

Dartmouth-Hitchcock Medical Center DEVELOPMENT

Helping put outcomes on the map By Barbra Alan

Politician, writer, World War II veteran, industrialist, activist: Throughout his life, General Robert Wood Johnson was all of these and more. During his 30-plus years at the helm of Johnson & Johnson, he helped build the small, family-owned business his father had started into the world's largest health- and medical-products manufacturer.

But Johnson's contributions to health care and medicine extend far beyond the business world. His lifetime devoted to public service and philanthropy culminated in the establishment in 1968 of the Robert Wood Johnson Foundation. Started with an endowment of \$1.2 billion bequeathed by General Johnson, the Foundation's assets have grown to \$8.4 billion, making it the nation's fourth-largest foundation and largest philanthropy devoted exclusively to health and health care.

Over the years, the Robert Wood Johnson Foundation has been an invaluable partner with Dartmouth Medical School by supporting numerous research projects. Among them is *The Dartmouth Atlas of Health Care*, a groundbreaking research project of the Center for the Evaluative Clinical Sciences (CECS). The *Atlas* has been funded by the Foundation for over a decade.

The Dartmouth Atlas of Health Care is produced by a group of epidemiologists, economists, and statisticians headed by pioneering epidemiologist John Wennberg, M.D., M.P.H., the Peggy Y. Thomson Professor of the Evaluative Clinical Sciences and the founder and director

of CECS. The project illustrates—literally—how medical resources are distributed and used throughout the United States. With its first printing in 1996, the *Atlas* spotlighted striking variations in how Americans use health-care resources and what influence the local supply of resources (such as hospital beds) has on the rates at which those resources are used. It showed that geography is destiny: the care you receive is often determined by where you live and the doctor you consult, rather than by the best treatment for you and what you actually want.

"It's not about pointing fingers or placing blame," insists Megan McAn-

Wennberg suggested the idea of a health-care atlas in a proposal to the Robert Wood Johnson Foundation.

drew, M.B.A., M.S., communications director for CECS and editor of the *Atlas*. Rather, the project raises important questions about how health-care services are used throughout the country and why this use may vary among communities, with the goal of reducing unnecessary spending and improving quality.

As its name implies, *The Dartmouth Atlas of Health Care* is filled with maps. They divide the United States into 3,000-some hospital service areas, then into more than 300

hospital referral regions (groups of hospital service areas that are natural markets for tertiary care, such as open-heart surgery or neurosurgery) to show where people go for acute and specialized services. On these maps, state boundaries tend to blur. For example, the Lebanon, N.H., referral region includes all of eastern Vermont, from Brattleboro north to Newport. The New Haven, Conn., region includes parts of eastern New York and part of Long Island.

Each region is color-coded to make it clear which areas have the highest rates of, say, back surgery or coronary angiography or the highest per capita supply of hospital beds. The *Atlas* is based on the Medicare population, since Medicare claims, which account for 35% of total health-care spending, are contained in the only uniform, national claims database. "Every state has a different requirement for how claims are reported, so you can't get comparable claims databases from state to state," explains McAndrew.

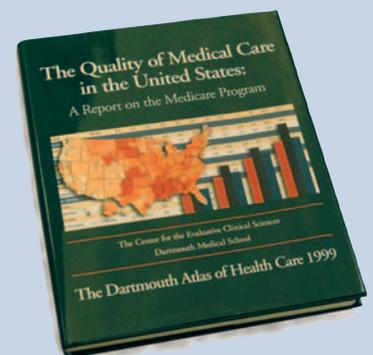
Two decades of research led up to the *Atlas*. In the early 1970s, fueled by an interest in the regional distribution of health-care resources, Jack Wennberg collaborated with Dr. Alan Gittelsohn, his former teacher from Johns Hopkins, to develop a method for monitoring health-care systems. Their method, called small-area analysis, uncovered large variations in health-care usage among different areas, even when factors such as disease severity, age, gender, and so on were controlled. For example, their early work revealed that children in certain areas of Vermont routinely had their tonsils removed,



while children in other areas of the state did not. "These findings challenged some basic assumptions about how health-care decisions were made," McAndrew says. "It wasn't something that doctors had an easy time accepting, and it didn't make Jack a popular guy."

The discovery that surgical rates varied in large part because of differences in medical opinion led Wennberg to document the outcomes of common medical practices—outcomes research. He and his colleagues demonstrated that decision-making about many procedures, such as hysterectomy and prostatectomy, were made in the absence of information about both outcomes and patients' preferences.

