

# **REPORT**

## **Board of Trustees of Catholic Medical Center**

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## I. BACKGROUND AND SCOPE OF REVIEW

Catholic Medical Center (“CMC”) was founded in 1974, when Sacred Heart Hospital and Notre Dame Hospital merged. With 330 beds, CMC is one of the largest medical centers in New Hampshire.

Over time, CMC developed clinical services which helped to define it on a local, regional, and national level. The Women’s Wellness & Fertility Center is the only Catholic OB-GYN practice in New England. The New England Weight Management Institute is the largest surgical weight loss program in the state. CMC’s Health Care for the Homeless Program, which provides primary care for individuals who are experiencing homelessness or who are at risk of becoming homeless, has been recognized as one of the top community health centers.

For decades, the New England Heart Institute, which later became the New England Heart & Vascular Institute (“NEHVI”), has been CMC’s flagship service. NEHVI is a nationally recognized center of excellence in the diagnosis and therapeutic management of cardiovascular disease. It provides a wide variety of services including diagnostic and therapeutic cardiac catheterization, electrophysiology procedures (including ablations), transcatheter aortic valve replacement (“TAVR”), thoracic endovascular aortic repair (“TEVAR”), open heart procedures, and vascular surgeries.

As a Catholic hospital, CMC adheres to the Ethical and Religious Directives for Catholic Health Care Services. According to its Mission Statement: “The heart of Catholic Medical Center is to carry out Christ’s healing ministry by offering Health, Healing, and Hope to every individual who seeks our care.” CMC’s Catholic affiliation and mission are critical to its identity. Expectations regarding how CMC operates are framed, for many people, by its Catholic identity.

During the last several years, CMC has faced a number of extremely difficult challenges. Some of these were known to, and addressed by, Senior Leadership<sup>1</sup> and the CMC Board of Trustees (“Board”); others played out in much more public ways. The pivotal incidents include: (1) the leave in 2018, taken by Yvon Baribeau, M.D., a longstanding cardiothoracic surgeon, his return, and Dr. Baribeau’s subsequent retirement/separation from CMC in 2019; (2) the filing of a *qui tam* complaint against CMC in 2018, and CMC’s \$3.8 million settlement of that complaint in February 2022; (3) a demand by Abramson, Brown & Dugan (“Abramson Firm”) in 2020 to resolve 17 malpractice claims involving Dr. Baribeau’s patients, and the subsequent mediation of these claims in October through December 2020; and (4) the failed CMC-Dartmouth-Hitchcock Health System merger in May 2022.

Each of these incidents is significant in its own right. Any one of them in isolation, and certainly several of these incidents in combination, should have served as an early warning signal and

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<sup>1</sup> For ease of reference, throughout the Report we have used the term “Senior Leadership” to refer collectively or individually to the Chief Executive Officer, Chief Operating Officer, Chief Medical Officer, Chief Financial Officer, Chief Nursing Officer, Senior Vice President, Physician Practice Network and Integration, and/or Executive Medical Director of NEHVI. We appreciate that the individuals serving in these positions have changed, in some instances multiple times, over the years. However, for the purpose of this Report, we did not think it was necessary, at least in most circumstances, to specifically identify the individuals involved.

triggered an in-depth analysis of organizational accountability and systemic opportunities for improvement. Instead of adopting a proactive, evaluative approach, CMC leadership adopted a more defensive strategy. Valuable time and credibility were lost in pursuit of that strategy.

The situation at CMC reached a crescendo in September 2022 when the *Boston Globe* Spotlight Team ran a series of articles about CMC and Dr. Baribeau. To his credit, Alex Walker, President and Chief Executive Officer, used the *Boston Globe* articles as the basis to recommend to the Board, that there be an independent, external review of its past and present clinical operations and processes. After making this recommendation, and to facilitate objectivity, Mr. Walker excused himself from the review process.<sup>2</sup> The Board then appointed a committee (“Special Board Committee”), comprised of three Board members, Pamela Diamantis (chair), Matthew Albuquerque, and Grace Tung, and Thomas Donovan, former Director of Charitable Trusts for the New Hampshire Department of Justice, to oversee the review.

The Board’s charge to the Special Committee was that the review should be fair, thorough, and objective, and should include the following: (1) an evaluation and assessment of the quality and safety of the current CMC cardiac surgery program; (2) an evaluation and assessment of the past and present policies, processes, and provider credentialing and peer review applicable to the Medical Staff, Hospital Administration, and the Board, as well as each group’s implementation of those policies, processes, and procedures; (3) an evaluation and assessment regarding the functioning of shared responsibilities, delegated authorities, oversight roles and communication structure among the Board, Medical Staff Leadership and Hospital Administration; and (4) an evaluation and assessment of Board governance, including the roles of Board committees. CMC contacted Horty, Springer & Mattern, P.C. (“HortySpringer”) to discuss a potential engagement for this independent, comprehensive review.<sup>3</sup>

HortySpringer is a nationally recognized health law firm that, since 1971, has been dedicated to working with hospitals, boards, and physician leaders, across the country to help patients receive high quality, safe, competent care. HortySpringer works to prepare hospital and medical staff bylaws and related governance documents including, but not limited to, credentialing, professional practice evaluation/peer review, professionalism, and practitioner health policies. HortySpringer provides legal counsel on physician contracting, fraud and abuse, compliance and other regulatory matters. Since its inception, HortySpringer has conducted national, regional, and local educational programs to train board members, administrators, and medical staff leaders on the law, core functions, and best practices. CMC confirmed HortySpringer’s engagement for this review on October 5, 2022.

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<sup>2</sup> As part of the review process, HortySpringer interviewed Mr. Walker. His interview spanned several meetings.

<sup>3</sup> In the early 2000s, HortySpringer served as outside counsel to CMC on a medical staff bylaws project and provided sporadic follow-up advice through January 2007. CMC leaders also occasionally attended HortySpringer’s national seminars.

## II. REVIEW PROCESS

### A. Process Followed by HorthySpringer

In furtherance of this review, HorthySpringer requested a wide array of documents from CMC and received significant support and cooperation in response to these document requests. It is estimated that HorthySpringer reviewed over 300,000 pages of documents. Documents requested, received, and reviewed are outlined in Attachment 1.

HorthySpringer was also provided with unfettered access to employees, including, but not limited to, members of Senior Leadership, the Board, and the Medical Executive Committee (“MEC”). Additionally, CMC assisted HorthySpringer in contacting individuals no longer with the organization who provided valuable and diverse opinions for this review.

Throughout the engagement, HorthySpringer conducted over 250 hours of interviews. These included 140 separate interviews of more than 90 individuals. The interviews were conducted on a confidential basis. Specifically, individuals were assured that neither their name nor their identity would be disclosed in any verbal or written report. HorthySpringer determined that this was important to encourage individuals to be candid and forthcoming in the information they provided.

Our interviews included:

- 47 Physicians and Advanced Practice Professionals (“APPs”);
- 34 Administrators, including Senior Leadership, Directors, and Other Managers;
- 39 individuals who are no longer associated with CMC;
- 5 current and former lay Board members<sup>4</sup>; and
- 3 patients or patient family members (who reached out to us).

HorthySpringer reached out to numerous individuals who had been interviewed by the *Boston Globe* or were cited in the *Boston Globe* articles. The vast majority of individuals contacted agreed to talk with us. Dr. Baribeau was invited to meet. On the advice of his attorney, he declined the invitation.

In light of information contained in the *Boston Globe* articles which alleged that individuals had suffered from retaliatory actions in the past, Timothy Riley, Chair of CMC Board, and Pamela Diamantis, Chair of the Special Board Committee, prepared a statement explaining HorthySpringer’s engagement and pledging that “there will be no retaliation, of any sort, against anyone who provides information as part of this review.” The statement invited individuals to

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<sup>4</sup> Some interviewees were counted twice because they fit more than one category.

contact them with concerns. A copy of this statement, which was provided to interviewees, is included as Attachment 2.

HortySpringer met with the Special Board Committee and the MEC<sup>5</sup> on a regular basis throughout the engagement. The purpose of these meetings was to ensure that the Special Board Committee and the MEC were aware of the review process.

## **B. Process Followed by NorthGauge**

A critical part of the HortySpringer engagement was to review the quality and safety of the current cardio thoracic (“CT”) surgery program.<sup>6</sup> NorthGauge Healthcare Advisors (“NorthGauge”) was retained to take the lead on this part of the engagement. NorthGauge was selected because of its extensive experience and expertise in working with hospitals and health systems across the country on complex peer review matters, including comprehensive reviews of cardiac surgery and other interventional/surgical programs.

Jon Moses, President and CEO of NorthGauge, actively participated in the review. Joseph Cleveland, Jr., M.D., a board certified, cardiothoracic surgeon, working in conjunction with NorthGauge, served as the clinical expert. Dr. Cleveland is the Chair of Surgery and Chief of the Division of CT Surgery at the University of Colorado School of Medicine. A copy of Mr. Moses’ curriculum vitae is included as Attachment 3 and a copy of Dr. Cleveland’s curriculum vitae is included as Attachment 4.

NorthGauge requested, obtained, and reviewed a variety of documents, including patient medical records, statistical data, and clinical privilege delineations. These documents are outlined in Attachment 5. NorthGauge and HortySpringer jointly conducted on-site interviews at CMC on February 6 through 8, 2023. These interviews included:

- 12 Physicians and APPs;
- 6 Other Clinical Staff; and
- 10 Administrators, including Senior Leadership, Directors, and Other Managers.<sup>7</sup>

## **C. Outcome of Engagement**

From the outset of the HortySpringer engagement, there have been ongoing discussions about how the findings, conclusions, and recommendations would be presented. It was agreed that HortySpringer would make a comprehensive presentation to the Special Board Committee; that presentation took place on April 21, 2023. It was also agreed that HortySpringer would make a joint presentation to the Board of CMC and the MEC; that presentation took place on May 25, 2023. In addition, HortySpringer was requested to prepare a single written report

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<sup>5</sup> We also met individually with almost every current member of the MEC.

<sup>6</sup> Other than to assess the peer review process, HortySpringer was not charged with reviewing medical procedures performed by Dr. Baribeau.

<sup>7</sup> Some interviewees were counted twice because they fit more than one category.

(“Report”) that would be shared with the Board, the MEC, and others as the Board deemed appropriate. This document is that Report.

HortySpringer recommended that if the Board intended to share the Report with third parties, confidentiality requirements should be respected. These confidentiality requirements include, but are not limited to, the New Hampshire peer review statute (see N.H. Rev. Stat. Ann. §151:13-A) which protects peer review documents, and the federal HIPAA Privacy Rule (see 45 C.F.R. parts 160-164 (“HIPAA”) which protects individual health information. Additionally, confidentiality provisions included in employment and/or employment-related agreements must be respected. The Report has been prepared in conformity with this advice.

In carrying out the Board’s charge, it was not possible to review every document and interview every individual with potentially relevant information. With that as a caveat, HortySpringer is confident that we have sufficient information to render findings, conclusions, and recommendations. Should there be additional information that impacts the findings, conclusions, and recommendations, HortySpringer reserves the right to update this Report.

### **III. LEGAL ANALYSIS AND CONFIDENTIALITY REQUIREMENTS**

#### **A. Medicare Conditions of Participation, State Law, and DNV Standards**

From the inception of licensing statutes, regulations, and accreditation standards, the governance structure of hospitals included the governing body, administrators, and the medical staff. This governance structure has often been referred to as a “three-legged stool.” In order for a hospital to be successful, each of these groups must be proficient with respect to its core functions; the team must be committed, strong, and balanced. There must also be an appreciation of and respect for the other members of the team – one cannot succeed without the strength, balance, and success of the others.

Hospital governance is addressed by the Medicare Conditions of Participation (“CoPs”). All hospitals participating in the Medicare program must adhere to the CoPs. The CoPs require that there be “an effective governing body that is legally responsible for the conduct of the hospital.” 42 C.F.R. §482.12. According to the CoPs, the board must ensure that there is a medical staff and that the medical staff “is accountable to the governing body for the quality of care provided to patients.” 42 C.F.R. §482.12(a). The CoPs also require that the board “appoint a chief executive officer who is responsible for managing the hospital.” 42 C.F.R. §482.12(b).

In furtherance of its responsibilities, the medical staff must make recommendations, to the governing body, regarding the grant of medical staff appointment and reappointment, and the grant of clinical privileges. The CoPs also require that the medical staff, with the approval of the governing body, adopt and enforce bylaws to carry out its responsibilities. See 42 C.F.R. §§482.22(a)(1); 482.22(a)(2); 482.22(b); 482.22(c); and 482.22(c)(6).

The role and responsibilities of the board, administration, and the medical staff are also addressed in the New Hampshire hospital licensing regulations. See N.H. Code Admin. R. Ann. He-P 802.16(a)(4) and 802.16(e)(1)(d). The accreditation standards for DNV, the organization that

accredits CMC and oversees CMC's compliance with the CoPs, also addresses the joint responsibility and accountability of the governing board, medical staff, and administration. See DNV GB.2 SR.1c.

## **B. Board Responsibilities**

On May 26, 2022, Thomas Donovan, then Director of Charitable Trusts,<sup>8</sup> was invited to address the Board of CMC.<sup>9</sup> His focus was the fiduciary duties of Board members, including the duty of care, duty of loyalty, and duty of obedience to the institution's mission. With respect to whether Board members have satisfied their duty of care, Mr. Donovan advised that consideration will be given to the duty of attention, including whether Board members showed up and actively participated in Board meetings. Consideration will also be given to the quality of Board members' decision-making and their duty not to waste assets.

Mr. Donovan made it clear that while the Charitable Trust Unit does not want Boards to be too risk averse, it will consider whether Board members listened to outside experts and challenged mixed signals between outside experts and management. Specifically, the Charitable Trust Unit expects Board members to: (a) continually undergo training and education programs; (b) hold hospital management accountable and bring their experience, interest, and expertise to their service; (c) find and consult outside experts who do not rubberstamp everything management wants to do but will dig in and give frank advice; (d) make decisions consistent with the hospital's mission; (e) question management if they are headed in the wrong direction; and (f) document tough questions in minutes.

At the May 26, 2022 meeting, Mr. Donovan also reminded the CMC Board that, in making decisions, Board members have a duty of obedience to the institution's mission. At CMC, the mission is "to carry out Christ's healing ministry by offering Health, Healing, and Hope to every individual who seeks our care." Mr. Donovan's guidance, then and now, is instructive. It provides an important framework within which this Report should be reviewed, analyzed, and used.

## **IV. FINDINGS AND CONCLUSIONS OF NORTHGAUGE**

CMC reports to the Society of Thoracic Surgeons ("STS") Database and the STS/ACC TVT Registry for TAVR. The cardiac surgery program has a 3-star rating from STS for coronary artery bypass grafting ("CABG"), which places it in the top tier of CABG programs in the United States for outcomes such as avoidance of mortality or major complications. The three CT surgeons who practice at CMC, Benjamin Westbrook, M.D., David Caparrelli, M.D., and Gerald Sardella, M.D., appear to have excellent technical skills and judgment.

Prior to the on-site visit, NorthGauge requested that CMC provide medical records for 15 cases, five for each of the CT surgeons, Drs. Westbrook, Caparrelli and Sardella. As requested by

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<sup>8</sup> As noted above, Mr. Donovan was appointed to the Special Board Committee at CMC to oversee the review undertaken by HortySpringer.

<sup>9</sup> Mr. Donovan is an expert in board governance. Inviting him to present to the Board is exactly the kind of education that HortySpringer is recommending. CMC should be commended for proactively providing this education.

NorthGauge, these were highly complex cases in which there had been complications. Dr. Cleveland performed a detailed case review for each of these 15 cases.<sup>10</sup> Dr. Cleveland determined that the standard of care had been met in each of the cases he reviewed.

Prior to the on-site visit, NorthGauge also requested that CMC provide medical records for three cases to evaluate the concern that patients had been unnecessarily “kept alive” to avoid the 30-day mortality reporting requirement. Dr. Cleveland performed a detailed case review for each of these three cases.<sup>11</sup> Dr. Cleveland determined that there was no evidence that patients were being kept alive to avoid the 30-day mortality reporting requirement. Furthermore, in reviewing case logs for the prior 18 months, there was no evidence of a pattern of patients dying at or near the 30-day time period. This also supports that there was no concerted effort to alter patient care to improve mortality rates.

On behalf of NorthGauge, Mr. Moses and Dr. Cleveland conducted a two-and-a-half-day on-site visit at CMC from February 6 through 8, 2023. During this on-site visit, Dr. Cleveland directly observed a CT surgery procedure and attended a structural heart meeting. HortySpringer participated in all aspects of this on-site visit with the exception of the intraoperative and postoperative surgical case review.

Dr. Cleveland confirmed that the CT surgery program and cardiology have a coordinated and supportive approach to aortic valve disease. The TAVR program is robust and the discussion of the structural heart patient at the meeting confirmed a collegial, patient-focused program. The institutional resources for cardiac surgery appear to be adequate.

Dr. Cleveland’s extensive case review, along with his observations and his assessment from the on-site review, highlight the complexity and breadth of cardiac surgery offered by CMC to patients in Southern New Hampshire/Northern New England. Based on a peer review of cases, a review of outcomes, limited observation of surgery, the training and experience of the CT surgeons, and information gleaned from interviews with physicians and staff during the on-site visit, the CT surgery program at CMC is high functioning with excellent outcomes.

Senior Leadership views the CT surgeons as “rock stars” who are “fighting above their weight class.” There is, however, an opportunity for improvement in the quality management and peer review programs. While the CT surgery program is safe and of high caliber today, it is imperative that systems, processes, and plans be reviewed and updated to ensure the CT surgery program remains at its current state.

## **V. FINDINGS AND CONCLUSIONS OF HORTYSPRINGER**

### **A. *Boston Globe* Articles**

As reported, the *Boston Globe* interviewed over 40 individuals who currently and previously had worked and practiced at CMC. The articles contained detailed information, including information

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<sup>10</sup> The medical record review contains protected health information that is confidential and privileged pursuant to HIPAA and therefore is not included in this Report.

<sup>11</sup> See footnote 11 above.

that appears to have come from confidential peer review meetings at CMC.<sup>12</sup> Based on our review, we found that the *Boston Globe* articles, in general, accurately reported critical patient care events and concerns at CMC.

At the same time, we found that in several key areas the articles did not completely report underlying events or fully reflect the complexities of hospital operations. HorthySpringer wanted to address those issues from the *Boston Globe* articles which, as confirmed during interviews, appeared to be misunderstood, including Dr. Baribeau’s malpractice history, allegations that patients were kept alive to avoid 30-day mortality reporting, and allegations that CMC put profits over patients. Other issues identified in the *Boston Globe* articles are addressed later in this Report.

With respect to his malpractice history, the *Boston Globe* articles asserted that Dr. Baribeau had “one of the worst malpractice records among all physicians in the United States.” This is not completely accurate. Prior to his departure from CMC in October 2019, Dr. Baribeau’s malpractice history was **not** particularly concerning or unusual. In fact, Dr. Baribeau had settled only four malpractice claims, including one settlement in September 2018. While it could be argued that Dr. Baribeau became an outlier, with respect to his malpractice history, **after** the settlement of the malpractice claims brought by the Abramson Firm **in 2020**, that was not the case prior to his departure from CMC in 2019.

Seventeen of the 21 malpractice claims that were settled on behalf of Dr. Baribeau were raised by the Abramson Firm in the fall of 2020, more than a year **after** Dr. Baribeau had left CMC. If any of these 17 malpractice claims had been settled during Dr. Baribeau’s tenure at CMC, per its consistent practice, the settlement would have been shared with the Credentials Committee, MEC, and Board. CMC cannot be faulted for failing to act on 17 of the 21 malpractice settlements, when these settlements were not entered into until after Dr. Baribeau left CMC. The New Hampshire Department of Justice, in its April 14, 2023 report, reached a similar conclusion with respect to Dr. Baribeau’s license.

However, as addressed in Section V.G of this Report, there were significant shortcomings in CMC’s Medical Staff Peer Review Policy<sup>13</sup> and process. Perhaps as a result of these shortcomings, some of Dr. Baribeau’s cases were not reviewed through the peer review process, including some cases that resulted in a death or serious complication. In fact, eight of the 17 malpractice claims brought by the Abramson Firm had not been reviewed through CMC’s peer review process. Although there is no evidence that the shortcomings in the Peer Review Policy or process were intentional or designed to protect Dr. Baribeau, they presented significant opportunities for improvement.

CMC’s response to the settlement of the malpractice claims also presented an opportunity for improvement. Specifically, CMC could have used the settlement of the 17 malpractice claims as

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<sup>12</sup> It should be noted that communicating confidential peer review information to third parties, including the media, is contrary to the New Hampshire peer review statute, which states that peer review records “shall be confidential.” N.H. Rev. Stat. Ann. §151:13-A.II.

<sup>13</sup> This policy was changed over time, including its name. For ease of reference, it will be referred to as the Peer Review Policy.

an opportunity to vigorously pursue a contemporary, pro-active effective quality and peer review process. We did not see evidence that this occurred.

