

PATIENT SATISFACTION & OUTCOMES MANAGEMENT™

IN PHYSICIAN PRACTICES

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**JULY
1999**

**VOL. 5, NO. 7
(pages 73-84)**

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Are you connected? On-line services take patient care to new horizons

Systems aim to improve outcomes, reduce health care costs

It's 6 a.m., and as you reach to turn off the alarm, you glance over at the small, freestanding screen on your night table. "You have a session waiting," it says. If you touch it, it will come alive with questions.

"Hello, Michele. Have you checked your blood glucose in the past 24 hours?"

If you haven't, it asks you to check it and enter the reading. Then it follows with a short series of health monitoring and patient education questions that vary day to day. Did you check your feet? Did you take your medicine? "Have a good day, Michele. I will be in touch with you again tomorrow. Bye-bye."

Welcome to the new world of outcomes management. Thanks to the Internet, touch screens, and other forms of computer technology, doctors and nurses can reach into the homes of their patients and monitor their care daily.

With the Health Hero Network system described above, patients can answer the preset questions any time during the day. The device, called the Health Buddy, automatically transmits the answers through a phone line in the middle of the night. Physicians or nurses can call up a list of patients they're monitoring, with red flags for patients whose response (or non-response) suggests a problem in symptoms, behavior, or knowledge.

The Health Buddy, which costs about \$20 per patient per month, is about the size of a hardback book and can be easily packed if patients

EXECUTIVE SUMMARY

Internet-based services offer a new mechanism for monitoring patients with chronic diseases and improving self-care.

- The Health Buddy system uses a touch screen and doesn't require patients to have computers.
- Patients discover the benefits of getting information and support through the Internet, including popular "chat rooms."
- Outcomes studies are not yet complete showing how Internet services impact health status, satisfaction, and medical utilization.

Special Report: High-Tech Tools

travel. It transmits information through a toll-free number. Other similar systems of on-line care management have evolved using a direct Internet connection, which requires patients to have and be able to use a computer. From a password-protected Web site, they can e-mail their doctor, record key clinical indicators or symptoms, and chat with others who have the same condition.

"It's a continuous process of documenting how the patient feels," says **Steve Brown**, chief executive officer of Health Hero Network in Mountain View, CA.

These systems encourage patients to become responsible for monitoring outcomes while allowing early identification of those patients whose symptoms are progressing or compliance is lagging. "People [usually] just slip between the cracks, and you don't hear from them at all until they show up at the emergency room," says Brown. "That's what we're trying to avoid."

A better way of keeping tabs

Standard disease management is supposed to keep close tabs on patients. But the Santa Clara County Individual Practice Association (IPA) in San Mateo, CA, discovered failings. Nurses in the IPA's disease management service, which was provided through a contract with an outside vendor, called congestive heart failure patients every day with a list of questions.

"It was the same set of questions standardized every day to all the patients," says **Calvin Chao**, MD, MBA, the IPA's associate medical director. "There was no customization of the questions and no variation of the questions."

The IPA learned that of 120 patients in the program, about 40 were either improperly enrolled because their conditions didn't meet the parameters of the service or were noncompliant with the disease management intervention.

"We felt there was no substitute for managing a program with our own nurses," says Chao, whose IPA includes 850 physicians in Santa Clara County and 125,000 members. "That would give us the oversight and ability to develop some key insights into the population we were managing."

The IPA chose the Health Buddy system with an eye toward the type of patient with congestive heart failure. Most are in their 70s and 80s and have multiple medical problems, often including use of a wheelchair or oxygen.

To join the program, both patients and their physicians had to agree to use the Health Buddy. The IPA staff assured patients that the device would be easy to set up and use, and provided orientation sessions. Fifty-nine patients are now on-line with Health Buddy.

"Whenever you present octogenarians with a piece of unfamiliar technology, you have to do some orientation and some hands-on selling of the device," he says. "We're very pleased with how many people did hook up the device."

Initially, the Santa Clara County IPA asked each patient the same questions, although the questions would change from day to day. The IPA can easily change questions by accessing a password-protected Web site.

But based on responses, the IPA identified subgroups, such as smokers or diabetics, and targeted specific issues to them. For example, patients with weight problems or who admitted to adding salt to food might be targeted with dietary questions and information.

"You can program this [device in a way] that the patients feel each question is written with them in mind," says Chao. "It appears as if somebody is on the other end writing e-mail to this person."

