Medical Xpress

Crossing the digital divide

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What will motivate the elderly, the chronically ill and the medically underserved to use interactive information technology systems to actively help manage their own health problems? What barriers have prevented people in these groups from using such systems more widely than they have?

The U.S. Agency for Healthcare Research and Quality's (AHRQ) Oregon Evidence-based Practice Center (EPC) at Oregon Health & Science University searched the scientific literature for answers. The EPC's report is the first to identify and catalog the factors that influence the use of home computer-based health IT systems by the most at-risk subgroups of the population and to review the evidence on health outcomes attributable to the use of these technologies.

"This report will help us make health information technology more available and accessible to consumers as they use it to become more active in their care," said AHRQ Director Carolyn M. Clancy, M.D. "I hope the report will be useful to clinicians, policymakers, patient advocates and others who are working to integrate health IT solutions that improve the quality and safety of health care for all Americans."

The review was directed by lead investigator Holly Jimison, Ph.D., an associate professor of medical informatics and clinical epidemiology, OHSU School of Medicine.

"We know," said Jimison, "that health IT systems have the potential for empowering patients to become more active in the care process, which

not only can reduce hospitalizations, emergency department use, and overall managed care costs but can improve health outcomes. To successfully incorporate interactive IT into the health care of these subgroups, we need to determine the impact of a wide range of barriers and drivers of health IT use, from motivation, cost, literacy, and education to language, culture, telecommunication infrastructure and access to technology. That's the process this review begins."

Among the study's findings:

-- The most effective systems are those that provide routine and timely tailored clinical feedback and advice. Patients prefer systems that provide them with information that is specifically tailored for them and is not general in nature.

-- Patients prefer systems that send them information on devices that fit into their normal daily routine, such as cell phones.

-- The lack of a perceived benefit is the primary barrier to wider use by patients of interactive IT technologies. When patients did not perceive a potential health benefit or did not trust the advice they were given they were less likely to use the technology.

-- Issues of access, ease of use, and convenience of technology systems were also found to be key barriers to wider use.

-- The most frequently used health IT functions are online peer group support bulletin boards and disease self-management tools.

-- Patients value the anonymity and nonjudgmental nature of interacting with a computer system, especially those with HIV/AIDS or mental disorders.

The review focused on health IT systems where patients or consumers interact with the technology and receive patient-specific information in return. These include home monitoring systems with interactive disease management or self-management technology, educational or decision aid software tailored to the patient's needs, online patient support groups, tailored health reminder systems where interactions are linked with personal health records, and patient-physician e-mail systems. The elderly were defined in the study as those with a mean age greater than 65 years; the chronically ill as those with conditions such as diabetes, asthma, heart failure, chronic obstructive pulmonary disease and mental illness; and the underserved as minorities, low-income populations and those living in medically underserved geographic regions.

The factor most frequently associated with increased use of interactive health IT systems, the study found, is the perception of a real health benefit. Diabetes patients who were able to monitor data feedback perceived improved glycemic control, however with some systems many also found the interactive reminders annoying and intrusive. Asthma patients keeping an electronic diary felt it helped them better manage their disease and gave them a sense of security. Heart failure patients with online access to their medical records valued the reminders it offered of medication dosage changes and lab results.

The most effective disease self-management systems, the study found, are those that provide the patient a complete feedback loop that includes active participation by physicians or other health professionals, a current individual assessment of the patient's health status, and new or adjusted treatment advice when necessary. In a randomized trial of patients with hypertension, for example, 261 patients who used a Web site to report daily monitoring of blood pressure and received biweekly adjustments from a pharmacist kept better control of their blood pressure than patients in a similar sized group who simply monitored their blood pressure and had online access to their medical records and another

group who only had a routine briefing on the dangers of hypertension and also had online access to their records.

"As the Institute of Medicine's 2001 report, 'Crossing the Quality Chasm,' made clear, the widespread adoption of many IT applications will require behavioral adaptations on the part of large numbers of clinicians, organizations and patients," said Jimison. "Although health IT has the potential to empower the elderly, the chronically ill and the underserved to be more active in the care process, our study shows there are significant usability and accessibility issues. More than a quarter of all American adults have no online presence, according to a Pew survey. The elderly are at a particular disadvantage. Their needs are seldom explicitly considered by designers of software and hardware technology and they need to be."

Source: Oregon Health & Science University