

EDITORIAL

The Society of Thoracic Surgeons Congenital Heart Surgery Database: A Tool for Learning, Not Judging



Ross M. Ungerleider, MD, MBA,¹ Edward L. Bove, MD,² Joseph W. Turek, MD, PhD, MBA,³ Erle H. Austin III, MD,⁴ and Jamie Dickey Ungerleider, MSW, PhD¹

The establishment of congenital heart surgery as a subspecialty has been paralleled by concomitant growth in pediatric intensive care, pediatric cardiology (including interventional cardiology), and pediatric cardiac specialization in associated health care professions such as cardiac intensive care nursing and perfusion. Care across the country is now being delivered by dedicated experts who have received exceptional training in surgery, cardiology, anesthesiology, intensive care, nursing, and perfusion as well as many other specialties, and who are devoted to understanding and caring for children with congenital heart disease. The field of cardiothoracic surgery and care for the patient with congenital heart disease has grown and is being delivered by many who feel called to commit their careers to the advancement of the specialty.

In 1994, The Society of Thoracic Surgeons Congenital Heart Surgery Database (STS-CHSD) was developed as an initiative to provide a quality improvement tool to congenital heart surgeons through distribution of confidential feedback reports that enabled each institution to compare themselves with other institutions in the database.¹ It was a tool designed to assist programs and providers at each organization in better understanding their strengths and also their opportunities for improvement, with the intention of helping each other as colleagues who were “all in this together.” Developing a national database has been a monumental undertaking led by conscientious and thoughtful leaders in our profession. As important a contribution as it has been, the STS-CHSD was never intended to be a foundation for guiding public reporting, or to be misapplied as a tool to evaluate individual surgeons. Yet here we are.

It seems that over time, we have evolved into the current era in which we are cultivating a risk averse attitude,^{2,3} particularly in a lineage of surgeons who are often afraid of failure and the possible consequences of how they might be perceived, graded, and judged by others.

Outcomes are important—and the developers of the STS-CHSD knew this.⁴ Outcomes should be viewed the way they were intended—as a formative tool to guide growth and improvement. But in the current climate that uses STS data to drive public reporting, these data are being used as a summative evaluation tool for determining how a program should be rated, and from the standpoint of some, whether an individual surgeon is competent. While sharing outcomes in some way to help the public understand where they can get excellent care is also important,^{2,5} we should not sacrifice our opportunity to use the outcome data to help each other as opposed to criticizing each other. How can we find a way to help all programs improve as opposed to competing against one another? That has been successful in some areas of the country for adult cardiac surgery, and we can learn from them to do the same for congenital heart care.

The STS CHSD is a surgical database. Surgical outcomes for children with congenital heart disease are related to numerous factors beyond surgery—factors that encompass aspects of the entire program as well as the nuances of a specific disease, not all of which can be distinguished from the data.^{2,5,6} The way these data are currently reported, we risk losing an ability to connect this information to unique opportunities for improvements for each particular program. An inadvertent consequence of singling out the surgeon as the “problem” (whenever a program has an outcome “dip”) is loss of courage expressed as a willingness to take on challenges, our nonjudgmental and inclusive willingness to share our knowledge and support each other, and our curious openness to ask and learn, particularly when our ideas challenge conventional thinking.⁷ Some senior surgeons now confess that they are often reluctant to take on a case that risks a mortality for their program, even when taking on that case offers the patient and the family their only hope.

¹Institute for Integrated Life Skills, Bermuda Run, North Carolina; ²Department of Cardiac Surgery, University of Michigan, Ann Arbor, Michigan; ³Duke Children’s Pediatric and Congenital Heart Center, Durham, North Carolina; and ⁴Department of Cardiovascular and Thoracic Surgery, University of Louisville, Louisville, Kentucky

Address correspondence to Dr Ungerleider, Institute for Integrated Life Skills, 431 Riverbend Dr, Bermuda Run, NC 27006; email: ross@integratedlifefskills.com.

This editorial is not intended to disparage the STS-CHSD, nor to discount the value of the information it provides. Indeed, the STS-CHSD has spawned a subspecialty in outcomes research that has produced experts who have contributed greatly to how we can evaluate, understand, and enhance our outcomes.

However, the unintended consequences created by the STS-CHSD as it is currently used for public reporting are troublesome. In the era before the use of the STS-CHSD to drive public reporting, surgeons were more likely to take on enormous challenges with courage, curiosity, and enthusiasm, producing inspiring successes, innovative solutions, and at times, agonizing failures. The insights gained from singular failures were often to the benefit of many. Our current status quo, mired in constant concern about how our last struggle or failure might affect our next data harvest, risks us losing sight of the importance of acknowledging struggle and occasional failure as a prerequisite for growth and learning.⁷

At a cursory glance, the STS-CHSD shows that most programs perform within 95% confidence limits around the mean with respect to mortality.⁴ Yet, despite the perception that most programs are performing within this acceptable range, the differences in program structure may be substantial and it is not likely that they have ever been or ever will be the same.⁸ Programs have different resources and capabilities, and our focus should be aimed at understanding those differences in a way that can enable us to collaborate on thoughtful improvements for all programs without dichotomizing programs into those that should vs those that should not provide care for patients with congenital heart disease. Our programmatic differences were not polarizing in the past. Our differences helped spark unique approaches to shared challenges. As evocatively stated by Virginia Satir, “It is in our sameness that we connect and in our differences that we grow.”

