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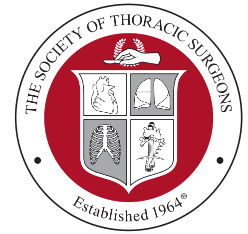
STS News



"These recommendations are really centered on the patient and how they would want to be treated during complex cardiothoracic procedures."

Susan D. Moffatt-Bruce, MD, PhD, MBA

▶ The new clinical practice guideline is the first one on blood management since 2011. It includes 23 new or updated recommendations.

Blood Management Guideline—Considered a 'Moving Target'—Gets Long Overdue Update

The Society, along with three other leading medical specialty societies, recently released a new clinical practice guideline that includes recommendations for reducing blood loss during heart surgery and optimizing patient outcomes.

Since 2011—when the guideline was last updated—there has been a "remarkable increase" in minimally invasive procedures that has contributed to a favorable shift in blood product utilization and management, according to coauthor Victor A. Ferraris, MD, PhD, from the University of Kentucky College of Medicine in Lexington.

"Blood management guidelines are a moving target that change with the advent of new or modified evidence," he said.

As a result, the new comprehensive, well-researched document—a multidisciplinary collaboration among STS, the Society of Cardiovascular Anesthesiologists, the American Society of ExtraCorporeal Technology, and the Society for the Advancement of Patient Blood Management (SABM)—features 23 new or updated recommendations. This is the third iteration of the guideline on blood management and the first in 10 years.

"This guideline provides clinicians with a detailed assessment of patient blood management in the cardiac surgical patient—what has been proven to work and what has not, as well as the ability to incorporate these techniques with the most up-to-date evidence," said lead author Pierre R. Tibi, MD, from Yavapai Regional Medical Center in Prescott, Arizona.

Patient-Centered Blood Management

It's important to note that in previous guidelines, the term "blood conservation" was used; the new recommendations yield to the broader term "patient blood management" (PBM).

▶▶ CONTINUED ON PAGE 6

The Society's mission is to advance cardiothoracic surgeons' delivery of the highest quality patient care through collaboration, education, research, and advocacy.

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STS News is a quarterly publication for members of The Society of Thoracic Surgeons. If you have a comment regarding the content of this publication or story ideas for future issues, please contact us. STS is not responsible for the opinions expressed by its writers and/or editors.

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Resilience, Optimal Performance Are Front and Center in New Podcast Series

A provocative new STS podcast series aims to help surgeons be their best selves inside and outside of the operating room.

"The Resilient Surgeon" series—part of the STS Surgical Hot Topics podcast—features renowned guests who will explain their own struggles with anger, depression, burnout, and career challenges before they learned strategies and techniques that helped energize them and improve their wellness, work-life balance, and optimal performance.

"Our goal with 'The Resilient Surgeon' is to inspire cardiothoracic surgeons to be their best selves, in and out of the OR, using scientifically proven tools and recovery strategies of the world's top performers from all walks of life," said podcast host Michael A. Maddaus, MD, chair of the new STS Task Force on Wellness.

The episodes will be released biweekly beginning on July 9:

- Monique Valcour, PhD, executive coach, shares advice and strategies on integrating work and life and thriving in a high-demand world.
- Daniel Z. Lieberman, MD, author of *The Molecule of More,* provides a master class in dopamine and explains why happiness comes only in the here and now.
- Suniya S. Luthar, PhD, cofounder and chief research officer at Authentic Connections, provides tips on managing stress and anxiety, especially for mothers and women in medicine.
- Chris Germer, PhD, clinical psychologist, offers insights on mindfulness and self-compassion.
- Christopher M. Barnes, PhD, who worked in the Fatigue Countermeasures branch of the Air Force Research Laboratory, explains why sleep deprivation takes a toll on our ability to be charismatic leaders and creative entrepreneurs.
- Robert H. Lustig, MD, MSL, pediatric endocrinologist, details metabolic health and nutrition, exposing some of the leading myths that underlie diet-related disease.
- Dorie Clark—described by *The New York Times* as an "expert at self-reinvention and helping others make changes in their lives"—tackles topics such as personal branding, professional reinvention, leadership, networking, and social media.

Additional guests will include Wendy Wood, PhD, Brian Ferguson, Wayne M. Sotile, PhD, Judson A. Brewer, MD, PhD, Sara B. Algoe, PhD, and Dr. Maddaus, himself.

Subscribe to Surgical Hot Topics via your favorite podcast app, or find the episodes at **sts.org/podcast**. New episodes will be added regularly and social media postings about the series will include the hashtag **#BeYourBestSelf**. ■

Scan the QR code for a list of podcast episodes.

Member News

Kim Helps Guide Quality in Houston

Min P. Kim, MD, was named vice chair of the Department of Surgery in Quality at Houston Methodist Hospital in Texas. He will continue to serve as the David M. Underwood Distinguished Professor of Surgery and head of the Division of Thoracic Surgery and associate program director of thoracic fellowship, as well as associate professor of surgery and cardiothoracic surgery at both Weill Cornell Medical College in New York City, New York, and Houston Methodist Institute for Academic Medicine in Texas. Dr. Kim has been an STS member since 2013.

Mascio Leads WVU Children's Heart Center

Christopher E. Mascio, MD, now serves as executive director of the West Virginia University (WVU) Medicine Children's Heart Center in Morgantown and division chief of pediatric cardiothoracic surgery in the Department of Cardiovascular and Thoracic Surgery. Previously, he was an attending surgeon in the Cardiac Center at Children's Hospital of Philadelphia in Pennsylvania and associate clinical chief of the Division of Pediatric Cardiothoracic Surgery. Dr. Mascio has been an STS member since 2007.

Anderson Promoted to Chair

Richard C. Anderson, MD, is the new chair of the Department of Surgery at the University of Illinois College of Medicine at Peoria (UICOMP). He has been on the UICOMP faculty in the Department of Surgery for more than 20 years, serving as the surgery clerkship director, professor of clinical surgery, and section chief of cardiothoracic surgery. Dr. Anderson has been an STS member since 2003.

Gleason Moves to Maryland

Thomas G. Gleason, MD, recently began a new position as director of cardiac surgery research and professor of surgery at the University of Maryland in Baltimore. Prior to this role, he was co-executive director of the Heart and Vascular Center and chief of the Division of Cardiac Surgery at Brigham and Women's Hospital in Boston, Massachusetts. Dr. Gleason also was formerly chief of the Division of Cardiac Surgery, co-director of the Heart and Vascular Institute, and director of the Center for Thoracic Aortic Disease at the University of Pittsburgh Medical Center in Pennsylvania. An STS member since 2004, he serves on the STS Board of Directors.

Meyer Moves Up at Northwell

David B. Meyer, MD, has been appointed system chief of pediatric and adult congenital cardiothoracic surgery for the Northwell Health System in New York, which includes Cohen Children's Medical Center, Long Island Jewish Medical Center, North Shore University Hospital, and Lenox Hill Hospital. He has been an attending surgeon with Northwell since 2008. Dr. Meyer also is associate professor of cardiothoracic surgery and pediatrics at the Zucker School of Medicine at Hofstra/Northwell in Uniondale, New York. He has been an STS member since 2007.

Mangi Heads Cardiac Surgery at MedStar

Abeel A. Mangi, MD, has joined MedStar Health System in Washington, DC, as the cardiac surgeon-in-chief for the health system and the chair of cardiac surgery at the Medstar Washington Hospital Center. Before accepting this role, he was surgical director of the structural heart and cardiac valve program and managing director of the cardiac surgery network at Yale New Haven Heart and Vascular Center in Connecticut. Dr. Mangi also served as professor of surgery at the Yale University School of Medicine in New Haven, Connecticut. He has been an STS member since 2011.

Litle Is Thoracic Chief in Utah

Virginia R. Litle, MD, has joined Intermountain Healthcare in Murray, Utah, as chief of thoracic surgery and system-wide medical director of thoracic surgery. Prior to this role, she was chief of thoracic surgery at Boston Medical Center and professor of surgery at Boston University School of Medicine, both in Massachusetts. An STS member since 2007, Dr. Litle is treasurer of The Thoracic Surgery Foundation.

Cooke Named TSDA President-Elect

David Tom Cooke, MD, has been voted president-elect of the Thoracic Surgery Directors Association (TSDA), becoming the first African American to hold the position. He will transition to a 2-year term as president in May 2023. Dr. Cooke is chief of the Division of General Thoracic Surgery at the University of California Davis Health in Sacramento and vice chair for faculty development and wellness, as well as director of the general thoracic surgery robotics program. An STS member since 2010, he leads the STS Workforce on Diversity and Inclusion.

Additional Member News items are available online at **sts.org/membernews**.

Send news about yourself or a colleague to **stsnews@sts.org**. Submissions will be printed based on content, membership status, and space available.

Listening to Our Members

Sean C. Grondin, MD, MPH, FRCSC

As new technologies to assist in the diagnosis and treatment of our patients are developed and implemented, it is imperative that surgeons remain essential leaders of the care team.

