concomitant AF ablation is a great procedure. I feel that what we need now is a reimbursement of this procedure.

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Commentary: Navigating a MAZE of implementation science for surgical atrial fibrillation ablation

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Contemporary trials in cardiovascular medicine focus on studying new treatments or techniques for existing diseases that impact public health. There is often a clear progression of knowledge from bench research to phase I clinical trials (translation to humans; T1), then phase II and III trials (translation to patients; T2), and finally phase IV trials (translation to clinical practice; T3). However, significant gaps exist in our understanding of how research findings are disseminated and implemented in common practice

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CENTRAL MESSAGE

Significant barriers to broader use of concomitant MAZE exist, but addressing these barriers through continued education, using an implementation science framework, provide opportunity for improvement.

among physicians, patients, health care systems, and populations (translation to real world settings; T4). On average, it takes approximately 17 years for only 14% of new scientific evidence to enter clinical practice.¹ Moreover, Americans receive only one half the recommended acute, preventative, and long-term quality health care measures.² As such, the National Heart, Lung, and Blood Institute has identified implementation science, the study of methods to promote the uptake of research findings into routine clinical practice, as an area of high priority for outcomes research.³ Mehaffey and colleagues⁴ highlight this gap between research and clinical practice through their analysis of

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barriers to surgical atrial fibrillation (AF) ablation. Despite randomized trial evidence, observational studies, and a Class I recommendation from the Society of Thoracic Surgeons, only 40% of patients with preoperative AF receive a Cox-Maze (MAZE) procedure.⁵⁻⁷ The top 3 barriers to performing a MAZE in the current study include additional crossclamp time, concern over patient risk, and an increased risk of arrhythmias. Each of these barriers is a valid concern; however, the authors provide insight into the potential etiology for these concerns.

First, only one half of respondents learned the MAZE during their fellowship. Although most respondents reported feeling very comfortable with ablation, it is possible that a lack of early career training could influence concerns over excessive crossclamp time and patient risk. As a corollary, lower-volume mitral valve surgeons were more likely to report increased barriers to MAZE. This does not mean the MAZE should be reserved for high-volume surgeons, but supports the idea that a potential experience gap contributes to decreased use. Lastly, respondents cited a lack of discussion about concomitant MAZE from referring cardiologists. Taken together, lack of early career training may lead to low procedural volume, perception of excessive operative time and patient safety, and ultimately lack of requests for MAZE due to low institutional volume.

Due to the deidentified nature of the survey, it is unknown whether those surgeons who reported no barriers truly performed concomitant MAZE at greater volume. Nevertheless, the analysis provides important insight on pathways forward to increase adoption. Most notable is the use of regional consortia to serve as a vehicle for implementing national guidelines on a local level. Such consortia provide opportunities for surgeons to share knowledge and techniques locally and engage with referring cardiologists—a practice we have used to drive quality improvement in our region.⁸

Like the use of bilateral internal thoracic artery grafting, the MAZE represents a surgical technique that can provide patients with a more comprehensive and effective operation. For example, when evaluating a low-risk patient with aortic stenosis and AF, should the discussion be transcatheter aortic valve replacement versus surgical aortic valve replacement, or transcatheter aortic valve replacement versus surgical aortic valve replacement with MAZE and left atrial appendage ligation? Overcoming barriers to the use of MAZE not only serves as an opportunity to provide AF patients with improved survival and quality of life, but potentially a more comprehensive alternative to a transcatheter intervention. Now that we have identified the barriers to concomitant maze, we must create the solutions to overcome those barriers and expand use.

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