“This crisis has really brought forth a new appreciation for what those of us in medicine do to care for others. I think it’s sort of a golden moment.”

Valerie W. Rusch, MD

Collaboration Is Key to Cardiothoracic Surgery Comeback

“To be outstanding, get comfortable with feeling uncomfortable,” or so the saying goes. The COVID-19 global pandemic certainly has pushed cardiothoracic surgery out of its comfort zone.

Despite feelings of uncertainty and doubt these past few months, the specialty is moving forward. Surgeons are venturing into workdays that look quite different; but that’s what growth feels like, many would say.

This was an important focus of the “Global Summit on Reactivating Cardiothoracic Surgery Programs,” hosted in May by STS President Joseph A. Dearani, MD. For the first time, leaders representing the most prominent surgical organizations from around the world gathered in one (virtual) place for an open, honest dialogue about the comeback of the specialty following the COVID-19 crisis.

The webinar featured Sanghoon Jheon, MD, PhD, president of the Asian Society for Cardiovascular and Thoracic Surgery, Tomislav Mihaljevic, MD, CEO and president of the Cleveland Clinic, Domenico Pagano, MD, FRCS(C-Th), FETCS, secretary general of the European Association for Cardio-Thoracic Surgery, Enrico Ruffini, MD, president of the European Society of Thoracic Surgeons, Valerie W. Rusch, MD, president of the American College of Surgeons, and Vaughn A. Starnes, MD, president of the American Association for Thoracic Surgery.

“Moments like this demonstrate that we are stronger together and are able to weather the storm if we stand together and learn from one another,” said Dr. Dearani. “I am confident that we will persevere and prevail in our resolve to protect our patients, our fellow surgeons, and health care workers everywhere in the world as we recover from this crisis.”
The COVID-19 pandemic has proven to be a powerful trigger that not only has changed just about everything in daily life, but also has accelerated adoption of new methods of education and information sharing.

As temperature taking, elbow bumps, and face coverings, as well as constant hand washing and hand sanitizing become the proverbial “new normal,” the Society is managing the immediate impact and recognizing the importance of keeping an eye on longer-term changes.

While there is much uncertainty about what the future holds, STS will be vigilant in its efforts to develop and share timely information, expanded resources, expert guidance, and superior educational opportunities. The Society’s top priority remains supporting the needs of its members and helping to ensure that those within the cardiothoracic surgery community stay connected, learn from one another, and lean on each other as the world tackles this historic public health crisis.

Here are some of the ways that STS is continuing to support its members and offer valuable products and services during this challenging time:

**Education**

The Society canceled all remaining planned in-person meetings for 2020, but both the 17th Annual Perioperative and Critical Care Conference (September 24–26) and Advances in Quality & Outcomes: A Data Managers Meeting (September 29–October 2) will be held in virtual format. See page 11 for additional information about these upcoming courses.

At press time, STS was considering its options for the 57th Annual Meeting, scheduled for January 30–February 2, 2021, in Austin, Texas. The latest information can be found at [sts.org/annualmeeting](http://sts.org/annualmeeting).

**Webinars**

The Society presented the free live webinar series, “Cardiothoracic Surgery in the COVID Crisis,” which focused on important topics related to the coronavirus. Featuring STS members and other expert participants, including public health, industry, and infectious disease specialists, the webinars provided information on lessons learned, best practices, and key considerations to help navigate cardiothoracic surgery during the COVID-19 pandemic and ramp up for the future.

These webinars cumulatively attracted more than 8,000 viewers to the live broadcasts. An archive is available online at [sts.org/webinars](http://sts.org/webinars) and on the STS YouTube channel.

Also now under way is the “STS Summer Series,” a collection of biweekly, hour-long webinars featuring presentations and discussions on a variety of key topics—some are related to the COVID-19 crisis, while others are geared toward clinical or career development topics in cardiothoracic surgery. The webinars are broadcast live via Zoom and Facebook on Thursdays at 6:00 p.m. ET/3:00 p.m. PT.

The first episode, “Early Career Surgeons, COVID-19, and the Future,” aired on June 4. Moderators Joseph A. Dearani, MD, and Mara B. Antonoff, MD, talked to colleagues from around the US and in varying practice situations about how they have been coping—both physically and emotionally.
Dodge-Khatami Takes Position in New York

Ali Dodge-Khatami, MD, PhD, is now professor and system chief of pediatric and congenital heart surgery at Northwell Health hospitals in New York, including the Cohen Children's Medical Center in New Hyde Park, North Shore Hospital in Manhasset, and Lenox Hill Hospital in Manhattan. Previously, he was director of pediatric cardiac surgery at Children’s Memorial Hermann Hospital in Houston, Texas; he also has led congenital heart surgery programs at the University of Mississippi Medical Center in Jackson and the University Heart Center in Hamburg, Germany. Dr. Dodge-Khatami has been an STS member since 2003.

Çiçek Selected as Chief

M. Sertaç Çiçek, MD, has been appointed professor and chief of pediatric cardiothoracic surgery at West Virginia University (WVU) Heart and Vascular Institute and WVU Medicine Children’s in Morgantown. Previously, Dr. Çiçek worked at the Mayo Clinic in Rochester, Minnesota. He also served as director of the heart surgery center at the Anadolu Medical Center/Johns Hopkins Medicine in Istanbul, helping the program grow from 200 cases per year to more than 1,000. Dr. Çiçek has been an STS member since 2001.

Murphy Tapped to Lead Safety and Quality

Charles Murphy Jr., MD, CPPS, has been appointed as chief quality and patient safety officer for Jupiter Medical Center in Florida. Most recently, he served as chief patient safety officer at the Inova Heart and Vascular Institute in Falls Church, Virginia. Dr. Murphy, who has been an STS member since 2013, also previously was associate chief patient safety officer and medical director of intensive care units at Duke University Health System in Durham, North Carolina.

Edgerton Appointed Adjunct Professor

James R. Edgerton, MD, has been named an adjunct professor of surgery in the Division of Cardiac Surgery at Washington University in St. Louis, Missouri. He will continue as a senior clinical scientist at Baylor Scott & White Health in Dallas, Texas, where he maintains an active research program, and as an adjunct professor of biology at the College of Charleston in South Carolina. An STS member since 1994, Dr. Edgerton currently serves on the Council on Clinical Practice and Member Engagement.

