May 2008 Vol. 14, No. 5

DISEASE MANAGEMENT ADVISOR™

Interim report shows clinical improvements for diabetes initiative

Pharmacists, VBID keys to program

The Diabetes Ten City Challenge (DTCC), which uses pharmacist coaches and a value-based insurance design (VBID) to help patients manage chronic disease, demonstrated improvements in all key clinical indicators in the first year, according to an interim report by the American Pharmacists Association (APhA) Foundation.

Through the DTCC, which the foundation is conducting in 10 U.S. cities with support from GlaxoSmithKline, employers establish a voluntary health benefit for insured members with diabetes and waive copayments for diabetes medications and supplies if they work with a pharmacist coach to manage their condition. The DTCC is modeled after other APhA Foundation programs that have proven to improve overall health, reduce absenteeism, shorten hospital stays, and reduce healthcare costs.

The interim report, published in the March/April *Journal of the American Pharmacists Association*, reviewed results of 914 patients who were in the DTCC at least three months as of September 30, 2007. It documented improvements in all the recognized standards of diabetes care (see the chart on p. 3), including:

- Clinical measures, such as A1c, LDL cholesterol, and blood pressure
- Care measures, including current influenza vaccinations and foot and eye exams
- Self-management goals for patients, such as nutrition, weight, and exercise
- Patient satisfaction with their pharmacist and overall diabetes care

> **"Patients really are not directly involved in their care. With this program, they become educated about their condition and work in partnership with their pharmacists, physicians, and other healthcare providers."**
>
> *—William M. Ellis*

Coauthor of the report **William M. Ellis,** CEO of the APhA Foundation, which contracts with employers, helps establish local pharmacist networks, and provides software and data analysis for the DTCC, says the diabetes self-management program empowers patients and puts them at the center of care. "Too many times, patients really are not directly involved in their care. With this program, they become educated about their condition and work in partnership with their pharmacists, physicians, and other healthcare providers," says Ellis.

Building upon the Asheville Project, a successful pharmacist-driven diabetes program implemented in Asheville, NC, the APhA Foundation is expanding the pharmacist coach model nationally to prove it can be

> continued on p. 2

HCPro

IN THIS ISSUE

Diabetes initiative

< continued from p. 1

replicated in diverse geographies and various employer types.

The project is the most recent initiative giving the pharmacist a greater role in healthcare. A study released earlier this year by the University of Oklahoma Health Sciences Center's College of Pharmacy in Oklahoma City showed that pharmacists performing medication therapy management services improved diabetic patients' A1c levels. (See the February **DMA** for more information on this study.)

Although many graduating pharmacy students have healthcare experience beyond dispensing pills, local pharmacists are a largely untapped resource by the healthcare system, says Ellis.

The DTCC creates a system in which pharmacists play a larger role. There is also greater communication among the physician, diabetes educator, and other healthcare professionals. The pharmacist coach combines teaching lifestyle factors, such as prevention, exercise, and reading labels, which are meant to empower the patient to take a greater role in his or her health, with a clinical component in which the pharmacist can review and suggest changes to medications and check blood sugar and A1c levels. **Jan Park, RN,** a wellness coordinator for the city of Charleston, SC, says the pharmacist plays the role of patient advocate and collaborates with the physician and other members of the care team.

Pharmacists are also able to spend more time with patients than PCPs, who are often stretched for time. "They feel like their pharmacist coach is someone they can definitely call at any time and is a little bit easier to get in touch with at a moment's notice and get their questions answered rather than waiting for their physician," says Park, adding that one-third of the city's diabetic employees (89 people) took advantage of the program.

Charleston doesn't have the clinical outcomes for its DTCC patients, but **Cecily V. DiPiro, RPh, PharmD,** a pharmacist at The Prescription Center in Charleston, says, overall, her patients have started exercising more, reduced blood sugar and A1c levels, and are feeling better.

The city hasn't received the insurance claims data yet to review the potential program savings, but Park hopes to save at least $1,000 per year per participant, which she bases on the Asheville Project. "It's really an amazing thing to see. It really makes you feel like we're doing something to help change healthcare," says Park.

The preventive nature of the program is what prompted Charleston officials to get involved. The U.S. healthcare industry is great at "fixing things after they're broken," but DTCC is a shift to prevention focus, Park says.

Disease Management Advisor™ (ISSN 1531-5681) is published monthly by HCPro, Inc., 200 Hoods Lane, P.O. Box 1168, Marblehead, MA 01945. Subscription rate: $399/year. • Postmaster: Send address changes to **Disease Management Advisor**, P.O. Box 1168, Marblehead, MA 01945.

"We need to shift [healthcare] over to more prevention and putting people in control of their disease and educating them and giving them the tools they need to prevent complications," Park says. That shift to prevention appears to be working in the DTCC. After one year, the report noted, the program showed the following improvements:

- A 21% increase in the number of participants achieving the American Diabetes Association goal of A1c levels of less than 7%
- An increase from 43.8% to 57.7% of those who achieved National Cholesterol Education program goals for LDL cholesterol
- A 15.7% increase in the number of people who achieved recognized goals for systolic blood pressure

The study's authors say programs such as the DTCC could affect how healthcare is delivered in the United States.

