

GETTING HOSPITAL ADMINISTRATORS TO

# **SUPPORT INTRAOPERATIVE FLOW MEASUREMENT**

## **DURING CABG**





## How does a product add value to patient care? What is its cost? Does it contribute to improved patient outcomes?

When evaluating different equipment for a hospital, these are all questions that the value analysis committee is likely to ask. The answers help this team of representatives—one that often includes high-level hospital administrators—navigate through numerous equipment requests and prioritize those with the greatest benefit to their hospital and bottom line.

To support the accurate decision-making of the value analysis committee, clinicians need to provide ample data on the value of specific technologies. This means presenting a clear vision of how the equipment aligns with the hospital's strategy, as well as both its short- and long-term objectives.

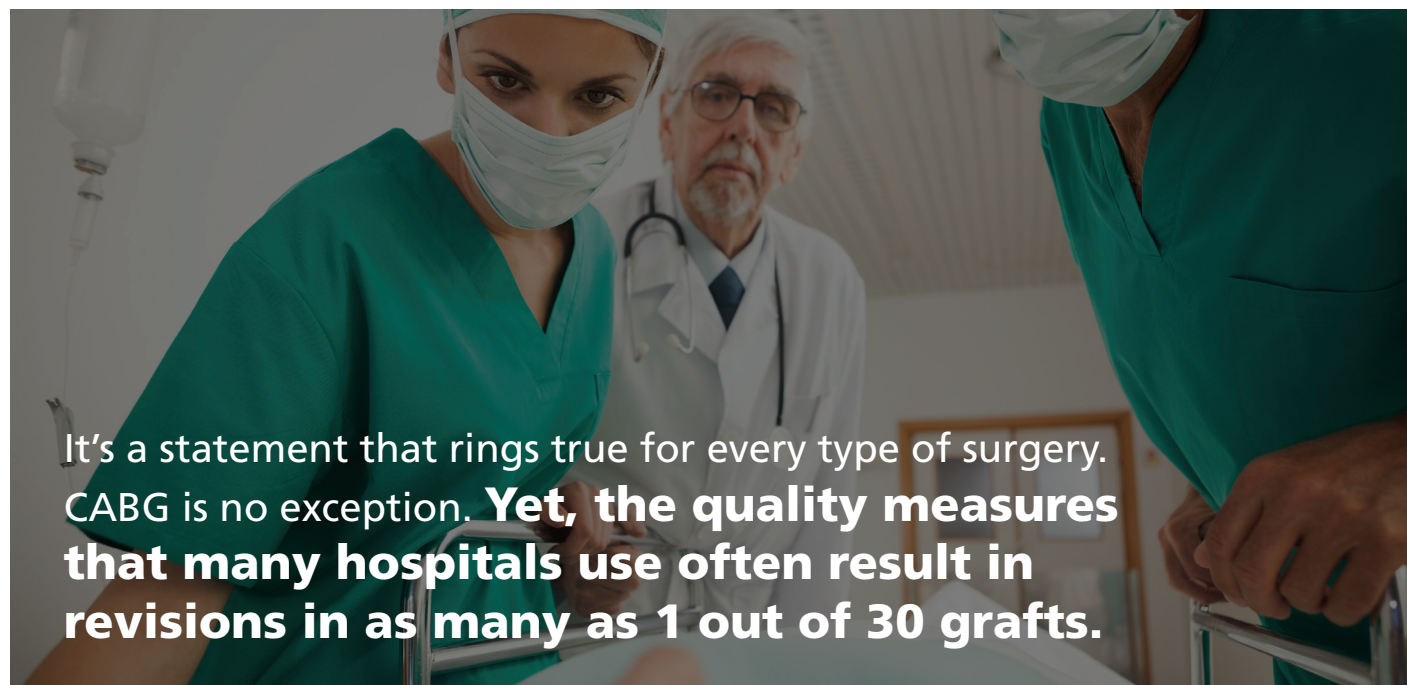


**This guide will offer suggestions on how to present the value of intraoperative flow measurements during coronary artery bypass grafting (CABG) to your value analysis committee—specifically hospital administrators.**



# Effectively Managing Flow in CABG

*"If you can't measure, **you can't manage.**"*



In some cases, flow measurement is assessed simply through clinical observation and the feeling of the vessel. Feeling a pulse only indicates that the vessel is connected to the heart. It is a subjective qualitative measure that is not quantitative.