In mid-June, STS hosted its first Town Hall webinar during which Society leaders listened to key issues of concern to our members.

In addition to this new forum for member feedback, we also look very closely at direct communications sent to Society leaders and results from our member needs assessment, which we disseminate every 3 years; the most recent survey closed on July 1.

Based on this feedback, the STS Board prioritizes efforts and responds to areas of need. In this column, I will highlight broadly the top five priorities identified by STS members and describe the initiatives that STS leadership currently is undertaking to address these concerns.

Improving Quality of Care for Our Patients

STS has an award-winning, internationally recognized quality improvement registry. Keeping the STS National Database the gold standard of clinical outcomes registries remains a top priority.

We also are driving new quality initiatives as a founding member and the only CT surgery organization in the Surgical Care Coalition (SCC). Comprising 12 surgical professional associations, including the American College of Surgeons and Society of Vascular Surgeons, this group represents more than 150,000 surgeons in America and the patients they serve. Ongoing key initiatives include active lobbying for maintaining and expanding access to necessary surgical procedures for patients, as well as addressing the surgeon workforce shortage. Furthermore, STS—separately and as part of the coalition—has undertaken initiatives to streamline preauthorization for surgical treatments and protect patients from unanticipated medical bills.

Championing Fair Reimbursement

In 2020, STS was successful in halting, at least temporarily, proposed cuts to Medicare reimbursements for CT surgery. With these reimbursement cuts now planned for January 2022, STS is focusing efforts toward not only encouraging Congress and the Centers for Medicare & Medicaid Services (CMS) to stop reductions in Medicare physician payments, but instead provide for a modest increase in Medicare reimbursements. As well, we are working with our SCC partners on initiatives that encourage congressional leaders to establish a revised payment system compatible with the current health care environment and ensure that 10- and 90-day global codes are adjusted to reflect the increased payments for postoperative and evaluation management services.

Ensuring CT Surgeons Are Essential Leaders of the Care Team

As new technologies to assist in the diagnosis and treatment of our patients are developed and implemented, it is imperative that surgeons remain essential leaders of the care team. As such, STS has increased its education offerings and content delivery to encourage continuous learning throughout the year. Currently, STS members can access journal club webinars, wellness sessions and roundtables, online curricula, and virtual conferences, as well as dedicated leadership skill development seminars.

STS also has completed the much anticipated *Cardiothoracic Surgery E-Book,* which includes *Pearson's Thoracic.* The e-book is the most complete and authoritative online resource for CT surgery in the world. Accessible online and from mobile platforms 24/7/365, this continuously updated multimedia textbook brings together 600 leading international surgeon authors in more than 300 interactive chapters covering all main CT surgery domains.

In addition to assisting members with expanded educational programs, the Society has partnered with other organizations to deliver innovative, multidisciplinary educational content for all career stages. For example, STS now funds and manages a national resident boot camp in conjunction with the Thoracic Surgery Directors Association and the Thoracic Surgery Residents Association, ensuring that trainees have access to the latest technologies taught by world leaders.

STS also is committed to partnering with non-surgical organizations such as the American College of Cardiology (ACC) to develop collaborative initiatives like coauthoring influential clinical practice guidelines. In doing so, STS leaders and members provide important input and perspectives on the management of CT patients. Another STS/ACC joint activity is the CMS-approved Transcatheter Valve Therapy (TVT) Registry. This state-of-the-art database monitors patient safety and real-world outcomes related to transcatheter valve replacement and repair procedures and also helps guide emerging treatments for valve disease patients using precise scientific data.

Supporting Surgeon Wellness

Surgeon burnout is recognized as a serious problem that may have significant personal and professional consequences. STS leadership has heard from its members that one of the major sources of physician burnout is the frustration with time-consuming administrative tasks related to meeting regulatory requirements that do not add value to patient care or outcomes.

To support the mental and physical wellbeing of CT surgeons and increase access to mental health services for physicians, trainees, and other health care team members, the SCC is lobbying policymakers to implement the "Dr. Lorna Breen Health Care Provider Protection Act." The Society also has created a dedicated Task Force on Wellness led by Dr. Michael Maddaus. This group has been busy expanding current STS resources such as the recent webinar on resilience, launching a new podcast series (see page 2), and developing focused content on physician wellness—a topic that also will play an important role at the upcoming STS Annual Meeting.

Programs such as the STS Mentorship Program and the STS Leadership Series also are important resources designed to support the growth and wellbeing of future generations of cardiothoracic surgeons.

Wanting to Interact in Person Again

Many STS members have communicated that they want our annual meetings to not only deliver relevant educational content, but also provide opportunities to safely network with colleagues and industry partners in person again.

To accomplish this, the STS Annual Meeting Planning Committee led by Dr. John Mitchell is working hard to deliver an exceptional in-person meeting at the newly renovated conference center in Miami Beach, Florida, January 29-31, 2022. At this time, STS also is exploring platforms to simultaneously offer a virtual meeting component for those who are unable to travel and join us in person.

Please note the deadline for submitting abstracts for STS 2022 is August 3, 2021. Additional meeting information is available at **sts.org/annualmeeting**.

I look forward to seeing you there. ■

Blood Management Guideline—Considered a 'Moving Target'—Gets Long Overdue Update

▸▸
CONTINUED FROM COVER

PBM—developed in 2008—is "the timely application of evidence-based medical and surgical concepts designed to maintain hemoglobin concentration, optimize hemostasis and minimize blood loss in an effort to improve patient outcomes," according to SABM.

Based on a growing body of evidence published over the years (much of which was reviewed by the writing committee), PBM has moved away from simply reducing the use of blood components and now focuses more on developing multidisciplinary and multimodal strategies centered on patient outcomes.

The major tenets of PBM, which are confirmed in this guideline, are:

- Managing anemia
- Minimizing blood loss
- Reducing the need for allogeneic blood transfusions

This approach also places patients at the heart of the decision-making process, helping to ensure that they are fully informed of the risks and benefits of their treatments and their values and choices are incorporated into the treatment pathway.

"As medicine evolves and we learn more, it always is important to review past assumptions, validate new information, and concisely present the best current recommendations," said senior author Susan D. Moffatt-Bruce, MD, PhD, MBA, from the Royal College of Physicians and Surgeons of Canada in Ottawa. "These recommendations are really centered on the patient and how they would want to be treated during complex cardiothoracic procedures."

Blood Is a 'Liquid Organ'

Among the most important changes to the practice guideline is the adoption of PBM as a treatment of the whole patient, with blood considered a "liquid organ" or "vital entity" in taking care of the surgical patient, rather than focusing simply on when or when not to transfuse, explained Dr. Tibi.

Blood transfusions—which can be a critical and life-saving facet of cardiothoracic surgery patient care—date back to the 17th Century when British physician William Harvey, MD, discovered the circulation of blood and attempted the first blood transfusion.

In the hundreds of years since, the practice has certainly evolved, being proven generally safe and saving millions of lives. However, it does carry the risk of serious side effects, according to Dr. Tibi. With the potential to introduce disease and cause potent immunological reactions or even death, transfused blood does not work as well as a patient's own blood.

"Blood transfusions can be harmful to the body. Therefore, unless the proven benefit of blood transfusions outweighs the known risks, it is better to treat patients before, during, and after surgery in ways that decrease the risks of needing blood as much as possible for the best outcomes," he said.

These risks can be lessened through the use of PBM, by safeguarding the patient's own blood and ensuring transfusions are not needed. In fact, some hospital systems in the US have experienced as much as a 45% overall reduction in the rate of transfusions since starting PBM programs.

"Patient safety is well supported in this guideline, as it reduces the risks associated with blood transfusions," said Dr. Moffatt-Bruce.

Avoiding Blood Transfusions

For example, the guideline includes preoperative interventions related to identifying and managing anemia, which is "extremely prevalent" in the cardiac surgical population, especially in elderly patients or those with multiple comorbidities and chronic diseases.

The most common cause of anemia is iron deficiency, occurring in up to 50% of anemic patients, according to the guideline. Historically, patients with preoperative anemia are more likely to require transfusions, so treating iron-deficiency anemia should be done before surgery. If successful, this can dramatically reduce the need for a blood transfusion.

The new guideline also suggests that in cardiac operations with cardiopulmonary bypass, the "well-established method" of red cell salvage via centrifugation may be routinely used. Red cell salvage is an important part of the blood conservation aspect of PBM.

Another new addition to the guideline is the recommendation to administer human albumin after cardiac surgery, which also has been shown to minimize the need for transfusion. Also, retrograde autologous priming should be used wherever possible, according to the guideline. This simple, safe, and effective process has been shown to decrease transfusion rates, especially for cardiac operations that result in excessive blood loss.

"The guideline has been assembled by experts from different specialties and backgrounds who have reviewed the most recent data," said Dr. Moffatt-Bruce. "This guidance allows clinicians to standardize treatment with the knowledge that they are utilizing the best information while considering all aspects of patient care."

