We're always glad to hear from readers—whether it's someone weighing in about an article in a past issue or someone asking to be on our mailing list for future issues. We are happy to send Dartmouth Medicine—on a complimentary basis, to addresses in the U.S.—to anyone interested in the subjects we cover. Both subscription requests and letters to the editor may be sent to: Editor, Dartmouth Medicine, 1 Medical Center Drive (HB 7070), Lebanon, NH 03756 or DartMed@Dartmouth.edu. Letters for publication may be edited for clarity, length, or the appropriateness of the subject matter.

The work featured in the cover article of our Spring issue came in for kudos but also caught some brickbats. That's nothing new for the featured researchers, however—they're used to criticism of their counterintuitive findings about patterns of health-care usage.

The proselytizer

Congratulations to Maggie Mahar for her superbly written article, "The State of the Nation's Health." With great clarity, she described the pioneering work of the Center for the Evaluative Clinical Sciences. She has ably demonstrated the power and impact of the efforts of Drs. Wennberg and Fisher in reforming our badly broken system of health-care services.

The day after I read her article, I incorporated it into a course I teach to undergraduates at the University of Central Florida. Most of the 44 students quickly understood the significance of regional variations and what they mean for American health care. I hope our elected leaders will rapidly arrive at the same understanding.

Charles Pierce, DC '58
Winter Springs, Fla.

The barrister

The article in the Spring issue by Maggie Mahar, on the work being done by Drs. Wennberg and Fisher, was excellent and gave praise where praise certainly is due. Their work has shed a whole new light on the quality of medical care, and, given the quality of their methods, their results are not questioned.

I see the issue of health-care quality from a very different perspective. As a trial lawyer, I have been representing both patients and providers in many different types of litigation for more than 30 years, and I concur in the observations made by Jack and Elliott about variation in the cost and quality of care. I would take it one step further—to variation in the quality of medical education and training.

The medical establishment would have the American people believe that all doctors are essentially equal, all are well trained, and all are capable of delivering care consistent with applicable standards. I have practiced in a number of states in my career and I know this not to be the case. In some jurisdictions, the historic and sociological development of the population creates a citizenry which accepts average to poor care because (1) the people providing it don't know any better, and (2) the people receiving it don't know any better.

There are hospitals and training programs in this country that are abysmal. There are medical school graduates who don't match anywhere and wind up at a hospital/residency of last resort, and no one seeks to improve that situation. States that do not have a strong tradition of excellence in public education often have publicly funded medical schools that are well behind the curve as far as attracting superior students and providing education and training above the merely passable.

Perhaps the next step in getting to the root of the cost and quality differentials between the different states might be aided by comparing the quality of the training programs and individuals practicing in those states.

Lee J. Dunn, Jr., J.D.
Boston, Mass.

Dunn, an adjunct associate professor of community and family medicine at DMS, both teaches and practices medical law.

The prognosticator

I read with great interest the article "The State of the Nation's Health" in the Spring 2007 issue of Dartmouth Medicine. Drs. Fisher and Wennberg have indeed established, defined, defended, and developed the evaluative principles of health care within Dartmouth's Center for the Evaluative Clinical Sciences (CECS). Their efforts have faced and overcome many professional and political impediments.

I would like to offer some comments on the evolution in the cost of medical care. I am a 71-year-old retired physician, and my father was secretary-treasurer of the American Medical Association for several years. Thus I grew up with discussions of the socioeconomic forces in medicine. My own career began at Dartmouth and Harvard, included several years as a physician in the U.S. Navy, training in ob-gyn at the University of Chicago, then several years of academic practice in Chicago.

In 1972, I joined a multispecialty group in rural Oregon. This transition—from being paid a salary to think and innovate to being paid to perform procedures—was brutal. Actions, not ideas, are reimbursed on the front lines of medicine.

From then until my retirement in 1997, I observed ever more sophisticated and complicated carrot-and-stick controls on health-care costs. The business side of medicine is like any other business. There is a cost of doing business—paying rent, paying staff, buying equipment and supplies, etc.—and an income from the business. Just as in any business, profit depends on controlling the costs of maintaining and repairing the "machines" that produce the "product" and maximizing the price of the "product."

