

Evidence-Based
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Diabetes self-management education and support needs to occur throughout the course of living with the disease, but payer coverage has not typically reflected this.

CALLING ALL CHANGE AGENTS



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PROVIDER PERSPECTIVE

In the Era of Payment Reform, Diabetes Educators Can Lead the Way Toward Value-Based Care

Robert A. Gabbay, MD, PhD, FACP

FOR A HEALTHCARE SYSTEM that spends more per person than any in the world,¹ Americans are not in superior health compared with other developed countries.² This does not make sense, but much of what occurs in the US health system has not made sense—until one considers how our system of reimbursement has functioned for decades.

Our system of fee-for-service reimbursement—of being paid to do things—has created incentives that reward process, not outcomes. This has meant that care for diabetes, while an essential component of any health system, has been looked upon as a “cost center.” Meanwhile, the parts of our system that deal with the complications of diabetes, like a cardiac wing for heart surgery, have been seen as “revenue centers.”

Fortunately, and especially so for diabetes educators and other diabetes professionals, the system is changing. We're moving from a fee-for-service world to one where value is key, with value being defined as improving health outcomes while reducing costs, or least getting better outcomes for the same cost. That is shift is happening now, and it will fundamentally change the work of diabetes educators.



Diabetes educators, including professionals with degrees in nursing and nutrition, are more valuable than ever to health systems as the reimbursement system shifts to a prevention model.

Editor's Note: This article is based on an August 17, 2018, keynote presentation to the American Association of Diabetes Educators at their annual conference.

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COMMENTARY

Is It Time to Remodel Diabetes Self-Management Education and Support?

Hope S. Warshaw, MMSc, RD, CDE, BC-ADM

Introduction

Societal trends are converging to raise the question, is it time to remodel diabetes self-management education and support (DSMES)? These trends include the related epidemics of obesity, prediabetes, and type 2 diabetes, which we know are progressive and frequently occur with comorbidities and complications that demand increasingly complex management. This management occurs most often in primary care, where the average appointment is just over 20 minutes.¹ Healthcare delivery is evolving toward value-based care and payment structures, with a focus on improving primary care delivery and patient engagement. The public is growing accustomed to easily accessible, 24/7 services for banking, shopping, and other services that lead them to expect the same for their healthcare. Lastly, and importantly, technology is enabling an array of digital health solutions.

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DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT

WellDoc Touts What Clinical Outcomes, Engagement Mean to Employers' Bottom Line

Mary Caffrey

THE IDEA OF USING digital technology to manage diabetes is well past the “new” phase. But getting health plans and employers to incorporate these solutions to deliver positive clinical outcomes and cost savings for members who have diabetes or chronic diseases has come more slowly. For starters, employers are flooded with pitches, and many struggle to figure out which products are worthy. Second, employers want more than just clinical outcomes. They want to know how solutions, such as digital therapeutics, will cut healthcare costs.

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FROM THE CHAIRMAN

In Diabetes Care, Show Us the Money

THIS YEAR, WE HEARD sobering news from the American Diabetes Association—the disease now costs the United States \$327 billion a year in medical costs and lost productivity. So much of this could be avoided if people who have received new diagnoses or are at risk of developing diabetes can adopt healthier nutrition and exercise habits, as well as better ways to avoid stress and improve sleep. For those living with the disease, good self-care is essential, and that often means careful monitoring of blood glucose.

But too often, when we hear from patients and diabetes educators, it seems that nothing about the healthcare system encourages prevention or self-management. Patients who want to work out get capped with limits on blood glucose testing strips. It is now well documented how a bidding program in CMS disrupted supplies for Medicare patients and let low-quality strips into the market. These problems were unearthed thanks to advocacy from the American Association of Diabetes Educators (AADE) and other groups. And despite evidence that the needs of people with diabetes change over time, reimbursement policy has treated self-management education and support like a “one and done” proposition. We’ve also seen inexplicable, head-scratching resistance to uses of technology on the part of CMS; for example, the agency initially refused to allow Medicare beneficiaries to use the Dexcom G5 with their phone or share their data with family members.

As we see in this issue of *Evidence-Based Diabetes Management*,™ things are starting to change. At their annual conference, AADE members heard from our editor-in-chief, Robert A. Gabbay, MD, PhD, FACP, about how the shift to value-based reimbursement should make what members do more important to health systems looking to take costs out of the system (see **cover story**). We hope this is true, because we’ve also heard that so far, health systems have been eager to take the easy steps in system transformation but need to be pushed toward the more difficult step of 2-sided risk.

Fortunately, innovators are stepping up to meet the needs of patients and employers. The latter group is playing a more active role than ever in controlling costs on the front end, instead of waiting for the annual premium increase to arrive. But employers are getting smarter about wellness programs and digital tools, as seen in the interview with leaders from Welldoc, developer of a diabetes therapeutic that helps people with type 2 diabetes manage their condition and share information with their caregivers. Employers want to know that their workers will be engaged with digital solutions and stay that way, according to Laurel Pickering, who joined Welldoc after a long tenure with a leading employer-led healthcare organization.

Things would move more quickly, however, with stronger leadership from CMS. We need Medicare to fully embrace reimbursement for all the components of diabetes self-management—from education services to devices and supplies to ongoing support from certified educators. We need rapid expansion of telehealth so that people with diabetes in remote locations can gain access to education and support wherever they live. And we need CMS to move quickly to include online providers in the Medicare Diabetes Prevention Program.

As Gabbay told members of AADE last month, technology can offer solutions, but the best solutions combine technology with a human touch. Payers should take heed and combine technology, a human touch, and fewer hurdles to reimbursement. ♦

Sincerely,

Mike Hennessy, Sr
CHAIRMAN AND CEO

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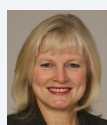
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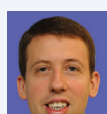
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FROM THE EDITOR-IN-CHIEF

Technology Is a Great Tool, but the Team Makes the Difference



GABBAY

THE DIABETES technology landscape is so vast and diverse that it can be difficult to keep track of all the developments. From devices that monitor blood glucose to those that partially automate insulin delivery, to therapeutic apps that allow 2-way communication with a health coach, it seems there's something new every week.

For all the promise of technology in diabetes care, however, we are learning that while devices and apps can assist the doctor, the nurse, or the educator, personal contact cannot be completely replaced. Studies are showing that the best diabetes tools have a human element—especially those that connect people with diabetes to their healthcare team.

A comprehensive look at technology-enabled diabetes self-management education and support (DSMES) appeared last year in the *Journal of Diabetes Science and Technology*; 18 of 25 studies reported significant reduction in glycated hemoglobin (A1C) as an outcome measure.¹ This systematic review identified 4 characteristics for technology interventions to improve A1C: (1) communication, (2) patient-generated health data, (3) education, and (4) feedback.

In other words, the technology itself wouldn't help people with diabetes unless they did something meaningful with it, and that typically involved a clinician or health coach who could offer additional support to keep people engaged and motivated to maintain changes in nutrition, exercise, medication, or stress reduction.

The review concluded, "The most effective interventions incorporated all the components of a technology-enabled self-management feedback loop that connected people with diabetes and their healthcare team using 2-way communication, analyzed patient generated health data, tailored education, and individualized feedback."

Technology, for all its possibilities, is unlikely to ever fully replace the role of the team in diabetes care. Technology can give us new ways to gather data and analyze data; it can help us identify those people living with diabetes who are missing appointments or not picking up their medication. But as the systematic review found, the difference comes when information fuels action. In the future, many elements of diabetes education will be technology-enabled, but for now, ongoing support

must still come from trained team members, who can offer evidence-based input on changes to a diet and exercise regimen, as well as words of encouragement when the grind of managing the disease becomes overwhelming. Those offering support should be connected to the primary care physician and specialists, so that day-to-day disease management aligns with clinical needs as a seamless team.

Last spring, the American Diabetes Association reported that cost of diabetes in this country is now more than \$327 billion a year, a 26% jump from the amount reported just 5 years ago.² Of this amount, \$237 billion is for direct medical costs, and 60% stems from hospitalization and complications, including prescription drugs. If we are to see these numbers level off, we must put more resources into the "support" part of the equation, where we get more value for the dollar. That means our healthcare system must invest in connecting people with diabetes with people who are experts in offering this support.

In this issue, Hope Warshaw, a former president of the American Association of Diabetes Educators, writes that payers are starting to make this transition, in part due to changing incentives under Medicare. Notably, she points out that remote monitoring of patients is considered an improvement activity that will allow practices to increase their scores under the Merit-based Incentive Payment System, or MIPS. But Medicare must go further and increase the number of hours a person can receive diabetes education each year; a bill in Congress calls for this.³

Of course, we must not overlook the most important member of the team: the person with diabetes. Whether they include technology, in-person support, or some of each, the best solutions empower patients to take ownership of their own care, and our reimbursement system must facilitate this and match it. ♦

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Robert A. Gabbay, MD, PhD, FACP
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PROVIDER PERSPECTIVE

In the Era of Payment Reform, Diabetes Educators Can Lead the Way Toward Value-Based Care

Robert A. Gabbay, MD, PhD, FACP

continued from cover



GABBAY
Robert A. Gabbay, MD, PhD, FACP is senior vice president and chief medical officer at Joslin Diabetes Center.

