

## Perspectives

# A Roadmap to Reinvigorating Training Pathways Focused on the Care of Patients With Heart Failure: Shifting From Failure to Function

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After many years of work led by the Heart Failure Society of America, cardiovascular disease specialists dedicating careers to caring for patients living with heart failure (HF) in need of advanced therapies were specifically recognized in 2008 when the American Board of Internal Medicine identified Advanced Heart Failure and Transplant Cardiology (AHFTC) as a cardiovascular subspecialty. After this recognition, the Accreditation Council for Graduate Medical Education (ACGME) formalized the subspecialty requirements and scope of training in 2013.

Ten years later, the advances and innovation in the field of HF are remarkable, if not breath

taking. These life-saving developments range from modern guideline-directed medical therapy across the spectrum of ejection fractions; targeted medical therapies in hypertrophic cardiomyopathy and cardiac amyloidosis; percutaneous interventions for complex valvular pathologies; hemocompatible durable left ventricular assist devices (LVAD) that confer significantly improved longevity; and advances in heart transplantation (HT), including noninvasive means of detecting allograft rejection, increased use of organ donation after circulatory death, and the first implant of a porcine xenotransplant. With more than 6 million patients living with HF in the United States alone, the umbrella of therapeutic options for these patients now includes a wider range of options than ever before, rendering a palpable sense of energy and excitement in our field.

Yet, in recent years, more than 40% of ACGME-accredited AHFTC fellowship positions have gone unfilled through the National Resident Matching Program. Despite more than 1100 applicants matching into cardiovascular disease fellowship, only 74 cardiovascular fellows applied to AHFTC for the 2023–2024 cycle, filling 71 of 127 (56%) positions, and leaving 45 of 73 (62%) programs unfilled. Unfortunately, these match results for AHFTC continue a consistent trend, with similar statistics observed in 2022.<sup>1</sup> There is no evidence of more cardiovascular disease fellows being drawn to our field despite the growing clinical need and aforementioned advances.

What accounts for the paradox of these diverging trends?

Although a data-driven approach to answering this pressing question is currently lacking, several hypotheses have been proposed.

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■ *Inadequate exposure to AHFTC during cardiovascular disease fellowship training:* Although the number of centers performing HT and LVAD implantation is increasing, many general cardiology fellowship training programs do not have HT or LVAD services and do not provide opportunities to rotate at centers that do. To this end, a 2018 survey of cardiovascular disease fellowship program directors found that approximately 40% of programs did not have direct clinical exposure to HT and 62% did not offer AHFTC training programs at their institutions.<sup>2</sup> In such programs, a lack of AHFTC exposure early in cardiovascular training may result in trainee misconception as to what “heart failure” care (and training) entails, as well as missed opportunities to connect with relevant HF mentors and sponsors.<sup>3</sup> Of note, the most recent Core Cardiovascular Training Statement iteration suggests 8 weeks of HF training or exposure over 3 years of fellowship,<sup>4</sup> yet these recommendations are not requirements and do not stipulate exposure to HT and LVAD management.

■ *Curriculum updates needed and suboptimal designation as “AHFTC” fellowship:* The AHFTC fellowship was designated as an ACGME-accredited training program in an era of fewer diagnostics and therapeutics than available today. Contemporary patients with HF have a higher burden of pathology, are more complex, and require specialized care across a wide spectrum of disease stages. As a result, clinical interests have emerged that are outside the scope of advanced HF and transplant cardiology (ie, intersection of AHFTC and critical care,<sup>5</sup> management of specific cardiomyopathies, cardio-oncology, cardio-obstetrics, pulmonary hypertension, etc). By definition, “AHFTC” does not represent the vast range of conditions addressed by the modern-day HF cardiologist, and this limited focus could potentially dissuade the attraction to pursue additional training for those with broader interests who aspire to practice other aspects of HF care. A training curriculum that better matches the clinical need of our current HF patient population and a fellowship title that more accurately describes the across-the-board pathology encountered by HF cardiologists in clinical practice could serve to draw interest more widely toward the pursuit of HF training.