In other cases, a Doppler probe may be placed on the vessel. This approach, however, doesn't measure volume flow; it just measures velocity, and is less precise and accurate than transit-time volume flow measurements.

The most accurate intraoperative quality check of coronary artery bypass grafts is transit-time flow measurements. Measuring volume flow through bypass grafts is paramount in ensuring functioning grafts and the success of the CABG surgery. As you establish this increased level of quality, the hospital benefits as a whole.

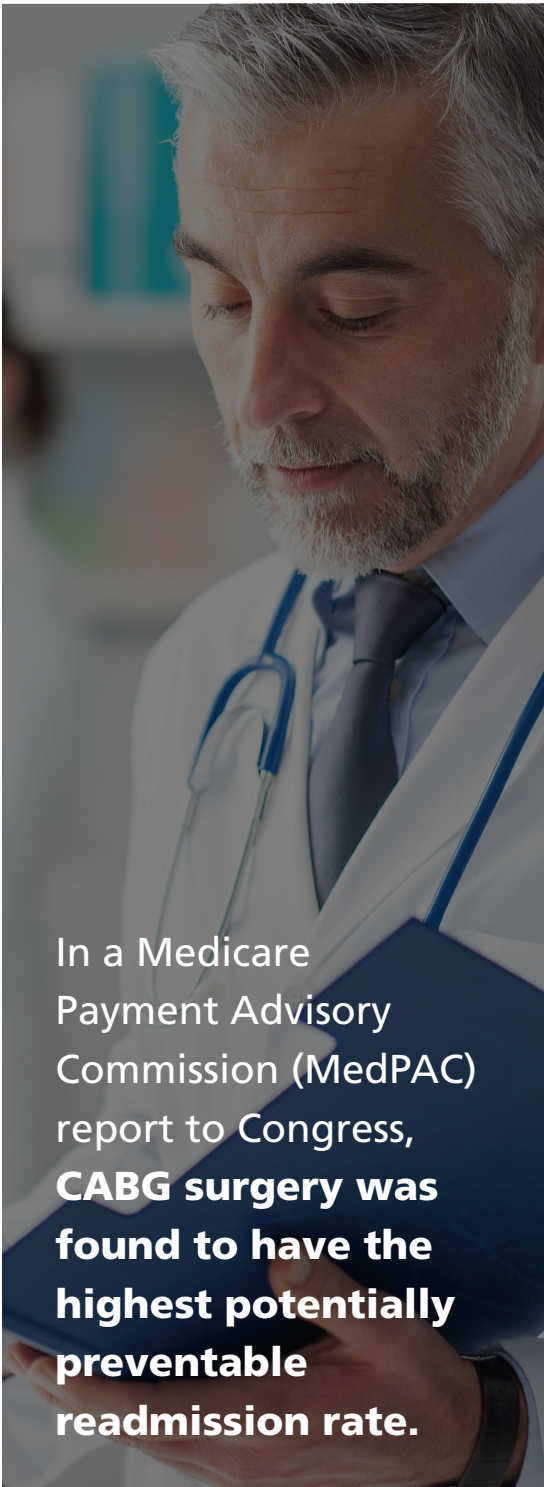
# The Benefits of Transit-Time Flow Measurement in CABG

## FEWER READMISSIONS

Readmissions have always been a point of concern for hospitals. But with the advent of CMS's Readmissions Reduction Program in 2012, there is an increased financial incentive to reduce or eliminate readmissions.

Recently, this program's list of applicable surgeries has grown to include [patients admitted for CABG surgery](#). That means that if a patient goes home from the hospital and is readmitted within 30 days, the hospital is penalized by a 3% reduction in reimbursement.

By alerting surgeons of flow-limiting problems during surgery and prompting corrective action, intraoperative flow measurement is an effective way to reduce the incidence of postoperative complications and avoid hospital readmissions and their subsequent costs. This also avoids the additional costs that come with the utilization of the OR for reoperations.



In a Medicare Payment Advisory Commission (MedPAC) report to Congress, **CABG surgery was found to have the highest potentially preventable readmission rate.**



## IMPROVED PATIENT SATISFACTION

A hospital's quantity of care was once the metric used to pay providers. In the age of value-based programs, healthcare providers are rewarded financially for the quality of care they deliver.

