



MANAGING MEDICAL MIRACLES

By Johanna Van Hise Heart

Replacing worn out hips and knees, bolstering ailing arteries with stents, and regulating heart function with electronic devices—procedures that were once cutting edge—are now commonplace.

New biochemical therapies for beating back cancer arrive on the market every year, as do diagnostic tools that can disclose genetic predispositions to diseases or offer images that reveal sources of pain or malfunction. Unprecedented innovation, especially in biotechnology, medical devices, and advanced diagnostics, has catapulted medicine into a new era.

This all comes with both significant costs and enormous benefits, notes **James C. Robinson, Ph.D., M.P.H. '81**, Kaiser Permanente Professor of Health Economics and director of the new Berkeley Center for Health Technology (BCHT). “New medical technologies offer great opportunity to improve the health and well-being of patients with severe diseases,” says Robinson, “but are also a major driver of the rise in the cost of health care. We need to encourage, and pay more for, appropriate uses of biomedical innovations while we discourage, and pay less for, inappropriate uses.”

BERKELEY RISES TO THE CHALLENGE

The Berkeley Center for Health Technology was established with generous start-up funding from Genentech, one of the most prominent firms in the biotechnology industry and a longtime supporter of the University. BCHT’s mission is twofold: First, it aims to address opportunities and challenges associated with incorporating medical innovations into the standard of care. Second, the center seeks to promote methods of payment that reward innovations while reducing expenditures for less effective treatments. To that end, the center will sponsor roundtables and conferences, conduct case studies and quantitative research, and develop professional education programs

for industry leaders, as well as new course offerings for Berkeley students.

Robinson and colleague **Kim Solomon, M.B.A., M.P.H. '94**, associate director of professional development for the center, are well-positioned to understand the challenges that come with medical innovation. Robinson’s interest in the economics of technological innovation led him to design the statewide Value Assessment and Purchasing of Medical Devices project for the Integrated Healthcare



Kim Solomon and James Robinson

Association. (See page 9.) He spent academic year 2007–2008 in Washington, D.C., as editor in chief of the nation’s top health policy journal *Health Affairs*, and continues to serve as contributing editor in charge of the journal’s new TechWatch section.

Solomon’s passion for this research area builds upon a strong background in health care reimbursement. Before returning to the

School in January 2006 as a lecturer and director of the Health Policy and Management (HPM) master’s program, she was a management consultant with expertise in the financing and services sectors of health care. For Solomon, work with BCHT will provide opportunities to look at specific innovations—new drugs, new biologics, new devices—and how each of these will affect the system.

BALANCING COMPETING INTERESTS

While members of each health care sector have a passion for the potential good of new clinical technology, cohesion is often lost when it comes to marketing, financing, purchasing, reimbursing, and regulating these innovations.

Taken in an economic context of supply and demand, the American population is aging and business is booming. However, the demand side of the health care system—which includes physicians, hospitals, employers, and insurers—has not developed the mechanisms needed to assess the value of what the medical device and pharmaceutical companies are supplying

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so rapidly and in such great volume. This uncertainty has become a source of misunderstanding and often mistrust.

For example, there may be several choices of artificial knee kits produced by competing companies, but a surgeon must choose just one and could base that decision on any number of factors. Because physicians often have only loose affiliations with a hospital, they have little incentive to share their reasons. Yet it is the hospital that must pay for the devices, and its ability to obtain a competitive price from the manufacturer is hampered if different surgeons insist on using different brands and thereby undermine volume purchasing.

There are also disputes over appropriate use of biopharmaceuticals and medical devices. Mounting evidence suggests that some who could benefit enormously from new drugs, devices, and diagnostics aren't getting them, while others who aren't likely to benefit are using them. Huge disparities exist in rates of



"Manufacturers need better information on the coverage, reimbursement, and benefit design strategies pursued by health insurers," he explains, "while insurers need better information on the pipeline of new products, likely patterns of use, and potential pricing and distribution methods."