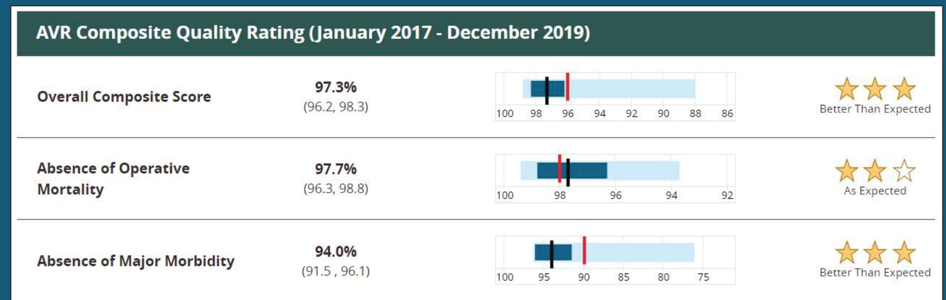
Dr. Tibi expects that some clinicians will be surprised by several of the recommendations, especially those that carry a "great deal of evidence" and likely will require changes to routine treatments for their patients undergoing cardiac surgery (e.g., the information related to the preoperative treatment of anemia and the assorted perfusion techniques).

For patients, it's important that their hospitals, surgeons, and care teams are aware of PBM and that they are utilizing the "best, most proven techniques available," Dr. Tibi advises. "Patients should certainly ask, 'What do you do so that my chances of receiving blood are minimized?'"

In developing this guideline and identifying relevant evidence, a systematic review was outlined and extensive literature searches were conducted by a workgroup. The group then wrote and developed recommendations based on the critical appraisal of approximately 90 highly cited articles included in the final review. ■

The guideline is available at annalsthoracicsurgery.org.

Contextual Data Displays, Easier Interpretation Represent Next Level in Public Reporting



▶ **Enhancements to the ACSD public reporting pages include interactive maps, new search features, graphic representations, and updated descriptions of star ratings.**

Just as the STS National Database experience features more visual, easy-to-understand graphical data, so too does the STS Public Reporting program. Substantial changes have been implemented to improve the stakeholder experience.

These updates help participants better understand their performance and make real advances toward quality improvement—and view a more balanced representation of publicly reported results, said Benjamin D. Kozower, MD, MPH, chair of the Database's Public Reporting Task Force.

"In addition, the public reporting website has been redesigned and will be easier to use for the many different stakeholders seeking STS outcomes data," Dr. Kozower said. These include patients, physicians, data managers, hospital executives, and marketing teams.

Seeing More than Stars

The updated Public Reporting site presents individual participant group scores in addition to—and in comparison to—overall participant outcomes. Not only does a participant webpage publicly report a participant's numeric score and range for each composite measure, it also displays a graph demonstrating where those unique scores fall in relation to overall STS participant ratings. For each composite measure and its domains, the corresponding graph incudes a participant's results (represented by a black vertical line), the statistical credible intervals around the results (dark blue shading), the overall/average STS results (red line), and the lowest-to-highest range across all North American Adult Cardiac Surgery Database participants (light blue shading).

This contextual representation gives a realistic snapshot of what star ratings mean. With the new enhancements, publicly reported star ratings will always include a display of "out-of-how-many" possible stars, accompanied with a "Better Than Expected," "As Expected," or "Worse Than Expected" definition.

ACSD Hospital-Level Reporting Eliminated

Since the STS Public Reporting initiative launched in 2010, results at both the participant group and hospital levels have been reported for the Adult Cardiac Surgery Database (ACSD), the largest registry component. While the majority of participant groups practice at only a single hospital, some practice at multiple locations. Correspondingly, some single hospitals house only one participant group, while other hospitals house multiple groups.

Hospital-level results were not provided to participants prior to being publicly reported, whereas participant-level data matched harvest reports exactly. Understandably, participants as well as consumers found it confusing that a single site could have two slightly different results because of differences in the denominator populations.

As a result, STS discontinued hospital-level reporting. This move matches the reporting system of the General Thoracic Surgery Database (GTSD), which also is publicly reported only at the participant level.

Overall Enhancements Enable More Participant- and Public-Friendly Experience

Visitors to the public reporting pages for ACSD, GTSD, and the Congenital Heart Surgery Database (CHSD) participants now have the convenience of a site-wide search feature pinned to the top of all pages, allowing them to search by participant group, hospital, or location, regardless of database component.

For the ACSD pages, the site offers a search feature that is specific to ACSD participant surgery groups and the ability to search by location. Embedded maps on ACSD search and participant pages show hospital locations so that visitors may drill down via geographic location or view what's in their local areas.

ACSD CABG and Multiprocedure Composite Measures on Horizon

"We're very excited about a number of quality enhancements that will be implemented later this year and in early 2022," said David M. Shahian, MD, chair of the STS Workforce on Quality. "The STS ACSD CABG composite measure, the first of our composites developed more than a decade ago, has now been updated to use 3-year analytic data windows and 95% credible intervals."

This update makes the CABG composite methodology consistent with that of all subsequent ACSD composite measures, he explained. "These changes will help to more accurately classify the performance of lower-volume programs that consistently perform better or worse than expected, but whose 1-year sample sizes were too small to categorize them as outliers."

STS also has developed an ACSD multiprocedure composite measure that drills down to the level of an STS participant, such as a medical center or a practice group, said Dr. Shahian. "This is similar to our individual surgeon composite measure developed in 2015. This new multiprocedure composite will provide a broad overview of a participant's performance across all the major adult cardiac procedure types and is designed to complement individual procedure composite measures."

STS Public Reporting is voluntary. Currently 81% of ACSD participants, 91% of CHSD participants, and 44% of GTSD participants publicly report their outcomes. To learn more about the STS National Database, contact **STSDB@sts.org**. ■

Visit the updated Public Reporting site.

Survey-Driven Salary Negotiations Create Thorny Competitive Environment

When determining salaries for cardiothoracic surgeons, institutions and health systems often rely on survey data—but these data vary significantly from survey to survey and don't represent the highly nuanced variables of cardiothoracic surgery discipline, practice type, regional demand, and value units, surgeon leaders say.

In the academic realm, for example, the Association of American Medical Colleges (AAMC) ranks cardiothoracic surgeon salaries third among the highest average compensation for combined assistant professor, associate professor, and full professor rankings.

The salary range, however, doesn't make a distinction among the various cardiothoracic disciplines, explained John S. Ikonomidis, MD, PhD, from the University of North Carolina in Chapel Hill.

"The primary issue with AAMC data is that they do not separate adult cardiac, general thoracic, and congenital heart surgery," said Dr. Ikonomidis, who serves on the STS Workforce on Clinical Education and has authored the last two STS practice surveys. "The salary lines for these three disciplines are different in terms of amount, and because that's not reflected in the AAMC data it impacts the surgeon's ability to negotiate."

STS recently sent a letter to the AAMC, urging it to report on cardiothoracic surgery salaries by discipline rather than in the aggregate so that the specialty has a clearer representation of the marketplace.

Medical Group Surveys Target Similar Datasets, Different Practice Sizes

The 2021 report of the American Medical Group Association (AMGA), aggregated from 2020 data, represented two categories of interest to cardiothoracic surgeons: "Cardiac/Thoracic Surgery" and "Cardiac/Thoracic Surgery—Pediatrics." The mean reported salary, available courtesy of the author, Elizabeth Siemsen, AMGA consulting director, was $810,933 for the former category and $827,618 for the latter. Regional breakdown data will be available from AMGA this summer. The 2020 non-pediatrics category included responses from 54 medical groups and 220 providers, while the pediatrics cohort was comparatively small, including 14 groups and 31 providers. Dr. Ikonomidis points out that this smaller response was not due to there being such a small community of providers but to a low response rate—underscoring the value of active participation and transparent responses from surgeons.

> "Cardiothoracic surgeons in negotiation should be individually prepared to advocate for favorable arrangements related to their personal high-priority issues, perhaps in exchange for less-favorable arrangements on matters less important to them."
> J. Michael DiMaio, MD

Whereas AMGA data are derived mainly from larger medical groups (approximately 64% of its survey base is composed of groups employing 151 physicians or more), the Medical Group Management Association (MGMA) surveys a similarly sized cohort but leans toward smaller medical groups or individual providers. The average number of providers per group in the AMGA dataset is 430, while MGMA averages around 24.5 per group.

MGMA also takes a different approach to distinguishing surgical disciplines, employing the categories "Surgery: Cardiovascular" and "Surgery: Thoracic (Primary)" in the cardiovascular surgery realm. It uses 50th-percentile results to report median salaries of $799,663 for cardiovascular and $650,000 for thoracic surgeons.

