

Highlights from the 4th Annual Connected Health Symposium
Building the Connected Health Economy:
Innovation, Implementation and Investment
The Conference Center at Harvard Medical, Boston
October 22-23, 2007



The Center for Connected Health's 4th Annual Connected Health Symposium was opened to a record number of participants by Joe Ternullo, Associate Director at the Center for Connected Health. Mr. Ternullo called upon the 800-plus participants to take advantage of an interactive format to forge new and meaningful collaborations.

Hon. Richard T. Moore, Senate Chair of the Joint Legislative Committee on Health Care Financing, Massachusetts General Court, then proposed two "essential discussions" in healthcare today -- economics and incentives -- and suggested that healthcare information technology (HIT) can support high quality, universal care. Following a brief review of Massachusetts' mandate for universal health care and support for the life sciences, Senator Moore urged symposium participants to become allies in promoting health care for all.

There were a number of provocative and insightful sessions and keynote presentations throughout the two-day conference, ranging from virtual, online social networking and employee wellness programs to economic considerations for connected health.

Macroeconomics of Connected Health

David Cutler, Otto Eckstein Professor of Applied Economics and Dean for the Social Sciences at Harvard University, provided an economist's perspective on connected health in the first keynote address of the symposium. Beginning with an ingeniously simple definition of a good healthcare system -- that everyone is insured and the system provides high value services -- Dr. Cutler proffered the notion that the cost of providing high value services is not about how much, but how well, the healthcare system expends resources.

According to Dr. Cutler, the United States misappropriates spending in healthcare, spending \$400-\$500 billion a year on unnecessary medical care. Certain types of health care are underutilized, citing for example that only 25% of depressed patients and a third of people with hypertension are successfully treated despite the fact that good treatments have been available since the 1950s. He believes back-end technology can be particularly helpful in mitigating resource misallocation.

Dr. Cutler pointed out that the healthcare system has not adequately addressed ways of helping patients to succeed with their medical regimen when their behavior is a critical component of the care rendered (ex: taking medications). Only 50% of patient-directed medical regimens are successful. Front-end technology can be applied to improve adherence, and patients who take part in technology-driven adherence programs are convinced of their value, said Dr. Cutler.

In terms of promoting connected health, he believes that standard setting is a critical first step to promoting investment, and that the federal government is best suited to manage the process. Dr. Cutler estimated that it will cost \$150-\$200 billion to create a national connected health data network. Revisions to the system he would like to see include tying provider pay to best practices and creating incentives for preventive care programs. In closing, Cutler charged attendees to find ways to persuade stakeholders that they should immediately invest in technology.

Second Life: Virtual Healthcare in a Virtual World

Dr. Joseph Kvedar, Director of the Center for Connected Health, moderated a unique discussion about the potential benefits and pitfalls of transacting healthcare in the virtual world of Second Life. Developed by Linden Labs and accessible online at www.secondlife.com, Second Life is a virtual world where participants establish identities online and interact personally and/or professionally with others as “co-creators” of the world.

Live panelists were represented as animated figures, or “avatars,” of their own creation in Second Life to make them visible to virtual participants. A remote panelist and Second Life virtual attendees were visible to conference participants in Boston via live telecast. Virtual audience members communicated through instant messaging with one another and with a live monitor, who relayed their questions to the live participants. The interaction of live and virtual audiences and panelists made this forum as much an experiment as an exploration of new ideas.

Dr. Kvedar opened with a statement about the importance of direct communication in healthcare, the richness of communication on Second Life as opposed to other digital forms of communication, and his personal interest in and skepticism about Second Life as a medium for delivering health care. He announced plans for the Center for Connected Health to conduct a study comparing the effectiveness of teaching the relaxation response via traditional means and in Second Life.

The highlight of the panel was a fascinating presentation and follow-up commentary by the remote panelist ‘Sojourner,’ a multiple stroke survivor who uses Second Life as a means of coping with the physical and emotional impact of her medical condition. Sojourner described a unique availability, control and breadth of interactions available to her in the virtual world – including those activities of which she is no longer physically capable – and the ability to shed one’s disabilities online. She emphasized that the nature of interactions is real, rather than fantastical or playful.

