

2022 CSCP National Meeting

Friday, Oct 28

07:00 AM - 07:10 AM

Welcome

Welcome to the 2022 CSCP National Meeting! Tips for the best experience: 1. Watch the Video in the 'Help' Tab2. Use a DESKTOP or LAPTOP computer (phones and tablets are not recommended) 3. Recommended browser is Google Chrome4. ENABLE pop-ups - Class I credits can only be claimed for content watched LIVE5. Get comfy, fill your water bottles and have lots of snacks available

Friday, Oct 28

07:10 AM - 07:50 AM

Perfusionist Removal of Intra-aortic Balloon Pump Catheters Improves Efficiency without an Increase in Complication Rates

Richard Saczkowski

Clinical Perfusionist, Kelowna General Hospital

Authors: Richard Saczkowski, Saverio Spada, Kris Hromadnik Introduction The intra-aortic balloon pump (IABP) is one of the most utilized cardiac assist devices. Patients receiving IABP therapy are managed in high acuity clinical care areas, typically the coronary care unit (CCU) or cardiac surgery intensive care unit (CSICU). These care areas have limited bed space and high demand, which require efficient resource use to permit patient access. Our center instituted a perfusionist lead initiative to remove IABP catheters in order to reduce IABP therapy time, hasten removal and improve efficiency. Methods The purpose of the study is to compare outcomes for ...

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07:50 AM - 08:30 AM

Differential Effects of Normoxic and Hyperoxic Reperfusion on Myocardial Ischemia-Reperfusion Injury

John Charpie

Division Director and Amnon Rosenthal Professor of Pediatric Cardiology & Co-Director of the University of Michigan Congenital Heart Center, C.S. Mott Children's Hospital & University of Michigan Congenital Heart Center Background: Myocardial ischemia-reperfusion (IR) injury associated with cardiopulmonary bypass (CPB) and cardioplegic arrest contributes to ventricular dysfunction and adverse outcomes after open heart surgery. The pathogenesis of myocardial IR injury is complex, but oxidant stress (OS) may play a pivotal role leading to lipid peroxidation, protein denaturation, DNA fragmentation, and irreversible cardiomyocyte injury. OS-related cell damage can also initiate a local inflammatory response which further exacerbates tissue injury. The aim of this study was to use in vitro and in vivo models of IR to assess the impact of re-oxygenation conditions on OS, inflammation, and cardiomyocyte injury. Methods: For in ...

Friday, Oct 28

08:30 AM - 09:10 AM

Randomized Prospective Trial Comparing DNA Cardioplegia to 1:4 Del Nido Cardioplegia.

Scott Noesges

Perfusion Manager; Director of ABCP, Baylor University Medical Center

Cardioplegia has evolved over several decades from mechanical clamp techniques and electrical fibrillation, to the current chemical arrest agents. During this evolution there have been many advances from cold crystalloid therapies to a variety of blood/crystalloid ratios. Single dose techniques of Del Nido cardioplegia have shown to improve outcomes and reduce cross clamp times, however, there are known limitations with crystalloid based cardioplegias. Our study compared DNA microplegia to Del Nido utilizing a single dose method, shows a reduction in troponin-I levels, intra/post-operative fibrillation, and a reduction in hemoconcentrator use by 95%. Our technique and antegrade method of single dose ...

Friday, Oct 28

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Mental Wellness in High Psychological Risk Occupations

Megan McElheran

Clinical Psychologist, Wayfound Mental Health Group

In the context of the ongoing COVID-19 pandemic, issues related to mental wellness have been significantly identified, particularly for those working in frontline healthcare occupations. This presentation will discuss the issue of proactive psychological protection for frontline healthcare workers, with the goal of enhancing personal empowerment and decreasing experiences of learned helplessness in the face of persistent occupational and social stressors. The construct of resiliency will be discussed, with an emphasis on how frontline workers can develop idiosyncratic ways of enhancing mental wellness in a fluid, versus fixed, fashion.<https://wayfound.ca/start-the-registration-process/>

Friday, Oct 28

10:10 AM - 10:50 AM

Why do we HOPE?