Diabetes Educators: the Value People

The Medicare Access and CHIP Reauthorization Act (MACRA), is the biggest change in the way providers are paid in more than 25 years.³ MACRA fundamentally changes the compensation structure for providers, and it sets in motion the transition from fee-for-service to a fee-for-value system with the Merit-based Incentive Payment System, or MIPS. This starts with a fee-for-service payment, but adds a significant value component or score based on 4 elements: (1) quality, (2) resource utilization, or cost; (3) engagement in practice improvement, and (4) use of electronic health records. Of these elements, quality is the most heavily weighted.

While a MIPS score could initially cause payments to vary by 3% to 4%, eventually a MIPS score could swing payments by 9% to 10%. Thus, although some qualified providers are still learning about MIPS, at some point these shifts will capture everyone's attention, and the focus on quality will be essential. In fact, 2017 data in many cases has been used to adjust 2019 payments.³

How will quality be measured? Many of the measures that determine quality are measures used in diabetes care, such as the percentage of patients who achieve a glycated hemoglobin (A1C) below 9%. Providers could complete MIPS reporting requirements on diabetes measures alone.

If we are moving to a system that rewards value, there are incentives to offer better diabetes care. And that makes the role of diabetes educators so important: The good news is, the services educators provide are relatively inexpensive—although, sadly, this is due to the fact that educators are paid less than they should be paid.⁴

From a health system perspective, however, diabetes educators are the value people: they teach patients self-management and provide support; they offer both specific information and encouragement in areas that include nutrition, exercise, and stress reduction; and they can identify those patients most at risk of complications or hospitalization and work with them to improve glycemic control.

By fully deploying diabetes specialists—in both traditional and new roles—health systems have the opportunity under new payment models to convert traditional cost centers involving diabetes care into potential savings centers.

ACOs and the Value Shift

Improved diabetes care is the foundation of savings seen in accountable care organizations (ACOs), which saved Medicare nearly \$1 billion over their first 3 years, according to a 2017 report of the HHS Inspector General.⁵ ACOs receive a lump sum to care for a population; if they succeed in improving quality and reducing costs, they are able to keep some of the money Medicare saves. ACOs have improved quality by reducing readmissions, by scheduling primary care hours later in the day to accommodate work schedules, and by thinking not only about the patients who come through the door, but those who haven't shown up. Population health strategies demand that health systems engage

with the community to identify those at high risk of costly events or complications, and take preventive steps, such as more screenings or adding office hours for primary care that more easily accommodate working people.

As it has in the past, diabetes care will lead the way.

Elliott Joslin, the founder of Joslin Diabetes Center, became the world's first diabetologist and the earliest diabetes epidemiologist by keeping registries of all his patients, in which he recorded their natural history and potential complications. He trained the “wandering nurses,” who today are called diabetes educators, to teach patients about the importance of exercise, attention to diet, and, later, proper insulin dosing.⁶ From this early example of population management, we see the origins of today's patient-centered medical home (PCMH) and the team-based approach that has been shown to improve outcomes for people with diabetes. We also see the idea of the “medical neighborhood,” which is essential to a well-functioning ACO. This includes not only the PCMH, but also medical and non-medical partners, including hospitals, home health care, specialists (such as ophthalmologists), and mental health professionals, as well as community resources like school systems, large employers, or food pantries.⁷

What makes diabetes care the foundation of the reimbursement shift we are seeing? The disease meets each of the “5 Cs”:

- It is Costly: medical costs and lost productivity now account for \$327 billion per year in the United States.⁸
- It is Common: according to CDC, 9.4% of Americans has the disease.⁹
- It is Complex: diabetes can be managed with a choice of over 12 classes of drugs along with lifestyle changes.
- It is Calculable: progress in diabetes management can be measured in A1C, blood pressure, and cholesterol levels, in weight loss, by how often a patient experiences hypoglycemia and by time in range.
- It has Complications that are preventable: a goal of good diabetes care is to avoid long-term outcomes such as retinopathy, renal disease, or lower limb amputations, which are responsible for most of the costs of diabetes.

Changing Reimbursement, Changing Opportunities

Under the shift to value-based care, health systems will be wise to add professionals who can help (1) identify those members of the population who are high-risk and likely to incur high costs, and (2) to intervene with those patients to take preventive steps to avoid major events or disease progression. There are 3 distinct opportunities where diabetes educators can be valuable to health systems as they shift their focus to population health management:

1. *Practice coaching.* Primary care practices often struggle to make the leap to a PCMH, since they must do so while meeting their patients' day-to-day needs. Diabetes educators can help practices make the shift, because »

they are already experts in negotiated goal setting, problem solving, empowering, team dynamics, and cheerleading.

2. *Care management.* If the goal is to reduce costs and improve quality, diabetes educators are well-positioned to be experts in risk stratification and working with high-risk patients, both those who are newly diagnosed with type 2 diabetes (T2D) and those who have lived with the disease for some time. Data from the Agency for Health Research and Quality show that 10% of high-risk patients account for two-thirds of the costs—the key is finding that 10%.¹⁰
3. *Augmenting digital care.* For all the excitement about using digital therapeutics to manage diabetes, researchers are finding that early engagement tends to wane over time. A key seems to be finding a way to combine the technology with the human touch to ensure ongoing use. Competition in the diabetes digital technology sector ensures that companies will seek those with expertise in diabetes care and patient engagement.

In many ways, there has never been a time of greater opportunity for diabetes educators. It is important for those who understand how to identify those patients most in need of care—and how to motivate them to stick with a self-management plan—to step forward, both within their health systems and beyond. We can, and should, expect to see greater numbers of diabetes educators engaged in new roles as the transition to payment for value takes hold. ♦

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COMMENTARY

Is It Time to Remodel Diabetes Self-Management Education and Support?

Hope S. Warshaw, MMSc, RD, CDE, BC-ADM

continued from cover

Background

In 1997 Medicare authorized expanded coverage for Diabetes Self-Management Training, the term CMS uses for the DSMES benefit, for all people with a diabetes diagnosis.² Prior to 1997, this benefit was offered only to people with insulin-requiring diabetes. To be eligible for Medicare reimbursement, DSMES programs must be recognized by the American Association of Diabetes Educators (AADE) Diabetes Education Accreditation Program³ or the American Diabetes Association (ADA) Education Recognition Program.⁴ These are the sole national accrediting organizations designated by CMS for this benefit.

DSMES is defined as the ongoing process of facilitating the knowledge, skills, and ability necessary for diabetes self-care as well as activities that assist a person in implementing and sustaining the behaviors needed to manage on an ongoing basis.⁵ This Medicare benefit was originally designed almost 2 decades ago to reimburse for a formal curriculum-based program typically conducted at a hospital outpatient or healthcare facility. Over the years, CMS has made minimal changes to the design and structure of this benefit, although legislation to revise the program has been introduced several times. Currently, there is bipartisan legislation to make changes in the structure and

coverage.⁶ At present, beneficiaries with a confirmed diagnosis of diabetes are eligible for up to 10 program hours of initial education and then 2 hours of service in each subsequent year.⁵ Private payers often follow Medicare's guidelines for DSMES coverage.

High Effectiveness, Low Usage

DSMES has been shown to improve glycated hemoglobin (A1C) by as much as 1%. In addition, DSMES improves other clinical factors and quality of life while reducing hospitalizations and healthcare costs and minimizes the onset and/or advancement of diabetes complications.^{2,5,7} The ADA's *Standards of Medical Care in Diabetes* recommends that all individuals with diabetes receive DSMES at diagnosis and as needed.⁷ However, the DSMES benefit remains woefully underused by Medicare beneficiaries and private payers, with estimates of under 10%.^{5,7,9}

The current delivery model for DSMES has inherent barriers that are becoming more significant because of the noted societal trends that play a role in low usage. Primary care providers lack knowledge and understanding of this benefit and often do not adequately refer people with diabetes for the service. If the requisite referral is made to what is often called diabetes education, the service may be provided in a location apart from »



WARSHAW

Hope S. Warshaw, MMSc, RD, CDE, BC-ADM, owns Hope Warshaw Associates, LLC, a diabetes and nutrition consultancy based in Asheville, North Carolina.

that of an individual's other healthcare providers and may be offered by providers with whom they are unfamiliar. Individuals with diabetes may not have an understanding of DSMES or its value in their diabetes care. Add to this mix the potential for co-pays, deductible reimbursements, time away from work, and travel costs. Lastly, in a curriculum-based, once-and-done education program delivered, in most instances, in a group setting, diabetes educators lack the capacity to optimally individualize peoples' care and management.