The *Boston Globe* articles also asserted that patients at CMC were kept alive for more than 30 days solely for the purpose of manipulating reporting statistics. NorthGauge evaluated this allegation as part of its review, and found no evidence to support it. (See Section IV of the Report for further analysis of this issue.)

The *Boston Globe* articles also insinuated that CMC put profits over patients. In retrospect, while there were shortcomings in the peer review process, there also had been a good faith effort to improve the Peer Review Policy and process. There is no evidence that these shortcomings were purposeful or profit motivated. Rather, the peer review process was compromised both by process failures and by a breakdown in the relationships between Senior Leadership and members of the MEC which developed over years, and led to a significant lack of trust, respect, and communication.

## **B. Foundation for Quality of Care**

The physicians and APPs practicing at CMC (“Medical Staff members”), along with the nursing staff, and clinical support staff, are clinically expert, dedicated, and committed to CMC and its patients. The current Medical Staff, along with the nursing and clinical support staff, create a strong foundation for the consistent delivery of high-quality care to patients and for promptly and effectively addressing issues that may arise.

This foundation is also capable of supporting the systemic and overarching changes that CMC must make to recapture its mission, vision, and values, and ultimately reclaim its reputation. If CMC does not make significant, systemic, overarching changes, we would expect to see further deterioration in this foundation at continued risk to the organization.

## **C. Dr. Baribeau’s Clinical Practice<sup>14</sup>**

Dr. Baribeau was a highly skilled, technically proficient CT surgeon who was committed to his practice and his patients. Dr. Baribeau was demanding of himself and others and was perceived, by some, as arrogant. Dr. Baribeau’s philosophy of giving every patient a chance to survive led him to perform surgery on many patients for whom other surgeons would not have performed surgery.

Despite being highly skilled and technically proficient, Dr. Baribeau had occasional cases that raised serious concerns about his judgment and decision-making. When confronted with concerns about these cases, Dr. Baribeau rarely accepted responsibility and instead seemed to deflect attention away from himself by questioning the process and/or the care provided by others.

In retrospect, an argument could be made that more should have been done to discipline Dr. Baribeau over the years. However, the record clearly reflects that the underlying

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<sup>14</sup> The details about any peer review activities involving Dr. Baribeau are protected by the New Hampshire peer review statute, N.H. REV. STAT. ANN. § 151:13-A, and, as such, are not included in this Report.

recommendations for the actions taken in the earlier years, were made by the MEC and approved by the Board, as required by the Credentialing Policy and the CMC Corporate Bylaws. If more significant disciplinary action should have been taken against Dr. Baribeau, Senior Leadership, the MEC, and the Board, would have been responsible for doing so.

In 2016, as recommended by the MEC, and approved by the Board, Dr. Baribeau was reappointed, without any conditions. Reappointment with conditions would have helped to send a clearer message to Dr. Baribeau regarding expectations and the consequences if those conditions were not satisfied. We view the failure to impose conditions when Dr. Baribeau was reappointed in 2016 as a missed opportunity for improvement.

Between mid-2016 and 2018, no cases were referred to the MEC for a formal investigation and there was no other mechanism for oversight of the overall quality of care by the MEC. While there is no evidence that there was a deliberate attempt to keep information from the MEC or Board, this presented a significant opportunity for process improvement.

#### **D. Dr. Baribeau’s Employment**

In August 2013, CMC entered into an Asset Purchase Agreement with Cardiothoracic Surgical Associates. According to the Agreement, CMC Physician Practice Associates (“PPA”) would employ Dr. Westbrook and Dr. Baribeau for a period of five years. The employment contract entered into by PPA and Dr. Baribeau (“Baribeau Employment Agreement”) did not include a “no cause” termination provision. It also did not include any specific terms or conditions to reflect issues that had been recently addressed with Dr. Baribeau. It would have been advisable to build safeguards into the Baribeau Employment Agreement to allow PPA to more readily address any issues that might arise in the future.

#### **E. Dr. Baribeau’s Leave of Absence and Return to Practice**

The *Boston Globe* reported that Dr. Baribeau returned to work, after a medical leave, and continued to operate during the summer of 2018 while he was undergoing chemotherapy.<sup>15</sup> During this time, CMC followed its employment processes in allowing Dr. Baribeau to return to work from the leave. Dr. Baribeau did not report either his leave, or any change in his health status, to the Medical Staff Office at the time.<sup>16</sup> As a result, neither the MEC nor the Practitioner Health Committee<sup>17</sup> was involved in evaluating or monitoring his return to practice.

HortySpringer found no conclusory evidence that Dr. Baribeau was impaired or compromised during this period in a way that would have impacted the quality of care he provided to patients.

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<sup>15</sup> The details of any medical condition Dr. Baribeau might have had, and any treatment he might have undergone, are confidential, pursuant to HIPAA, and thus are not included in this Report.

<sup>16</sup> The Credentialing Policy only requires a member to request a leave of absence if the member will be away from patient care responsibilities for 90 days or longer. The reapplication form expressly requires that a member notify the Medical Staff Office of “any changes in my health status that might affect my ability to practice medicine....”

<sup>17</sup> The name of this committee has changed over time. For consistency, and to avoid confusion, for the purpose of this Report, it will be referred to as the Practitioner Health Committee.

Some staff who worked with Dr. Baribeau in CMC's CVOR<sup>18</sup> were adamant that there was no change in his performance. The documents also reflect that his practice partners had no concerns about his clinical performance or decision-making.

However, beginning in mid-July until mid-August 2018, nurses, APPs, and other physicians reported concerns about Dr. Baribeau. Dr. Baribeau continued to practice while these concerns were evaluated by Senior Leadership. Dr. Baribeau went on vacation on August 20, 2018. He did not return to work until after he was cleared through the employment process. After his return, Dr. Baribeau limited his practice to the Vein and Vascular Specialists Center. This was not a condition or limitation that was imposed on his clinical privileges by the Medical Staff; the change appears to have been an accommodation made by PPA to Dr. Baribeau.

CMC had a legitimate legal interest in protecting Dr. Baribeau's right to privacy under HIPAA. At the same time, when Dr. Baribeau requested to return to a clinical practice at CMC, including in the CVOR and the ICU, Senior Leadership had a responsibility to confirm that he was safe and competent to do so. The HIPAA Privacy Rule allows protected health information to be used and disclosed without the authorization of the individual for health care operations, which includes peer review. This responsibility could have been fulfilled with a referral to the Practitioner Health Committee, but no such referral was made.

Dr. Baribeau also had an obligation to report any change in his health status to the Medical Staff Office and/or the Practitioner Health Committee so that an assessment could be made as to whether he was safe and competent to practice, especially after the leave. There is no documentation to support that Dr. Baribeau provided notice to the Medical Staff Office of any change in his health status during this time frame.

## **F. Duties and Responsibilities of the Board**

Governance of hospitals is a complex, intricate, and multifaceted responsibility. The board must delegate many responsibilities to administration and the medical staff. However, the board is ultimately responsible for all decisions. The CoPs, New Hampshire hospital licensing regulations, and DNV standards all clearly require that the board is ultimately responsible for the conduct and operations of the hospital. In common parlance: "The buck stops with the Board."

This does not mean that the Board is required to second-guess all recommendations made by Senior Leadership or the Medical Staff. However, Board members must be vigilant in reviewing recommendations, they must ask probing questions, they must bring their experience to their service, and they must hold Senior Leadership and the Medical Staff accountable.

As supported by the actions taken with respect to Dr. Baribeau, at least in the earlier years, the evidence supports that the Board fulfilled its legal responsibilities. Board members asked Senior Leadership and the Medical Staff probing questions, modified and improved upon recommendations, and used and relied upon outside experts.

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<sup>18</sup> The CVORs were designated operating rooms used exclusively by the CT surgeons.

Thereafter, there was little or no information pertaining to Dr. Baribeau that was brought to the Board's attention. No recommendations were presented to the Board, which would have caused Board members to ask probing questions, modify and improve recommendations, or use outside experts.

Throughout the summer of 2018, it is not clear that the Board was kept apprised of any issues pertaining to Dr. Baribeau's health status. Any issues were managed exclusively by Senior Leadership. By the time the Board was apprised, Dr. Baribeau had received clearance to return to practice.

In 2020, the Board was informed of the 17 malpractice claims that had been raised by the Abramson Firm and the Board approved the settlement of those claims. At that time, it is not apparent that the Board asked probing questions of Senior Leadership about the underlying claims. It appears as though the Board accepted the representations made by Senior Leadership.

While some of those representations may have been accurate, it was also true that there were significant shortcomings in the peer review process as evidenced by the fact that eight of the 17 cases that were settled were not reviewed through that process. In conjunction with the settlement of the malpractice claims, the Board should have asked probing questions about the peer review process and held Senior Leadership and the Medical Staff accountable for reviewing and revising the peer review process.

Additionally, after being made aware of the *qui tam* action, and certainly after the settlement of that action in February 2022, the Board should have asked probing questions of Senior Leadership about the coverage arrangement at issue and held the responsible members of Senior Leadership accountable.

#### **G. Peer Review Process**

Our review of the peer review process at CMC focused on the application of the process to Dr. Baribeau. Our findings and conclusions are offered from that perspective. However, in light of the information received, we are concerned that the issues identified with respect to Dr. Baribeau also exist elsewhere in the organization. Recent feedback from an administrative director supports our concern.

The Board is responsible for overseeing the development and implementation of a robust, ongoing peer review process. Along with the credentialing process, the peer review process is one of the core functions that the Board delegates to the Medical Staff. This function directly impacts the quality of patient care.

The peer review process at CMC was carried out in accordance with the Credentialing Policy and the Peer Review Policy. The Credentialing Policy was triggered when there were more serious concerns that required a formal investigation and perhaps the imposition of disciplinary action. As drafted, the MEC was actively involved in this process.

The Peer Review Policy provided guidance for the review of lower-level concerns. It did not include an active role for the MEC. Rather, the MEC served more as an appeal body; it only reviewed certain cases. The MEC could approve the use of an external expert for the review of a case; however, the results of the external review were not automatically shared with the MEC. The Peer Review Policy included an escalation process.

Even after the Peer Review Policy was revised, and the Peer Review Committee was formed in the fall of 2017, that committee also did not oversee, and was not responsible for, the entirety of the peer review process. Rather, the Peer Review Committee only reviewed cases in which the reviewer had assigned a certain score or if the physician, who was the subject of the review, “appealed” a rating. This is not a common practice.

As a result, neither the MEC nor the Peer Review Committee had a comprehensive understanding of Dr. Baribeau’s practice. There is no evidence that the Peer Review Policy was drafted to protect Dr. Baribeau. There is also no evidence that the implementation of the Peer Review Policy was unique to Dr. Baribeau.

At CMC, the rigor and effectiveness of the peer review process depended, in large part, on the reporting of cases through 2BSafe which was inconsistent at best. It also depended on the substantive review performed by the section chief or department chair. If these reviews were inadequate, the process would fail because there was no oversight by the MEC, Peer Review Committee, or any other Medical Staff Committee. For these reasons, as outlined in Recommendation F, HorthySpringer is recommending that the Peer Review Policy be revised.

Other issues also impacted the effectiveness of the peer review process at CMC. For instance, the scoring of cases became a major distraction most likely because certain scores had specific consequences.<sup>19</sup> Thus, assigning a score to a particular case seemed to be the primary focus of the peer review process instead of the more productive, important function of identifying opportunities for improvement that might exist for cases under review.

Additionally, at CMC, the way in which conflicts of interest were addressed fueled suspicion about the peer review process. There is evidence to support that, at CMC, conflicts seemed to be both undermanaged (i.e., relying almost exclusively on the section chief to perform reviews) and overmanaged (i.e., determining that the department chair, who had reviewed a case, could not attend a meeting where that review was being discussed). The Peer Review Policy should provide additional guidance on how to appropriately manage conflicts of interest. (See Recommendation F.)

Morbidity and Mortality (“M&M”) Conferences are designed to give Medical Staff members an opportunity to learn about interesting and complicated cases and consider process changes. As such, they are a valuable part of the overall peer review process. Importantly, however, M&M Conferences are not designed, and should not be used, as a substitute for individual focused peer review. The Peer Review Policy should provide guidance on how M&M Conferences are conducted and documented. It should also articulate a referral process from individual focused peer review to M&M Conferences and vice versa. (See Recommendation F.)

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<sup>19</sup> This is a common problem with peer review policies.

It was reported that M&M Conferences were more or less discontinued in 2020 because of COVID. After the *Boston Globe* articles, and the breach of confidentiality, there was an unwillingness on the part of Medical Staff members to again participate in M&M Conferences. The reluctance to continue M&M Conferences because of the breach of confidentiality is understandable. However, the reluctance must be overcome to serve the important goal of identifying and addressing system's issues, educating providers, improving patient care, and, in some instances, identifying cases that should be referred for further review consistent with the Peer Review Policy.

All hospitals have an incident reporting system that refers cases into the peer review process. However, at CMC, since there are no standard triggers (e.g., mortality or serious complication), 2BSafe reports are the main way to trigger the peer review process. Several critical steps should be considered to revise the 2BSafe reporting process. (See Recommendation H.)

## **H. Perceived/Real Culture of Retaliation**

The *Boston Globe* articles asserted that CMC retaliated against individuals who criticized Dr. Baribeau. Over time, a dangerous divide developed between Senior Leadership and certain members of the MEC. The divide was detrimental to the peer review process and resulted in actions being taken by CMC that were viewed, by many, as retaliatory.

One of the allegations of retaliation related to Raef Fahmy, DPM, a long-standing member of the Medical Staff who also held various leadership positions, including as a Board member. Dr. Fahmy was appointed to serve as Chief Medical Officer in 2012. He also served as Chief Medical Information Officer.

In late 2014, Dr. Fahmy spoke up at an MEC meeting and suggested that additional action be taken with respect to a pending peer review matter. Shortly thereafter, Dr. Fahmy was removed from his position as Chief Medical Officer and was made a full-time Chief Medical Information Officer. Around the same time, Dr. Fahmy approached several Board members to report his concerns about the same peer review matter. Dr. Fahmy was given a letter questioning his actions in contacting Board members.

For reasons which may have been unrelated to the way in which he managed concerns about the pending peer review matter, Senior Leadership decided that Dr. Fahmy was not a good fit for the Chief Medical Officer position. That was their prerogative. However, instead of appearing to demote Dr. Fahmy for speaking out or reprimanding him for raising concerns to Board members, Senior Leadership should have done more to explore those concerns. The timing of his demotion and his reprimand are concerning.

Another allegation of potential retaliation pertained to David Goldberg, M.D., an interventional cardiologist, who was employed by PPA and who, in 2016, was serving as Vice President of the Medical Staff. Dr. Goldberg had been slated to become the next President of the Medical Staff beginning January 1, 2017. At the December 20, 2016 meeting of the MEC, Dr. Thomas Kleeman, then President of the Medical Staff, announced Dr. Goldberg's departure from CMC. This was

described as an employment matter and members were told that no additional information could be provided.

Allegations of retaliation were also raised by another member of the Medical Staff who had served in various leadership roles, including Chair of the Peer Review Committee, and who was also employed by PPA. In 2018, this physician received a letter which explained that the renewal of his employment contract had been delayed, in part, because of his actions in a peer review matter and because of a pattern of incidents involving his behavior.

The MEC was unaware of any underlying behavioral complaints related to Dr. Goldberg or this other physician. Since they were both members of the Medical Staff, PPA should have shared any complaints about them with the MEC. Then, the MEC could have addressed the complaints either on its own or in conjunction with PPA. By compartmentalizing “behavioral” issues and dealing with them exclusively through PPA, the credentialing and peer review processes were devoid of potentially important information.

PPA has the right to employ, or not employ, physicians as it sees fit. However, Dr. Goldberg’s sudden and unexpected departure resulted in the term “Goldberged” being coined; the term is now used to explain whenever a physician leaves CMC without explanation. Dr. Goldberg’s sudden departure was also viewed as an event that was carried out by Senior Leadership against a duly elected Medical Staff officer to silence his complaints against Dr. Baribeau. Similarly, threatening a physician’s employment because of his involvement in a peer review matter sent the wrong message to him and to other members of the Medical Staff. These events fostered distrust of Senior Leadership and fed into the perception of a culture of retaliation.

## **I. Coverage Arrangement with Dr. Paicopolis**

Mary-Clare Paicopolis, M.D. is a Board-certified cardiologist whose primary practice is at Lakes Regional General Hospital in Laconia, New Hampshire. She referred her patients who needed further cardiac testing and interventional procedures to CMC and other hospitals. As a solo practitioner, Dr. Paicopolis needed a physician to cover her practice and PPA provided coverage for her.

A *qui tam* complaint was filed against CMC in June 2018 and included allegations about the coverage arrangement with Dr. Paicopolis. CMC settled the *qui tam* action in February 2022 for \$3.8 million. The explanation to Medical Staff members, regarding the *qui tam* settlement, was that it was a technical issue. This explanation was not found to be credible and, instead, fueled distrust of Senior Leadership by some members of the Medical Staff.

With specific reference to Dr. Paicopolis, in an e-mail dated June 20, 2019, PPA employees were warned “negative comments or criticisms of any of our colleagues, including referring providers, is unacceptable and could lead to disciplinary action.” This kind of e-mail fostered the narrative of culture of fear and retaliation at CMC.

The Board was informed of the settlement of the *qui tam* action. However, it does not appear as though Board members inquired of Senior Leadership how and why the coverage arrangement was

entered into, or how it continued for so long without internal detection and further review. Perhaps most importantly, there is no information to support that the Board held anyone accountable for this arrangement.

## **J. Stroke Certification Survey**

CMC's stroke program was surveyed by The Joint Commission in October 2021.<sup>20</sup> As part of the survey, signed and dated OPPE reports were provided to the surveyor. The OPPE reports did not accurately reflect a review that had occurred; they had been signed and dated during the survey to avoid a citation.<sup>21</sup>

This matter was brought to the attention of Jessica Arvanitis, Compliance & Privacy Officer, Deputy General Counsel, who timely and thoroughly addressed the matter from a compliance perspective and reported it through the appropriate channels, including notification to The Joint Commission. The Board was informed about what had occurred. However, the Board was not advised of the names or positions of the individuals involved. The MEC was not informed of this incident until April 2023.

The individuals involved in this incident remained in their positions and continued to serve on the Board's Quality Management and Patient Experience Committee. Given the position of the individuals who were involved in this incident, it would have been prudent to share their identity, at least, with members of the Board Executive Committee and Medical Staff officers.

The underlying offense of misrepresenting documents submitted to The Joint Commission during a survey is very serious. Action was taken with respect to both employees. More rigorous corrective action, including a demotion, focused education, and/or resignation from key committees and leadership positions, should have been considered given the serious nature of their actions.

## **K. "Stay in Your Lane"**

The most valuable resources a hospital has are its employees and medical staff. A successful hospital must train, support, educate, and empower its Medical Staff leaders, including its employed physicians and APPs ("employed practitioners"), so they can fulfill the core functions of a self-governing Medical Staff. Hospitals, like CMC, which have a large number of employed practitioners, must strike a balance between their role as employer and their obligation to support and empower Medical Staff leaders. An organization that wields too much control over its employed practitioners risks creating a Medical Staff that is unwilling or unable to fulfill its core functions as outlined in the CoPs, accreditation standards, and state law.

At CMC, Senior Leadership seemed focused on controlling employed practitioners. For instance, it was reported that Senior Leadership did not welcome, invite, or value the input of employed practitioners, but rather made comments such as: "the best employees are the ones I never hear from." Employed practitioners also reported feeling "slapped" or "smacked down" when making

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<sup>20</sup> This survey was conducted before CMC elected to change to accreditation by DNV.

<sup>21</sup> CMC had been cited by The Joint Commission in 2020 for deficiencies in its OPPE process.

suggestions or raising concerns to Senior Leadership. It was reported by employed practitioners that Senior Leadership told them to “stay in your lane.”

One member of Senior Leadership routinely wielded their authority in what some interviewees described as an authoritarian, bullying, disrespectful manner. Knocking people down in an effort to control them is highly destructive, inconsistent with CMC’s mission, and counterproductive to the goal of building a cohesive team.

Well qualified, committed physicians and APPs are difficult to find and harder to keep. Senior Leadership should take steps to develop and maintain meaningful relationships with Medical Staff members (including but not limited to their employed practitioners), by engaging them in problem solving rather than sidelining them. Ignoring or, worse, retaliating against those efforts, stymies innovation and creativity to the detriment of the organization.

## **L. Quality Management**

The CoPs require that hospitals have a quality assessment and performance improvement (“QAPI”) program that is data driven and focused on indicators. The QAPI program must reflect the complexity of the services provided at the hospital.

According to a March 9, 2023 Memorandum from CMS, QAPI deficiencies are the third most frequently cited problem. A hospital with a well-designed and well-maintained QAPI program can significantly enhance its ability to provide high quality safe care to patients. A strong QAPI program requires leaders who have the appropriate training, expertise, and commitment.