Sojourner had experienced therapeutic effects that she attributed to Second Life, including better memory, planning, organizational, executive functioning and social skills as well as increased resiliency. Skills and abilities developed in Second Life translated to the real world. For example, Sojourner witnessed the undoing of “learned helplessness,” a documented phenomenon, which enabled two stroke survivors to discard their wheelchairs. Sojourner advised that everyone on Second Life, as in real life, has an agenda and shared her belief that it is not a safe forum for those with serious emotional or social conduct disorders.

The audience and panelists raised a number of questions about safety, including addiction to the medium, the need to authenticate identities and the liability of practicing medicine in the virtual world. Dr. Daniel Hoch, Assistant Professor, Harvard Medical School, pointed out that the medium provides a greater “emotional bandwidth” than other digital forms of communication, and could even facilitate the sharing of information that is difficult in a face-to-face interaction. Dr. Roger Edwards, Managing Consultant, PA Consulting Group, who is part of a project to share health information in Second Life at the UK’s National Health Service, offered that the potential pitfalls of transacting health care in the virtual world could be overcome by setting boundaries for appropriate use of the medium.

In their closing comments, panelists unanimously supported both the notion of potential and the value of experimenting with healthcare in Second Life.

Prevention: Who's Willing to Spend What?

Moderator Stever Aubrey, CEO of Dovetail Health, with panelists Elizabeth Boehm Principal Analyst, Forrester Research, and Dr. Kenneth L. Minaker, Chief, Geriatric Medicine, Massachusetts General Hospital, presented three gerontology case studies to illustrate the nature of the consumer market for connected healthcare. To establish the economic milieu, Mr. Aubrey reviewed some average costs of care for seniors: \$4,000 per month for a skilled nursing facility; \$12,000 per month for an assisted living facility; \$20-\$30 per hour for homecare.

The cases highlighted poignant dilemmas in the lives of senior citizens healthcare, which Dr. Minaker asserted are commonplace in gerontology:

- patient isolation and/or lack of understanding of their medical status
- inappropriate standards of care that preclude prevention and encourage crisis management
- patient avoidance of care due to inability to pay
- poor continuity of care that leads to worsening medical status
- social factors that promote overly taxing, isolating or unsafe spousal/family caretaking
- lack of community resources and home care services to support patients and family caregivers

Panelists viewed technology-enabled care as a valuable solution in each of the cases presented, but noted that the market for consumer-driven connected healthcare is hampered by fragmentation, lack of awareness and consumers' inability to assess cost vs. value.

According to Ms. Boehm, while adult children are most often the buyers of consumer health technologies – such as home monitoring devices – research shows that seniors can adapt to new technologies, especially when the adaptation encompasses a familiar device/process. Personal finances, given the lack of reimbursement for connected health services/devices, are also a major obstacle for patients who might otherwise benefit from connected modes of healthcare delivery.

Patient Perspective

Gene Sacco, Director, Business Practices Development at Wyeth, moderated a discussion that explored the patient perspective on the need and value of connected care. He was joined by patients Win Hodges, a lung cancer survivor, and Carolyn Thornton, who had experienced congestive heart failure. Other panelists included Susan Edgman-Levitan, PA, Executive Director of the John D. Stoeckle Center for Primary Care Innovation and Lecturer in Medicine, Massachusetts General Hospital, and Associate in Health Policy, Harvard Medical School, and Dr. Michael Isakoff, Director of the Adolescent and Young Adult Cancer program at the Department of Hematology/Oncology, Connecticut Children's Medical Center.

Mr. Sacco observed that in addition to high quality, traditional medical care, products of the healthcare system include advice, opinions, timely responses, second opinions, reassurance, hope, and information – the “human touch.”