Time to Remodel DSMES

In support of a new model for DSMES more in line with the current understanding of the needs of adults with diabetes, a 2015 Joint Position Statement from the ADA, the AADE, and the Academy of Nutrition and Dietetics outlined an algorithm for the 4 critical junctures when DSMES should occur: at diagnosis, annually, when complicating factors arise, and during transitions in life and care.⁷ Action steps for each critical juncture are also provided. This statement details why the DSMES benefit as designed is no longer in concert with the collective evidence that people with diabetes need education, along with changes in management and support throughout their lives, to match their ever-changing life and care needs to achieve positive outcomes.^{2,5,7}

Although CMS regulations have changed minimally, diabetes educators, healthcare systems, and healthcare enterprises have adapted where and how DSMES is delivered, and services are increasingly integrated into primary care settings, Federally Qualified Health Centers, patient-centered medical homes, and other new models of care. Technology-based solutions are increasingly common and can serve diverse needs, including reaching patients in rural areas.

Current State of Clinical Outcomes

Though the goals for glycemic, lipid, and hypertension control are well known, and healthcare providers have more tools than ever in their armamentarium, 33% to 49% of people with diabetes don't meet these targets, and only 14% meet the targets for all 3 measures and avoiding smoking.¹⁰ More recent Healthcare Effectiveness Data and Information Set figures show that only 40% of people covered by a health maintenance organization and 30% of people covered by a government healthcare plan achieve the A1C goal of less than 7% with no change seen over the past decade.¹¹ Real-world trends in glycemic-lowering medication demonstrate limited use of and intensification with newer such medications,¹² and real-world medication adherence and persistence are significant.¹³

From Isolation to Integration in the Care Continuum

We've repeatedly observed in results from multisite studies funded by the National

Institutes of Health that frequent and consistent education, training, and behavioral and lifestyle change facilitation and support provided by healthcare providers with diabetes care expertise improve clinical outcomes and, in some cases, cost effectiveness of care. Over the past decade, diabetes educators and others have tested the delivery of DSMES or innovative models in new delivery locations and formats including technology-based ones. (Coverage on **SP452-SP455** details several of these use cases.)

Although the hurdles of reimbursement and coverage of services will not disappear quickly, the evolution to new models of care and the increased willingness of private payers and Medicare to implement and allow billing for connected care solutions will assist this transition.

Advancing the Roles and Use of the Diabetes Educator

Beyond the need to remodel DSMES and delivery models, it may also be time for an evolution in the specialty of diabetes education, including the name diabetes educator, and perhaps the professional association, AADE. As part of its current strategic plan, AADE has developed a vision through 2033 and within this effort has asked these questions. An estimated 20,000 diabetes educators hold the Certified Diabetes Educators (CDE) credential.¹⁴ CDEs all hold a registration and/or license in their primary discipline of nursing, dietetics, pharmacy, behavioral health, exercise science, or other areas. Board Certified-Advanced Diabetes Management is the other advanced credential in the field.¹⁵ An increasing number of diabetes educators have

earned advanced practice credentials, such as nurse practitioner, physician's assistant, and clinical nurse specialist, and in some states, these professionals have prescriptive authority. Doctors of pharmacy may work under cooperative medical management agreements.

Other credentialed diabetes educators have within their state-based scopes of practice the knowledge and capabilities to work alongside providers with prescriptive authority to titrate glycemic control medications and possibly others based on prescriber-approved algorithms. This role fits naturally with delivering education, management, and support. Enabling these healthcare providers to practice at the top of their scope of practice has the potential for healthcare systems to cost-effectively build on value-based care models striving to achieve the triple aims of healthcare.

Beyond delivering direct care, diabetes educators have and continue to take on roles in various types of organizations and businesses that include program management, risk stratification, population health management, case management and coordination, technology-enabled care delivery systems, and supervision of paraprofessionals such as community health workers, lifestyle coaches, and others.

Impetus to Remodel DSMES

We now have all the impetus we need to remodel DSMES to increase usage and affect individuals' short- and long-term health and the healthcare system at large. For starters, it's critical to integrate the ADA standards of care, guaranteeing that all people with diabetes receive education and support⁸ in the care continuum, and to deliver it based on the Joint Position Statement algorithm.^{7,16} With the use of newer models of care, a laser focus on increasing the use of and improvements in primary care practice, and »

FIGURE. Critical Considerations for Choosing Digital Health Solutions

Clinical Validation	
	Has the digital solution received FDA clearance?
	Were randomized controlled trials conducted?
	Was the evidence significant?
Patient Engagement	
	Was user experience science used in the design?
	Is the digital therapeutic intuitive and easy to use?
	Does it guide the user through a use journey?
Data Security	
	Is it SOC 2 certified?
	Is it HIPAA compliant?
Patient and Provider Communication	
	Does it enable data sharing?
	Does it facilitate remote patient monitoring that meets requirements for billing?

HIPAA indicates Health Insurance Portability and Accountability Act of 1996; SOC 2, a service organization control report on 5 essential elements of data security, certified by the Association of International Certified Professional Accountants. Source: Adapted with permission from Welldoc Insights; Welldoc.com/insights/article/digital-health-solutions-evaluations.

new pay-for-performance payment models like those within Medicare's Quality Payment Program, it makes sense to integrate practitioners with diabetes expertise into healthcare delivery systems to offer a variety of results-proven innovative models of DSMES rather than isolate them.

Taking the integration of DSMES into the care continuum a step further, digital health solutions show promise. A recent publication explains the potential: "The anytime anywhere capabilities of digital technology support the delivery of automated, personalized, individualized content and coaching at the right time in the right way at the right place (while living life with diabetes), thus providing a timely nudge encouraging ongoing, informed self-management."¹⁷

Evidence is mounting for the clinical effectiveness of technology-enabled solutions, particularly for time- and care-intensive chronic conditions like diabetes. In a 2017 systematic review, participants in the majority of studies (18 of 25) showed significant A1C improvement.¹⁸ This review identified 4 key elements that were incorporated into the most effective interventions, including (1) 2-way communication, (2) analyzed patient-generated health data, (3) tailored education, and (4) individualized feedback. The authors refer to this as a technology-enabled self-management feedback loop that connects people with their healthcare providers. With this and other information, the 2018 ADA standards of care for the first time recognized emerging evidence of technology-enabled solutions to deliver DSMES.⁸ The **Figure** offers considerations for healthcare providers and systems when choosing a digital health solution.

Two currently available diabetes care digital health solutions from for-profit entities, One Drop and Livongo, have received DSMES recognition (ADA)¹⁹ or accreditation (AADE),²⁰ respectively. However, neither presently bills Medicare for its service because of lack of coverage for online platforms or virtual DSMES. Another digital health solution entity, Welldoc, has licensed AADE's DSMES curriculum and has integrated it into its BlueStar FDA-cleared mobile medical app within a 12-week patient journey,²¹ and translated into Spanish.

Although the hurdles of reimbursement and coverage of services will not disappear quickly, the evolution to new models of care and the increased willingness of private payers and Medicare to implement and allow billing for connected care solutions will assist this transition. In recent years, even Medicare is revising previously rigid definitions of telehealth and adding new codes to allow for services like chronic care management (Current Procedural Terminology [CPT] code 99490)²² and remote patient monitoring, including glucose monitoring (unbundled CPT code 99091).²³ Using remote patient monitoring is considered an improvement activity under the Medicare Merit-based Incentive Payment System. As part of the 2018 federal budget agreement, Medicare will make additional changes to its telehealth and telemedicine regulations.²⁴ In addition, the CMS proposed 2019 Medicare Physician Fee Schedule pushes

the envelope of reimbursement for telehealth and remote patient monitoring even further.²⁵

In conclusion, the answer to the central question posed here is yes. It is time to remodel DSMES. This includes revamping the design of the Medicare benefit and the payment structure for coverage to better mesh with the current and impending needs of healthcare delivery and primary care providers. More important, we need innovative and successful models of care that meet the needs of people with these conditions and their caregivers. Reflexively, these changes will necessitate changes in the roles of diabetes educators and perhaps lead to a more accurate name for these increasingly valuable healthcare providers, to improve diabetes outcomes while achieving costs savings. ♦

AUTHOR INFORMATION

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DISCLOSURE

Warshaw serves as a consultant to Welldoc, Inc.

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Language barriers, LDL cholesterol control among Latinos with diabetes
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DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT

Welldoc Touts What Clinical Outcomes, Engagement Mean to Employers' Bottom Line

Mary Caffrey

continued from cover

It's familiar territory for Laurel Pickering, MPH, who spent 24 years as head of the Northeast Business Group on Health, an employer-led coalition of health-care leaders and stakeholders.¹ "These companies are knocking on employers' doors every day with programs that have very little evidence of their efficacy," Pickering told *Evidence-Based Diabetes Management™* (EBDM™) in an interview. Employers, she said, want to know, "How's your engagement?"



PICKERING

For Pickering, Welldoc stood apart from the crowd. And today, she is the executive vice president for enterprise solutions at Welldoc, developer of the BlueStar digital therapeutic for type 2 diabetes (T2D). Over the past decade, the company has conducted randomized clinical trials,^{2,3} and other studies,⁴ with results showing BlueStar's efficacy. "No one has that," she said.

