



MCSQI Annual Report | 2017

The Maryland Cardiac Surgery Quality Initiative's (MCSQI) Annual Report is a confidential report detailing the activities and achievements of MCSQI. It is intended for use by physicians, administrators, data managers and the cardiac surgery community for development and evaluation of quality improvement plans.

Calculations utilize data from the Society of Thoracic Surgeons (STS) Adult Cardiac Surgery Database, O/E Recalibration Coefficients from STS Reports, and apply exclusion criteria as noted in this report.

All data in this report is protected from disclosure pursuant to the provisions of Maryland statutes as may be applicable.

Unauthorized disclosure or duplication is absolutely prohibited.

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Letter from the Chairman of the Board

We are one big happy family!

Cardiac surgery in the state of Maryland has never before seen such a positive change in an organized, unified, and quality-oriented, patient-centered healthcare during its history. The communication between statewide cardiac surgeons has never been better than now. The interaction between governmental regulatory agencies and payers with cardiac surgery programs has never been more positive than it is now. The sharing of best and current practice knowledge has never been better. The Maryland Cardiac Surgery Quality Initiative (MCSQI) is responsible for one of the single greatest positive movements in cardiac surgery in the state of Maryland!



Kurt Wehberg, MD
Peninsula Regional Medical Center

Communication and sharing of knowledge amongst cardiac surgery programs in the state of Maryland has never been better. MCSQI is leading the state with accuracy in data management of detailed outcomes reported by the Society of Thoracic Surgeons (STS). MCSQI has taken the initiative to help organize all healthcare providers involved on the management of our cardiac surgery patients. State-wide cardiologists, cardiac anesthesiologists, perfusionists, Cardiac Surgery Critical Care Nurses, Advanced Professional Practitioners, and Cardiovascular and Pulmonary Rehabilitation specialists are now collaborating with MCSQI. We are sharing best and current practices with all of the healthcare providers in an organized fashion, all with the goal of improving quality of care for our patients.

The interaction between cardiac surgery programs and regulatory agencies has never been more positive. The MCSQI recently established accurate definitions of cardiac surgical procedures with the Maryland Health Care Commission (MHCC). We are working together to establish guidelines for the Certificate of Ongoing Performance (COP). We are sharing MCSQI-driven data for the important public disclosure of outcomes within our state. These interactions with our regulatory agencies are extremely positive team-building experiences. MCSQI is uniting with national organizations dedicated to improving quality of care with cardiac surgery patients. We are developing a VCSQI/MCSQI joint collaborative research project involving the CMS SAN 2.0 grant. Dr. Jeffrey Rich, Chairman of the VCSQI Board of Directors, recently stated as the keynote speaker of our recent bi-annual meeting, "I have never seen such excitement and collaborative input from so many clinicians at a statewide level than at the MCSQI."

The enthusiasm and self-motivation within MCSQI is totally altruistic! All of the efforts above are done voluntarily with no remuneration other than doing it for the right reason! Let us keep the momentum, and continue to build upon the greatest movement in state-wide cardiac surgery history! We are one big happy family doing the right thing for our cardiac surgery programs and our patients.

MCSQI Overview

The goal of the Maryland Cardiac Surgery Quality Initiative (MCSQI) is to improve clinical quality in the state's cardiac surgery community through outcomes analysis and process improvement. MCSQI serves as a peer-to-peer value exchange whose work promotes the adoption of evidence-based best practices, ensures fair and accurate reports and enhances healthcare policies.

Our group endorses the spirit and intent of the Maryland Health Care Commission's (MHCC) legislative charge to improve oversight and maintain high performance standards in Maryland hospitals' cardiac programs.

Improve Quality and Control Costs: MCSQI members collaborate to analyze hospital processes, work to identify opportunities for improvement and help implement relevant best practice protocols.

Enhance Communications: MCSQI serves as the interface to communicate process of care information between member sites, eliminating decision making in silos and connecting clinical teams.

Inform MHCC Policy: MCSQI helps establish a voice within the state's healthcare legislation by providing MHCC committees and staff with ways to define and assess cardiac surgery performance.

Organizational Components

MCSQI is a non-profit consortium supported by all ten hospitals that perform cardiac surgery in the state of Maryland. The organization provides value to its stakeholders by improving the quality of care through data analysis and implementing best practice protocols led by the Board of Directors, Quality Committee and Research and Writing Committee.

Communications, Meetings and Outreach: MCSQI network of surgeons, data managers and clinical teams fosters statewide collaboration through in-person meetings, conference calls and site visits. Through dynamic communication MCSQI informs, motivates, builds trust and increases transparency; consequently, helping our quality improvement consortium affect meaningful organizational change.

Benchmarking and Reporting: MCSQI focuses on selecting quality indicators, establishing baseline data, designing scorecards, addressing privacy and confidentiality and using providers' commentary as context to better understand trends and variations. Data managers convene regularly to standardize coding practices, allowing for timely, sound and accurate interpretations of cardiac surgery performance reports.

MCSQI Overview

Quality Improvement Agenda: MCSQI members research, identify, and replicate best practices with the goal of improving the quality of patient care across the state. Pilot programs and other ‘proof-of-concept’ steps are used to develop and lead initiatives for Maryland’s cardiac surgery sites. Best practices and evidence-based guidelines are researched and validated before adoption.

Evaluating Impact: MCSQI adjusts its efforts to improve participants’ chances for success by implementing models to evaluate hospital performance. Progress is communicated to key audiences in state government, the cardiac surgery community and other external organizations.

Informatics

MCSQI’s database links clinical factors with qualitative, process-level information in order to monitor and drive quality improvements. Participants’ clinical records from the Society of Thoracic Surgeons (STS) Adult Cardiac Surgery Database are submitted quarterly to a secure web-based system. An annual report and inter-hospital rankings are used to compare performance related to specific metrics for the group’s quality initiatives.

Membership

Participation is open, voluntary and non-hierarchical. Member bylaws and committee decisions guide the group’s priorities, synchronizing efforts to regularly refine the management of data.