 Jacobs Joins UF

Jeffrey P. Jacobs, MD, has accepted a position as professor of surgery at the University of Florida Congenital Heart Center. Previously, he was professor of surgery and pediatrics at The Johns Hopkins University in Baltimore, Maryland, as well as chief of cardiovascular surgery and co-director of Johns Hopkins All Children’s Heart Institute in St. Petersburg, Florida. Dr. Jacobs, who has been an STS member since 2002, is senior editor of the congenital section of the STS Cardiothoracic Surgery E-Book.

Rokkas Is New Chief in Vermont

Chris K. Rokkas, MD, has been appointed professor and chief of cardiothoracic surgery and the Frank P. Ittleman Chair in Surgery at the University of Vermont in Burlington. Previously, he was a professor of cardiothoracic surgery at the Medical College of Wisconsin in Milwaukee. Dr. Rokkas has been an STS member since 2002.

DaRosa Joins STS Board as Public Director

Debra A. DaRosa, PhD, a professor emerita of surgery and medical education at the Northwestern University Feinberg School of Medicine in Chicago, is the new Public Director on the STS Board of Directors. She fills the vacancy left by Roger Newton, PhD, MS. Dr. DaRosa served for many years as the vice chair of education in the Department of Surgery at Northwestern, as well as the course director for the American College of Surgeons’ Surgeons as Educators course. She was the first non-clinician elected president of the Association for Surgical Education, served on the editorial boards of Academic Medicine and the Journal of Graduate Medical Education, and has earned many awards for her commitment to medical education.
We definitely will face some challenging conditions moving forward, but our specialty has a history of being impressive, and I know we will prevail.”
As you read this, I hope you, your family, and colleagues are well. The COVID crisis has altered our lives, both professionally and personally. Hospitals, health care systems, private practitioners, and most of all—our patients—have been impacted.

STS also has been affected. We have canceled courses, conferences, meetings, and events. Yet, I am proud to say that throughout this difficult time, STS has been front and center—vocal, visible, and increasingly virtual.

Surgeon leaders, including myself and Drs. Sean Grondin and Joe Sabik, have been in regular contact with CEO Elaine Weiss and other members of the STS management team, as well as many of our talented and dedicated members. Together, we have been nimble and worked hard to develop resources and programs to help you and the specialty at this difficult time.

These COVID-related resources have included webinars, guidance documents, surgeon perspective articles, and resource utilization prediction tools (see pages 2 and 12).

We hosted a Global Summit that featured major leaders from our most prestigious organizations around the world. The group shared lessons learned so that we persevere and prevail in our resolve to protect our patients, our fellow surgeons, and health care workers as we recover from this crisis (see cover). More than 1,000 unique individuals participated in the live broadcast and many more have watched the archived version.

The Global Summit and other moments like that demonstrated that we are stronger together and can weather the storm if we stand together and learn from one another.

The Society also engaged in successful conference calls with the deputy secretary of the US Department of Health and Human Services, House Committee on Energy and Commerce, Centers for Disease Control and Prevention, Food and Drug Administration, and National Institutes of Health. These conversations focused on increasing availability of ECMO equipment, personal protective equipment, parenteral medicines (diuretics, anticoagulants), and a blood product donation initiative.

Now, as the US and many other countries begin to recover from the COVID crisis, we are cognizant of how this pandemic has affected cardiothoracic surgeons—financially, physically, and emotionally.

In early June, we launched a new series of webinars. This STS Summer Series began with an episode for early careerists. Dr. Mara Antonoff and I talked to colleagues about how they are coping and asked them for insights and tips on how cardiothoracic surgeons can thrive in this new world. If you did not have a chance to view this webinar, you can view it now on the STS website or on the Society’s YouTube channel.

Other webinars this summer will focus on low-risk TAVR, critical care, and the financial impact of COVID.

Health of the Society
I am pleased to report that STS remains on solid financial ground at this point in time, but we are carefully monitoring all aspects of our business and organizational activity as we know it. This is a marathon, and we are not yet close to the finish line.

We will be hosting two fall meetings virtually and will do everything possible to ensure that our members have a meaningful experience and that our industry partners can continue to play a valuable role. At this time, we still plan to hold our January 2021 meeting in Austin, Texas, but will keep you apprised if the situation changes.

Our Board recently held an orientation and spring meeting via Zoom. We were surprised at how effectively we were able to conduct our business and maintain meaningful exchanges throughout these meetings. As a result, we are planning an additional Board meeting via Zoom later in July.

Reactivation of CT Surgery
Now, as surgical programs around the country and around the world ramp back up again, we are beginning to see the effects of delayed procedures. Some patients have died because they didn’t seek help for obstructive lesions or because cancer care was delayed. We also are seeing and experiencing the financial effects that COVID has had on our hospital systems and health care workers. In addition, we are fighting a battle to stop planned Medicare reimbursement cuts from taking effect in 2021 (see page 18).

We definitely will face some challenging conditions moving forward, but our specialty has a history of being impressive, and I know we will prevail.

Cardiothoracic surgery is on the stage every single day. Cardiothoracic surgeons face a storm head on. Our grit, professionalism, and empathetic side have been projected to the outside world in a way that instills confidence, hope, and unity. It is a reminder to me why I went into cardiothoracic surgery in the first place.

The medical profession—and specifically cardiothoracic surgeons—have performed really quite well under very untoward circumstances these past few months. I feel proud to be part of a profession in which the higher the pressure, the better the performance. I hope you feel the same way.

Please feel free to reach out to me with your thoughts, concerns, and feedback at jdearani@sts.org.

Be well and be safe.
Collaboration Is Key to Cardiothoracic Surgery Comeback

CONTINUED FROM COVER

This meeting of great minds tackled various important, relevant topics while harnessing the collective knowledge of high-level leaders known to be fierce guardians of and advocates for cardiothoracic surgery. They shared vision and guidance about lessons learned from the COVID-19 pandemic, the reintroduction of elective procedures, physician wellness, and—most importantly—plans for the future of the specialty.

Lessons Learned So Far

In the past several months, as the virus has spread across the world at a rapid pace and exceeded 10 million cases, health care systems have struggled to carry the sudden burden. Hospitals have scrambled for ventilators that weren’t available; beds in the Intensive Care Unit overflowed; and health care workers were forced to treat patients without the proper personal protective equipment (PPE) needed to be successful and safe.