Health Hero Network users can determine how they want the patients' information flagged. Nurses or physicians might follow up with patients who are out of compliance with goals

COMING IN FUTURE MONTHS

■ Why you should look at outcomes by care teams

■ Tracking surgical outcomes led to lower mortality at Veterans Affairs medical centers

■ Can a Philadelphia collaborative change the health status of pregnant Medicaid patients?

■ Award-winning outcomes: Profiles of success in quality improvement

■ What you can — and can't — learn from patient satisfaction surveys

(for example, diabetics with high blood glucose readings) or suffering worsening symptoms (such as congestive heart failure patients with extreme shortness of breath).

The Santa Clara County IPA uses a red flag to indicate that a nurse should follow up that day. A yellow flag means the follow up should occur within two to three days, and a green flag suggests a follow-up at the nurse's convenience. The Health Buddy responds to a report of seriously acute symptoms by telling the patient to call their physician immediately. (The Health Buddy doesn't transmit information to the IPA until the next day.)

A cardiologist also works with nurses as a consultant and carries a beeper so he can be responsive to urgent questions about Health Buddy

patients. Nurses also can refer a home health nurse to check on patients.

For those willing to venture fully into the Internet, the on-line potential for disease and outcomes management expands. Virtua Health, a health system based in Marlton, NJ, is conducting a pilot study of on-line diabetes self-management. Patients have access to every imaginable on-line amenity, including a personal diary to collect information, an education center with everything from medical information to recipes, and an algorithm-based "What If?" section that essentially helps patients know when to seek additional care. There are chat rooms, bulletin boards, and messaging centers.

The study, called Community Health

Even the elderly log on to Internet health care

Tapping into the Internet provides a new realm for managing patients' health. But can you get the elderly — who make up much of the chronically ill population — to log on?

The answer is yes, according to those involved in early efforts to connect patients via computers.

In a pilot test of Community Health Advancement Through Technology (CHATT), an on-line disease management program, patients received very minimal computer training. Since the project provided free computers to participants, some patients had little previous exposure to the technology. Project coordinators wanted to see whether a lack of comfort with computers would be a barrier.

"Some people didn't even know what a mouse was," says **Tracy Carlino**, RN, CDE. Carlino is director of community education for Virtua Health, a health system based in Marlton, NJ, that is sponsoring the project with Community Health, an on-line health information company in Malvern, PA, and Intel Corp. in Santa Clara, CA. "They thought it was something that ran through the backyard."

The response to the computer-based monitoring and education has been overwhelmingly

positive, says Carlino. Chat rooms have been particularly popular, as diabetic patients form their own on-line support group.

Some stereotypes also have been quashed. One of the most enthusiastic users of the on-line program is a woman in her late 80s who lives in an extended care facility. "She relies on that communication she has with her diabetes peers, educators, and physicians," says Carlino.

The Health Hero Network, based in Mountain View, CA, uses an Internet connection but doesn't place computers in patients' homes. Instead, they use a Health Buddy, a small touch screen that offers a multiple-choice response. The technology doesn't allow e-mail or chats, but it is more user-friendly, says **Steve Brown**, chief executive officer of Health Hero Network.

"I think what's most interesting about it is that it's so simple," says **Calvin Chao**, MD, MBA, IPA's associate medical director of the Santa Clara County Independent Practice Association in San Mateo, CA, which uses the system. "If an 85-year-old woman can do this with no fear and no difficulty, it speaks to the effectiveness of the device."

Even so, there are some patients who will remain stubbornly resistant to the use of technology. A few patients at the Santa Clara County IPA declined to use the Health Buddy.

"It's something that is unfamiliar. It isn't so much that was difficult," he says. "They didn't even take the device out of the box." ■

Advancement Through Technology (CHATT), is jointly funded by Virtua Health, CommuniHealth, an on-line health information company based in Chicago, and Intel Corp in Santa Clara, CA. It uses the Internet-based HealthAnswers software, developed by CommuniHealth, as its core module.

To participate, the 240 patients in the pilot test agreed to log in at least once a week. They could do whatever they chose within the Web site.

"They didn't necessarily have to log in and record all their blood sugars," says **Tracy Carlino**, RN, CDE, director of community education for Virtua Health. Chat rooms have been the most popular areas, she notes. "The social support they've gained has been critical."

"The frequency [of connecting with the program] is variable," she says. "I have people who log on 20 times a day, and people who barely make their one time a week. It seems once they get started, they don't get off. It's a matter of motivating them."