I learned soon after going into private practice that payment for my efforts was based on my rural location—that a simi-

lar service provided by an equivalent "repair unit" (doctor) in an urban area was reimbursed at a higher rate. I also learned an arcane set of rules governing payments. For example, if I observed a cervix with an instrument called a colposcope while evaluating the cervix for possible conditions requiring repair, I would be paid a reasonable fee only if I removed a sample of cervical tissue and sent it for biopsy; I received less than 20% of that fee if I did not do a biopsy. I also learned terms such as "full-risk capitation," "third-party agreements," and "adjustments and write-offs." And many more.

Such is the arcane medico-economic system that CECS is trying to fix. My guess is that we will end up with all the "repair units" under one large umbrella —call it socialized medicine if you want—so the costs of maintaining all the "service units" (patients) are standardized.

The "repair units" in this system have historically operated under a code of conduct known as the Hippocratic Oath—one of whose precepts is *Primum non nocere*—"First do no harm." But after the evolution to the new system that I suspect we are headed for, I fear their motto will be *Primum non redundo*—"First do not do too much."

Michael J. McKeown, M.D.,
DC '58, DMS '59
Portland, Ore.

The unpersuaded

I, too, have enjoyed the increasing prominence of Dartmouth researchers in the national media, as described in the Spring 2007 cover feature—but I think a dose of real-world medicine might alter the conclusions Drs. Wennberg and Fisher draw about the roots of regional disparities in health care. They take great pains to document that a disproportionate amount of services are provided in areas overstocked with physicians and hospitals, and then blithely jump to the conclusion that it is this supply that drives up the demand.

This feature in the Spring issue—on research from Dartmouth that is changing the national health-policy debate—impressed, intrigued, and irked readers.

Of course, correlation is quite different from causation. Several alternative explanations for this correlation leap to mind. The most obvious is that different patient populations might be more demanding of sophisticated services. While it is not popular to suggest that ethnicity could be an intervening variable, I do not think it a coincidence that Northern New England and the North Central States, home to hardy Yankees and stoic Scandinavians, respectively, stand out as low-demand states. I suspect patients there might not be as quick to request fancy tests and MRIs as wealthy retirees in the Sunbelt.

Yet the researchers summarily dismiss this possibility with unfounded, inflammatory statements like "People don't just go out and get care . . . the financial incentives point providers in that direction."

The team also discounts the impact of malpractice concerns on this issue by saying that eliminating this factor would decrease spending by "only" 5% to 9%. Inexplicably, they prefer to ignore this amount (which is in fact a huge sum of money) in their search for a single explanation for excess spending—greedy doctors and hospitals.

Interestingly, two additional variables that CECS does not examine are explored on page 6 of the same issue of Dartmouth Medicine. Maria Ceyala's research demonstrates that both distance from health care facilities and bad weather reduce patients' pursuit of more sophisticated care. The *Dartmouth Atlas* map on page 30 reinforces her findings. High demand for services predominates in densely populated states (New York, New Jersey, Pennsylvania) and those whose population is concentrated in large metropolitan areas, while the Great Plains and Rocky Mountain states stand out for their lower demand.

I heartily agree with Fisher and Wennberg's assessment that perhaps one-third of health care dollars are wasted—but not by avarice. I choose tests without regard for how I might benefit from them, and I believe the great majority of physicians do the same. We resent the implication that doctor greed is at the root of the cited disparities. I suggest the researchers do a better job at ferreting out the other, more real causes. At DMS, even 30 years ago, my friends and I would speculate about where all these arrogant, "me-first" doctors we read about were coming from. It couldn't be any of us! Doctors in this regard are like congressmen: the ones you know are great; it's all the others who are doing the bad stuff.

As an aside, I'm a major fan of Dartmouth Medicine, with its pleasing but not flashy layout, spectrum of issues covered, and discreet ads.

S. R. Fahey, M.D., DMS '72
University of Maryland
Health Center
College Park, Md.

We invited Drs. Wennberg and Fisher to respond to the points made in this letter. They wrote: "We appreciate Dr. Fahey's interest in our work and agree about the importance of distinguishing association from causation. But it is also important to distinguish the causes of health-care variation from the consequences these variations have on health. In both cases, we have worked hard to use rigorous obser-

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vational methods to distinguish association from causation.