From the information received during the review, it appears that CMC’s QAPI program lacks the necessary leadership. By way of example only, TJC OPPE deficiency from 2020 has still not been corrected. Even though CMC is no longer accredited by TJC, a robust OPPE process is an important component of the peer review process.

Critically, the QAPI program also does not appear to be data driven, focused on indicators, or reflective of the acuity of patients treated at CMC. A review of the Quality Management and Patient Experience Committee minutes also reflects that there is a lack of relevant quality information/metrics being presented.

Furthermore, some of the information received from Quality Management, as part of this review, was disorganized and disjointed and appeared not to be stored in a central location. Additionally, it took several months, and multiple requests, for basic information from Quality Management to be shared with us.<sup>22</sup>

Antiquated information systems at CMC make it challenging to efficiently extract data in support of quality monitoring. Even with this challenge, QAPI leadership must still be committed to finding and mining data to support this fundamental program. The peer review process is dependent on the QAPI program. If the QAPI program is not revamped and improved, the peer review process will suffer. (See Recommendation G.)

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<sup>22</sup> This is a marked exception from the response received to other requests from HortySpringer.

## **M. Recruitment Decisions**

The recruitment of physicians and APPs is a critical process because it provides a gateway into the hospital. Thus, like credentialing and peer review, recruitment serves as the foundation for the quality of care that is delivered. At a minimum, recruitment requires a sophisticated understanding of the credentialing process including red flags and warning signs. It is imperative that recruiters for PPA be familiar with the eligibility criteria in the Credentialing Policy and understand that individuals who fail to satisfy these criteria will not be granted appointment or clinical privileges unless a waiver is granted by the Board after considering the findings of the Credentials Committee and MEC.

Throughout our review, multiple individuals reported concerns about PPA's recruitment process. It was also reported that PPA's recruitment process operates separate and apart from CMC's recruitment process. If these reports are accurate, that would be an unusual practice.

When mistakes are made in the recruitment process, it is destabilizing to the clinical service and staff morale, and has the potential to compromise the quality of patient care. An occasional bad employment decision is understandable. The frequency of the mistakes or miscalculations at CMC raises concerns about the underlying process itself. Currently, CMC policies do not reflect a path to integrate and coordinate the recruitment and credentialing processes. This is a shortcoming in the process and should be addressed.

## **N. Employed Practitioners**

Employed practitioners are required to abide by CMC's policies and procedures that apply to all employees. Employed practitioners are also required to abide by the Medical Staff Bylaws, and other Medical Staff policies and procedures. In the past, when issues were raised involving an employed practitioner, it was unclear whether the issue should be addressed by PPA, the Medical Staff, or some combination of PPA and the Medical Staff.

In contrast to the approach currently taken by PPA, we recommend an approach in which there is coordination of processes and a sharing of information. This approach enables both the employer, in this case PPA, and the Medical Staff (e.g., MEC or Practitioner Health Committee) to be kept informed of the underlying issues, and involved in the collegial efforts, progressive steps, and, if needed, discipline.

Following this approach, issues pertaining to professional conduct for all physicians and APPs, including employed practitioners, would be addressed in accordance with the Medical Staff Professionalism Policy; clinical matters would be addressed in accordance with a Medical Staff Peer Review Policy; and health issues would be addressed in accordance with the Medical Staff Practitioner Health Policy. (See Recommendation F and Attachment 6 for more details on the policies we are recommending that CMC adopt.) Importantly, these policies include language that allows notice to, and the involvement of, PPA, as appropriate. This approach has the added benefit of ensuring that issues pertaining to all members of the Medical Staff and APPs are handled in a

consistent fashion. PPA retains the authority to take employment actions with respect to employed practitioners.

A related issue is that the dual lines of authority that have developed over time between PPA and Medical Staff Leadership have compromised the ability of Medical Staff Leaders to fulfill their responsibilities. Compensation paid to employed practitioners provides Senior Leadership with leverage and interferes with the openness and honesty that is essential to effective quality oversight.

## **O. Medical Staff: Composition, Functioning and Engagement**

During the review, concerns were raised by members of the MEC about the composition and size of the MEC, including that there were too many members of Senior Leadership who attended MEC meetings. It is unusual for the Chief Financial Officer, Chief Operating Officer, and Senior Vice President, Physician Practice Network to be members of the MEC.<sup>23</sup> Concerns were also raised by MEC members and others, that employed practitioners on the MEC were reluctant to speak up for fear of incurring the wrath of their employer. Along these lines, several employed practitioners provided specific examples in which they felt “chastised” or “scolded” for speaking out at an MEC meeting.

Many MEC members reported that the meetings felt scripted and that there was little room for discussion. Members of the MEC believed that they were rarely presented with meaningful issues to decide but rather were presented with decisions that had been made. In 2021, a member of Senior Leadership, who has since retired, praised the MEC for being “the best functioning MEC in all my time at CMC.” This comment was not viewed, by members of the MEC, as a compliment, but was understood as encouragement to go along and not raise concerns.

Consistent with the CoPs, state regulations, and DNV standards, the Medical Staff, through its leadership on the MEC and other Medical Staff Committees, is responsible for performing core functions as delegated by the Board including but not limited to credentialing, privileging, and peer review. Most physicians and APPs do not learn about these core functions during their formal education or training. The Board and Senior Leadership should take steps to make sure medical staff members are provided with this training prior to, or during, their service as an officer, department chair, section chief, or a member of a Medical Staff committee.

It is also incumbent on Medical Staff members who serve in a leadership role, such as an officer, department chair, section chief, or a member of a Medical Staff committee, to accept the responsibilities delegated by the Board. Medical Staff members must be willing to actively participate in the education and training offered and to invest the time and energy necessary to carry out these responsibilities in a manner that fosters and facilitates the delivery of safe, competent care and the orderly and effective operation of the hospital.

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<sup>23</sup> In many organizations, the Chief Financial Officer, Chief Operating Officer, and Senior Vice President, Physician Practice Network would give their respective reports and then leave the meeting. They would not even be considered *ex officio* members of the MEC.

## **P. Strategic Plan**

There is a common belief across all levels of the organization that CMC does not have a clear strategic plan. Without a strategic plan, focus and allocation of resources lacks rationale and leads to misunderstanding and miscommunication internally. This makes it difficult to align the efforts of team members and to effectively engage in performance improvement and quality management functions in support of CMC's mission.

There is a widespread perception that NEHVI receives too much in the way of accolades, resources, and attention at the expense of other programs. As part of its strategic plan, CMC should strive to recognize and provide the other programs with more, including accolades, attention and recognition, which costs little in terms of financial expenditures. Praising others for their efforts and accomplishments goes a long way in building relationships and trust.

## **VI. RECOMMENDATIONS**

Based on the above findings and conclusions, we offer the following recommendations:

### **A. Short-Term Goals**

It is imperative that CMC develop an action plan with short-term goals and objectives in support of rapid, critical, systemic changes to drive organizational direction over the next 6-12 months. These goals should prioritize recommendations from this Report and identify teams that will be responsible for carrying out the plan. CMC must commit the necessary resources to follow through with these recommendations. CMC must also use the action plan as a stepping-stone to a longer term strategic plan.

An immediate goal might also be to develop and deliver internal and public messages to follow up on this Report. In order for CMC to maintain the moral high ground, the messages will have to be candid and honest. In order to move forward, the messages will have to acknowledge and accept accountability for past actions.

Additionally, as a short-term goal, CMC should immediately reinstitute M&M Conferences and peer review activities as outlined in the current documents and policies. While these processes need to be revised, CMC cannot wait until the revision process is complete to resume M&M Conferences or reinstitute the Peer Review Committee and process. Ideally, a Physician Champion can be identified who is committed to these processes and is willing to restart and reinvigorate these critical functions.

### **B. Organization, Structure, and Composition of Senior Leadership Team**

The organizational structure at CMC presents an opportunity for improvement. Even with respect to key leadership positions, employed practitioners were unable to identify who reported to whom. While some of this may have been the result of recent changes in personnel, it was nevertheless worth noting. As part of the short and longer term strategy,

CMC should consider restructuring and simplifying its organizational foundation while focusing on getting the right people in the right positions to make needed changes.

Recent Chief Medical Officers described feeling powerless and without authority over physicians employed by PPA. Going forward, the physician who serves in this role must be involved in clinical, behavioral, and health issues for all physicians and APPs, including those who are employed by PPA. Therefore, consideration should be given to employing a “Chief Physician Executive” who has involvement in and oversight of all physicians and APPs who practice at CMC.

As CMC moves forward, an early step should be to build and coalesce around an innovative, diverse, cohesive management team which may include some current members of Senior Leadership. There are currently vacancies in the Chief Medical Officer and Chief Operating Officer positions. In order to be successful, significant changes should also be considered. These changes are necessary to demonstrate the Board’s commitment to move in a new direction as CMC refocuses on its mission, vision, and values.

**C. Provide Education**

CMC needs to provide education for the Board, Senior Leadership, and the Medical Staff, including with respect to the core duties and responsibilities. This education can also be used to explain the proposed path forward.

**D. Review Corporate Bylaws**

In order to fulfill the intent of the CoPs, and its mission, the Board should revise and update the Corporate Bylaws, including the duties of the Quality Management and Patient Experience Committee, to clearly reflect the following: (1) oversight of credentialing and peer review functions; (2) oversight of PPA hiring for compliance with Medical Staff standards and the Hospital’s mission; (3) service on MEC and other key Medical Staff Committees; and (4) receipt of MEC recommendations – it will become the Board’s expert body on credentialing and peer review.

Having Board member(s) serve on key Medical Staff committees is useful so they can better understand issues being addressed by the Medical Staff and help Board members develop expertise in the core Medical Staff functions. Additionally, having a Board committee, such as a Quality Management and Patient Experience Committee, that is responsible for, among other things, receiving, reviewing, and acting on all recommendations of the MEC, is a useful way to educate Board members and facilitate relationships between the Board and the MEC.

**E. Update Medical Staff Bylaws and Credentialing Policy**

The Medical Staff Bylaws address matters primarily relating to Medical Staff organization and governance, such as Medical Staff categories, qualifications, duties and responsibilities

of Medical Staff Leaders; and provisions pertaining to meetings of the Medical Staff, departments, and committees, such as voting and quorum requirements.

The Credentialing Policy is one of the most important of the Medical Staff governance documents. It should reflect recommended best practices on matters relating to appointment, reappointment, clinical privileges, collegial intervention and progressive steps, as well as investigations, hearings and appeals.

The Medical Staff Bylaws and Credentialing Policy should be reviewed, revised and updated. This process requires the active involvement of MEC members, other physician leaders, and Senior Leadership. The Director of Medical Staff Services and Chief Medical Officer are also critical to this process. Specific recommendations for revisions to these documents are outlined in Attachment 6.

#### **F. Develop New Peer Review Policies**

As a priority, with the active participation of MEC members, other physician leaders, Board members, Senior Leadership and Administrators, CMC must rewrite its peer review policies including the Professional Practice Evaluation Policy, Practitioner Health Policy, and Professionalism Policy. Those involved in this process must be aligned, mission-driven, and committed to adopting contemporary principles, objective standards, and recommended best practices. The Director of Medical Staff Services and Chief Medical Officer should support and guide this process. A description of these policies is included in Attachment 6.

We recommend that the Peer Review Committee oversee the peer review process for all members of the Medical Staff regardless of their employment status. Peer review conducted by PPA, or contract groups, should be integrated into the Medical Staff process; it should not be conducted in isolation from this process. The Peer Review Committee should report to the MEC and the Board, through the Quality Management and Patient Experience Committee. This report should address individual practitioner issues and system's issues.

We strongly recommend moving away from scoring in particular cases and instead using a review form that helps identify issues and opportunities for improvement in care.

The revised Peer Review Policy should provide guidance on how to appropriately manage conflicts of interest, including allowing individuals who have or may have a conflict of interest to answer questions and provide information. The ability to use an external peer review organization is also important for an effective and credible peer review process.

The Peer Review Policy should clearly articulate the referral process to and from M&M Conferences. It should also address confidentiality and provide guidance on how M&M Conferences are conducted.

## **G. Revise Quality Management Program**

There is a substantial opportunity for improvement in CMC's Quality Management Program. It is important to have the right people, who have the right education, training, experience, and commitment, serving in leadership roles in the Quality Management Program. As noted above, it appears that CMC's QAPI program lacks the necessary leadership.

The goals and objectives for Quality Management should also be reevaluated to better support and strengthen the QAPI program. Leaders in Quality Management must then be held accountable for achieving these goals and objectives. CMC may also need to provide additional resources and training for Quality Management to fulfill data needs, and to empower and support revised quality and peer review programs.

## **H. Revise 2BSafe Reporting**

The numerous issues outlined in this Report support the need to substantially revise the 2BSafe reporting program and process. This includes the name that is used, the form for reporting, and the process for the screening of reports. It is also imperative that individuals who file a 2BSafe report receive feedback so their effort can be recognized and thereby encouraged. Additionally, the person or body that reviews 2BSafe reports should be a physician or physician led rather than nurse/administration directed.

## **I. Other Operational Issues**

Medical Staff meeting procedures should be evaluated and redesigned, including agendas and minutes, to help ensure that actions and recommendations have a responsible party and date of completion and there is continuity from one meeting to the next.

Policies and procedures should be reevaluated and redesigned to help the flow of information from one Medical Staff committee to the next. This will also help to facilitate the flow of critical information to the Board, on a regular basis, so it remains in a position to fulfill its responsibilities.

## **VII. CONCLUSION<sup>24</sup>**

We consider it a professional privilege to have had the opportunity to conduct this review. We are grateful to the Special Committee, Board, Senior Leadership, and the MEC for their trust in HortySpringer and their repeated expectation that our work be independent and objective. We are also grateful to all of the individuals who took the time to meet with us and trust us with their concerns and with their praise of, and hopes for, CMC.

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We would like to recognize and thank Jessica Arvanitis, Compliance & Privacy Officer/Deputy General Counsel, Jason Cole, Vice President, General Counsel and Kimberly Herrera, Director, Medical Staff Support Services from CMC for their timely, candid, consistent support throughout the review. A special thanks is also owed to Jon Moses, President and CEO of NorthGauge who was instrumental throughout the review process in providing input, insight, and perspective.

We appreciate that this Report may be difficult to read and that the recommendations may be even harder to implement. It is our hope and expectation that the Report will serve as a roadmap for the future. We have full confidence that CMC can survive and thrive with a commitment to change.

As an important next step, it will be necessary for Board members, Senior Leadership and MEC members to recognize, accept, and acknowledge their responsibility for the events of the past. Then, and only then, can the healing begin in earnest. It will also be necessary for Board members, Senior Leadership and MEC members to be willing to learn from the past and let go of established assumptions, so that going forward, progress is possible.

As noted throughout the Report, the greatest failure at CMC was not bad faith, malicious intent, or inappropriate motives. Rather, the greatest failure was the lack of trust and the lack of respect that hardened over time among the various leaders at CMC. Trust and respect cannot be demanded of others. Trust and respect must be earned, over time, and will flow organically from relationships that are candid, authentic and integrity based.

Respectfully submitted this 26<sup>th</sup> day of May, 2023.



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Susan Lapenta  
Horty, Springer & Mattern, P.C.



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Henry Casale  
Horty, Springer & Mattern, P.C.

## ATTACHMENT 1

### DOCUMENTS REVIEWED BY HORTYSPRINGER

As part of its review, HortySpringer requested, received and reviewed documents, including, but are not limited to, the following:

1. Dr. Baribeau's credentials, quality, peer review and employment files;
2. Credentials and Human Resource files for other physicians, APPs, and CMC employees;
3. Meeting minutes from 2012 to the present for the Credentials Committee, MEC, Practitioner Health Committee, Peer Review Committee, Risk Management and Quality Management Committee, CMC Board of Trustees, CMC Board Executive Committee, Quality Management and Patient Experience Committee;
4. Relevant e-mails from 18 custodians;
5. Employment contracts for various physicians;
6. Information from malpractice settlements;
7. Information relating to the *qui tam* complaint and settlement;
8. Information from surveys performed by The Joint Commission;
9. Minutes from Root Cause Analyses and Morbidity and Mortality Conferences;
10. CMC Hospital Corporate Bylaws;
11. CMC Medical Staff Bylaws, Credentialing Policy, Peer Review Policy, Practitioner Health Policy, Professional Conduct Policy;
12. Employee Engagement Survey;
13. 2BSafe Reports;
14. Information requested by and provided to the New Hampshire Board of Medicine;
15. Information provided by individuals who were interviewed including news articles, e-mails, and memos; and
16. Chartis and other consultant reports.

## ATTACHMENT 2



### CONFIDENTIAL AND PRIVILEGED

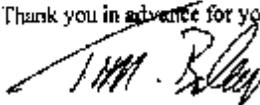
In response to questions that have been raised, including by the *Boston Globe*, the Board of Trustees of Catholic Medical Center has engaged the services of Harty, Springer & Matern, a nationally recognized health law firm. HartySpringer will conduct an independent review of our policies, practices, and procedures and evaluate the systems CMC has in place to ensure safe, competent, quality patient care.

In order for this review to be successful, HartySpringer needs to have access to any information they deem relevant. We have pledged our full support in this regard. As part of their review, HartySpringer will be conducting interviews to learn about questions or concerns staff and others might have now or may have had in the past. As you meet with them, we encourage you to be open, candid, and forthright.

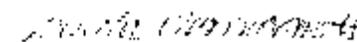
The Board of Trustees pledges that there will be no retaliation, of any sort, against anyone who provides information as part of this review. If you have any concerns, please feel free to contact us. We have included our contact information below.

No doubt this is a challenging situation. We hope and expect to learn and grow from this experience and to be a stronger organization as we move forward.

Thank you in advance for your help.



Tim Riley, Chair, CMC Board of Trustees  
603.668.0634 (Office)  
603.714.4665 (Cell)



Pamela Diamantis, Chair, Special Board Committee  
603.624.8462 (Office)  
603.674.8784 (Cell)

# ATTACHMENT 3

## Jon Moses

15385 W. Iliff Drive  
Denver, CO, 80228  
208-720-5061

200 Union Blvd. Suite 200  
Lakewood, CO 80228  
720-506-1042

### PROFESSIONAL EXPERIENCE

**NORTHGAUGE HEALTHCARE ADVISORS, Denver, CO** **2014 - Present**  
**President and Chief Executive Officer**

Founded, designed, launched and now led firm offering external physician peer review as well as strategic advisory services in the areas of clinical and non-clinical operations, medical staff optimization, quality improvement, physician integration, and leadership. Serves hospitals, health systems, group practices, law firms, managed care entities, insurance carriers, and consulting firms.

- Forged partnership with prominent national consulting firm with complementary services.
- Worked with partner firm to craft new, innovative and integrated offerings that take advantage of each partner's unique strengths.
- Developed comprehensive promotional campaign employing a myriad of web, networking and direct sales strategies.
- Led company to profitability in first year with over 50% growth in revenues each year.

**MDREVIEW, Denver, CO** **2007 - 2014**  
**President and Chief Executive Officer**

Designed the brand, developed all systems and strategies, led the management team and board, and grew this external physician peer review operation. Exited this position to expand in-demand innovative solutions and to service national and growing client base more effectively with advanced peer review and related advisory services.

- Set many of the standards for how external physician peer review is provided and played significant role in the development of this market segment.
- Expanded company to serve hospitals, healthcare systems, law firms and consulting firms in all 50 states, increasing revenue by over 500% in seven years.
- Provided peer review and leadership education to large audiences, achieving 95% positive response rates.
- Relocated operation from small resort community to large metropolitan city while maintaining profitability.

**INDEPENDENT LEADERSHIP AND OPERATIONS CONSULTANT** **2007 - 2014**

Served numerous hospitals with operational crisis intervention and turnaround, governance education, peer review education, leadership assessment and development, clinical program turnaround, fair hearing guidance and testimony and survey response to DOJ and OIG demands.

**MD<sup>2</sup> INTERNATIONAL, Seattle, WA** **2002 - 2007**  
**Chief Executive Officer**

Led the development and operations of the nation's first retainer-based, concierge medicine operation. Designed model for acceptance by insurance commissioner demands unique to each state. Attracted top physicians, negotiated all terms, supported practice conversion, identified space, designed and oversaw construction of luxury offices, recruited staff, wrote policies and procedures and worked closely with physicians to attract clientele.

**ST. LUKE'S WOOD RIVER MEDICAL CENTER, Ketchum, ID** **1997 - 2002**  
**Chief Executive Officer**

- Overhauled operation including organizational redesign and management consolidation.
- Consolidated emergency and surgical services from two campuses to one, gaining community support against widespread resistance. Implemented relatively low cost urgent care services at site vacated by one emergency department.
- Raised over \$36 million for construction of new hospital.