Many of the surgeon leader participants in the Global Summit agreed that the lack of preparedness was a major deficiency upon emergence of the coronavirus.

Italy was hit particularly hard by COVID-19, with approximately 34,000 deaths. Dr. Ruffini explained that even as the scale of the outbreak was becoming apparent, many health care systems failed to treat the pandemic as a serious threat and did not take swift enough action to protect patients and health care workers.

“We were basically not prepared for this,” he said. “We underestimated the risk and the contagious spread, and I think that we made the same mistakes all over the world.”

According to Dr. Starnes, this unpreparedness forced hospitals to take “draconian measures”—emptying out facilities, shutting down all elective procedures, and transforming many facilities into COVID hospitals. “I believe this was sort of an overreaction, although we didn’t know it at the time,” he said.

A more timely and sophisticated dissemination of accurate and critical information throughout the health care community may have been helpful and, in some cases, could have even meant the difference between life and death.

“These are the kinds of strategies that we need to work together on both nationally and internationally to mitigate either a second surge in COVID or other similar pandemics in the future,” said Dr. Rusch.

The Cleveland Clinic in Ohio is an international health care system with a presence in the United Arab Emirates—a country in which COVID patients appeared ahead of the US. As a result, administrators were warned earlier on about the severity of the virus and the challenges that it could potentially create in a hospital environment. With this valuable and immediate flow of daily information, the Cleveland Clinic began preparations—including securing adequate amounts of PPE and creating a sufficient surge capacity—in the beginning of January.

“As a larger health care system, we had a unique opportunity to flex our resources in ways that allowed us to adequately address this pandemic. Information was essential to us successfully meeting this challenge,” said Dr. Mihaljevic.

Safe Reintroduction of Cardiovascular Care

The shutdown of elective surgeries and other nonessential medical care during the pandemic has left many hospitals with empty operating rooms and a serious shortage of patients. However, as restrictions begin to ease in some parts of the world, procedures unrelated to the coronavirus have slowly resumed. It’s important that the rebooting of routine cardiothoracic operations occurs in a “phased manner,” according to Dr. Dearani.

These phases may be best determined with the help of accurate, real-time data secured in collaboration with institutions, virologists, and epidemiologists. Dr. Pagano explained that because of the “regional behavior” of the virus, this type of “granular” assessment is needed, and the specific environments and their capabilities must be considered.

Also essential to the successful relaunch of cardiothoracic surgery is the utilization of testing and triaging. Dr. Rusch described how Memorial Sloan Kettering (MSK) has progressively intensified its testing so that the status of every patient and staff member is known. This, she said, has been crucial to providing “the most COVID-free environment.” Many hospitals around the world also have established widespread testing of their health care workers and patients. Dr. Jheon described how his hospital in South Korea sends daily text messages to every employee inquiring about symptoms or possible contact history. They are expected to reply before 10:00 a.m.; if a possible risk is determined, the staff member may be told to stay home.

“Interconnection, collaboration, and integration. These are three magic words that we have to use in the future.”

Enrico Ruffini, MD

In addition, MSK, like other hospitals, has developed a COVID-free pathway, which has proven to be another successful strategy. This is a separate route and process for COVID-positive patients to enter the institution, receive treatment and undergo procedures, recover from anesthesia, and be discharged home. Strategies such as these are especially important as hospitals move forward and begin their recoveries, because “this infection is not about to disappear anytime soon,” said Dr. Rusch.

The group also collectively agreed that the role of the heart team, with principles such as strong leadership, solidarity, and empathy,
Global Summit is more essential than ever. “At this time, with reduced resources and high risk of infection, we may have to face difficult decisions. It’s important that no clinician makes decisions of this magnitude on his/her own. We need to collaborate and share the decision-making burden,” said Dr. Pagano.

Just as mentionable as the return of cardiothoracic surgery programs is the potential mental health crisis facing health care workers. COVID-19 undoubtedly has tested the physical and emotional wellbeing of those on the front lines of this pandemic. No long-term data for the coronavirus and its psychological effects are available, but past similar crises have shown that health care workers are at great risk for depression, anxiety disorders, and post-traumatic stress disorder.

“We, as surgeons on the front lines, are likely to be exposed to this kind of depression. This is very important and not something that we can underestimate,” said Dr. Ruffini.

In recognizing the seriousness of these challenges, Dr. Dearani said he has been calling several colleagues every day—in the US and around the world—to check in on their physical and mental health. He said he is grateful that the cardiothoracic surgery, cardiology, and other medical specialty organizations have come closer together these past several months, and he asked that they continue to be there for each other.

Finding the Silver Lining

In the days ahead, as cardiothoracic surgery perseveres and adjusts, one day at a time, there will be a need for steady and supportive voices everywhere and at every level. The specialty can expect more collaboration and less competition. This may include working closely with other disciplines and different associations, as well as new relationships between local and regional hospitals.

“Interconnection, collaboration, and integration. These are three magic words that we have to use in the future. This will not be the last pandemic. This is just the beginning. Second waves and new viruses will appear, and it would be nice if we used this crisis to be better,” said Dr. Ruffini.

Many expect this global pandemic to be an accelerator for changes and transformation in health care and its delivery. According to Dr. Starnes, the COVID crisis already has pushed forward to now what otherwise may have taken 3 to 5 years. He used the rapid rise in telemedicine as an example, explaining that half of his clinic is now by e-visit.

So far, telehealth has been successfully bridging the gap between people, physicians, and health systems, enabling patients to stay at home and communicate with physicians through virtual channels, while reducing the likelihood of spread to medical staff on the front lines and the public.

Perhaps the brightest of the silver linings, though, is the recuperation of “a well-deserved reputation of an honorable profession that serves a greater need,” said Dr. Mihaljevic.

Dr. Rusch agreed. “In recent years, physicians have felt unappreciated and embattled. This crisis has really brought forth a new appreciation for what those of us in medicine do to care for others. I think it’s sort of a golden moment.”

Watch the Global Summit at sts.org/globalsummit or on the STS YouTube channel.
Transformed Database Provides New ‘Window’ to View Surgical Outcomes

The Congenital Heart Surgery Database recently joined its adult cardiac and general thoracic registry counterparts in formally transitioning to the new online, real-time, interactive STS National Database platform.

“This extremely important achievement is the culmination of several years of work and will enhance how our participants interact with their data for the benefit of our patients,” said Felix G. Fernandez, MD, MSc, chair of the STS Workforce on National Databases.