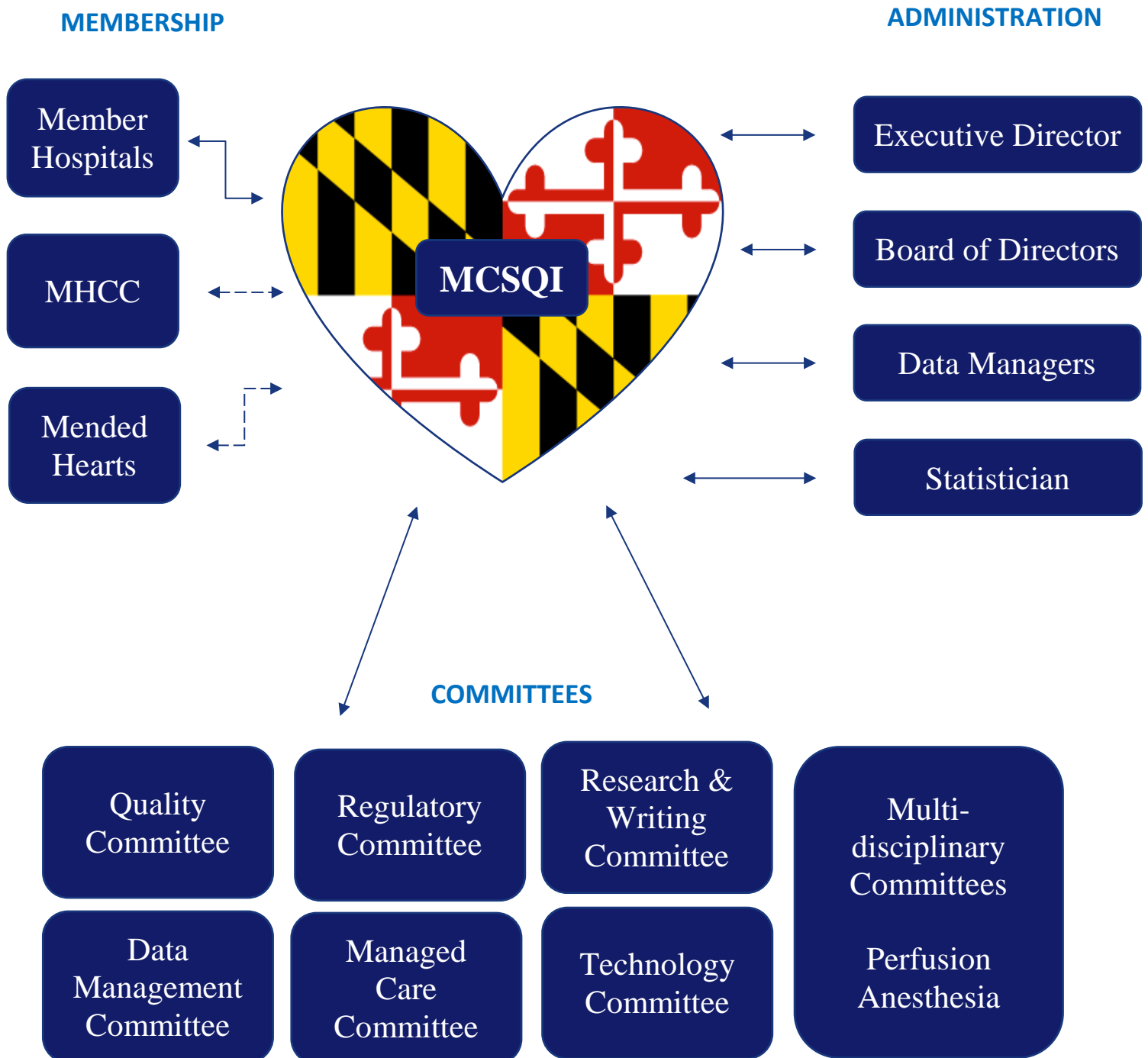
Effective Governance: The Board of Directors represent participants’ interests, and developed a governance structure, set dues and adopted bylaws. MCSQI encourages broad participation among its member provider organizations and surgical practices.

Operational Capacity: In conjunction with the Board of Directors and other group members, the Executive Director manages the organization by facilitating development, setting agendas, encouraging participation, focusing discussion on key issues, helping the group reach consensus and solving problems.

Summary

Since 2013, MCSQI has brought surgeons, data managers and hospital administrators together to compare data, share best practices, perform outcome analyses and implement process improvements. MCSQI is becoming a trusted, credible leader building a culture of continuous quality improvement in the cardiac surgery community. Benefits include reduced costs, enhanced clinical effectiveness, increased accountability, fewer regional variations and stronger alliances between heart team members.

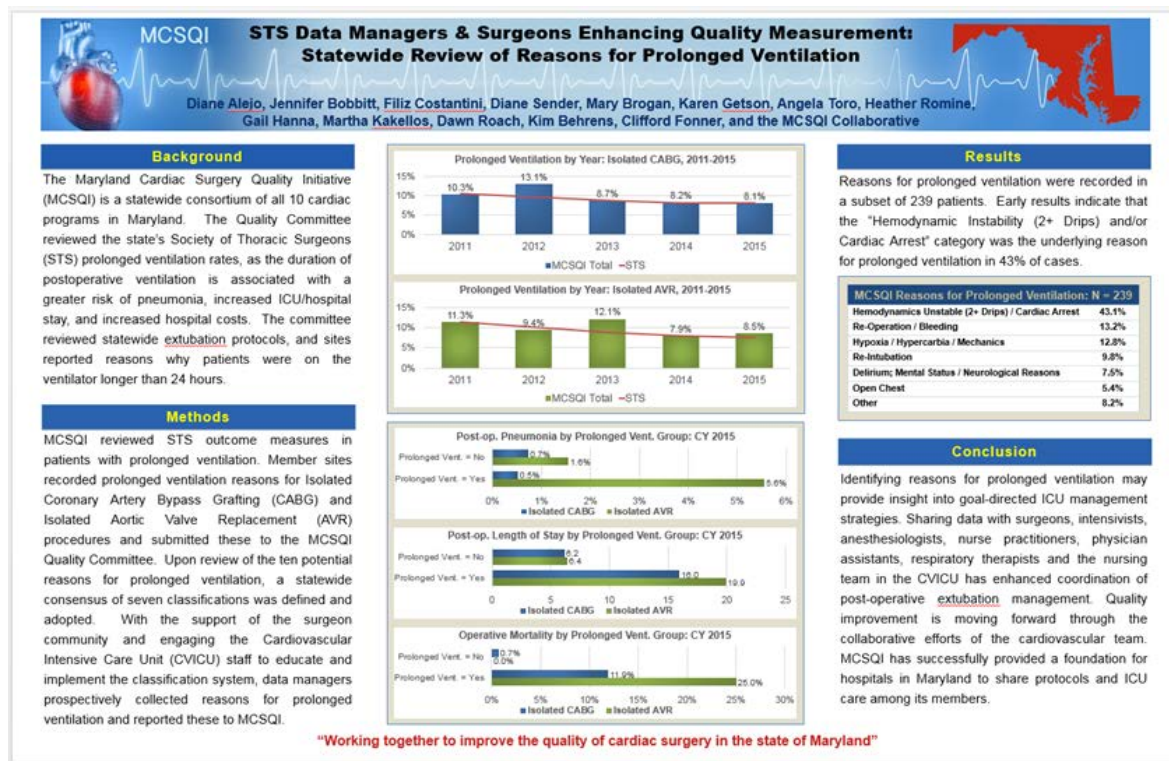
Organizational Model



Quality Committee

The Quality Committee, formally established in March 2014, is tasked with managing MCSQI's quality improvement agenda. Membership is comprised of clinicians at all ten MCSQI hospitals, including: surgeons, data managers, intensivists, pulmonologists, nurse practitioners and members of the cardiovascular team.

After a survey of quality improvement topics, members chose blood conservation and timely extubation as MCSQI's inaugural initiatives. The Quality Committee examined clinical data from the STS registry correlating hospitals' results against qualitative information from transfusion to extubation protocols through monthly conference calls. A subcommittee formed to analyze top performers' guidelines and craft a set of MCSQI best practice recommendations with the goal of increasing the proportion of cases extubated in less than six hours. The MCSQI average across all ten centers has improved since implementation of this best practice protocol. The committee also reviewed statewide reasons for prolonged ventilation and presented early results in a poster presented at the 2016 STS Advances in Quality and Outcomes Meeting.