- Designed, developed and moved operations to new state of the art medical center.
- Merged operations with large tertiary referral center, from public to private status and from municipal to private ownership.
- Phased out board of former medical center and created new 17-member board. Designed extensive orientation program encompassing both operational and governance education in support of board effectiveness.
- Developed and implemented plan to control medical staff development consistent with community needs and strategic plan.
- Completely revamped emergency services operations including the replacement of part time/on-call, primary care physicians with full-time, board certified emergency physicians and leadership.
- Created and implement plan to address harmful conflict among physicians, achieving widespread support and success from the effort.
- Dramatically improved hospital's image and relationship with media and public.
- Recruited top physicians to assume key clinical leadership roles for emergency services and medical imaging.
- Pursued and successfully attained hospital's first Joint Commission accreditation.
- Chaired regional emergency medical services council. Led development of the regions first paramedic and paramedic training program.
- Designed and developed medical office building adjacent to hospital, overcoming significant political resistance.
- Restructured foundation to ensure rational allocation of funds and assurance of compelling cases for giving.

**PROVENA ST. MARY'S HOSPITAL (now Presence Health), Kankakee, IL**

**1995 - 1997**

**Vice President, Ambulatory Services**

- Responsible for the majority of clinical and support services for this 260 bed multi-specialty hospital including the areas of surgery, psychiatry, rehabilitation, radiology, laboratory, home health care, emergency/trauma services, renal dialysis, facilities management/planning, biomedical engineering, information systems, management development, process improvement and business development.
- Spearheaded development of continuum of wellness/fitness services consisting of a new medically-supervised fitness center and the forging of a relationship with the YMCA to joint venture on community wellness/fitness programs.
- Successfully negotiated new contract with existing well-regarded, politically strong group of emergency physicians which resulted in \$740,000 in management fee reductions over five years while strengthening hospital's relationship with the group.
- Led the development of facilities plan which supported highly customer-focused operations under significantly lower cost structure.
- Designed and led organization-wide leadership development, process improvement and reengineering effort in preparation for major managed care driven change.
- Served as project director for the construction of both a cancer center and a renal dialysis center. Both projects completed on time and under budget.
- Actively participated at both corporate and organizational levels in the development and implementation of managed care strategies.

**PROVENA COVENANT MEDICAL CENTER (now Presence Health), Champaign, IL**

**1989 - 1995**

**Vice President, Patient Services and Service Development**

- For this 274 bed multi-specialty teaching medical center, responsible for the areas of cardiovascular services, rehabilitation, pulmonary medicine, pharmacy, social work services, materials management, security, housekeeping, clinical education, employed regional family practice group, physician recruitment and education, home health, information systems and clinical education.
- Integrally involved as a leader in the highly successful merger of the City and Catholic hospitals that formed this new hospital.
- Led consolidation and strategic planning activities for departments of surgery, medicine, ambulatory services, rehabilitation and cardiovascular services.
- Transformed fragmented, problematic cardiovascular services into well-coordinated, marketing-oriented "Heart Care Center" resulting in 18% growth in cardiovascular revenues in two years.
- Selected, acquired, and implemented comprehensive, fully integrated clinical and management information system. Coordinated facilities design and construction of new 35,000 square feet inpatient and outpatient rehabilitation center.

- Achieved reduction of more than \$900,000 in hospital-wide, annualized, non-labor expenses and more than \$500,000 in labor expense reduction (more than 90% through attrition) over first three years, all while significantly enhancing service quality.
- Integrally involved in design, development and implementation of hospital-wide 14-month intensive management development curriculum.
- Served as senior staff member of steering committee charged with overseeing the assessment, design and implementation of comprehensive patient-focused reengineering project.
- Initiated and developed regional "Family Care Network", a hospital-employed group of family practitioners. Acquired three FPs and recruited six others; renovated existing offices and designed a prototype primary care facility built at various acquired sites; implemented physician billing and information system—all within 15 months.
- Took over leadership of hospital's failing home health services. While substantially enhancing quality, developed business plan which provided strategies for market expansion; development of new specialty services; optimization of reimbursement; and inpatient cost avoidance, with a 450% increase in home health visits within three years.
- Served as a member of steering committee which developed strategies for implementation of critical clinical protocols for all inpatient and outpatient services.
- Developed sub-acute care service including successful attainment of a C.O.N.
- Served on parent corporation's Managed Care Strategy Committee.
- As a member of hospital - group practice integration team, led development of cooperative plans for both primary care and information systems development.

**MERCY HOSPITAL, Urbana, IL**

**1987 - 1989**

**Director, Rehabilitation and Pulmonary Medicine**

Responsible for the regional 26 bed CARF/JCAHO accredited comprehensive inpatient/outpatient Rehabilitation Center as well as for the Department of Pulmonary Medicine for this 222 bed multi-specialty hospital.

- Achieved an increase in inpatient admissions of 12.4% through personal outreach and other marketing efforts while decreasing direct expenses by 6.3%. This resulted in a 10.6% increase in the bottom line.
- Developed and implemented a hospital-wide physician sales program for local and regional referral enhancement.
- Maintained a full staff of physical, occupational, recreational and speech therapists in a time of serious shortages of these professionals.
- Designed, developed and successfully implemented the Human Performance Center which provides pulmonary function testing, body composition analysis, stress testing, nutritional studies and exercise prescriptions.

**MERCY HOSPITAL, Urbana, IL**

**1986 - 1987**

**Administrative Fellow**

Selected by the CEO of this 222 bed multi-specialty hospital to serve as a post-graduate Fellow in Administration. Working closely with the executive team, was quickly integrated and involved with virtually every aspect of individual and group planning, problem solving and decision making. Served as the hospital's representative on affiliated group practice's physician recruiting committee; performed a physician needs assessment and presented findings and proposed strategies to both hospital board and medical staff executive committee during board retreat; served on nearly all board and medical staff committees; and developed a manual for writing new venture proposals. Actively involved in the entire process of developing the hospital's three-year strategic plan.

UNIVERSITY OF MISSOURI HOSPITAL AND CLINICS, Columbia, MO

1984 - 1986

**Fiscal Analyst**

Throughout graduate school, worked for the Division of Financial Services within this 500 bed tertiary care teaching hospital. Performed work efficiency and productivity studies which included staffing recommendations in several areas of materials management; wrote a comprehensive training manual for supply distribution and patient transportation; served as a support liaison between a software company and the hospital user staff in the implementation of a sophisticated computer inventory management system; for the Division of Professional Services, developed facility expansion proposals and assisted in preparation for the Joint Commission survey.

**ACADEMIC (Past)**

Associate Clinical Faculty, University of Illinois College of Medicine

Guest Lecturer - Business Administration, Medical Scholars, Graduate Medical Education and Rehabilitation Administration Programs

University of Missouri, graduate student mentor

**EDUCATION**

MHA, University of Missouri, 1986

BS, Psychology, University of Missouri, 1984

Executive Program in Managed Care, National Center for Managed Healthcare Administration, University of Missouri-Kansas City, 1997

**PAST AND CURRENT PROFESSIONAL AFFILIATIONS**

Illinois Hospital Association Rehabilitation Constituency: Chairman;

Illinois Hospital Association Advocacy Council

American College of Healthcare Executives: CEO Circle

American Association for Physician Leadership (American Collage of Physician Executives)

**PAST AND CURRENT COMMUNITY ACTIVITIES**

Every Child Pediatrics - Board Chair

Colorado Healthcare Strategic Management Association

American Heart Association Board: Chair, American Heart Walk

Salvation Army Board: Chair, Planning Committee

American Red Cross Board: Chair, Fund Development Committee

Champaign County Chamber of Commerce: Environmental Committee

Champaign County Network: Chair, Medical Applications Task Force

AMBUCS

Rotary

Heatherlands Homeowners Association Board

Ketchum-Sun Valley Chamber of Commerce Board

Sun Valley Ski Education Foundation Volunteer

# ATTACHMENT 4

## CURRICULUM VITAE Joseph Cornelius Cleveland, Jr., MD Frederick and Carol Grover Endowed Chair in Surgery

### Current Position

Professor of Surgery  
Vice-Chair, Faculty Affairs  
Associate Program Director, Thoracic Surgery Residency  
University of Colorado Anschutz School of Medicine  
Department of Surgery  
Division of Cardiothoracic Surgery  
12631 East 17<sup>th</sup> Avenue, Academic Office 1, Room 6602  
Mail Stop C-310, Aurora, Co 80045

Telephone: (303) 724-2799  
Fax: (303) 724-2806  
Email: [joseph.cleveland@ucdenver.edu](mailto:joseph.cleveland@ucdenver.edu)

### Education

1983-1987 B.S., Biological Sciences, Magna Cum Laude,  
University of Southern California, Los Angeles, CA  
1987-1991 M.D., with High Honors, University of Washington, Seattle, WA  
1991-1992 Intern, General Surgery, University of Colorado, Denver, CO  
1992-1998 Resident, General Surgery, University of Colorado, Denver, CO  
1994-1996 NIH Trauma Research Fellowship  
University of Colorado, Denver, CO (Alden H. Harken, MD, Advisor)  
1998-2001 Resident, Cardiothoracic Surgery, University of Colorado, Denver, CO

### Academic Appointments

2001-2005 Assistant Professor of Surgery  
University of Colorado School of Medicine  
2005-2012 Associate Professor of Surgery  
University of Colorado School of Medicine  
2012-Present Professor of Surgery  
University of Colorado School of Medicine  
2018-Present Frederick and Carol Grover Endowed Chair in Surgery

### Administrative Appointments

2001-2010 Chief, Cardiothoracic Surgery, Denver Veterans Affairs Medical Center  
2002-2003 Program Director, Thoracic Surgery Residency  
University of Colorado School of Medicine  
2003-Present Associate Program Director, Thoracic Surgery Residency  
University of Colorado School of Medicine  
2003-2018 Surgical Director, Mechanical Circulatory Support  
University of Colorado School of Medicine

- 2003-Present Surgical Director, Cardiac Transplantation  
University of Colorado School of Medicine
- 2015-Present Vice Chair for Faculty Affairs, Department of Surgery  
University of Colorado School of Medicine

**Hospital, Government or Other Professional Positions**

- 2001-Present Attending Physician, Cardiothoracic Surgery  
University of Colorado Hospital Anschutz Medical Center, Aurora, Co
- 2001-Present Attending Physician, Cardiothoracic Surgery  
Denver Veterans Affairs Medical Center, Aurora, CO

**Consultant Positions**

- 2016-Present CPEP, The Center for Personalized Education for Physicians
- 2014-2016 American Board of Thoracic Surgery, Question Writer
- 2017 American Board of Thoracic Surgery, Guest Examiner
- 2019 American Board of Thoracic Surgery, Guest Examiner

**Honors, Special Recognition and Awards**

Undergraduate

- 1983-1987 Dean's List, University of Southern California
- 1986 Phi Beta Kappa, University of Southern California (Junior Year)
- 1987 Blue Key, University of Southern California
- 1987 Mortar Board, University of Southern California
- 1987 Skull and Dagger, University of Southern California
- 1987 Order of the Palm, University of Southern California

Medical School

- 1990 Alpha Omega Alpha Honor Medical Society (Junior Year)
- 1991 Medical Student Research Program Honors Thesis (Advisor D. Scott Weigle, MD)
- 1991 Henry Harkins Award for Outstanding Medical Student in Surgery
- 1991 Graduation with High Honors

Postgraduate/Career

- 1992 Intern of the Year, University of Colorado Department of Surgery
- 1997 Ben Eiseman Surgical Research Award,  
University of Colorado Department of Surgery
- 1998 First Place, Resident Presentation,  
Colorado Chapter American College of Surgeons
- 2001 Clifford Van Meter President's Award for Best Scientific  
Presentation, Southern Thoracic Surgical Association, "Off Pump  
Coronary Artery Bypass Grafting Significantly Decreases Risk  
Adjusted Mortality and Morbidity"
- 2003 Outstanding Instructor, Elected by MSIII Students,  
University of Colorado School of Medicine

2004-2006	Dennis Jahnigen Scholar – Selected by the American Geriatrics Society
2004	Golden Apple Teaching Award, Presented to the Best Clinical Teacher by the Surgical Residents, University of Colorado Department of Surgery
2004	President's Award for Leadership, Presented by the Medical Staff, University of Colorado Hospital
2007	Professionalism Award, Inaugural Recipient, The University of Colorado School of Medicine
2009	Dr. Dwight C. McGoon Award for Outstanding Resident Education, given by the American Association for Thoracic Surgery
2009-2019	Castle Connolly, Top Doctors in America
2010	5280 Top Doctor, Thoracic and CV Surgery
2012-2019	5280 Top Doctor, Thoracic and CV Surgery
2015-2019	Best Doctors in America
2018	Socrates Award, Given by the Thoracic Surgery Residents Association

#### **Extramural Competitive Research Funding**

2004-2007	Dennis Jahnigen Career Development Award: The Effect of Age upon Myocardial Cytokine Production	\$200,000
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#### **Clinical Trials**

2002-2008	Cooperative Studies Program (CSP#517) – ROOBY Study, Denver VAMC Principal Investigator
2003-2008	Mitraclip EVEREST II, University of Colorado, Surgical Principal Investigator
2005-2009	Heartmate II LVAS Pivotal Trial, University of Colorado, Principal Investigator
2010-2018	HVAD ENDURANCE Trial, University of Colorado, Principal Investigator
2015-Present	National Co-PI, (Surgery) MOMENTUM 3 Trial, Abbott Medical

#### **Membership in Professional Organizations, Offices Held, and Leadership Positions**

1988	American Medical Association
1997	American Association for the Advancement of Science
1998	American Physiological Society
1998	Association for Academic Surgery
2001	American Heart Association
	QCOR Specialty Conference Program Committee, Council on Quality of Care and Outcomes Research, 2013-2018
2003	American College of Surgeons
2003	Denver Academy of Surgery
	Executive Committee, 2011-2012
	Chair, Program Committee, 2012-2013
	Secretary, 2014-2015
	President, 2015-2016
2003	Society of Thoracic Surgeons
	Workforce on Clinical Trials, Member, 2004-2007

Workforce on Aging, Member 2006-2012  
 Workforce on Surgical Treatment for End Stage  
 Cardiopulmonary Disease, Member 2006-2012  
 Workforce on Annual Meeting Program, Member 2006-2009  
 Task Force on Quality Initiatives, Member 2008-Present  
 Workforce on Coding and Reimbursement, Member 2001-Present  
 Workforce on National Databases, Member 2011-2015  
 Chair, Workforce on Annual Meeting Program, 2014-2015  
 Board of Directors, Member, 2016-2019  
 Workforce for INTERMACS, Member 2018-Present  
 STS Executive Director Search Committee, Member, 2018-2019  
 STS/AATS Joint Guideline Steering Committee, Member 2018-Present  
 STS Representative to the AGS, Section for Enhancing  
 Geriatric Understanding and Expertise Among Surgical and  
 Medical Specialists, Member 2010-Present  
 STS Advisor to the AMA/Specialty Society Relative Value  
 Scale Update Committee (RUC), 2006-2014  
 Alternate Member, Representing the STS at the  
 AMA/Specialty Society Relative Value Committee, 2014-Present  
 Practice Expense Subcommittee, Member, of the RUC, 2014-Present  
 STS Representative to the Physician Consortium for Practice  
 Improvement (PCPI) of the AMA, 2011-Present  
 STS Representative to the National Quality Forum (NQF)  
 Cardiovascular Standing Committee, 2013-Present  
 2004 Heart Failure Society of America  
 2004 Western Thoracic Surgical Association (WTSA)  
 Member, Program Committee, 2008-2009  
 Chair, Program Committee 2009  
 Treasurer, 2012-2016  
 2004 International Society for Heart and Lung Transplantation  
 Abstract Grader, Annual Meeting 2010-2018  
 2005 United Network for Organ Sharing (UNOS)  
 National Lung Review Board, Alternate Member, 2005  
 Region 8 Heart Review Board, 2005-2019  
 Thoracic Transplantation Committee, Region 8 Member, 2011-2014  
 Membership and Professional Standards (MPSC)  
 Committee, at large representative, 2015-2017  
 Performance and Analysis Improvement (PAIS)  
 Subcommittee, 2015-2017  
 2005 American College of Cardiology  
 Member, Council on CV Care for Older Adults, 2010-2016  
 Member, Heart Failure and Transplant Leadership Section, 2012-2015  
 Chair, Workgroup on Heart Transplant and High Risk CV Surgery,  
 2014-2015  
 Colorado Chapter, ACC, Board of Directors, Member, 2012-2016

- ACC.16 Annual Scientific Session Program  
Committee, Member, 2016
- Colorado Chapter, ACC, Incoming Governor –Elect, 2017
- Colorado Chapter, ACC, Governor – Elect, 2018
- Colorado Chapter, ACC, Governor, 2019-Present
- Surgeons Council, Member, 2017
- Surgeons Council, Chair-Elect, 2019
- Board of Governors, 2019- Present
- NCDR STS/TVT Registry Research and Publications  
Subcommittee, Member, 2019-2021
- 2006 American Society of Transplant Surgeons  
Thoracic Transplantation Committee, Member, 2013-2016
- 2006 American Geriatrics Society  
Aging and Surgical Specialties, Member, 2006-2010  
Chair, Program for Surgical Specialties, 2009
- 2007 Donor Alliance Medical Advisory Board, Member, 2007-Present
- 2009 American Association for Thoracic Surgery  
CT Residents Committee, 2013-2015  
Co-Chair, CT Residents Committee, 2015-2016
- 2010 INTERMACS  
Adverse Events and Adjudication Committee, Member 2010-2016

**Major Committee and Service Responsibilities**

- 2002 Faculty Senate, Department of Surgery Representative  
University of Colorado School of Medicine, 2002-2004
- 2003 Surgical Director, Cardiac Transplantation  
University of Colorado Hospital, 2003-Present
- 2006 University of Colorado Hospital, Risk Management,  
Sentinel Event Committee Member, 2006-2009
- 2008 Faculty Promotions Committee  
University of Colorado School of Medicine, 2008-2011
- 2011 Medical Board (Elected Position)  
University of Colorado Hospital, 2011-2015
- 2012 Blue Ribbon Committee for Revision of Faculty Promotions and Tenure  
University of Colorado School of Medicine, Member, 2012-2014
- 2014 Cardiovascular Center Quality Committee  
University of Colorado Hospital, Member 2014-Present
- 2014 Faculty Professionalism Award Selection Committee, Member, 2014-2017
- 2015 Executive Committee, Department of Surgery  
University of Colorado School of Medicine

**Licensure**

- 1999 State of Colorado - # 37633

**Board Certification**

- 1992 National Board of Medical Examiners #400198

1999 American Board of Surgery #44129  
2008 Re-certified  
2002 American Board of Thoracic Surgery #6611  
2010 Recertified

**Review and Referee Work**

Editorial Boards

2008-1025 Journal of Surgical Research

Ad Hoc Reviewer

2002-Present American Journal of Physiology: Heart and Circulatory  
2003-Present The Annals of Thoracic Surgery  
2004-Present The Journal of Thoracic and Cardiovascular Surgery  
2004-Present Diabetes  
2004-Present Journal of American College of Surgeons  
2004-Present Journal of American College of Cardiology  
2005-Present Journal of Surgical Research  
2005-Present Heart  
2005-Present Circulation  
2006-Present American Heart Journal  
2012-Present Transplantation  
2017-Present New England Journal of Medicine

**Selected Invited Extramural Lectures, Presentations, and Visiting Professorships**

2002 Medical University of South Carolina, Visiting Professor  
2004 Invited Speaker, "On v. Off Pump CABG", American Heart Association  
Fall Symposium, UCLA  
2005 Invited Speaker, "Thoracic Transplantation", American College of  
Surgeons 91<sup>st</sup> Annual Clinical Congress, San Francisco, CA  
2007 Invited Panelist, National Institute of Aging (NIA)/RAND, "Developing  
Quality Indicators to Improve the Care in Elderly Surgical Patients,  
Los Angeles, CA  
2007 Invited Speaker, "Why Would You Implant a VAD?", International Transplant  
Nurses Society, Denver, CO  
2007 Invited Speaker/Moderator, "Surgical Treatment of End-Stage Heart Disease"  
American College of Surgeons, 93<sup>rd</sup> Annual Clinical Congress, New Orleans, LA  
2008 Invited Speaker, "Mechanical Circulatory Support for the Failing Heart",  
American College of Surgeons, 94<sup>th</sup> Annual Clinical Congress, San Francisco, CA  
2009 Invited Speaker, "Fixing a Broken Heart with an LVAD",  
Duke University Thoracic Surgical Resident Symposium, San Francisco, CA  
2009 Invited Speaker, "Ventricular Assist Devices" 4<sup>th</sup> Annual Academic Surgical  
Congress, Sanibel Harbour Resort, Fort Myers, FL  
2011 Invited Speaker, "Of Man and Machines" Society of Cardiovascular Anesthesia  
Annual Meeting, Savannah, GA