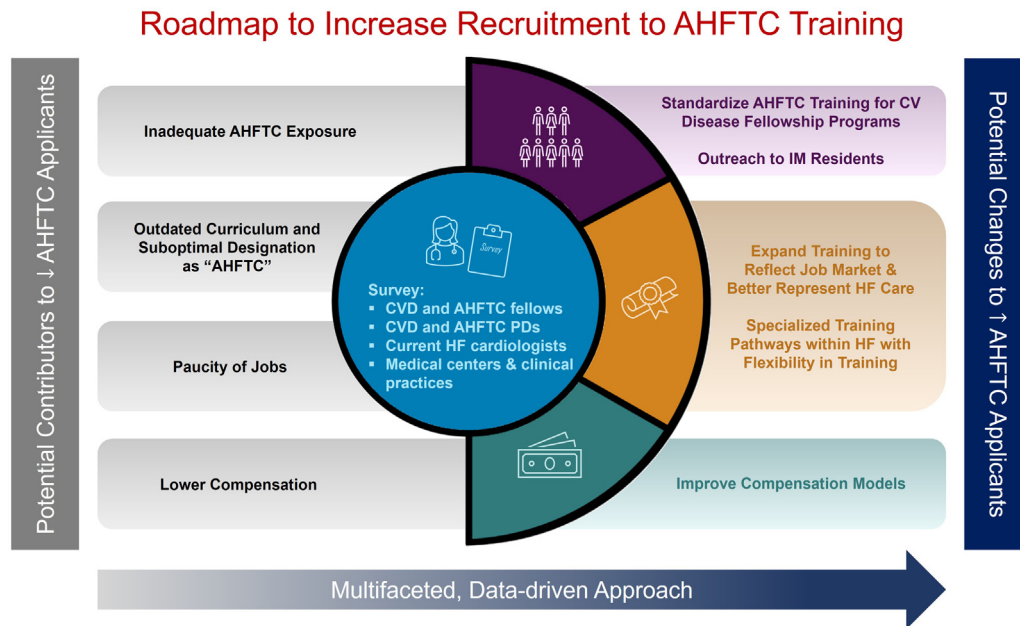
■ *Paucity of HT and LVAD related jobs:* Many AHFTC fellows seek to pursue job opportunities at HT and LVAD centers, but not enough of these positions are available. A far greater number of opportunities and a greater need for clinicians to practice general HF are present either in the

community or in affiliation with tertiary and quaternary institutions.<sup>6</sup> Training will need to adapt to meet the needs of the evolving job market, which is a reflection of what is required to best care for contemporary patients with HF more broadly.

■ *Perceived lower compensation with a lower quality of life relative to other cardiovascular subspecialties:* Despite the high clinical complexity of patients with HF, compensation for the AHFTC subspecialty may be lower than other subspecialties of cardiology. Trainees may question whether it makes sense from a financial perspective to pursue another year of training in AHFTC if it only variably leads to additional compensation. In addition, there is the perception that AHFTC cardiologists may have lower quality of life, in part attributed to high patient acuity, complexity, and time spent in direct patient care, as well as orchestrating implementation of life-saving therapies, which are not reimbursed in a commensurate manner. In all, the limited exposure that some trainees have to AHFTC cardiologists and routine care of HF patients, rather than direct clinical experience, might be important determinants of training and career decisions.

The time to bridge the divide between the dearth of AHFTC fellowship applicants, exciting therapeutic advances, and an increasing need for a larger HF-specialized workforce is now. A multifaceted, data-driven intervention involving diverse stakeholders will be necessary to sustainably work toward meaningful solutions. The Heart Failure Society of America already has assembled a Task Force to address this pressing issue. While we await those efforts, the following is intended to further the conversation with the HF community by proposing a draft roadmap of next steps (Fig. 1).

- *Survey cardiovascular disease and AHFTC fellows:* Cardiology fellows play a critical role in shaping the HF workforce. It is important to better understand their viewpoints and determinants or drivers for subspecialty selection, including those who have chosen to not pursue an AHFTC fellowship. Comprehensive survey data of cardiovascular disease and current AHFTC fellows are necessary to have a more objective overview of the problem.
- *Survey cardiovascular disease and AHFTC program directors:* Current program directors have intimate knowledge of their local application patterns, educational resources, and programmatic needs. Furthermore, they are directly involved in designing and implementing a



**Fig. 1.** Roadmap to increase recruitment to AHFTC training. Potential contributors have been proposed to explain the low rate of AHFTC applicants in recent years. A multifaceted, data-driven approach involving diverse stakeholders will be necessary to sustainably work toward meaningful solutions that will lead to a reinvigorated interest in the subspecialty. AHFTC, Advanced Heart Failure And Transplant Cardiology; CVD, cardiovascular disease; HF, heart failure; IM, internal medicine; PD, program director.

training curriculum to meet the educational objectives of their trainees.

