HIT LIST: DMS health-policy researcher Dr. Jack Wennberg is one of three candidates shortlisted for the prestigious *British Medical Journal* Lifetime Achievement Award. The voting is taking place between now and April 9 at http://groupawards.bmj.com.

THEN & NOW

A reminder of the pace of change, and of timeless truths, from *Dartmouth Medical School: The First 175 Years* by Carleton B. Chapman:

"The other significant appointment at the time was Oliver Wendell Holmes, the poet-physician of Boston. . . . Although he lectured at Dartmouth only two years, the remarkable fact is that he left his beloved Boston at all. He . . . accepted the job as Professor of Anatomy on 12 July 1838 . . . [but] had . . . misgivings about moving from the 'hub of the solar system' to the backwoods."

6
DMS faculty in 1838

2,185
DMS faculty in 2010

32
Graduates of DMS in 1838

192
Graduates of DMS in 2010

No more singing the blues about OR waste

Most operating rooms are a sea of blue—blue gowns, blue drapes, blue wraps. But over the last five years, the DHMC ORs have become increasingly green. The effort includes recycling plastic containers, encasing sterilized equipment in reusable hard cases instead of disposable wrap, and reprocessing single-use devices.

Reuse: When people first hear that "we are reusing things that are not 'supposed' to be reused," says John Leigh, manager of waste and recycling, they "freak out." But peoples' fears subside once they learn that the devices are sterilized and prepped for reuse according to strict Food and Drug Administration guidelines. "Infection prevention and patient safety are always going to trump other considerations," says Leigh.

Operating rooms typically produce 20% to 30% of a hospital's waste.

Operating rooms are among a hospital's most resource-intensive, waste-generating areas, typically producing 20% to 30% of total waste volume. At DHMC, operating room waste makes up a significant portion of the eight tons of waste produced each day, says Leigh. So efforts in the OR to reduce, reuse, and recycle make literally a ton of difference for the environment.

Line: The efforts even benefit the bottom line. In 2010, for example, DH saved approximately $300,000 by reprocessing some devices instead of tossing them and buying new ones.

To help promote green practices in ORs across the country, and to learn and share best practices, Dartmouth-Hitchcock recently joined a national collaborative of more than 85 hospitals. The effort is led by Practice Greenhealth, a membership organization for health-care institutions that are devoted to environmentally responsible operations. DHMC was already a member of the organization's Environmental Leadership Circle. (For more on DH's efforts to reduce its environmental impact and minimize employees' and patients' exposure to toxic substances, see dartmed.dartmouth.edu/su07/f01 and watch the web-extra video "Inside Waste Management at DHMC.")

By being part of the collaborative, "we're finally getting credit for a lot of great behind-the-scenes work," says Leigh. Much of that work is done by OR nurses, he adds, who are "constantly asking good questions" about how to "be green."

For a long time, Dartmouth OR nurses have been "pushing to recycle more," says nurse Katie Steuer, a clinical educator in the OR. Now, OR staff can recycle that ubiquitous blue wrap (which is made of polypropylene), as well as unsoiled drapes and gowns; rigid, empty plastic containers; and boxboard, which is often part of equipment packaging. Any items in the surgical field—the area immediately surrounding the patient—cannot be recycled once surgery has started. However, almost 80% of packaging waste from a procedure is generated before the patient even enters the room, notes Leigh.

Can do: With support from Steuer and other OR staff, Leigh is also exploring the possibility of replacing many common disposable items, such as drapes, gowns, and basins, with reusable ones that can be sterilized. "John has been instrumental in making us aware of what we can do," says Steuer—in seeking ever more ways to bring some green to the sea of blue in the ORs.

Jennifer Durgin

FLYING SQUIRREL GRAPHICS

The blue drapes and basins in the DHMC ORs are no longer universally disposable.

PAPER TRAIL: A hospice chaplain who wrote to the newspaper advice column "Annie's Mailbox," formerly "Ask Ann Landers," praised the wisdom in *The Four Things That Matter Most*—a book written by Dartmouth palliative-care expert Dr. Ira Byock.

Use of blood drops during cardiac surgery

Thanks to good data and clear communication, the cardiac surgery team at DHMC has reduced its use of blood transfusions in recent years. Transfusions can save the lives of patients who lose a large amount of blood, but they also carry risks.

"Years ago, it was just sort of accepted that anybody that had cardiac surgery was going to need to be transfused," says Lawrence Dacey, M.D., a cardiothoracic surgeon and DHMC's chief medical officer. But recently, he notes, studies have shown that transfusions raise the risk of infection in the short term and lead to worse outcomes for patients in the long term.

"Even giving one transfusion increases your risk of long-term mortality," adds Donald Likosky, Ph.D., an assistant professor of surgery.

Levels: Once a patient's red blood cell count drops too low, a transfusion is necessary to keep the patient alive. Doctors don't always agree about exactly how low is too low, but today, says Dacey, they're generally willing to allow red blood cell levels to drop lower than was thought to be safe in the past, in part because more is known about the risks of transfusions.