Trudie Yeung

Hope Coordinator, Alberta Health Services

The first successful human organ transplant was completed in 1954. Since then, science has allowed us to begin transplanting other organs and tissues and has become an option for treatment. In 2019, 250 patients died waiting for an organ transplant in Canada and 4,400 patients were waiting for a transplant. The purpose of this presentation is to bring more awareness to organ and tissue donation in hopes of reducing the number of deaths of patients waiting for a transplant, and to tell you about what we at HOPE do.

Friday, Oct 28

10:50 AM - 11:30 AM

Re-thinking Mandated Anonymity in Deceased Organ Donation

Nicholas Murphy

Bioethicist and Postdoctoral Fellow, Western University

Historically, all Canadian provinces had policies or legislation barring organ donation organizations from disclosing information identifying deceased donors' families and organ recipients, even with their mutual consent. The rationale was to protect stakeholders from risks like financial exploitation, unwelcome emotional demands, feelings of indebtedness, and complicated grief. Some stakeholders have long expressed frustration with this restrictive framework, believing that they ought to be permitted to reap the benefits that research has shown can arise when the two sides meet. With the rise of social media, deceased donors' families and organ recipients are taking matters into their own hands by seeking ...

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Building A Normothermic Regional Perfusion Program

Kara Monday

Trauma Surgeon, Surgical Intensivist, Associate Medical Director, Baylor University Medical Center

Lifesaving organ transplants have been limited by availability and quality of organs for transplant, and donation after cardiac death provides a viable source of organs if ischemia time can be limited. Normothermic Regional Perfusion (NRP) is an option to perfuse and assess organs before implantation and also allow for cardiac donation in the DCD donor. This presentation will outline the benefits and operational basics of NRP for abdominal and thoracic organ transplant, and the steps we took to start a program at our institution. We will cover the initial planning steps, ethical and institutional considerations, and logistical challenges and how ...

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Normothermic Regional Perfusion: A Clinical Perspective

Scott Noesges

Perfusion Manager; Director of ABCP, Baylor University Medical Center

Donation after cardiac death (DCD) is a method of organ procurement developed the last decade. This process has increased the donor pool of non-cardiac organs and has made a profound impact on patient survival. Historically hearts and lungs were not considered viable due to concerns of hypoxia and myocardial cell death. Recently, a new method Normothermic Regional Perfusion (NRP) has proven to reverse the hypoxic conditions, and lead to the recovery of these organs. This method now allows the cardiac team to place the donor on modified cardiopulmonary bypass (mCPB) to perfuse the body. Our modifications to standard bypass protocols ...

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Expanding the Donor Pool: A Case for DCD heart Transplantation

Jordan Hoffman

Cardiac Surgeon; Associate Professor, University of Colorado

Background: Given the shortage of suitable donor hearts for cardiac transplantation and the growing interest in donation after circulatory death (DCD), there has been an interest in alternative techniques to DCD heart recovery. Methods: Starting October 2020, patients with heart failure underwent cardiac transplantation using DCD allografts. Allografts were procured using a modified extracorporeal membrane oxygenation circuit for thoracic normothermic regional perfusion (TA-NRP) and were subsequently transported using cold static storage. Data collection and analysis were performed with institutional review board approval. Results: Sixty-two (n = 62) total DCD procurements have occurred with the TA-NRP technique. Of these, there has ...

Friday, Oct 28

02:10 PM - 02:50 PM

Oxygenator Transmembrane Pressure Panel Discussion

Christos Calaritis

Director and Chief of Perfusion and ECMO, Children's Hospital of Richmond at VCU Health

Justin Hawkins

Cardiovascular Perfusionist, Nova Scotia Health Authority - QEII

Matthew Hillier

Cardiovascular Perfusionist, Mazankowski Alberta Heart Institute

This panel discussion will explore oxygenator transmembrane pressures and high pressure excursion on cardiopulmonary bypass. Topics of discussion to include: Do you monitor pre & post-membrane pressures? Why or why not? What is the max TMP pressure you would tolerate? When do you consider changing out the oxygenator? Predictors and solutions to resolve pressure excursions Review of previous cases & results from manufacturer investigation (if applicable)