STS Workforce Report Drills Down to Disciplines

Both overall averages and breakdowns by discipline are illustrated in the STS practice survey, conducted every 5 years. In the most recent survey, 60.9% of responding surgeons reported an income of $200,000 to $799,999 per year, compared with 74.5% for respondents in the previous survey in 2014. Salaries increased for many—the percentage of surgeons reporting an income of $800,000 or more increased from 13.4% in 2014 to 27.0% in 2019. The most selected income range among those provided, reported by 24.8% of respondents overall, was $600,000 to $799,000 per year.

The STS Special Report published in the September 2020 issue of in *The Annals of Thoracic Surgery* further delineates salary ranges for adult cardiac, general thoracic, and congenital heart surgeons, and while all disciplines experienced a jump in income between 2014 and 2019, the variance among each group was significant. Among adult cardiac surgeons, the percentage reporting incomes in the $600,000 to $799,999 range was 27.9%, in contrast to 20.8% for general thoracic and 23.1% for congenital. As incomes rose, they did so most dramatically for adult cardiac surgeons—33.6% reported an income of $800,000 or above. The largest percentage of respondents in the $800,000 or above range were congenital heart surgeons—39.6%—while only 9.6% of general thoracic surgeons reached that range.

Surgeon Income

	2019		2014		Adult Cardiac Surgeon		General Thoracic Surgeon		Congenital Heart Surgeon	
					2019 (n=571)	2014 (n=688)	2019 (n=260)	2014 (n=224)	2019 (n=91)	2014 (n=84)
Responses	No.	%	No.	%	%	%	%	%	%	%
<$200,000	29	3.1	45	4.5	2.6	4.8	5.0	4.9	1.1	1.2
$200,000–399,999	117	12.7	199	20.0	11.2	18.8	17.7	27.2	7.7	10.7
$400,000–599,999	215	23.3	330	33.1	17.2	32.8	38.1	39.7	19.8	17.9
$600,000–799,999	234	25.4	213	21.4	27.9	23.1	20.8	12.1	23.1	32.1
≥$800,000	253	27.4	133	13.4	33.6	13.1	9.6	7.1	39.6	32.1
I would rather not disclose my income	74	8.0	76	7.6	7.5	7.4	8.8	8.9	8.8	6.0
Total	922	100	996	100	100	100	100	100	100	100

▶ **The Workforce Reports of the STS Thoracic Surgery Practice and Access Task Force utilize data gathered from surveys of STS membership, conducted every 5 years.**

MGMA: Cardiac Surgery and Thoracic Surgery, 2017–2020

	2017	2018	2019	2020
	50th Percentile			
Surgery: Cardiovascular	$701,219	$725,000	$795,000	$799,663
Surgery: Thoracic (Primary)	$596,972	$615,737	$582,290	$650,000

2020 MGMA DataDive Provider Compensation. ©2021 MGMA. All Rights Reserved.

▶ **Both cardiovascular and thoracic surgeons' salaries increased from 2019 to 2020. MGMA categories make a distinction between the two disciplines.**

Relative Value Units Prove of Relative Value

More than half of surgeons in the STS workforce survey reported that their income included a bonus structure, and the most common basis for these bonuses were work relative value units (RVUs), quality metrics, or "citizenship"—which can include anything from patient and staff satisfaction to community outreach to committee participation and meeting attendance.

These bonus measures can be problematic at every career level, and salary reports may not take them into consideration, said J. Michael DiMaio, MD, who serves as chair of the STS Workforce on Practice Management and practices at Baylor Scott & White Cardiac Surgery Specialists in Plano, Texas.

As Medicare reimbursement rates decline and advocates fight to stave off massive cuts for cardiac and thoracic surgery, surgeons find themselves increasingly pressed upon to demonstrate their value to patients and the health care system, said Dr. DiMaio. "However, the overall contribution of a cardiothoracic surgeon can be difficult to measure, and it varies widely depending on a host of factors, including practice setting, experience, subspecialization, and the local market," he said.

RVUs are assigned by the Centers for Medicare & Medicaid Services based on surgeon billing of CPT and ICD-10 codes. Each code carries a corresponding RVU that determines the total surgeon payment, and the formula distributes one RVU each for physician work, practice expense, and professional liability expense. Each component is adjusted depending on the surgeon's geographic location, accounting for variations in cost of living, overhead expenses, and practice premiums.

"Virtually all of the clinical tasks a cardiothoracic surgeon performs have been assigned a work RVU, but complexity arises in determining how much each RVU is worth and how much of that value should go directly to physician compensation," said Dr. DiMaio. He noted that a surgeon's practice setting—private, academic, or hybrid—plays a major role in determining the model for compensation. Surgeons in private, non-academic practices are usually heavily focused on clinical productivity because that's what generates income, while for academic surgeons, non-clinical responsibilities like research, education, and national leadership roles—which unarguably benefit the mission of the academic center—aren't typically tied to any direct form of reimbursement, leading them to seek income from other sources.

AMGA: Adult and Pediatric Cardiac/Thoracic Surgery, 2019 - 2020

		Adult		Pediatric	
		2019 50 groups, 199 providers	2020 54 groups, 220 providers	2019 11 groups, 24 providers	2020 14 groups, 31 providers
	Total (Mean)	**$848,988**	**$810,933**	**$830,886**	**$827,618**
Size	Group <50	—	—	—	—
	Group 50–150	$788,656	$813,823	—	—
	Group 151–300	$906,737	$877,077	—	—
	Group >300	$851,078	$801,112	$830,886	$811,238
Region	Eastern	$800,910	$734,302	—	—
	Western	$808,270	$839,486	—	—
	Southern	$952,505	$909,725	—	$ 907,615
	Northern	$847,574	$823,317	$831,084	—

▶ **AMGA data demonstrate how cardiothoracic surgeon salaries can vary significantly depending on region.**

A hybrid model accounting for both clinical and academic activities could be mutually advantageous to both the surgeon and the health care system, Dr. DiMaio points out, because it allows the surgeon to offload financial risk without a total sacrifice of autonomy in practice. "Meanwhile, the health care system ensures a minimum availability of the desired surgeon's services with persistent motivation for the surgeon to remain clinically busy and generate high-quality outcomes."

"Cardiothoracic surgeons must consider a host of other issues that impact their personal salary negotiations," Dr. DiMaio explained. "These include practice focus, subspecialization, unique surgeon skills, practice location, length of training, and educational debt. And with the increasing subspecialization of cardiothoracic trainees into dedicated cardiac, thoracic, and congenital tracks, not all 'cardiothoracic' surgeons should be lumped together when negotiating compensation."

Surgeons Should Be Advocates—for Themselves and the Specialty

So what can individual surgeons do to safeguard their own salaries? Drs. Ikonomidis and DiMaio advise reading up on the nuances.

Also importantly, respond to workforce surveys. "When I first got involved with the Workforce, 10 or 15 years ago, we had response rates of over 50% from our membership," Dr. Ikonomidis said. "Now the response rates have dropped considerably. And I think the reasons for that are myriad—we're all inundated with emails, we're all inundated with survey requests, and this is yet another survey. But it's very valuable."

Surgeons also should keep in mind what's personally important to them, Dr. DiMaio advised. Non-financial benefits such as parental leave, vacation policy, call coverage, awarded titles and academic rank, and protected time for research and professional development are valuable in different degrees among individual surgeons. "Cardiothoracic surgeons in negotiation should be individually prepared to advocate for favorable arrangements related to their personal high-priority issues, perhaps in exchange for less-favorable arrangements on matters less important to them," he said.

The next STS practice survey will be conducted in 2024. ■

Leaders Advise on Weathering Crises, Building Brand Identity

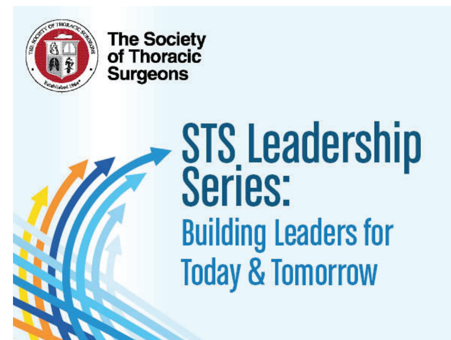
Navigating the unexpected and establishing your brand as a surgeon have been the focuses of the first two episodes in the new STS Leadership Series: Building Leaders for Today & Tomorrow.

"Leading During Crisis" featured a short presentation on different leadership styles, a keynote address on leading during a pandemic, and a 20-minute panel discussion, moderated by Mara B. Antonoff, MD, and Ram Kumar Subramanyan, MD, PhD, on how to lead in the face of difficult situations such as poor clinical outcomes and HR challenges. Panel members also described the benefits of leading by example, being present, and offering optimism and hope.

In "Building Your Practice and Your Brand," moderated by Robert S.D. Higgins, MD, MSHA, and Anita R. Krueger, MD, accomplished early career and mid-career surgical practitioners offered tips on how to build a foundation for a successful practice. Topics included how to launch a successful career, creating a professional niche, the art of decision-making, and how to ask for a pay raise.