Diabetes educators have full access to the site and receive copies of such things as e-mail messages to doctors. They can view a patient's personal diary to see the blood glucose readings. So far, no emergency situations have emerged on-line, and patients understand that they should call their physicians with urgent medical problems, Carlino says. Physicians have been slower to embrace the technology, says Carlino. "They're so used to their day-to-day routine that finding the time just to sit down and log on is an issue for them now."

Program directors expect cost savings

This summer, Virtua Health is beginning to collect and analyze information on the on-line program, with a comparison control group that did not receive access to the site. The health system conducted a pre-assessment and will follow up with a post-assessment that involves a medical exam, lab tests, and patient surveys. Outcomes measures include satisfaction, changes in health status, knowledge about self-care, hospitalization, and participation in at-risk behaviors.

Based on cost-savings through better control of chronic diseases, it may be economically feasible to provide computers to patients willing to use the program, says Carlino. Managed care organizations also have expressed interest in

On-line Resources

- Health Hero Network:** This on-line monitoring uses a separate unit, called the Health Buddy, with a touch screen and multiple-choice response. For more information, contact the Health Hero Network, 2570 W. El Camino Real, Suite 111, Mountain View, CA 94040. Telephone: (650) 559-1000. Fax: (650) 559-1050. Web site: www.healthhero.com.
- HealthAnswers:** By connecting to a Web site, patients can keep a personal diary of medical information; set behavioral goals; communicate through chat rooms, bulletin boards, and e-mail; and receive health information. For more information, contact CommuniHealth, 100 South Sangamon St., Chicago, IL 60607. Telephone: (312) 942-1656. Web site: www.communihealth.com.
- LifeMasters Supported SelfCare:** Patients input certain vital signs in this on-line pilot program that is monitored by nurses. Patients also have access to chat rooms, e-mail, and educational information. Available for congestive heart failure, asthma, diabetes, coronary artery disease, and chronic obstructive pulmonary disease. For more information, contact LifeMasters Supported SelfCare, 450 Newport Center Dr., Suite 410, Newport Beach, CA 92660. Telephone: (800) 760-9261. Web site: www.lifemasters.net.
- Health Coaching Network:** This disease management and shared decision-making support system has added an on-line component to its telephone support line staffed by specially trained nurses. Available for diabetes, asthma, hypertension, and chronic obstructive pulmonary disease. For more information, contact George Bennett, HealthDialog, 60 State St., Suite 700, Boston MA 02109. Telephone: (888) 634-1532. Web site: www.healthdialog.com.

enrolling their patients in such a program, she says.

The Santa Clara County IPA is collecting data on hospital admissions, inpatient days, and emergency room admissions to determine the impact of the Health Buddy on congestive heart failure. So far, both physicians and patients seem pleased, says Chao.

In a survey conducted through the Health Buddy, the IPA found that patients felt more confident in handling their condition and had a better understanding of congestive heart failure. Meanwhile, the IPA is considering using the Health Buddy system with other conditions.

"We're learning that this is a very powerful tool," says Chao. "It is useful for anyone who requires disease monitoring. It's just a matter of plugging in the right questions to the right people and conducting your interventions."

Other Internet-related programs developing

Meanwhile, other disease management programs are adding on-line components. LifeMasters Supported SelfCare of Newport Beach, CA, is conducting a pilot test of a congestive heart failure program in conjunction with Intel Corp. and Physicians Medical Group of Santa Cruz, CA.

In that program, patients are expected to access a personalized Web page daily and answer a list of questions. Nurses monitor the responses and regularly call patients to check on them. LifeMasters offers the program and four others to medical groups or managed care organizations, allowing physicians to vary the expected patient response times from daily to less frequent based on a risk stratification.

The Health Coaching Network, developed by Boston-based HealthDialog, is creating a Web site for its disease management programs that allow patients to respond to questionnaires. Nurses then follow up with telephone calls. In yet another application of the technology, patients considering various treatment options will be able to access shared decision-making information that helps them understand how their personal values and preferences may affect their choice. Again, a nurse follows up and even helps patients frame questions they'd like to ask their doctor. "The purpose is to facilitate the patient's communication with the physician," says **George Bennett**, PhD, chairman and CEO of HealthDialog. "If that communication is facilitated, the decision that is made is more consistent with the values of the patient."

Connecting patients with physicians and other clinicians is likely to accelerate as Internet access becomes faster, easier, and cheaper. "The percentage of people getting on the Web are increasing daily," says Carlino. ■

Patient response is just a touch (screen) away

Kiosks merge education and satisfaction surveys

Paper is passé. Instead of handing out brochures and questionnaires, medical groups are now installing kiosks with touch-screen computers that allow for interactive sessions and immediate feedback from patients.

