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### In Brief

Diabetes educators have valued and unique skills in the art and science of diabetes management that are beneficial in the delivery of shared medical appointments (SMAs). These contributions augment and expand the medical model of intervention in chronic disease because psychosocial concerns and behavior change are integral to successful outcomes. This article reflects on lessons learned from a multidisciplinary team of diabetes health care professionals with a strong diabetes education background who have been delivering comprehensive diabetes care for more than 6 years in an SMA model.

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## Lessons Learned from Inter-Professional Diabetes Educators in Diabetes Shared Medical Appointments

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Diabetes is a chronic disease that affects patients' physical, social, and psychological experiences. A comprehensive patient-centered approach can be used to address the multiple needs of patients with diabetes while increasing patient satisfaction and maximizing successful outcomes.

Our shared medical appointments (SMAs), conducted at a large Veterans

Affairs (VA) medical center, are designed to provide patient-centered care in which patients are encouraged and offered support to take an active role in their own health care. An electronic registry of enrolled patients is used to identify high-risk patients with a diagnosis of diabetes and one or more of the following: A1C > 9%, systolic blood pressure > 160 mmHg,

and LDL cholesterol > 130 mg/dl.<sup>1</sup> These patients are selected because of their high-risk status and the fact that they have demonstrated failure to achieve treatment targets with usual care modalities.

Intensive follow-up through SMAs offers these high-risk patients more potential benefits and provides more resources than patients meeting their therapy goals may need. The identified patients are invited to participate in group appointments that augment standard care. One-on-one and 30-minute SMA group sessions are facilitated by a behavioral psychologist. Group discussions focus on barriers to self-management, support planning, and change talk (motivational interviewing). Safety issues such as hypoglycemia prevention and treatment and education regarding treatment targets for blood glucose, lipids, and blood pressure are also discussed at each visit. While group sessions are taking place, participants individually meet briefly with a clinical pharmacist or a nurse practitioner for medication titration. Participants in the SMAs have achieved improved cardiovascular risk reduction compared to those receiving standard care.<sup>1</sup>

### Case study, part 1

*Mr. S. is a 52-year-old patient with diabetes of 11 years' duration who has lost his private health insurance. He works various short-term manual labor jobs and is currently working evenings. He has some old prescriptions for his blood pressure and diabetes that he takes when he can afford to buy them. His medications include glipizide, 5 mg in the morning and 10 mg at dinner; metformin, 1,000 mg twice daily; lisinopril, 5 mg daily; and fosinopril, 5 mg daily. Simvastatin, 20 mg at bedtime, is sporadically refilled. His blood pressure is 121/78 mmHg, LDL cholesterol is 140 mg/dl, and A1C is 11.7%. Mr. S. received an invitation to attend a diabetes SMA.*

### Shared Educator Skills

Diabetes educators, regardless of their professional discipline, contribute both common and unique skill sets to the diabetes care team. The American Association of Diabetes Educators defines diabetes educators as "health care professionals who have experience in the care of people

with diabetes and have achieved a core body of knowledge and skills in the biological and social sciences, communication, counseling, and education."<sup>2</sup> Diabetes educators use the following skills and knowledge when working with participants in SMAs:

- Attention to the psychosocial influences affecting diabetes management
- Attention to detail and troubleshooting skills regarding insulin delivery technique
- Understanding of adult learning, self-management, and behavior-change principles
- Advanced understanding of diabetes management
- Attention to low literacy/numeracy skills
- Understanding of common barriers to successful treatment<sup>3</sup>

The diabetes educators working in our SMAs provide a consistent message to patients with diabetes that they can control their own health behaviors and work with providers to optimize their well-being and take an active role in mitigating long-term complications.

Three of the five providers in our SMAs are certified diabetes educators (CDEs). To become a CDE, diabetes educators must have worked a minimum of 2 years in a qualifying health care discipline, have a minimum of 1,000 hours of diabetes self-management education (DSME) experience, and pass a standardized exam.<sup>4</sup> Barlow et al.<sup>5</sup> surveyed diabetes educators across the United States and found that CDEs were more likely than non-certified diabetes educators ( $P < 0.001$ ) to deliver more complex services such as medication management (e.g., initiating insulin, providing insulin pump training, initiating multiple daily insulin injections, and adjusting diabetes medications).

One of the main goals for SMAs in our facility is to overcome clinical inertia in advancing medication management, and the CDEs on our team help us to achieve that goal. Our providers augment primary care through the SMAs by offering a more intensive approach to medication management and adjusting treatment to achieve diabetes control targets.