It's Pickering's task to bring BlueStar's story to a wider network of employers and health plans, by showing them what empowering employees with T2D to manage their disease means to the bottom line.

Study findings show that the FDA-cleared BlueStar mobile medical app produces reductions in glycated hemoglobin (A1C) of 1.7% to 2%.^{2,4,5} In June 2018, the company announced data that show how these results translate into savings: At the 78th Scientific Sessions of the American Diabetes Association held in Orlando, Florida, researchers from Truven Health presented an analysis that found health plans offering BlueStar to those with T2D would save \$254 to \$271 per member per month, depending on the user's A1C level.⁶

BlueStar combines automated in-app coaching and real-time support with educational tools, embedded with curricula from the American Association of Diabetes Educators (AADE), under an agreement reached last year.⁷ A digital therapeutic is not a "diary," but rather a tool that uses technology to provide

"Too many employers have been burned by paying for solutions that didn't keep employees engaged."

— Laurel Pickering, MPH
Executive Vice President, Enterprise Solutions
Welldoc

people with real-time support at the decision point, based on their personal data: what they are eating, what medications they are taking, and their blood glucose results over time. Sharing information with the care team offers a more complete picture and leads to better decision making, both during office visits and in the time between visits that evidence shows matters most when managing the disease. Although today BlueStar's main product is available without a prescription, there is also within-app access to a prescription-only insulin bolus calculator. Another version of BlueStar, the Diabetes Wellness Program, is a consumer "lifestyle" and wellness solution available through Samsung Health.⁸

Welldoc is gaining more understanding of how BlueStar users interact with the technology and how it could be scaled across different patient populations. In the EBDM™ interview, Welldoc's Malinda Peoples, RN, MS, CDE, vice president for clinical services, programs, and research, and Pickering said this is key information for employers because they want to be assured that employees will use the technology before they make the investment.



PEEPLES

Pickering said too many employers have been burned by paying for solutions that didn't keep employees engaged. Peoples said Welldoc understands this, and the company is taking time to study engagement because it's crucial to the transition to value-based care. "What has really been interesting is that not only did we demonstrate outcomes in the clinical trial, we have actually seen similar ones in demonstration projects in commercialization," she said.

Welldoc has consistently seen the same findings, across different settings and patient populations, Peoples added.

So far, Welldoc reports that its study results show users engage with the app 13 to 24 times per week, and findings from a research study with Vanguard Medical Group and Horizon Blue Cross Blue Shield of New Jersey showed that 86% of active users shared the 1-page report of their data with their healthcare team.^{4,9}

Peoples described 3 categories of engagement with a digital therapeutic by patients, informed by a recent study completed in collaboration by Welldoc, Samsung, and Ontario Telemedicine¹⁰:

- Early adopters who are very savvy with technology and very motivated to engage in diabetes self-management.
- A second group has smartphones and has started using apps, but these users must learn to fold in the diabetes self-management element. Once this group is assisted with a digital tool, Peoples said, they learn to incorporate support into the context of their daily lives. "In-app coaching delivered by BlueStar becomes very effective," she said.
- A third group finds diabetes self-management challenging. "This group is slower to get involved, but with BlueStar, they can actually engage."

What's important to Welldoc, Peoples said, is to understand how to help the patient engage with BlueStar, whether it's through an employer or through a provider, "to use it in either setting and connect with their healthcare team."

BlueStar can now be used for hypertension and/or weight management in people with T2D.¹¹ It's well known that overweight and hypertension are common among people with prediabetes, a condition that affects up to 84 million Americans. In recent years, CDC has been working with the American Medical Association, the AADE, and other partners to encourage more people with prediabetes to become aware of their condition and to enroll in a yearlong National Diabetes Prevention Program (DPP), or Medicare DPP if eligible, to make lifestyle changes to prevent or delay progressing to T2D.¹² Research now shows that after 15 years, 55% of those in the lifestyle arm of the study that formed the basis of the National DPP, progressed to T2D.¹³

And Welldoc continues to gain evidence from its work with health systems, such as Providence Health and Services in the Oregon region,¹⁴ as well as large-scale efforts with employers, which Pickering said includes CBS Television and the New York City Department of Transportation. The latter includes a mix of very active and very sedentary employees.

"As a rule, employers don't like to be first, but they like to be second. They need someone to be the early adopter," she said. Word is spreading, and more conversations are happening. "We have good results and a great story to tell." ♦

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DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT

Through “Information Shift” and Support, North Carolina Program Brings Dramatic A1C, Therapy Reductions

Mary Caffrey

FIGHTING DIABETES IN THE hills outside Marion, North Carolina, is not easy. Though not technically part of the CDC’s designated “diabetes belt,”¹ it’s just 90 minutes from where the area begins along Tennessee’s eastern border, and data show that 14.2% of the county’s residents have the disease.²

Rates like that will not fall by telling people to exercise and watch what they eat. In a place where it’s said that “gravy is its own food group,” people living with type 2 diabetes (T2D) must be retaught how to eat.

But it can be done, as Kimberly Freeman, RN, CDE, CIC, CTTS, and Michael Hanlon have shown. She is a nurse and certified diabetes educator in the Diabetes Program at Mission Hospital McDowell, part of Mission Health; he is the diabetes intervention director for the YMCA of Western North Carolina. Together they have built a partnership and a program with proven results: reductions of glycated hemoglobin (A1C) of 2%, reductions in blood pressure and resting heart rate, and a 50% increase in balance, a key indicator for preventing falls.

Called Taking Control of Type 2, or TCT2, the program has been so successful, it’s now a covered benefit for health system employees and is offered through Mission Health’s accountable care organization. Although Freeman and Hanlon do not guarantee that participants will reduce their need for medication, many have: “We’ve consistently seen a 56% decrease or elimination of medications for type 2, hypertension, hyperlipidemia—and there’s cost savings here,” Hanlon said.

“There’s a level of passion around this program,” Freeman said.

Evidence of their success was published in July in *The Diabetes Educator*,³ the research-focused journal of the American Association of Diabetes Educators. In an interview with *Evidence-Based Diabetes Management*[™], Freeman and Hanlon described their journey in building their program and their desire to teach other health professionals what they have learned.

Hanlon initially came to the YMCA in the rural area north of Asheville, North Carolina, to launch the Diabetes Prevention Program (DPP) there. This evidence-based, 12-month program has been studied for more than 15 years nationwide. It has been shown to keep more than half of those with prediabetes from progressing to type T2D over 3 years; among seniors, DPP’s success rate is even higher.⁴ After a community health assessment revealed a high level of T2D and a 73% level of obesity among the patients in the McDowell County area, it became clear that something had to be done.

Through a collaboration between the YMCA and Mission Health, Hanlon and Freeman developed a 28-session curriculum, using materials recognized by the American Diabetes Association, that offers people with T2D both clinical information and practical advice on how to shop, cook, and eat in ways that fit into their lives. The lessons are offered in a group setting of 12 to 15 participants, who must agree to follow the program for a year.

A yearlong commitment. The schedule resembles the original DPP, but after the initial phase of weekly sessions ends, the program switches to sessions every 2 weeks instead of once a month. “I never liked that,” Hanlon said, explaining that he felt that people who are trying to make lifestyle changes need more regular support, and evidence is accumulating to support this view. “It just doesn’t happen that quickly,” he said.

What it takes is an “information shift,” Freeman said, which calls for people with T2D to become partners with their clinicians in managing the disease. The first stage takes a more heavily clinical approach, as participants hear from certified diabetes educators, including registered dietitians, and other members of the diabetes health care team. “The first 16 weeks is the most intense and the most supported in terms of clinical expertise,” she said.

The clinical background is critical for the next phase, which focuses on the more practical aspects of lifestyle management, such as managing carbohydrate intake and limiting hypoglycemia. “We’re setting them up to ask really good questions,” Hanlon said.

Learning what people of all ages can do. The partnership has broken down barriers—Mission Hospital McDowell and the YMCA have overcome transportation hurdles to enroll people who live up to 30 minutes away. They’ve encouraged primary care providers from all over the county to send patients to the program (a referral is required). Word of the success has spread: A competing health system sends patients, as well.

Freeman and Hanlon say they’ve shattered the beliefs some providers had about patients over 65 years of age. “[Some felt seniors] were set in their ways and weren’t going to have significant results,” Freeman said. “We didn’t listen. We admitted everyone—people in their late 70s, early 80s.”

“They were rocking!” Hanlon said.

What about spouses or caregivers? Yes, Hanlon said, spouses, partners, and best friends were welcome. “We immediately offered to include family members for the duration of the program,” Freeman said. A diagnosis of T2D affects a patient’s whole family, so it makes sense to engage all family members in the support process, from food tracking to shopping to setting goals.

And sometimes, the support person came back as a participant.

Community-wide shifts. As the program grew, more graduates became advocates for healthy changes in their family, at their churches, and in their communities. Freeman and Hanlon described a shift in the community, as people asked for menu changes at local restaurants or for low-fat peanut butter at the supermarket. The Y logo now appears on healthy items added to local restaurant menus, which Hanlon calls “empowerment at its finest.”