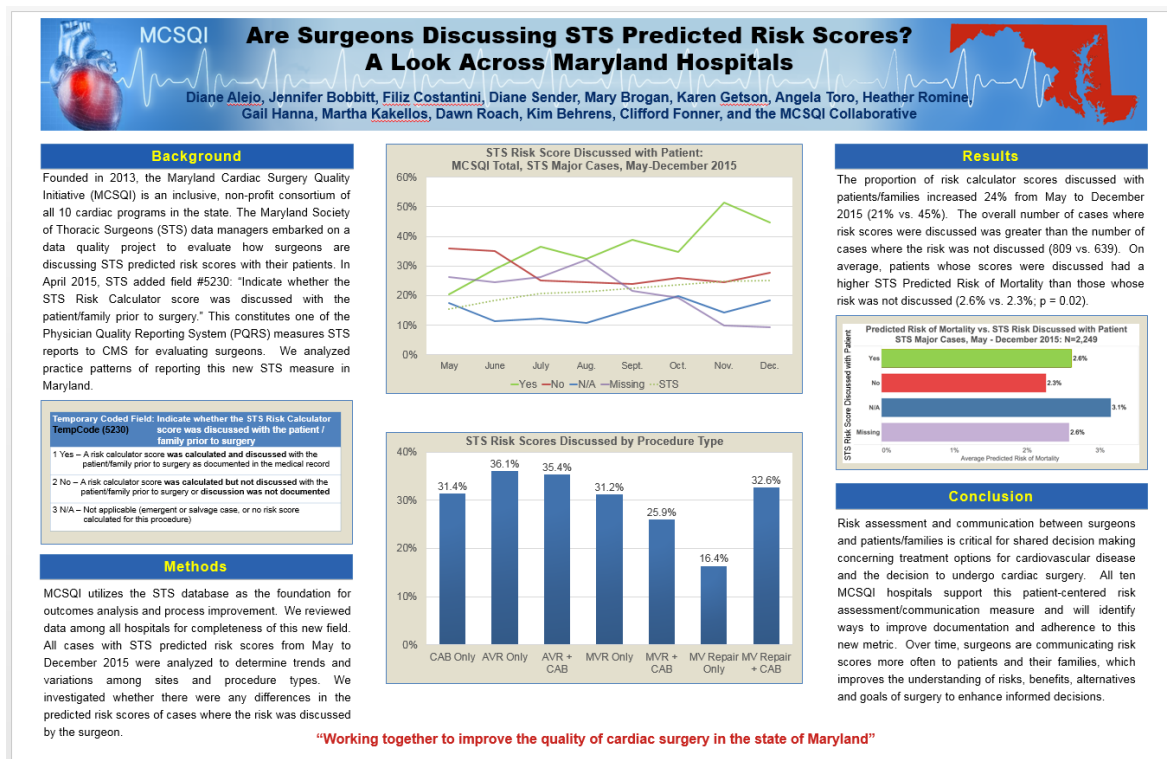
MCSQI abstract/poster presented at the STS Advances in Quality and Outcomes meeting in Baltimore, Maryland in October 2016

Quality Committee

In the blood conservation subcommittee, analysis of transfusion rates by hospital, procedure type and pre-operative hematocrit levels yielded significant questions about transfusion practices across MCSQI centers. A study coordinated by the Research & Writing Committee yielded statistically significant differences between hospitals after adjusting for risk. Going forward, members will continue to analyze sites' transfusion practices and work towards generating a comprehensive list of best practice guidelines with the hopes of reducing transfusion rates statewide.

Co-chairs Diane Alejo, Dr. Glenn Whitman and members have been vital to the committee's continued progress. Preventing readmissions and atrial fibrillation are, and group members will continue collaborating to affect positive across the continuum of cardiac surgical care.

The quality committee endorsed a Statewide Perfusion Practice Survey and Sternal Wound Practice Survey to assess variation and outcomes within our collaborative. Both projects culminating accepted poster presentations at upcoming national conferences in 2017.



MCSQI abstract/poster presented at the STS Advances in Quality and Outcomes meeting in Baltimore, Maryland in October 2016

Research and Writing Committee

In August 2015, the MCSQI Board of Directors voted to formally establish a committee tasked with overseeing and developing a research and publication process. This Research and Writing Committee officially reviews and approves all proposals for publication, decides upon a process for project initiation and develops and submits proposals for approval.

The Research and Writing Committee members convened and agreed upon MCSQI's first research project in October 2015, which was an analysis of inter-center differences in blood product utilization.

MCSQI members submitted a manuscript to the Annals of Thoracic Surgery detailing variation in transfusion practices across Maryland hospitals after multiple rounds of review with the Research and Writing Committee in March 2016. The manuscript was accepted for publication.

MCSQI Research and Writing Committee members are excited for the opportunity to impact quality improvement and research on a regional and national level.

2017 / 2018 MCSQI Poster Presentations:

Sternal Wound Care Practices in Maryland Cardiac Surgery Programs

Society of Thoracic Surgeons Advances in Quality & Outcomes: A Data Manager Meeting
October 18-20, 2017 Chicago, Illinois

Variations in Perfusion Practice during Adult Cardiac Surgery: A Statewide Survey

55th Annual Meeting of the Eastern Cardiothoracic Surgical Society (ECTSS)
October 18-21, 2017 Amelia Island, Florida.

Off-pump Coronary Artery Bypass in Octogenarians: Results of a Statewide, Matched Comparison

Society of Thoracic Surgeon (STS) 54th Annual Meeting, Fort Lauderdale, Florida, January 27-31, 2018

2017 / 2018 Oral Presentations:

Variation in Platelet Transfusion Practices during Cardiac Operations among Centers in Maryland: Results from a State Quality-Improvement Collaborative

Society of Thoracic Surgeon (STS) 54th Annual Meeting, Fort Lauderdale, Florida, January 27-31, 2018.

Bilateral Internal Mammary Artery Utilization in Diabetics: Friend or Foe?

Society of Thoracic Surgeon (STS) 54th Annual Meeting, Fort Lauderdale, Florida, January 27-31, 2018.

Data Managers

MCSQI's STS Data Managers, co-chaired by Jennifer Bobbitt of Washington Adventist Hospital and Filiz Demirci of University of Maryland Medical Center, serve as the backbone to the organization. The Data Managers each share vital minute details related to data abstraction with their internal teams, which allows for more accurate and consistent data capture. In July 2017, the STS Adult Cardiac Registry released a new version that included 200 additional data elements. The collaboration amongst the group is instrumental in ensuring that all data abstractors across the state are collecting data with the same understanding of the definition.

Data Managers convene at bi-annual workshops to review challenging cases and confirm all members are up-to-date with the latest STS definition clarifications. STS surgeons have also participated in these workshops. Most recently Dr. Mike Fiocco of Medstar Union Memorial Hospital presented on Aortic Surgery in the STS Registry. MCSQI also interfaces with our counterparts in Virginia, Michigan and Texas.

