Research Update

Fast Adoption of Significant Technologies

FAST: Unleashing the Power of Medical Technologies

Established in 2003 through a partnership between the New England Healthcare Institute (NEHI) and the Massachusetts Technology Collaborative (MTC), the Fast Adoption of Significant Technologies (FAST) initiative identifies and supports the adoption of underutilized health care technologies. To close the gap between technology discovery and health care system adoption, FAST focuses on promoting those technologies that are not widely used despite evidence of their potential to improve outcomes for large patient populations and lower overall health care costs.

FAST Focus: Stem the Tide of Chronic Disease

The FAST search for promising technologies initiated in 2008 was focused on identifying telemedicine technologies – electronic information and communication technologies that provide and support health care interaction when distance separates the patient from the provider – that are specifically used to treat chronic disease. More than 133 million Americans currently live with at least one chronic disease, and the growing prevalence of chronic diseases such as diabetes and heart disease accounts for more than 75 percent of the nation's $2 trillion in medical care costs. Telemedicine technologies have been shown to greatly improve the care of chronic disease, ultimately reducing its burden to the overall health care system.

The FAST team reviewed over 100 health care technologies in this area, narrowing them to the 11 most promising candidates and conducting in-depth research on each of the eleven finalists.

Rating Promising Technologies

The 11 technologies were selected and ranked based on the following FAST criteria:

- User Satisfaction – Patient and provider satisfaction with the technology and its usability.
- Clinical Outcomes – Outcomes using the technology, in comparison to outcomes achieved using the current standard of care.
- Financial Analysis – Total return on investment to the health care system of using the technology for an episode of care.
- Policy Relevance – Relevance of the technology to fundamental concerns in the health care system; likelihood of receiving substantial media coverage and attention from policymakers.
- Potential for Impact –The ability of NEHI, its members and partners to facilitate expanded use of the technology in a reasonable timeframe.

Full profiles for the 11 finalist technologies, described on the reverse, are available at www.nehi.net.

FAST Finalist Technologies

The *FAST* initiative has identified and profiled the following 11 telemedicine technologies that address the health care needs of chronic disease populations. In late 2008, the *FAST* Steering Group ranked most promising technologies among these 11 finalists, listed below in order of priority.

In 2009, the *FAST* initiative will determine the most appropriate actions to promote their broader adoption, including demonstration projects and policy activities.

Rank	Technology	Application	FAST Assessment
1	Interactive Health Support Platform	Small, portable telemedicine tool providing remote case management for patients with chronic illnesses.	Small size of installed base and outcomes data limit immediate implementation; next steps may include determination of the target population and payer education.
2	Tele-Stroke	System incorporating video conferencing and imaging, allowing remote specialist to diagnose stroke symptoms and prescribe treatment.	Mature technology with substantial evidence supporting effectiveness. Will require policy action to increase use in underserved areas.
3	Nursing Home eVisit	Provides remote access to physicians for patients at skilled nursing facilities, addressing a physician shortage.	Technology has potential to reduce non-urgent ED visits and hospitalizations; more research is needed on cost-effectiveness.
4	Telemedicine Enabled Home Hemodialysis	Supports patients in conducting home hemodialysis for renal failure by providing monitoring and support.	High potential to improve outcomes and reduce costs for renal disease patients; barriers must be addressed through policy action and technology development.
5	Telepsychiatry	Use of video conferencing to provide psychiatric services including diagnosis, medication management and therapy.	Studies show technology is successful in treating mental disorders, but lack evidence that the technology reduces costs.
6	Tele-Wound Care	Uses digital imaging to transmit chronic wound data from patients to remotely located wound care specialists.	Substantial promise in improving outcomes and financial savings, though hampered by small sample sizes in clinical trials.
7	School Based Telemedicine	Telemedicine station in school settings allows for remote treatment of common or chronic illnesses.	Technology requires more extensive profiling and market assessment before its value can be fully determined.
8	Tele-ophthalmology	Uses digital camera and software to transmit photographs of patients' retinas to remote ophthalmologists to diagnose diabetic retinopathy.	Offers significant promise in diabetes care; more research is needed on the cost-effectiveness of the technology to increase its adoption.
9	Medication Adherence Management	Communicates data from patients to health care professionals to improve patient adherence to medication.	Lack of clinical trial data makes it difficult to predict potential benefits of telemedicine in increasing patient medication adherence.
10	Cell Phone Glucose Monitoring	Uses ubiquitous cellular technology to allow easy blood glucose measurement and monitoring to promote better management of diabetes.	Barriers include inconsistencies in the U.S. cell phone market and insufficient data on the technology's effectiveness.
11	Web-based eVisit	Virtual health care environment providing on-demand access to primary care.	Requires more extensive evaluation on user satisfaction, continuity of care and quality of outcomes.