By marrying patient education with short surveys, medical groups are finding that patients are more willing to answer the questions about satisfaction and functional status.

With kiosks, "you're going to get anonymous, more accurate, more timely information on your practice," says **Leslie R. Jebson**, manager of specialty clinics operations at the University of Missouri Hospitals and Clinics in Columbia.

Jebson is pilot-testing a kiosk system in an orthopedic clinic. He wanted to know, "Do patients enjoy or retain more patient education information using an interactive format rather than [reading] a pamphlet?" Of the first patients surveyed, 85% said they preferred the computer-based system.

But even without that statistic, Jebson can readily see the advantages of such a system. A nurse selects the clinical content that patients view, which includes video and an interactive presentation regarding the patient's specific diagnosis and surgical treatment. "It's truly interactive and personalized," he says.

The program asks patients questions to verify their understanding of the material. Medical groups can add other questions to monitor service quality or to record a specific patient's functional status. "Everybody struggles to capture unbiased clinical [and satisfaction] information," says Jebson. "This may be the route to go."

In many procedures, it is vital for patients to understand the risk and benefits of a recommended procedure so they can make a decision about their treatment. For physicians, it is equally important to document that the patient received the information and gave informed consent.

That provided an impetus for computer-based learning that could record a patient's viewing of a patient education program. With the X-Plain system, developed by the Iowa City, IA-based

More About Touch Screens

- ✓ **Inlight Shared Choice and Inform programs:** Interactive systems provide information on a patient's condition and treatment options or on a variety of health topics. They can incorporate patient satisfaction and functional health status surveys. For more information, contact Inlight Inc., 1603 Orrington Ave., Suite 750, Evanston, IL 60201. Telephone: (847) 475-3700. Fax: (847) 475-3720. Web site: www.inlightinc.com.
- ✓ **X-Plain:** Interactive systems that focus on informed consent or health information topics and patient satisfaction. Surveys can be customized. For more information, contact the Patient Education Institute, University of Iowa, 100 Oakdale campus, Iowa City, Iowa 52242. Telephone: (800) 397-8093. Web site: www.patient-education.com.

Patient Education Institute in 1994, nurses select the topics for the patient and the patient cannot skip any sections.

But since late 1998, a new product is geared toward more general patient education and surveys. It looks like an ATM booth and can be used in waiting rooms or even in community centers, schools, and shopping malls, says **Moe Ajam**, PhD, director of operations for the Patient Education Institute. Some sections patients can click on include:

- About Our Clinic.
- Patient Education.
- Give Us Feedback.

"The idea then is that patients are nervous anyway in the waiting room," says Ajam. "The screen is attractive. It displays images and information."

Neurosurgeon **Souheil F. Haddad**, MD, at the Neurosurgical Clinic of Bloomington (IN) has been using a patient education system for informed consent. But recently the clinic incorporated a patient satisfaction element. "As of yet, we do not have any preliminary results, except that all patients went through the whole questionnaire module," says Haddad. They indicated that they "were glad to be given the

opportunity to voice their opinion," he says.

A study of another interactive patient education system, created by Inlight Inc. of Evanston, IL, found that 74% of patients were moderately satisfied and 21% completely satisfied with the program. Practices said it saved them an average of 16 minutes per patient, and 56% of the practices surveyed said patients were more compliant with their treatment after they viewed the program.

Joining a patient satisfaction survey to an appealing patient education program may make it easier to get bigger sample sizes — and a better picture of patients' perspective of the practice. "Even if I could capture one out of three patients, I would have a pretty good feel for what they think of this [medical] service," says Jebson. ■

More physicians using e-mail to communicate

It saves time, produces a record

When it comes to improving communicating with patients, "the telephone is no longer adequate," says **Daniel Hoch**, MD, assistant in neurology and director of neurology operations improvement at Massachusetts General Hospital in Boston, who is running a pilot e-mail program with about 10 patients.

"There are too many calls, and people are not satisfied with a quick answer. The Web-based approach is more convenient, and more information can be given," he says.

The neurology department has had a service for about a year that allows patients to post a message to Hoch on a bulletin board. He answers directly to the bulletin board, and the postings are saved to provide a record of the interaction that is easy to review. The site is password-protected and more secure than standard e-mail, he says.

Hoch uses the e-mail method to answer patient questions, leave instructions for medication changes, and to direct patients to Internet sites that might supply more information.