Maryland hosted the 2016 STS Advances in Quality and Outcomes (AQO) meeting in September 2016 with great success and also presented two posters: "STS Data Managers & Surgeons Enhancing Quality Measurement: Statewide Review of Reasons for Prolonged Ventilation" and "Are Surgeons Discussing STS Predicted Risk Scores? A Look Across Maryland Hospitals". The posters were well received by our colleagues and more are in the pipeline for upcoming meetings.

Data Managers have also developed a comprehensive set of data quality reports utilizing consistency checks from the STS and the Michigan Society of Thoracic and Cardiovascular Surgeons. The MCSQI data managers are continuously looking for ways to be armed with high quality, defensible data to assist with the accurate measurement of clinical quality metrics. Data Managers serve alongside surgeons on various committees and task forces within MCSQI. They are involved with research, quality improvement projects and constantly striving to provide suggestions to drive improvement in cardiac surgery care for Maryland patients.

"Working together to improve the quality of cardiac surgery in Maryland"

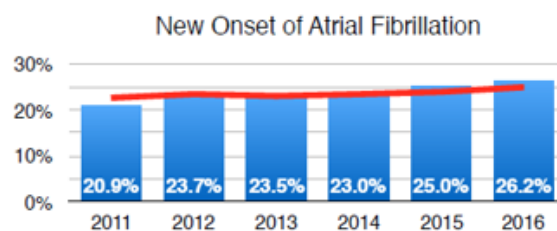
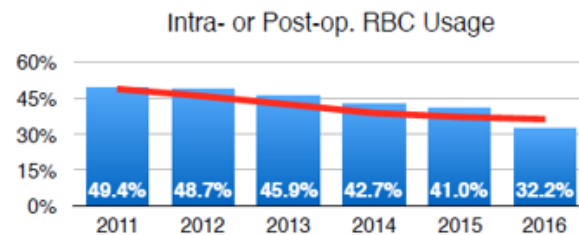
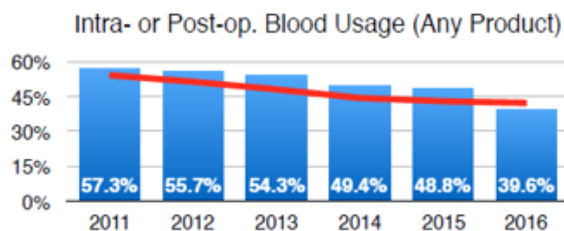
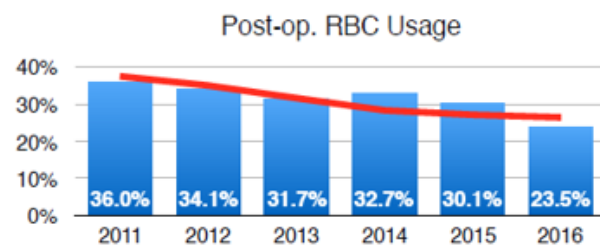
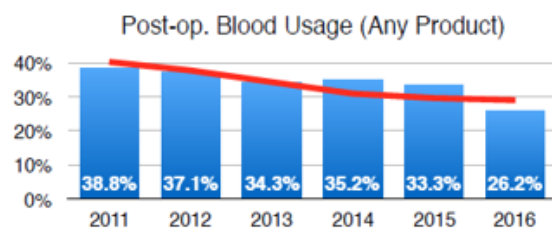
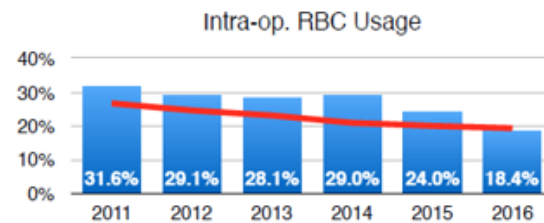
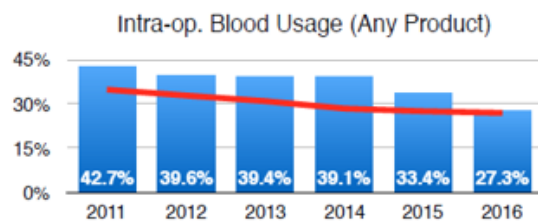
Executive Summary – CABG Only, 2011-2016



All Risk-adjusted Rates apply STS Recalibration coefficients from the 2016 STS Report

*STS Risk-adjusted Rates. These calculations involve two steps: 1. Calculation of the O/E ratio, which divides the percentage of an observed morbidity by the rate predicted by the STS risk calculator, and 2. Multiplication of the O/E ratio by the STS national rate of the observed morbidity. All O/E ratios apply STS Recalibration coefficients, which normalize the national benchmark value to exactly 1.0.

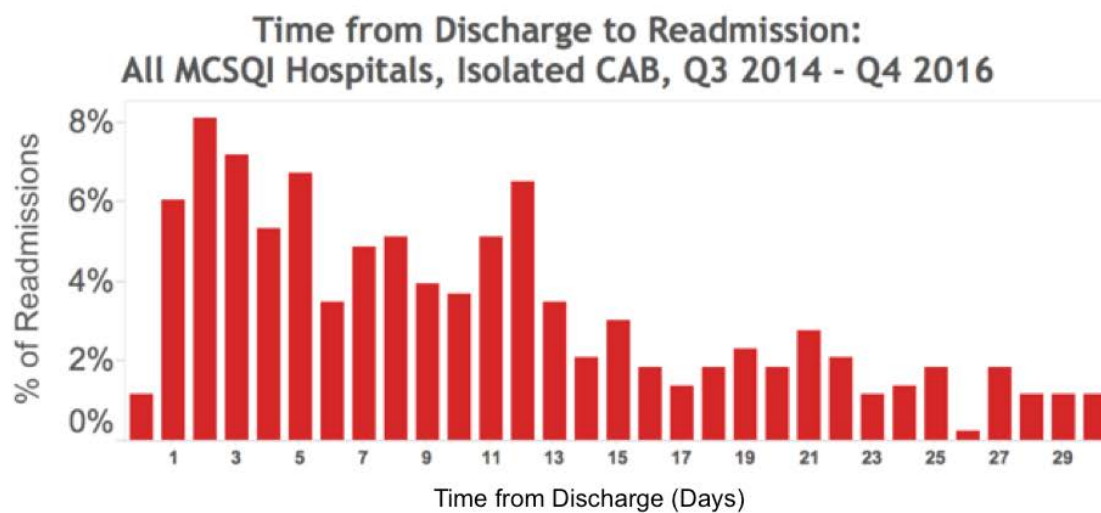
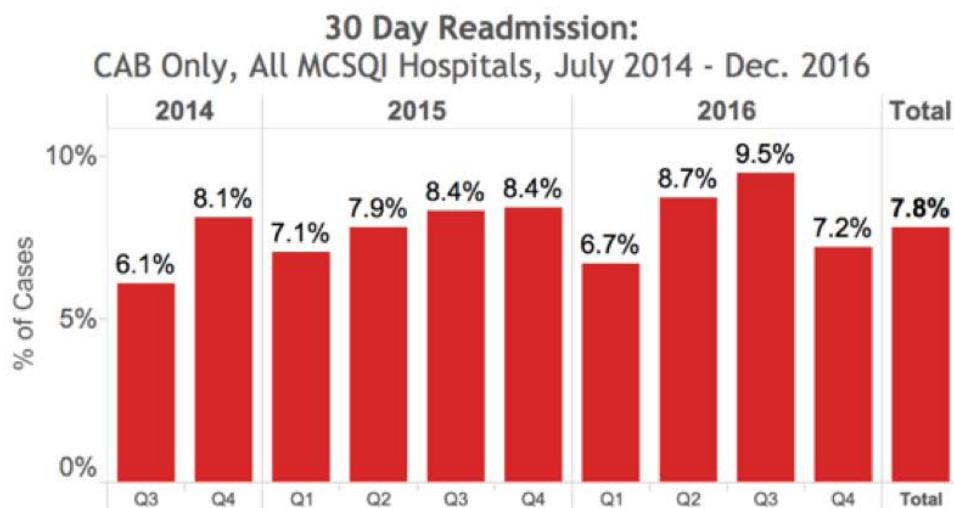
Executive Summary – CABG Only, 2011-2016