"Successful implementation of such a model on a broad scale would have the capacity to transform the healthcare system by improving outcomes and controlling costs," according to the interim report.

The ten DTCC sites are:

- Charleston, SC
- Chicago
- Colorado Springs, CO
- Cumberland, MD
- Honolulu
- Milwaukee
- Northwest Georgia
- Pittsburgh
- Los Angeles
- Tampa Bay, FL

Training

Pharmacists participating in the DTCC completed a diabetes certificate program offered by the APhA.

> *continued on p. 4*

The Diabetes Ten City Challenge's interim clinical results

Key outcomes measured			
Clinical measures	**Mean initial measure**	**Mean ending measure**	**Mean change**
A1c (glycosylated hemoglobin)	7.6	7.2	-0.4
LDL cholesterol level	96.3	93.3	-3.8
BP—systolic	131	129	-2.5
BP—diastolic	79.3	77.3	-2.3
Care measures	**Initial**	**Follow-up**	
Current influenza vaccination	43%	61%	
Current foot exam	38%	68%	
Current eye exam	60%	77%	
Self-management goals	**Initial**	**Follow-up**	
Patients with nutrition goals	22%	66%	
Patients with weight goals	23%	64%	
Patients with exercise goals	24%	72%	
Patient satisfaction	**Initial**	**Follow-up**	
Overall diabetes care good/excellent	39%	87%	
Very satisfied/satisfied with pharmacist	N/A	97%	

Source: The Diabetes Ten City Challenge.

Diabetes initiative

< continued from p. 3

This program reviewed diabetes and its complications, offering management, monitoring, and educational strategies for diabetes care, as well as information on exercise and nutrition.

DiPiro assists in the care of 30 patients in the DTCC and says her role is to keep the patient focused. "The majority of these people know what they need to do. They know that they should be eating better, that they should be exercising more, but they need that one more person to keep them focused on actually doing it and someone to be accountable to," she says.

Pharmacists meet with diabetic patients four times in the first six months. The first visit includes collecting information about medication, disease history, exercise regimens, sugar levels, and other specifics so the pharmacist knows where to focus. After that, visits range from 30 to 60 minutes and vary in regularity, depending on the status of the disease. For the patient who is in control of his or her diabetes, a meeting every three months might be sufficient, but someone with more education needs may have a monthly visit.According to the report, the participants studied visited the DTCC pharmacist an average of 4.6 times in the first year. During those appointments, pharmacists reviewed patients' medications and blood glucose self-monitoring skills. A1c and cholesterol test results were discussed, when available, and pharmacists taught patients about nutrition and helped them create clinical, fitness, and nutritional goals.

Patients are weighed at every visit and the pharmacist also takes their blood pressure. The pharmacists are reimbursed by employers for patient visits depending on the fee schedules negotiated by the local pharmacy network.

DiPiro says part of her role is empowering patients to take greater control of their healthcare, such as suggesting what questions to ask a physician. For example, many of DiPiro's patients did not understand or request copies of their blood work before the DTCC.

"It has been very gratifying to see people now ask, 'What was my A1c?' or 'How do my cholesterol values look?' " says DiPiro.

After each visit, the pharmacist sends a note to the patient's physician with a summary of the visit. The pharmacist might also call the patient's physician if there is a concern. Clinical information obtained at each visit is documented by the pharmacist at a secure Web site.

Some physicians have been leery of programs in which other healthcare professionals assist in patient care, but DiPiro says she has not received any pushback from physicians.

She adds that she is careful not to compromise the physician-patient relationship. When communicating with physicians, she says she stays focused on the issue at hand and lets physicians know she is there to work with them.

"I want my patients to have the best relationship they can with everyone on the team because we are all working toward the same goal," says DiPiro.

Park says physicians in the Charleston area have been receptive to the DTCC and have even encouraged some of their diabetic patients to take part. The pharmacist coaches' participation has increased doctor visits because of prevention.

"Visits with the pharmacist coaches are not in place of their doctor visits. The nice part of the physician visit

> continued on p. 6

Comparison of DTCC and HEDIS process measures

HEDIS commercial indicator	HEDIS 2006 commercial-accredited plans	DTCC
Tested for A1c	87.5%	100%
Good A1c control (<9%)	70.3%	91.2%
Testing for lipid profile	92.3%	89.2%
LDL-C<100 mg/dL	43.8%	57.7%
Current eye exams	54.8%	76.9%
Immunized against influenza	36.3%	61.5%

Source: The Diabetes Ten City Challenge (DTCC).

Business leader: The DTCC involves best practice strategies

Not only are patients, their families, and the healthcare system struggling with the $174 billion spent annually on caring for the 17.5 million diabetic Americans, but businesses grapple with an estimated $58 billion in reduced productivity and absenteeism each year.

The authors of the Diabetes Ten City Challenge (DTCC) believe that the program, which couples a pharmacy program with a value-based insurance design (VBID) model that reduces or eliminates copays on specific drugs—in the DTCC's case, diabetes drugs and tests—could be the cure for what's ailing diabetic care.