He says using e-mail has cut the time he spends on the phone with patients by 25% to 50%.

"We've generally found it more efficient than phone calls. There is the ability to take care of business from remote sites, to do so at odd hours without worrying about waking someone up. And it is often faster than phone tag," he says.

Another benefit: Since e-mail messages can be printed out, there is a written record for both the patient and the physician.

Hoch is on the cutting edge of using a technological tool that could transform the day-to-day practice of medicine. Only about 5% to 10% of physicians currently correspond with their patients by e-mail, up from 1% to 2% one year ago. However, experts predict this number will rise quickly as patients used to e-mailing business associates, friends, and family demand the doctors respond to their e-mail inquiries.

"The small group of clinicians who routinely use provider-patient e-mail say that it has revolutionized their practice in very positive ways," says **Tom Ferguson**, MD, an Austin, TX-based consultant. "In many cases, they can avoid the need for a clinic visit by an on-line exchange. And there is always a full record of the on-line conversation, so it can automatically become a part of the patient's medical record."

Ferguson says 25% to 30% of doctor-patient e-mail deal with follow-up questions after an office visit, a perfect example of the benefits of e-mail. "It's wonderful as a doctor to say, 'Send me an e-mail in 10 days, and let me know how you're doing.' You usually don't know what happens to the patient. Think how good that could be for your clinical expertise."

Paul M. Ford, MD, an assistant professor of medicine at Stanford University in Palo Alto, CA, who practices internal medicine, has been using e-mail with his patients for about five years. "E-mail unloads a lot of the administrative stuff you have to do in medicine," he says. "I really believe if we had more patients using e-mail, it would decrease our overall practice costs. We wouldn't need so many people to answer the telephone, so many people in the file room moving charts around. Also, patients would feel more connected to the practice, which could help financially in the long run."

Ford's practice of 10 physicians has a central e-mail address and a software filtering program that helps automatically route messages to the appropriate people. An automatic reply is sent to notify patients their message was received and who will take care of their request. Sometimes, the practice adds standardized reminders to the

automatic message such as information about flu shots. Many of the messages involve prescription refills, appointments, and specialist referrals that can be handled by someone other than a doctor. Physicians only give out their private e-mail addresses when they feel it's appropriate.

(For more information, the American Medical Informatics Association Internet Working Group, has developed "Guidelines for the Clinical Use of E-mail with Patients." The guidelines are available at www.amia.org/pubs/pospaper/positio2.htm.) ■

Volume and outcomes related in cancer surgery

Experience leads to lower mortality rates

Are more experienced surgeons necessarily better ones? In some complex procedures, research indicates that they are.^{1,2} That connection between case volume and outcomes has spurred some physicians to advocate directing patients toward specialty centers, particularly for high-risk cancer surgery in which mortality rates vary greatly.

"Imbedded in high volume are well-trained people, dedicated staff and equipment, and well-established clinical protocols," says **Toby Gordon**, ScD, vice president of strategic planning and marketing for Johns Hopkins Medicine in Baltimore and associate professor of surgery and health policy and management at Johns Hopkins University School of Medicine. "We've been able to establish over and over the relationship between volume, cost, and outcome," she says. "The more you do, the less it costs per case, and the better the clinical outcome. That's after case-mix adjustment."

Gordon analyzed data from 795 cases at 43 Maryland hospitals of patients undergoing pancreaticoduodenectomy, also known as the Whipple procedure, a complex operation for pancreatic cancer. The operative mortality rate over the 12-year study period ranged from 1.8% to 14.2%.¹

The study used a cut-off of at least 20 procedures a year to separate high-volume from low-volume hospitals. Only Johns Hopkins performed more than 20, with an average of 51 per year, while the others had an average of slightly less than one per year.

The research on the Whipple procedure grew

out of concerns from managed care organizations that the care at Hopkins was too costly. The payers were “very receptive to the data,” says Gordon, and as the number of procedures performed at Hopkins grew, the statewide mortality rate associated with the procedure fell. A similar connection between outcomes and volume exists with other complex procedures, such as esophagectomy and liver resection, she says.

Evidence for a link between volume and outcomes in surgical oncology grew stronger with another study at Memorial Sloan Kettering Cancer Center in New York City.