■ MCSQI — STS

Executive Summary – CABG Only, 2011-2016

MCSQI Statewide 30 Day Readmission Rates



MCSQI Procedural Volumes 2012 - 2016

| MCSQI Procedure Volumes by Year | 2012 | 2013 | 2014 | 2015 | 2016 |
|------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Isolated CAB | 1,926 (48.1%) | 2,069 (48.0%) | 2,193 (47.8%) | 2,384 (51.9%) | 2,283 (54.4%) |
| Isolated AVR | 495 (12.4%) | 469 (10.9%) | 489 (10.7%) | 426 (9.3%) | 395 (9.4%) |
| AV Replacement + CAB | 270 (6.7%) | 289 (6.7%) | 281 (6.1%) | 254 (5.5%) | 252 (6.0%) |
| Isolated MVR | 62 (1.5%) | 87 (2.0%) | 70 (1.5%) | 85 (1.9%) | 79 (1.9%) |
| MV Replacement + CAB | 14 (0.3%) | 31 (0.7%) | 31 (0.7%) | 34 (0.7%) | 22 (0.5%) |
| Isolated MV Repair | 182 (4.5%) | 178 (4.4%) | 178 (3.9%) | 174 (3.8%) | 159 (3.8%) |
| MV Repair + CAB | 74 (1.8%) | 66 (1.5%) | 66 (1.4%) | 57 (1.2%) | 43 (1.0%) |
| Total: STS Major Procedures | 3,023 (75.4%) | 3,200 (74.3%) | 3,308 (72.1%) | 3,414 (74.3%) | 3,233 (77.0%) |
| Other Procedures* | 985 (24.6%) | 1,107 (25.7%) | 1,279 (27.9%) | 1,180 (25.7%) | 967 (23.0%) |
| Total: All Procedures | 4,008 | 4,307 | 4,587 | 4,594 | 4,200 |

* Excludes TAVR Procedures

NQF Measures

Calendar Year 2016, CAB Only Procedures (unless otherwise indicated)

| | | MCSQI | STS |
|------------------|------------------------------------------------------------|------------------|--------------------|
| Procedure Volume | Isolated CAB | 2,283 (54.4%) | 156,931 (53.8%) |
| | Isolated Valve | 633 (15.1%) | 44,248 (15.2%) |
| | CAB + Valve | 317 (7.5%) | 23,545 (8.1%) |
| | Other | 967 (23.0%) | 67,119 (23.0%) |
| Pre-Operative | Timing of Antibiotic Administration | 99.1% | 99.3% |
| | Selection of Antibiotic Administration | 99.9% | 99.1% |
| | Duration of Prophylaxis | 99.9% | 98.9% |
| | Pre-operative Beta Blockers | 98.9% | 95.2% |
| Operative | Use of Internal Mammary Artery | 99.6% | 99.0% |
| Complications | Risk-Adjusted Prolonged Ventilation | 6.8% | 7.9% |
| | Risk-Adjusted Deep Sternal Infection | 0.2% | 0.3% |
| | Risk-Adjusted Permanent Stroke | 1.3% | 1.3% |
| | Risk-Adjusted Renal Failure | 1.5% | 2.1% |
| | Risk-Adjusted Re-Operation | 3.1% | 3.6% |
| Discharge | Anti-Platelets | 99.2 | 99.0% |
| | Beta Blockers | 99.5% | 98.5% |
| | Anti-Lipids | 99.0% | 97.7% |
| Mortality | Risk-Adjusted Inpatient Mortality: Isolated CAB | 1.3% | 1.7% |
| | Risk-Adjusted Operative Mortality: Isolated CAB | 1.6% | 2.2% |
| | Risk-Adjusted Operative Mortality: AV Replacement | 4.5% | 2.2% |
| | Risk-Adjusted Operative Mortality: AV Replacement + CAB | 1.9% | 3.3% |
| | Risk-Adjusted Operative Mortality: MV Replacement | 7.0% | 4.9% |
| | Risk-Adjusted Operative Mortality: MV Replacement + CAB | 5.8% | 9.5% |
| | Risk-Adjusted Operative Mortality: MV Repair | 0.6% | 1.1% |
| | Risk-Adjusted Operative Mortality: MV Repair + CAB | 2.1% | 4.6% |
| Readmissions | 30-Day Readmission Rate: Isolated CAB | 8.0% | 10.0% |

Data Specifications

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Operative Mortality O/E*: Any death during patient hospitalization or within 30 days of surgery | <ul style="list-style-type: none"> • Inpatient Mortality O/E*: Any death during patient hospitalization |
| <ul style="list-style-type: none"> • Prolonged Ventilation O/E*: Post-operative pulmonary ventilation greater than 24 hours | <ul style="list-style-type: none"> • Permanent Stroke O/E*: Post-operative stroke that did not resolve within 24 hours |
| <ul style="list-style-type: none"> • Renal Failure O/E*: Increase in post-operative serum creatinine greater than 3 times baseline, serum creatinine greater or equal to 4 mg/dL, or new requirement for dialysis post-operatively | <ul style="list-style-type: none"> • Mediastinitis O/E*: Any post-operative deep sternal wound infection or mediastinitis during patient hospitalization or within 30 days of surgery |
| <ul style="list-style-type: none"> • Re-Operation O/E*: Return to the operating room for bleeding, valve dysfunction, graft occlusion, or other cardiac reasons (the NQF definition does not include 'other non-cardiac reasons') | <ul style="list-style-type: none"> • Morbidity/Mortality O/E*: Any patient incurring operative mortality or any of the five major morbidities listed above |
| <ul style="list-style-type: none"> • Readmissions within 30 Days: Any patient who was readmitted for inpatient stay at an acute care facility within 30 days of discharge | <ul style="list-style-type: none"> • Re-Operation for Bleeding: Re-exploration for mediastinal bleeding either in the ICU or return to operating room |
| <ul style="list-style-type: none"> • Length of Stay (LOS) Admit-Discharge: Total number of days from patient admission to discharge | <ul style="list-style-type: none"> • Length of Stay (LOS) Surgery-Discharge: Total number of days from surgery to discharge |
| <ul style="list-style-type: none"> • Post-Operative Ventilation Time: Total amount of time from operating room exit to initial extubation, plus any additional time spent on pulmonary ventilation | <ul style="list-style-type: none"> • Early Extubation: Initial Ventilation Hours less than 6; excludes patients who were extubated in the operating room |
| <ul style="list-style-type: none"> • Intra-Operative Blood Products: Any patient who was transfused any time intra-operatively during the initial surgery. | <ul style="list-style-type: none"> • Post-Operative Blood Products: Any patient who was transfused any time post-operatively |
| <ul style="list-style-type: none"> • New Onset of Atrial Fibrillation: Any patient with post-operative Atrial Fibrillation; excludes patients with pre-operative arrhythmias | <p>*The Observed-to-Expected Ratio (O/E). These calculations divide the percentage of an observed morbidity by the rate predicted by the STS risk calculator. All O/E ratios apply STS Recalibration coefficients, which normalize the national benchmark value to exactly 1.0.</p> |