"By implementing this standardized model, employers in a variety of markets can improve health outcomes for their health plan beneficiaries with diabetes," according to the interim report published in the March/April *Journal of the American Pharmacists Association*.

Andrew Webber, president and CEO of the National Business Coalition on Health in Washington, DC, says his organization supports the DTCC and also backed the Asheville model, which was the launching point for the DTCC.

Webber's organization believes that the idea of empowering patients through greater pharmacist involvement coupled with VBID combines best practice strategies. "There is a very good chance that this chronic condition can be managed, and individuals can live with diabetes and be very productive members in an employer's work force," says Webber.

Beyond a moral obligation, Webber says employers have a "huge business imperative" to tackle the issue of diabetes-related costs. Webber, a VBID proponent, says cutting copays gives employees an incentive to join the DTCC and shows that businesses support prevention and chronic care DM. The VBID model has been gaining popularity as studies have shown the benefits of reducing or eliminating copays for lifesaving medications. One study, released in January and led by a team of University of Michigan and Harvard University researchers, echoed other studies that reported that incorporating a VBID can increase medication compliance. That study of a large private employer showed significantly increased employee use of chronic-disease medicines by reducing or eliminating copays.

Another recent study by Brown University and Harvard Medical School researchers published in the *New England Journal of Medicine* showed that significantly fewer women received mammograms if a copay was charged for the potentially lifesaving screenings.

VBID supporters say the model works well with a DM program. In a regular DM program, coaches impart knowledge, but patients may not follow it because they can't afford prescriptions. "Here's an area where some short-term investment has longer-term payoffs on the two outcomes most important to employers: It improves their health and productivity and controls overall costs," says Webber.

In the DTCC project, **Cecily V. DiPiro, RPh, PharmD,** a pharmacist at The Prescription Center in Charleston, SC, says the waived copays have increased diabetes medications and testing, which she believes will improve outcomes and reduce long-range costs.

"We see the wisdom in spending that money on prevention versus later having to spend that on a complication of diabetes," says **Jan Park, RN,** a wellness coordinator for the city of Charleston.

Webber says he hopes the DTCC model of proactive community pharmacist coaches is the future of healthcare, adding that he would like to see the notion of the community pharmacy transformed from a place to pick up drugs and buy groceries to one of a community health center.

Community pharmacies should welcome these kinds of programs, and pharmacist coaches could work well as a business model, Webber says. Community pharmacies often compete with mail order companies, and pharmacy benefit managers often bypass the local pharmacist. By taking a larger coaching role, community pharmacists can create their own niche, he says.

"I would even argue that there is a business imperative to rethink their role at the community level," says Webber. ■

Diabetes initiative

< *continued from p. 4*

is they are becoming more preventive," says Park, adding that physician visits before the DTCC were related mostly to sickness rather than prevention.

Ellis says the process of care is changing with more acceptance of pharmacists as members of a collaborative healthcare team.

"The pharmacist coach is central to this model, but not at the exclusion of other healthcare providers. This program involves a lot more communication and referrals to physicians, diabetic education centers, and other healthcare professionals than typically is found in the care process," says Ellis.

DiPiro says the DTCC has allowed her to collaborate with other pharmacists on matters such as patient interviewing techniques. She takes a greater role in a patient's care in the DTCC, asking personal, open-ended questions about general health, caregivers, and whether the patients have received eye and foot exams. Although pharmacist coaches are not the norm for community pharmacy, DiPiro says pharmacists in institutional practice have had more opportunity for involvement in direct patient care as members of the healthcare team.

"The opportunities at the community level can only expand. There are so many chronic diseases, and I believe pharmacists can have an impact in improving a patient's daily health," says DiPiro.

Researchers will review the economic analysis for the DTCC (which has expanded to more than 1,000 participants and 31 employers since the interim report research was conducted), and Ellis hopes to release that information in the first quarter of 2009. ■

A supplement to Disease Management Advisor May 2008 Vol. 3, No. 5

MEDICARE DISEASE MANAGEMENT

First SNP for Alzheimer's disease implemented

This is the second article in a two-part series exploring Medicare Advantage special needs plans (SNP).

Evercare rolled out a Medicare Advantage SNP in January designed specifically for people with chronic disease and dementia.

Medicare has agreed to pay for services that help the caregivers of these patients, not the patients themselves. The program also includes direct collaboration with Banner Alzheimer's Institute in Phoenix, which helps families dealing with dementia.

"In Arizona, we are taking care of many patients with dementia and chronic disease," says **Ana Fuentevilla, MD,** medical director at Evercare's Arizona region. "Before we initiated this program, there was a huge burden for caregivers that was not being attended to and that had a direct impact on our ability to provide optimal care for the patients."

Fuentevilla and her colleagues sought the advice of the Banner Alzheimer's Institute in developing a specific benefits package that would meet the needs of these caregivers. Within three months after proposing the plan to CMS, the government approved this first SNP for Alzheimer's disease, she says.

The program targets all stages of the disease, including late-stage dementia when DM strategies are most difficult to implement because of the beneficiary's cognitive impairment.