Colin Begg, PhD, head of the cancer center’s department of epidemiology and biostatistics, studied short-term operative mortality for 5,013 patients using a Medicare database. The patients underwent pancreatectomy, esophagectomy, pneumonectomy, liver resection, or pelvic exenteration, or procedures for cancers of the pancreas, esophagus, lung, colon, and rectum, and genitourinary cancers. “There were trends favoring high-volume hospitals for all five of the procedures although the strength of the trends varied, and it was statistically significant only for four of them,”² he says. “It was a fairly restricted study, but it gave us very clean-cut results.”

Begg plans to expand his research into these broader questions: Do specialization and expertise impact other outcomes? When is expertise important and when does it have little effect?

“It’s not easy evidence to assemble,” he says. “If there is a value-added for specialist care, it may show up in quality of life outcomes or morbidity from cancer treatments. These kinds of endpoints are not generally available in administrative databases.”

What might be done in response to evidence that expertise in some complex surgeries reduces mortality? Payers can and often do steer patients to regional centers for certain difficult and costly procedures, and hospitals may set volume standards as a part of credentialing.

However, states and medical societies have been reluctant to regulate a minimum volume, although studies do show the potential for a “cut-off.”

“Is there a linear relationship, so the more you do, you get better and better? Usually it levels off at some point, so that is the minimum,” says Gordon.

Yet setting a lower limit may be more problematic than it seems. When the Chicago-based Society of Thoracic Surgeons considered the relationship between volume and outcome in coronary artery bypass graft surgery, the society’s committee chose

not to recommend a minimum standard.

One study found a higher ratio of observed vs. expected mortality among practices with less than 100 cases per year.³ A study of 44 Veterans Affairs hospitals showed a relationship of higher observed to expected mortality at low-volume hospitals but didn’t find a volume threshold.⁴ The society’s Ad Hoc Committee on Cardiac Surgery Credentialing determined that volume should not be used as a criterion for credentialing but that surgeons should track their outcomes and compare themselves to peers with a national database.

“There’s some relationship [with volume and outcomes], but it’s not as tight of a relationship as you would like to develop a standard,” says **Don Turney**, the society’s assistant executive director.

A minimum standard can have unanticipated consequences, he notes. “There are lots of reasons that [physicians] may have low volume for a particular year that has nothing to do with surgical ability. They may have broken an arm; they may have been on vacation,” he says.

Instead, the society has focused on a national database that allows surgeons to compare their outcomes with peers and to use the data for quality improvement. “This databasing effort has had a significantly positive effect in outcomes and improving care,” says Turney.

Meanwhile, **Bruce Hillner**, MD, professor of medicine at the Medical College of Virginia at Virginia Commonwealth University in Richmond, says he hopes the research on variation in mortality from cancer procedures will spur a greater focus on outcomes in oncology.

“It’s a very major challenge,” he says. “The issues of practice variation and indirect quality indicators are not high on the national agenda in the cancer scene.”

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Focus on special needs improves geriatric care

As the U.S. population ages, medical groups face the dilemma of providing cost-effective geriatric care that allows patients the best possible quality of life. Successful solutions have emerged that target high-risk elderly with an interdisciplinary, team-based approach to diagnosis and treatment.

In a study of a geriatric evaluation and management (GEM) program at the University of Minnesota Medical School in Minneapolis, functional ability declined less rapidly than that of a control group. The GEM patients also reported greater patient satisfaction,¹ and their informal caregivers were less likely to experience increasing burden over time. Health care costs were similar in the GEM and control groups.

However, researcher **Chad Boulton**, MD, MPH, notes that Minnesota is a state with heavy managed care penetration in which overall health care costs are already minimized. In other areas, GEM may produce substantial savings, he says.

"You're preserving function at no cost with GEM," says Boulton, who is an associate professor at the University of Minnesota Medical School. He presented the GEM results at the May meeting of the American Geriatrics Society. "Ten percent of the people cost 70% of the money. If you can find those 10% and work closely with them, you have a potential to make a big difference."

Geriatric outcomes are becoming increasingly important to payers. The Health Care Financing Administration is monitoring the health status of elderly Medicare managed care patients through the Medicare Health Outcomes Survey. The National Committee for Quality Assurance in Washington, DC, has several health plan performance measures that relate to health of older people, including pneumonia and flu vaccination.

"One way to [comply with standards and produce better outcomes] is to monitor the population with some sort of screening tool and to implement comprehensive action plans for those who are high-risk," says Boulton.

Participation in the GEM program began with a screening questionnaire, the Pra, an eight-item questionnaire that identifies high-risk elderly patients.¹

"When we tested the Pra, we found out when you follow people identified as high-risk over the

following year, they go on to use about twice as many health services and spend about twice as much on health resources as those below the [cut-off]," he says. "It's simple and inexpensive to administer." Boulton is one of the developers of the screening tool.