“It was not something we were looking to do,” he said. “It was something we happened to witness.”

There are provisions for those who’ve completed the 12-month program to check in for additional support, and now the quest is to make the program itself as sustainable as the lifestyle it teaches. Initially funded through the Kate B. Reynolds Charitable Trust, the program receives some coverage from private payers and Medicare as Mission Health seeks reimbursement under Diabetes Self-Management Education and Support services. And the hospital has begun collecting monthly payments through the Chronic Care Management fee that CMS created in 2017 for health systems to manage care coordination of seniors who have more than 1 chronic condition, including diabetes.

Freeman and Hanlon are now working to bring the program to other YMCAs and federally qualified health centers, as well as health systems in other parts of North Carolina.

What the program shows, Hanlon said, is the impact of supporting an individual in their own self-management over a sufficient period of time. The results can be significant, he said: “The 12-month program is really the beginning. It’s not the end.” ♦

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DIABETES SELF-MANAGEMENT EDUCATION AND SUPPORT

From High Tech to Low, Livongo Meets People With Diabetes at Decision Points

Mary Caffrey

FOR PEOPLE LIVING WITH DIABETES, having an insurance company dictate your supply of blood glucose test strips doesn't make sense. Some days you're sick. Some days you're exercising a lot. If you're taking a new medication, an extra test for a few days is wise. When keeping blood glucose in range is the goal, fighting for extra test strips is more than a headache—it can be a roadblock to optimal health.

Enter Livongo, a diabetes management system that features a “smart” blood glucose meter plus diabetes coaching from a Certified Diabetes Educator (CDE). The platform records data in the cloud and shares the information with family members and the health system—but only if the user approves. “That’s a very individual choice,” said Jennifer Schneider, MD, MS, chief medical officer at Livongo.

The company has also entered into a partnership with Glytec, a leader in automated insulin titration that the companies say will help “connect more dots” for more patients.¹ All of this drives a system that will offer Livongo users better tips, insights, and guidance from their CDEs, driven by choices the person with diabetes makes.

But for all the advances in technology, leaders at Livongo say one of its most popular features is a low-tech one: an option to let people order test strips when they need them, with the click of a button and without phone calls and battles with the insurance company.

“We’re really taking the market by storm,” said Schneider in an interview with *Evidence-Based Diabetes Management*[™]. “Our design shows why healthcare hasn’t been beneficial to people with chronic conditions.”

Livongo’s technology is built around the idea that a person living with diabetes must make multiple decisions every day, and the cumulative effect of all those decisions drives outcomes. So, the Livongo system tries to be there for the person at the decision point—to nudge the person if blood glucose strays out of range, to order test strips before they run out, and to connect the person to a coach who can offer encouragement and advice, especially to those who feel burned out from managing their disease.

As Schneider pointed out, however, good disease management means the system must allow each person to adapt it to individual needs. “We should not call during dinner,” she said. People who use Livongo can tailor the alerts based on when they want to be contacted, as highlighted in a review by Healthline’s Mike Hoskins, a longtime journalist with type 1 diabetes, who wrote that getting the level of coaching just right took some adjusting. Still, Hoskins wrote, he’d recommend the system for those who want a “bright, clear interactive meter” and more active coaching.²

As Schneider said, “All people are motivated differently. Some people really love that we give them unlimited blood glucose strips, or [because] they have diabetes that requires very frequent monitoring.” A person with newly diagnosed diabetes or someone with less experience managing a new medication would benefit from input from a CDE, for example.

Jenna Bollyky, MD, vice president of clinical research and analytics at Livongo, likened the relationship as less “Big Brother” and more “Big Sister,” one that holds the person accountable and offers feedback in an individualized way.

People with diabetes do not get Livongo directly; it’s obtained through health systems, health plans, and employers. These are partners who have an interest in seeing those with diabetes manage their disease and not end up in the hospital, and Livongo has provided evidence that its system has created cost savings—an average of \$83 per member per month for large self-insured employers.³

At the most recent American Diabetes Association Scientific Sessions in Orlando, Florida, Bollyky presented data that compared medical spending and clinical outcomes for 2017 Livongo users with a matched set of nonusers (n = 8385)

for 12 months. The study found that a 10% increase in the monthly Livongo usage rate was associated with a 2.1% decrease in medical spending ($P < .01$), which was driven by a 2.9% reduction in spending on office-based services.⁴

It’s not a surprise, then, that Humana and an investment group created by several Blue Cross Blue Shield health plans are among Livongo’s financial backers, Schneider said. However, she and Bollyky see employers as the real forces driving change. A paper published this spring in the *Journal of Diabetes Research* addressed a problem often seen with employer-based interventions: engagement starts off strong, but then tapers off. Researchers showed that Livongo users with T2D who had hit a plateau could benefit from short, intensive periods of coaching.⁵

Researchers randomized study participants into 3 intervention groups: Livongo users who were given a connected scale, Livongo users who received a scale and light coaching, and Livongo users who received the scale and intensive coaching. A control group was also followed. Results showed that users with the highest glycated hemoglobin (A1C) levels at the start of the intervention saw the most improvement. Using calculations based on the costs of coaching and the number of texts sent to each group, the authors calculated 12-week costs for each group:

- \$92 for the scale-only group, which translated into \$84 per pound lost, or \$230 per 1% decrease in A1C
- \$120 for the scale plus lightweight coaching, which translated into \$29 per pound lost, or \$300 per 1% decrease in A1C
- \$240 for the scale plus intensive coaching, which translated into \$38 per pound lost, or \$329 per 1% decrease in A1C.

“Though the overall intervention effect size was greatest in the intensive coaching arm, lightweight coaching was more cost-effective for weight loss and change in mean [blood glucose],” they wrote. Based on existing studies, the cost savings attributable to A1C reduction ranged from \$113 to \$179 per month. The authors, led by Bollyky, concluded, “lifestyle coaching may be a cost-effective adjunctive therapy for reaching target glucose control for selected participants.” ♦

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AADE CONFERENCE COVERAGE

From Diabetes Professional to Change Agent: The Shift That Population Health Requires

Mary Caffrey

MOVING THE HEALTHCARE SYSTEM from taking care of individual patients to taking care of populations demands a series of shifts, changes that transform the professionals who care for people with diabetes from doctors and nurses to change agents, according to a physician who helped undertake such a transformation.

Somava Stout, MD, MS, vice president at the Institute for Healthcare Improvement (IHI), spoke at the 2018 meeting of the American Association of Diabetes Educators about her experiences at the Cambridge Health Alliance (CHA), an affiliate of Harvard Medical School that provides healthcare in the Cambridge, Somerville, and Boston Metro-North areas in Massachusetts. The integrated delivery system serves 130,000 individuals, including 50% who speak a language other than English and 70% who are publicly insured.



STOUT

Stout began with an overview of the Triple Aim, the idea pioneered by former CMS administrator and IHI President Emeritus and Senior Fellow Don Berwick, MD, MPP, that healthcare should simultaneously improve the experience of care, improve the health of populations, and lower per capita costs. “It’s not enough to do one without thinking about the [others],” Stout said.

Her message that the road to better health mostly happens outside the doctor’s office was a good match for an audience of educator who included nurses, dietitians, pharmacists, exercise specialists, and more. Innovative programs at CHA, such as efforts to teach people with diabetes to shop for healthy groceries, were part of a transformation process that led to better-than-average improvements in health indicators among patients who typically had poor health outcomes.

As medical director, Stout said 2 of the first “change-maker agents” were a diabetes educator and a nutritionist on her team. When they started, she said, “People’s A1C [glycated hemoglobin] seemed to be getting better, but we were seeing some plateaus.”

So, the medical team asked the patients: What can we do to help you manage your diabetes? “They began to say things to us that we would not have expected,” Stout said.

Patients told the team, “What we really need is someone to come shop with us. Or a buddy to come walk with me so I feel safe.” Others mentioned a food co-op to save money purchasing fresh fruits and vegetables. People living with diabetes needed support, which led to a shared medical appointment led by a diabetes educator.

“As we changed the balance of power,” Stout said, “that created insights for us.” Most of the hours people spend living with diabetes is not spent at the doctor’s office, and CHA began to help people better manage those hours away from the clinic. By listening to the CHA patients and offering them the tools they needed, the health system was able to achieve a 36% reduction in the hospitalization rate for people with diabetes.

Population health, Stout said, recognizes the significant role that location plays in health outcomes and how the cost of inequity and disease is unsustainable. The most recent estimate from the American Diabetes Association shows the annual cost of prediabetes and diabetes is \$322 billion and those with diabetes have health costs 2.3 times higher than those without the disease. Stout shared maps of Los Angeles County Census tracts that showed how the areas with the highest poverty overlapped the areas with the highest rates of childhood obesity. Similarly, states with the highest rates of diabetes and obesity—such as West Virginia, Kentucky, Mississippi, Louisiana, Arkansas, and Alabama—are among the poorest. Stout said data show that race widens the disparity gap in poverty.