If you missed these two webinars, you can access the recordings in the STS Learning Center. Instructions are available at **sts.org/leadershipseries**.

You also can find details about the third and final webinar in the 2021-2022 series, which will be held on October 7. Melanie A. Edwards, MD, and Dawn S. Hui, MD, will moderate "Promoting Your Brand."

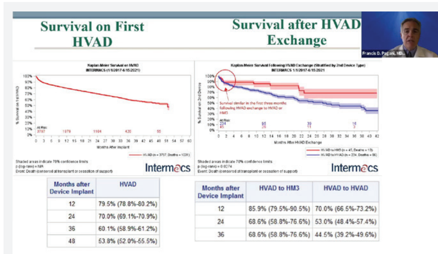


In addition to the three webinars, the series will include an in-person event on Friday, January 28, prior to STS 2022 in Miami Beach, Florida.

STS Webinar Series Offers Timely Topics for International Audience

From medical device problems, to "town hall" discussions, to surgeon wellness initiatives, the free STS Webinar Series, available at **sts.org/webinars** and on the Society's YouTube channel, offers informative, engaging discourse on a variety of topics. The webinar library now includes:

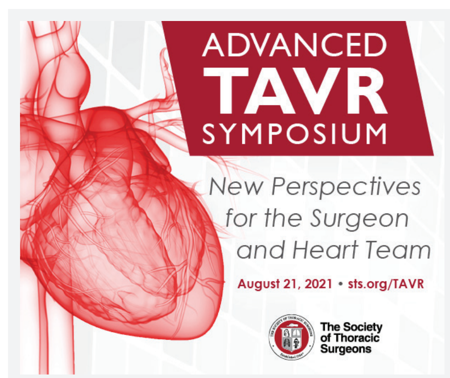
- **Ask STS—A Town Hall with Surgeon Leaders:** STS President Sean Grondin, MD, MPH, FRCSC, and other surgeon leaders connect for an interactive conversation on issues of concern to the specialty. Panelists also provide updates on a range of STS activities, including plans for STS 2022.
- **Sedate or Cannulate? ECMO Strategies During COVID:** In this spirited and fast-paced episode, J.W. Awori Hayanga, MD, MPH, and an esteemed panel address ECMO considerations, including anticoagulation strategies in COVID patients, the relationship between patient selection and survivability, and the challenges of weaning patients off sedation.
- **E/M Coding in 2021: Changes in Documentation and Code Selection:** Aaron M. Cheng, MD, Francis C. Nichols III, MD, and Julie R. Painter, MBA, CCVTC, CPMA, help to demystify the new codes and code changes related to office and outpatient visits. The expert group gives detailed case examples and addresses audience questions about unique coding scenarios.
- **HVAD Is Off the Market—Now What?:** Following the market removal of the HeartWare Ventricular Assist Device (HVAD) system, surgeons and industry representatives from the US and Europe discuss patient care implications, including new data from the Intermacs Database on whether there's a survival benefit from a device exchange.



- **High-Impact Studies in Cardiac Surgery: Key Takeaways:** Joseph E. Bavaria, MD, and expert panelists engage in a robust debate on takeaways from recent high-impact cardiac surgery manuscripts on the ISCHEMIA trial, 2-year outcomes for low-risk transcatheter aortic valve replacement, and a new guideline on the timing and intervention for patients with valvular heart disease.
- **The Resilient Surgeon: Strategies to Be Your Best Self, In and Out of the OR—No Matter What:** Michael A. Maddaus, MD, moderates a panel of game-changers in high performance and wellness, including a cardiothoracic surgeon, a former Navy Seal, and a clinical psychologist. They discuss the crucial habits that make up the "resilience bank account," the role of meaning, wonderment, and relationships in countering despair, and the myth of a balanced life.

Virtual Courses Offer Flexible Access to Don't-Miss Events

To help professionals balance a post-quarantine schedule of increasing in-person activities, STS has opted to keep some of its most popular courses virtual. Find details on these courses and more—and add them to your calendar—at **sts.org/meetings**.



Advanced TAVR Symposium

Designed to give cardiothoracic surgeons, interventional cardiologists, and other members of the heart team an in-depth understanding of transcatheter aortic valve replacement (TAVR), the half-day, Advanced TAVR Symposium: New Perspectives for the Surgeon and Heart Team course—scheduled for August 21—will explore the latest in TAVR research and techniques.

A distinguished multidisciplinary faculty will cover advanced perspectives and topics including state-of-the-art TAVR implantation and explantation techniques, managing controversial patient populations, and staying relevant in the aortic surgical field. The symposium will feature didactic sessions, case-based presentations, and live discussion and Q&A.

Associate, Candidate, and Pre-Candidate Members receive free registration for the Advanced TAVR Symposium. For more information on the meeting agenda and registration, visit **sts.org/tavr**.

Critical Care Conference

The Perioperative and Critical Care Conference—taking place September 10–11—is expected to attract all members of the critical care team and provide a forum to enhance knowledge and expertise in cardiovascular and thoracic critical care, as well as enhanced recovery after surgery.

The event will feature live transmissions from around the globe, transformative research and science, as well as opportunities to learn and engage with the brightest minds in critical care. Leading experts will present new concepts, technologies, management protocols, and clinical experiences.

For more information, visit **sts.org/criticalcare**.

AQO Data Managers Meeting

Surgeon leaders and data managers will gather virtually during Advances in Quality Outcomes (AQO): A Data Managers Meeting, October 12–15, to share valuable research and important clinical findings with the goal of improving data collection and patient outcomes. The conference also will highlight what's new with the STS National Database.

One day will be dedicated entirely to each registry:

- Tuesday, October 12 – Intermacs/Pedimacs
- Wednesday, October 13 – General Thoracic
- Thursday, October 14 – Adult Cardiac
- Friday, October 15 – Congenital

This year, AQO registration is free for all STS National Database data managers. More information is available at **sts.org/AQO**.

New Pediatric and Congenital Chapters Round Out the STS E-Book

The highly anticipated Pediatric and Congenital Cardiac Surgery chapters are now available in the STS Cardiothoracic Surgery E-Book.

This resource is hailed as the most complete and authoritative online resource for cardiothoracic surgical information in the world. The comprehensive e-book features 350+ chapters, more than 780 hand-drawn, high-quality medical illustrations, 25,000 evidence-based references, plus photographs, tables, and relevant surgical videos. It is accessible 24/7/365 via a web browser or mobile app (iOS and Android). The e-book includes two volumes: an update and expansion of the popular *Pearson's General Thoracic Surgery* and all-new content in the Adult and Pediatric Cardiac Surgery volume. Among the 15 new chapters are:

- Nomenclature for Pediatric and Congenital Cardiac Care
- Basic Hemodynamics for Pediatric and Congenital Cardiac Care
- Myocardial Protection
- Basic Hemodynamics for Pediatric and Congenital Cardiac Care
- Vascular Rings and Slings
- Hybrid Approaches to Congenital Heart Disease
- Approach to Patients and Families

The e-book chapters are regularly updated with the latest technological and treatment advances. Institutional subscriptions and individual subscriptions—with a special discount for STS members—are available. Subscribe at **sts.org/ebook**.

STS 2022 Abstract Deadline Fast Approaching

Oral, poster, and surgical video abstracts are now being accepted for the STS 58th Annual Meeting, January 29-31, 2022, in Miami Beach, Florida. As the STS community prepares to be "Together Again," abstract submitters have the chance to share research on a global stage at one of the largest cardiothoracic surgery meetings in the world.

The submission deadline is Tuesday, August 3, 2021, at 4:00 p.m. ET. It's important to note that those involved in clinical trials or prospective clinical research for which no preliminary data will be available by the August deadline can submit late-breaking promissory abstracts if the data are expected to be available by December 13, 2021.

Submission categories include:

- Adult cardiac surgery
- Congenital heart surgery
- General thoracic surgery
- Basic science research
- Critical care and temporary mechanical circulatory support
- Quality improvement
- Cardiothoracic surgical education
- Physician/provider wellness

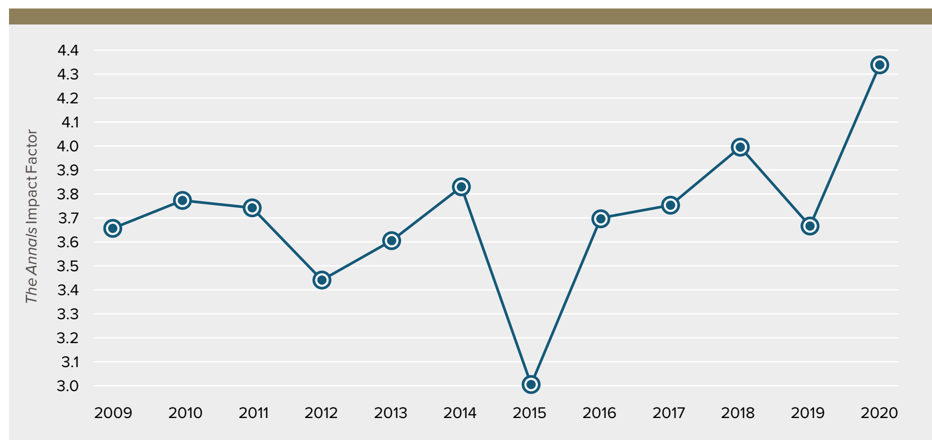
Annals Impact Factor Reaches Record High

The Society's peer-reviewed journal, *The Annals of Thoracic Surgery,* has earned its highest impact factor to date—and the first one over four.