### Case study, part 2

*When Mr. S. attended our SMA, he was among other patients with diabetes who helped him recognize*

*that taking care of his diabetes is important, even during financially difficult times. The psychologist assisted participants in exploring common barriers and encouraged them to share potential coping solutions with the group. The dietitian helped him understand that drinking excess juice and soda contributed to his elevated blood glucose and explained what beverages he could choose that would not raise his blood glucose. The 9-inch plate method and benefits of consistent carbohydrates were reviewed. Prevention and treatment of hypoglycemia was reviewed. The sodium content of foods and its link to high blood pressure was also discussed. During the group sessions, he reviewed his own blood pressure, lipid, and A1C test results and compared his values to treatment goals.*

### Unique Educator Skills

The American Diabetes Association has published national standards for DSME that state that "DSME has been shown to be most effective when delivered by a multidisciplinary team with a comprehensive plan of care."<sup>6</sup> Our SMA team is composed of members from various professional disciplines to provide comprehensive diabetes management expertise.

The nurse practitioner educator offers years of experience in complex medical management of diabetes. She is called in to consult and collaborate on difficult renal and hepatic issues. Additional duties include:

- Titration of basal and bolus insulin regimens for patients with type 1 diabetes
- Performing physical assessments to determine whether conditions such as foot ulcers or heart failure are worsening or improving
- Contributing a broad scope of health care knowledge, including matters related to medication adherence and insulin initiation and titration
- Coaching in self-management and health promotion

The pharmacist educator also has a unique set of knowledge, skills, and abilities that blend well within the multidisciplinary diabetes SMA team. The pharmacist conducts medication reconciliation during the SMA. One study<sup>7</sup> found a 98% reduction in medication discrepancies when pharmacists conducted medication

reconciliation during the admission process at a VA Medical Center, which confirmed prior studies. This service has been shown to reduce the potential for medication errors. The Joint Commission considers medication reconciliation an important patient safety goal when providing medical care.<sup>8</sup> Additional duties undertaken by the pharmacist include:

- Understanding and interpreting drug pharmacokinetic and pharmacodynamic properties
- Providing patient information about medications and potential side effects
- Contributing expertise in chronic disease management approaches
- Considering facility-specific drug formulary options for disease management
- Routinely employing strategies to alleviate adverse drug effects to retain medication therapies that have proven morbidity and mortality prevention data
- Acting as a resource for providers regarding drug-drug interactions, drug-supplement interactions, and over-the-counter products, thereby preventing potential prescribing errors

Many of our higher-risk patients in the SMAs have individual follow-up appointments with the pharmacist. These additional visits ensure appropriate medication monitoring, from rechecking basic metabolic profile results after ACE inhibitor initiation to monitoring pulse and blood pressure after  $\beta$ -blocker initiation.

### Case study, part 3

*The pharmacist saw Mr. S. in the group visit and discovered during medication reconciliation that he has two different prescriptions for ACE inhibitors, which could cause deleterious electrolyte imbalance or potentially increase serum creatinine. His blood pressure medications were reviewed and corrected. After noting that Mr. S. omits doses of metformin because of gastric distress, the pharmacist initiated sustained-action metformin. Basal insulin was ordered because of an average blood glucose level > 200 mg/dl. Repeat fasting laboratory testing was ordered for lipids, basic metabolic panel, microalbumin-to-creatinine ratio, A1C, and a liver function panel. Mr. S. was changed to a formulary ACE inhibitor and*

*formulary basal insulin to decrease his out-of-pocket expense for drug copayments.*

The registered dietitian (RD) educator works with participants to help them gain an understanding of how excess carbohydrates, sodium, and fat in the diet contribute to poor glycemic control and increase cardiometabolic risk factors. Discussions are directed toward healthy meal planning and practical application of skills such as reading food labels, making healthier food choices when eating out, and using simple cooking techniques to meet goals.

An important topic covered at each SMA is the prevention, detection, and appropriate treatment of hypoglycemia. The dietitian reviews how missing a meal, participating in unplanned activity, and consuming alcohol might negatively affect blood glucose. The dietitian also discusses the balance between carbohydrate intake, activity, and medication to prevent hyperglycemia. This group encounter with the dietitian helps alleviate patients' fears that they are just going to be told what they "can't" eat and encourages participants to schedule a one-on-one visit with the dietitian to individualize their meal plans as needed.

The health psychologist's role in the SMA is vital to addressing barriers to treatment. Our entire staff is trained in motivational interviewing; however, the psychologist is truly the expert in this technique and models this effective form of communication. Additionally, his expertise in group process is essential to facilitating meaningful discussions among patients. The psychologist also identifies patients who need one-on-one evaluation for comorbid depression or addiction issues.