To help patients avoid those risks, Dacey and Likosky helped start an initiative in 2004 to reassess the use of transfusions during heart surgeries at DHMC. The first step was simply to understand when transfusions were typically used and how the decision was made. In this phase, they began tracking the rate of transfusions during surgery.

The next phase was aimed at trying to reduce the use of transfusions by talking with everyone involved in heart surgeries—including surgeons, anesthesiologists, nurses, and staff from the blood bank. The effort also included bringing in outside experts to give talks about the latest evidence on transfusions.

DHMC's attending cardiac surgeons, who typically make the decision to give a transfusion, then came to agreement on the thresholds at which transfusions would be given. If a patient's red blood cell level dropped below that point, the patient would be given a transfusion. Above that point, the surgical team would keep in mind the goal of reducing the use of transfusions, although a transfusion could still be provided if the attending surgeon deemed it necessary.

"Even . . . one transfusion increases your risk of long-term mortality."

"The goal was not to remove clinical judgment," Likosky says. "The goal was to say, 'This is how we feel we ought to practice.'"

Track: During the last phase of the project, the team did not actively discuss the initiative but continued to track transfusion rates. They wanted, Likosky says, to see if the rate would return to previous levels if they stopped focusing on the issue as intently.

The three-year effort resulted in a significant reduction in the transfusion rate. From phase one to phase two, the transfusion rate during cardiac surgery dropped from 33% to 26%. The reduction was not only sustained during the last phase of the effort but declined further to 23%. And patients who did not receive a transfusion were less likely to get an infection or pneumonia while they were hospitalized.

Consistent: Likosky and Dacey caution that the process wasn't designed to draw definitive conclusions about patient outcomes. But, Dacey says, these findings are consistent with other reports showing the benefits of avoiding transfusions when possible.

The effort may have come to an end, but the cardiac surgery team continues to keep the findings in mind. "Before you transfuse somebody now, you're thinking long and hard about whether you need to do this," observes Dacey.

Amos Esty

VLADISLAV MITIC

A three-year effort has reduced transfusions during cardiac surgeries at DH.

THEN & NOW

A reminder of the pace of change, and of timeless truths, from the 1902 DMS Circular of Information:

In the second-year course in Bacteriology, "special attention is given to the examination of sputum for tubercle bacilli, to the diagnosis of diphtheria, the technic of the Widal serum diagnosis in typhoid fever, and to staining gonorrhoeal pus. Each student is required to isolate a number of different organisms. Special instruction is given to any student desirous of doing research work."

2000

Year DMS began a clinical trial of a new tuberculosis vaccine, in partnership with a Tanzanian medical school

2009

Year the researchers announced that the trial showed a 39% reduction in the rate of definite TB

FAT CHANCE: The DHMC cafeterias deep-sized their deep-fat fryers in July 2009 as part of the employee health program. Not only are an estimated 21 million fewer fat calories now consumed per year, but the number of items sold rose by 1.6%

THEN & NOW

A reminder of the pace of change, and of timeless truths, from a 1991 history of Mary Hitchcock Hospital:

"The hospital continued to enjoy . . . the material and financial support of the community. Contributions took many forms, from x-ray machines (the hospital's first, in 1903, was the gift of four Hanover residents . . .) to assorted amenities for patients [such as, in 1906-07]: 'cream, milk, jellies, flowers, string beans, cucumbers, apples, summer squash, grape-fruit, [and] piccalilli.' . . . It became traditional to rely on private donations of fresh produce [and] canned goods . . . to feed patients."

$28.5 million

Contributions (in dollars, rather than in pecks of produce) to DHMC and DMS in 2009-10

Dartmouth is a top performer in federal project

In 2005, the federal Centers for Medicare and Medicaid Services (CMS) devised a five-year pilot project called the Physician Group Practice (PGP) Demonstration, to test the theory that financial incentives could motivate health-care organizations to provide higher-quality care for Medicare beneficiaries.

According to recently published data from the project's fourth year—2008-09—five of the 10 PGPs participating, including the Dartmouth-Hitchcock Clinic, are proving CMS right on the money. The five received bonus payments totaling $31.7 million—a share of the $38.7 million in savings they generated for Medicare.

In year four, Dartmouth met 94% of the project's quality benchmarks.

Bonus-worthy: A participating PGP is deemed bonus-worthy if it spends at least 2% less on Medicare beneficiaries comparable to those of other providers in the area, while performing well on a series of quality benchmarks. Successful PGPs can share in up to 80% of Medicare's savings. In doling out bonuses during the first two years, CMS emphasized cost reduction over quality; since year three, cost and quality have been weighted equally.

Dartmouth-Hitchcock Clinic—a bonus recipient in all but the first year—has so far stockpiled $13 million in monetary rewards, one of the highest amounts awarded any of the 10 PGPs. Much of the focus has been on improving care management strategies, says Dr. Barbara Walters, the Clinic's senior medical director and coordinator of the project. DH has brought in recognized experts to coach physicians and support staff on evidence-based care guidelines. Triage nurses are engaged in more active and motivational outreach; for example, patients get a call a few days before an appointment, plus a follow-up call within 24 hours of a discharge. DH has also integrated more electronic tools into day-to-day practice—for instance, charts that track vital signs and vaccinations; disease registries; and reports to providers showing their individual progress on quality benchmarks. The aim is to zero in on preventive care, reducing readmissions and costly emergency procedures.