The impact factor, an important metric indicating a journal's influence, measures the frequency with which the average article has been cited in a particular year. For 2020, the impact factor was 4.330, as reported by Clarivate Analytics in its Journal Citation Reports.

Article topics that received the most citations last year include: the Intermacs annual report; reporting standards for type B aortic dissection; COVID-19 guidance documents for crisis management, mitigation strategies, and triage of operations in adult cardiac and congenital heart surgery, and thoracic malignancies; social media's influence in CT surgical literature dissemination; representation of women in STS authorship and leadership positions; and the growing role of artificial intelligence and machine learning in cardiovascular health care.

A subscription to *The Annals* is a benefit of STS membership. To read the journal online, visit **annalsthoracicsurgery.org**.



LTTF Scholarships Give Bright Young Minds a Glimpse at a Future in CT Surgery

For general surgery residents and medical students training in the US or Canada and are considering a career in cardiothoracic surgery, the Society's Looking to the Future (LTTF) Scholarship Program can inspire minds and open doors.

STS encourages ambitious, accomplished students and residents to apply for an LTTF scholarship, which gives selected candidates the opportunity to attend the STS 58th Annual Meeting—to be held January 29-31, in Miami Beach, Florida.

Scholarships cover registration fees to the meeting, a 3-night stay at an STS-designated hotel, participation in exclusive events, and reimbursement of up to $500 in related travel expenses.

Application details will be available later this summer at **sts.org/lttf**. Previous scholarship recipients are not eligible; however, previous applicants are encouraged to re-apply.

Single Sign-On Enables Easier Access to *Annals,* Member Benefits

STS members no longer need separate log ins to access the robust multimedia content in *The Annals of Thoracic Surgery* or other STS member benefits. A new single sign-on (SSO) feature allows members to move seamlessly from the resources accessible on STS.org to the *Annals* site.

To take advantage of this SSO feature, members will need to sync accounts—only once—using the following instructions:

1. Go to the *Annals* website: **www.annalsthoracicsurgery.org**.
2. In the upper right corner, click the "Log in" link.
3. From the two login types displayed, select "STS Member Login."
4. Once routed to the STS Portal, enter your STS Portal credentials and click "Log in."
5. This will take you back to the Elsevier page to link your accounts. Enter your Elsevier login credentials and click "Log in."
6. In the future, you will only need to log in via the STS portal.

If you have questions regarding the STS portal login, contact Member Services at **membership@sts.org**.

STS Leadership Positions: Are You Interested?

All members are invited to participate in the Society's self-nomination process for standing committee and workforce appointments. In order to represent the full gender and ethnic diversity of the membership, STS encourages submissions from all practice types, career levels, disciplines, geographic areas, and other demographics.

Submissions will be accepted in August; information on how to self-nominate will be coming soon through various STS communications and online at **sts.org/selfnomination**.

A full list of the Society's leadership and governance structure can be found at **sts.org/leadership**.

Latest 8 in 8 Videos Offer Longstanding Knowledge in a Short Watch

The 8 in 8 Series offers quick access to important topics in cardiothoracic surgery. Each informative video is narrated by an expert in the field and covers one topic using eight slides in 8 minutes.

Categories cover advocacy, critical care, end-stage cardiopulmonary disease, and general thoracic topics. The latest videos, accessible at **sts.org/8in8** and on the STS YouTube channel, include:

Right Ventricular Failure in Cardiac Surgery
Nathalie Roy, MD, and Hitoshi Hirose, MD, PhD, review the pathophysiology, diagnosis, and management of post-surgical right ventricular failure.

ECMO in Lung Transplantation
With a focus on intraoperative management, Mauricio Villavicencio, MD, MBA, explores the essentials of ECMO as a useful approach during lung transplant surgery.

Lung Resection in Patients with Marginal Pulmonary Function
Janet P. Edwards, MD, and Robert E. Merritt, MD, cover risk assessment and stratification, as well as operative and non-operative treatment options for lung resection in patients with marginal pulmonary function.

Thromboelastogram in the ICU
Frank A. Baciewicz Jr., MD, and Nina Delavari, DO, discuss the utility of thromboelastogram in managing bleeding patients.

More videos are expected to be added to the series this fall.

In Memoriam: Charles R. Hatcher, MD STS Past President 1986–1987

A celebrated cardiothoracic surgeon known for his dedication to foundations and family—as well as for many "firsts" in his home state and beyond—died March 27 at age 90 at Emory University Hospital, where he worked and taught for more than 3 decades.

Charles Ross Hatcher Jr., MD, became the Society's 22nd President in 1986 after previously serving in various other STS leadership roles. An STS member for more than 50 years, he continued to lend his time and talents to STS long after his presidency, holding positions on several committees.

A Georgia native, Dr. Hatcher graduated in 1954 from the University of Georgia School of Medicine (now Medical College of Georgia), completing his internship and residency at The Johns Hopkins University School of Medicine, where he was named Halsted Chief Resident in Cardiac Surgery. While still a resident, Dr. Hatcher was drafted into the US Army and served as a captain in the Medical Corps at the Walter Reed Army Institute of Research in Maryland. Afterward, he was offered a surgical position at Johns Hopkins, but he chose to work at Emory to be near his parents as they aged. Dr. Hatcher joined Emory Clinic and Emory School of Medicine in 1962 as a surgeon and instructor, launching a long career of surgical milestones.

Dr. Hatcher performed Georgia's first "blue baby" operation—on his second day at Emory—and continued the trend in the following years, performing the state's first double and triple valve replacements and its first coronary bypass. He was named chief of cardiothoracic surgery at Emory University Hospital in 1971 and director and chief executive officer at the Emory Clinic in 1976, and he went on to lead Emory's Robert W. Woodruff Health Sciences Center in 1984.

Through Dr. Hatcher's vision, the state of Georgia gained the Rollins School of Public Health—another first—and new institutions and partnerships including the Carlyle Fraser Heart Center, Emory Healthcare, and a 30-year contract between the Emory School of Medicine and Grady Memorial Hospital. At Emory, he has a distinguished named professorship in his honor.

Dr. Hatcher also oversaw the movement and expansion of the Yerkes National Primate Research Center, which since 1984 has consistently received full accreditation from the Association for Assessment and Accreditation of Laboratory Animal Care for the humane treatment of animals in research. The Yerkes model implements social housing, environmental enrichment, and positive reinforcement training for the animals at its facilities and has developed advancements in combating diseases including malaria, HIV/AIDS, Alzheimer disease, and stroke. ■

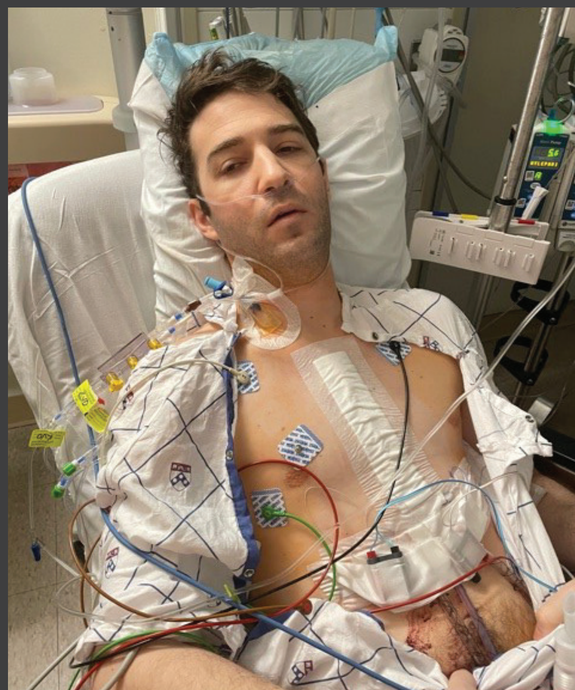
'I've Been Through This, and It Gets Better': STS Candidate Member Shares Experiences as Surgeon and Patient

The prospect of heart surgery is understandably frightening for patients, but Todd C. Crawford, MD, can tell them from personal experience that it's worth it.

