Pittsburgh Regional Healthcare Initiative
Reprinted from *PRHI Executive Summary*, March 2004
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Controlling depression seems to improve outcomes

Cardiac Forum covers anesthesia, mental health

On February 10, 27 physicians representing 25 organizations convened at UPMC Shadyside Hospital for PRHI Cardiac Forum #5. Elizabeth Concordia, President and Chief Executive Officer of UPMC Presbyterian–Shadyside, welcomed the group, which promotes regional improvement of patient outcomes following coronary artery bypass graft (CABG) surgery. In the largest turnout to date, all came to learn from each other in a safe, collaborative environment.

PRHI Cardiac Registry: NNE Perspective

The keynote speaker was **Dr. Stephen K. Plume**, professor emeritus of surgery and family and community medicine at Dartmouth Hitchcock Medical Center, Lebanon, New Hampshire and one of the founders of Northern New England (NNE) Cardiovascular Disease Study Group.

Dr. Plume noted, "HCFA (now CMS) does sometimes come up with good data that can stimulate improvement."

This was the case 16 years ago when surgeons in New England received letters from HCFA stating their mortality rates were statistically higher than expected. While locally validated, the data provided no insight for improvement. They discovered that the alternative to frustration was collaboration.

The NNE was formed through the participation of six hospitals widely scattered over New England for the purpose of continuous learning and care improvement in the region. Site visits by a multidisciplinary team including a process engineer, quality improvement education under the direction of Don Berwick, and a regional registry for improvement propelled the NNE to its position of the best performing regional model in the nation.

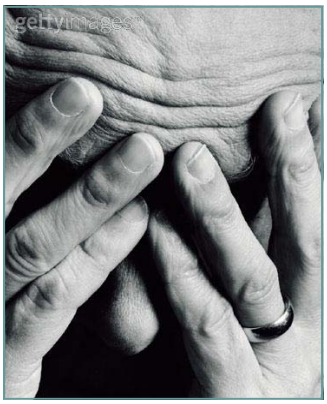
Dr. Plume was impressed with the maturity of the relatively new group of improvement scholars in PRHI's Cardiac Working Group. The sheer volume of the CABG cases analyzed, along with the growing sense of community in our region creates the potential for learning at a rate even greater than NNE's. This learning may also result in accelerated improvement of outcomes.

Dr. Plume then stated, "If the four processes of care—highlighted in NNE literature and adopted by the PRHI Cardiac Working Group—were fully adopted, the region might expect a mortality rate of around 1% for isolated CABG surgery. That's half of what is currently reported."

Although it took the NNE about eight years before they could be comfortable with head-to-head comparisons of CABG outcomes, the PRHI cardiac community may be on a faster track. Dr. Plume was stimulated by what he saw during the day of his visit, and encouraged the PRHI Cardiac Working Group to continue its local efforts and collaboration with the NNE as a partner.

Unseen Confounders to Cardiac Care

Dr. Bruce Rollman, Associate Professor of Medicine, Psychiatry, Health Policy and Management, Center for Research on Health Care, Division of General Internal Medicine, University of Pittsburgh School of Medicine outlined the profound effect of the frequently undiagnosed or under-treated problem of depression following CABG surgery.



"Depression can be a significant risk factor for unfavorable outcomes," said Dr. Rollman. Depression and coronary artery disease have a unique relationship in that any increase on the rate of either one results in a rise in the other. Postoperative CABG care often suffers in the presence of depression. The medical literature documents treatment failures, readmissions and increased long-term mortality rates for depressed patients. Dr. Rollman's current study, "Bypassing the Blues," is an NHLBI-Funded, citywide partnership to examine the impact of treating post-CABG depression on clinical outcomes. Participants include Allegheny General Hospital, Mercy Hospital Heart Institute, UPMC-Presbyterian, UPMC-Shadyside, VA Medical Center, and West Penn Allegheny Hospital.

Dr. Rollman notes, "If we understand the rate of depression and its effect on CABG outcomes, the next step is to understand how effective treatment can improve post-CABG outcomes for the depressed patient."

The February 23 *Wall Street Journal* article, "A little known link: depression and heart disease," by Tara Parker-Pope, indicates that the public is also becoming aware of this important factor of co-morbidity.