What happened? We became afraid to fail. We have developed a culture that demands perfection, even though we know that perfection, which is our goal, while possible for an individual case, is not achievable every time. Perfectionism can be the breeding ground for shame, and when we fail, we risk internalizing that failure as an indication that there is something defective in us, or in our program (blame is often shame turned outwards), rather than stimulating a curious mindset to understand what happened and how we can do better—the kind of mindset that encourages creativity, innovation, and growth.

How can we harness the CHSD to stimulate understanding the difference between excellence and perfection?⁹ Although we may aim for perfection, it is important to understand, with self-compassion, that falling short of perfection does not equal failure. Excellence is a process (which is always achievable) of commitment to high standards (including striving for

perfection as opposed to being obsessively concerned with being perfect), coupled with responsibility to appreciate failure as an opportunity to continually learn and improve.^{4,9} In our current climate, the CHSD is generating a fear of failure and of being labeled a failure. When that happens, we risk getting stuck, aiming at a target of what we have achieved, but not aspiring to what we might achieve if we can use the CHSD to guide but not to inhibit. The way the STS-CHSD is now being weaponized, primarily by the lay press, the court of public opinion, and attention from public media,² it can inadvertently fuel a culture of perfectionism and create a deterrent for learning and growth.

Surgeons are serving the STS-CHSD more than it is serving them.

Concern over the consequences of a mortality motivates some surgeons to avoid high-risk cases, or to perform a potentially suboptimal procedure with less perceived risk.^{2,6} Some providers become the purveyors of false hope, dragging families and teams through extended misery by prolonging the slide into an inescapable death because of their desire to avoid a mortality on their data report. Perhaps worst of all, we are allowing the STS-CHSD to drive relationships within our centers, contributing to cultures of intimidation, fear, and blame as opposed to cultures of curiosity, creativity, learning, and compassion.¹⁰

Paul Batalden, MD, stated that “every system is perfectly designed to give you the results you get.” Under the current STS-CHSD, we are evolving a new culture in pediatric cardiac surgery—one that is quite different from the one that helped us achieve a pinnacle of performance and innovation. We are training bright, imaginative, and talented people and then discouraging them (squashing their courage) and competing against their potential (and all they may someday contribute) when they land in small or medium size programs. Rather than finding creative ways to help them (and their programs) succeed, we lack compassion when these surgeons become afraid for their careers, and we do not realize our loss when these budding talents shut down their willingness to embrace the struggle that accompanies learning, growing, and innovating. We have produced a fear of consequence that has contributed to loss of curiosity and willingness to explore, ask, and understand the perspectives of others as a way of unlocking the collective wisdom of the entire team. We find cultures where teams have deteriorated into a disengaged, somber morass of broken human spirit. And we find organizations living in fear that the next bad outcome might culminate in a public report that will initiate a cascade into financial and programmatic ruin.¹⁰

We can do better. We can create a way to return the STS-CHSD to a tool that benefits all of us—and ultimately our patients, families, and team members—more than it constrains us.

How do we create a system where the STS information are data, with a story to tell, to guide us, not grade us? How can we create a culture where it is safe to “not know,” to be able to use the data as a source of inspiration instead of as a cause of exasperation? How do we take away the pressure? Performance suffers when the stakes are high and the psychological safety is low.¹¹ How long do you think the people in a system can last, without burning out or becoming dispirited, if they are disparaged for failing, ridiculed for struggling, or intimidated from asking a question that might inspire a creative response?

This editorial is an invitation to imagine ways that the STS-CHSD can be enriched so that it can better serve all of us, including our patients. There are so many inventive ways we can do this and better use the outcome information from our STS-CHSD without discouraging appropriately managed attempts at learning and growing. Here are a few suggestions, and the readership is invited to provide more.

- Incentivize taking on high-risk cases by appropriately resourced institutions, with thoughtful delineation of what those “resources” are.
- Help each other, particularly our less experienced providers, perform complex cases for which they are adequately trained, at appropriate institutions and under the guidance of providers who can help them learn and grow while achieving best outcomes. Rather than exalting our more senior surgeons for their skills and knowledge, how can we acknowledge them for mentoring and teaching their more junior colleagues without blame or intimidation? Perhaps we can distinguish these surgical educators and trainers and create more incentive for having them participate on a case.
- Change the definition of mortality to better evaluate the nature of mortality as opposed to the rigid application of assigning every death as a surgical mortality. That not only contributes to risk aversion, but it also obscures the fidelity of trying to identify true causes of poor outcomes, some of which could

be remediated by a program once properly identified. How we do this is a worthy challenge.