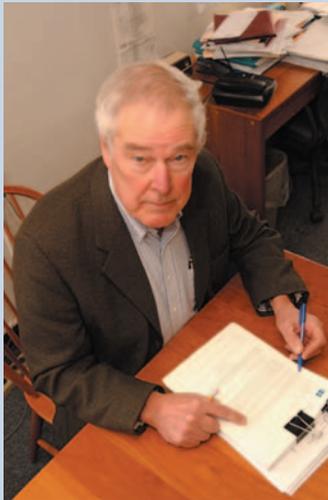
In the early 1990s, Wennberg's team at CECS began to work with the national Medicare claims database, using the methodology developed in Vermont to determine local patterns of care throughout the United States. Once this analysis was complete, one area could be compared to any other area—giving a national picture of the distribution and utilization of



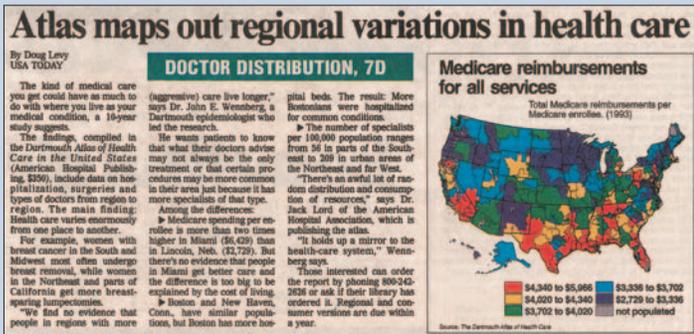
Barbra Alan is assistant director of development communications at DHMC.

The important thing is to never stop questioning.
—Albert Einstein

BOTH: FLYING SQUIRREL GRAPHICS



Jack Wennberg, far left, and Megan McAndrew, near left, are among those who work on the Dartmouth Atlas—which often makes the news.



health-care resources. An atlas, complete with maps, charts, and text, seemed the perfect vehicle for presenting these findings.

Wennberg first suggested the idea of a health-care atlas in a proposal to the Robert Wood Johnson Foundation. Concerned about the high cost of medical care, the Foundation agreed to fund the project, seeing it as an important step toward understanding the root cause behind inflated costs in the U.S. health-care system. "It's hard to overstate the role of the Robert Wood Johnson Foundation with CECS. They made it possible for this work to be done, and for it to be published," says McAndrew.

Emboldened by the Robert Wood Johnson grant, the *Atlas* project be-

gan in 1993 and the first edition was published three years later. Not only did the *Atlas* illustrate the extraordinary variations in health-care resources and utilization across the country, but it also disclosed the methodology used to derive that information. "This meant that anyone who wanted to argue with the methodology was dealing with the real thing," explains McAndrew.

And argue they did. The *Atlas* presented ideas that were not especially welcomed by the medical establishment. Ideas such as that supply increases demand in health care. That areas with more hospitals and specialists spend more on health care per person. And, most surprising of all, that more health care doesn't necessarily translate into bet-

ter care, better health, or greater patient satisfaction.

Subsequent editions, all funded by Robert Wood Johnson, grew in breadth and depth—including measures such as Medicare enrollees' experiences in the last six months of life and use of preventive interventions like pneumonia vaccinations.

While the readership for the *Atlas* is mainly health-care consultants, insurers, and large employers looking to save health-care dollars, CECS believes the information could be useful to a lay audience. "People are doing a lot more homework on their health," notes McAndrew. "An important goal of Jack's is to get the patients involved in the decision-making process."

To that end, an online *Atlas* (at www.dartmouthatlas.org) was launched in September 2000—with a grant from Robert Wood Johnson.

The most recent step in its long tradition of generous support to the *Atlas* project came in July 2004, when the Foundation made a three-year, \$1.5-million grant for the continuation and expansion of the project's analyses. Goals include gaining access to real-time Medicare claims data, introducing provider-specific data, and increasing awareness of the *Atlas* among all groups, especially consumers.

The partnership between CECS and the Robert Wood Johnson Foundation is making the *Dartmouth Atlas* an increasingly powerful catalyst in reducing variations and improving the nation's health-care system.

Important partners in improving care

Without funding support, landmark research efforts like that of Dr. John Wennberg and his talented colleagues at the Center for the Evaluative Clinical Sciences (CECS) cannot effect the change that is so critically needed in our nation's health-care system.

Funding partners essential to CECS' work in measuring, organizing, and improving the health-care system include the Robert Wood Johnson Foundation, which believed early on in the importance of Dr. Wennberg's controversial work, and Peggy Y. Thomson, whose late husband, Dr. Andrew Thomson, Jr., endowed the Peggy Y. Thomson Professorship in the Evaluative Clinical Sciences in her honor in 1994. The country's first endowed chair in the discipline of outcomes research, the Thomson Professorship is held by Dr. Wennberg.

The physicians, scientists, and students at CECS are working to define what quality medical care is and how best to provide it. The knowledge they are developing in understanding the systems and processes of care, outcomes research, clinical applications, and the role and value of shared decision-making is revolutionizing health care. And their efforts are realigning the resources and incentives of our health-care system, provoking changes that will improve the lives of millions.

The generosity of those who understand and appreciate the innovative work of CECS and who are inspired to support it will help ensure the continuous improvement of health care, and the health-care system, for us all.