- 2011 Invited Speaker and Moderator, "Right Ventricular Failure: The Other Side", Transcatheter Cardiovascular Therapeutics (TCT) 23<sup>rd</sup> Annual Scientific Meeting, San Francisco, CA
- 2012 Invited Speaker, "Assessment of the Right Ventricle at LVAD Implantation", 48<sup>th</sup> Annual Meeting, Society of Thoracic Surgeons, Fort Lauderdale, FL
- 2013 Invited Speaker, "Managing, Handing, and Dealing with Risk. 49<sup>th</sup> Annual Meeting, Residents Symposium, Society of Thoracic Surgeons, Los Angeles, CA
- 2013 Invited Speaker, Grand Rounds, "Update on Transplantation and VAD" St. Luke's Mid-America Heart Institute, Kansas City, MO
- 2014 Invited Speaker, "Defining your Clinical Niche/Building a Practice", AATS Leadership Academy, Toronto, CA
- 2014 Invited Speaker, "Why Does Medical Technology Cost so Much?" American College of Surgeons Clinical Congress, San Francisco, CA
- 2019 Invited Speaker, Centers for Medicare and Medicaid Services, "ECMO for Intraoperative Procedural Support", Baltimore, MD

**Presentations**

1. Diuretics in the Management of Acute Renal Failure. Presented at Horizons in Surgery. Breckenridge, Colorado, March 1994
2. Prevention of Sodium Accumulation Mediates Alpha-one Adrenergic Myocardial Preconditioning. Presented at the Society of University Surgeons Thirty-Seventh Annual University Surgical Residents' Conference. Denver, Colorado, February 1995
3. PKC Dependent Sodium-Hydrogen Exchange Mediates Alpha-one Adrenergic Stimulated Preservation of Ischemic PH. Presented at The American Heart Association 68<sup>th</sup> Scientific Session Anaheim, California, November 1996
4. The Obligate Role of Protein Kinase C in Mediating Clinically Accessible Cardiac Preconditioning. Presented at the 57<sup>th</sup> Annual Society of University Surgeons Meeting. Washington, D.C., February 1996
5. Stress Ulcers in 1996: Is Prophylaxis Still Warranted? Presented at Horizons in Surgery Breckenridge, Colorado, March 1996
6. Optimal Myocardial Protection: Cooling, Cardioplegia, and Conditioning. Presented at The Rocky VI Frontiers in Valvular Surgery. Missoula, Montana, August 1996
7. Adenosine Preconditioning of Human Myocardium is Mediated Through KATP Channel Activation. Presented at the 82<sup>nd</sup> Clinical Congress Surgical Forum, American College of Surgeons. San Francisco, California, October 1996

8. Ischemic Preconditioning of Human Myocardium: Protein Kinase C Mediates a Permissive Role for Alpha-one Adrenoceptors. Presented at the American Heart Association 69<sup>th</sup> Annual Scientific Sessions. New Orleans, Louisiana, November 1996
9. Adenosine Receptor Stimulation Optimizes Preconditioning in Human Myocardium. Presented at the Society of University Surgeons 39<sup>th</sup> Annual University Surgical Residents' Conference. Tampa, Florida, February 1997
10. Is Surgery for Peptic Ulcer Disease Obsolete in 1997? Presented at Horizons in Surgery. Breckenridge, Colorado, March 1997
11. Treatment of Acute Variceal Hemorrhage: TIPS vs. Endoscopic Therapy or Surgical Shunts. Presented at Horizons in Surgery. Breckenridge, Colorado, March 1998
12. Off-Pump Coronary Artery Bypass Grafting Significantly Decreases Mortality and Morbidity. Presented at the 47<sup>th</sup> Annual Southern Thoracic Surgical Association. Marco Island, Florida, November 2000
13. Myocardial Hibernation. Presented at the Society of Critical Care medicine's 31<sup>st</sup> Critical Care Congress. San Diego, CA January 2002
14. Preoperative Cardiopulmonary Work-up? What's Really Needed? Presented at Horizons in Surgery. Breckenridge, Colorado, March 2002
15. On vs Off Pump Open Heart Surgery. Presented for Outreach Program, Community Hospital. Grand Junction, Colorado, July 25, 2002
16. Ascending Aortic Dissection with Involvement of SMA/Renal Arteries. Presented for COBE Carbomedic Summit Seminar. Breckenridge, Colorado, March 5, 2004
17. Myocardial Cytokine Release During Cardiac Surgery in Geriatric Patients. Invited Poster Presentation at the Hartford Interdisciplinary Scholars Conference Chicago, Illinois, July 11-13, 2005
18. Infected LVAD followed by Heart Transplantation. Sorin Group At the Heart of Medical Technology Keystone, Colorado, March 17-18, 2005
19. Cardiogenic shock: The hidden surprises that provide challenges. COBE Summit Seminar, Keystone, Colorado, March 10, 2006
20. Moderator at the Society of Thoracic Surgeons 43<sup>rd</sup> Annual meeting. Parallel Surgical Forum II: Adult Cardiac II, San Diego, California, January 29, 2007
21. Invited panel discussant. American Society of Transplantation (AST) Winter Symposium Phoenix, Arizona, February 15-18, 2007

22. 6<sup>th</sup> Vail Cardiothoracic Transplantation An International Update (Co-Director)  
Moderator Vail, Colorado, March 19, 20, 2007
23. Pre-Transplant LVAD Does Not Adversely Affect One-Year Cardiac Transplant Survival. WTSA 33<sup>rd</sup> Annual Meeting, Santa Ana, New Mexico, June 30, 2007
24. Managing an Academic Cardiac Surgical Practice. Scholars Leadership Committee, American Geriatric Society. Fort Lauderdale, Florida, January 11, 2008
25. The Failure of Reverse Remodeling Following LVAD Placement: Discordance between Gene Expression and Ventricular Function. Poster presentation at The Heart Failure Society. Toronto, Canada, September 20, 2008
26. Invited moderator for the parallel sessions at the 45<sup>th</sup> Annual STS Meeting  
San Francisco, California, January 26, 2009
27. Devices for the Treatment of Heart Failure. Presented at the 38<sup>th</sup> Annual Society of Critical Care Congress. Nashville, Tennessee, February 3, 2009
28. AMA Editorial Panel. Requested by the STS to sit as an expert regarding CPT codes for VADs. Phoenix, Arizona, February 6, 2009
29. Short and Long Term Approaches to Ventricular Assist Devices. Presentation at the 18<sup>th</sup> Annual Cardiovascular Conference. Beaver Creek, Colorado, February 12, 2009
30. Short-Term MCS Strategies. Invited Speaker at the Society of Thoracic Surgeons Advanced Technologies for Heart and Lung Support Symposium.  
Chicago, Illinois, September 7-8, 2012
31. *Right Heart Failure after LVAD: Navigating Shark Infested Waters*. Invited Speaker at Heartware ENDURANCE Investigators Meeting. Chicago, IL 2012
32. Finding the Sweet Spot: Selection for Mechanical Circulatory Support. Invited Presentation at 22<sup>nd</sup> Annual Cardiovascular Conference. Beaver Creek, Colorado, February 12, 2013  
Phoenix, Arizona, Feb 6-8, 2014
33. AMA RUC Panel: Testimony regarding ECMO  
Chicago, Illinois, April 23, 2014
34. 2014 ACC/AHA/HRS Guideline for the Management of Atrial Fibrillation. Colorado Arrhythmia Symposium. Boulder, Colorado, October 17, 2014

35. Progenitor Mechanisms of Vascular Injury in Restenosis. Vascular Surgery II, Surgical Forum, ACS Clinical Congress. Invited Discussant. San Francisco, California, October 2014
36. Atrial Fibrillation Ablation During Mitral Valve Surgery. Colorado Arrhythmia Symposium, Boulder, Colorado, September 18-20, 2015
37. What's New in the Surgical World? Colorado Chapter, American College of Cardiology, Colorado Springs, Colorado October 9-11, 2015
38. Surgical Management of Atrial Fibrillation. Colorado Arrhythmia Symposium, Boulder, Colorado, September 23-25, 2016
39. Heart Team Approach for Aortic Valve Disease. 26<sup>th</sup> Annual Cardiovascular Conference, Beaver Creek, Colorado, Feb 4-8, 2017
40. Decision Making in Mitral Valve Disease. 27<sup>th</sup> Annual Cardiovascular Conference, Beaver Creek, Colorado, Feb 10-14, 2018
41. Multicenter Study of MagLev Technology in Patients Undergoing Mechanical Circulatory Support Therapy with Heartmate 3 (MOMENTUM 3)- Long Term Outcomes. ACC. 17, Late Breaking Clinical Trials, Orlando Florida, March 11, 2018
42. MOMENTUM 3 Update. 11<sup>th</sup> Vail Cardiothoracic Transplantation – an International Update, Vail, CO January 12-15, 2019.
43. Advances in Destination LVAD Therapy. 28<sup>th</sup> Annual Cardiovascular Conference, Beaver Creek, Colorado, Feb 9-13, 2019.

#### Teaching Record

##### Ward and Clinical Attending Responsibilities

Daily bedside and in the operating room instruction of medical students, general and thoracic surgical residents

Cardiac Surgery Clinic (4 Hours/week)

Multidisciplinary Valve Clinic (4 Hours/Week)

##### University of Colorado School of Medicine Foundations of Doctoring Curriculum

2003-2005 Benjamin Kartchner

2018-Present Adam Carroll

## Bibliography

### Referred Journal Articles

1. Wilson BE, Meyer GE, **Cleveland JC Jr**, Weigle DS. Identification of candidate genes for a factor regulating body weight in primates. *Am J Physiol* 1990; 259: R1148-R1155.
2. Rowland RT, **Cleveland JC Jr**, Meng X, Harken AH, Brown JM. Potential gene therapy strategies in the treatment of cardiovascular disease. *Ann Thor Surg* 1995; 60: 721-728.
3. Rehring TF, Friese RS, **Cleveland JC Jr**, Gamboni-Robertson F, Banerjee A, Harken AH. Specific isoforms of protein kinase C are associated with limitation of ischemic acidosis in the preconditioned heart. *Surgical Forum* 1995; Vol XLVI: 216-218.
4. Lindenfeld J, Shakar S, Zamora MR, Cook CD, Wolfel EE, Lowes BD, Ireland N, Keller K, Frisk R, Stepien L, **Cleveland JC Jr**, Zolty R. BOOP is common in cardiac transplant recipients switched from a calcineurin inhibitor to sirolimus. *Am J of Transplantation* 2005, Vol 5(issue 6), 1392-1396.
5. **Cleveland JC Jr**, Meldrum DR, Rowland RT, Banerjee A, Harken AH. Optimal myocardial preservation: cooling, cardioplegia, and conditioning. *Ann Thor Surg* 1996; 61: 760-768.
6. Meldrum DR, **Cleveland JC Jr**, Rowland RT, Sheridan BC, Banerjee A, Harken AH. Cardiac surgical implications of calcium dyshomeostasis in the heart. *Ann Thor Surg*, 1996; 61: 1273-1280.
7. **Cleveland JC Jr**, Meldrum DR, Rowland RT, Sheridan BC, Banerjee A, Harken AH. The obligate role of protein kinase C in mediating clinically accessible cardiac preconditioning. *Surgery*, 1996; 120: 345-353.
8. **Cleveland JC Jr**, Wollmering MM, Meldrum DR, Rowland RT, Rehring TF, Sheridan BC, Harken AH, Banerjee A. Ischemic preconditioning in human and rat ventricle. *Am J Physiol* 1996; 271: H1786-H1794.
9. Sheridan BC, McIntyre RC Jr, Meldrum DR, **Cleveland JC Jr**, Agrafojo JA, Eisenach JH, Harken AH, Fullerton DA. Antibody mediated neutrophil depletion preserves pulmonary vasomotor dysfunction. *J Surg Res*, 1996; 62: 74-78.
10. Sheridan BC, McIntyre RC Jr, Meldrum DR, **Cleveland JC Jr**, Agrafojo JA, Banerjee A, Harken AH, Fullerton DA. Microtubules regulate pulmonary vascular smooth muscle contraction. *J Surg Res*, 1996; 62: 284-287.
11. Meldrum DR, **Cleveland JC Jr**, Rowland RT, Banerjee A, Harken AH. Calcium induced inotropy is in part mediated by protein kinase C. *J Surg Res*, 1996; 63: 400-405.
12. Rowland RT, **Cleveland JC Jr**, Meng X, Ao L, Harken AH, Brown JM. A single endotoxin challenge induces delayed myocardial protection against infarction. *J Surg Res*, 1996; 63: 193-198.
13. Sheridan BC, McIntyre RC Jr, Meldrum DR, **Cleveland JC Jr**, Agrafojo JA, Eisenach JH, Fullerton DA. Vinblastine attenuates endotoxin-induced impairment of cGMP-mediated pulmonary vasorelaxation. *Shock*, 1996; 6: 35-38.
14. Meldrum DR, **Cleveland JC Jr**, Mitchell MB, Sheridan BC, Gamboni-Robertson F, Harken AH, Banerjee A. Protein kinase C mediates calcium induced cardioadaptation to ischemia-reperfusion injury. *Am J Physiol*, 1996; 271: R718-R726.
15. Meldrum DR, **Cleveland JC Jr**, Sheridan BC, Rowland RT, Banerjee A, Harken AH. Cardiac preconditioning with calcium: clinically accessible myocardial protection. *J Thorac Cardiovasc Surg* 1996; 112: 778-786.

16. Meng X, Cleveland JC Jr, Rowland RT, Mitchell MB, Brown JM, Banerjee A, Harken AH. Norepinephrine – induced sustained myocardial adaptation to ischemia is dependent on alpha – one – adrenoceptors and protein synthesis. *J Mol Cell Cardiol*, 1996; 28: 2017-2025.
17. Rehring TF, Friese RS, Cleveland JC Jr, Banerjee A, Harken AH. Alpha-adrenergic preservation of myocardial pH during ischemia is cPKC isoform dependent. *J Surg Res*, 1996; 63: 324-327.
18. Banerjee A, Gamboni-Robertson F, Mitchell MB, Rehring TF, Butler K, Cleveland JC Jr, Meldrum DR, Shapiro JI, Meng X. Stress induced cardioadaptation reveals a code linking hormone receptors and spatial redistribution of PKC isoforms. *Ann NY Acad Sci*, 1996; 793: 226-239.
19. Meldrum DR, Cleveland JC Jr, Mitchell MB, Rowland RT, Banerjee A, Harken AH. Constructive priming of myocardium against ischemia-reperfusion injury. *Shock*, 1996; 6: 238-242.
20. Meldrum DR, Cleveland JC Jr, Sheridan BC, Rowland RT, Banerjee A, Harken AH. Differential effects of adenosine preconditioning on the post-ischemic rat myocardium. *J Surg Res* 1996; 65: 159-164.
21. Fullerton DA, Sheridan BC, Meldrum DR, Cleveland JC Jr, Agrafojo J, Harken AH, McIntyre RC Jr. Neutrophils mediate pulmonary vascular smooth muscle dysfunction in acute lung injury. *Surg Forum* 1996; Vol XLVII, 328- 330.
22. Meldrum DR, Cleveland JC Jr, Sheridan BC, Banerjee A, Harken AH. The alpha and beta isoforms of protein kinase C mediate the cardiac contractile response to exogenous calcium. *Surg Forum* 1996; Vol XLVII, 300-303.
23. Cleveland JC Jr, Meldrum DR, Rowland RT, Sheridan BC, Fullerton DA, Butler K, Banerjee A, Harken AH. Adenosine preconditioning of human myocardium is mediated through Potassium- ATP channel activation. *Surg Forum* 1996; Vol XLVII.
24. Meldrum DR, Sheridan BC, Cleveland JC Jr, Fullerton DA, Banerjee A, Harken AH. Neutrophils are required for endotoxin-induced myocardial cross tolerance to ischemia-reperfusion. *Arch Surg*, 1996; 131: 1203-1208.
25. Meldrum DR, Cleveland JC Jr, Meng X, Sheridan BC, Banerjee A, Harken AH. Hemorrhage induces acute cardioadaptation to ischemia-reperfusion by an alpha-one adrenoceptor mediated, protein synthesis independent mechanism. *Am J Physiol* 1997; 272: R718-R725.
26. Cleveland JC Jr, Meldrum DR, Harken AH, Banerjee A. Ischemic preconditioning of human myocardium: protein kinase C mediates a permissive role for alpha-one adrenoceptors (abstract). *Circulation* 1996; 94(supplement D) I-114.
27. Meldrum DR, Cleveland JC Jr, Butler KL, Mitchell MB, Gamboni F, Meng X, Banerjee A. Exogenous Calcium stimulated preconditioning of rat hearts is mediated by PKC (abstract). *J Mol Cell Cardiol* 1996; 28: A189
28. Meldrum DR, Cleveland JC, Jr., Fullerton DA, Banerjee A, Harken AH. Neutrophils are required for endotoxin-induced myocardial cross-tolerance to ischemia-reperfusion injury. *Arch Surg* 1996;131:1203-8.
29. Meldrum DR, Cleveland JC, Jr., Sheridan BC, Rowland RT, Banerjee A, Harken AH. Cardiac surgical implications of calcium dyshomeostasis in the heart. *Ann Thorac Surg* 1996;61:1273-80.

30. **Cleveland JC, Jr.**, Meldrum DR, Rowland RT, Banerjee A, Harken AH. Preconditioning and hypothermic cardioplegia protect human heart equally against ischemia. *Ann Thorac Surg* 1997;63:147-152
31. Rehring TF, Bender PR, Cairns CB, Joo K, Friese RS, Shapiro JI, **Cleveland JC, Jr.**, Banerjee A. Different preconditioning stimuli invoke disparate electromechanical and energetic responses to global ischemia in rat hearts. *Can J Physiol Pharmacol* 1997;75:335-342.
32. **Cleveland JC Jr**, Meldrum DR, Rowland RT, Meng X, Gamboni-Robertson F, Banerjee A, Harken AH. Ischemic preconditioning of human myocardium: protein kinase C mediates a permissive role for alpha-one adrenoceptors. *Am J Physiol*, 1997; 273: H902-H908.
33. **Cleveland JC Jr**, Meldrum DR, Cain BS, Banerjee A, Harken AH. Oral sulfonylurea hypoglycemic agents prevent ischemic preconditioning in human myocardium. *Circulation*, 1997; 96: 29-32.
34. Winter CB, **Cleveland JC Jr**, Butler KL, Bensard DD, Mitchell MB, Harken AH, Banerjee A. Facilitative interactions between noradrenergic and purinergic signaling during preconditioning of the rat heart. *J Mol Cell Cardiol*, 1997; 29: 163-173.
35. **Cleveland JC Jr**, Meldrum DR, Rowland RT, Banerjee A, Harken AH. Adenosine preconditioning of human myocardium is dependent upon the ATP-sensitive potassium channel. *J Mol Cell Cardiol*, 1997; 29: 175-182.
36. Meldrum DR, **Cleveland JC Jr**, Meng X, Sheridan BC, Gamboni F, Harken AH, Banerjee A. Protein kinase C isoform diversity in preconditioning. *J Surg Res*, 1997; 69: 183-187.
37. Meldrum DR, **Cleveland JC Jr**, Sheridan BC, Rowland RT, Selzman CH, Banerjee A, Harken AH. Alpha-adrenergic activation of myocardial NF Kappa B during hemorrhage. *J Surg Res*, 1997; 69: 268-276.
38. Rowland RT, Meng X, **Cleveland JC Jr**, Meldrum DR, Harken AH, Brown JM. LPS-induced delayed myocardial adaptation enhances acute preconditioning to optimize post-ischemic cardiac function. *Am J Physiol*, 1997; 272: H2708-H2715.
39. Rehring TF, Bender PR, Cairns CB, Joo K, Friese RS, Shapiro JI, **Cleveland JC Jr**, Banerjee A. Alpha-one adrenergic cardiac preconditioning attenuates ischemic acidosis and promotes proton extrusion in the rat. *Can J Physiol Pharmacol*, 1997; 71: 335-342.
40. Rowland RT, Meng X, **Cleveland JC Jr**, Meldrum DR, Harken AH, Brown JM. Cardioadaptation induced by cyclic ischemic preconditioning is mediated by translational regulation of de novo protein synthesis. *J Surg Res*, 1997; 71: 155-160.
41. Meldrum DR, **Cleveland JC Jr**, Rowland RT, Banerjee A, Harken AH, Meng X. Early and delayed preconditioning: differential mechanisms and additive protection. *Am J Physiol*, 273: H725-H733.
42. Cain BS, Meldrum DR, Selzman CH, **Cleveland JC Jr**, Meng X, Sheridan BC, Banerjee A, Harken AH. Surgical implications of vascular endothelial physiology. *Surgery*, 1997; 122: 516-526.
43. Cain BS, Meldrum DR, Selzman CH, **Cleveland JC Jr**, Banerjee A, Harken AH. The alpha and beta isoforms of PKC mediate the human myocardial contractile response to exogenous calcium. *Surg Forum*, 1997; XLVIII: 335-337.