Key elements of the program are education for caregivers and members, care manager coordination, special prescription drug coverage for dementia-related therapies, free enrollment in the Alzheimer's Association Safe Return program (a program that helps families find a loved one who wandered from home and got lost), and emergency respite services that provide caregivers with a break so they can address their own healthcare needs. Another added benefit to caregivers is free transportation for up to 10 one-way plan-approved trips per year.

"We looked at the traditional benefit package for a special needs plan and added a couple of additional benefits for this population," says Fuentevilla. For example, the drug benefit includes the memory drug Aricept on the formulary, but it also includes it in a lower tier so that the out-of-pocket copay expense for families is less, she says.

> **"We prepare the caregiver through education that explains what is happening to make the patient act this way and strategies for reacting to and managing it."**
>
> *—Julie Keys, LMSW*

Professional care managers lead team

"Our care managers are essential to helping members and families navigate the maze of the healthcare system," says Fuentevilla. Care management is very intensive, with an assessment scheduled with the member and family immediately after enrollment in the SNP program.

"This is a two- to three-hour meeting in which we help caregivers assess the member's current status and help the families understand and anticipate decline," says **Julie Keys, LMSW,** clinical manager of the Alzheimer's disease special needs program. "Our care

> *continued on MDM p. 2*

SNP

< *continued from MDM p. 1*

team, unlike other disease management care teams for Medicare patients, must be experts in dementia care." Each care manager receives specialized training from the Banner Institute.

"The goal of our care managers is to be both preventive and proactive," Keys says.

She cites an example of a patient who has started to exhibit behavior changes that include combativeness or paranoia. "These are two common situations with dementia patients," she says. "We prepare the caregiver through education that explains what is happening to make the patient act this way and strategies for reacting to and managing it."

The in-home meeting and subsequent visits (as needed by the caregiver) allow the care manager to identify triggers in the home that might lead to difficult-to-manage behavior. For example, if the person with dementia is talking to imagined people, the solution may be as easy as taking down all mirrors and pictures in the house, says Keys. The eight-week educational program for families allows care managers to share techniques they have learned at Banner with caregivers.

Membership in this SNP also provides families and patients with the opportunity to visit with a dementia specialist at Banner to evaluate conditions and develop a care plan and to participate in clinical trials if they are interested.

Physician collaborators

"It is really important for the patient's primary care physician to understand that this program is not a replacement but rather a collaborator," says Fuentevilla. "Our care managers work closely with the physician, particularly in managing the member's other chronic illnesses."

Fuentevilla says Medicare beneficiaries in this program will undoubtedly have other chronic diseases, such as diabetes and CHF, that must be managed as part of an overall chronic care plan. "What we are doing with the Alzheimer's program is incorporating these services into the chronic disease model," she says. ■

Multidisciplinary team key to chronic care

Proof that DM/chronic care management can be effective in the older, sicker population of Medicare patients might be found in small programs rather than in large programs such as Medicare Health Support.

Take, for example, a three-year demonstration called After Discharge Care Management of Low Income Frail Elderly (AD-LIFE), a program funded by the Agency for Health Research and Quality (AHRQ) that's now entering its third year in Akron, OH. The goal of the initiative is to reduce hospital readmissions and nursing home placements, as well as overall functional decline and decreased quality of life.

"We haven't been allowed to look at the actual data as yet, but all of the anecdotal findings point to the fact that the team approach is improving the quality of health for the patients enrolled," says **Kyle Allen, DO,** a geriatrician and medical director at Summa Health System in Akron and principal investigator of the AD-LIFE study.

A smaller pilot study done at Summa Health before the AD-LIFE trial included 118 patients. It showed that the intervention of a multidisciplinary care team that focused on individual management of patients with more than one chronic disease resulted in decreased hospital admissions and decreased costs.[1]

The pilot compared the cost of prehospitalization with a one-year post-care management implementation. The results showed a savings of approximately $1,000 per patient per month, says Allen.

So far, the AD-LIFE trial has enrolled 300 patients with a goal of 533 by the end of this year. In many ways, the design of this trial would seem to defy all previous theories about what population is most likely to improve with individualized care management. Patients in this trial are all low-income and are Medicaid eligible and nursing home certifiable. They must have more than one comorbid condition, have posthospital discharge complications, and be limited in at least one activity of daily living (e.g., feeding, bathing, or dressing) or two instrumental activities of daily living (e.g., preparing meals, taking medications, or grocery shopping).

Patients must be able to return home after discharge or after a short stay in long-term care. In addition to these inclusion criteria, patients are tested for cognitive impairment. Allen says although mild dementia doesn't prohibit patients from being able to benefit from the study intervention, moderate and severe dementia would be an excluding factor in enrollment.

"The diversity of people enrolled in the program so far is amazing," says **Kathy Wright, MSN, RN, APN, BC,** coinvestigator of the trial. "There are so many examples of patients referred to the study who were homebound or who had one foot into a nursing home and now are living independently," she says.

Many of the patients had psychosocial issues, such as caregiver support and geriatric syndromes, including incontinence, depression, and dementia. Wright and Allen say these issues, and other intangibles that make it harder for these patients to be more self-directed, are often present in older Medicare patients. But, they say, these issues are often not accounted for in DM programs that focus more on the disease than the individual person.