A Cardiac Anesthesiologist's Perspective

Cardiac teams in our region have come to realize that CABG surgery is an ensemble performance, not a solo effort by the cardiovascular surgeon. The last Cardiac Forum highlighted the important role of the perfusionist and how it affects care.

This forum focused on the role of the anesthesiologist. **Dr. Erin Sullivan**, Associate Professor of Anesthesiology, University of Pittsburgh, School of Medicine, Associate Chief Anesthesiologist, Director, Cardiothoracic Anesthesiology, UPMC Presbyterian presented her perspective on the use of perioperative beta-blockade in CABG surgery. Dr. Sullivan cited landmark studies in the 40-year history of beta-blockade and its cardio-protective effects.

"The use of perioperative beta-blockade is not without controversy," says Dr. Sullivan. While older drugs were sometimes contraindicated, recent literature suggests that most patients tolerate newer beta-1-selective antagonists.

Dr. Sullivan concluded that perioperative beta-blockade is effective for patients at risk for coronary artery disease and non-cardiac surgery. Dr. Sullivan cites the importance of further studies to investigate:

- ✧ The importance of perioperative beta-blockade for CABG surgery patients.
- ✧ Whether the combination of perioperative beta-blockade and thoracic epidural anesthesia is beneficial.

One by One Protocol

Dr. Forozan Navid, cardiovascular surgeon of the Raj Cardiovascular Association, shared UPMC Shadyside's plan to assess preoperative risk with patients as a standard of care. The team referred to this process change as "high risk patient care," but they plan to carry preoperative risk assessment one step

Participants:

Allegheny General Hospital,

Dubois Regional Medical Center,

Jefferson Hospital,

Mercy Hospital of Pittsburgh,

St. Clair Hospital,

The Medical Center of Beaver,

UPMC Passavant,

UPMC Presbyterian,

UPMC Shadyside,

Washington Hospital,

West Penn Hospital,

Westmoreland Regional Hospital

further. Patient care protocols are being developed so treatments and standing order sets are carefully matched to the patient's preoperative risk.

"We are proud of our patient care, and now we will be better positioned to respond to our specific patients' needs," said Dr. Navid. His team looks forward to presenting outcome measures at a future forum.

Hidden Barriers to CABG Surgery Perfection

Dr. Michael Culig, cardiovascular surgeon of Pittsburgh Cardiothoracic Associates, posed the question, "Does the concomitant use of aspirin and clopidogrel increase the risk of post operative bleeding?"

Circulating cells in the blood called platelets are essential in the complicated biochemical processes of blood clotting. The complication of bleeding following CABG surgery may be the result of the patient's inability to successfully form the clots at the microsurgical sites. About 14.5 % of regional patients received BOTH aspirin AND clopidogrel (each potent antiplatelet agents) within five days of surgery. These facts combine to form a complicated problem for CV Surgeons, and the surgeons must decide on the courses of action for these problems. The CWG registry shows post operative bleeding happens 2.3 times more in the patients that receive both drugs, but the overall incidence of bleeding is so low that the variation is statistically insignificant. The decision to infuse additional platelets to avoid bleeding is made at a statistically higher rate for those patients who receive both drugs. We hope the growing registry will provide us the knowledge on how to deal with these types of problems by harnessing the experiences of the region.

Future Plans

The PRHI Cardiac Working Group is currently seeking a host for the spring 2004 forum. At the time of the forum the CWG hopes to convene an Executive Leadership Committee meeting with two voting representatives – one administrative and one clinical (CV surgeon) – from each facility of the Cardiac Working Group . The importance of the executive meeting cannot be understated as the Cardiac Working Group is now approaching the second anniversary of the first Business Associate Agreements for participation. The term of these agreements is three years.

PRHI Cardiac Registry

tracks four specific processes of care that have produced significant improvements in patient outcomes following CABG surgery:

- *Use of the internal mammary artery (instead of leg) as a harvest site*
- *Use of pre-operative aspirin*
- *Use of enough beta-blockers so pre-op pulse rate less than 80 beats per minute when surgery starts*
- *Avoidance of anemia due to blood dilution while on the bypass pump (hematocrit not below 21).*

To learn more about PRHI's Cardiac Registry or Cardiac Working Group, contact:
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