Friday, Oct 28

02:50 PM - 03:30 PM

Combined Coronary Artery Bypass Grafting and Carotid Endarterectomy: A Review of Evidence

Saurabh Gupta

Cardiac Surgery Fellow, University of Alberta

Stroke remains a serious complication of coronary artery bypass grafting surgery, with incidence ranging from 2-4%. The incidence of carotid artery stenosis with coronary artery disease varies anywhere from 2% to 22%, depending on the series of patients reviewed. Among those undergoing coronary artery bypass grafting, 8% to 10% are identified to have carotid artery stenosis. In fact, a unilateral carotid artery stenosis of >70% is identified as an "important" risk factor for cerebrovascular accident in coronary artery bypass grafting surgery patients. As such, we will review the available evidence around concomitant surgical intervention for carotid and coronary artery diseases.

Friday, Oct 28

03:30 PM - 04:10 PM

Emboli Fate Influenced by Aortic Cannula and Cardiopulmonary Bypass Pump Variables

Raymond Ho

BEng, MEngSci, PhD, Queensland University of Technology

Abstract: Numerous research has investigated gaseous emboli aetiology and end-organ complications during cardiopulmonary bypass, yet the presence of emboli remains a constant threat. Our study uses computer simulations and in vitro experiments to demonstrate how the aortic cannula and CPB pump variables influence emboli trajectories. Therefore, increasing our understanding of particle pathlines could help predict embolic load towards the great arch vessels.

Saturday, Oct 29

07:00 AM - 07:40 AM

Physician Sex and Impact on Patient Outcomes

Angela Jerath

Cardiac Anesthesiologist, Sunnybrook Health Sciences Centre

Christopher Wallis

Urologic Oncologist, University Health Network

Sociocultural constructs of patients and their treating surgeon are likely to significantly impact patient survival and recovery after surgery. This talk will explore the intersection of physician sex and age with patient sex on outcomes after common and complex surgical procedures. <https://www.nytimes.com/2019/02/07/opinion/sunday/girls-school-confidence.html>

Saturday, Oct 29

07:40 AM - 08:20 AM

Communication Pattern in the Cardiac Surgery Operating Room are Affected by Task Difficulty: A Simulation Model

Abigail White

Cardiac Surgery Resident; PhD Candidate, University of Alberta

Background: Cardiac surgery is dependent on successful interaction between surgeon, anesthesia, and perfusion to ensure a successful patient outcome. Despite this recognition, few multidisciplinary NOTSS-training programs currently exist. We demonstrate a simulation model to evaluate communication patterns amongst operating room members. Methods: Four groups consisting of a surgeon, anesthesiologist and perfusionist underwent a high-fidelity porcine model cardiopulmonary bypass (CPB) simulation. Phase I: initiation of CPB and phase II: weaning from CPB (more difficult). Videos of the simulation sessions were transcribed for audio and analyzed for the following five communication patterns: question, response, give an order, acknowledge/rebuke, and show appreciation. Chi-square ...

Saturday, Oct 29

08:20 AM - 09:00 AM

Advanced Practice in Clinical Perfusion

Saverio Spada

Cardiovascular Perfusionist, Kelowna General Hospital

We face within our current medical system a health care crisis punctuated by significantly depleted human resources resulting in challenges in providing timely patient centered-care. There is a need to consider "thinking outside the box" and create adaptability and flexibility under the human resource challenges we currently face. The expansion of health care roles and responsibilities to include taking on new tasks and advanced practice opportunities should be considered a valuable tool for health organizations looking to improve access to care. We present on the framework used within our department to support Perfusion Advanced Practice (AP) roles, and provide an ...

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Heartmate 3 Perfusion Considerations and 5-year Outcome Update for the Momentum 3 Trial

Bhavan Sandhu

Senior MCS Clinical Consultant, Abbott Medical Canada

Erica Johansson

Senior HF Clinical Consultant, Abbott Medical Canada

This presentation will provide a brief overview of the theory of operation of the HeartMate 3 LVAD. Specific attention will be given to perfusion considerations for different approaches (sternotomy vs thoracotomy) and key considerations during LVAD initiation. New clinical outcomes related to the Momentum 3 trial will also be covered.

