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RESPONSE: Training in Cardiac CT Is Essential for Every Cardiologist

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Janus and colleagues provide a thoughtful and timely perspective highlighting that while there is an increasing role of cardiac computed tomography (CCT) in clinical cardiology, many cardiologists lack the training and expertise necessary for patient selection and exam interpretation. They suggest that current training guidelines are insufficient, and that the time spent in training on CCT is disproportionate to its emerging role. Accordingly, they propose that “at the very minimum” CCT level 1 training should require 2 dedicated months of training with a minimum of 100 cases, as opposed to the current minimum of 1 month and 50 cases.

Janus and colleagues correctly identify that CCT has undergone an evolution, as it now has an integral role in cardiovascular medicine. Although there is an important need to further educate cardiologists of every level, it is important to understand the differences in the goals of training those who will be “end users” of the exam (level 1) versus those who wish to acquire the skills to independently interpret CCT studies (level 2). For instance, Janus and colleagues state that “It is unlikely that cardiologists will be independent with interpreting only 50 CT studies”;

however, level 1 defines the fundamental level of experience required of all fellows-in-training to be considered competent to practice cardiology. Level 1 training does not qualify a trainee to perform or interpret CCT, or any other imaging studies, independently.

Although training in CCT should be expanded, the exact mechanism deserves further thought. Programs could add an additional month of CCT (of note, at least one program in the United States currently requires 3 months), but program directors are constantly being asked to include more rotations, and thus adding any time should be discussed in the context of what should be “given up.” Also, the experience that fellows obtain during a 1-month block of CCT is highly variable across institutions. In high-volume centers, fellows may be involved in up to 100 cases in 1 month, whereas in some centers only a small fraction of this number would be achieved. Additional mechanisms for augmenting fellows' experience include adding multimodality rotations, having regular conferences correlating CCT with invasive angiography or other imaging studies, and providing virtual “hands-on” learning experiences.

The latter might be especially important for enhancing learning in areas that may not be available in every center (eg, before transcatheter mitral valve replacement¹ or left atrial appendage occlusion planning; advanced plaque assessment²)

In addition to improving level 1 training for all cardiology fellows, there is also currently a shortage of trained cardiologists and radiologists who can independently interpret CCT studies. At the same time, the knowledge and skill set required to interpret CCT studies has dramatically expanded in recent years. Accordingly, in 2020, the Society of Cardiovascular Computed Tomography published a new training statement that increased the training requirements for both cardiologists and radiologists who wish to become independent (level 2) or advanced (level 3) practitioners.³ The Society of Cardiovascular Computed Tomography training statement also provided minimum case volumes for individuals who want to train in additional areas like structural heart disease or congenital heart disease.

When envisioning the needs of future cardiovascular imagers,⁴ several opportunities come to mind.

First, although establishing appropriate training in each individual imaging modality is essential, there is also a need to better train advanced multimodality cardiovascular imagers⁵ who will specialize in multiple modalities. To that end, the American College of Cardiology, along with multiple other societies, is currently developing an advanced training statement on this topic. Second, and as alluded to previously, not all institutions involved in training will have the necessary volume and diversity in CCT cases. Janus and colleagues recognize this and appropriately call for more online and in-person learning opportunities. Indeed, future collaborations between the American College of Cardiology and other imaging societies may facilitate the development and implementation of such opportunities.

In summary, the concerns raised by Janus and colleagues regarding inadequate training in CCT during cardiology fellowship are timely and reinforce the need to rethink how to ensure that future generations of cardiologists obtain the necessary expertise in knowing when and how to best use CCT in clinical practice, as well as how to independently perform and interpret CCT studies.

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