News & Information from the Department of Cardiothoracic Surgery

check up

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A Pilot's Unique Perspective

It's a little-known fact that long before he got his license to practice medicine, Dr. Wayne Isom, chair of the Department of Cardiothoracic Surgery at Weill Cornell Medical Center, earned his private pilot's license at the tender age of 17. In his youth, he flew small planes in his hometown of Idalou, a short distance from Lubbock, Texas. He abandoned his childhood dream of becoming a fighter pilot or a crop duster in the cotton fields of west Texas due to some pretty dangerous working conditions—"I looked around and noticed there were very few old crop dusters." Nevertheless, his love of flying stayed with him through his medical studies and surgical training in Texas and New York. In recent years he has returned to flying, buying a single-engine Cessna aircraft and taking regular excursions on the East Coast.

"The reason I started back flying," explained Dr. Isom, "was that GPS navigation and global weather prediction had revolutionized the flying experience. Additionally, twenty-first century aviation had perfected a number of safety measures, such as the Garmin 1000 instruments."

"There are safety techniques in modern aviation that have clear applications for medicine." said Dr. Isom during a recent interview. "For example when you're a pilot, no matter how many hours you have flown, even if it's thousands of hours, when you get ready to start a flight you have a checklist that you must follow, no matter what. Most are at least eight pages long. You check everything, inside and outside the plane, every time; that's what makes you a good pilot.

"It's the same situation in medicine because we have adopted quality assurance measures that are quite similar. So even if we've done a procedure many times, we always run through the checklist. We call it a time-out. Before we make the first incision we confer with everyone present—the nurses, anesthesiologists, the surgeon. We go over every aspect of the surgery before we start. Nationally, these precautions have proved to significantly cut down on errors."

Dr. Isom points to another improvement general aviation has made, especially at the airlines and with commercial pilots: the reporting of near misses.

> "There are safety techniques in modern aviation that have clear applications for medicine and we've adopted a number of them ..."

He explains: "Let's say there's a near miss, for example, landing at LaGuardia. One of the runways is shorter than the other one and there have been, say, several times that your plane barely cleared the runway, or your approach speed is supposed to be 130 knots and you barely make it. Now, in aviation, they report that as a way to call your attention to an area in which you may need improvement as a

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professional. It's not put on your record, it's not something that's going to come back to haunt you. In fact, reporting near misses is a positive, it's a teaching tool." Dr. Isom notes that this approach is beginning to be used in medicine, with the same goal: calling attention to areas in which improvements are possible.

Advances in technology in medicine and aviation are having a profound impact on patient and passenger safety. Dr. Isom points out that innovation in these areas is a result of investments made long ago.

"I always remember that when John Glenn circled the earth, everybody thought, that's wonderful, now we'll all go to the moon. Well, it didn't happen; there was no practical application. But going to the moon lay the foundation for other advances that we now use every day, like global satellites. That's why investments in all areas of scientific research are so important. How we spend our research dollars now will determine the quality of life for future generations." ■

Patient Profile: William Naeder

Surgery: Quadruple Bypass, 1996

For three decades, Bill Naeder had a front row seat to some of the best events in professional sports. As a broadcast engineer for CBS in New York, first as a technician and then in management, Bill oversaw the national television broadcasts of 26 Masters Golf Tournaments and 12 Super Bowl games. Along with exciting action on the field came a lot of stress that contributed to his high blood pressure, a lifelong health problem.

But Bill was careful: He had regular checkups and always followed his doctor's recommendations to control his blood pressure. When he turned 65, his physician sent him for a stress test that suggested a major blockage in his heart. Further tests confirmed the worst: His arteries were clogged and he needed surgery—fast.

"I went for the cardiac catheterization on Thursday and was told there was a serious problem that needed immediate attention. My cardiologist asked me where I wanted to go for the surgery and I asked him, where would you go? And he said Weill Cornell Medical Center. I met with Dr. Krieger on Friday and had the bypass surgery on Tuesday. It was quite a ride."

> "It was a long time ago, but I remember Donna's (Nurse Reilly) kindness, it means a lot to me to this day."

Since his surgery in 1996, Bill has resumed an active life. His "retirement" includes boating near his home on Staten Island (he owns a 32-foot Luhrs) and visiting his children and his six grandchildren. Bill is one of a growing number of alumni from the operating room at Weill Cornell who are well into their second decade of a full life after major heart surgery. Bill keeps in touch with the staff who treated him. Nurse Donna Reilly made a special impression on him. "It was a long time ago, but I remember Donna's kindness, it means a lot to me to this day."

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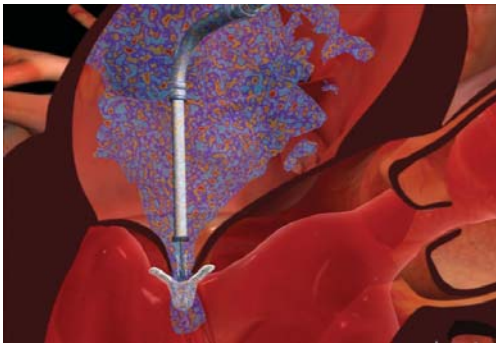
For more information about the department, log on to: www.cornellheartsurgery.org

Research Update: Everest II

Data from a national clinical trial of a new technique known as the Evalve Percutaneous Mitral Repair system to treat mitral valve regurgitation shows very promising results for patients with this serious condition. Thirty-six months after a tiny MitraClip was inserted in their heart, the vast majority of patients did not need mitral valve surgery and showed a marked improvement in heart function. Weill Cornell is one of 35 medical centers in North America participating in EVEREST II (Endovascular Valve Edge-to-Edge REpair Study) and has seen outcomes similar to the national findings.