“We’ve begun to understand something about the risk of adverse childhood events, and what happens when a child doesn’t have everything they need and is growing up in a toxic environment of stress,” Stout said. “Of course, it makes

sense when you think about it,” she said, as research shows that high stress levels create a stress response that leads to higher levels of prediabetes and diabetes.

“There are chronic space-based inequities that are not accidental,” she said. Decades of redlining and lack of investment mean minority communities have fewer jobs, poorer schools, fewer grocery stores, and fewer parks. It takes longer to get to work, it’s harder and less safe to walk or exercise, and it’s not easy to get fresh food, Stout said. “All of the things that we tell our patients to do aren’t there.” Thus, the best clinical care in the world won’t drive down healthcare costs if policy makers and communities cannot create conditions that reduce stress and promote health in the first place, she said. Huge differences in life expectancy can occur between children who grow up within a few square miles depending on neighborhood quality, based on social determinants of health.

When patients hit plateaus, clinicians need to ask what their goals are in life, beyond the numbers. One patient with diabetes wanted to be able to attend a family wedding without having to get up in the middle of the ceremony to use the restroom, for example. “We need to help remove those barriers,” Stout said. “We need to think about how to go from a sick-care system to a health and well-being system.”

Making the Shift to Population Health

Moving from a sick-care system demands 5 shifts, Stout said:

- From a “healthcare system” to a “health and well-being system”
- Changing efforts to address inequity from “doing good” to understanding that the cost of poverty and inequity is unacceptable
- From scarcity to abundance
- From pathology to vision, the idea that change is possible
- From communities of poverty to communities of solution

The foundation of population health, she said, is prevention. Communities and policies must support ways to create health and build it from the beginning, not try to turn a sick person into a healthy one when they turn 60. Population health must also address the country’s demographic shifts, understand the role of place in addressing equity, and embrace the importance of mental health.

Policies and health systems must be part of the solution, she said. For example, it became much easier to get people to quit smoking when public spaces became smoke free, including hospitals. Community health must become a way of life, from community gardens to using technology remotely for mental health.

Health systems have 4 interconnected “portfolios” in their communities:

- Physical and mental health, which includes addressing food insecurity and social determinants of health in diabetes
- Social and spiritual well-being, which can include creation of a modified care coordinator model that creates a single coordinator for the family. Diabetes educators can be a fit for this model because they are accustomed to addressing multiple issues.
- Community health and well-being, which can include addressing morbidities like childhood asthma through home interventions
- Being communities of solutions, which means using all available levers, such as engaging restaurants, local lawmakers, or environmental activists in health-related causes.

“What can we do?” Stout asked, inviting attendees to sign on to a population health framework called 100 Million Healthier Lives.¹ “All of us can become innovators that improve health, well-being, and equity over the life course, where people live, work, learn, play, and pray,” she said. “Be a change maker. We invite you to not do it alone.” ♦

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AADE CONFERENCE COVERAGE

Update on Diabetes Prevention Program Seeks Progress on Referrals, Reimbursement

Mary Caffrey

MORE THAN 15 YEARS after the first study on the National Diabetes Prevention Program (National DPP), long-term evidence shows that it works, even if the effects wane over time. But before this tool can make a dent in the 30 million individuals with diabetes or 84 million with prediabetes, more doctors must refer people to the program and more payers must fund it, according to panelists who appeared at the 2018 meeting of the American Association of Diabetes Educators, held in Baltimore, Maryland.

The officials represented 3 agencies—the National Institutes of Health (NIH), CDC, and CMS—that have federal key roles in the development and execution of DPP. This year brought a milestone when Medicare began offering DPP to eligible seniors on April 1, 2018. But it appears there are still enrollment hiccups, based on questions after the session from educators for Nina Brown Ashford, MPH, CHES, deputy director for the Prevention and Population Health Group at the Center for Medicare and Medicaid Innovation at CMS.

“We really need to join forces. One of the beauties of the National [Diabetes Prevention Program] is that it unites us,” said Ann Albright, PhD, RDN, director of the CDC Division of Diabetes Translation. The prospects of diabetes and its cost complications are so daunting that Albright predicted people would look back at this period and ask, “Did we stand up and really work to turn the tide?”

Amid concerns that Medicare DPP lacks adequate capacity because many qualified providers did not sign up to become Medicare suppliers, Ashford showed 1 slide that said a map of local suppliers was “coming soon.”

Ann Albright, PhD, RDN, who is director in the Division of Diabetes Translation at CDC’s National Center for Chronic Disease Prevention and Health Promotion, added that there’s been growth in the number of commercial payers willing to cover the National DPP, including Humana, Anthem, Blue Cross Blue Shield of Florida, Blue Shield of California, and Priority Health of Michigan. In addition, 3.4 million state employees and dependents in 18 states now have National DPP as a covered benefit. But state employees in areas with high levels of type 2 diabetes (T2D) and obesity, including Mississippi, Alabama, Arkansas, and West Virginia, lack coverage, according to Albright’s information.

What’s new, according to Judith Fradkin, MD, director of the Division of Diabetes, Endocrinology, and Metabolic Diseases at the National Institute of Diabetes and Digestive and Kidney Diseases, part of the NIH, is that scientists are learning more as the original DPP cohort hits the 15-year mark. The NIH study that appeared in the *New England Journal of Medicine* examined the lifestyle intervention now known as the National DPP in overweight adults compared with 2 groups: one taking placebo and the other taking metformin.

As Fradkin explained, overall results showed that DPP reduced the likelihood of progression to T2D by 58% relative to placebo, beating metformin, which reduced progression by 31%. Although the lifestyle results were clearly

superior among patients 65 years and older, reducing progression to diabetes by 71%, metformin was nearly as effective as lifestyle among young adults and “metformin saves healthcare costs,” she said.

The DPP is a yearlong lifestyle intervention that asks participants to make a series of cumulative lifestyle changes, which are designed to help them alter bad eating habits, increase exercise, and learn coping skills that will last after the program ends. The goal is 7% weight loss and 150 minutes a week of physical activity. Often, the spouse or the family member who prepares the food is invited to participate so that the person trying to avoid developing T2D receives support. Sixteen weekly core sessions are followed by monthly sessions in the classic National DPP; the Medicare version allows beneficiaries to attend a second year of support sessions, although this does not affect a provider’s CDC recognition, Ashford said.

“Diabetes is not inevitable,” Fradkin said. Fifteen years after receiving the DPP, Fradkin said, “The benefits decreased over time but [remained] substantial.” Still, the most recent evidence shows that 55% of those in the lifestyle intervention group and 56% of those in the metformin group had developed T2D mark compared with 60% in the placebo group.

New research is examining the effects of vitamin D on T2D prevention, as well as the effects of metformin on preventing cancer and cardiovascular disease, Fradkin said. One study, RISE, is examining early use of metformin with either insulin glargine or liraglutide in patients with impaired glucose function to preserve B-cell function before patients develop diabetes. “We want to give people as many tools as possible,” she said.

CDC’s elements of success. Albright said there are 4 key elements of success for the National DPP: high-quality programs, demand from participants, referrals from providers, and reimbursement from payers. Despite the numbers of people with prediabetes and the costs on the horizon—Ashford said that diabetes already costs Medicare \$104 billion a year—90% of people with prediabetes don’t know it and providers are just starting to learn that they can send patients with certain blood glucose benchmarks to programs to make lifestyle changes.

“We all really need to join forces. One of the beauties of the National DPP is that it unites us,” she said. The prospects of diabetes and its cost complications are so daunting that Albright predicted people would look back at this period and ask, “Did we stand up and really work to turn the tide?”

Albright said it’s taken time to build the local infrastructure to deliver the National DPP, but it’s getting better. The addition of virtual programs has helped, although Medicare will not cover them—a point not raised by the panelists. The addition of Medicaid 1115 waivers in many states will help reach some of the most at-risk people with prediabetes, as will the start of a National DPP customer service center.

Rules and reimbursement for Medicare DPP. Ashford covered the particulars of how to become a Medicare supplier, and there are several steps: Each coach must have a National Provider Identifier, or NPI number; a health system that already bills for Medicare must separately register as a Medicare DPP supplier; and groups must use the CDC curricula and have at least preliminary recognition. Reimbursement follows an outcomes-based sliding scale tied to attendance and weight loss, with a floor of \$195 and a ceiling of \$670 for participants who may stay in the program as long as 2 years.

She called on attendees to encourage those CDC-recognized providers that are not part of the Medicare program to become suppliers, and she repeated Albright’s call for doctors to “screen, test, and refer” patients to the program. Everyone, she said, can “promote awareness among the Medicare population.” ♦

AADE CONFERENCE COVERAGE

Finding the Golden Opportunity in Becoming a Diabetes e-Educator

Mary Caffrey

THE RISE OF DIGITAL HEALTH alongside the transformation of reimbursement from fee-for-service to value-based care is allowing patients to fully participate in their own care, according to a leader with one of the top digital health companies in diabetes care.

