

For a **WEB EXTRA** with a chart showing case mix index data for DHMC and half a dozen other major medical centers, see dartmed.dartmouth.edu/f11/we07.

CULTURE WAR: The New Hampshire Department of Health and Human Services' annual report on healthcare-associated infections (HAIs) found that, compared national data, HAIs were 64% lower than expected at DHMC and 39% lower statewide.



CMI OFFERS A CASE IN POINT

A little-known number called case mix index (CMI) may actually serve as a good case in point for DHMC's capabilities and strengths. CMI is a measurement that reflects the diversity, clinical complexity, and need for resources among the patient population at a given hospital. A hospital with a high CMI has more varied cases, sicker patients, and more equipment and



other services—which all translate into higher Medicare reimbursements. CMI is based on a system that organizes patients into hundreds of so-called diagnosis-related groups.

For FY10, DHMC's CMI was 2.13, which was in the top 3% nationally—96th out of 3,594 hospitals. DHMC's CMI is even higher than Massachusetts General Hospital's (1.87) and the Mayo Clinic's (1.82). According to Robin Kilfeather-Mackey, DHMC's chief financial officer, it's not that hospitals strive for a high CMI, but that DHMC (pictured above) is the main referral hospital for the whole region, and its CMI reflects that fact. "Our case mix index shows that we treat the sickest patients in our state," she says. M.C.W.

HIGH-CONCEPT CONSTRUCTION

An increased role for primary-care physicians. Flexible space that can be reconfigured as medical needs change. Those are a couple of the concepts behind D-H Heater Road (pictured below), a 102,750-square-foot ambulatory-care facility now under construction. It's about a mile from DHMC, where inpatient occupancy is nearly 100% five days a week; the new space will



address this problem by moving some outpatient services off-site.

It will also provide more appropriate space than currently exists. The family medicine service, for example, is among those that will relocate to D-H Heater Road, where there will be room to offer more integrated, interdisciplinary care for patients and their families. Other services moving to the new facility, which is slated to open in the fall of 2012, include dermatology and sleep disorders.

Another construction project under way, this one at DHMC, is the Advanced Surgery Center, to be used mostly for research. It will offer intraoperative MRI and computed tomography in the same suite, making it the only such facility of its kind in the U.S. It is expected to be completed in 2013. M.C.W.

Giving a Haitian a leg up on health—and life

John Laguerre knew he needed help. The victim of a drive-by shooting, he had simply been standing outside his home in Montrouis, Haiti, one day when he was shot in the leg.

It was now months later, and his thigh was still swollen. The 18-year-old had traveled numerous times to Zanmi Lasante in Cange, one of 12 Haitian hospitals operated by Partners in Health (PIH), a nonprofit organization dedicated to providing medical care to those who would otherwise not have access to it. Laguerre kept hoping to meet with a physician who would be able to help him.

Finally, in February of 2011, he saw Dr. Michael Beach, an anesthesiologist at Dartmouth-Hitchcock Medical Center who had traveled to Haiti with other Dartmouth physicians to treat patients at Zanmi Lasante.

"It was immediately clear that there was something very wrong," says Beach. Laguerre had two problems with his leg: an arteriovenous fistula (an abnormal flow of blood between an artery and a vein) and a pseudoaneurysm (a leakage of blood from an artery into the surrounding tissues).

Fistula: Dr. John Butterly, the executive medical director of DHMC and the individual who is responsible for coordinating the DH medical teams that travel regularly to Haiti, says that both conditions are serious. "Chronically, the fistula can be

very debilitating, but the pseudoaneurysm was acutely dangerous. Although we had several very capable specialists in Haiti at the time, they conferred with vascular surgeons here at Dartmouth and did not feel it was safe to try to fix the leg there."

The team decided to bring Laguerre to DHMC for surgery and recovery. "It took about a month for us to get the paperwork to bring him to the United States," explains Owen

"It was . . . clear that there was something very wrong," says Beach.

Robinson, the operations manager for a future PIH-Zanmi Lasante hospital in Mirebalais. Once Laguerre's passport and visa were set, Robinson flew with him to the U.S. To finance the trip, Dartmouth used funds from a budget set aside just for international patients who are in danger and unable to otherwise receive appropriate care.

Cast: The surgery went fairly smoothly. "A cast of hundreds of people . . . helped with arrangements, appropriately evaluating him, doing the operation itself, and providing postoperative care," says Butterly.

During Laguerre's recovery, which was more complicated than anticipated due to problems with clotting, the Haitian teen stayed with Beach, who has two teenage children. Laguerre even accompanied them to Hanover High School and on some social outings, and he started to learn some English, says Beach. "What was most striking was how different living in Hanover was



GROWTH FACTOR: For the first time this past summer, DHMC made 30 garden plots available to employees on land next to the Medical Center. A shared rototiller and soil preparation were supplied thanks to a grant from the Healthy Eating Active Living (HEAL) Partnership.

compared to his life in Haiti. He and his sister run a food stand to support his six siblings. His father is quite ill, due to complications related to high blood pressure, and his mother died several years ago.

Abundance: “He was completely awestruck by the abundance of food here,” adds Beach, “and the luxuries we take for granted every day, like a bed to sleep in and flush toilets.”

Six weeks after his surgery, Laguerre returned to Haiti and his family. Beach, Butterly, and the other Dartmouth physicians who helped care for him were so moved by his struggles that they started a fund for his education. Laguerre wants to be an auto mechanic, and Robinson, who is orchestrating follow-up psycholog-

ical and social support for Laguerre and his family, says the plan is to enroll him in a vocational school where he can pursue his dream. But it’s not as simple as just paying his school tuition. Laguerre’s family can’t survive without his support, so PIH is working out a plan to see that some of the money goes to helping his family so he can stay in school. (Information on helping support Laguerre’s education is available from Molly.R.Bode@Dartmouth.edu.)

Poverty: “I’m optimistic that he’ll do better in the long run if he can get into school,” says Beach. “Still, his problem now isn’t his leg at all. It’s surviving in a country where poverty is a real issue on a daily basis.”

LAUREN WARE



Pictured at the home of Michael Beach, one of the DH physicians who helped bring Laguerre from Haiti to New Hampshire, are, from the left, Owen Robinson of Partners in Health; Laguerre; and Frantz Thelismond, a Haitian who lives in near-by White River Junction, Vt., and who served as Laguerre’s primary translator.

F A C T S & F I G U R E S

X-ceptional impact



1895

Year Wilhelm Conrad Roentgen discovered x-rays, in Germany

3

Number of months later that the first clinical x-ray in the U.S. was performed, in Dartmouth’s Reed Hall, by Dr. Gilman Frost, a professor of medicine, and Edwin Frost, a professor of physics

20

Minutes the patient’s broken arm was exposed to the x-rays

1903

Year Hitchcock Hospital acquired its first manufactured x-ray machine

1920

Year a course in x-rays was first taught for Dartmouth medical students—by a member of the Dartmouth College physics faculty

1930

Year the first “roentgenologist” joined the DMS faculty

5

Number of radiologists on the faculty in 1973, the year Dr. Peter Spiegel was named to lead the specialty at Dartmouth

38

Number of years Spiegel held that leadership post

45

Number of radiologists at all Dartmouth-Hitchcock sites in June 2011, when Spiegel retired as chair of the Department of Radiology

SOURCES: DARTMOUTH MEDICAL SCHOOL, DARTMOUTH-HITCKOCK MEDICAL CENTER, AMERICAN PHYSICAL SOCIETY