The registered nurse (RN) educator provides case management, education about insulin and blood glucose meter use, and follow-up care. Our RN educator sees individual patients for case management after the group as the other providers do. She presents patient findings to the nurse practitioner or pharmacist for medication titration orders as needed. Additionally, she is onsite and available to provide insulin instructions for patients starting basal insulin or adding bolus injections. The RN is the constant provider in the clinic

and can schedule follow-up visits or phone calls with patients who have just started insulin and may need therapy adjustments. If a patient misses a group session, the RN calls for individual case management follow-up.

### Case study, part 4

*The RN educator is available after clinic to instruct one or more patients like Mr. S. about insulin injections and self-monitoring of blood glucose. She teaches proper injection technique by demonstration and reviews the mechanism of action, peak, and duration of the specific insulin being initiated. She schedules a clinic follow-up appointment to review Mr. S.'s lipid results, during which she will have the pharmacist initiate statin therapy if needed. She also scheduled him for a routine follow-up appointment for primary care.*

### Lessons Learned

We have found that it truly does "take a village" to support patients with diabetes on their health care journey. A multidisciplinary team of diabetes educators collaborating with each other during SMAs can expand their own skills and scopes of knowledge. This improves and strengthens best practices in diabetes care.

Patients such as Mr. S. in our case study are the ultimate beneficiaries when diabetes educators are present in SMAs. They receive necessary medical care, but with the enhanced benefit of a holistic, patient-centered approach. Their treatment is adjusted to their life, and they are actively involved in determining their own care plan and goals. Many patients believe the support from the team provides an important refresher to their knowledge of diabetes, as well as providing an environment to discuss the challenges of living with a chronic disease that requires a commitment to self-management.

An RN initiates insulin therapy the same day a decision to start therapy is reached to prevent unnecessary delays. Follow-up phone calls are also provided by the RN for continuity and to ensure safety after insulin initiation. The nurse practitioner and pharmacist provide medication management. For error prevention and safety, the pharmacist pays particular attention to medication reconciliation. The RD helps patients understand the effects of food and physical activity on blood

glucose, blood pressure, and lipid control. Additionally, the dietitian emphasizes appropriate treatment of hypoglycemia.

Most importantly, our team has learned that educators with varied expertise contributing to SMAs have enhanced both patients' and providers' success and satisfaction in managing diabetes. The providers realize that we share a common set of core skills and knowledge, but also that each of us has a unique skill set to contribute. When we work together synergistically in the SMAs, we reinforce and augment the care provided to our patients.

#### Case study, part 5

*After attending six SMAs throughout the year, Mr. S. is now taking all of his medications regularly. His A1C has decreased to 6.9%, and his LDL cholesterol is 62 mg/dl. He is tolerating the sustained-action metformin well. Mr. S. has potentially many more healthy years ahead of him now as a result of participation in the SMAs and the dedication of multiple diabetes educators working together with him to improve his diabetes care.*

## References

- <sup>1</sup>Kirsh S, Watts S, Pascuzzi K, O'Day ME, Davidson D, Strauss G, Kern EO, Aron DC: Shared medical appointments based on the chronic care model: a quality improvement project to address the challenges of patients with diabetes with high cardiovascular risk. *Qual Saf Health Care* 16:349–353, 2007
- <sup>2</sup>American Association of Diabetes Educators: The scope of practice, standards of practice, and standards of professional performance for diabetes educators [article online]. Available from [http://www.diabeteseducator.org/export/sites/aade/\\_resources/pdf/research/ScopeStandards\\_Final2\\_1\\_11.pdf](http://www.diabeteseducator.org/export/sites/aade/_resources/pdf/research/ScopeStandards_Final2_1_11.pdf). Accessed 23 March 2012
- <sup>3</sup>American Association of Diabetes Educators: *The Art and Science of Diabetes Self-Management Education Desk Reference*. 2nd ed. Chicago, Ill., American Association of Diabetes Educators, 2011
- <sup>4</sup>National Certification Board for Diabetes Educators: Eligibility requirements 2012. Available online from <http://www.ncbde.org/eligibility.cfm>. Accessed 26 January 2012
- <sup>5</sup>Barlow S, Crean J, Heizler A, Mulcahy K, Springer J: Diabetes educators: assessment of evolving practice. *Diabetes Educ* 31:359–372, 2005
- <sup>6</sup>American Diabetes Association: National standards for diabetes self-management education. *Diabetes Care* 35 (Suppl. 1): S101–S108, 2012

<sup>7</sup>Strunk LB, Matson AW, Steinke D: Impact of a pharmacist on medication reconciliation on patient admission to a veterans affairs medical center. *Hosp Pharm* 43:643–649, 2008

<sup>8</sup>Joint Commission: 2012 national hospital patient safety goals [article online]. Available from [http://www.jointcommission.org/assets/1/6/2012\\_NPSG\\_HAP.pdf](http://www.jointcommission.org/assets/1/6/2012_NPSG_HAP.pdf). Accessed 26 January 2012

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