Ms. Thornton, who was part of a telemonitoring study at Partners Homecare, described her technology-enabled care experience as reassuring, and a great aid in her successful recovery. She agreed that reassurance is important to patients. Win Hodges had used web sites and online second opinions to help him through lung cancer, and he continues to use them to help with post-recovery health questions. Within the healthcare system, he found communications among physicians to be a challenge. Mr. Hodges advocated for cancer patients to be provided with CD-based risk profiles and encouraged patients to access online support groups.

The physician panelists spoke of the need to improve communication with patients, engender trust and bring families into healthcare, and the obstacles they face in attaining these ideals, such as policies that prevent certain types of email exchanges, lack of reimbursement for the “human” aspects of providing medical care and patient privacy. Ms. Thornton stated that she had not been concerned about privacy, while Mr. Sacco and Mr. Hodges had reservations.

All panelists expressed a uniform support for technology as a means of facilitating better communication with patients.

Cost Containment

Dr. Thomas Lee, CEO, Partners Community HealthCare, rounded out the first day with a keynote address, “Meeting the Cost Containment Imperative,” which focused on the economic and behavioral forces driving cost increases in healthcare and Dr. Lee’s plan for long-term cost containment.

Dr. Lee implicated chaos, resulting from rapid progress within the fragmented delivery system, as the leading cause of soaring costs in healthcare. Rapid progress in our healthcare system also leads to waste, poor reliability and safety, he explained, since from rapid progress flows micro-specialization. In turn, this leads individual physicians to an increase in the number of providers needed to address patient concerns; more work; and longer office visits.

Further, he reported that while collaboration in healthcare is “extremely high yield,” it contributes to more work and longer office visits. Adding to upward pressure on costs, said Dr. Lee, is the uncertain environment surrounding healthcare, including the global economy, cost shifting to employers and their resultant desire to discontinue healthcare benefits, as well as profit pressure in publicly funded healthcare organizations and threats to consumer confidence.

Dr. Lee proposed organization of the delivery system as the best solution to cost pressures, with technology-enabled programs figuring prominently in his recommendations. Specifically, Dr. Lee promoted decision support, EMR, improved access to medical records for patients and providers, and the use of practice-level and aggregate practice-pattern data. Overall, Dr. Lee believes the solution to rising costs is the adoption of systems that improve coordination and continuity of care.

The Role of Government

Thomas A. Gustafson, PhD, Senior Health Policy Advisor, Arent Fox LLP, and former Acting Director, CMS’ Center for Medicare Management, addressed the relationship between The Centers for (Medicaid and Medicare) and healthcare technology innovations in a keynote address, “Healthcare IT: A View from the Top of the Payer Pyramid.”

Reimbursement decisions by CMS are made within the context of its chartered scope as a medical care provider, said Dr. Gustafson. Further, wellness and convenience – two major drivers for innovations in connected health – are excluded from consideration by CMS.

The process for evaluating a claim for reimbursement addresses the CMS charter by asking “Can Medicare pay?” Once eligibility has been determined, the claim is measured against the notions of “reasonable and necessary.” Potential cost increases bear negatively on a review. Like the court system, CMS relies on precedents for guidance in reviewing innovations, though Dr. Gustafson acknowledged that the priorities of the current federal administration influence decision making at the agency. Other factors include clinical opinion, potential to improve quality or outcomes, ease of administration, and the entitlement structure of CMS – which holds that benefits should be provided, regardless of cost, if they meet the regulatory requirements.

Given these factors, said Dr. Gustafson, the executive leadership of CMS is very cautious about approvals that extend payments in novel ways, for example to new provider types. The fee-for-service structure of most Medicare programs excludes payments for capital, a negative factor for connected health innovations because they inherently involve capital equipment. Further, connected health pioneers must contend with a fee-for-service system that cannot directly account for savings across payment systems.

However, Dr. Gustafson said that CMS is undergoing a cultural shift in which it is both adopting a public health mission and becoming an active purchaser of health care, with increased focus on financing incentives and healthcare quality. He believes that technology innovations will succeed with CMS when they are embedded effectively into the care system, demonstrably improve care over an existing approach and can evidence improved outcomes. Still, capitated environments, said Gustafson, are today’s best hope for gaining CMS acceptance for technology-enabled healthcare.