- *Survey current HF cardiologists, medical centers, and clinical practices:* A better understanding of typical practices and job descriptions among current HF cardiologists will allow for more accurate reporting and representation of the contemporary jobs available upon graduation. Assessing job satisfaction from currently practicing HF cardiologists will clarify which aspects of our field provide career fulfillment and should be promulgated, as well as those aspects that are less attractive and represent opportunities for change.

- *Standardize AHFTC exposure in cardiovascular disease fellowship:* Outlining specific training requirements and exposure to AHFTC for general cardiology fellowship programs is necessary for consistency across programs. Advocacy efforts via professional society platforms such as the Heart Failure Society of America, American Heart Association, and American College of Cardiology need to be coordinated to enable change across ACGME, Core Cardiovascular Training Statement, and American Board of Internal Medicine. Novel strategies through multiprogram collaborations can also be crafted to support smaller programs that are not able to provide a well-rounded, specialized outlook of AHFTC care to their trainees.

- *Develop specialized training pathways embedded in dedicated HF fellowships:* In recognition of the changing landscape of HF, many have advocated for the provision of novel pathways or personalized training tracks within the AHFTC fellowship year. While recognizing that the logistics of devising different specialized tracks within an AHFTC fellowship may not be feasible for all programs, this framework would allow trainees to acquire skillsets in other domains beyond HT and LVAD. Based on specific interests or career goals, ensuring additional competencies essential to contemporary HF management may ultimately increase and diversify the HF workforce. Proposed tracks could overlap, but focus on the following.

- (1) *General HF:* focused on guideline-directed medical therapy optimization and implementation, more nuanced management of specific cardiomyopathies (infiltrative, inflammatory, genetic, etc), and recognition of appropriate referral for advanced HF therapies.
- (2) *Critical Care or Interventional HF:* including a more in-depth comprehensive approach of cardiogenic shock, temporary mechanical circulatory support (tMCS), interventional skillset, and intensive unit care of patients with HF.

(3) *Specialized HF*: further personalized training in other adjacent realms such as cardio-obstetrics, cardio-oncology, HF with preserved ejection fraction, HF research, and so on.

(4) *Advanced HT/LVAD*: comprising intricacies of HT and LVAD selection and management in addition to end-of-life care.

■ *Provide flexibility in training, including potential incorporation during general cardiovascular disease fellowship*: How to accommodate time for personalized tracks remains an important issue that warrants consideration. Comprehensive training in both inpatient and outpatient management and the entire spectrum of evolving HF pathology in one year of AHFTC fellowship may pose challenges depending on institutional volumes, as well as the need to train other general cardiology and additional subspecialty fellows. Although a possible alternative is to revamp the curriculum to a 2-year fellowship program, there is also an opportunity to provide a training pathway for interested fellows that allows for competency-based training in AHFTC during their third year of general cardiovascular disease fellowship. Depending on the background, skills, and career goals of individual trainees, elective time may be devoted to additional HF training and this added exposure could enable some trainees to gain an added level of competence, render more specialized HF care, and/or gain skillsets to perform or interpret certain HF relevant procedures (ie, invasive remote monitoring, cardiopulmonary exercise testing, tMCS, etc).<sup>7</sup>

■ *Improvement in HF compensation models*: Compensation models based on relative value unit productivity do not consistently favor HF cardiologists, who routinely spend larger portions of time in the evaluation and management services and care coordination, compared with other cardiovascular subspecialties. As such, further downstream revenues that result from the activities of HF cardiologists may not be captured and credited in many settings. Overall, shifting to value-based payment models with emphasis on longitudinal care may not only improve clinical outcomes, but also lead to enhanced compensation and greater applicant interest.<sup>8</sup>

As members of our vibrant HF community, we have a responsibility to serve as agents of change to ensure the long-term sustainability and success of our field.

In so doing, not only must we enhance the recruitment of a talented and diverse future generation of HF cardiologists, but we also need to match our training to the contemporary patient population encountered in clinical practice. A better understanding of the components of the problem and a roadmap of actionable interventions are needed to achieve meaningful solutions. This approach will require multipronged efforts including thoughtful data collection and rigorous analyses by different stakeholders. How do we increase exposure to AHFTC so that all fellows can determine if this subspecialty is a good fit for them? What are the precise milestones and core competencies required for a career focused on the care of patients with HF in the contemporary era? What is the best model to increase flexibility for trainees and improve efficiency in HF training? How do we assess whether compensation models fairly match the specialized care we are providing? Together, we are confident the HF community can work toward a reinvigorated interest in moving our educational efforts from failure to function and provide better care for our patients.

#### Disclosures

No disclosures.

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