This is where Robinson believes the new center can help. As an academic entity, BCHT will offer

THREE-STAGE RESEARCH STRATEGY

Innovation by definition means change, and the study of innovation itself requires innovative research techniques. "The unique challenge to this research is that the methods by which health plans and hospitals seek to manage new technologies change very rapidly," says Robinson. "Additionally, the drugs and devices that are on the market change very rapidly." Relying only on traditional research methods, which use existing data sources or involve gathering large samples of new data, would be time consuming and thereby risk rendering results irrelevant. By the time the research was done, a product or device might no longer be on the market.

To accommodate these circumstances, BCHT will pursue a research strategy consisting of three stages: identification of leading organizations and methods; in-depth case studies; and analyses of data covering large populations.

The most basic need is to identify the most creative methods for coverage, payment, and management that are being used by leading health insurers, delivery systems, and/or product manufacturers. To identify these best practices, the center will convene one-day roundtables on particular dimensions of technology management, focusing on issues where there is the potential for cooperation and mutual benefit among the different health care sectors. The roundtables will involve approximately 25 people who often do not see eye to eye, and therein lies the value.

The idea is to stimulate research and implement new methods for managing innovation.

use and expenditure across geographic areas and depending on a patient's insurance coverage. Continued progress against cancer, auto-immune conditions, and other serious illnesses requires continued financial investments, but purchasers and consumers feel drug prices are high as it is.

In order to balance what he calls "the competing claims of access and affordability," Robinson proposes a cultural shift. "The relationship among the sectors would move from the contemporary 'hand-off' of responsibility from manufacturers to insurers at the time of product launch," he suggests, "to a framework where manufacturers have greater insight and input into post-launch decisions and insurers have greater insight and input into pre-launch decisions.

data-supported analyses and a neutral ground where cross-sector industry leaders can assess workable solutions to real world challenges. The center will work closely with leaders from each sector—biotech and medical device firms, health insurance plans, and health care delivery organizations—to research and make available knowledge concerning new technologies and develop new methods for coverage, reimbursement, and management.

"The idea is to stimulate research and implement new methods for managing innovation," says Robinson. "We seek new methods of payment, new forms of insurance, and new forms of clinical management of drugs and devices to get better outcomes for the patients and for the system as a whole."

“The whole point is to bring together disparate viewpoints,” says Solomon. “It’s a way of finding neutral ground and trying to have productive conversations, rather than everybody defaulting to their traditional positions.”

From there, relationships are forged that extend into involvement in the second stage of research activity: case studies of best practices in leading health plans, hospital systems, and technology firms. This will involve spending some time at each organization.

“The key point is to get under the hood, as it were, to understand the opportunities and the obstacles,” says Robinson. One organization may be proud to tell its success story; another may be experiencing difficulties and therefore be interested in having outside researchers come in, study what it is doing, and give feedback.

Next the center will conduct data-based analyses assessing the range and impact of management strategies for new technologies

across different technology companies, hospitals, or health plans.

The first data-based study for the center, recently funded by the California HealthCare Foundation, will examine patterns and determinants of costs, complications, insurance payments, and other factors for approximately 80,000 patients undergoing any of 14 orthopedic or cardiac procedures in California hospitals in 2008. These data are being collected by the IHA’s value purchasing project for

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Susan Desmond-Hellmann: Improving Patients’ Lives on a Broad Scale



Susan Desmond-Hellmann, M.D., M.P.H. ’88 is driven by the desire to improve therapies for cancer patients. She’d like to see cancer become a manageable chronic disease rather than a fatal one in her lifetime. As president of product development for Genentech in South San Francisco—

which helped establish the School’s new center, the Berkeley Center for Health Technology (see page 4)—she has been a key force bringing innovative drugs to cancer patients, including Rituxan, Herceptin, Avastin, and Tarceva.

Desmond-Hellmann recently stepped down from her position at Genentech, where she served in various roles since 1995, including clinical scientist, chief medical officer, and executive vice president of development and product operations. In May 2009, she was named chancellor of UCSF. Her appointment begins on August 3, 2009.

Regarding her new role, Desmond-Hellmann said, “The most important thing to me throughout my entire career, whether as physician or manager or clinical scientist, has been to work on things that truly matter for patients, and this new role has the potential to make an even larger impact on patients through all aspects of UCSF’s mission.”