"Dr. Fahey is correct that there are two major competing explanations for the regional differences in intensity of usage: once we rule out differences in illness rates (addressed early in the course of this research), either the patients 'want' more or the providers are prescribing more. Data from two academic medical centers in Maryland reflect the kind of differences we see: Hospital A has a more intensive pattern of end-of-life practice than Hospital B, with more patients dying during an ICU-associated hospital stay (33.9% versus 21.7% of deaths) and fewer patients receiving hospice care (23.9% versus 31.5%). Research by Joanne Lynn and others found that similar differences across five major academic medical centers were not due to patients' preferences but to characteristics of the delivery system—most notably the local supply of hospital beds.

"We do not argue that physicians are venal. On the contrary, we believe that most physicians are trying to do the best they can to care for sick patients in systems that make it more efficient (from the physicians' perspective) to refer or to admit. Doctors' decisions are strongly influenced by how many specialists are on staff at their hospital (making it easier to refer) and how many beds there are relative to the population being served (making it easier to admit patients with complex problems to the hospital, where others can oversee their care).

"The second question—whether a higher-intensity practice pattern is beneficial to health—is just as important. And here the evidence is strong, developed over many years and based upon observational methods (instrumental variables approaches) that have convinced even our most skeptical reviewers. On average, higher-intensity systems have slightly worse technical quality, and higher-intensity care does not result in better health outcomes; if anything, higher-spending systems achieve slightly worse results. And physicians in higher-intensity systems are more likely to say they have difficulty providing high-quality care. This suggests that we have substantial opportunities to reduce costs while maintaining or even improving quality and outcomes.

"This brings us back to preferences. It seems unlikely that patients would demand high-intensity care if they knew they could receive care of higher quality at lower cost—perhaps pocketing the savings. But our delivery system does not offer that choice. We need more robust and convincing performance measures. We need new models of care. And we need to change the payment system.

"But achieving these goals will require change. We believe that academic medical centers have both an opportunity and a responsibility to be leaders of that change by examining their own practices.

"On that score, readers may be interested to know that the higher-intensity 'Hospital A' mentioned above is the University of Maryland Medical Center, while the lower-intensity 'Hospital B' is Johns Hopkins. But both lie at the higher end of U.S. practice patterns."

Foreign correspondent

I was enjoying the Winter 2006 issue of Dartmouth Medicine when I noticed the feature on the magazine's 30th anniversary. That significant milestone impelled me to write.

I have been receiving the magazine for more than 20 years, ever since I was class secretary for the Dartmouth College Class of '63. I have found the magazine consistently interesting and well done. Since retiring a year ago, I have been able to read it more carefully and have appreciated it even more. Before, it always left me wishing I could have spent more time with it.

The current issue is a good example. I read with interest the articles on chemoprevention and flu. (As a former magazine editor, I couldn't help but admire the intrepid way you got around the vexing lack of 1918 file photos.) The collection of past articles in the 30th anniversary feature startled me by bringing me face to face with a number of interesting pieces I had missed. I am trying to catch up now. The editorial remarks about the importance of "story" were very well put. And then there were the timely little insights one wouldn't get from any other source, such as the fact that Hillary Clinton cochaired the birthday dinner for Dr. Koop!

I am now living in Bolivia, where I taught high school history for four years before re-retiring, so I appreciate very much the tie back to Hanover. Best wishes for continued success.

David Boldt, DC '63
Santa Cruz de la Sierra, Bolivia

Boldt is the former editor of the Philadelphia Inquirer*'s magazine section and of its editorial page.*

Another butterfly

Congratulations on another fine issue of Dartmouth Medicine and for 30 years of a magazine that continues to inform alumni and help us stay connected to the roots of our experience in medicine. It seems like only yesterday that I enjoyed the seminal issue in the Fall of 1976.

I am a firm believer in the "butterfly effect," the subject of the Editor's Note in the Winter 2006 issue, and deeply appreciate the ripples that Dean Strickler has generated in both medical education and international health. I'm certain that we can't even begin to measure the effect Jim has had on countless students, young doctors, and untold

millions of people displaced by conflict in the past few decades. He truly has been a leader in international health since his "retirement" from DMS.