"These patients need a navigator, either a registered nurse or a social worker, tied to a multidisciplinary team that manages patients with higher disease risk and higher utilization of services," says Allen.

And that's what the AD-LIFE trials provide—each enrollee is followed by a case manager who is part of a multidisciplinary care team that includes a geriatrician, an RN, a pharmacist, and a social worker. Other specialists, such as occupational, physical, and speech therapists, might be added to the team if necessary.

Allen says medication management is a key to the management of these patients, adding that many chronically ill patients who are on a host of medications end up having a medication-related adverse event that puts them back in the hospital within a few weeks after discharge. A key member of the team is the geriatric pharmacist who does a review of all of the patient's medications.

> **"There are so many examples of patients referred to the study who were homebound or who had one foot into a nursing home and now are living independently."**
>
> *—Kathy Wright, MSN, RN, APN, BC*

Intervention elements

AD-LIFE trial patients are referred to Summa Health by the local Area Agency on Aging (AAoA) for frail elderly. Wright says the trial uses the social services of the AAoA (e.g., home health aides, transportation, mobile meals, portable weight scales), but adds on the elements of a comprehensive geriatric assessment, the care management team, an individualized evidenced-based care plan, and a focus on patient self-care and education about their chronic illness. The patients are followed for one year after hospital discharge.

The implementation of the care management begins while the patient is still in the hospital to improve the transition between inpatient and outpatient care, Wright says. The care manager does the

> continued on MDM p. 4

Chronic care

< *continued from MDM p. 3*

in-home assessment within one week of discharge and develops and implements a care plan that is shared with the patient's PCP. Other tasks that the care manager performs include:

- Ensuring access to medical and social services
- Educating the patient about signs and symptoms of chronic illness exacerbation and appropriate response if symptoms occur
- Informing and motivating the patient about lifestyle changes, such as smoking, exercise, alcohol consumption, and diet
- Ensuring medication appropriateness
- Ensuring continuity of care by communicating with all medical and social service personnel who interact with the particular patient

Case managers meet with the PCP to discuss the one-page care plan, which serves as an icebreaker between the nurse and doctor. "This is different than traditional disease management, in which doctors are bombarded with case managers who they feel are interfering with their management of the patient," Wright says.

Allen says Summa Health System doctors benefit from the case manager, and physicians see the "AD-LIFE participation as a downstream benefit and true resource."

Self-motivation is important in this patient population. "Since these patients are low-income, there is a certain social reluctance to take on a more direct role in their own care," says Allen. "In many cases, they have never been asked to challenge low expectations about their own healthcare."

Wright says case managers let the patients set their own goals. They help the patient develop and keep personal medical records, including a living will and advance directives for healthcare.

"Educated patients bring all of their medical information and a list of medications to each doctor's visit and keep medications organized to prevent errors," Wright says.

"They learn to know their own body, be alert to changes, and know how to distinguish between non-urgent and urgent needs … They also know that if they don't understand medical terminology, they should not hesitate to ask questions," she adds.

Allen says the trial has helped patients who came into it just trying to survive and has improved health disparities and health literacy.

The program allows for more one-on-one time with the patients, Wright says, citing an example of a woman who had to use a motorized scooter when she enrolled in the trial.

The woman was close to needing nursing home care because of her immobility. She started taking water therapy classes, lost 25 lb., and no longer needed the scooter.

Trial patients now initiate calls to the doctor's office to report a symptom or ask for test results, says Wright. "They don't have a wait-and-see attitude anymore," she adds.

Allen says the trial is funded by AHRQ through October, but he hopes to get additional funding to perform another full year. The additional 12 months of data will help verify that these interventions are working, he adds. ■

Questions? Comments? Ideas?

Contact Managing Editor
Les Masterson
Telephone 781/639-1872, Ext. 3157
E-mail *lmasterson@hcpro.com*

Reference

1. Wright, K, Hazelett, S, Jarjoura D, and Allen K. "The AD-LIFE Trial: Working to Integrate Medical and Psychosocial Care Management Models." *Home Healthcare Nurse* 2007; 25(5):308–314.

Active seniors decrease health costs

SilverSneakers study shows significant benefits in year two

Being physically fit improves a person's well-being and reduces mortality, and a recent study shows that a fitness program for senior citizens can control healthcare costs.

The study, "Managed-Medicare Health Club Benefit and Reduced Health Care Costs Among Older Adults," was funded by the Centers for Disease Control and Prevention (CDC) and conducted by Group Health and the University of Washington, both in Seattle.

Researchers studied nearly 5,000 SilverSneakers participants, who are Medicare Advantage beneficiaries, over a two-year period. The retrospective cohort study discovered that total healthcare costs and inpatient admission costs increased at a smaller rate among SilverSneakers members than the control group. (For a breakdown of healthcare costs, office visits, and inpatient admissions, see the chart on p. 8.)

Steve Lindstrom, vice president of the Arizona Business Unit at Healthways in Tempe, AZ, says the study is important because health plans and Medicare are demanding positive ROI for wellness programs. The SilverSneakers study, which was published in *Preventing Chronic Disease*, a peer-reviewed electronic journal published by the National Center for Chronic Disease Prevention and Health Promotion, one of CDC's eight centers, shows the benefits of fitness.