Saturday, Oct 29

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LVAD Decommissioning Case Report

Vinod Kumar

Cardiac Surgery Fellow, University of Alberta

Mr. PF, 52/M, S/P Heartmate III LVAD by mini left thoracotomy and mini sternotomy on Apr, 2021 for non-ischemic dilated cardiomyopathy by Dr. Steven Meyer, underwent LVAD decommissioning 14 months later on June 2022 in view of improved LVEF from 15% to 60%. After confirming normal biventricular function with ramp studies utilizing transesophageal echocardiography (TEE) and Right heart catheterization (RHC), patient was taken to OR on June 02, 2022 and underwent LVAD decommissioning uneventfully by subxiphoid approach by Dr. Steven Meyer. Intraoperatively, small incision of about 5 cm is made at the level of xiphisternum and with the help of ...

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Use of Intravenous Albumin for Cardiac Surgery

Jeannie Callum

Director of Transfusion Medicine, Kingston Health Sciences Centre

Intravenous Albumin use in cardiac surgery ranges from 5 to 100% of patients across Canadian cardiac centres. Albumin use has been associated with fluid overload, hypotension, peripheral gangrene, and increased bleeding and infection rates after cardiac surgery. Albumin is expensive at approximately 75 CAD per 25 g dose. Use in cardiac surgery is a major driver of high rates of inappropriate use. A large, prospective, randomized trial involving 1400 patients failed to find albumin improving patient-important outcomes after cardiac surgery, and was found to increase the rates of bleeding, re-sternotomy, and infection. This session will review the clinical trial evidence ...

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Case Report: Total Volume Blood Exchange for a Sickle-Cell Anemia Patient

John Miller - C

Clinical Lead for Pediatric Perfusion, Children's Hospital of Richmond at VCU

Patients with Sickle-Cell Disease (SCD) present the cardiac surgery team with unique challenges. Prevention of the numerous sequelae of red blood cell sickling and sickle-cell crisis pathophysiology requires a comprehensive patient management strategy including careful pre-operative evaluation and laboratory studies, multidisciplinary surgical procedure planning, and a team-based intraoperative management strategy. This case report describes a congenital cardiac surgical procedure for a patient with SCD. Specific detail will focus on the patient's hematology laboratory results, pre-operative treatments, and Perfusionist intraoperative interventions to manage this pathology and optimize physiology to tolerate the surgical procedure on cardiopulmonary bypass.

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Circuit Challenges and Clinical Significance of Integrating CRRT with PediMag VAD Support for an Infant with Single Ventricle Complex Physiology

Laura Hebert

Cardiovascular Perfusionist, The Johns Hopkins Hospital

Our patient was a previous 37 week GA baby with a prenatal diagnosis of pulmonary atresia with intact ventricular septum whom underwent aortopulmonary shunt, bilateral pulmonary arterial reconstruction via pulmonary homograft and PDA closure at 2 weeks old. He subsequently developed ischemia and severe mitral regurgitation requiring ECMO support followed by mitral valve excision and Melody valve placement one week after his initial operation and was separated from ECMO 1 week post-op. Despite this effort, he had persistent ongoing ischemia and was listed for cardiac transplantation and a PediMag for left ventricular support was placed. By 5 months old, he ...

Saturday, Oct 29

01:00 PM - 01:40 PM

Paracorporeal VAD Support in Pediatric Patients

Jennifer Conway

Pediatric Cardiologist & University of Alberta Assistant Professor Department of Pediatrics, Stollery Children's Hospital

This talk will focus on the current state of paracorporeal VAD support in children including patient selection, device-patient interactions and outcomes. It will outline the efforts being made by the pediatric VAD community to improve outcomes and discuss changes that are on the horizon.

