CRUISE CONTROL: This summer's issue of *Cruise Travel* magazine will profile DHMC medical transcriptionist Andrea Peterson. Certified in wilderness emergency medicine, she once lent a hand on a cruise when the weather turned wild.

THEN & NOW

A reminder of the pace of change, and of timeless truths, from a book titled *Hiram Hitchcock's Legacy*:

When Mary Hitchcock Memorial Hospital opened in 1893, "many citizens were skeptical. Thirty-six beds seemed excessive! . . . There was also a certain amount of fear regarding hospitals—after all, people often went there and died! . . . Others were pleased and impressed with such a large and modern facility. . . . [It] also had gas and electricity."

22
Number of fireplaces in the 1893 MHMH building

14,000
Number of light fixtures in DHMC's Lebanon facility when it opened in 1991

4,000
Approximate number converted to use compact fluorescent bulbs by 2007

Website asks patients: "How's your health?"

Thousands of patients in Chicago, Ill.; Long Beach, Calif.; and other cities across the country may not know it, but they're being cared for, in part, by a member of the Dartmouth faculty. Those are among the cities where large numbers of doctors have asked their patients to go online and, before their next appointment, fill out a survey at **www.howsyourhealth.org**.

The site was the brainchild of DMS's Dr. John Wasson, a nationally recognized leader in health-care quality improvement; several of his colleagues in DMS's Department of Community and Family Medicine; and Dr. Regina Benjamin, founder of a rural clinic in Alabama.

Specific: The survey is deceptively simple. After answering a number of basic questions, the patient gets back a summary of findings plus a list of sources of further information about his or her own specific health situation. An individual of average intelligence and health may at about that point be thinking, "So what? This isn't telling me anything I didn't already know—after all, who supplied the information in the first place?"

But there is much more to the site than meets the eye. It is only a small part of a system that has been 10 years in the making and is now improving the quality of care delivered all over the U.S. First, the website is a place where patients can collect and easily retrieve their own health information and concerns; 100,000 patients have now filled out the survey. Second, it provides patients with tools to inspire confidence in themselves so that, as Wasson puts it, they "can and should take control of [their] own health and health care."

Anyone can use the site—not just those whose doctors have adopted it as a tool. For example, this writer filled out the survey and was told that at my next appointment I should ask my doctor, "What medications am I taking, in what doses, what are they for, and how much do they cost?" I was reminded to include nonprescription drugs, herbal medications, and nutritional supplements. And I was told to ask, "What vaccinations do I need to keep track of? And where can I get reliable information in a form I can understand so I can talk about my health in an informed way?" And that, the site's creators feel, can't help but improve outcomes.

The site is deceptively simple. There is more to it than meets the eye.

Wasson and his team have recruited cities and organizations from all across the U.S. to sign on to use the site—at no charge. For example, in Chicago and Long Beach, they worked with the Chambers of Commerce. In Chicago, Mayor Richard Daley taped TV spots asking, "How's your health, Chicago?" A sizeable segment of the population then went on the website and filled out the survey.

Innovative: Then comes an even more innovative and useful part of the system. When enough people in a city have filled out the survey, the aggregate information—stripped of personal identifiers—goes into a database that allows public-health officials to make informed decisions about the quality and delivery of care. The state of New Jersey and the city of Milwaukee, Wisc., have been particularly enthusiastic about this capability.

In addition, once enough of a

TIM HALL

Even on a clear day, it's not possible to see the Chicago skyline from Dartmouth. But the Dartmouth experts behind an innovative website can see aggregate health information on 100,000 patients—in Chicago and other cities across the country.

given doctor's patients have filled out the survey, that doctor can use the database to ask questions like "What percentage of my patients are seeing another doctor?" It's not common for patients to volunteer such information or for doctors to ask—but it can be very important to a patient's health for that information to be known. Or a doctor might ask, "How many of my patients have feelings of depression that they haven't told me about?" Many patients will conceal such feelings unless prodded about them.

The benefits run deeper still. All the information from patients all over the country goes into a very sophisticated database that promises to yield valuable information about the health of the nation as a whole.

For example, participating doctors can compare their practice patterns with those of other doctors, asking such questions as "How does my handling of allergies compare with that of other doctors?" or "Am I using the best possible medicines to treat a given condition—with appropriate consideration for efficacy, safety, and cost?"

Aggregated: And at the most aggregated level, the database will allow national outcomes researchers to track regional differences and other variables in patterns of care and pinpoint what does and what does not make for differences in the quality of care.

For that, of course, is what everyone is after—from the patient in Long Beach, Calif., to the doctor in Lebanon, N.H.

Roger P. Smith, Ph.D.

INVESTIGATOR INSIGHT

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

Brent Berwin, Ph.D.
Assistant Professor of Microbiology and Immunology
Berwin studies how white blood cells induce immune responses—in particular, how molecular chaperones (molecules that help proteins fold) activate the immune system, how white blood cells clear bacteria after an infection, and how immune cells induce antitumor responses. He joined the faculty in 2004.

What are the keys to being a successful scientist?
Work hard. Plan well. Think things through. And be in an environment where you enjoy working and spending time.

What got you interested in science?
I've always enjoyed science, although for a long time I thought I'd end up working for the Oregon Department of Fish and Wildlife (which I did for a couple of summers). Then I came back from my senior year of college abroad, needed a job, and got sucked into working in a virology lab for two years—that was the beginning of the end.

Are there any misconceptions people have about your field?
Lots. Most people outside of science don't really understand what we do from day to day. And it's always vaguely entertaining when a random person asks me about some obscure disease or condition they have, fully expecting me to have a working knowledge of the entire therapeutic and medical field.

What's a typical day like for you?
After getting to the lab, I try to get any long or continuing experiments under way; check the baseball box scores and make sure my fantasy baseball team is doing okay (or not); search for recent published papers that are relevant to our work; check on our cell cultures and our mice; go back down to the animal facility and do what I forgot to do the first time; and check in with the lab members to see what they are doing, how things are going, and how we can press forward. On top of all that, I am usually writing grants and manuscripts or attending meetings.

What were your first paying jobs?
In high school, I had the usual array of restaurant jobs—busting suds. In college, I worked in the chemistry department stockroom and, during the summers, for the Oregon Department of Fish and Wildlife doing a census of salmon and squawfish in the McNary Reservoir on the Columbia River in Oregon. And for two years before going to grad school, I was a technician at Oregon Health and Science University.

What are your favorite nonwork activities?
Pretty much anything outside: hiking, biking, running, swimming, canoeing, etc. I think it's important to engage in activities outside the lab to get the blood flowing, work off frustrations, and maintain sanity.

What place would you most like to travel to?
There are not many places I wouldn't want to explore—in times of peace. I love traveling. I visited a lot of places on an around-the-world trip after graduate school. I think my credit card is still recovering from that.

Do you always have a working hypothesis in the lab?
If you consider "let's try this and see what happens" a working hypothesis, then yes, we do.

What do you like most about your job?
The people I work with and around—what a good group of intelligent, entertaining, and motivated people. I'm proud that our lab members enjoy each other's company and can work, play, and (usually) laugh together. I also feel pretty lucky to have a job where I get paid to do something I enjoy. That said, my department chair jokes that I'm lucky to have a job at all.