Maryland Health Care Commission (MHCC) Alliance

| | |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 07/11/2012 | The General Assembly of Maryland passes House Bill 1141, MHCC – Cardiac Surgery and PCI Services that established a new legal framework for the oversight of percutaneous coronary intervention (PCI) services and cardiac surgery. A Clinical Advisory Group comprised of 26 cardiac experts was tasked with providing input to MHCC on standards for the establishment of cardiac surgery and PCI programs and ongoing performance standards for existing and new programs. |
| 06/20/2013 | After eight meetings, the Clinical Advisory Group releases their final report, recommending procedure volume and quality measurement standards for both PCI and cardiac surgery programs. |
| 10/21/2013 | MCSQI sends a formal letter to MHCC advocating removal of the requirement for external review of cardiac surgery cases from the proposed regulations of COMAR 10.24.17. MCSQI also asked for clarification on several sections of the regulations where the exact intent of oversight was unclear. (Letter 1) |
| 06/23/2014 | MCSQI meeting with Eileen Fleck to discuss the STS data collection and reporting processes: data abstraction and harvest, procedure type categorization, risk-adjustment calculations, NQF measures and STS Star ratings. |
| 06/30/2014 | With regards to MHCC's proposal to obtain reports and patient-level metrics from the Society of Thoracic Surgeons (STS), MCSQI sends a formal letter to MHCC providing a detailed explanation of the STS database, their risk-adjustment methodology and quarterly reporting processes. (Letter 2) |
| 08/18/2014 | MHCC approves COMAR 10.24.17, the State Health Plan for Facilities and Services: Specialized Health Care Services – Cardiac Surgery and Percutaneous Coronary Intervention Services. This legislation implemented the new state regulations, which formally establishes standards for the performance of cardiac surgery programs. Procedure volume requirements and quality measures are specified to maintain certificates of ongoing performance. It also details a process of focused reviews if programs do not meet particular benchmarks. MHCC requires STS data. |
| 05/13/2015 | The MHCC Advisory Committee addresses the list of ICD-9 codes constituting cardiac surgery procedures that count toward COMAR 10.24.17's minimum volume requirements for cardiac surgery programs. |
| 11/09/2015 | MHCC passes an update to COMAR 10.24.17 with a revised list of ICD-9 procedure codes for cardiac surgery cases. |
| 11/18/2015 | MCSQI writes a letter to MHCC with recommended changes to the list of ICD-9 codes , recommending that cardiac surgery cases must fulfill two of the four following criteria: 1) an incision into the chest, 2) direct contact with the heart, 3) use of cardiopulmonary bypass, and 4) operation on the thoracic aorta and/or great vessels. (Letter 3) |
| 12/16/2015 | MHCC presents the results of the initial data quality audits of STS data. Overall, MCSQI hospitals performed very well on the audits with greater than 90% agreement for the state on the data elements impacting the STS risk adjustment model. |
| 03/02/2016 | MCSQI sends a formal letter to MHCC with updates to the ICD-9 procedure code list, comments for each procedure code that was updated or changed and a conversion chart for all possible equivalents in the ICD-10 procedure code list. (Letter 4) |
| 04/12/2016 | MHCC sends applications for Certificates of Ongoing Performance to all ten MCSQI hospitals. Programs are tasked with documenting their quality assurance standards to fulfill requirements of COMAR 10.24.17. |

Source: <http://mhcc.maryland.gov>

MCSQI Correspondence to MHCC

MARYLAND CARDIAC SURGERY QUALITY INITIATIVE

9/228/16

Eileen Fleck
Maryland Health Care Commission
4160 Patterson Ave.
Baltimore, MD 21215

Dear Ms. Fleck,

As per the request from the MHCC, members of the Maryland Cardiac Surgery Quality Initiative have updated our list of Cardiac Surgery procedure codes for COMAR 10.24.17. We have attached a summary spreadsheet for your reference.

This Excel document contains the ICD-9 codes for our previously agreed upon Cardiac Surgery procedures as well as codes for procedures that are only safe to perform at a hospital with cardiac surgical services. We have provided commentary for all procedure codes that have been added or changed from COMAR 10.24.17, along with a classification for each code as to which of our four objective criteria it satisfies: incision into the chest, direct contact with the heart, use of cardiopulmonary bypass, and operation on the thoracic aorta and/or great vessels.

ICD-9 codes were used as specifically requested by the MHCC. We feel it is important to accept these procedure codes using ICD-9 given the lack of familiarity with ICD-10 conversions, realizing that consideration will be necessary whenever new ICD categorizations are implemented.

Please let us know if there is any additional information that might assist your work on the State Health Plan for Cardiovascular Services. We appreciate this opportunity to advise MHCC and look forward to continued collaboration toward improving the quality of clinical care and patient safety across the state of Maryland.

Sincerely,

John Conte, MD
Chairman, MCSQI

Eddie Fonner
Executive Director, MCSQI

Attachment: MCSQI Recommended Procedure Codes – FINAL.xlsx

MCSQI Correspondence to MHCC

MARYLAND CARDIAC SURGERY QUALITY INITIATIVE

9/28/2016

Eileen Fleck
Maryland Health Care Commission
4160 Patterson Ave.
Baltimore, MD 21215

Dear Ms. Fleck,

After thoughtful consideration by members of the Maryland Cardiac Surgery Quality Initiative regarding the MHCC's requested applications for Certificates of Ongoing Performance, we propose the following as the tenets underlying quality for cardiac surgery programs in the state of Maryland. All programs should have:

1. A regular, peer-reviewed Morbidity and Mortality conference
2. Performance improvement committee(s) that address:
 - a. Unit-based quality (e.g. CUSP) including Operating Room, Intensive Care Unit, and step-down measures
 - b. STS-based quality (e.g. metrics underlying STS star rankings)
 - c. Service-line-based quality (e.g. value, efficiency, patient education and patient satisfaction)

Each of the aforementioned committees should meet at least quarterly with agenda, detailed minutes, and an attendance list for each occurrence. Because of concerns regarding disclosure of privileged and sensitive information, we feel the results of these meeting should be available on-site but should not be submitted separately to the State.

We appreciate the opportunity to advise MHCC on this important component of the State Health Plan for Cardiovascular Services. Thank you, and please let us know if there is any additional information that we may provide.