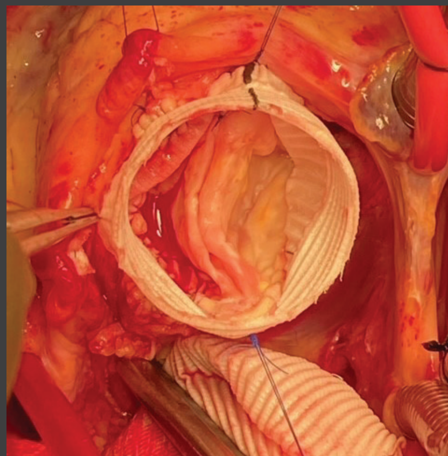
When he was 19 years old and in pre-med school, Dr. Crawford first began experiencing chest pain. The nurse practitioner at the office where he worked told him that he had a diastolic murmur.

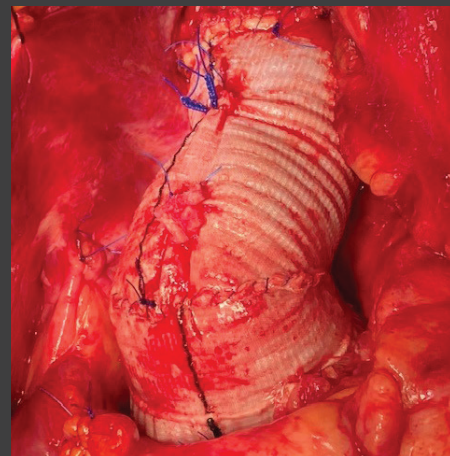
"Of course I knew what the words 'diastolic' and 'murmur' meant, but until then, I'd been seeing a pediatrician every year for sports physicals, and no one had ever mentioned a heart murmur," Dr. Crawford said. "I was fortunate to be in the medical community in Kansas City and to know a cardiologist who got me in right away for a stress echo. And sure enough, I had a bicuspid aortic valve with mild insufficiency, and a root aneurysm that was around 4.3 centimeters."

At the time, Dr. Crawford didn't pursue aggressive treatment, opting instead to have annual imaging exams to monitor the condition. Fourteen years passed and he remained asymptomatic.



▸ Dr. Crawford spent several days in the hospital, and then "I was off to the races," he said.





▸ The surgical teams performed a successful root replacement and, via a complex repair, were able to save Dr. Crawford's bicuspid aortic valve.

In the meantime, however, a subtle change was occurring, and by the time Dr. Crawford was nearing the end of general surgery residency, the aneurysm was bordering on 5 centimeters.

"But I was too busy to slow down," Dr. Crawford said. "I got married. My wife and I had a kid. And I hadn't seen a heart surgeon in years."

During his first year as a fellow at Penn Medicine's Division of Cardiovascular Surgery—under the supervision of Joseph E. Bavaria, MD—Dr. Crawford consulted with his colleague and friend Joshua Grimm, MD, who now serves on the Penn faculty. Dr. Grimm advised him to see Dr. Bavaria as a patient.

"Of course Dr. Bavaria is this incredible figure who's been a leader in aortic surgery, especially aortic valve-sparing root replacements in patients with bicuspid aortic valves," Dr. Crawford said. "And he also was my boss at the time. I'd done a couple of aortic valve replacements with him earlier in the year, and it was a little intimidating to now see him as a patient."

Because he thought that his condition had been relatively stable, Dr. Crawford and his wife, Tori, were surprised when Dr. Bavaria advised him to consider surgical repair as soon as possible, saying that he was confident that he could save the aortic valve.

The Crawfords knew Dr. Bavaria's track record for outstanding surgical outcomes, but any open-heart surgery, especially one involving circulatory arrest and a valve-sparing attempt, is no small consideration. They also worried for their young son, Case, and because both Dr. Crawford and Tori had pre-existing conditions—Tori had undergone a sternotomy 3 years prior for a thymoma—neither was eligible for life insurance.

"The pre-existing condition is a glittering asterisk on your life insurance application," Dr. Crawford recalled. "We have a 1-year-old, we're renting a place, Tori's still working in Baltimore half the month while I'm in Philadelphia. And now we were talking about open-heart surgery."

With the support of the Penn team and staff at Children's Hospital of Philadelphia (CHOP) and both Tori's and Todd's families, the Crawfords chose to go through with the operation on February 8 of this year. "It happened to be the day after the Super Bowl, and I'm from Kansas City, and my Chiefs were playing," Dr. Crawford remembered. "And obviously the loss was a tremendous letdown, but it was hard to care too much about that because all I could think about was having heart surgery the next day."

The surgical team admitted Dr. Crawford into the OR early, taking additional precautions to respect his privacy as a surgical fellow at the hospital. Dr. Grimm and the chief cardiac resident, Michael Ibrahim, MD, PhD, visited with the Crawfords before surgery and Dr. Grimm assisted Dr. Bavaria with the operation. Dr. Grimm's wife, Jessica, even brought Tori lunch during the surgery.

Despite a complex bicuspid aortic valve repair, the valve-sparing root replacement was a complete success; Tori recalls Dr. Bavaria's phone call to her at the completion of the operation. "We knocked it out of the park," he said. Now several months after the surgery, Dr. Crawford says, "It was more like a bottom-of-the-ninth walk-off grand slam!"

"Tori was my rock during this whole experience," Dr. Crawford said. "From our last moment alone before I was wheeled to the OR, to spending every second at my bedside and barely sleeping while I was in the hospital. She was the person who pushed me to ambulate, to eat, to start to recover, and she gave me the strength to get through this challenge and get back to work."

After 5 weeks, during which Dr. Crawford experienced tachyarrythmias as the irritability of his heart recovered, the CHOP team welcomed him to the OR once again—as an operating surgeon.

"That first week was wild," Dr. Crawford said. "I only live a mile from the hospital, more or less across a large bridge, and I typically walk to work. But I didn't want to overdo it the first day by walking so many steps before the workday even began," he recalled. "But then my Uber canceled on me. I ended up walking the distance so I wouldn't be late for work. By the time I got there, I'm sure my heart rate was in the 130s."

The Penn/CHOP team was overwhelmingly compassionate, Dr. Crawford said, and on that first day he worked on a congenital operation. "I think that shows the support of Penn for their trainees," he said. "To be willing to put me in that situation and be patient with me. From there, I went back to the adult hospital in April, and I was extremely busy, taking overnight call…and my heart's been great. I feel great. I have great endurance. And now we're almost 4 months out, and I feel very fortunate."

Dr. Crawford and his son, Case, enjoyed a visit following a successful surgery.

Dr. Crawford, now looking toward his second year of fellowship, said that he has a new appreciation for his patients' apprehensions. In May, he had the opportunity to give back and perform his first valve-sparing root replacement with Wilson Y. Szeto, MD.

"We all try to maintain the same focus with every operation, but there was something extra special about that day and the relationship that followed with that patient," he said. "Patients appreciate it when I tell them I've been through this, and I know it's rough, but this is what you can expect, and things do get better." ■

Dr. Crawford described his wife, Tori, as his "rock."

If you know of a unique member experience that should be featured in *STS News*, contact **stsnews@sts.org.**

THE

THORACIC

SURGERY

FOUNDATION

Amid Conflict and COVID, TSF Award Recipient Takes Screening Tools to Armenia

During a year confounded by a pandemic and war in Armenia, a Thoracic Surgery Foundation (TSF) grant recipient began laying the groundwork for a congenital heart screening program in the country's capital city.

Harma K. Turbendian, MD, with sponsorship from a TSF Every Heartbeat Matters Award, traveled to Yerevan in March 2021 with the goal of advancing Armenia's cardiac care system.

"Armenia is lacking in both prenatal and postnatal heart screening," said Dr. Turbendian, from Children's Hospital of Illinois at OSF Healthcare in Peoria. "That's especially true outside of the capital city, where medical care is not as good. It also applies to adult cardiac screening programs, and there is a pretty high prevalence of risk factors for acquired structural heart disease in Armenia."

The TSF Every Heartbeat Matters Award provides support for programs that educate, screen, and/or treat underserved populations to reduce the global burden of heart valve disease.

Dr. Turbendian's team is working to establish a comprehensive database to capture referrals for intervention and follow-up in patients found to have structural heart disease. Using the database, they will recommend interventions—at the facilities in Yerevan best equipped to provide the necessary medical care—and potential improvements in the patients' lifestyles. They will focus especially on patients from underserved areas based on their location and history.

Restrictions imposed during COVID-19 and the Nagorno-Karabakh conflict added logistical challenges and cut Dr. Turbendian's visit short, but during his time in Yerevan, he was able to arrange for the needed equipment deliveries to the sites. Now that he has returned to the US, he's working remotely with clinicians at Nork Marash Medical Center to establish connections and enroll patients. Approximately 25 clinicians have received training in the interim.

"COVID cases were in their second peak, so we couldn't do much in terms of going outside of the capital city, and I wasn't able to do any actual screening while I was there," he explained. "What I did do is get laptops, tablets, and portable ultrasound echo probes out there, and now I'm in the process of setting up all the Cloud accounts so that we can start the screenings."