For some practices, the next generation Database not only is transforming how surgeons work with their data managers, but it also is changing the speed at which quality improvement is implemented.

Recent Changes

Several new Database enhancements were rolled out on July 1, including direct data entry for the Adult Cardiac Surgery Database (ACSD) and General Thoracic Surgery Database and a software upgrade (version 4.20) for the ACSD. This upgrade was long-awaited because it provides approximately 30% fewer data entry fields, significantly reducing the data entry burden without sacrificing the granularity or robustness of the data. Fields that were not necessary for quality measurement or those not often completed were among the data elements that were removed.

Because the COVID pandemic forced many hospitals to reassign data managers to clinical duties on a temporary basis, the Society has delayed data harvests and postponed the next round of public reporting results until early 2021. In addition, COVID variables were added as data fields, allowing sites to note which patients were COVID positive so that outcomes from these patients could be analyzed separately.

The transformed Database represents a sea change for the thousands of users worldwide. As a result, the Society is doing everything possible to keep data managers, vendors, and participants informed about the new platform’s myriad features. Since early January, more than 50 webinars have been conducted highlighting the new functionality and key elements, gathering user experiences, and answering questions. These webinars are available on the STS YouTube channel, as well as the Society’s website at sts.org/databasewebinars.

Future Innovations

In a year that has already seen a monumental transformation of the STS National Database and a global health pandemic, behind-the-scenes work on other Database enhancements continues to move forward.

“Our next steps are to incorporate additional valuable tools to view risk-adjusted outcomes,” said Dr. Fernandez. “We also will be looking to add other sophisticated measures of performance such as cumulative sum (CUSUM) analyses and variable life adjusted display (VLAD) curves.”

CUSUM charts can be valuable tools in problem solving because they reveal when a change has occurred, offering the opportunity to confirm or eliminate potential causes; VLAD curves are used to measure health care quality and patient outcomes.

“The planned new interactive dashboards will provide a ‘window’ through which participants can view the rich legacy of the STS National Database,” explained Vinay Badhwar, MD, chair of the STS Council on Quality, Research, and Patient Safety. “At an institutional level, we can compare our real-time data to STS benchmarks. We also can use the dashboards to change time intervals and detect subtle changes in different subtypes of comorbidity or mortality with various operations. In addition, we can extract and present the data in a dynamic way during quality meetings to really have our teams get a good grasp of the information and implement change if change is required.”

For Dr. Badhwar, the Database transformation was the first step in what he says will be a “lasting shift” in how cardiothoracic surgeons manage patients. “Having access to our data in real time and being able to implement quality change more rapidly, one would hope that all institutions will use this resource as a primary tool in quality assessment. Perhaps the availability of this valuable information will prompt increased regularity of institutional quality meetings. We hope that this will be a tide that lifts all boats for our specialty,” he said.

For more information about the STS National Database, contact STSDB@sts.org.
Submit Science, Ideas to STS Annual Meeting

Oral, poster, and surgical video abstracts are now being accepted for the STS 57th Annual Meeting, January 30–February 2, 2021, in Austin, Texas. This is an opportunity to share research at one of the largest cardiothoracic surgery meetings in the world. At press time, the Society was planning to hold an in-person annual meeting.

The submission deadline is Tuesday, August 11, 2020, 3:00 p.m. CT. 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 14, 2020.

Submission categories include adult cardiac surgery, congenital heart surgery, general thoracic surgery, basic science, cardiothoracic surgery education, critical care, and quality improvement. And, just added for this upcoming meeting is the chance to specify whether submitted research is related to COVID-19.

The Society also is accepting ideas for Tech-Con presentations that focus on new cardiothoracic surgical technologies and innovative, off-label, or outside-the-box techniques that address complex problems. Anyone can submit a proposal, including industry representatives, for a product, device, drug, or application that is currently undergoing investigation. Accepted pitches will be presented during the dynamic Shark Tank session to a panel of experts and the audience. The submission deadline for Tech-Con is Tuesday, August 11, 2020, 3:00 p.m. CT.

Visit sts.org/abstracts for complete details about submitting abstracts, including instructions and policies.

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. Submissions will be accepted September 1–30; information on how to self-nominate will be coming soon via STS Weekly or online at sts.org/selfnomination.

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

Now Available! STS 56th Annual Meeting Online

STS Annual Meeting Online provides unlimited, on-demand access to more than 100 hours of recorded sessions, as well as the opportunity to claim CME or participation credit. Highlights include “How to” video sessions, an ethics debate on second valve replacements for opioid addicts with endocarditis, Tech-Con presentations, and keynotes from Robert S.D. Higgins, MD, MSHA, Bartley P. Griffith, MD, Domenico Pagano, MD, FRCS(C-Th), FETCS, and Clyde W. Yancy, MD.

Access to Annual Meeting Online was included with Annual Meeting registration. Non-attendees can purchase the online product at sts.org/AMonline. Note: Access is free for all Candidate and Pre-Candidate Members—even those who were not able to attend the meeting!

To access the online product, you will be prompted to log into the STS Learning Center with your STS username and password or the same login credentials that were used to register for the meeting or purchase the product. Purchasers and Annual Meeting attendees will receive access through January 31, 2021.

Visit sts.org/abstracts for complete details about submitting abstracts, including instructions and policies.

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Get Ready for Upgraded STS Learning Experience

The new and improved STS Learning Center is now available. This enhanced educational platform offers improved navigation, functionality, and searchability.

The Learning Center provides a central location to easily view webinars, complete e-learning modules, review relevant educational content, and much more. Annual Meeting Online is already on the new platform, ready for viewing.

Over the coming months, additional features and activities will be introduced, and the interface will be steadily improved to help ensure the best learner experience possible. More details will be available in the Fall issue of STS News.

Additional information is available at sts.org/learningcenter.

New STS Video Series Offers Microlearning Opportunity

The Society recently launched a new 8 in 8 Series—a collection of videos that offers clear and quick explanations of complex cardiothoracic surgery topics.

Each informative video is narrated by experts who describe one subject over the stretch of approximately 8 minutes, using eight slides. This valuable learning resource provides digestible lessons supported by easy-to-understand explanations and simple visuals. The videos are designed as microlearning courses—short, focused lessons—to be wedged between busy schedules and other responsibilities, while giving viewers the opportunity to learn, at their convenience, something new and important.