Desmond-Hellmann has received well-deserved recognition throughout her career. The Wall Street Journal ranked her sixth of its “50 Women to Watch” in 2005, and Fortune magazine included her among the “50 Most Powerful Women” in 2001 and 2003-2008. The Healthcare Businesswomen’s Association named Desmond-Hellmann its 2006 “Woman of the Year.” She was named to the Biotech Hall of Fame in 2007 and was appointed to the California Academy of Sciences Board of Trustees in 2008.

Desmond-Hellmann is board-certified in internal medicine and medical oncology and completed her clinical training at UCSF. She earned her master’s degree in epidemiology and biostatistics from the UC Berkeley School of Public Health, where she began planning a research project on the epidemiology of patents with Kaposi’s sarcoma, a viral cancer prevalent among AIDS patients.

On April 9, Desmond-Hellmann returned to the UC Berkeley campus to deliver the 2009 Edward E. Penhoet Lecture on Biology, Behavior, and Environment—named for Chiron cofounder and former School of Public Health dean Edward Penhoet. Her talk focused on the public health implications of advances in biotechnology. She formerly cochaired the steering committee for the School’s fundraising effort, The Campaign for the School of Public Health. 🌱

Working Together to Turn RESEARCH INTO ACTION

The Integrated Healthcare Association (IHA), an Oakland-based nonprofit committed to improving the efficiency and quality of health care in California, is a key partner working with the new Berkeley Center for Health Technology (BCHT).

BCHT's research—which draws upon real world data and can be used to influence decisions made by corporate, policy, and professional leaders—is a natural fit with IHA's action-oriented, change-implementing activities. BCHT's offices will be housed adjacent to IHA's in downtown Oakland to facilitate cooperation between the two organizations.

One of IHA's programs, Value Assessment and Purchasing of Medical Devices, presents a particularly promising opportunity for collaboration. The program will gather and analyze data on 14 high-volume and high-cost procedures performed in California hospitals each year and will include a series of roundtables addressing best purchasing practices. IHA is also piloting a "episode-of-care" payment method for these complex procedures, offering a single bundled payment for the physicians' services, the hospital's costs, the cost of the medical devices themselves, and the cost of rehabilitation care received by the patient after discharge from the hospital.

Already known for its work on physician pay-for-performance, IHA was looking for a project that would engage California hospitals, explains **Tom Williams**, IHA's executive director (and a current doctoral candidate at the School). "By addressing the increasing financial burden placed upon hospitals by the dramatic uptake of wonderful but expensive

new medical devices," he says, "we get at a problem the hospitals care about deeply, and one that also affects health care affordability for everyone."

"The project targets procedures involving what are called 'physician preference items'—artificial knees, hips, spinal, and cardiac implants," explains program director **Weslie Kary, M.P.P., M.P.H. '06**. "For each of these procedures, the device represents a



very significant portion of the total cost of the procedure. Somewhere between 30 and 80 percent of the reimbursement that the hospital receives from the insurer for everything that happened to the patient can be consumed by the device cost."

Because these devices are chosen by the physicians, it is especially challenging for hospitals to manage spending in this area. "The hospitals are placed between a rock and a hard place when reimbursement is fixed, as it is for a Medicare patient," Kary says. "With commercial payers, hospitals are often successful in carving device cost out of their negotiated rates. That's why this topic also resonates with health plans—since their costs go up directly with device price increases.

"It has been difficult for hospitals to obtain really reliable benchmark information so that they can compare how they are doing," adds Kary. "They need help to build a comprehensive, external view of what is going on with implant costs."

The program is the collective brainchild of hospital representatives on the IHA board of directors and **James C. Robinson, Ph.D., M.P.H. '81**, BCHT's executive director and a long-time IHA board member. It is funded by a grant from the Blue Shield of California Foundation. BCHT will be involved with both the data analysis and best practice identification phases of the program, complementing IHA's applied work. The center will have the academic wherewithal to understand the economic forces driving the market, and to identify and publish on best practices to address those forces in a constructive way.

"IHA brings the stakeholders to the table to talk about shared problems, understand best practices, try out new ideas—but we're not in a position to conduct real-time rigorous academic analysis of what is going on," says Kary. "That's why BCHT's work will be a very valuable adjunct to the project." 🌀