"We know that it improves people's lives and their quality of life. That's not enough in the world we are operating in now. We have to have these positive ROIs to prove these kinds of things work," says Lindstrom.

The study's lead author, **Huong A. Nguyen, PhD,** assistant professor of biobehavioral nursing systems at the University of Washington, says the researchers analyzed total healthcare costs, including primary care, specialty care, inpatient, and pharmacy.

A total of 4,766 participants were enrolled in the health plan for at least one year before participating in the SilverSneakers study. The control group consisted of 9,035 people who mirrored SilverSneakers' enrollee demographics. However, the study participants were slightly older, used more preventive services, made more PCP office visits, and had higher total healthcare costs at the baseline. By using more preventive services, SilverSneakers participants were already taking control of their health, which affects costs in the long run, says Lindstrom. "When people are taking charge of their health, they are more aware of things and they will seek primary care more often and earlier, rather than not go and then have an event later where they have not done any prevention," he says.

The study did not use self-reports to measure the participants' fitness level and wellness, but Lindstrom says SilverSneakers asks its members quality-of-life questions annually so the program can track a person's progress and benchmark the results. Because the study focused on the Medicare population, researchers did not take into account productivity, absenteeism, and presenteeism factors.

Researchers found cost savings—in the form of inpatient admissions—in both years of the study, although the first year was not statistically significant. Nguyen speculates that the delayed reduction in costs is due to the length of time the fitness program takes to improve participants' health, but the study did not analyze the matter.

"We need additional confirmation from other studies. Hopefully, other health plans having seen our publication will be motivated to do their own internal evaluation and will publish their findings so we can see if they are seeing similar benefits across health plans that offer similar programs to their older adults," says Nguyen.

Lindstrom says the finding mirrors other studies done on the program. The second year is when the benefits of consistent exercise and participation are evident.

Nguyen says she is pleased with the results but suggests health plans, DM, and wellness programs not jump to conclusions. She adds that the study's findings are not definitive but hopes that it will stimulate further study.

> ***continued on p. 8***

SilverSneakers

< continued from p. 7

The study's authors also noted that managed care companies should be careful when creating these kinds of wellness programs. "Notably, the cost of the health club benefit was included in the overall cost allocations in this study. Therefore, in constructing such benefits, payers will need to ensure that the benefit cost does not exceed savings and potential resources required to build incentives for regular participation," according to the study.

This study was the most recent to show cost savings for the SilverSneakers program. In a 2004 study, Highmark Blue Cross Blue Shield found that healthcare costs for SilverSneakers members were 30% lower than nonparticipants with similar demographics. In another 2004 study, researchers found that healthcare costs among Medica's Medicare plan members enrolled in SilverSneakers were 11% lower than among the control group. The researchers estimated that the 3,000 SilverSneakers members in

SilverSneakers program saves money

	Controls (n = 9,035)	SilverSneakers participants (n = 4,766)
Number (%) of people with an inpatient admission		
Baseline	825 (9.1%)	432 (9.1%)
Year 1	984 (10.9%)	454 (9.5%)
Year 2	1129 (12.5%)	471 (9.9%)
Number of primary care visits per person		
Baseline	4.5	5.1
Year 1	4.7	5.3
Year 2	4.8	5.3
Number of specialty care visits per person		
Baseline	2.7	3.2
Year 1	2.9	3.3
Year 2	3	3.4
Total healthcare costs		
Baseline	$4,693	$5,212
Year 1	$5,687	$5,677
Year 2	$6,742	$6,155
Inpatient admission costs		
Baseline	$1,000	$1,248
Year 1	$1,391	$1,346
Year 2	$1,803	$1,497
Primary care costs		
Baseline	$788	$911
Year 1	$829	$962
Year 2	$875	$983
Specialty care costs		
Baseline	$716	$793
Year 1	$813	$825
Year 2	$890	$935

Source: "Managed-Medicare Health Club Benefit and Reduced Health Care Costs Among Older Adults," Preventing Chronic Disease.

that study saved the health system $1.3 million in the program's first year. The study also found that those who frequented the center reported better health.

Program keys

Lindstrom says there are three key elements to the SilverSneakers program, which was founded 15 years ago by Mary Swanson:

- Evidence-based classes
- A fun atmosphere
- Social networking for seniors

Lindstrom says socialization and making older adults feel welcome in the fitness center are critical in reducing barriers to exercise. According to the recent study, 61% of SilverSneakers members remained active in the program for the second year. Healthways' SilverSneakers contracts with 40 health plans with 4 million Medicare beneficiaries. SilverSneakers has about 3,000 participating locations, including fitness centers, YMCAs, and other health/wellness partners. SilverSneakers members can use the participating locations' equipment and services, as well as special classes for older adults. There are 490,000 SilverSneakers classes annually, and 68,000 members participate each day, according to Healthways.

The program offers four types of classes. The basic class builds muscular strength and increases range of motion. Participants use handheld weights, elastic tubing, and a ball for resistance; they may perform the exercises seated, standing, or standing with support. Cardio, water training, and yoga make up the other three classes.

