and a pilot resident/fellow. Some level of apprehension on our part regarding our readiness to assume clinical responsibilities closer to a fellow-level trainee rather than a resident was to be expected. These concerns, however, did not materialize. Our peers treated us no differently from other residents who were



pursuing cardiology fellowships, and our faculty provided us significant supervised autonomy that the first-year fellows typically receive. The harmonious interaction between the IM and cardiology departments and intense faculty development regarding the goals and expectations of the Pilot were cornerstones to the success of the blended year, and will likely be critical in replicating the Pilot at other training sites.

One of the unique aspects of the ABIM Pilot is that IM and cardiovascular training are completed at the same institution. The opportunity to continue training at the same institution assuaged the emotional and financial stress that comes with moving to a different city and acclimating to the unique challenges of practicing medicine in a different academic health center. Additionally, the continuity of training in the same institution helped us to carry our ongoing research projects to completion.

The addition of 4 competency-based cardiology-specific rotations in the blended year resulted in a

TABLE 1 Summary of the Application Process With Comparison of Advantages and Disadvantages of Traditional Training Model Versus the Pilot		
	Traditional Training Pathway	Pilot
Cardiology fellowship match process	National Residency Match Program	Selection of suitable candidates from internal medicine residency program in the same institution by cardiology fellowship program director.
Application	Electronic Residency Application Service submission required in beginning of third year of medicine residency.	Personal statement and letters of recommendation e-mailed to cardiology fellowship program director in the middle of the second year of internal medicine residency followed by interview.
Advantages	<ul style="list-style-type: none"> • Opportunity to evaluate and consider other cardiology fellowship programs for training. • Time-tested training model. 	<ul style="list-style-type: none"> • Saving time, money, and stress by staying at the same institution. • Cardiology-focused blended year training in third year of residency. • Smooth residency-fellowship transition. • Additional 4 months of electives available in third year of cardiology fellowship to utilize in areas of interest. • Potential for shorter training duration in future.
Disadvantage	Time, stress, and cost of interviewing at different programs.	<ul style="list-style-type: none"> • Silo effect by completing 6 yrs of training at the same institution. • Accelerated application timeline.

more rigorous but interesting and meaningful third year of IM residency. For us, this was a more efficient use of our training time, as it focused on our future career goals. The trade-off of completing cardiology-specific rotations during the blended year was giving up 4 IM elective rotations (e.g., endocrinology, rheumatology, pulmonology, gastroenterology, or other IM subspecialties). We do not feel that the unique structure of the blended year created any significant gaps in our core IM knowledge. Our participation in the IM continuity clinic remained unchanged during these 4 structured rotations, and at the end of IM training, we felt as capable as our peers in patient care. We were also able to prepare for the ABIM certification examination in IM as rigorously as our peers and passed the examination with good scores.

BEYOND THE PILOT BLENDED YEAR

During our first year of cardiology fellowship, we found the faculty eager to teach us relatively advanced concepts in echocardiography generally reserved for the second year of cardiology fellowship. We attribute this to the structured exposure and experience in echocardiography that we received during the blended Pilot year. Our attendings seemed to have relatively higher expectations from us compared with first-year fellows assigned to the traditional pathway. However, we observed that we were treated similar to traditional first-year fellows in other areas of cardiology not covered by the blended year, such as the cardiac catheterization laboratory.

Completing 4 months of cardiology-themed rotations during the blended year creates the opportunity

for 4 additional elective months during our third year of cardiology fellowship. These rotations could be tailored to our areas of interest and have the potential to facilitate a more effective transition from fellowship to subspecialty training or clinical practice.

We hope that the Pilot findings would lead to a shorter training period to become a cardiology specialist. The trend of increasing length of training in cardiology subspecialties, such as electrophysiology and structural interventional cardiology, imposes a significant financial burden on current trainees. The current training duration of 8 years or more after medical school to become a subspecialist in cardiovascular disease is indeed daunting. Any new training pathway that offers a shorter duration of training without compromising the education or attainment of necessary competencies is certainly attractive to us and our peers.

CONCLUSIONS

The ABIM Pilot in IM-cardiology offers an opportunity for a long overdue paradigm shift in graduate medical education training of future cardiovascular specialists. The Pilot pathway offered us the attractive prospect of staying in the same institution for both IM residency and cardiology fellowship training while beginning the core training experiences in cardiology several months earlier (Table 1). Apart from the stress of preparing a competitive application much earlier than the traditional National Residency Match Program, our experience with this program has been overwhelmingly positive. We hope that the Pilot results would pave the way to reconsider the pathway to train cardiovascular specialists of the future.

Reducing the total duration of training while still producing well-trained cardiologists should be our future goal (7).

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RESPONSE: Are We Ready for Competency-Based Cardiology Training?

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Within the evolving framework of competency-based medical education, cardiology has unique opportunities to develop and evaluate innovative methods of training. The American Board of Internal Medicine (ABIM)/American College of Cardiology Pilot is an initial step in this direction. Dr. Asad presents the perspective of 2 fellow participants in this program. This perspective is critical in evaluating outcomes and implications for this or any innovation in training.

There is much interest nationally in identifying ways to decrease the cost and intimidating amount of time required for medical training. Given our comfort as a field in adapting to emerging evidence, cardiology is well positioned to innovate in evidence-based medical education. We do, however, need to ensure that we approach this in a thoughtful, deliberate manner. Dr. Asad describes advantages for fellows with an early career focus. He concludes that an early focus did not lead to gaps in core internal medicine (IM) knowledge. This is also the conclusion of the IM and cardiology program directors who participated in the Pilot. Acting responsibly, we must then ask whether an early focus results in lost opportunity for expertise in noncardiology areas of IM. If so, is this

important for fellows' long-term career goals and ultimately for their patients' care?

The primary tools used for identification of gaps in trainee knowledge and for determination of competency for independent practice are imperfect and not standardized. Determining how to best make these assessments and then, in turn, how to implement them across institutions is a major challenge moving forward in competency-based cardiology training (CBCT). In fact, it leads to more questions. How do we determine the amount of knowledge or skill that is appropriate for each individual trainee? Are the necessary amounts the same in all areas for internists compared with general cardiologists and electrophysiologists? Are they the same for future physician scientists compared with pure clinicians? Some of the skills in which these different physician phenotypes need to be competent to practice independently vary, implying that the paths to acquire these skills should vary as well. Currently, we address this by adding time to training, but is this the most effective and efficient method to accommodate different learning needs? We know from experience that, even for trainees pursuing the same career goals, the amount of experience required to obtain competency is

not the same. Can we then develop a truly flexible system that allows trainees to progress as their individual knowledge and skill dictates? These are important questions that cardiology has the potential to answer.

There are many stakeholders involved in decisions ahead of us as we continue to develop CBCT, including residency and fellowship programs,

accrediting bodies, hospitals, government, trainees, and the public. There are implications of cost and resources to all of these stakeholders, but most importantly, our patients. As cardiology grows in complexity, it is imperative that we determine how to utilize our resources as effectively as possible. We must embrace and invest in CBCT and lead in the innovation of medical education.