Sincerely,

John Conte, MD
Chairman, MCSQI

Eddie Fonner
Executive Director, MCSQI

MCSQI Correspondence to MHCC

Benjamin Steffen
Executive Director, Maryland Health Care Commission
4160 Patterson Avenue
Baltimore, MD 21215

November 8, 2016

Dear Mr. Steffen,

The Maryland Cardiac Surgery Quality Initiative (MCSQI) was formed and is dedicated to ensuring the highest quality cardiac surgery care for all patients undergoing cardiac surgery in the state of Maryland. We fully support ongoing review of outcomes and collaborative efforts between the cardiac surgery programs themselves and with the state to reach and sustain this goal.

We support public reporting of outcome data as well as the education of current, past and future cardiac surgery patients about cardiac surgery results. We feel it is critically important that the data that is reported be the highest quality data that is clear, unambiguous and presented in a format that is easily understood. The presentation of data that is not of statistical significance or is presented in a manner that is easy to misinterpret will be a disservice to the many patients who may look to the data reported on the MHCC website at a very stressful time in their lives or the lives of their loved ones.

MCSQI completely understands the dual responsibilities of the MHCC to have and review all appropriate risk adjusted data to award certificates of ongoing performance as stipulated by COMR 24.10, as well as presenting information in a transparent fashion on the MHCC website for public review. MCSQI believes the state needs to have all data it feels necessary to evaluate programs to award certificates of ongoing performance. However, we also believe that it is the responsibility of all stakeholders of cardiac surgery services in Maryland to present outcomes data that does not confuse, is understandable to all and is not able to be manipulated. After thoroughly reviewing the regulations contained in COMAR 24.10, reviewing your letter of October 26 and discussing this issue with MHCC officials we would like to formally present our concerns about the public reporting of cardiac surgery outcomes in the state of Maryland.

The consent form for the release of data that the 10 Maryland cardiac surgery programs have been asked to sign needs to be revised so that it clearly and accurately represents what data will be reported and the format in which it will appear. The consent form asks programs to agree to use information as specified in exhibit A in your letter while this information is not specified in the MHCC agreement with the STS. It is specified the stark presentation of mortality data as percentages or as observed to expected ratios in tabular form as demonstrated is rife for misinterpretation by the average Marylander.

Any reporting of mortality should be limited to statistically sound risk adjusted data. This needs to be specifically stipulated in the consent form. This data should be presented in a format that clearly states that it is risk adjusted and helps the reader to understand what risk adjustment means on a practical level including its inherent limitations.

MCSQI Correspondence to MHCC

We feel that the star ratings of the STS is the best way to present mortality data on the MHCC website. It shows how Maryland cardiac surgery programs are doing benchmarked against all cardiac surgery programs in the United States, it represents a far greater statistical fidelity than any comparison limited to 10 programs in a small state such as Maryland, it is data that the MHCC already receives and using, and it generates no additional costs for the state.

We would welcome the opportunity to work with the MHCC to design a format that allows public reporting of cardiac surgery mortality data that would alleviate our concerns.

Sincerely yours,

A handwritten signature in blue ink, appearing to read "John Conte" and "Diane Alejo" joined together.

John Victor Conte, MD and Diane Alejo on behalf of the MCSQI

Abstracts, Posters and Manuscripts

Posters

The Maryland Cardiac Surgery Quality Initiative: Collaborating to Improve Outcomes Statewide. Alejo D, Horvath KA, Salenger R, Conte JV, Whitman GR, Bobbitt J, Fonner CE. Poster: Society of Thoracic Surgeons Advances in Quality and Outcomes Meeting, 2015.

Are Surgeons Discussing STS Predicted Risk Scores? A Look across Maryland Hospitals. Alejo D, Bobbitt J, Costantini F, Brogan M, Getson K, Toro A, Romine H, Hanna G, Kakellos M, Roach D, Behrens K, Fonner CE. Poster: Society of Thoracic Surgeons Advances in Quality and Outcomes Meeting, 2016.

STS Data Managers & Surgeons Enhancing Quality Measurement – Statewide Review of Reasons for Prolonged Ventilation. Alejo D, Bobbitt J, Costantini F, Brogan M, Getson K, Toro A, Romine H, Hanna G, Kakellos M, Roach D, Behrens K, Fonner CE. Poster: Society of Thoracic Surgeons Advances in Quality and Outcomes Meeting, 2016

Sternal Wound Care Practices in Maryland Cardiac Surgery Programs
Society of Thoracic Surgeons Advances in Quality & Outcomes Meeting, October 2017
Demirci F, Alejo D, Fonner CE, Bobbitt J, Hanna G, Fiocco M, Getson K, Nelson M, Conte JV, Whitman GJ, Salenger R, Todd J, Wehberg K and the MCSQI Collaborative.

Variations in Perfusion Practice during Adult Cardiac Surgery: A Statewide Survey
Suarez-Pierre A, Wierschke C, Crawford TC, Zhou X, Fraser CD III, Alejo D, Fonner CE, Salenger R, Whitman GJ, Conte JV. 55th Annual Meeting of the Eastern Cardiothoracic Surgical Society (ECTSS). October 2017

Off-pump Coronary Artery Bypass in Octogenarians: Results of a Statewide, Matched Comparison

Suarez-Pierre A, Crawford TC, Fraser III CD, Lui, C, Zhou, Alejo, D, Fonner CE, Kwon CC, Taylor, B, Wehberg K, Conte JV, Fiocco, M, Whitman GJ, Salenger R, behalf of the MCSQI Collaborative. January 2018

Manuscripts

Variation In Red Blood Cell Transfusion Practices During Cardiac Surgery Among Centers In Maryland: Results From A State Quality Improvement

Collaborative. Magruder JT, Blasco-Colmenares E, Crawford TC, Alejo D, Conte JV, Salenger R, Fonner CE, Kwon CC, Bobbitt J, Brown JM, Nelson MG, Horvath KA, Whitman GR. Ann Thorac Surg. 2017 Jan;103(1):152-160. Epub 2016 Aug 20.

Less is More: Results of a statewide analysis of the impact of blood transfusion on CABG outcomes. Crawford TC, Magruder JT, Fraser CD, Suarez-Pierre A, Alejo D, Fonner CE, Canner J, Horvath K, Wehberg K, Taylor B, Kwon C, Whitman GJ, Conte JV, Salenger R. Ann Thorac Surg 2017 [in press].

Abstracts, Posters and Manuscripts

Podium Presentations:

Variation in Platelet Transfusion Practices During Cardiac Operations Among Centers in Maryland: Results from a State Quality-Improvement Collaborative

Zhou X, Fraser C, Suarez-Pierre A, Crawford T, Lui C, Alejo D, Conte J, Lawton J, Fonner C, Taylor B, Whitman G, Salenger, R. Society of Thoracic Surgeon (STS) 54th Annual Meeting, Fort Lauderdale, Florida, January 27-31, 2018.

Bilateral Internal Mammary Artery Utilization in Diabetics: Friend or Foe?

Crawford T, Zhou X, Fraser C, Suarez-Pierre A, Alejo D, Fonner C, Bobbitt J, Salenger R, Wehberg K, Kwon C, Taylor B, Fiocco M, Conte J, Whitman G. Society of Thoracic Surgeon (STS) 54th Annual Meeting, Fort Lauderdale, Florida, January 27-31, 2018.