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"We've been very pleased with the results so far. This new technique has broadened options for our patients," says Dr. Arash Salemi, assistant professor of cardiothoracic surgery, who is leading the study with Drs. Shing-Chiu Wong and Geoffrey Bergman of the Department of Cardiology and the Cardiac Catheterization Laboratory at NewYork-Presbyterian Hospital/Weill Cornell Medical Center.

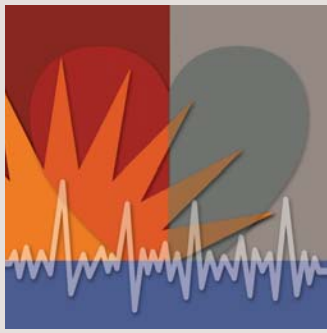
In the heart, the mitral valve separates the left upper chamber from the left lower chamber. Mitral valve regurgitation occurs when the leaflets of the mitral valve do not close properly. Thus, when the heart beats, some of the blood flows backward from the left ventricle into the left atrium, decreasing blood flow to the rest of the body. The new technique involves a catheter inserted through a small incision to deliver a tiny valve clip that joins together the two leaflets of the mitral valve. With these parts joined, the valve is able to open and close properly and blood can follow its normal path into and out of the left ventricle without regurgitation.

Dr. Salemi says that the early success of Everest II puts it at the leading edge of minimally invasive therapies to treat all heart valve diseases.

"With these treatments, we are poised to transform treatment plans for our sickest patients, improving and extending lives. We are now actively enrolling patients for a percutaneous aortic valve trial which again is targeted at the sickest patients who lack good options for management of their aortic valve disease. This is all part of our push to use the most innovative technologies to help patients who are dealing with the most difficult problems in cardiovascular medicine. As a physician, it's been very gratifying to work with my colleagues on these breakthrough advances in health care." ■

Heart Surgery Bests Stents

A recent study of patients in hospitals in the United States and Europe has shown that heart bypass surgery is a better choice than coronary stents to treat complex cases of heart disease. The research, sponsored by a stent manufacturer hoping to boost the case for stents over surgery, ironically demonstrates that patients with a more advanced stage of disease fare much better when they have bypass surgery rather than stent implantation.



"This study shows what we've been advocating for a long time: While stents are valuable for some patients, bypass surgery is still the best course for our patients with serious heart disease. It's the gold standard for these patients," says Dr. Karl Krieger, vice chair of the Department of Cardiothoracic Surgery at Weill Cornell Medical Center.

Boston Scientific sponsored the research hoping to prove that seriously ill patients would benefit from stents, widely used to treat lesser forms of the disease, thus sparing them from heart surgery. Results of the reviews of 3,000 heart patients with three clogged arteries or a single clog in the left main artery show that stents did not work as well as bypass surgery.

Helping to Heal Hearts

One of the many advantages of Weill Cornell Medical Center is the availability of highly trained specialists within the institution itself who consult, with cardiothoracic surgeons, on cases which present special challenges. These consulting physicians are frequently leaders in their field and bring considerable expertise to the table.

Weill Cornell Art and Photo

Dr. Evelyn Horn

Dr. Evelyn Horn, director of the Perkin Center for Heart Failure at Weill Cornell, consults on high-risk valve surgeries and newer catheterization-based valve procedures particularly in patients with some degree of heart failure and/or secondary pulmonary hypertension. These patients require careful medical and surgical management of their condition and Dr. Horn's expertise is invaluable to them receiving the best care possible.

"We have fantastic technologies and therapies available," says Dr. Horn, "but these may not be in every patient's best interest. Understanding why a patient is short of breath, and unable to perform at their previous level of usual activities, is essential in determining whether advanced therapies are appropriate. These therapies may include medical, catheter-based or surgical interventions.

It is essential to understand when therapies will or will not work, and when one has to move beyond them—perhaps to mechanical assist devices or heart transplantation for heart failure and lung transplantation for pulmonary hypertension. If we wait too long, we may have missed an opportunity to treat a patient, but no one wants to resort to devices or transplantation before a patient absolutely needs it. We want to time things so that patients have the best chance of doing well with such interventions.

Strong collaborations with the cardiac surgical teams is essential to our endeavors at the Perkin Center."

Since Dr. Horn's arrival at the Perkin Center in 2007, she has consulted on cases with Drs. Jonathan Chen, Karl Krieger, Wayne Isom, Arash Salemi and others. This teamwork has resulted in excellent care for our patients. ■

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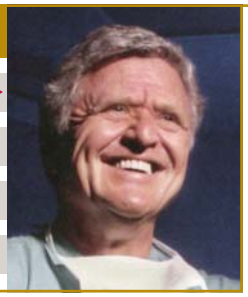

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