Saturday, Oct 29

02:00 PM - 03:30 PM

CSCP Annual Business Meeting

Andreanne Thiffault - C

Justin Hawkins

Cardiovascular Perfusionist, Nova Scotia Health Authority - QEII

Paul Gosse - C

Paul Hunter - C

All documents are available for viewing online [HERE](#) For unknown reasons, the Board Report video is not available. Board of Director voting is OPEN until Oct 30 0800 EDT (0500 PDT) - please check your email/junk. Emails were sent from Election BuddyAGM voting is OPEN until Oct 29 2359 EDT Please log in to the CSCP website, scroll down, click on 'Annual Reports' on the right-hand side and use the embedded form to vote. Recommended Browser is Google Chrome. If you are having difficulty with hospital computers, please try again on your personal device.

Sunday, Oct 30

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Protamine Test Dose: Impact on Activated Clotting Time and Circuit Integrity

Lauren Jansa

Cardiovascular Perfusionist, University Health Network

Introduction. Recurrent observation of clot in the cardiopulmonary bypass circuit following the administration of a Protamine Test Dose (PTD) prompted concern into the effects of PTDs on patient activated clotting times (ACT). Methods. Data was prospectively collected on 120 cardiopulmonary bypass patients undergoing a variety of cardiac surgeries from July to October, 2018. ACTs were documented prior to cardiopulmonary bypass termination, post PTD, and post protamine full dose. Statistical analysis was completed using a paired t-test. Results. The average PTD was calculated to be 36+21 mg or 11+7% of the full protamine dose of 367+153 mg. This "test" dose ranged ...

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TEG Viscoelastic Testing at Eastern Health

Lesley Johnston

Clinical Chief Peri-operative Anesthesiologist, Eastern Health; Memorial University

Thromboelastography is a non-invasive test that measures the viscoelastic changes of whole blood as it forms a clot. The real-time information obtained can be utilized to help guide transfusion decisions. At Eastern Health, the cardiac surgery program based out of the Health Sciences Centre began utilizing TEG6S analyzers in 2017 to support and guide patient blood management. This is our single-center experience in implementing the TEG6S and Cell Saver Devices to make improvements in patient blood management.

Sunday, Oct 30

08:20 AM - 09:00 AM

Immunologic Profile Differences between Sanguineous and Asanguineous Cardiopulmonary Bypass Prime for Pediatric Cardiac Surgery

Joel Bierer

Cardiac Surgery Resident PGY4, Dalhousie University

Roger Stanzel - C

CPC, PhD, MSc, Lead Perfusionist, Adjunct Professor, Dalhousie University (Surgery/Graduate Studies), Nova Scotia Health, Dalhousie University

Background. Sanguineous cardiopulmonary bypass (CPB) prime is commonly used for neonates, infants and small children undergoing cardiac surgery with CPB. This is primarily to avoid excessive hemodilution of hematologic components that would otherwise be experienced if a crystalloid prime was used. However, sanguineous prime is composed of donated packed red blood cells and fresh frozen plasma which can contribute to the systemic inflammatory response experienced during CPB exposure. This study aims to identify the quantities of relevant complement factors and cytokines in sanguineous prime and how this influences the patient's immunologic profile of inflammatory factors upon initiation of full-flow CPB. Methods. After ...

Sunday, Oct 30

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Pump Prime Solution: History, Current Perspectives and Future Directions

Blaine Achen

Anesthesiologist, Mazankowski Alberta Heart Institute

Elliot Pittman

Cardiac Anesthesia Fellow, University of Alberta

The fluid of choice for cardio-pulmonary bypass (CPB) priming has varied significantly over the last 20-30 years yet clinical equipoise still exists. CPB priming solution effects plasma oncotic pressure, hemodilution, tissue edema as well as metabolic, end-organ, and coagulation cascade dysfunction. Here we aim to briefly review past perspectives on the choice of CPB priming solution, current evidence, and the direction for potential future research.