The first set of 8 in 8 videos features the four following critical care topics and experts:

**Vasoplegic Shock**
Subhasis Chatterjee, MD, from Baylor College of Medicine in Houston, Texas

**Ideal Ventilatory Settings for Venovenous ECMO**
HelenMari Merritt-Genore, DO, from Methodist Health System in Omaha, Nebraska, and J.W. Awori Hayanga, MD, MPH, from West Virginia University Medicine in Morgantown

**Postoperative Delirium**
Rita Karianna Milewski, MD, PhD, MSEd, from the University of Pennsylvania in Philadelphia, and Rakesh C. Arora, MD, PhD, from the University of Manitoba in Winnipeg, Canada

**Lactate and Cardiac Surgery**
Shahnur Ahmed and Frank A. Baciewicz Jr., MD, both from Wayne State University in Detroit, Michigan

More videos are expected to be added to the series this summer. The collection is available at sts.org/8in8 and on the STS YouTube channel.

Studies on Frailty in Mitral Valve Patients, Satisfaction within Cardiothoracic Surgery Capture Media Attention

Research highlighting frailty and its impact on mitral valve procedures and results from the quinquennial cardiothoracic surgery workforce survey were the subjects of two press releases issued by STS this past quarter. The studies were published in The Annals of Thoracic Surgery.

**Frailty May Be Highly Predictive of Complications, Death in Patients with Mitral Valve Disease**

- **Researchers:** Amit Iyengar, MD, MSE, and colleagues from Penn Medicine in Philadelphia
- **Main finding:** Frailty plays a significant role in determining mortality, length of hospital stay, and other outcomes following mitral valve procedures.
- **Featured in:** Cardiovascular News, Medical Xpress, Drugs.com, and Practice Update

**‘Vibrant’ Cardiothoracic Surgery Specialty Faces Considerable Challenges Head-On**

- **Researchers:** John S. Ikonomidis, MD, PhD, from the University of North Carolina at Chapel Hill, and colleagues
- **Main finding:** Most practicing cardiothoracic surgeons are extremely satisfied with their careers in this intensely demanding and competitive specialty, even though some challenges—such as risk of burnout, gender disparity, and educational debt—exist. See page 14 for more information on the 2019 STS Practice Survey.
- **Featured in:** Cardiovascular Business Online, Physician’s Briefing, Medical Xpress, Cardiovascular News, and Physician’s Weekly

Find more details on these important studies at sts.org/media.
The AQO conference—designed for data managers of all experience levels—will highlight what’s new with the STS National Database and offer valuable educational sessions on evidence-based practice with the goal of improving data collection and patient outcomes. Surgeons also are urged to consider attending the conference.

For those who would like to present at the AQO meeting, abstracts will be accepted for presentation consideration. Information about registration, the event schedule, and abstract submission can be found at [sts.org/AQO](https://sts.org/AQO); for more details, contact Emily Conrad at econrad@sts.org.

**STS Condemns Racism and Violence**

Following the death of George Floyd and the consequent protests and unrest across the US and the world, the Society released a statement condemning racism and racial inequities in health care.

The pain and anger surrounding the recent death of George Floyd in Minnesota is understandable and justified, as his death represents a painful national legacy of institutional racism. While the most recent wave of civil unrest and protest-related violence may seem appropriate to some, STS condemns at the same time racism, in any form, and violence.

African Americans in the United States face racism and systemic inequities that also include significant health disparities. As the world’s largest organization of heart and lung surgeons, STS is acutely aware that heart disease is the leading cause of death for African Americans. African Americans also have the highest incidence and death rate from lung cancer and have been disproportionately affected by the COVID-19 pandemic.

The statement is available at [sts.org/diversity](https://sts.org/diversity).

**STS Conferences Go Virtual**

The last few months of COVID-19 travel restrictions and social distancing guidelines have made face-to-face meetings impossible, resulting in a cascade of changes, cancelations, and postponements that have wiped major events off the calendar. Nonetheless, STS is using this opportunity to rethink its meetings and conferences. In accepting this new virtual reality, the Society has begun offering more online and digital education options.

This fall, both the 17th Annual Perioperative and Critical Care Conference (September 24–26) and Advances in Quality & Outcomes: A Data Managers Meeting (September 29–October 2) will be held in virtual format.

**Critical Care Conference**

The Perioperative and Critical Care Conference brings together all members of the critical care team and provides a dedicated forum to discuss and collaborate on important intensive care and enhanced recovery after surgery (ERAS) issues.

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.

Some of the topics that will be covered include aortic emergencies, infections, extracorporeal membrane oxygenation, renal and gastrointestinal complications, respiratory support, neurologic issues, and coagulopathies. In addition, 1 full day will focus on COVID-19 and disaster management matters.

Abstracts can be submitted that describe research related to critical care and/or ERAS. The submission deadline is Monday, August 17, 2020. For more information on abstracts, the meeting agenda, and registration, visit [sts.org/criticalcare](https://sts.org/criticalcare).

**AQO Data Managers Meeting**

Registration is now open for the AQO Meeting. This popular annual event also will take place virtually, with 1 day dedicated entirely to each registry: Intermacs/Pedimacs, General Thoracic, Adult Cardiac, and Congenital.

The AQtio conference—designed for data managers of all experience levels—will highlight what’s new with the STS National Database and offer valuable educational sessions on evidence-based practice with the goal of improving data collection and patient outcomes. Surgeons also are urged to consider attending the conference.

For those who would like to present at the AQtio meeting, abstracts will be accepted for presentation consideration. Information about registration, the event schedule, and abstract submission can be found at [sts.org/AQO](https://sts.org/AQO) for more details, contact Emily Conrad at econrad@sts.org.
The panel shared insights on how cardiothoracic surgeons can thrive in the specialty as they begin to emerge from the COVID crisis.

In addition, other episodes have explored topics such as robotic cardiac surgery and the financial impact of COVID on cardiothoracic surgery. The next webinar—scheduled for July 16—will highlight low-risk transcatheter aortic valve replacement, with the following episode delving into the challenging and controversial issue of Medicare reimbursement cuts. Webinar dates and topics may vary based on speaker availability.

The series will include seven episodes, and each episode will be available on the STS website and the Society’s YouTube channel the day after the live broadcast.