The tool has a scoring algorithm to determine whether patients are high- or low-risk. An expanded version, the Pra Plus, contains questions that can lead directly to interventions.² For example, the Pra Plus asks patients how many medications they are currently taking. That became one focus of the GEM program at the University of Minnesota. **(For a copy of the questionnaire, see p. 82.)**

"One of the most frequent things we did was to reduce the number and dose of medications people were taking," says Boulton. "Older people with chronic diseases tend to accumulate medications from different doctors."

Teams consisting of a geriatrician, nurse, social worker, and gerontological nurse practitioner managed the care of GEM patients, beginning with a home visit to assess their psychosocial and environmental needs. Each patient had treatment goals and a plan of care, and in addition to comprehensive medical treatment, they received counseling, education, and necessary referrals.

GEM was designed as a short-term program in which patients would return to their primary care physicians for routine care, says Boulton. "GEM is intended to be self-limited. You bring people in and get them on the path to where they need to go." However, some very high-risk patients may need periodic GEM care to maintain improvements, he says.

In a similar program, Group Health Cooperative of Puget Sound in Seattle is creating links between primary care physicians and geriatricians. But this "action plan" ultimately involves every older patient, with a special focus on those at high risk. Group Health has provided a special comprehensive assessment program for elderly patients for 10 years. Primary care physicians referred patients with complex care needs to the program.

But that assessment program didn't impact ongoing care and helped only a small percentage of seniors, says **Chris Himes**, MD, director of geriatrics and long-term care at Group Health Cooperative. Instead, Group Health is beginning a program that links geriatric physicians and nurses with primary care doctors.

(Continued on page 83)

PraPlus Questionnaire

[Note: Users of this questionnaire must pay an annual \$500 licensing fee to the University of Minnesota. For more information, contact the University of Minnesota, Center on Aging, 420 Delaware St., S.E. (Box 197 Mayo), Minneapolis, MN 55455. Telephone: (612) 625-8954. Fax: (612) 624-8448. E-mail: sylvia002@tc.umn.edu.]

1. In general, would you say your health is:
 Excellent
 Very good
 Good
 Fair
 Poor
2. In the previous 12 months, have you stayed overnight as a patient in a hospital?
 Not at all
 One time
 Two or three times
 More than three times
3. In the previous 12 months, how many times did you visit a physician or clinic?
 Not at all
 One time
 Two or three times
 Four to six times
4. In the previous 12 months, did you have diabetes?
 Yes No
5. Have you ever had:
A. Coronary heart disease?
 Yes No Don't know
B. Angina pectoris?
 Yes No Don't know
C. A myocardial infarction?
 Yes No Don't know
D. Any other heart attack?
 Yes No Don't know
6. Is there a friend, relative, or neighbor who would take care of you for a few days, if necessary?
 Yes No
7. Please check all those conditions for which you are currently receiving medical treatment.
 Breathing problems Arthritis
 High blood pressure Mental problems
 Heart problems Ankle/leg swelling
 Urinary problem Cancer
8. Do you live: (check one answer)
 Alone
 With spouse
 With a son or daughter
 With other family
Who? _____
 Other
Explain _____
9. Do you live: (check one answer)
 An independent house, apartment, condominium or mobile home
 An assisted-living apartment or board & care home
 A nursing home
 Other
Explain _____
10. Please circle 1, 2, or 3 for each item:
(1 = Able to do without help. 2 = Need some help. 3 = Cannot do at all without help.)
 Bathing Meal preparation
 Dressing Housekeeping chores
 Eating Shopping and errands
 Toileting Transportation
 Walking Money management
 Taking medications
11. Are you currently receiving Medical Assistance or Medicaid?
 Yes No Don't know
12. How many different prescription medicines do you take?
_____ Number of medicines
13. How is your eyesight? (This means eyesight while wearing glasses or contacts, if you use them.)
 Excellent
 Good
 Fair
 Poor
 None
14. In the past six months, have you lost more than 10 pounds without trying?
 Yes No Don't know
15. Do you often feel sad or blue?
 Yes No
16. Are you:
 Male Female
17. What is your date of birth?

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This new model includes a "care road map" with key indicators based on geriatric health needs. Eventually, all patients 65 and older will receive assessments. It is patterned after a similar program designed to improve care for diabetics. "If a diabetic comes in for an office visit, the medical receptionist presses a button that prints out that person's registry," says Himes. "Anything that's out of date comes up."