44. Meldrum DR, Cleveland JC Jr, Moore EE, Partrick DA, Banerjee A, Harken AH. Adaptive and maladaptive mechanisms of cellular priming. *Ann Surg*, 1997; 226: 587-598.
45. Meldrum DR, Cain BS, Cleveland JC Jr, Meng X, Ayala A, Banerjee A, Harken AH. Adenosine decreases post-ischemic cardiac TNF-alpha production: anti-inflammatory implications for preconditioning and transplantation. *Immunology*, 1997; 92: 472-477.
46. Meldrum DR, Dinarello CA, Cleveland JC Jr, Shapiro L, Sheridan BC, Harken AH. P38 MAP Kinase mediates myocardial ischemia-reperfusion injury: improved post-ischemic recovery with SB 203580 (Cytokine Suppressor Anti-Inflammatory Drug, CSAID). *Surg Forum*, 1997; XLVIII.
47. Meldrum DR, McIntyre RC Jr, Sheridan BC, Cleveland JC Jr, Fullerton DA, Harken AH. L-arginine decreases alveolar macrophage proinflammatory monokine production during acute lung injury by a nitric oxide synthase-dependent mechanism. *J Trauma*, 1997; 43: 888-893.
48. Meldrum DR, Dinarello CA, Shames BD, Cleveland JC Jr, Cain BS, Banerjee A, Meng X, Harken AH. Ischemic preconditioning decreases posts ischemic myocardial tumor necrosis factor-alpha production. *Circulation* 1998;98:II214-II219.
49. Meldrum DR, Cleveland JC Jr, Meng X, Cain BS, Banerjee A, Harken AH. Increased myocardial TNF-alpha in a crystalloid perfused model of cardiac ischemia-reperfusion injury. *Ann Thor Surg*, 1998; 65: 439-443.
50. Cleveland JC Jr, Meldrum DR, Cain BS, Banerjee A, Harken AH. Reply to letter to editor: Oral sulfonyleurea hypoglycemic agents prevent ischemic preconditioning in human myocardium. *Circulation*, 1998; 97: 1427-1428.
51. Meldrum DR, Dinarello CA, Cleveland JC Jr, Cain BS, Shames BD, Meng X, Harken AH. Hydrogen peroxide induced tumor necrosis factor alpha mediated cardiac injury by a P38 mitogen activated protein kinase dependent mechanism. *Surgery*, 1998; 124: 291-296.
52. Cain BS, Meldrum DR, Joo KS, Wang J, Meng X, Cleveland JC Jr, Banerjee A, Harken AH. Human SERCA2a levels correlate inversely with age and may explain diastolic dysfunction in senescent human myocardium. *JACC*, 1998; 32: 458-467.
53. Rehring TF, Shapiro JI, Cain BS, Meldrum DR, Cleveland JC Jr, Harken AH, Banerjee A. Mechanisms of pH preservation during global ischemia in preconditioned rat hearts: roles for PKC and NHE. *Am J Physiol*, 1998; 275: H805-H813.
54. Meldrum DR, Cleveland JC Jr, Cain BS, Shames BD, Banerjee A, Meng X, Harken AH. Ischemic preconditioning decreases post-ischemic myocardial tumor necrosis factor alpha production: potential ultimate effector mechanism of preconditioning. *Circulation*, 1998; 98(19 suppl): II218-II219.
55. Meldrum DR, Cain BS, Meng X, Cleveland JC Jr, Shames BD, Donahoo KK, Banerjee A, Harken AH. Calcium preconditioning but not ischemic preconditioning bypasses the adenosine triphosphate-dependent potassium (KATP) channel. *J Surg Res*, 1999; 85: 77-82.
56. Cain BS, Meldrum DR, Cleveland JC Jr, Meng X, Banerjee A, Harken AH. Clinical L-type Ca (2+) channel blockade prevents ischemic preconditioning of human myocardium. *J Mol Cell Cardiol* 1999;31:2191-2197.

57. Pomerantz BJ, Joo K, Shames BD, **Cleveland JC Jr**, Banerjee A, Harken AH. Adenosine preconditioning reduces both pre and post ischemic arrhythmias in human myocardium. *J Surg Res*, 2000; 90: 191-196.
58. Pomerantz BJ, **Cleveland JC Jr**, Garlid K, Banerjee A, Harken AH. Adenosine mediated cardiac preconditioning extends beyond opening of the mitochondrial KATP channel in human myocardium. *J Surg Res* 2000;90:191-196.
59. Rowland RT, **Cleveland JC Jr**, Upadhyya P, Harken AH, Brown JM. Transportation or noise is associated with tolerance to myocardial ischemia and reperfusion injury. *J Surg Res* 2000;89:7-12.
60. Cain BS, Meldrum DR, **Cleveland JC Jr**, Meng X, Banerjee A, Harken AH. L-type calcium channel blockers inhibit myocardial preconditioning. *J Mol Cell Cardiol*, 2000; 32: 861-862.
61. Plomondon ME, **Cleveland JC Jr**, Ludwig S, Grunwald G, Werking DH, Grover FL, Shroyer AL. Impact of off-pump coronary artery bypass graft procedures upon risk-adjusted outcomes at experienced centers. *Ann Thor Surg*, 2001;72:114-119.
62. **Cleveland JC Jr**, O'Brien MM, Shroyer AL, Grover FL. Impact of graft ischemic time on outcomes after lung transplantation. *Ann Thorac Surg* 2000;69:1986.
63. Pomerantz BJ, **Cleveland JC Jr**, Olsen HK, Pomerantz M. Pulmonary resection for multi-drug resistant tuberculosis. *J Thorac Cardiovasc Surg*, 2001;121:448-453.
64. Raeburn CD, **Cleveland JC Jr**, Selzman CH, Harken AH. Preconditioning in myocardial revascularization. *J Card Surg*, 2000.
65. **Cleveland JC Jr**, Raeburn C, Harken AH. Clinical applications of ischemic preconditioning: L from head to toe. *Surgery*, 2001;129:664-667.
66. **Cleveland JC Jr**, Shroyer AL, Chen A, Peterson E, Grover FL. Off-pump coronary artery bypass grafting significantly decreases risk-adjusted mortality and morbidity. *Ann Thor Surg* 2001;72:1282-1289.
67. Grover FL, Shroyer AL, **Cleveland JC Jr**, Hammermeister K. A decade's experience with quality improvement in cardiac surgery using the Veterans Affairs and Society of Thoracic Surgeons national databases. *Ann Surg* 2001;234:464-472.
68. Plomondon ME, **Cleveland JC Jr**, Shann LT, Grunwald GK, Kiefe CI, Grover FL, Shroyer AL. Off-pump coronary artery bypass is associated with improved risk-adjusted outcomes. *Ann Thor Surg*, 2001;72:114-119.
69. Raeburn CD, **Cleveland JC Jr**, Zimmerman MA, Harken AH. Organ preconditioning. *Archives of Surgery* 2001;136:1263-1266.
70. Grover FL, **Cleveland JC Jr**, Shroyer LW. Quality Improvement in Cardiac Care. *Archives of Surgery* 2002;137:28-36.
71. Asano K, Bohlmeyer T, Westcott JY, Zisman LS, Kinugawa K, Good M, Minobe WA, Roden RL, Wolfel EE, Lindenfeld J, Port DJ, Perryman MB, **Cleveland J**, Lowes BD, Bristow MR. Altered expression of endothelin receptors in failing human left ventricles. *Journal of Molecular and Cellular Cardiology* 2002;34:833-46.
72. Stefka J, **Cleveland JC**, Lucia S, Singh M. Sarcomatoid intracardiac metastasis of a testicular germ cell tumor closely resembling primary cardiac sarcoma. Case Study. *Human Path* 2003;34(10):1074-1077.
73. Grazia TJ, Hodges TN, **Cleveland JC**, Sheridan BC, Zamora MR. Lobar torsion complicating bilateral lung transplantation. *J Heart Lung Transplant* 2003;22(1):102-6.

74. Gardner SC, Grunwald GK, Rumsfeld JS, Cleveland JC Jr, Dexiang G, Grover FL, McDonald GO, Shroyer, L. Comparison of short-term mortality risk factors for valve replacement versus coronary artery bypass graft surgery. *Ann Thorac Surg* 2004;77:549-56.
75. Meldrum DR, Partrick DA, Cleveland JC Jr, Shenkar R, Medrum KK, Raiesdana A, Ayala A, Brown JW, Harken AH. On-pump coronary artery bypass surgery activates human myocardial NF-kappaB and increases TNF-alpha in the heart. *J Surg Res* 2003;112(2):175-179.
76. Knaut AL, Cleveland JC Jr. Aortic Emergencies. *Emergency Medicine Clinics of North America* 2003;21(4):817-45.
77. Raeburn, C.D., Zimmerman, M.A., Banerjee, A., Cleveland, JC., Jr., Harken, A.H. Surgical applications of organ preconditioning. *Minerva Chir* 2004;59, 209-18.
78. Gardner SC, Grunwald GK, Rumsfeld JS, Cleveland JC Jr, Schooley LM, Gao D, Grover FL, McDonald GO, Shroyer AL. Comparison of short-term mortality risk factors for valve replacement versus coronary artery bypass graft surgery. *Ann Thorac Surg* 2004;77:549-56.
79. Lindenfeld JA, Simon SF, Zamora MR, Cool CD, Wolfel, Lowes BD, Ireland N, Keller K, Frisk R, Stepien L, Cleveland JC Jr, Zolty R. BOOP is common in cardiac transplant recipients switched from a calcineurin inhibitor to sirolimus. *American Journal of Transplantation* 2005, 5(6):1392-6.
80. Bridges CR, O'Brien SM, Cleveland JC, Savage EB, Gammie JS, Edwards FH, Peterson ED, Grover FL. Association between indices of prosthesis internal orifice size and operative mortality after isolated aortic valve replacement. *J Thorac Cardiovasc Surg* 2007, 133(4):1012-21.
81. Lowes BD, Zolty R, Shakar SF, Brieke A, Gray N, Reed M, Calalb M, Minobe W, Lindenfeld J, Wolfel EE, Geraci M, Bristow MR, Cleveland J Jr. Assist devices fail to reverse patterns of fetal gene expression despite beta blockers. *J Heart Lung Transplantation* 2007;26:1170-6.
82. Babu A, Meng X, Banerjee AM, Gamboni-Robertson F, Cleveland J, Damle S, Fullerton DA, Weyant MJ. Secretory phospholipase A2 is required to produce histologic changes associated with gastroduodenal reflux in a murine model. *J Thorac Cardiovasc Surg* 2008 Jun;135(6):1220-7.
83. Meng X, Ao L, Song Y, Babu A, Yang M, Wang M, Weyant MJ, Dinarello CA, Cleveland J, Fullerton DA. Expression of functional toll-like receptors 2 and 4 in human aortic valve interstitial cells: potential roles in aortic valve inflammation and stenosis. *Am J Physiol Cell Physiol* 294:C29-C35, 2008
84. Cleveland JC Jr, Grover FL, Fullerton DA, Campbell DN, Mitchell MB, Lindenfeld J, Wolfel EE, Lowes BD, Shakar SF, Brieke A, Cannon A, Robertson AD. Left ventricular assist device as bridge to transplantation does not adversely affect one-year heart transplantation survival. *J Thorac Cardiovasc Surg* 2008;136:774-7.
85. Argenziano M, Skipper E, Fudge T, Heimansohn D, Letsou G, Woo YJ, Kron I, Alexander J, Cleveland J, Kong B, Davidson M, Vassiliades, Krieger K, Sako E, Tibi P, Galloway A, Foster E, Feldman T, Glower D. Surgical revision after percutaneous mitral repair with the MitraClip® Device: Preservation of surgical options. Submitted, *Ann Thorac Surg* January 2008.

86. Briekke A, **Cleveland J Jr.**, Lindenfeld J. Mechanical support in acute and chronic heart failure. *Curr Cardiol Rep*, 2008 May;10(3):168-75.
87. Babu AN, Meng X, Zou N, Yang X, Song Y, **Cleveland JC**, Weyant M, Banerjee A, Fullerton DA. Lipopolysaccharide stimulation of human aortic valve interstitial cells activates inflammation and osteogenesis. *Ann Thorac Surg* 2008 Jul;86(1):71-6.
88. Zou N, Ao L, **Cleveland JC Jr.**, Yang X, Su X, Cai G, Banerjee A, Fullerton DA, Meng X. Critical role of extracellular heat shock cognate protein 70 in myocardial inflammatory response and cardiac dysfunction following global ischemia/reperfusion. *Am J Physiol Heart Circ Physiol* 2008 Jun;294(6):H2805-13.
89. **Cleveland JC Jr.** Invited Commentary: Navia DO, Vaccarion G et al. Total arterial off-pump coronary revascularization using bilateral internal thoracic arteries in triple vessel disease. Aug 2008 *Ann Thorac Surg* 86(2):530-1.
90. Reece TB, Mitchell JD, Zamora M, Fullerton DA, **Cleveland JC**, Pomerantz M, Lyu DM, Grover FL, Weyant MJ. Native lung volume reduction surgery relieves functional graft compression after single-lung transplantation for chronic obstructive pulmonary disease. *J Thorac Cardiovasc Surg*. 2008 Apr;135(4):931-7.
91. Yang X, Fullerton DA, Su X, Ao L, **Cleveland JC Jr.**, Meng X. Pro-osteogenic phenotype of human aortic valve interstitial cells is associated with higher levels of Toll-like receptors 2 and 4 and enhanced expression of bone morphogenetic protein 2. *JACC* 2009 Feb 53(6):491-500.
92. Weitzel N, Puskas F, **Cleveland J**, Levi ME, Seres T. Left ventricular assist device outflow cannula obstruction by the rare environmental fungus *myceliophthora thermophila*. *Anesth Analg*. 2009 Apr;108(4):1105-6.
93. **Cleveland JC Jr.** Reply to the Editor re VAD publication. *J Thorac Cardiovasc Surg* 2009;137:787 The American Association for Thoracic Surgery.
94. Ao L, Zou N, **Cleveland JC Jr.**, Fullerton DA, Meng X. Myocardial TLR4 is a determinant of neutrophil infiltration after global myocardial ischemia: Mediating IL-8 and MCP-1 expression induced by extracellular HSC70. *Am J Physiol Heart Circ Physiol*. Jul;297(1):H21-8 2009.
95. Zou N, Ao L, **Cleveland J**, Yang X, Su X, CAi GY, Banerjee A, Fullerton DA, Meng X. Role of extracellular heat shock cognate protein 70 in post-ischemic cardiac inflammatory response and dysfunction. *J Mol Cell Cardiol* 2008 (in review).
96. Song Y, Fullerton DA, Mauchley D, Su X, Ao L, Yang X, **Cleveland JC**, Meng X: Microfilament-facilitate TLR4-mediated ICAM-1 expression in human aortic valve interstitial cells. *J Card Surg*. 2009 Nov-Dec;24(6):677-81.
97. Ambardekar AV, Lowes B, **Cleveland JC Jr.**, Briekke A. Overdrive pacing suppresses ectopy and minimizes left ventricular assist device suction events. *Circ Heart Fail*. 2009 Sept;2(5):516-7.
98. Rogers JH, Yeo KK, Carroll JD, **Cleveland J**, Reece TB, Gillinov AM, Rodriguez L, Whitlow P, Woo J. Late surgical mitral valve repair after percutaneous repair with the mitraClip® System. *J Card Surg*. 2009 Nov-Dec;24(6):677-81.
99. Yang X, Meng X, Su X, Mauchley DC, Ao L, **Cleveland JC Jr.**, Fullerton DA. Bone morphogenetic protein 2 induces Runx2 and osteopontin expression in human aortic valve interstitial cells: role of Smad1 and extracellular signal-regulated kinase 1/2. *J Thorac Cardiovasc Surg*. 2009 Oct;138(4):1008-15.

100. Ambardekar AV, Lowery CM, Allen LA, Cannon AP, **Cleveland JC Jr.**, Lindenfeld J, Brieke A, Sauer WH. Effect of left ventricular assist device placement on preexisting implantable cardioverter-defibrillator leads. *Journal of Heart and Lung Transplantation*. *J Card Fail*. 2010 Apr;16(4):327-31.
101. Ambardekar AV, Allen LA, Lindenfeld J, Lowery CM, Cannon AP, **Cleveland JC Jr.**, Brieke A, Sauer WH. Implantable cardioverter-defibrillator shocks in patients with a left ventricular assist device. *J Heart Lung Transplant*. 2010 Jul;29(7):771-6.
102. Klein AJ, Hudson PA, Kim MS, **Cleveland JC Jr.**, Messenger JC. Spontaneous left main coronary artery dissection and the role of intravascular ultrasonography. *J Ultrasound Med*. 2010 Jun;29(6):981-8.
103. **Cleveland JC Jr.** Frailty, aging, and cardiac surgery outcomes: the stopwatch tells the story. *J Am Coll Cardiol*. 2010 Nov 9;56(20):1677-8.
104. **Cleveland JC Jr.**, Naftel DC, Reece TB, Murray M, Antaki J, Pagani FD, Kirklin JK. Survival after biventricular assist device implantation: An analysis of the Interagency Registry for Mechanically Assisted Circulatory Support database. *J Heart Lung Transplant*. 2011 Aug;30(8):862-9.
105. Li J, Jin C, **Cleveland JC Jr.**, Ao L, Xu D, Fullerton DA, Ming X. Enhanced inflammatory responses to toll-like receptor 2/4 stimulation in type 1 diabetic coronary artery endothelial cells: the effect of insulin. *Cardiovasc Diabetol*. 2010 Dec 16;9:90.
106. Walker LA, Medway AM, Walker JS, **Cleveland JC Jr.**, Buttrick PM. Tissue procurement strategies affect the protein biochemistry of human heart samples. *J Muscle Res Cell Motil*. 2011 Mar;31(5-6):309-14.
107. Smith PD, Puskas F, Fullerton DA, Meng X, Cho D, **Cleveland JC Jr.**, Weyant MJ, Reece TB. Attenuation of spinal cord ischemia and reperfusion injury by erythropoietin. *J Thorac Cardiovasc Surg*. 2011 Jan;141(1):256-60.
108. LaPar DJ, Bhamidipati CM, Reece TB, **Cleveland JC Jr.**, Kron IL, Ailawadi G. Is off-pump coronary artery bypass grafting superior to conventional bypass in octogenarians? *J Thorac Cardiovasc Surg*. 2011 Jan;141(1):81-90.
109. Forman DE, Rich MW, Alexander KP, Zieman S, Maurer MS, Najjar SS, **Cleveland JC Jr.**, Krumholz HM, Wenger NK. Cardiac care for older adults. Time for a new paradigm. *J Am Coll Cardiol*. 2011 May 3;57(18):1801-10.
110. Lee JH, Meng X, Weyant MJ, Reece TB, **Cleveland JC Jr.**, Fullerton DA. Stenotic aortic valves have dysfunctional mechanisms of anti-inflammation: implications for aortic stenosis. *J Thorac Cardiovasc Surg*. 2011 Feb;141(2):481-6.
111. Song Y, Fullerton DA, Mauchley D, Su X, Ao L, Yang X, **Cleveland JC Jr.**, Meng X. Microfilaments facilitate TLR4-mediated ICAM-1 expression in human aortic valve interstitial cells. *J Surg Res*. 2011 Mar;166(1):52-58.
112. Ambardekar AV, Walker JS, Walker LA, **Cleveland JC Jr.**, Lowes BD, Buttrick PM. Incomplete recovery of myocyte function despite improvement of myocardial architecture with left ventricular assist device support. *Circ Heart Fail*. 2011 Jul;4(4):425-32.
113. Smith PD, Puskas F, Meng X, Cho D, **Cleveland JC Jr.**, Weyant MJ, Watkins MT, Fullerton DA, Reece TB. Ischemic dose-response in the spinal cord: Both immediate and delayed paraplegia. *J Surg Res*. 2011 Apr 5.
114. Sadaria MR, Smith PD, Fullerton DA, Justison GA, Lee JH, Puskas F, Grover FL, **Cleveland JC Jr.**, Reece TB, Weyant MJ. Cytokine Expression Profile in Human Lungs

- Undergoing Normothermic Ex-Vivo Lung Perfusion. *Ann Thorac Surg*. 2011 Aug;92(2):478-84.
115. Ambardekar AV, Cannon AP, Cleveland JC Jr, Brieke A, Lindenfeld J. Driving with a driveline: a survey of current practice patterns for allowing a patient supported with a left ventricular assist device to drive. *J Heart Lung Transplant*. 2011 Oct;30(10):1204-5.
  116. Weitzel NS, Edelstein SB, Cleveland JC Jr, Cornelissen CB. Drug-Eluting Stents in the Perioperative Period: What Are the Key Aspects in Management? *Semin Cardiothorac Vasc Anesth*. 2011 Mar-Jun;15(1-2):44-8.
  117. Puskas F, Cleveland JC Jr, Sing R, Weitzel NS, Reece TB, Shull R, Salcedo EE, Seres T. Detection of left ventricular apical thrombus with three-dimensional transesophageal echocardiography. *Semin Cardiothorac Vasc Anesth*. 2011 Sep; 15(3):102-4.
  118. Howell JW, Meng X, Fullerton DA, Jin C, Reece TB, Cleveland JC Jr. Toll-like receptor 4 mediates oxidized LDL-induced macrophage differentiation into foam cells. *J Surg Res* 2011 Nov 171(1) e27-31.
  119. Smith PD, Puskas F, Meng X, Cho D, Cleveland JC Jr, Weyant MJ, Watkins MT, Fullerton DA, Reece TB. Ischemic dose-response in the spinal cord: both immediate and delayed paraplegia. *J Surg Res* 2012 May; 174(2) 238-44.
  120. Hattler B, Messenger JC, Shroyer AL, Collins JF, Haugen SJ, Garcia JA, Baltz JH, Cleveland JC Jr, Novitzky D, Grover FL. Off pump coronary artery bypass surgery is associated with worse arterial and saphenous vein patency and less effective revascularization: results from the veterans affairs randomized on/off bypass (ROOBY) trial. *Circulation* 2012 June;125(23):2827-35.
  121. Zeng Q, Jin C, Ao L, Cleveland JC Jr, Song R, Xu D, Fullerton DA, Meng X. Crosstalk between the toll-like receptor 4 and notch1 pathways augments the inflammatory response in the interstitial cells of stenotic human aortic valves. *Circulation* 2012; 126[suppl1]: S222-S230.
  122. Smith PD, Puskas F, Meng X, Lee JH, Cleveland JC Jr, Weyant MJ, Fullerton DA, Reece TB. The evolution of chemokine release supports a bimodal mechanism of spinal cord ischemia and reperfusion injury. *Circulation* 2012; 126[suppl 1]:S110-17.
  123. Nadlonek NA, Weyant MJ, Yu JA, Cleveland JC Jr, Reece TB, Meng X, Fullerton DA. Radiation induces osteogenesis in human aortic valve interstitial cells. *J Thorac Cardiovasc Surg* 2012 Dec;144:1466-70.
  124. Ambardekar AV, Dorosz JL, Cleveland JC Jr, Lindenfeld J, Buttrick PM. Longitudinal left ventricular structural and functional imaging during full support with continuous –flow ventricular assist devices: a retrospective preliminary analysis. *J Heart Lung Transplant* 2012 Dec;31:1311-13.
  125. Smith PD, Bell MT, Puskas F, Meng X, Cleveland JC Jr, Weyant MJ, Fullerton DA, Reece TB. Preservation of motor function after spinal cord ischemia and reperfusion injury through microglial inhibition. *Ann Thorac Surg* 2013 May; 95(5):1647-53.
  126. Nadlonek N, Lee JH, Reece TB, Weyant MJ, Cleveland JC Jr, Meng X, Fullerton DA. Interleukin -1 Beta induces an inflammatory phenotype in human aortic valve interstitial cells through nuclear factor kappa Beta. *Ann Thorac Surg* 2013 Jul;96:155-62.
  127. Robinson TN, Wu DS, Pointer L, Dunn CL, Cleveland JC Jr, Moss M. Simple frailty score predicts postoperative complications across surgical specialties. *Am J Surg* 2013 Oct; 206(4):544-50.