COVID-19 Resources Page

The COVID-19 Resources page offers a plethora of helpful information and resources, including links to a real-time tracking map, guidance documents, active research projects, resource tools, a personal protective equipment (PPE) burn rate calculator, and video messages from Dr. Dearani, STS President. Also available are additional articles, videos, and PowerPoint presentations on topics such as extracorporeal membrane oxygenation, PPE, ventilator management, telehealth, and many others. Stay informed by visiting stsrc.org/covidresources.

Guidance Documents

Throughout the past few months of the COVID-19 pandemic, seven STS-supported guidance documents have been published in The Annals of Thoracic Surgery. Members of a special STS COVID Task Force, as well as other surgeon leaders and leading organizations, collaborated on the articles, which cover all major disciplines within the specialty—adult cardiac, general thoracic, and congenital.

These documents detail “granular guidance” and recommendations for ramping up cardiac surgery, safely reintroducing cardiovascular services, implementing aggressive infection mitigation strategies, stratifying adult cardiac patients, triaging congenital heart disease patients, and facilitating difficult decisions when caring for patients with thoracic malignancies. Links to all of the documents can be found at stsrc.org/covidresources.

Resource Tools

With informed resource allocation decisions more important than ever, the Society developed two interactive, online tools to help triage adult cardiac surgery cases: STS Resource Utilization Tool for Cardiac Surgery and the COVID-19 Resource Prediction Instrument.

The Resource Utilization Tool is powered by more than 440,000 de-identified patient records from the most recent 2-year period in the Adult Cardiac Surgery Database (ACSD). It displays national averages of outcome metrics such as time in the operating room, time on the ventilator after surgery, hospital lengths of stay, and expected number of blood product units likely to be needed. Access the tool at stsrc.org/resourcetool.

The Prediction Instrument, based on 10 years of data from the ACSD, is designed to be used in conjunction with the Resource Utilization Tool. This instrument, available at stsrc.org/covidinstrument, provides a rapid estimate of ventilator hours, ICU time, transfusions, and risk of acute reoperation. Both resources are free to use and open to everyone.

Blog Articles

A number of STS members have written blog articles, sharing their experiences and perspectives from the fight on the front lines of the coronavirus crisis. The columns covered a broad range of topics, including staying grounded during COVID-19, how leaders make decisions during times of crisis, embracing the changes in health care, and how different regions, the US and Hong Kong, in particular, are dealing with the pandemic. A full list of the articles is available at stsrc.org/covidresources.

Throughout the upcoming weeks and months, the Society will continue to serve the surgical community by disseminating information, as well as facilitating opportunities and education.
Silver Linings from the COVID Pandemic

During a recent STS webinar on “Early Career Surgeons, COVID-19, and the Future,” panelists described some of the things that the pandemic has helped them better appreciate.

“One of the things that has really struck me is how much the patients themselves mean to me. It reminds me of why I went through all of this training and why the hard days are worth it. It’s all about the patients.”

Elizabeth A. David, MD, MAS

“Specific to the COVID crisis, there really was an ‘all hands on deck’ sense of solidarity both within and outside of the hospital. I think that is something that we desperately need to remember and keep hold of moving forward. Being reminded of our common humanity, I hope that mindset becomes the new normal.”

Melanie A. Edwards, MD

“We can take comfort in knowing that this pandemic will end. It may take until the end of the year, but it will end. So embrace the challenges, appreciate every day that you are healthy, and keep focusing on your mission and your patients.”

Gabriel Loor, MD

“I have learned that the things that are with you day in and day out are your family, your colleagues, and your patients. Really value those things in times of crisis and in times of calm.”

HelenMari L. Merritt-Genore, DO
Cardiothoracic Surgery Stands Strong Amid Coronavirus Pandemic and Other Challenges

The COVID-19 global pandemic has pushed many medical specialties to the limits—health care professionals working around the clock taking care of the sickest of patients, putting their lives on the line like never before, and struggling to handle growing patient loads and death rates, often with limited resources.

Cardiothoracic surgery has been no exception.

In many ways, cardiothoracic surgeons—who are comfortable in high-pressure, intensely demanding situations—were made for times like these.

“I think this is a good a place for cardiothoracic surgeons to be,” said Brendon M. Stiles, MD, from NewYork-Presbyterian/Weill Cornell Medical Center in New York. “We certainly do not want to be sitting at our desks in our offices while others do the work.”

Vinod H. Thourani, MD, from Piedmont Heart Institute in Atlanta, Georgia, echoed that sentiment. “We were born for this type of intense work since we have extensive training in critical care, cardiac surgery, and cardiopulmonary physiology,” he said.

Cardiothoracic surgeons are uniquely equipped to handle the arduous work involved with fighting a global health emergency. John S. Ikonomidis, MD, PhD, from the University of North Carolina at Chapel Hill, explained that heart and lung surgeons—with their formidable personalities and strong opinions—are comfortable in the role of “captain of the ship.”

“Over years of training, we have developed the stamina and focus that enables us to get through long and stressful days and still be able to come back for more,” he said.

Few career paths offer the same personal and professional satisfaction as that of a cardiothoracic surgeon. This is where “medicine best embodies the interface between humanity and science,” Dr. Ikonomidis said, making cardiothoracic surgery “one of the most rewarding specialties to choose.”

An increasing number of cardiothoracic surgeons agree, according to the 2019 STS Practice Survey. This workforce survey—carried out approximately every 5 years since the early 1970s—helps establish a current, detailed profile of the specialty. The results showed that 83.1% of surgeons are either satisfied, very satisfied, or extremely satisfied with their current career, compared with 72.8% in 2014.

In addition, half of practicing surgeons would recommend that their children or grandchildren pursue a career in cardiothoracic surgery, while only 47.5% and 37.1% reported feeling that way in 2014 and 2009, respectively. Some surgeons are even postponing retirement because they have a “high level of career satisfaction.”

“When a surgeon heals a patient through a carefully thought-out and expertly performed procedure followed by compassionate and comprehensive postoperative care, a deeply satisfied feeling ensues, which never dulls with time or age,” said Dr. Ikonomidis.

Even so, these are trying times for the specialty.

The survey showed that 68.9% of surgeons had 7, 8, or 9 years of training (21.8%, 25.0%, and 22.1%, respectively), while 29.2% reported having 10 years of post-MD training prior to entering practice.