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To RAP or not to RAP: A Retrospective Comparison of the Effects of Retrograde Autologous Priming

Emily Foreman

Chief Perfusionist, Memorial Hospital

ABSTRACT: BACKGROUND: Retrograde autologous priming (RAP) is a process used to reduce hemodilution associated with the initiation of cardiopulmonary bypass (CPB). Previous studies have reported potential benefits to RAP, however, many of these studies do not evaluate the benefits of RAP with limited preoperative fluid administration combined with a condensed CPB circuit. We examined clinical metrics of patients who underwent RAP versus those who did not undergo RAP prior to the initiation of CPB. METHODS: This was a retrospective data review of 1,303 patients who underwent CPB in the setting of open-heart surgery for a two-year period. RAP was utilized ...

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Platelet and Plasma Sequestration

Gerry van Rensburg

Anesthesiologist, Mazankowski Alberta Heart Institute

The coagulopathy brought about by cardiopulmonary bypass has long been a source of frustration and subject of study. We have found synthetic solutions for nearly all components of thrombus formation with the most notable exception being platelets. This presentation will review the literature around platelet and plasma sequestration, examine local techniques and consider its cost efficiency.

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Role of Rapid Deployment Valves

Sabin Boszo

Cardiac Surgery Resident, University of Alberta

Objectives: Rapid deployment valves have been developed as a means to adjust for limitations in transcatheter aortic valve replacement and surgical aortic valve replacement for the management of aortic valve disease. To date, many studies have shown that although rapid deployment valves facilitate a shorter surgical aortic valve replacement, they offer no clinical benefit. The purpose of this study was to compare the outcomes of rapid deployment valves with conventional surgical aortic valve replacement. Methods: This study was a retrospective review of all patients undergoing tissue aortic valve replacement at a single center. The majority of patients were men and ...

Sunday, Oct 30

12:15 PM - 01:00 PM

Neuroprotection in Aortic Surgery

Andy Liu

Cardiac Anesthesia Fellow, University of Alberta

Aortic surgery requires temporary interruption of cerebral blood flow, thereby requiring neuroprotection to avoid neurologic injury. Controversies exist in the most optimal strategy: how cold should the brain be? Should the brain be perfused in an antegrade or retrograde fashion? Should the brain be perfused unilaterally or bilaterally? This session will explore a historical context, some recent evidence, and future questions on neuroprotection.

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Aortic Dissections: What Do You Learn from the Research?

Michael Moon

Cardiac Surgeon, Mazankowski Alberta Heart Institute

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02:00 PM - 02:40 PM

Fatigue, safety, and extended work hours among cardiovascular perfusionists: Reflections from past to present

Edward Darling

Associate Professor, Cardiovascular Perfusionist, SUNY Upstate University Hospital

Due to the emergent unpredictable nature of cardiac surgery, perfusionists are susceptible to extended work hours and acute sleep deprivation. Previously in 2010, we published a comprehensive survey to determine (1) the prevalence and degree of fatigue in the perfusion community and, (2) concerns regarding fatigue, performance, and perfusion safety. In the 2010 survey the majority (68.9%) of surveyed perfusionists have worked at the hospital for greater than 23 hours straight and 17.5% have worked continuously for over 36 hours. Actual performance of cardiopulmonary bypass (CPB) after 17, 23, 36 hours of wakefulness was reported by 82.9%, 63% and 14.8% ...

Sunday, Oct 30

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Reducing Burnout in the Workplace

Anthony George

Cardiac Anesthesiologist, Mazankowski Alberta Heart Institute

What causes burnout? What are the consequences of burnout? What interventions help to reduce burnout? What are the ideal work elements that help to address burnout?

Sunday, Oct 30

03:20 PM - 04:00 PM

Supply Chain Issues - Taking Stock of the Situation

Brian McCloskey

Senior Clinical Specialist, Medtronic Canada

Supply chain is often taken for granted – in the past there were few issues affecting supply and production of cardiac surgery components. Rarely did we experience issues with equipment supply and if they happened they were typically short-lived. This situation has changed drastically in the past 2 years, with many factors creating shortages of raw materials and finished goods for perfusion supplies. COVID-19 has also exacerbated the issues, creating the perfect storm where supply, production and demand have not met the needs of the perfusion and cardiac surgery world. The multitude of reasons for the shortages are examined and ...

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Closing Remarks



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