128. Robinson TN, Wu DS, Sauaia A, Dunn CL, Stevens-Lapsley JE, Moss M, Stiegmann GV, Gajdos C, Cleveland JC Jr, Inouye SK. Slower walking speed forecasts increased post-operative morbidity and mortality and 1-year mortality across surgical specialties. *Ann Surg* 2013 Oct;258(4):582-90.
129. Cleveland JC Jr. A perfect storm: type A aortic dissection and previous cardiac surgery. *Circulation* 2013 Oct 8;128(15):1593-94.
130. Bell MT, Puskas F, Agoston VA, Cleveland JC Jr, Freeman KA, Gamboni F, Herson PS, Meng X, Smith PD, Weyant MJ, Fullerton DA, Reece TB. Toll-like receptor 4-dependent microglial activation mediates spinal cord ischemia-reperfusion injury. *Circulation* 2013 Sep 10; 128(11 Suppl 1): S152-6.
131. Jones TS, Dunn CL, Wu DS, Cleveland JC Jr, Kile D, Robinson TN. Relationship between asking an older adult about falls and surgical outcomes. *JAMA Surg* 2013 Dec; 148(12):1132-8.
132. Cleveland JC Jr. Invited commentary. *Ann Thorac Surg* 2014 Feb;97(2):616.
133. Nallamothu BK, Tommaso CL, Anderson HV, Anderson JL, Brady J, Cleveland JC Jr, Dudley RA, Duffy PL, Faxon DP, Gurm HS, Hamilton LA, Malenka DJ, Maniu CV, McCabe KW, Mortimer JD, Patel MR, Persell SD, Rumsfeld J, Shunk KA, Smith SC, Stanko SJ, Watts B. ACCF/AHA/SCAI/AMA-PCPI/NCQA 2013 Performance Measures for Adults Undergoing Percutaneous Coronary Intervention. *JACC* 2014 Feb 25; 63(7): 722-45. Also: *Circulation* 2014 Feb 25; 129(8):926-49.
134. Bell MT, Reece TB, Smith PD, Mares J, Weyant MJ, Cleveland JC Jr, Freeman KA, Fullerton DA, Puskas F. Reproducible paraplegia by thoracic aortic occlusion in a murine model of spinal cord ischemia-reperfusion. *J Vis Exp* 2014 Mar 3;(85).
135. Reece TB, Cleveland JC Jr. Noteworthy cardiac surgical literature in 2013. *Semin Cardiothorac Vasc Anesth*. 2014 Mar;18(1):12-6.
136. McIlvennan CK, Allen LA, Nowels C, Andreas B, Cleveland JC Jr, Matlock DD. Decision Making for Destination Therapy Left Ventricular Assist Devices: "There Was No Choice" Versus "I Thought About It an Awful Lot". *Circ Cardiovasc Qual Outcomes*. 2014;7(3):374-80.
137. January CT, Wann LS, Alpert JS, Calkins H, Cleveland JC Jr, Cigarroa JE, Conti JB, Ellinor PT, Ezekowitz MD, Field ME, Murray KT, Sacco RL, Stevenson WG, Tchou PJ, Tracy CM, Yancy CW. 2014 AHA/ACC/HRS Guideline for the Management of Patients with Atrial Fibrillation: Executive Summary: A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines and the Heart Rhythm Society. *JACC* 2014 Mar 28. Also: *Circulation* 2014 Apr 10.
138. Hafemann MJ, Kiser TH, Lyda C, Fish DN, Barber GR, Wempe MF, Cleveland JC Jr. Weight-based versus set dosing of vancomycin for coronary artery bypass grafting or aortic valve surgery. *J Thorac Cardiovasc Surg* 2014 Jun; 147(6):1925-30.
139. Meyer DM, Rogers JG, Edwards LB, Callahan ER, Webber SA, Johnson MR, Vega JD, Zuker MJ, Cleveland JC Jr. The future direction of the adult heart allocation system in the United States. *Am J Transplant*. 2015 Jan; 15(1) 44-54.
140. Freeman KA, Fullerton DA, Foley LS, Bell MT, Cleveland JC Jr, Weyant MJ, Mares J, Meng X, Puskas F, Reece TB. Spinal cord protection via alpha-2 agonist-mediated increase in glial cell-line derived neurotrophic factor. *J Thorac Cardiovasc Surg* 2015 Feb; 149(2):578-84.

141. Mares JM, Foley LS, Bell MT, Bennett DT, Freeman KA, Meng X, Weyant MJ, Cleveland JC Jr., Fullerton DA, Puskas F, Reece TB. Erythropoietin activates the phosphorylated c-AMP[adenosine 3'5' cyclic monophosphate] response element-binding protein pathway and attenuates delayed paraplegia after ischemia-reperfusion injury. *J Thorac and Cardiovasc Surg* 2015 March; 149(3):920-4.
142. Cleveland JC Jr., Reece TB. Noteworthy literature in cardiac surgery for 2014. *Semin Cardiothorac Vasc Anesth* 2015 March; 19(1):21-3.
143. Cleveland JC Jr. Invited Commentary. *Ann Thorac Surg* 2015 Apr; 99(4):1334.
144. Freeman KA, Puskas F, Bell MT, Mares JM, Foley LS, Weyant MJ, Cleveland JC Jr., Fullerton DA, Meng X, Herson PS, Reece TB. Alpha-2 agonist attenuates ischemic injury in spinal cord neurons. *J Surg Res* 2015 May 1; 195(1):21-8.
145. Foley LS, Fullerton DA, Bennett DA, Freeman KA, Mares JM, Bell MT, Cleveland JC Jr., Weyant MJ, Meng X, Puskas F, Reece TB. Spinal cord ischemia-reperfusion injury induces erythropoietin receptor expression. *Ann Thorac Surg* Jul; 100(1):41-6.
146. Bell MT, Puskas F, Bennett DT, Cleveland JC Jr., Herson PS, Mares JM, Meng X, Weyant MJ, Fullerton DA, Reece TB. Clinical indicators of paraplegia underplay universal spinal cord neuronal injury from transient aortic occlusion. *Brain Res.* Aug 2015 27; 1618:55-60.
147. Bennett DT, Zamora M, Reece TB, Mitchell JD, Cleveland JC Jr., Grover FL, Babu AN, Meguid RA, Fullerton DA, Weyant MJ. Continued utility of single-lung transplantation in select populations: chronic obstructive pulmonary disease. *Ann Thorac Surg* Aug 2015; 100(2):437-42.
148. Yao Q, Song R, Ao L, Zhan Q, Cleveland JC Jr., Yu X, Fullerton DA, Meng X. Over-expression of neurotrophin 3 in human aortic valves affected by calcific disease induces the osteogenic response via the Trk-Akt pathway. *Biochem Biophys Acta* Sept 2015; 1852(9):1940-9.
149. Shahian DM, Grover FL, Prager RL, Edwards FH, Filardo G, O'Brien SM, He X, Furnary AP, Rankin JS, Badhwar V, Cleveland JC Jr., Fazzalari FL, Magee MJ, Han J, Jacobs JP. The Society of Thoracic Surgeons voluntary public reporting initiative: the first 4 years. *Ann Surg.* 2015 Sep;262(3):526-35.
150. Shahian DM, He X, Jacobs JP, Kurlansky PA, Badhwar V, Cleveland JC Jr., Fazzalari FL, Filardo G, Normand SL, Furnary AP, Magee MJ, Rankin JS, Welke KF, Han J, O'Brien SM. The Society of Thoracic Surgeons Composite Measure of Individual Surgeon Performance for Adult Cardiac Surgery: A Report of The Society of Thoracic Surgeons Quality Measurement Task Force. *Ann Thorac Surg.* 2015 Oct;100(4):1315-24.
151. Wilkey BJ, Hanson R, Reece TB, Forman L, Burton JR Jr, Messenger JC, Kim MS, Cleveland JC Jr., Fiegel MJ, Nydam TL, Mandell MS. Transfemoral Transcatheter Aortic Valve Replacement for Mixed Aortic Valve Disease in Child's Class C Liver Disease Prior to Orthotopic Liver Transplantation: A Case Report. *Semin Cardiothorac Vasc Anesth.* 2015 Nov 29.
152. Blum FE, Weiss GM, Cleveland JC Jr., Weitzel NS. Postoperative Management for Patients With Durable Mechanical Circulatory Support Devices. *Semin Cardiothorac Vasc Anesth.* 2015 Dec;19(4):318-30.
153. Jacobs JP, Shahian DM, Prager RL, Edwards FH, McDonald D, Han JM, D'Agostino RS, Jacobs ML, Kowozor BD, Badhwar V, Thourani VH, Gaissart HA, Fernandez FG, Wright C, Fann JJ, Paone G, Sanchez JA, Cleveland JC Jr., Brennan JM, Dokholyan RS,

- O'Brien SM, Peterson ED, Grover FL, Patterson GA. Introduction to the STS National Database Series: Outcomes Analysis, Quality Improvement, and Patient Safety. *Ann Thor Surg*. 2015 Dec; 100(6):1992-2000.
154. Jacobs JP, Shahian DM, He X, O'Brien SM, Badhwar V, **Cleveland JC Jr**, Furnary AP, Magee MJ, Kurlansky PA, Rankin JS, Welke KF, Filardo G, Dokholyan RS, Peterson ED, Brennan JM, Han JM, McDonald D, Schmitz D, Edwards FH, Prager RL, Grover FL. Penetration, Completeness, and Representativeness of the Society of Thoracic Surgeons Adult Cardiac Surgery Database. *Ann Thor Surg*. 2016 Jan;101(1):33-41.
155. Howell KW, **Cleveland JC Jr**, Meng X, Ao L, Su X, Schwartz RS, Fullerton DA. Interleukin 6 Production during Cardiac Surgery Correlates with Increasing Age. *J Surg Res*. 2016 March;201(1):76-81.
156. Reece TB, **Cleveland JC Jr**. Noteworthy Literature in Cardiac Surgery 2015. *Semin Cardiothorac Vasc Anesth*. 2016 March;20(1):34-9.
157. Lindenfeld J, **Cleveland JC Jr**, Kao DP, White M, Wichman S, Bristow JC, Peterson V, Rodegheri-Brito J, Korst A, Blain-Nelson P, Sederberg J, Hunt SA, Gilbert EM, Ambardekar AV, Minobe W, Port JD, Bristow MR. Sex-Related Differences in Age-Associated Downregulation of Human Ventricular Myocardial B1-Adrenergic Receptors. *J Heart Lung Transplant*. 2016 March;35(3):352-361.
158. Afilalo J, Kim S, O'Brien S, Brennan JM, Edwards FH, Mack MJ, McClurken JB, **Cleveland JC Jr**, Smith PK, Shahian DM, Alexander KP. Gait Speed and Operative Mortality in Older Adults Following Cardiac Surgery. *JAMA Cardiol*. 2016 Jun 1;1(3):314-21.
159. McIlvennan CM, Thompson JS, Matlock DD, **Cleveland JC Jr**, Dunlay SM, LaRue SJ, Lewis EF, Patel CB, Walsh MN, Allen LA. A Multicenter Trial of a Shared Decision Support Intervention for Patients and Their Caregivers Offered Destination Therapy for Advanced Heart Failure: Decide-LVAD: Rationale, Design, and Pilot Data. *J Cardiovasc Nurs* 2016 Nov/Dec;31(6):E8-E20.
160. Jacobs JP, Shahian DM, Prager RL, Edwards FH, McDonald D, Han JM, D'Agostino RS, Jacobs ML, Kowozor BD, Badhwar V, Thourani VH, Gaissart HA, Fernandez FG, Wright C, Fann JJ, Paone G, Sanchez JA, **Cleveland JC Jr**, Brennan JM, Dokholyan RS, Brothers L, Vemulapalli S, O'Brien SM, Peterson ED, Grover FL, Patterson GA, Bavaria JE. The Society of Thoracic Surgeons National Database 2016 Annual Report. *Ann Thor Surg*. 2016 Dec;102(6):1790-97.
161. Mehra MA, Naka Y, Uriel N, Goldstein DA, **Cleveland JC Jr**, Colombo PC, Walsh MN, Milano CA, Patel CB, Jorde UP, Pagani FD, Aaronson KD, Dean DA, McCants K, Itoh A, Ewald GA, Horstmanshof D, Long JW, Salerno C; MOMENTUM 3 Investigators. A Fully Magnetically Levitated Circulatory Pump for Advanced Heart Failure. *N Engl J Med*. 2017 Feb 2;376(5):440-50.
162. Aftab M, **Cleveland JC Jr**, Reece TB. Noteworthy Literature Published in 2016 for Cardiac Surgery. *Semin Cardiothorac Vasc Anesthesia*. 2017 Mar;21(1):30-35.
163. Zeng Q, Song R, Fullerton DA, Ao L, Zhai Y, Li S, Ballak DB, **Cleveland JC Jr**, Reece TB, McKinsey TA, Xu D, Dinarello CA, Meng X. Interleukin -37 Suppresses the Osteogenic Responses of Human Aortic Valve Interstitial Cells in vitro and Alleviates Valve Lesions in Mice. *Proc Natl Acad Sci USA*. 2017 Feb 14;114(7):1631-36.

164. Hui H, Zhai Y, Ao L, **Cleveland JC Jr**, Liu H, Fullerton DA, Meng X. Klotho Suppresses the Inflammatory Responses and Ameliorates Cardiac Dysfunction in Aging Endotoxemic Mice. *Oncotarget*. 2017 Feb 28;8(9):15663-15676.
165. Uriel N, Colombo PC, **Cleveland JC**, Long JW, Salerno C, Goldstein DJ, Patel CB, Ewald GA, Tatoes AJ, Silvestry SC, John R, Caldeira C, Jeevanandam V, Boyle AJ, Sundareswaran KS, Sood P, Mehra MR. Hemocompatibility-Related Outcomes in the Momentum 3 Trial at 6 Months: A Randomized Controlled Study of Fully Magnetically Levitated Pump in Advanced Heart Failure. *Circulation*. 2017 May 23;135(21):2003-12.
166. Jessup M, Drazner MH, Book W, **Cleveland JC Jr**, Dauber I, Farkas S, Ginwalla M, Katz JN, Kirkwood P, Kittleson MM, Marine JE, Mather P, Morris AA, Polk DM, Sakr A, Schlendorf KH, Vorovich EE. 2017 ACC/AHA/HFSA/ISHLT/ACP Advanced Training Statement on Advanced Heart Failure and Transplant Cardiology (Revision of the ACCF/AHA/ACP/HFSA/ISHLT 2010 Clinical Competence Statement on Management of Patients with Advanced Heart Failure and Cardiac Transplant): A Report of the ACC Competency Management Committee. *J Am Coll Cardiol*. 2017 Jun 20;69(24):2977-3001.
167. Patel AC, Dodson RB, Cornwell WK 3<sup>rd</sup>, Hunter KS, **Cleveland JC Jr**, Brieke A, Lindenfeld J, Ambardekar AV. Dynamic Changes in Aortic Vascular Stiffness in Patients Bridged to Transplant with Continuous-Flow Left Ventricular Assist Devices. *JACC Heart Failure*. 2017 Jun;5(6):449-59.
168. Li F, Yao Q, Ao L, **Cleveland JC Jr**, Dong N, Fullerton DA, Meng X. Klotho Suppresses High Phosphate-Induced Osteogenic Responses in Human Aortic Valve Interstitial Cells Through Inhibition of Sox9. *J Mol Med (Berl)*. 2017 Jul;95(7):739-51.
169. Yao Q, Song R, Ao L, **Cleveland JC Jr**, Fullerton DA, Meng X. Neurotrophin 3 Upregulates Proliferation and Collagen Production in Human Aortic Valve Interstitial Cells: A Potential Role in Aortic Valve Sclerosis. *Am J Cell Physiol*. 2017 Jun;312(6):C697-706.
170. Song R, Fullerton DA, Ao L, Zhao KS, Reece TB, **Cleveland JC Jr**, Meng X. Altered MicroRNA Expression is Responsible for the Pro-Osteogenic Phenotype of Interstitial Cells in Calcified Human Aortic Valves. *J Am Heart Assoc*. 2017 Apr 24;6(4). pii: e005364.
171. Li F, Song R, Ao L, Reece TB, **Cleveland JC Jr**, Dong N, Fullerton DA, Meng X. ADAMTS5 Deficiency in Calcified Aortic Valves is Associated with Elevated Pro-Osteogenic Activity in Valvular Interstitial Cells. *Arterioscler Thromb Vasc Biol*. 2017 Jul;37(7):1339-51.
172. **Cleveland JC**, Goldstein DJ, Uriel N, Mehra MR; MOMENTUM 3 Investigators. Forward "MOMENTUM" in left ventricular assist systems: advanced engineering meets biology. *J Thorac Dis*. 2017 July 9(7):E653-E655.
173. Shroyer AL, Hattler B, Wagner TH, Collins JF, Baltz JH, Quin JA, Almassi GH, Kozora E, Bakaeen F, **Cleveland JC Jr**, Bishawi M, Grover FL. Five-Year Outcomes after On-Pump and Off-Pump Coronary Artery Bypass. *N Engl J Med*. 2017 Aug 17;377(7):623-32.
174. **Cleveland JC Jr**. Functional Survival: Alive and Better. *J Thorac Cardiovasc Surg*. 2017 Dec;154:1988-9.