The efforts are paying off, especially with respect to meeting the project's 32 quality benchmarks. These were phased in gradually and now cover diabetes, congestive heart failure, coronary artery disease, hypertension, and cancer screening.

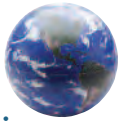
Quality: In year four, DH met 94% of the benchmarks, including targets for screening for breast and colorectal cancers. According to Jennifer Snide, a quality measurement analyst at DHMC, CMS stipulated that PGPs should perform mammograms in at least 75%, and colonoscopies in at least 61%, of patients falling within the defined age- and gender-based guidelines. Dartmouth surpassed both those benchmarks and has consistently done well meeting benchmarks for diabetes, too. The biggest improvement was that the percentage of patients having an annual foot exam increased from 21% to 59%.

Model: The project is widely regarded as a model for accountable care organizations (ACOs), a provision of the 2010 health reform law that has received solid bipartisan support. In a recent news release, CMS administrator Donald Berwick hailed the 10 PGPs as "leaders in organizing care delivery" and as a demonstration of what the health-care sector can achieve "if we put the right incentives in place."

JON GILBERT FOX

The rate of annual foot exams for diabetics increased from 21% to 59% under the federal project. Here, Dr. Richard Powell examines the foot of a diabetic who has already lost one toe.

IN SERVICE: Three DMS fourth-years, 4 clinicians, 21 Dartmouth undergrads, and a faculty fellow spent 13 days in rural Siuna, Nicaragua, in December through the Cross-Cultural Education and Service Program. Dartmouth's trips to the region began in 2001.



THEN & NOW

A reminder of the pace of change, and of timeless truths, from the Spring 1981 issue of this magazine:

"In June [1981], Dr. James Strickler will step down after eight years as dean of the Medical School." During his tenure, "the annual budget has doubled, but the deficit [he inherited] has declined steadily" and "the faculty . . . has increased by 50%. . . . As to his own plans, he will return to his former dedication as a teacher, . . . both at home and abroad."

6

Number of months that Strickler (and his wife) spent working at a refugee camp in Thailand after he stepped down as dean

30

Number of years since then (so far) that he has spent teaching and supporting global health initiatives

Granite State premeds try DMS on for size

Taking the plunge into medical school can be challenging, especially for students from rural areas. But that's just the kind of student medical schools are trying to attract, to increase the nation's pool of primary-care physicians likely to practice in underserved rural areas.

To address that dilemma, DMS offers premedical students from New Hampshire colleges a peek inside the process through its Medical Student for a Day program. The event, run by the Rural Health Scholars program, is in its sixth year and has proven so popular that it's now offered twice a year. Last November, 16 students from the University of New Hampshire, Keene State College, Plymouth State University, and Colby Sawyer College attended.

Day: Their day started at 7:30 a.m. sharp, at a first-year anatomy lecture. Many of the premeds had spent the previous night at the home of a current DMS Rural Health Scholar. Next came a tour of the School's labs, auditoriums, and library.

Over coffee, the students were then given a chance to introduce themselves and their interest in medicine. Many had been instrumental in setting up or participating in premed societies at their respective colleges, and they compared their experiences volunteering both in local emergency rooms and farther afield in places such as China and South America.

Next was a talk, given by Sally Redman, associate director of admissions, on how to prepare a good medical school application and to stand out in an interview. Redman stressed that DMS values applicants with varied interests and with both practical and research experience.

Dr. David Nierenberg, senior associate dean for medical education, then explained the courses that medical students can expect to take and how they build on each other to help students acquire the skills they'll need to practice medicine.

The event has proven so popular that it's now offered twice a year.

Pose: During both talks, the premeds were able to pose questions, such as "Should I attempt humor in my application?" (The answer: No!)

Over lunch, the premeds were introduced to the current Dartmouth Rural Health Scholars and to DMS's dean, Dr. Wiley "Chip" Souba.

Next, Sally Kelley, assistant director of financial aid, talked about applying for support for medical school—both loans and scholarships.

Train: The group then got a tour of the vast labyrinth of DHMC, including the Simulation Center, where they saw medical scenarios recreated using lifelike human models and scripted volunteers—a sophisticated yet risk-free environment in which to train.

After a debriefing, this whistle-stop tour of the medical education experience concluded with an expression of hope that some of the premeds in attendance might meet again as Dartmouth medical students in coming years.

The event is a great opportunity for premeds to become "immersed in the Dartmouth culture," says Inger Imset, coordinator of the program. "It is a feel-good event."

KATHERINE DAWSON

The 16 participants in last November's Medical Student for a Day event got their picture snapped in DMS's Faculty Conference Room—next to the current dean, Chip Souba (in the red tie), and in front of imposing oil portraits of two long-ago deans.