He also was able to interact directly with patients. "The folks who came in weren't really there for the screening program, but the staff at the hospital had arranged the schedule so that they had a week full of congenital cases, knowing that I was going to be there."

Dr. Turbendian assisted the Armenian surgical team with congenital heart surgeries scheduled in anticipation of his visit.

▶ **Working with international brokers, Dr. Turbendian's team transported valuable equipment needed to help establish a congenital heart screening program.**

Transporting thousands of dollars' worth of equipment into a former Soviet country was no simple task, Dr. Turbendian discovered. His team worked through several customs brokers before procuring the correct paperwork that established their humanitarian intent and showed that they weren't there to sell the equipment.

"I think it's uncommon to the culture in countries like Armenia when you come in from the outside and don't have any other motives for what you're doing aside from the personal satisfaction you get from being able to help."

The project was an extension of the work Dr. Turbendian began in 2018, with the support of the TSF Robert L. Replogle Traveling Fellowship Award. The congenital cardiac program there was set up by Hagop Hrayr Hovaguimian, MD, a congenital heart surgeon from Legacy Emanuel and Providence St. Vincent in Portland, Oregon, Dr. Turbendian explained.

"I knew of him before I received my Replogle fellowship, since he was a family acquaintance and a legend in Armenian health care. The work started during my relationship with him. And my background is Armenian, so it was kind of a natural progression of wanting to participate and getting back to my roots."

Dr. Turbendian plans to return to Armenia soon, and he encourages other applicants to take advantage of the rich experiences and outreach opportunities that TSF awards provide. "Even though this particular trip couldn't be as impactful as I wanted it to be, I am very thankful to have had the opportunity to take part in the *Every Heartbeat Matters* program, and that I was able to set things up for a potentially successful screening system," he said. "Just going through the process really opened up a bunch of doors into opportunities to improve Armenian health care in general, and I'm indebted to this program for having opened those doors up for me." ■

TSF Applications for 2022 Awards Open

Awards like Every Heartbeat Matters and the Replogle Traveling Fellowship are available for applicants interested in surgical outreach both locally and abroad.

The Thoracic Surgery Foundation (TSF) is accepting applications for 2022 awards through September 15, 2021. Offerings include grants for research, education, leadership, and surgical outreach. A full menu of options, along with specific submission criteria, can be found at **thoracicsurgeryfoundation.org/awards**.

In 2020, more than $1 million was awarded to 29 surgeons. So far in 2021, TSF already has provided $861,870 in research grants and educational scholarships, with plans to award another $250,000 in grants later in the year.

"Research grants, fellowships, and educational scholarships from TSF represent all of our disciplines and surgeons at all career stages," said Foundation President Joseph E. Bavaria, MD. "The Foundation's awards have been instrumental in developing hundreds of young surgeons by providing the support needed for their career advancement. These awards also have been important stepping stones in furthering innovation in cardiothoracic surgery."

For more information on the Foundation, go to **thoracicsurgeryfoundation.org**.

Scan the QR code to read the 2020 TSF Annual Report.

Expanded Coverage for Lung Cancer Screening

At press time, the Centers for Medicare & Medicaid Services (CMS) was considering public comments after reopening its National Coverage Determination for low-dose computed tomography lung cancer screening. The health care community had been urging CMS to update lung cancer screening payment parameters to match new guidance from the US Preventive Services Task Force. A decision from CMS is expected by November, and the process should be completed by February 2022.

STS Continues Fight against Tobacco after Historic Victory

The US Food and Drug Administration (FDA) has announced plans to ban menthol cigarettes and flavored cigars within the next year. The historic move, when implemented, will help to protect children from tobacco addiction, advance health equity, and prevent tobacco-related illnesses.

The Society has long been committed to protecting patients against the harmful effects of tobacco, and mitigating e-cigarette and tobacco use, especially among kids and young adults, remains a priority.

The menthol ban is due largely to the collective efforts of many organizations, including STS, and critical grassroots advocacy participation from physicians from across the country.

Despite this major victory, STS continues its aggressive fight against tobacco.

The Society is among the organizations pushing for a $72.5 million increase in funding (for a total of $310 million) for the Centers for Disease Control and Prevention's Office on Smoking and Health (OSH). This increase would allow OSH to strengthen efforts that address the e-cigarette and tobacco use epidemics and expand programs to assist regions disproportionately harmed by it.

In addition, STS and more than 50 medical organizations are supporting the Quit Because of COVID-19 Act. This legislation, led by Rep. Lisa Blunt Rochester (D-DE), would ensure that all Medicaid and Children's Health Insurance Program enrollees have access to a full array of evidence-based tobacco cessation treatments for the duration of the COVID-19 public health crisis and the subsequent 2 years.

Equally important, STS members are amplifying the Society's anti-tobacco initiatives. They have sent numerous messages to their legislators and are active on social media in promoting STS advocacy efforts in the fight against tobacco.

Details of the Society's anti-tobacco position are available in the policy paper on tobacco and nicotine, which is included in the STS Health Policy Compendium. STS also has divested from investments that include companies tied to the tobacco industry.

STS members who are interested in joining the fight and becoming an advocate for patient health can join the Key Contact Program. For more information, visit **sts.org/keycontact**.

Sen. John Boozman Recognized for Commitment to Health Care Policies

In May 2021, STS presented its Legislator of the Year award to Senator John Boozman (R-AR) during a virtual ceremony for his outstanding legislative contributions that impact cardiothoracic surgeons and their patients.

An optometrist by training, Sen. Boozman is committed to sharing his experience with colleagues on both sides of the aisle and finding "commonsense" solutions to challenges in the health care system. He consistently has been a champion of reforms that lower costs, improve quality, and increase affordable access to patient care. Most recently, Sen. Boozman led bipartisan efforts to halt damaging Medicare reimbursement cuts for cardiothoracic surgery. ■

Q&A with Sen. Boozman

▶ Sen. John Boozman received the STS Legislator of the Year Award.

Q What are the most important health care issues our country faces in the current COVID-19 environment?

A As a result of COVID-19, medical providers are implementing telehealth alternatives to provide quality care that is convenient, safe, and efficient for patients. This practice has become more common and will continue to play a central role in the future of health care delivery. We must ensure providers have the tools and resources, particularly in rural areas where broadband deployment is underdeveloped, to expand this access to health care.

We've always known the importance of physicians and health professionals, but to see how the medical community was overwhelmed as a result of COVID-19 demonstrates the importance of ensuring we have the personnel in the pipeline so we can be prepared for future health challenges. One thing we can do to strengthen this foundation is develop a plan to address the growing shortage of primary and specialty care physicians. That's why I've helped introduce legislation to increase Medicare-supported residency positions. This will enable us to better provide quality health care throughout the country.

In the last few months, Congress has prevented implementation of the proposed cuts to physician payments by the Centers for Medicare and Medicaid Services. We need an environment that encourages physicians to continue practicing, so we must avoid these cuts, especially during the COVID-19 pandemic. Health care providers shouldn't have to worry about their bottom line when they are on the front lines treating patients with COVID-19 and administering life-saving vaccines.

Q How do you think Congress can best address the concerns that have been raised by the physician community?

A Congress best solves problems when folks outside of Washington offer solutions. The answers must come from the ground up instead of bureaucrats looking at spreadsheets. During this difficult time, it's even more important that we have bipartisan cooperation to prevent undercutting physicians with lower reimbursement rates or unfunded reporting requirement mandates that add extra burdens to providers when they're already short-staffed. These actions ultimately affect patient care.

Q What role does advocacy play in the policymaking process, especially in health care?

A COVID-19 has and will continue to impact the health care landscape in some capacity, so it's important that providers continue to engage with policymakers about the challenges they face. The voices of physicians will be necessary to helping us recover, improve health care, and prepare us for future pandemics.

Q How would you advise cardiothoracic surgeons on advancing important issues such as Medicare reimbursement and the accessibility and affordability of health care?

A Real life stories that show how policies affect patients and patient care are the most compelling. As an optometrist by training, I understand how well respected physicians are in the community. It's important to be vocal because citizens look to you for leadership and public servants need to understand how their decisions or lack of action on an issue impact your ability to provide the care and treatment we rely on.

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Mark Your Calendar

Upcoming STS Educational Events

- **How to Start a Surgeon-Led Lung Cancer Screening Program**
  Webinar · July 22
- **Advanced TAVR Symposium: New Perspectives for the Surgeon and Heart Team**
  Virtual · Aug. 21
- **18th Annual Perioperative and Critical Care Conference**
  Virtual · Sept. 10–12
- **STS Advocacy Conference**
  Virtual · Sept. 28–29
- **STS Leadership Series: Promoting Your Brand**
  Virtual · Oct. 7
- **Advances in Quality & Outcomes: A Data Managers Meeting**
  Virtual · Oct. 12–15
- **STS 58th Annual Meeting**
  Miami Beach, Florida · Jan. 29–31, 2022

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Thank You!

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