

Eliminate the Need for Compounding Pharmacies

The innovative design of the Quest[®] MPS 3 ND System does not rely on compounding pharmacies, instead it allows drawing drugs directly from the vial. This method can reduce pharmacy expenses and reduce waste.

Improve your bottom line and enhance patient care with the Quest MPS 3 ND.

Discover how at QuestMPS3.com



MICROPLEGIA WITH THE QUEST MPS SYSTEM VERSUS TRADITIONAL CARDIOPLEGIA¹



Lowering cardiac surgery costs: How microplegia drives financial + clinical improvements

Cardiology departments and practices face numerous challenges, ranging from decreasing reimbursements to increasing overhead for surgical procedures, the transition to value-based care and more. Becker's Healthcare recently spoke with Jeff Robbins, CEO of LiveData, to learn how deploying real-time data-capture technology in the OR can streamline surgical workflows and elevate patient care and safety standards.

Becker's Healthcare recently spoke with Josene Carlson, BSN, RN, clinical specialist at Quest Medical, Inc. about the current cardiology landscape and how the use of microplegia during cardiac surgery can reduce costs and improve patient outcomes.

Editor's note: Quotes have been edited for length and clarity.

Question: As reimbursements decline, costs increase and supply chain issues persist, ambulatory surgery centers are looking at new opportunities to drive savings and efficiency. How have you seen these challenges and aims emerge in the cardiology space?

Josene Carlson, BSN, RN: Surgeons and hospitals are definitely looking at the costs of services performed and are trying to reduce those costs. As margins shrink and staffing costs grow, profitability has to be maintained; advanced technology is proving to be an effective pathway for doing so. The Quest MPS³ ND Myocardial Protection System is a powerful tool for the cardiology team. It lessens pharmacy, blood and ICU/hospitalization costs, as it captures services as one collective cost. The system uses microplegia – an easy, “no-brainer” alternative to traditional blood-crystalloid cardioplegia that provides myocardial protection without hemodilution. This approach combats rising costs for cardiac surgeries in which patients go on a heart-lung machine and surgeons perform cardiopulmonary bypass and arrest the heart.

Q: Can you provide an overview of the Quest MPS 3 ND Myocardial Protection System? What distinguishes it from other cardioplegia delivery systems?

JC: Currently, all cardioplegia modalities (except for the Quest MPS technology) use roller pumps. When fluid is pulled through a roller pump, it is mixed with bagged cardioplegia at a predetermined rate. Roller pumps are inherently dangerous when pushing fluids to the patient, as they can pull air out of the solution. Patient safety is why many programs have replaced the arterial pump from roller head to centrifugal pumps. Why not do the same with cardioplegia?

The Quest MPS 3 ND Myocardial Protection System uses back pressure from the heart-lung machine to fill fluid. This serves as a safety feature because it means you can never pull air out of the solution. Other built-in safety features include air detection and superior air handling, temperature alerts, built-in timers and ease of use. Roller pumps do not provide any of this functionality. The Quest MPS 3 ND Myocardial Protection System also mitigates the risk of nontuberculous mycobacteria because the heat exchange design has a dripless connection to the heater-cooler.

In addition to improved patient safety, the Quest MPS technology offers several other benefits that other methods do not. It can handle any ratio – even though the primary focus is microplegia, the device can handle bagged plegia just as easily. It can also support any protocol. With the touch of a button, it's possible to tailor dosing to the specific patient. For instance, if a patient comes to surgery in renal failure, you have the ability to alter the dosage of potassium to fit the patient's specific needs. This cannot be done with bagged cardioplegia.

Q: What improvements in cost savings and patient outcomes can organizations expect to see when switching from bagged cardioplegia to microplegia? Can you share some examples?

JC: The Quest MPS 3 ND Myocardial Protection System saves money on multiple dimensions. First, drug costs are lowered in two different ways. Facilities that purchase pre-mixed bags of cardioplegia from a compounding pharmacy see reduced costs, reduced waste and a more stable supply chain. Cardioplegia bags have short expiration dates. As a result, facilities tend to overbuy, and expired products must be discarded. For facilities with an in-house pharmacy that makes bagged cardioplegia, internal costs go down because you no longer need hood time to produce the bagged plegia and there is less pharmacy waste.

Second, there is a lower likelihood that a hemoconcentrator will be required. When you buffer drugs with the patient's blood, rather than giving them one to two liters of crystalloid, you don't need to take volume off with a hemoconcentrator. This also leads to less blood product utilization, generating further cost savings.

With the Quest MPS 3 ND Myocardial Protection System's ability to give microplegia, patients will experience less myocardial edema than with bagged plegia. This leads to an easier recovery for the heart, which is evidenced in decreased inotropes post-bypass and decreased length of stay for patients.

A study to determine the impact of microplegia delivery compared with traditional cardioplegia found a per-case reduction in costs of \$1,231 (total visit) and \$192 in medication costs at hospitals using microplegia. Researchers also found a one-day reduction in ICU days and a 2.25% reduction in overall adverse events among patients who received microplegia, which led to reductions in total visit and medication costs.¹

Q: Is there anything else you'd like our readers to know?

JC: All Quest products are manufactured at factories in the U.S. Pre-COVID, Quest's leadership invested a substantial amount of money in raw materials, so we would not be victim to material shortages. We control our inventory of cardioplegia disposables and are committed to supplying customers with the supplies they need.

¹ Marc W Gerdisch, et al. Clinical and economic benefits of advanced microplegia delivery system in cardiac surgery: evidence from 250 hospitals. Journal of Comparative Effectiveness Research 2018; April: 673-683. <https://becarispublishing.com/doi/10.2217/ceer-2018-0011>