

HERT response team has cut code blues at DHMC by 40%

The patient's condition is deteriorating. He needs critical-care help—and fast. But he's not in the intensive care unit (ICU), where such expertise is readily available. "Call HERT," someone orders. In less than three minutes, a critical-care team is on the scene.

Blue: HERT—Hitchcock Early Response Team—is a new initiative to aid rapidly deteriorating patients before they "code." That term is short for "code blue," called when an unconscious patient goes into cardiac or respiratory arrest.

"We know we've saved lives," says Scott Slogic, who as director of respiratory care and life safety oversees HERT. The team's critical-care registered nurses, respiratory-care practitioners, and critical-care providers collaborate with the patient's physicians to develop a plan, provide treatment, and in some cases help transport the patient to the ICU.



IVs and oxygen masks are among the interventions used by the HERT teams.

The number of code-blue calls at DHMC has dropped thanks to HERT, which began earlier this year, and to the STAT Airway Team, another emergency response initiative that began in 2005. Typically, DHMC averages 200 to 225 code blues a year. But this year Slogic predicts that there will be only about 125. HERT has been activated 80 times since January.

The HERT team not only saves lives and reduces the number of days patients spend in the ICU, but "it helps improve everyone's ability to recognize, assess, and treat patients who are demonstrating early signs of deterioration," says Slogic.

Signs: Such early signs include respiratory distress (increased oxygen use and a breathing rate of more than 30 or fewer than eight breaths a minute); choking; acute mental status change; or a heart rate of more than 130 or fewer than 40 beats a minute. If a nurse, another provider, or even a family member is concerned, the decision may be made to call HERT.

"The signs can be quite subtle in the early phases," says Dr. Christopher Cook, a leadership preventive medicine resident. He and Dr. Stephen Surgenor, a critical-care specialist, are HERT's physician leaders. "Often it's nurses' intuition [or] a resident recognizes that something is not quite right," Cook says.

The concept of hospital early response teams began in Australia and has only recently begun to catch on in the United States, he adds.

Laura Stephenson Carter



Narath Carlile, left, and Gerard Carroll, right, are helping patients sleep better.

The rest of the story about sleep medicine

Cigarette burns dotted the man's chest because he kept falling asleep while smoking. He was overweight, had a family history of heart attacks, and had stopped working three months earlier. He spent 16 hours a day sleeping, he said, but never felt rested.

Although Narath Carlile, DMS '09, was only a first-year medical student, he knew the man needed a sleep evaluation. Carlile had been a sleep lab technician, so he recognized the symptoms of a sleeping disorder immediately. But sleep evaluations, or sleep studies as they are also called, are expensive—and this man had no insurance. Neither Carlile nor his preceptor, a physician in Newport, N.H., knew where to direct the patient for assistance.

Search: Frustrated by the situation, Carlile went looking for a way to help such patients. He enlisted his classmate Gerard Carroll in his search, and together they applied for an Albert Schweitzer Fellowship. Each

year, dozens of Schweitzer Fellows around the country work on projects to address unmet health needs in their communities. Carlile and Carroll are among 10 DMS students awarded fellowships this year. Now, with some basic funding and support, they are finding out what resources are available for patients with sleep disorders, identifying the steps required to access those resources, and working to streamline the process.

"The goal is to have the Good Neighbor Clinic be the knowledge center" for people seeking information about sleep disorders and treatments, says Carlile. The Good Neighbor Health Clinic (GNHC), in White River Junction, Vt., offers free primary-care and outreach programs, and DMS students and faculty volunteer there regularly. Carlile and Carroll will shepherd GNHC patients who may have sleep disorders through the process of getting an evaluation and possible treatment. And they've begun a recycling pro-

gram, too, for continuous positive airway pressure (CPAP) machines—which are often used to treat sleep apnea. One of their mentors for the fellowship, Dr. Carla Nordstrom, an adjunct assistant professor of community and family medicine at DMS and a volunteer physician at the GNHC, set up a similar CPAP recycling program in Philadelphia. The team will draw on her experience, as well as Carlile's technical expertise, to get the program up and running.

Carroll brings a different kind of perspective to the team, having worked as a paramedic in New York City for six years. "There were so many holes in the health-care system" in Manhattan, he says, but "here it seemed fairly well put together." So he was surprised when Carlile alerted him to the "huge, glaring hole" around sleep medicine. "Well," Carroll recalls thinking, "this is something we can do" something about.

Network: While Carlile and Carroll, who are both 32 years old, joke that they are "the old fogies" in their class, they have no lack of ambition. "We both want to continue to do service work, locally and internationally," says Carlile, who grew up in South Africa. "With the Schweitzer Foundation . . . you join this fellowship. . . . So you have access to a network of people who've demonstrated service to their communities." Both anticipate tapping into that network throughout their careers. "I think that is very exciting for both of us," adds Carlile.

JENNIFER DURGIN

INVESTIGATOR INSIGHT



In this section, we highlight the human side of biomedical investigation, putting a few questions to a researcher at DMS-DHMC.

Jose Conejo-Garcia, M.D., Ph.D.
Assistant Professor of Microbiology and Immunology
and of Medicine

Conejo-Garcia studies the contribution of inflammatory cells to tumor vascularization and growth. He is particularly interested in vascular leukocytes, which have the capacity to form blood vessels in the ovarian cancer microenvironment.

How did you get into biomedical research?

I am curious by nature, but my career has been quite anarchic. I grew up in Spain and studied medicine there because I loved the physiological processes of the human body. But I never pictured myself replacing cardiac valves. Nevertheless, at medical school I learned a sense of responsibility against human suffering. After earning my M.D. and Ph.D. and doing residency and a fellowship in Spain, I did a fellowship in Switzerland. Then I got an offer from a pharmaceutical company in Germany.



Why did you return to academia?

I did not choose industry versus academe. I chose meritocracy versus family ties and fawning. American science is more successful than European science. There's a much bigger investment in it here (although the current administration keeps restricting it), and, more importantly, there's a sense of equality and decency that is not frequent among the old dinosaurs of European science. So I started over, worked for four years at the University of Pennsylvania, and came to DMS last year.

What do you ultimately want to discover?

The cure for cancer. But there are several thousands of people out there with the same goal.

What's your favorite nonwork activity?

I love running. In fact, I consider it part of my work and never make an important decision without thinking about it during a long run. I also maintain that there is no stress resistant to 20 miles of hard running.

What famous person, living or dead, would you most like to meet?

Miguel de Cervantes, the author of *Don Quixote*. This old soldier, mutilated, impoverished, and suffering an unfair imprisonment after a life of services to the state, found the courage to write from his cell the best possible book about idealism and confidence in human nature.

If you weren't a scientist, what would you like to be?

I always wanted to be a top mountaineer.

What is the greatest frustration in your work?

Working in science is precisely about frustration. The quintessence of disappointment is a scientist in front of a failed experiment. We work to have a rush of satisfaction here and there, but many experiments and hypotheses don't work.

And the greatest joy?

Finding a piece of information unknown until that moment is tremendously addictive.

If you could live in any time period, when would it be?

The present. I agree with whoever said that if you think old times were better, you don't know what tooth pain meant in the Middle Ages.

If you invented a time machine, where would you go?

To Southern Europe during the time when *Homo sapiens* and Neanderthals coexisted. But I would not go too far away from the machine.

What do you consider your most important work?

Our studies about the indispensable role of leukocytes in the formation of blood vessels. This is a very hot—and controversial—field right now, and we were lucky to publish our work when nobody believed in it. I am convinced that these cells will provide effective therapeutic targets for new cancer interventions.