Janice MacLeod, MA, RDN, LDN, CDE, FADE, the director of clinical Innovation for Welldoc, maker of the BlueStar digital therapeutic for type 2 diabetes, described the current landscape when asked what being an “e-educator” meant today, as she joined representatives from other digital health companies for a panel at the 2018 annual meeting of the American Association of Diabetes Educators (AADE).



MACLEOD

“It is actually this convergence in digital therapeutics and the rapid transition to value-based care that together [are] creating this golden opportunity in healthcare transformation,” MacLeod said. “Nowhere is that more needed than in diabetes.”

Like MacLeod, fellow panelists Toby Smithson, MS, RDN, LDN, CDE, a diabetes lifestyle expert for Livongo Health, a diabetes management and coaching tool available through employers and health systems, and Rachel Head, RD, CDE, clinical operations manager for One Drop, a direct-to-consumer tool, described their frustrations in former traditional roles. Trying to get patients what they needed or being unable help them away from a hospital or care setting was “maddeningly frustrating,” said Head, who felt “that I was banging my head against the wall.”



SMITHSON

Traditional reimbursement limits on diabetes education don't meet current standards and fall far short of what patients need, the panelists said. Updated standards, also embraced by the American Diabetes Association, reflect the role that technology can play in giving patients coaching when they are making decisions—when it is most needed.

Smithson pointed to research that shows patients' office visits with physicians don't allow enough time to go over all of the topics they want to discuss. “We need to find other opportunities,” she said.

Moderator Molly McElwee Malloy RN, CDE, clinical services manager for Tandem Diabetes Care, asked the panelists to further compare the effectiveness of digital health and the office visit. MacLeod described how AADE has played a leading role in gathering evidence on this topic, starting with a 2016 working group that led to a 2017 systematic review. “What they found was that these approaches were effective as long as they continued all the critical components,” including:

1. The technology goes beyond tracking and visualizing data and is specific to the individual
2. The technology keeps the person with diabetes connected to the care team
3. The technology fosters 2-way communication

“Diabetes education is not ‘one and done.’ It doesn't just occur every 3 months” at an office visit,” MacLeod said. She highlighted the role of DANA, or Diabetes Advanced Network Access, the AADE's technology and training site that helps members sort through the various categories of technology, from health and wellness apps that are not regulated by the FDA to digital therapeutics, which are under FDA purview.



HEAD

Smithson and Head highlighted stories of real-life technology users who were able to do things like bring down their glycated hemoglobin (A1C) by 2% or avoid going on insulin through a combination of oral medications and coaching.

“Behavioral change doesn't necessarily take place in a 30-minute visit,” said Head.

While digital health can help patients overcome multiple challenges, including the emotional and financial burdens of living with diabetes, geographic access to care, and the burdens on providers, the panelists noted that technology is not without its own barriers. It can be hard to build rapport without eye contact. Although the gap is closing, some seniors still struggle with it.

Reimbursement remains a challenge, too, MacLeod said. If payers are serious about population health management, they should be serious about technology-enabled solutions, the panelists agreed.

“We need to be putting our thoughts and energy into, ‘How can I improve the health of the population in the most cost-effective way?’” MacLeod said. ♦

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AADE POSTER PRESENTATIONS

A Look at Research Presented at the AADE Annual Conference

Mary Caffrey

POSTERS AT THE 2018 American Association of Diabetes Educators (AADE) Annual Conference covered updates on new therapies and technology, strategies to help patients overcome fear of using insulin, and innovations in diabetes self-management education and support. Following are a few snapshots of the research presented at AADE.

Identifying Barriers to Individualizing DSMES

THE 2017 NATIONAL STANDARDS for Diabetes Self-Management Education and Support (DSMES) call for individualizing patient care. Research led by Columbia University's Elizabeth Heitkemper, PhD, RN, shows how this can be challenging, given the diversity of settings where DSMES is offered, including federally qualified health centers (FQHCs). The staff at FQHCs may address multiple health needs and patients may have barriers, including homelessness, that make diabetes self-management difficult.

Heitkemper's project assessed whether following the Precede-Proceed model would help FQHCs quickly identify barriers to personalized DSMES. The cost-benefit framework lets healthcare planners take factors including social determinants of health into account when designing interventions. The first half of the model, the Precede portion, evaluates social, environmental, and educational factors that affect a population before making policy recommendations that might require changing processes in the second part, the Proceed phase.

In this project, 4 FQHCs and 1 private center offered DSMES, and Precede/Proceed allowed investigators who conducted focus groups to identify barriers to using the usual content. Investigators identified "predisposing factors," such as attitudes and knowledge, that participants bring to the DSMES process. The FQHCs bring "enabling factors," such as organizational expertise or certain processes, which can help determine success and are sustained by "reinforcing factors," including the way patients are rewarded.

Through this process, the investigators identified several characteristics unique to FQHCs that called for DSMES to be adjusted for the population they serve:

- Staff likely need more training in shared decision making.
- Keeping patients organized to activate their own healthcare engagement is a priority.
- There is a need to engage community partners.
- Using exemplary patients to act as diabetes "champions" can motivate others.
- Creating support networks is essential.

Investigators also determined that typical educational tools like books may not be best for this population and that new DSMES approaches might be needed. The leadership of FQHCs must be engaged because these health centers typically deal with other health conditions, such as HIV. Ongoing support is needed, and some patients will need to repeat their education program; however, FQHCs have limited resources. ♦

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Recognizing Pharmacists as Providers for DSMES

PHARMACISTS' ACCESSIBILITY SHOULD MAKE them an obvious choice to deliver diabetes self-management education and support (DSMES). But in many states, laws that bar provider status, inadequate Medicaid coverage, and even lack of space keep pharmacists from fulfilling their potential on the diabetes care team, according to research presented at the 2018 American Association of Diabetes Educators Annual Conference.

An overview led by Diana Isaacs, PharmD, of the Cleveland Clinic's Diabetes Center, discussed the potential role of pharmacists as providers, as well as the current barriers that exist. The review noted that pharmacists are the third-most-common profession to hold the certified diabetes educator credential, behind nurses and dietitians. Having pharmacists involved in diabetes care offers many advantages:

As medication options in diabetes expand, it makes sense to involve pharmacists.

- Many people with diabetes take multiple medications, including injectable drugs.
- Pharmacists can help people with diabetes problem solve through management of adverse effects.
- Pharmacists are located in places where DSMES can be delivered, including hospitals and outpatient, managed-care, and long-term care settings.
- The expansion of telemedicine offers opportunities for pharmacists to make medication adjustments to; 1 study reported a 2.0% reduction in glycated hemoglobin (A1C) at 6 months among a rural population.¹
- For all the opportunities for pharmacists to drive better medication adherence and clinical outcomes—improved A1C, lower blood pressure, and lower low-density lipoprotein cholesterol—many barriers remain, the investigators report.

Although 21 states have passed laws granting pharmacists provider status, "lack of provider status" stops pharmacists in other states from offering DSMES or being reimbursed if they do not receive a referral from a physician. Medicaid restrictions at the state level and from private payers can be cumbersome. Reimbursement models also lead to inadequate space and staffing to offer DSMES, the authors found.

The authors called on fellow pharmacists to appeal to state legislators to authorize provider status in the remaining states and improve reimbursement models to boost availability of DSMES.² ♦

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Community Partnerships Lead to More Active Engagement in Diabetes Care

INVESTIGATORS BASED OUT OF Rutgers University in New Jersey showed attendees at the 2018 American Association of Diabetes Educators Annual Conference attendees how community partnerships expanded a hospital-based program offering diabetes self-management education into a community support program. Primarily for people with type 2 diabetes (T2D), the program began in 2014 as part of a community diabetes coalition, according to a poster presented by Alexandra Greci, MS, RD, LDN, CDE, of the Rutgers Cooperative Extension Service, who established a support group in a suburban New Jersey community near a regional hospital.

In 2015, the county's Division of Senior Services dictated that the support group, which had started as a short-term special nursing student project, continue due to participant demand. The support group connected patients to community partners, increased referrals between community-based and clinical services, and improved management skills, especially meal planning. A second group began meeting in the evening at a local supermarket to be more accessible for those who work during the day. This site held events such as in-store cooking demonstrations, visits from pharmacists, and diabetes-focused "tours" to help people shop for healthy items.

Government agencies advertised the support groups' availability through the county website, social media, and newsletters.

Greci's report showed that some patients with diabetes who took part in the hospital's self-management education program needed ongoing support and reminders of what they had learned. She reported several qualitative findings, including statements from participants:

"I was in denial about my diabetes. I forgot what I read. Repetition when necessary helps me remember and practice what's important."

"You are not alone! Take control of your life. It's your diabetes. Support is available."