MCSQI Membership

Hospitals

Johns Hopkins Hospital
 MedStar Union Memorial Hospital
 Peninsula Regional Medical Center
 Prince George's Hospital Center
 Sinai Hospital of Baltimore
 Suburban Hospital
 St. Joseph Medical Center
 University of Maryland Medical Center
 Washington Adventist Hospital
 Western Maryland Health System

Board Members

| | |
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| Jennifer Lawton, MD | Johns Hopkins Hospital |
| Michael Fiocco, MD | MedStar Union Memorial Hospital |
| Kurt Wehberg, MD, Chairman | Peninsula Regional Medical Center |
| Jamie Brown, MD | Prince George's Hospital Center |
| Christopher Kwon, MD | Sinai Hospital of Baltimore |
| James Matthew, MD | Suburban Hospital |
| Rawn Salenger, MD | St. Joseph Medical Center |
| Brad Taylor, MD | University of Maryland Medical Center |
| Paul Massimiano, MD | Washington Adventist Hospital |
| Mark Nelson, MD | Western Maryland Health System |
| Diane Alejo, Executive Director | MCSQI |

At Large Members

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| Christopher Haas, DO | Western Maryland Health System |
| | The Mended Hearts, Inc. |
| Eileen Fleck | Maryland Health Care Commission |

Treasurer

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| Rawn Salenger, MD | St. Joseph's Medical Center |
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Director of Analytics

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|-------------------|-------|
| Clifford E Fonner | MCSQI |
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MCSQI Organizational Structure

Executive Committee

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|---------------------|-----------------------------------|
| Kurt Wehberg, MD | Peninsula Regional Medical Center |
| Paul Massimiano, MD | Washington Adventist Hospital |
| Rawn Salenger, MD | St. Joseph's Medical Center |
| Diane Alejo | MCSQI |

Quality Committee

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|-------------------------------------|---------------------------|
| Diane Alejo, Co-Chair | Johns Hopkins Hospital |
| Glenn Whitman, MD, Co-Chair | Johns Hopkins Hospital |
| Rawn Salenger, MD, Workgroup Leader | St. Joseph Medical Center |

Regulatory Committee

| | |
|------------------------------|------------------------|
| John Conte, MD (thru 7/2017) | Johns Hopkins Hospital |
|------------------------------|------------------------|

Managed Care Committee

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|------------------|------------------------------------|
| Kurt Wehberg, MD | Peninsular Regional Medical Center |
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Data Management Committee

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|----------------------------|---------------------------------------|
| Jennifer Bobbitt, Co-Chair | Washington Adventist Hospital |
| Filiz Demirci, Co-Chair | University of Maryland Medical System |
| Clifford E. Fonner | MCSQI |
| Diane Alejo | MCSQI / Johns Hopkins Hospital |

Multi-disciplinary Clinical Committee

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|------------------|------------------------------------|
| Kurt Wehberg, MD | Peninsular Regional Medical Center |
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Perfusion Task Force

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|-----------------------------|-----------------------------|
| Christopher Kwon, MD, Chair | Sinai Hospital of Baltimore |
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Cardiac Anesthesia Task Force

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|------------------------------|-----------------------------------|
| Jaspreet Singh, MD, Co-Chair | Peninsula Regional Medical Center |
| Charles Brown, MD, Co-Chair | Johns Hopkins Hospital |

Research & Writing Committee

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|----------------------------------------|---------------------------|
| John Conte, MD, Co-Chair (thru 7/2017) | Johns Hopkins Hospital |
| Rawn Salenger, MD, Co-Chair | St. Joseph Medical Center |
| Diane Alejo, Co-Chair | Johns Hopkins Hospital |

Technology Transfer Committee

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|--------------------|------------------------|
| Diane Alejo, Chair | Johns Hopkins Hospital |
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Resources / Affiliates

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|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MCSQI Website | www.mcsqi.org |
| Maryland Health Care Commission (MHCC) | https://mhcc.maryland.gov |
| MHCC Quality Reports | https://healthcarequality.mhcc.maryland.gov |
| Maryland Health Services Cost Review Commission (HSCRC) | http://www.hscrc.state.md.us |
| Society of Thoracic Surgeons (STS) | http://www.sts.org |
| STS Public Reporting | http://www.sts.org/adult-public-reporting-module |
| Consumer Reports | http://www.consumerreports.org/health/doctors-hospitals/surgeon-ratings/ratings-of-bypass-surgeons.htm |
| National Quality Forum (NQF) | http://www.qualityforum.org |
| Improve Network | http://www.improvenetwork.org |
| Virginal Cardiac Services Quality Initiative (VCSQI) | http://www.vcsqi.org |

Testimonials

"It is gratifying to see Maryland's cardiac surgery programs working together to improve services for cardiac surgery patients. MCSQI's collaborative efforts bode well for future patients."

~ Eileen Fleck, Maryland Health Care Commission

"In this day and age with so much confrontation and dissension, it is comforting to note that the Maryland Cardiac Surgery Quality Initiative stands for just the opposite. Through the sharing of experience and data, collegiality and cooperation, MCSQI has a vision to improve the care that this state gives its cardiac patients. There are not many collaboratives throughout the country like this, and Maryland can count itself among those few that recognize the importance of this kind of united effort, where the only thing that matters is one common goal, better treatment for our patients."

~ Dr. Glenn Whitman, Johns Hopkins Hospital

Testimonials

“Following the pioneering efforts of Dr. Alfred Blalock at Johns Hopkins Hospital in the 1940’s and Dr. Joseph McLaughlin at University of Maryland in the 1970’s, the development of the Maryland Cardiac Surgery Quality Initiative (MCSQI) is probably the single most important advancement in the history of organization of cardiovascular medicine in the state of Maryland. The future of cardiac surgery in Maryland is dependent on statewide hospital and physician collaboration and sharing of “best practices.”

~Dr. Kurt Wehberg, Peninsula Medical Regional Center

“MCSQI provides the framework for an ongoing unprecedented level of collaboration between cardiac surgery programs in Maryland. By learning from experiences at other high quality programs, UM Saint Joseph Medical Center has been able to augment our own quality initiatives, and ultimately improve care for our patients.”

~ Dr. Rawn Salenger, St. Joseph Medical Center

“In 2013 Maryland created a statewide cardiovascular quality initiative providing a platform for in depth review of the care our patients receive who undergo heart surgery. Success of a program is measured by its outcomes. The Society of Thoracic Surgery (STS) sets the ‘National’ benchmarks to measure this success. The data managers in MCSQI are committed to ensuring Maryland programs succeed in data integrity, as this is the core of meaningful data. Data Managers at all ten sites in Maryland work collaboratively, review patient scenarios/data definitions, etc. to ensure STS registry data is accurate, complete, reproducible, and reflect the quality of care for patients in Maryland. The data managers play a vital role in supporting the quality improvement goals of MCSQI at a regional level and align themselves with other regional STS collaboratives at a national level! This collaborative and supportive approach is the key to MCSQI’s success in reporting surgical outcomes among the 10 programs in our State.”

~ Jennifer Bobbitt, Washington Adventist Hospital