At the same time, the educational debt accumulated by these surgeons is staggering, with 17.8% having $150,000 or more at the time they began active surgical practice.

When asked about the number of hours worked per week, most surgeons reported working between 51 and 80 hours per week (69.5%) with the largest group working 61 to 70 hours per week (29.0%).

Another matter of contention within the specialty is the potential workforce shortage, which is believed to be a result of factors such as aging surgeons, surgeon retirement, and a diminished cardiothoracic surgical trainee pool.

The current survey showed an increase in the average age of practicing surgeons by 2 years compared with the 2014 survey (56 years vs. 54 years, respectively). This suggests that a retirement surge is imminent, as is an expected decline in the workforce—from 4,000 surgeons in 2010 to less than 2,900 by 2035, as calculated by another study.

At the same time, with the general population also aging, the anticipated case load will increase from approximately 530,000 cases in 2010 to more than 850,000 cases in 2035, resulting in a 121% increase in case load per surgeon. The good news is that even though jobs are sometimes difficult to find, the current survey showed that 59.2% of practices are looking to hire a new surgeon within the next 2 years, up from 52.3% in 2014.

Also important to note and related to the aging workforce is the growing concern over surgeon performance, especially considering that cardiothoracic surgery is one of the most technically, cognitively, and physically demanding fields.

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The long and irregular hours often worked by cardiothoracic surgeons may impact wellbeing.
The survey revealed that 85.3% of cardiothoracic surgeons worked in institutions that did not conduct cognitive and psychomotor performance testing for surgeons who are 65 years or older. This issue, especially with more institutions expected to offer testing programs in the coming years, could potentially contribute to the diminishing cardiothoracic surgery workforce.

Other challenges within the specialty include the rapid introduction of novel technologies and techniques, as well as the pressure to incorporate minimally invasive treatment strategies into practice. The survey showed that while many surgeons have continued to expand their skill sets, approximately half (48.7%) have not learned a new surgical skill in the past year.

In addition, 59.6% of all surgeons reported using a less invasive approach while performing “20% or less” of cardiac surgery cases. For general thoracic surgery, 28.5% of surgeons said they use a less invasive approach “81% or more” of the time.

It is important that all physicians embrace new technologies and make them a part of their practice,” said Dr. Ikonomidis. “Adopting new surgical techniques and medical treatment methods prevents physicians from becoming obsolete.”

Perhaps one of the biggest issues, though, is the risk of depression and burnout within the specialty. More than 55% of surgeons reported symptoms of burnout and/or depression related to their jobs over the past year, which is 10% to 20% higher than that observed in other specialties.

“Cardiothoracic surgery—as a ‘frontline’ surgical specialty—is at great risk for burnout and depression.”

John S. Ikonomidis, MD, PhD

The delicate dance of balancing the demands of both professional and personal lives also may influence the risk of depression and burnout. The survey revealed that “work-life balance” is the most common reason for advising against a career in cardiothoracic surgery, with 65.2% of surgeons citing this as “very important.”

“Cardiothoracic surgery is not an ‘elective’ specialty. Patients are sick and need operations now, so a surgeon is not able to choose a convenient time to deliver care,” said Dr. Ikonomidis. “Being a surgeon is a highly stressful occupation and sometimes it is difficult to check your stress at the door when you go home after a hard day’s work.”

Despite numerous external pressures, the practice of cardiothoracic surgery remains strong, according to Dr. Ikonomidis. “It is a vibrant and multidimensional specialty that continues to be practiced at a very high level by an outstanding group of caring, hardworking, and highly intelligent individuals.”

This survey did not track specific elements contributing to these symptoms, but Dr. Ikonomidis explained that the “time-consuming, often counter-intuitive, and frustrating” implementation of electronic medical records, as well as increased scrutiny on surgeon productivity and outcomes, are among the factors that likely have impacted the personal wellbeing and emotional health of cardiothoracic surgeons.

Note: The most recent STS Practice Survey was conducted online from September 16 to November 1, 2019, with results published online in The Annals of Thoracic Surgery on May 14, 2020.
Foundation Expands Award Opportunities for 2021

Innovation, knowledge, research, patient care—these principles lie at the forefront of The Thoracic Surgery Foundation (TSF) mission.

“The mission of the Foundation is so important. The first part is to develop cardiothoracic surgeon-scientists. They will be the investigators who help us better understand the causes of and treatments for cardiothoracic disease,” explained TSF Board Member Scott A. LeMaire, MD. “The second part of the mission is to provide better patient care. In order for us to deliver better care in the future, it is important to support the people who are in training now and their ongoing research efforts.”

In an effort to continue advancing the TSF mission and the specialty, a new award will be offered for 2021—the Saha Scholarship Award—developed with the generous support of Sibu P. Saha, MD, MBA, from the University of Kentucky in Lexington.

“My mentor, who was a great teacher and generous person, took me to the STS Annual Meeting, where we shared a room because of budgetary constraints,” said Dr. Saha. “Now it is my turn to give back. Residents will benefit by learning and networking at our Annual Meeting.”

The Saha Award will allow two cardiothoracic surgery residents—one from the US and one from India—to attend the STS 57th Annual Meeting January 31–February 2, 2021, in Austin, Texas. The costs for registration, lodging, meals, and transportation will be covered.

Apply Now for a 2021 TSF Award

The Foundation is accepting applications for 2021 awards through September 15, 2020. 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 2019, more than $1.1 million was awarded to 109 surgeons. So far in 2020, TSF has already provided approximately $1.1 million in grants and scholarships. A full list of this year’s award recipients is available at sts.org/2020TSFawards.

“The Foundation’s awards have been instrumental in developing hundreds of young surgeons by providing the support needed for their career advancement,” said Foundation President Joseph E. Bavaria, MD. “The contributions of these award recipients to cardiothoracic surgery and our patients will be significant.”

TSF is the charitable arm of STS. For more information on the Foundation, go to thoracicsurgeryfoundation.org or see the 2019 TSF Annual Report at thoracicsurgeryfoundation.org/2019annualreport.
Double Your Impact: Donate to TSF Today

Take part in the 2020 Surgeon Match Challenge with The Thoracic Surgery Foundation (TSF). STS will match all surgeon contributions up to $200,000.

So far this year, the Society’s charitable arm has awarded approximately $1.1 million in funding to support surgeon-scientists in cardiothoracic surgery.