"I would tell people with diabetes to go to a support group. I knew about calories, but I was overwhelmed about carbs." ♦

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Lack of Time, Transportation Limit Diabetes Education, Support

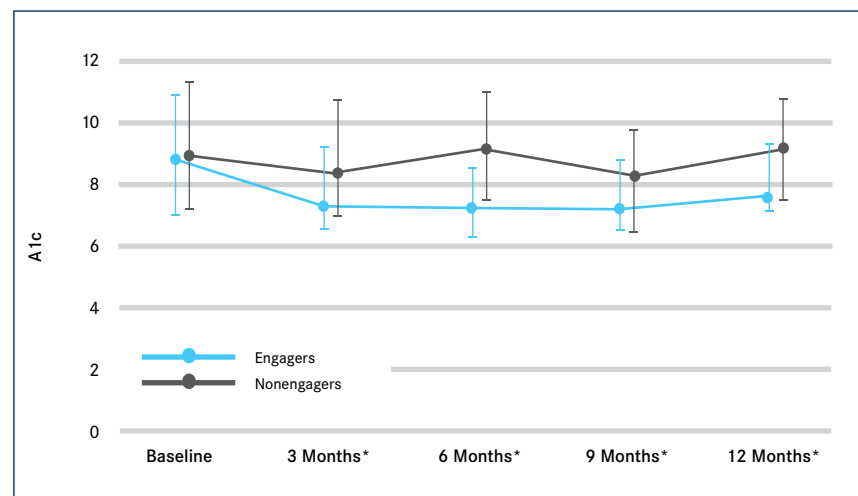
PEOPLE WHO RECENTLY RECEIVED diabetes diagnoses are most receptive to self-management education and support (DSMES), and the American Diabetes Association recommends that this group receive education regarding diabetes management. But not everyone is receptive to instruction, and a poster presented at the American Association of Diabetes Educators Annual Conference discussed the chief reasons: lack of time and transportation.

Investigators from sites in Indiana—Eskenazi Health, Purdue University College of Pharmacy, and Butler University College of Pharmacy and Health Sciences—evaluated the differences between 2 groups of patients who were offered DSMES after receiving diabetes diagnoses in 2014. Through phone calls, the team interviewed 129 engagers, defined as having taken at least 2 classes, and 40 nonengagers, who took 1 class or none. Patients with new diagnoses had until October 2016 to take classes.

The engagers had significantly greater drops in glycated hemoglobin than the nonengagers (**FIGURE**). Phone interviews revealed that nearly two-thirds of the nonengagers had barriers that had nothing to do with the curriculum; 16 of 40 reported time conflicts, and 12 reported transportation issues. When asked what changes they would make to the program, 19—nearly half—said they would make no changes, whereas 12 said they would change the schedule.

Digital therapeutics such as Welldoc (see **cover story**) and digital providers such as Omada Health, which now offers programs to help manage type 2 diabetes, can help patients get assistance with disease management and overcome the logistical challenges uncovered by the investigators. ♦

FIGURE. Secondary Outcomes. Hemoglobin A1C (months after start of DSMES) classes)



A1c indicates glycated hemoglobin; DSMES, diabetes self-management education and support.
*P value <.05

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Digital Coaching System Improves Diabetes Management, as Measured by PROs

A STARTUP BASED IN Birmingham, Alabama, reports positive results from users of its digital coaching tool for patients with type 2 diabetes (T2D), according to a poster presented at the American Association of Diabetes Educators (AADE) Annual Conference.

Pack Health developed its the system on the Salesforce platform, which allows people with T2D to enroll in the program online, be matched with a health advisor, and get connected to a curriculum aligned with the person's "goals and barriers," according to the poster. Like other digital solutions, the Pack Health system sends emails and texts with reminders about medication or offering guidance on achieving health goals, such as losing weight.

The platform is not used just for diabetes management; Pack Health also offers programs related to diabetes prevention, dyslipidemia, hypertension, and congestive heart failure, as well as pulmonary conditions, autoimmune disorders, and cancer treatment.

Results reported at AADE were based on a project that tracked patient-reported outcomes (PROs) from 1641 users over 12 weeks, as measured by the Patient-Reported Outcome Measurement Information System (PROMIS) Global-10, the Center for Adherence Support Evaluation adherence index, and the Diabetes Distress Scale. Pack Health also collected a Net Promoter Score based on a scale of -100 to 100 that measures customers' willingness to recommend the product to others. Researchers also measured patient-reported glycated hemoglobin (A1C).

Authors noted the following:

- Users reported improvements in overall health, based on an increase from 45 to 48.8 on the PROMIS physical health scale and from 47.6 to 51.7 on the PROMIS mental health scale ($P < .001$). »

- Users reported a jump in medication adherence from 65% to 84% ($P < .001$); of note, many health economics studies define medication adherence at 80%.
- Moderate to high diabetes distress fell from 63% to 47% ($P < .001$).
- Average A1C fell from 8.4% to 7.4% ($P < .001$). Although A1C was patient-reported for this analysis, Pack Health officials said in an email to *Evidence-Based Diabetes Management™* that other studies have used testing to validate A1C results.
- The Net Promoter Score was 67. ♦

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Burton BS, Srivastava U, Rasulnia M, Patel D. The development of a digital coaching program for the management of type 2 diabetes. Presented at: the 2018 AADE Annual Conference; August 17-20, 2018; Baltimore, Maryland. Poster IP10.

iGlucose SmartMeter Study Shows Improved Engagement, Testing Frequency

PEOPLE WITH DIABETES WHO used a blood glucose meter that provides real-time sharing of information tested more frequently and reported being more engaging in managing their own care, according to the results of a 90-day study. The findings appeared on a poster at the 2018 American Association of Diabetes Educators Annual Conference.

The iGlucose SmartMeter, which uses cellular technology and looks like a small phone (**FIGURE**), allows patients to place a test strip at the tip of the device. A glucose meter takes a blood sample and instantly records the results, sending them straight to clinicians, caregivers, and designated family members. If the person with diabetes is out of range, an electronic message encourages making adjustments, such as consuming fruit or juice to raise levels.

The poster detailed results on 60 users—including those with both type 1 and type 2 diabetes—from the Washington, DC, area and showed the following:

- Ninety-two percent of participants said they had more valuable in-office clinician visits after sharing their data.

FIGURE. Sample of iGlucose SmartMeter



Results from a 90-day study were presented at the American Association of Diabetes Educators' annual conference.

- Eighty-nine percent reported that checking their blood glucose levels was less of a hassle.
- Sixty-seven percent reported feeling less isolated while using the system. Clinicians who received blood glucose data with the system reported the following:
 - Seventy percent of patients who had out-of-range data needed closer monitoring; of these, 26% were deemed at risk due to below-range trends—meaning they were at risk of hypoglycemia—and were able to get immediate intervention.
 - Sixty-five percent of patients received additional education or follow-up based on above-range trends. ♦

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AADE NEWS

Helmsley Charitable Trust Awards AADE \$2.6M for Technology Hub

AJMC® Staff

THE LEONA M. AND Harry B. Helmsley Charitable Trust awarded the American Association of Diabetes Educators (AADE) \$2.6 million for Diabetes Advanced Network Access, or DANA, a technology platform that gives AADE members a single resource for information about new devices, technology updates, mobile app reviews, and training. The concept for DANA, a first-of-its-kind resource for healthcare professionals, arose after AADE identified a gap through a member survey, according to a statement from the organization.¹ The results revealed that 91% of members said they would recommend a new diabetes technology if they learned about it, but 85% said they did not have a central resource to gain access to information.

“It’s rare in this age that we can create something completely new that addresses such a large gap in information,” Donna Ryan RD, RN, MPH, FADE, 2018 AADE president, said. “Thanks to support from Helmsley, we will be able to

continue to enhance DANA and find more ways to serve diabetes educators and others who have expressed such a clear need for this kind of resource.”

DANA, which is free to AADE members, has 5 elements:

1. A product clearinghouse offers balanced information and specifications on more than 200 products, including links to manufacturers’ websites.
2. An education section connects users to on-demand and live courses and webinars.
3. An innovation section includes technology news, polls, market research, and testing.
4. The resources area gives educators access to peer-reviewed publications and guidelines regarding the technology landscape, as well as a discussion board on technology.
5. App reviews give details on individual products for diabetes management, fitness, and lifestyle. Each is reviewed based on AADE7 self-care behavior it addresses, as well as ease of use. ♦

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AADE awarded more than \$2.6 million by the Helmsley Charitable Trust in support of DANA, a first-of-its-kind technology curation hub for healthcare professionals [press release]. Chicago, IL: American Association of Diabetes Educators; August 23, 2018. [diabeteseducator.org/news-and-publications/press-releases/press-releases/2018/08/23/aade-awarded-more-than-\\$2.6-million-by-the-helmsley-charitable-trust-in-support-of-dana-a-first-of-its-kind-technology-curation-hub-for-healthcare-professionals](http://diabeteseducator.org/news-and-publications/press-releases/press-releases/2018/08/23/aade-awarded-more-than-$2.6-million-by-the-helmsley-charitable-trust-in-support-of-dana-a-first-of-its-kind-technology-curation-hub-for-healthcare-professionals). Accessed September 4, 2018.