But no issue of DARTMOUTH MEDICINE celebrating 30 years would be complete without a mention of another important "butterfly"—Dr. George Margolis, an early guiding spirit of the magazine (then the *Dartmouth Medical School Alumni Magazine*) and its senior editor for seven years. And George was not only a professor of neuropathology but also, in his role as director of minority student affairs, for many years led the effort to make DMS a welcoming and culturally diverse community. He was truly a "humanitarian for all seasons" (see **http://www.dartmouth.edu/~biomed/resources.htmld/margolis.shtml**) and is still very much missed.

George also helped to broaden the criteria of excellence in medicine. In the Spring 1977 issue of this magazine, he referred to Eleazar Wheelock's watchwords, *Vox clamantis in deserto* ("A voice crying out in the wilderness"), and wrote: "The eminence of a medical school is to be measured not merely on the narrow basis of the practical knowledge imparted to its students. The level of social consciousness instilled in them, and the quality of care delivered to the surrounding population, beset by the ills attending poverty, loom just as large as criteria of excellence."

George Margolis's ripples still reverberate as we strive to practice medicine in a fashion that is culturally sensitive and competent, or, as we would like to believe, just "good medicine."

ROBERT M. RUFSVOLD, M.D., DMS '79
Lyme, N.H.

An amazing joint

I usually read DARTMOUTH MEDICINE just before going to sleep. This item in the "Facts & Figures" box in the Winter 2006 issue caught my imagination: How are ">8,000 . . . explanted joints" stored, and with what kind of categorizing, etc.? It certainly has been an interesting mental exercise thinking about this. What a valuable resource, and what a monumental job!

DONA JACKSON
Lyndonville, Vt.

We invited Dr. Michael Mayor, who was instrumental in establishing Dartmouth's prosthetic joint laboratory, to respond to this question. He wrote: "The 8,000 items are all manner of metal and plastic joint replacement parts that have been through a highly varied life in service to patients whose joints needed replacing for any of many reasons. It has been my responsibility and privilege to evaluate each piece as it came in to assess the damage it may have suffered, assign a value to the modes of damage, photograph it from many angles, and then move it along through a myriad of special evaluations to further explore how its service life has impacted the materials of which it was made.

"All this information is gathered in a computer so sense can be made of how human activities alter these materials, especially in undesirable ways. Once enough information is available, ordered analyses can follow, so they can be shared with the world in some form or other. This may involve a visit by interested parties to the laboratory, posters and/or presentations at international meetings, or papers in peer-reviewed journals.

"We've been gratified to have made a difference in how joint replacement parts are produced. It's been an effort to create a set of approaches that are durable and more benevolent in service to people whose joints have 'gone south' on them. Combining insights from clinical practice and engineering science has been especially gratifying.

"Many thanks for your inquiry. Here's hoping you sleep soundly."

This box of statistics on prosthetic joints set one reader's mind spinning.

Topical storm

The diversity in the Spring 2007 issue of DARTMOUTH MEDICINE was outstanding. It is not often a reader can identify with so many topics. Here's what I found:

Faculty Focus: I used to work for Dr. Rosen.

Point of View: My father was mentally ill.

"Treating trauma in women veterans": I have suffered from PTSD myself.

"Pancreatic cancer: Deadly and on the rise": I lost a dear friend to this disease recently.

"When 'once upon a time' comes true": I know Wafica Brooks (the nurse who took care of Dr. Shoemaker), as well as her parents, from my church.

Thank you for reaching out to so many readers and on such different levels. Somehow this enables us not to feel isolated on cold winter days.

MIMI BAIRD
Woodstock, Vt.

The family business

I just finished the latest issue of DARTMOUTH MEDICINE and would like to have my niece added to your subscription list. She's about to graduate as a nurse practitioner from Mass General, and we'd love to see her eventually move back to New Hampshire. Perhaps DM will help convince her that she belongs here. Her grandfather practiced medicine on Boston's North Shore, and she was very fond of my father, Dr. John Milne, a fixture at MHMH for many years.

Many thanks for your excellent magazine.

JEFF MILNE, DC '67
New London, N.H.

Reading matter

I was in the Manchester, N.H., library on Saturday and happened to pick up your magazine. Two hours later I decided I needed to be on your mailing list!

KATY KRAMER
Manchester, N.H.

We're happy to add to our mailing list anyone at a U.S. address who's interested in the subjects we cover. *See page 22 for details.*