New Tools for Large Employers

Employers represented on this panel are taking an active roll in managing the health of their employees. They were joined by moderator Doug McClure, Corporate Manager for Technology and Operations, Center for Connected Health, and industry analysts Lynne Dunbrack, Program Director, IDC Health Industry Insights, and Cameron Congdon, Principal, Towers Perrin, who provided the trend perspective on employer adoption of connected health programs.

In general, said Ms. Dunbrack, employers rather than payers are driving technology-enabled healthcare. Mr. Congdon added, however, that the vast majority of employers do not collect or analyze population-based data needed to drive health improvements.

These employers held distinctly different self-images, points of view and approaches to managing their role as healthcare purchaser. Delia Vetter, Senior Director of Benefits and Programs, EMC Corporation, said her company views itself as an educator and motivator, and aims to increase employee awareness of health and personal health management, as well as improving the general state and cost of healthcare. For EMC’s employee population, technology is integral to the delivery of personalized health management and benefits information. The company uses incentives as a lever to promote healthcare behavior change in its employees.

IBM is focused on primary care. The company employs technology “as needed” and uses financial leverages to improve on care coordination and preventive health. Overall, said George Chedraoui, Healthcare Leader, IBM Global Business Services; Chair and President, Bridges to Excellence, IBM views its role as that of change advocate and is motivated to influence patent change in the US healthcare system. IBM is piloting community-based delivery systems in which physicians are compensated for preventive health and other types of care and transactions not covered under the traditional system, as well as operating programs in chronic disease areas such as diabetes.

Web 2.0

Web 2.0 and Healthcare: Business Prospects for the New Thing, moderated by Matt Holt, Consultant and Principal, “The Health Care Blog,” brought together executives from emerging companies leveraging the Internet to bring new, targeted healthcare content or services to consumers in a format they control. Panelists included: Jack Barrette, CEO, WEGO Health; Marlene Beggelman, President and CEO, Enhanced Medical Decisions; Benjamin Heywood, Co-Founder, PatientsLikeMe; Ryan Phelan, Founder and CEO, DNA Direct; Dennis Underwood, CEO, Praxeon. Their business models ranged from user and contract fees, to advertising and licensing arrangements.

The panelists believe that consumers want to take charge of their care and that the Internet is filling that need. They expressed a range of views on the appeal of the Internet as a medium for healthcare delivery, including speed, convenience, access, control and community. The panelists attributed growth in the market for online healthcare services to dissemination and adoption of the Internet, the emergence of broadband and a shift in cultural attitudes about healthcare.

Woven through the several panel discussions addressing online healthcare services during the symposium were the issues of patient privacy, malpractice, verification of patient and physician identities and legal implications for companies offering healthcare services online. These are clearly emerging issues both in terms of legal precedent and occurrence.

A Connected Future

In the closing keynote address, Dr. David Brailer, Chairman, Health Evolution Partners, and former first National Coordinator for Health Information Technology, shared a pragmatic vision for the dispersion of connected healthcare. Dr. Brailer emphasized the need to convince policymakers and investors, with concrete evidence, that technology enabled healthcare can play a central role in increasing healthcare access while managing costs. He encouraged urgent action toward innovation and demand creation in the absence of regulation, and warned that the level of investment in connected healthcare by doctors, hospitals and payers would slow in response to legislative activity.

The problem with the diffusion of innovation in healthcare, according to Dr. Brailer, is that public financing generally doesn’t become available until market forces have been exhausted. Further, social influences on adoption and challenges of implementing technology broadly are often overlooked.

On the question of influence, Dr. Brailer believes consumers will ultimately control the market, and that private financing can influence changes in healthcare financing, quality and efficiency.

Special Contributors to Connected Health

Dr. Joseph Kvedar, Founder and Director of the Center for Connected Health, presented special awards for service and dedication to advocating for connected health. Recipients of the Award were Dena Puskin, Director, Office for Advancement of Telehealth, and Jonathan Linkous, Executive Director of the American Telemedicine Association.