Any time a managed care company contracts with a fitness center, there is the question as to whether members are actually using the services. SilverSneakers' business model, which makes the fitness clubs and health plans active participants, removes that doubt.

SilverSneakers pays the participating locations (and bills the health plan) each time a member visits. This means that when beneficiaries visit the fitness centers more often, the gym gets more money, and better fitness should mean a better ROI for the health plan.

SilverSneakers also uses 160 account managers, who are Healthways employees. They collaborate with the SilverSneakers fitness centers to ensure that they are complying with program requirements, training fitness center staff members, and driving enrollment and participation through senior events and marketing.

Each fitness center also employs a senior advisor, who works during the peak workout times for SilverSneakers members—morning and early afternoon hours. Instructors for SilverSneakers programs enroll in ongoing training and must receive program certification.

Lindstrom says SilverSneakers programs are expanding. Looking to retain more members, Healthways has created an intervention program that will reach all SilverSneakers members by the end of the year. Healthways will work with health plans so that regular SilverSneakers members who suddenly stop visiting their gyms are flagged and contacted by their health plan's medical management team.

Lindstrom says the gym absences could be a result of depression, a caregiver issue, death of a spouse, or other issues. By intervening, health plans will be able to reach out to their members and potentially triage them to the proper programs. Such issues usually don't come up in typical DM or other interventions "because it really hasn't happened yet," Lindstrom says, adding that Healthways is speaking with health plans in order to fund a study that would further confirm the positive ROI. ■

What does the SilverSneakers program entail?

Healthways' SilverSneakers program offers Medicare Advantage beneficiaries the following services:

- A free fitness center membership with 3,000 participating fitness centers
- Customized SilverSneakers classes
- Health education seminars and wellness events
- A specially trained senior advisor employed by the fitness center who introduces members to the SilverSneakers program and the fitness center

Cell phones empower patients

WellDoc pilot shows clinical improvements in diabetics

A cell phone–based DM software program was found to improve diabetic patients' A1c levels within three months, according to a study that will appear in the June *Diabetes Technology & Therapeutics.*

A nonblinded, randomized, controlled trial of WellDoc's Diabetes Manager software, which combines medicine with coaching, found an average two-point drop in patient hemoglobin A1c within 90 days. (To view the results, see "WellDoc pilot shows improvements" on p. 12.)

WellDoc, located in Baltimore, was cofounded by a group of endocrinologists trying to improve diabetes patient care beyond the doctor's office. **Suzanne Sysko Clough, MD,** a cofounder of WellDoc, coauthor of the study, and a former endocrinologist in the Joslin Diabetes Center at the University of Maryland Medical Center, says her colleagues noticed that regardless of the patient's economic status, there was one common denominator: the cell phone.

Following three years of research and discussions with physicians and patients, WellDoc has created a program that uses the everyday piece of technology to help diabetics stay engaged and improve their habits and clinical results. The Diabetes Manager software provides real-time feedback on patients' blood glucose levels, displays patients' medication regimens, and incorporates hypo- and hyperglycemia treatment algorithms.

Clough says to properly care for a person with diabetes, the whole team of stakeholders must be involved, including the DM companies, health insurance companies, physicians, patients, and caregivers.

"We said we somehow have to connect all of these stakeholders," says Clough.

The three-month pilot tested whether the program could help reduce A1c levels, whether physicians would use it and empower patients to make decisions, and whether the patients would use and learn from it.

"These results demonstrate that a multifaceted intervention of education, patient feedback, and real-time individualized data between patients and providers eliminated barriers to controlling blood glucose," according to the study.

At the start of the pilot, researchers found that none of the patients knew their blood sugar goals or how to count carbohydrates. In fact, Clough says the longer the patient had diabetes, the less they knew about the disease. She suggests this is because providers did not have the information that is now available when the patients were diagnosed, and health officials probably assumed that those living with the disease for a long time were educated about diabetes and didn't need further teaching.

In the 90-day pilot, researchers recruited 30 patients with type 2 diabetes from three community physician practices in the Baltimore area and separated them into two groups.

Barriers to controlling blood glucose

Suzanne Sysko Clough, MD, cofounder of WellDoc, located in Baltimore, says there are five barriers to controlling blood glucose:

- Lack of nutritional education for patients and physicians. "Most medical schools do not train their physicians in anything having to do with nutrition and diet," says Clough, but education is the "cornerstone of diabetes" care.
- Diabetes is complicated. Regular life circumstances, such as stress and anxiety, affect blood sugar.
- There is a lot of shame with diabetes because people associate the disease with self-indulgence. Those with the disease blame themselves and think that if they need to take another pill or more insulin, they have failed.
- Diabetes is a burdensome disease. People have to regularly test their blood sugar, which is difficult in a hectic life.
- Americans are simply not exercising enough. "Lifestyle management is by far the most important part of the disease, especially early on," Clough says.

Those in the intervention group received WellDoc services, including:

- Use of cell phones with WellDoc's Diabetes Manager software.
- Diabetes logbooks with suggested treatment plans sent to patients' physicians at least every four weeks.
- Bluetooth-enabled blood glucose meters, blood glucose testing strips, and lancets.
- Education on the proper foods to eat. "We realize that information that we gave people on lifestyle management had to be relevant and personalized based on a lot of factors," Clough says.
- Nutrition education, such as counting carbohydrates and stressing the importance of exercise.