175. Foley LS, Fullerton DA, Mares J, Sungelo M, Weyant MJ, **Cleveland JC Jr**, Reece TB. Erythropoietin's Beta Common Receptor Mediates Neuroprotection in Spinal Cord Neurons. *Ann Thorac Surg* 2017;104:1909-14.
176. Beck DR, Foley L, Rowe JR, Moss AFD, Weitzel NS, Reece TB, Fullerton DA, **Cleveland JC Jr**, Bartels K. Right Ventricular Longitudinal Strain in Left Ventricular Assist Device Surgery – A Retrospective Cohort Study. *J Cardiothorac Vasc Anesth*. 2017 Dec;31(6):2096-2102.
177. Allen LA, McIlvennan CK, Thompson JS, Dunlay SM, LaRue SJ, Lewis EF, Patel CB, Blue L, Fairclough DL, Leister EC, Glasgow RE, **Cleveland JC Jr**, Phillips C, Baldrige V, Walsh MN, Matlock DD. Effectiveness of an Intervention Supporting Shared Decision Making for Destination Therapy Left Ventricular Assist Device: The DECIDE-LVAD Randomized Clinical Trial. *JAMA Intern Med* 2018 Feb 26. doi:10.1001/jamainternmed.2017.8713.
178. Yamanaka K, Eldeiry M, Aftab M, Mares J, Ryan TJ, Meng X, Weyant MJ, **Cleveland JC Jr**, Fullerton DA, Reece TB. Optimized Induction of Beta Common Receptor Enhances the Neuroprotective Function of Erythropoietin in Spinal Cord Ischemic Injury. *J Thorac Cardiovasc Surg*. 2018 Feb 9. Pii: S0022-5223(18)30305-2. doi: 10.1016/j.jtcvs.2017.12.132
179. Moulton KS, Li M, Strand K, Burgett S, McClatchey P, Tucker R, Furgeson SB, Lu S, Kirkpatrick B, **Cleveland JC Jr**, Nemenoff RA, Ambardekar AV, Weiser-Evans MC. PTEN Deficiency Promotes Pathological Vascular Remodeling of Human Coronary Arteries. *JCI Insight* 2018 Feb 22;3(4): pii:97228. doi: 10.1172/jci.insight.97228.
180. Mehra MR, Goldstein DJ, Uriel N, **Cleveland JC Jr**, Yuzefpolskaya M, Salerno C, Walsh MN, Milano CA, Patel CB, Ewald GA, Itoh A, Dean D, Krishnamoorthy A, Cotts WG, Tatoes A, Jorde UP, Bruckner BA, Estep JD, Jeevandam V, Sayer G, Hortsmanshof D, Long JW, Gulati S, Skipper ER, O'Connell JB, Heatley G, Sood P, Yaka N; MOMENTUM 3 Investigators. Two-year outcomes with a Magnetically Levitated Cardiac Pump in Heart Failure. *N Engl J Med*. 2018 Apr 12;378(15):1386-95.
181. Shahian DM, Jacobs JP, Badhwar V, Kurlansky PA, Furnary AP, **Cleveland JC Jr**, Lobdell KW, Vassileva C, Wyler von Ballmoos MC, Thourani VH, Rankin JS, Edgerton JR, D'Agostino RS, Desai ND, Feng L, He X, O'Brien SM. The Society of Thoracic Surgeons 2018 Adult Cardiac Surgery Risk Models: Part 1- Background, Design Considerations, and Model Development. *Ann Thorac Surg* 2018 May;105(5):1411-18.
182. O'Brien SM, Feng L, He X, Xian Y, Jacobs JP, Badhwar V, Kurlansky PA, Furnary AP, **Cleveland JC Jr**, Lobdell KW, Vassileva C, Wyler von Ballmoos MC, Thourani VH, Rankin JS, Edgerton JR, D'Agostino RS, Desai ND, Edwards FH, Shahian DM. The Society of Thoracic Surgeons 2018 Adult Cardiac Surgery Risk Models: Part 2- Statistical Methods and Results. *Ann Thorac Surg* 2018 May;105(5):1411-18.
183. **Cleveland JC Jr**. Timeout: A look to the left. *J Thorac Cardiovasc Surg*. 2018 Sept.pii:S0022-5223(18)32291-8.epub
184. Colombo PC, Mehra MR, Goldstein DJ, Estep JD, Salerno C, Jorde UP, Cowger JA, **Cleveland JC Jr**, Uriel N, Sayer G, Skipper ER, Downey FX, Ono M, Hooker R, Anyanwu AC, Givertz MM, Mahr C, Topuria I, Somo SI, Crandall DL, Horstmannshof DA. Comprehensive Analysis of Stroke in the Long Term Cohort of the MOMENTUM 3 Study: A Randomized Controlled Trial of the Heartmate 3 versus the Heartmate II Cardiac Pump. *Circulation* 2018 Sept 17. doi:10.1161/CIRCULATIONAHA.118.037231.

185. Mehra MR, Salerno C, **Cleveland JC Jr.**, Pinney S, Yuzefpolskaya M, Milano CA, Itoh A, Goldstein DJ, Uriel N, Gulati S, Pagani FD, John R, Adamson R, Bogaev R, Thohan V, Chuang J, Sood P, Goates S, Silvestry SC. Healthcare Resource Use and Cost Implications in the Momentum 3 Long-Term Outcome Study. *Circulation* 2018 Oct 30;138(18):1923-34.
186. Mehra MR, Salerno C, Yaka N, Uriel N, **Cleveland JC Jr.**, Horstmanshof D, Goldstein DJ, MOMENTUM 3 Investigators. A Tale of the Twist in the Outflow Graft: An Analysis from the MOMENTUM 3 Trial. *J Heart Lung Transplant* 2018 Nov;37(11):1281-84.
187. Yamanaka K, Eldeiry M, Aftab M, Ryan TJ, Roda G, Meng X, Weyant MJ, **Cleveland JC Jr.**, Fullerton DA, Reece TB. Pretreatment with diazoxide attenuates spinal cord ischemia-reperfusion through STAT3 pathway. *Ann Thorac Surg* 2018 Nov 2. Pii: S0003-4975(18)31549-2. Epub
188. Yamanaka K, Eldeiry M, Aftab M, Ryan TJ, Mares J, Meng X, Weyant MJ, **Cleveland JC Jr.**, Fullerton DA, Reece TB. Synergistic reduction of apoptosis with diazoxide and erythropoietin in spinal cord ischemic injury. *Ann Thorac Surg* 2018 Dec;106(6):1751-8.
189. **Cleveland JC Jr.**, Goldstein DJ. The HeartMate 3 pump: Overcoming the hemocompatibility gap. *J Thorac Cardiovasc Surg.* 2018 Dec;156(6):2140-42.
190. Afilalo J, Sharma A, Zhang S, Brennan JM, Edwards FH, Mack MJ, McChurken JB, **Cleveland JC Jr.**, Smith PK, Shahian DM, Peterson ED, Alexander KP. Gait Speed and 1-Year Mortality Following Cardiac Surgery: A Landmark Analysis from the Society of Thoracic Surgeons Adult Cardiac Surgery Database. *J Am Heart Assoc* 2018 Dec 4;7(23):e010139. Doi: 10.1161/JAHA.118.010139.
191. Eldeiry M, Ghincea C, Aftab M, **Cleveland JC Jr.**, Fullerton DA, Reece TB. Inominate Versus Axillary Artery Cannulation for the Hemiarch Repair. *J Surg Res* 2018 Dec;232:234-39.
192. January CT, Wann LS, Calkins H, Chen LY, Cigarroa JE, **Cleveland JC Jr.**, Ellinor PT, Ezekowitz MD, Field ME, Furie KL, Heidenreich PA, Murray KT, Shea JB, Tracy CM, Yancy CW. 2019 AHA/ACC/HRS Focused Update of the 2014 AHA/ACC/HRS Guideline for the Management of Patients with Atrial Fibrillation: A Report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines and the Heart Rhythm Society. *J Am Coll Cardiol* 2019 Jan 21. Pii:S0735-1097(19)30209-8. Doi:10.1016/j.jacc.2019.01.011
193. **Cleveland JC Jr.**, Invited Commentary: Arteries and Veins: Choices Abound. *J Thorac Cardiovasc Surg* 2019 Jan 22. Pii:S0022-5223(19)30242-9. Doi:10.1016/j.jtcvs.2019.01.032
194. Grover FL, **Cleveland JC Jr.**, Invited Commentary: Doing what is right-We are all in this together. *J Thorac Cardiovasc Surg* 2019 Jan 31. Pii:S0022-5223(19)30304-6. doi:10.1016/j.jtcvs.2019.01.090
195. Mehra MR, Uriel N, Yaka Y, **Cleveland JC Jr.**, Yuzefpolskaya M, Salerno CT, Walsh MN, Milano CA, Patel CB, Hutchins SW, Ransom J, Ewald GA, Itoh A, Raval NY, Silvestry SC, Cogswell R, John R, Bhimaraj A, Bruckner BA, Lowes BD, Um JY, Jeevanandam V, Sayeer G, Mangi AA, Molina EJ, Sheikh F, Aaronson K, Pagani FD, Cotts WG, Tatrooles AJ, Babu A, Chomsky D, Katz JN, Tessmann PB, Dean D, Krishnamoorthy A, Chuang J, Topuria I, Sood P, Goldstein DJ. MOMENTUM 3

**Book Chapters**

1. **Cleveland JC Jr**, Harken AH. Coronary Artery Disease. In *Surgical Secrets*, 3<sup>rd</sup> Edition, Harken AH, Moore EE, eds., Hanley and Belfus, Inc., Phila, PA, 1996.
2. **Cleveland JC Jr**, Harken AH. Rational Strategies in the Management of the Surgical Treatment of Ventricular Tachyarrhythmias. In *Mastery of Cardiothoracic Surgery*, 1<sup>st</sup> Edition, Kaiser LR, Kron IL, Spray TL, eds., Lippencott-Raven, Phila, PA 1998.
3. **Cleveland JC Jr**. Coronary Artery Disease. In *Surgical Secrets*, 4<sup>th</sup> Edition, Harken AH, Moore EE, eds., Hanley and Belfus Inc., Phila, PA, 1999.
4. Pomerantz BJ, **Cleveland JC Jr**, Pomerantz M. The Schede and Modern Thoracoplasty. In *Operative Techniques in Cardiovascular and Thoracic Surgery*. W. B. Saunders Company. Vol 5, No2, 2000:pp128-134.
5. **Cleveland JC Jr**, Grover FL. Prophylaxis against atrial fibrillation following open heart surgery. In Franco & Verrier eds. *Advanced Therapy in Cardiac Surgery*, BC Decker, Hamilton, ON Canada, May 2002.
6. **Cleveland JC Jr**, Zamora MR, Grover FL. Complications Following Lung Transplantation. In :Yang SC, Cameron DE, ed *Current Therapy in Thoracic and Cardiovascular Surgery*. Baltimore, MD: Mosby 2004.
7. **Cleveland JC Jr**. Coronary artery disease. In *Surgical Secrets*, 5<sup>th</sup> Edition, Harken, Moore EE, eds Hanley and Belfus Inc., Phila PA, 2003.
8. **Cleveland JC Jr**. Ascending aortic dissection. In *Treatment Strategies in Cardiovascular Disease*. Teaching Publication for national hand held computer program. June 2003.
9. **Cleveland JC Jr**. Thoracic aortic aneurysm. In *Treatment Strategies in Cardiovascular Disease*. Teaching publication for national hand held computer program. June 2003.
10. Selzman CH, **Cleveland JC Jr**. Preoperative Cardiac Evaluation. In: McIntyre, Stiegmann, Eiseman eds. *Surgical Decision Making* 5<sup>th</sup> Edition, Elsevier Saunders, Philadelphia, PA
11. **Cleveland JC Jr**, Mitchell JD, Grover FL. Databases and Clinical Outcomes: The General Thoracic Surgery Database. In: Franco KL, Putman JB, editors. *Advanced Therapy in Thoracic Surgery* 2<sup>nd</sup> ed. Hamilton, Ontario: BC Decker, Inc.; May 2005.
12. **Cleveland JC Jr**, Francalancia NA. Geriatric Cardiac Surgery. In: *New Frontiers in Geriatric Research; An agenda for surgical and related medical specialties*. eds. David H Soloman, Associate eds Joseph LoCicero III, Ronnie N Rosenthal. Aug 2006.
13. **Cleveland JC Jr**, Shroyer LA, Grover FL. Cardiac Surgical Databases. In: *Mastery of Cardiothoracic Surgery*, Second Edition, Kaiser LR, Kron IL and Spray TL eds. Philadelphia: Lippincott Williams and Wilkins. October 2006.
14. **Cleveland JC Jr**. Coronary Artery Disease. In: Harken AH, Moore EE, eds *Abernathy's Surgical Secrets*, 6<sup>th</sup> Edition., Mosby Elsevier. 2009
15. Reece TB, Cannon A, **Cleveland JC Jr**. Mechanical Circulatory Support. In : Harken AH, Moore EE, eds. *Abernathy's Surgical Secrets*, 6<sup>th</sup> Edition, Mosby Elsevier. 2009
16. **Cleveland JC Jr**, Grover FL. Thrombosis and Thromboembolism of Prosthetic Cardiac Valves and Extracardiac Prostheses. In: Sabiston & Spencer *Surgery of the Chest*, 8<sup>th</sup> ed. Sellke FW, del Nido PJ, Swanson SJ, editors. Philadelphia, Pennsylvania: chpt 82, 2010.

17. **Cleveland JC Jr.**, Preoperative Evaluation and Preparation in the Elderly Cardiac Surgery Patient. In: Cardiothoracic Surgery in the Elderly. Mark Katlic ed. Publisher: Springer Science + Business Media, Inc., 2010.
18. **Cleveland JC Jr.**, Pagani FD. Ventricular Assist Devices. In: Mack MJ and Grover FL eds. Master Techniques in Surgery: Cardiac Surgery, Wolters Kluwer, 2016.
19. **Cleveland JC Jr.** Cardiothoracic Surgery. In: Burton JR, Lee AG, Potter JF eds. Geriatrics for Specialists. Springer Switzerland, 2017.
20. **Cleveland JC Jr.** Long-Term Uses of Mechanical Circulatory Support Devices. In: Gravlee GP, Davis RF, Hammon JW, Kussman BD eds. Cardiopulmonary Bypass and Mechanical Circulatory Support Principles and Practice. Wolters Kluwer, 2019
21. Hoffman JR, Pal JD, **Cleveland JC Jr.** Devices for Cardiac Support and Replacement. In: Gravlee GP, Shaw AD, Bartels K eds. Hensley's Practical Approach to Cardiothoracic Anesthesia. Wolters Kluwer, 2019.

## **ATTACHMENT 5**

### **DOCUMENTS REVIEWED BY NORTHGAUGE**

As part of its review, NorthGauge requested, received and reviewed documents, including, but not limited to, the following:

1. comprehensive patient medical records;
2. outcomes data, by CT surgeon from STS registry data, STS/ACC TVT registry data, internal quality metrics/outcomes, CQI efforts, and OPPE reports by surgeon;
3. statistical reports reflecting volumes by physician by CPT code/description by year;
4. surgical patient mortalities by LOS for each physician: 2019-2022 (including surgeon name, patient ID, date of surgery, CPT code/description for surgery, date of mortality, cause of mortality);
5. clinical privilege requirements for CT surgery;
6. approved privileges form for each CT surgeon;
7. minutes of relevant meetings that address heart and vascular quality, patient safety, and strategy;
8. strategic plan for New England Heart and Vascular Institute;
9. organizational charts that show how the New England Heart and Vascular Institute fits into the organization;
10. contracts with physician leaders; performance standards;
11. contracts with each surgeon (if in place); and
12. performance-based job descriptions for clinical leaders, including directors of surgery, structural heart, and the ICU.

## **ATTACHMENT 6**

### **OVERVIEW OF PROPOSED PEER REVIEW POLICIES**

#### **Professional Practice Evaluation Policy**

The professional practice evaluation policy (“PPE Policy”) addresses the initial focused professional practice evaluation process, ongoing professional practice evaluation process, and focused professional practice evaluation when concerns have been raised.

All initially-granted clinical privileges should be subject to focused review to confirm that the practitioner is competent to exercise the privileges. The PPE Policy should outline how the clinical activity requirements are determined, the mechanism for focused review, and how the results of the review are factored into privileging decisions.

CMC should evaluate the clinical performance of the practitioners, including APPs, on an ongoing basis. Accordingly, the PPE Policy should provide guidance on how data that is collected is determined, the manner of collection, and how it is reviewed. It also addresses the process for further review if the data supports that such a review is required.

Perhaps the most critical part of the PPE Policy deals with the process to evaluate concerns that have been raised. The PPE Policy outlines the events that trigger a review, the interventions available to Medical Staff Leaders to address identified concerns, the way the practitioner is notified and included in the review process, and the specific step-by-step process for review.

#### **Medical Staff Professionalism Policy**

The Professionalism Policy describes the conduct that is expected of all practitioners and provides specific examples of inappropriate conduct and behaviors that undermine a culture of safety. The Policy also outlines the process for reporting concerns regarding professional conduct and outlines the specific way those concerns are most effectively shared with a colleague and then assessed by the Medical Staff Leadership. Specific interventions that can be utilized to address those concerns are included in the Policy.

#### **Practitioner Health Policy**

The Practitioner Health Policy outlines the process for reporting potential health issues, how to respond to health issues that may pose an immediate threat to patient care, the step-by-step review process and intervention steps with a practitioner in these situations, the conditions or restrictions on practice, and the reinstatement/resumption of practice process after a leave of absence for health reasons.

## **Manuals**

For each of the Policies, manuals should be developed which include tools to be utilized on a day-to-day basis to effectively implement and successfully maintain the new policies. The Manuals track the Policies and include numerous supplemental/operational documents such as review forms, recommended letters, talking points, and checklists for each level of review.

Each of these Policies also addresses how to integrate the employment process to help ensure that the employment decisions do not interfere with Medical Staff oversight.

## ATTACHMENT 7

### RECOMMENDATIONS REGARDING MEDICAL STAFF BYLAWS AND CREDENTIALING POLICY

#### A. Medical Staff Bylaws

1. To comply with the CoPs, the Bylaws need to include a section on history and physicals.
2. The patient contact requirements with respect to the Active Staff and Courtesy Staff are out of synch and should be revised.
3. There is no need for a Temporary Staff for individuals with temporary privileges. The Temporary Staff is not granted membership.
4. Article VI deals with Graduate Medical Trainees. Graduate Medical Trainees should not be granted clinical privileges.
5. Section VII.A.6 addresses quorum requirements. In addition to the 50% quorum requirement of the MEC, we would suggest adding the Credentials Committee and the Peer Review Committee.

#### B. Credentialing Policy

1. More stringent threshold criteria should be built into Section II.A.1.
2. A process for reviewing alleged misstatements should be included.
3. Section II.C.2(a), Grant of Immunity and Authorization to Obtain/Release Information, should be revised to make it clear that the immunity and authorization extends beyond a term of appointment or reappointment.
4. Section II.C.2(a)(2) needs to be revised to include authorization to release information to third parties who are assessing a practitioner's qualifications, competence or health pursuant to a review and government, regulatory, or licensure Boards or agencies pursuant to state or federal law.
5. A section should be added to Section II.C that addresses situations in which the practitioner decides to take legal action, despite the release and immunity language, and does not prevail.
6. Section III.A.5 is an expedited process for credentialing that seems to combine a bit of temporary privileges for applicants, temporary privileges for an important patient care need and expedited Board review on applications. This section should

be deleted and new sections on temporary privileges for applicants, temporary privileges for an important patient care need and expedited Board review on application should be included.

7. Section III.A.9, Criteria for Additional Inquiry, should be deleted as it could be construed as limiting Section II.B.2 Burden of Providing Information and limiting the circumstances for which additional, clarifying information may be requested from an applicant. Section II.B.2 is broadly worded and the circumstances described in Section III.A.9 are covered in that Section.
8. Section III.B addresses provisional status which really is covered by the FPPE Policy. We recommend deleting this section and making a reference to the FPPE process and the fact that all initial grants of clinical privileges will be subject to it.
9. A section should be added which addresses privilege modifications and waivers.
10. Section IV.A.2, Clinical Privileges for New Procedures, should be revised to include more detail and guidance as to the process to be followed when considering these decisions.
11. Section IV.A.3, Clinical Privileges That Cross Specialty Lines, should be revised to include more detail and guidance as to the process to be followed when considering these decisions.
12. A section on disaster privileges should be included unless there is a separate policy.
13. A section on exclusive arrangements should be included.
14. A section on telemedicine privileges should be included.
15. A section on guidelines on collegial intervention should be included.
16. A section on additional methods for progressive steps should be included.
17. Section VI.C on precautionary suspensions needs to be revised in terms of best practices and clarity.
18. The grounds for automatic relinquishment listed in Section VI.D should be expanded to address issues such as failure to satisfy threshold eligibility criteria, failure to comply with training or educational requirements, failure to comply with request for fitness to practice evaluation, and failure comply with request for competency assessment. A more detailed section of reinstatement from an automatic relinquishment should be included.
19. A provision should be added to Section VI.E that would allow the CMO to impose an administrative leave of absence. A provision which addresses what happens

when a practitioner's appointment and privileges expire while on leave would also be helpful.

20. Section VII.A.2, Exception to Hearing and Appeal Rights, needs to be revised.
21. Article VII is generally appropriate but provisions should be added to address issues such as compensation for hearing panel members, time allotted for the hearing, provision of information to the hearing panel, and presence of hearing panel members. We do not recommend the use of a hearing officer for clinical matters.