- Create a data reporting process that encourages more curiosity than condemnation.
- Invite members of the STS-CHSD to make suggestions about how the STS-CHSD can better serve them.

Our future depends on how we do this. We have all experienced struggles and failures. Admittedly, the times have changed, but there was a time when we were applauded for trying rather than criticized for failing. We learned from the past without fixating on it. We welcomed creative solutions to vexing challenges. Would we even have attempted the arterial switch operation in today’s psychological climate?¹²

Although we should not ignore the importance of our data, we owe it to the future of our profession to create a reliable way of supporting growth by encouraging responsible learning. Rather than risk homogenizing pediatric cardiac surgery by mandating how it should be performed, how can we stimulate and invite innovative contributions by capable and talented providers who might shine a light on a path that others may not see? How do we make it more likely that the current outcome data contained in the STS-CHSD will define our floor and not our ceiling?

We do need to protect patients from irresponsible surgery. But how do we distinguish that from the poor outcome from exceptionally well-trained and dedicated surgeons who we have taught to provide meticulous excellence? How can we better define the structures and processes that can encourage proficient providers at adequately resourced institutions to take on appropriate risk without fear of retribution or reputation-damaging public reports?

We can reinvigorate our specialty, remind ourselves that taking on challenge requires a unique spirit that thrives on encouragement, and that innovative thinking inspired by occasional struggle and failure is the nesting place of resilience and the stimulus for growth, learning, and eventual success as we reunite ourselves into a collective calling.

FUNDING SOURCES

The authors have no funding sources to disclose.

DISCLOSURES

The authors have no conflicts of interest to disclose.

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Published by Elsevier Inc.

0003-4975/\$36.00

<https://doi.org/10.1016/j.athoracsur.2022.09.024>

An Alternative Perspective on The STS Congenital Heart Surgery Database (CHSD)



INVITED COMMENTARY:

In this issue of *The Annals of Thoracic Surgery*, Ungerleider and colleagues¹ provide a thought-provoking assessment of the impact of database participation on congenital heart surgeons' mindset, particularly public outcomes reporting. This editorial unveils an inherent conflict among our professional responsibilities to patients and to society, but these issues must consider other important psychological and societal factors.

Through the efforts of innumerable surgeons, physicians, nurses, scientists, and engineers, congenital heart disease outcomes have improved remarkably. Operative mortality rates are now <3%, and among all patients born with congenital heart defects, there are now more patients alive over age 18 years than under age 18 years. Nobel laureate Kahneman² teaches us that when anticipated risks of a disease are high, humans are "risk-seekers", but when anticipated risks are perceived to be low, humans become "risk averse" (Prospect theory). This element of human psychology, combined with a "consumerist" mindset about medical care, explain why patients' families request more information and have different, and likely more risk-averse, expectations. In one sense, we are victims of our own success. These factors, combined with a sense that patients' families are entitled to know what we know, led to The Society of Thoracic Surgeons (STS) decisions to provide limited public outcomes reporting for centers that volunteer to report their results. The concern¹ is that public reporting promotes risk aversion and an incentive to avoid "taking on enormous challenges" that could produce "inspiring successes, innovative solutions, and at times agonizing failures" with the "opportunities for growth and learning".

These sentiments unveil inherent, unresolved inconsistencies in our professional responsibilities. We

must do the "best" for each patient, but we are also expected to advance knowledge, requiring innovation and, therefore, some risk-taking by both physicians and patients. Reconciling these competing obligations is accomplished through the professional responsibility to self-regulate, which database participation enables. Objective assessment of our own and our institution's capabilities to care for each patient is required, even if this means triage to a center with better capabilities. Whether this represents a "failure" or "disincentive" or results from professional judgements about capabilities lies in the eye of the beholder. One of my mentors, Dr Aldo Castaneda, often noted that "A surgeon who cannot be self-critical is lost."

Ungerleider and colleagues¹ suggest reworking mortality definitions and providing an incentive to "take on high risk cases by appropriately resourced institutions". Current mortality definitions accommodate postoperative care variations, particularly for patients with prolonged care in rehabilitation settings. Providing "an incentive to take on higher risk cases"¹ is an admonishment to improve risk adjustment, as ideally, risk adjustment mitigates "penalties" for undertaking "high-risk" cases. STS funding supported an update to the procedure-based STAT (The Society of Thoracic Surgeons-European Association for Cardio-Thoracic Surgery) mortality risk adjustment algorithm³ and an independent study using cohort definitions including both diagnoses and procedures and new statistical approaches.⁴ To reduce "judging", star descriptions of institutional performance were eliminated, and a new "public" report based on common diagnosis-procedure cohorts is in development. A newly funded National Institutes of Health grant will consider both morbidity and mortality. Reporting remains at the institutional level, recognizing that congenital heart surgery is a "team sport".

There are no easy answers for most issues involving competing professional and ethical responsibilities. My recommendation is to honestly engage patients' families and provide them with reliable and understandable