Those in the control group were given blood glucose meters, testing strips, and lancets and were asked to send their blood glucose logbooks to their physicians every two weeks until their blood glucose levels were stabilized within the target ranges. They did not receive the cell phone–based software.

Clough says only two patients in the control group consistently sent in their logbooks, which mirrors national norms. "Part of the problem is we know the primary care physicians are not getting the data from patients to make decisions," she adds.

At the time of registration, WellDoc input information from intervention patients, including demographics, length of diabetes, severity of the illness, medication, A1c figures, and target blood glucose. Clough says WellDoc found at least one medication error for every intervention patient.

With the prepopulated information and ongoing test results, WellDoc coached the patients on taking care of their disease.

Clough says those in the pilot's intervention group could be placed into three groupings: those who made dietary changes, those who refused to make dietary changes but were given more medicine, and those who made dietary changes and needed medication changes. The pilot saw improvements in all three groups.

At the end of three months, Clough says those in the intervention group either believed WellDoc taught them enough to move forward without the cell phone program or said they still needed it.

"The majority of people said, 'Please, don't take it away from me because I need big brother watching. It is holding me accountable,' " says Clough.

One issue WellDoc faced during the pilot program was the unreliability of the Bluetooth technology. Two or three patients' Bluetooth worked consistently, but others needed to manually input their data into the cell phone. Those without the Bluetooth technology pressed a button on the cell phone and used screenwide data, boxes, and labels. There was no text messaging involved.

Clough says there were initial concerns as to whether senior patients would use the cell phones, but WellDoc found that seniors operated the cell phone solely as a diabetes coach and not as a phone.

Program with physicians in mind

One problem for PCPs and endocrinologists is lack of time. Physicians simply don't have the time to properly care for diabetes patients in a 15-minute session, Clough says.

"It's a very difficult situation for a doctor to sit down, have the time, and take a longitudinal look at a person's diabetes," she says.

Mark Saba, MD, a physician in Cockeysville, MD, who volunteered for the pilot program and a longer ongoing study, says WellDoc's services educate his patients while not adding work on his end. WellDoc is an example of how outcomes improve when patients have more information about their disease, he says, adding that he wants patients involved in their care, and the WellDoc product helps him, as a doctor, stay informed about the most recent clinical guidelines and medications.

Saba has seen A1c numbers drop in patients who are engaged. "It's very rare to have a diabetic that is under great control who is not engaged," he says.

WellDoc provides another education source for the patient and helps keep patients on track between doctor

> *continued on p. 12*

WellDoc

< continued from p. 11

appointments, Saba says. Patients are able to link how they feel with their meals and exercise by following their progress on the cell phone.

"It's a positive reinforcing cycle: The better the patient's blood glucose readings, the more engaged they become," Saba says. "All of a sudden, it's not just me saying do this and you will feel better, they actually do feel better and become independently motivated to monitor their diabetes in a patient-oriented module with information they can relate to and also know their physician is monitoring as well."

Five pilot programs in 2008

Clough says WellDoc plans to launch five U.S. pilot programs this year. WellDoc is involved in a larger 300-patient trial that it is conducting with CareFirst health plans—which cover people in Maryland, Delaware, and Washington, DC—and the Maryland University School of Medicine. The yearlong study, which currently includes about 30 physicians and 100 patients, features technological advances since the pilot, including an option that gives physicians the most recent evidence-based guidelines on a Web site. This is different from the pilot, which forwarded an action plan to physicians but didn't have a site devoted to the most recent guidelines.

With the three-month pilot information in hand, Clough says WellDoc has shown that technology can bridge the gap between diabetes cases and shortages of doctors and time. She adds that healthcare needs to look "outside the box," and WellDoc's technology is an example of that thinking.

"We need physicians, we need nurses, we need nurse practitioners in the clinics, but we also need to support the patients outside of there," says Clough.

One barrier to greater technology and physician support is the lack of reimbursement to oversee a program such as WellDoc. Clough says technology programs save time for physicians and improve outcomes for patients, and health plans should reimburse doctors for their care support services. "If physicians are [using technology such as WellDoc], and that's driving outcomes, they should be paid for that," she says.

Clough says WellDoc is working with telecom companies to further improve the system's features—for example, using GPS technology so that the system could give diabetes patients the names of nearby restaurants with diabetes-friendly offerings. WellDoc is also exploring a program in which people could input what they ate and the program would automatically record the nutritional information. ■

WellDoc pilot shows improvements

	WellDoc intervention	Control group
A1c (mean)		
Baseline	9.51	9.05
Follow-up	7.48	8.37
Changes in medication		
Medications intensified	84.62%	23.08%
Medication errors identified	53.38%	0
Self-reported control issues		
Improved knowledge of food choices	90.91%	50%
Provider diabetes management improved by receipt of blood sugars	100%	37.5%
Patient confident about diabetes control	100%	75%

Source: WellDoc, located in Baltimore.