Award recipients are investigating topics such as the predictive utility of machine learning algorithms in adult cardiac surgery, functionality of T cells in advanced lung cancer, and sphingosine-targeted therapies in heart transplants. They’re training with experts to learn new skills, including robotic esophageal surgery, cone repair, valve sparing root replacement, the Bentall procedure, and complex tracheal surgery.

The funding also has allowed surgeons to provide lifesaving care to underserved patients in developing countries, including Armenia, Honduras, India, Kenya, Nepal, Nigeria, Pakistan, and South Africa.

In addition to matching surgeon donations, the Society covers all of TSF’s administrative expenses so that 100% of each donation is applied to award programs. Plus, TSF donations are tax-deductible to the extent permitted by law.

Help the Foundation continue supporting such important projects by contributing today at thoracicsurgeryfoundation.org/donate.
The past several months have been incredibly trying for health care professionals as COVID-19 continues its spread around the world. Fighting on the front lines, surgeons and other members of the health care team have shouldered a great share of the burden.

Despite this global pandemic, the Centers for Medicare & Medicaid Services (CMS) is moving forward with planned Medicare payment cuts of 7%–8% for cardiothoracic surgery, starting on January 1, 2021. These cuts are a result of changes in office and outpatient evaluation and management codes. In addition, CMS is expected to propose a 20% cut in global surgery payments sometime this summer.

The last time the specialty dealt with these types of drastic cuts was more than 20 years ago. In 1997, cardiothoracic surgeons came up against a proposal to reduce reimbursement by 27%. This was on top of a decade’s worth of cuts that already included a 60% decrease in reimbursement for coronary artery bypass graft surgery. At that time, the Society responded by creating an advocacy arm and forming an important presence in Washington, DC. This led to the opening of an “official” STS Washington office and the launch of STS-PAC—the only political action committee that exclusively represents cardiothoracic surgery.

The Society recognizes that cuts of this magnitude jeopardize not only the financial viability of hospitals and cardiothoracic surgeons’ clinical practices, but also patients’ timely access to quality care. In addition, it is expected that surgery will be critical to the post-COVID-19 financial recovery of the health care sector, and hospitals will be counting on increased surgical volumes to bolster their bottom lines. Also, smaller practices that are fighting to stay afloat will not be able to afford another financial hit.

So, in the face of a pandemic and these most recent proposed cuts, the Society is taking drastic, but necessary action.

STS has joined the newly formed Surgical Care Coalition, committing significant resources to the group in an effort to prevent these substantial reimbursement cuts. This alliance of surgical specialty societies is tasked with developing and executing a comprehensive, multifaceted campaign to educate the public and policymakers about the importance and role of surgical services as an essential component of health care. The Coalition also will work to prevent new cuts from being proposed.

The strategy will consist of legislative and regulatory advocacy, a public relations campaign, research and data collection on the impact of the cuts, and—potentially—legal action.

“Coming together to combat this threat and protect and defend the interests of surgeons around the country, national surgical organizations have coalesced around a campaign to educate the public and policymakers about the value of surgeons and prevent significant reimbursement cuts,” said STS President Joseph A. Dearani, MD, from the Mayo Clinic in Rochester, Minnesota.
“Coming together to combat this threat and protect and defend the interests of surgeons around the country, national surgical organizations have coalesced around a campaign to educate the public and policymakers about the value of surgeons and prevent significant reimbursement cuts.”

Joseph A. Dearani, MD

As part of the campaign, the Coalition commissioned a survey of more than 5,000 surgeons from various specialties. The results showed that many surgeons are facing serious financial distress due to the COVID-19 pandemic. As a result, it is expected that the combined impact of the planned CMS cuts and economic fallout from the COVID crisis may cause surgeons and hospitals to face difficult decisions about keeping surgical practices open.

The survey also found that even before the CMS cuts:

- 1 in 3 private practice surgeons were concerned that they may have to close their practices, limiting patient choices and access to care.
- Nearly half of surgeons who already were experiencing financial difficulties responded by instituting pay cuts for themselves and, in some cases, their employees.

While Congress considers COVID-19 relief legislation, the Coalition will take steps to ensure it includes language that prevents CMS from implementing the January pay cuts.

Separately, the Society will continue working with policymakers in Washington who have the ability to make a difference and help them understand how these pending pay cuts will negatively affect the health care system and patients.

As was the case in 1997 when cardiothoracic surgeons faced a similar situation, the Society will again call upon its members to engage in this effort. “In the coming weeks and months, we will ask you to take action in support of this campaign,” said Dr. Dearani. “Whether it is responding to surveys, writing to your elected officials or penning an op-ed, your active participation in this campaign is imperative and crucial to its success.”

Cardiothoracic surgeons have proven—time and time again—that they can produce exceptional outcomes, even in the direst circumstances. With this in mind, the Society will work diligently to help the specialty continue the critical work of saving patients’ lives.

Take Action Now
Encourage your legislators to reverse these reimbursement cuts! Even during this difficult time, there are still many ways to get involved virtually. STS can help you with scheduling and provide briefing materials.

Schedule a phone call or virtual meeting with your representatives or members of their health care teams to provide details on how these cuts may impact patient care.

Become a Key Contact. This program is a great way to stay informed while building relationships and advocating for the specialty. Get access to timely legislative updates and opportunities to engage.

Encourage your STS colleagues to become involved. STS members are the heart of our grassroots advocacy efforts. The more participation we have, the greater impact STS can make.

Contact advocacy@sts.org for more information and assistance.
Mark Your Calendar

Upcoming STS Educational Events

» STS 17th Annual Perioperative and Critical Care Conference
  Virtual — Sept. 24–26, 2020

» Advances in Quality & Outcomes:
  A Data Managers Meeting
  Virtual — Sept. 29–Oct. 2, 2020

» STS 57th Annual Meeting
  Austin, Texas — Jan. 30–Feb. 2, 2021

Facebook: The Society of Thoracic Surgeons (STS)
Twitter: STS_CTSurgery
Instagram: thesocietyofthoracicsurgeons
LinkedIn: The Society of Thoracic Surgeons
YouTube: ThoracicSurgeons
Flickr: Society of Thoracic Surgeons

Thank You!

STS gratefully acknowledges Edwards Lifesciences and Medtronic for being Platinum Benefactors (provided $50,000 or more) of the STS 56th Annual Meeting in New Orleans.