In this new environment, higher patient satisfaction scores have become especially important. Hospitals are encouraged to treat each patient experience as an investment and leverage tools that support initiatives for improvement. Intraoperative flow measurement is one of the tools that falls under this umbrella. When patients avoid coming back to the hospital after CABG for any reason, their satisfaction scores are bound to increase.

## BETTER PATIENT OUTCOMES

Every hospital wants to have a great track record for surgical success. One of the most powerful ways to measure this is by how your patients feel after surgery—both in the short-term and the long-term.

In the case of CABG surgery, patients with well-functioning grafts will feel better and have better outcomes. By detecting unseen blood flow obstructions that prompt re-examination by the surgeon, thus reducing early graft failure following CABG surgery, intraoperative flow measurements with transit-time ultrasound play a vital role in achieving better patient outcomes.



# Easily Incorporate Flow Measurement into Operations

## THE TIME

Intraoperative flow measurement that can help save a graft is a relatively short and simple part of a CABG procedure. In fact, clinicians can measure 3-4 grafts within a matter of 2 minutes or less, making sure that the vital flow needed by the heart continues.

## THE COST

When you consider the [expenses of CABG procedures](#), the cost of reoperations can have a substantial impact. The cost of the equipment per procedure is relatively minimal in comparison to the cost of a reoperation. Hospitals are able to easily recoup their costs within a year and also avoid the hurdles that come with purchasing capital equipment.

## THE ACCESSIBILITY

Introducing new technology in hospitals can be challenging. Intraoperative flow measurement tools from Transonic streamline this transition with easy-to-use features and functionality. Flow measurement is also beneficial in other applications such as transplant and vascular access surgeries where this technology is used.



According to the International Federation of Health Plans, **the average cost of hospitalization and physician fees for coronary artery bypass surgery is \$75,345 in the U.S.**

# Validation of Transit-time Ultrasound Flow Measurements

Transit-time ultrasound technology has been robustly validated against other methodologies including beaker stopwatch and angiography. A recent Oxford University study validated transit-time ultrasound with beaker stopwatch in 68 grafts and determined that transit-time ultrasound is “an accurate indicator of left internal mammary artery (LIMA) blood flow during CABG with a clinically acceptable precision.” Amin S, Werner, RS, Taggart DP et al, Ann Thorac Surgery 2018 March 29.

## REDUCE VENTRICULAR FIBRILLATION AND POSTOPERATIVE COMPLICATIONS

In a [study led by Dr. Stefan Bauer](#), the incidence of postoperative fibrillation and myocardial infarction were assessed between two groups of patients—one with flow measurement and one without. The group without flow measurement experienced 0.66% fibrillation and a 30% mortality rate, while the group with flow measurement experienced 0.44% fibrillation and a 12.2% mortality rate.

## PREDICT GRAFT PATENCY AT ONE YEAR POST-OP

At Copenhagen University, surgeons sought to identify whether transit-time flow measurement could be used to [predict graft patency at the one-year post op](#). In this case, graft failure was defined as greater than 50% stenosis. The clinicians found that transit-time flow measurement is a valuable resource in assessing the risk of graft failure within the first year after CABG surgery.



*“The intraoperative use of flow measurements provide invaluable information in a timely, accurate, cost-effective manner enabling surgical corrections when appropriate. This has significantly reduced the complication related to early technically induced graft failure.”* **Mindich B, MD**



# Make Flow Measurement Part of Your Practice

Readmissions are costly for hospitals in terms of finances and patient outcomes. As the pioneer in intraoperative flow measurement, Transonic delivers innovative technology to better manage CABG surgeries, lower costs and keep patients safe.

With the confidence that our intraoperative flow measurement will provide these results, we've established the Transonic CABG Patency Assessment program. If our algorithm indicates that a graft appears patent and a patient is readmitted within 30 days, we will offer credits for future meter usage.

Interested in learning more about  
this innovative partnership program?  
**Find details here.**







Transonic Systems Inc. is a global manufacturer of innovative biomedical measurement equipment. Founded in 1983, Transonic sells “gold standard” transit-time ultrasound Flowmeters and Monitors for surgical, hemodialysis, pediatric critical care, perfusion, interventional radiology and research applications. Transonic® also provides pressure and pressure volume systems, laser Doppler Flowmeters and telemetry systems.

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