The geriatric program will strive for a similar system, although the care goals are more difficult to define. "No one can agree on what the appropriate measures for geriatrics are," she says, "not the federal government, not even the U.S. Preventive Services Task Force."

Group Health has developed assessment tools and interventions based on the issues that research shows most affect geriatric health. "There are three things that overall have been shown to make a difference [in care]," says Himes. "The first one is exercise. Second is social activation. Third is overall good geriatric care with focus on the geriatric syndromes." The geriatric syndromes include urinary incontinence, depression, and memory/cognitive changes. The geriatric program also deals with prevention of falls, advance directives, and other preventive health.

Seniors generally enter this program when they schedule a "health maintenance visit." Before their visit, they receive a screening tool that incorporates those major areas of concern. For example, the tool asks patients if they have lost interest in daily activities or if they have been feeling sad or blue. If they answer yes, they receive another questionnaire that is a screening tool for major depression.

Group Health has developed an array of interventions. For example, patients with urinary incontinence can be referred to the physical therapy department's new Kegel exercise classes. Urologists agreed on guidelines determining which patients should be referred. And primary care doctors received a refresher course on medications and other interventions to address the problem.

Group Health also has determined that it can obtain a score similar to the Pra Plus by reviewing medical records. "We're being proactive with high-risk folks and trying to put them into the system," she says. Lifestyle issues present the greatest challenge to Group Health's program. But Himes is convinced that exercise is a key to improving the quality of life for older patients.

Group Health worked with the University of Washington and local senior centers to develop a

strengthening, fitness, and aerobic program for seniors called Lifetime Fitness. The MCO also offers seniors an independent program called Silver Sneakers.

"We've started to write prescriptions for exercise at all the health monitoring visits," says Himes. "[Lack of exercise] really is the one thing that keeps people from being able to be happy and be able to do what they want to do."

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Patient Satisfaction & Outcomes Management™ is published monthly by American Health Consultants®, 3525 Piedmont Road, Building Six, Suite 400, Atlanta, GA 30305. Telephone: (404) 262-7436. Co-publisher is Medical Group Management Association, Web site: WWW.MGMA.com. Application to mail at periodical rates is pending at Atlanta, GA 30304. POSTMASTER: Send address changes to **Patient Satisfaction & Outcomes Management™**, P.O. Box 740059, Atlanta, GA 30374.

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Subscription rates: U.S.A., one year (12 issues), \$329. Outside U.S., add \$30 per year, total prepaid in U.S. funds. One to nine additional copies, \$197 per year; 10 to 20 additional copies, \$132 per year. For more than 20 copies, call for more information. Missing issues will be fulfilled by customer service free of charge when contacted within 1 month of the missing issue date. **Back issues**, when available, are \$55 each. (GST registration number R128870672.)

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CME questions

1. A survey of congestive heart failure patients using the "Health Buddy" to monitor outcomes found that:
 - A. patients using Health Buddy don't answer all the questions as they should
 - B. patients using Health Buddy felt more confident in handling their condition and had a better understanding of congestive heart failure
 - C. patients used Health Buddy to report their need for urgent attention to symptoms
 - D. Health Buddy had no impact on patient satisfaction or outcomes
2. According to Leslie R. Jebson, manager of specialty clinics operations at the University of Missouri Hospitals and Clinics in Columbia, MO, what are some advantages of conducting patient satisfaction surveys with computer kiosks?
 - A. patients can read the questions more clearly
 - B. they provide anonymous, accurate and timely information on the practice
 - C. they are cheaper than using hand-printed surveys
 - D. they don't take as much time to complete as other surveys
3. According to Paul B. Batalden, MD, director of Health Care Improvement Leadership Development at Dartmouth Medical School in Hanover, what is the difference between report cards and outcomes-based "instrument panels"?
 - A. report cards are the most useful method of presenting trends in outcomes
 - B. medical groups and consumers alike can make use of instrument panels
 - C. report cards are designed for judgment while instrument panels are created to continuously monitor improvement
 - D. report cards and instrument panels are different names for the same type of outcomes reporting
4. According to Chris Himes, MD, director of geriatrics and long-term care at Group Health Cooperative of Puget Sound in Seattle, what has the greatest impact on the geriatric health and quality of life?
 - A. seeing a physician regularly for a physical exam
 - B. taking medications as recommended by physicians
 - C. exercise, social activation, and care that focuses on the geriatric syndromes, such as urinary incontinence and depression
 - D. the type of insurance coverage for medical care