Enhancing the Role of Medical Office Staff in Diabetes Care and Education

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Providing education for the 18.8 million people who have been diagnosed with diabetes in the United States is a challenge. Although there are now more than 17,000 certified diabetes educators (CDEs), only about one-third to one-half of the population with diabetes reports having ever received any type of formal diabetes education.[1,2] In addition, it is well recognized that, to maximize access to diabetes education, it needs to be available in convenient, community-based settings such as within primary care offices. Enhancing the role of medical office staff (MOS) in primary care to provide additional support for diabetes-related care and education activities can have beneficial results for patient outcomes and physician satisfaction.

Consider these facts:

- More than 90% of adults with diabetes are cared for by their primary care providers (PCPs).[3] Regardless of the settings in which PCPs work, they rarely have adequate time to provide necessary education to patients with diabetes.
- In a national survey of diabetes educators,[4] only 13% responded they worked in a "physician office" as their primary practice setting providing diabetes education.

The purposes of this article are to:

- Describe gaps in education in the primary care setting, as evidenced by both quantitative and qualitative research
- Describe an office-based program for training MOS to increase their basic understanding of, confidence in, and skills regarding diabetes, as well as to implement interventions to improve office systems
- Suggest specific ways in which PCPs can make small practice changes, particularly related to enhancing the role of MOS to improve care and outcomes

Alternatives for Provider Assistance

In 2010, the Joslin Diabetes Center collected and analyzed data to better understand the challenges and opportunities for improving diabetes care and education in primary care settings from the perspective of both patients and providers. Quantitative (surveys) and qualitative (focus groups) data were obtained. Analysis of survey data from 266 PCPs and 1,321 patients yielded the following insights:

- Sixty-two percent of the PCPs surveyed felt that they do not have enough time with patients during diabetes visits.
- Only 5.8% of patients and 6.0% of PCPs identified "diabetes educator" as a role of PCPs.
- Thirty-seven percent of PCPs reported that there is a lack of adequate support staff to teach about diabetes.
- More than half of the PCPs (58%) agreed that training office staff to help more in certain aspects of diabetes care and education would be helpful.
- PCPs reported that they do much of the education themselves; 61.7% reported that they are the primary person to give general diabetes education for newly diagnosed patients, and 65.0% responded that they provide ongoing diabetes education.

Ideally, and according to standards of medical care,[5] patients with newly diagnosed diabetes should be referred for both diabetes self-management education (DSME) and medical nutrition therapy (MNT). Instead of expecting patients to seek education services outside of their medical home, a variety of approaches have been described that effectively bring needed diabetes information and education services to primary care settings. For example, researchers at the University of Pittsburgh Diabetes Institute successfully implemented a program that involved placing part-time diabetes educators into primary care practices for specific "diabetes days" when office staff could schedule DSME appointments.[6]

Numerous programs employing community health workers (CHWs) have been introduced to facilitate diabetes self-management within primary care.[7,8] The use of CHWs has been particularly effective in underserved areas and those with ethnically diverse populations.[9] CHWs play an important role in helping to provide ongoing support, a crucial element of diabetes edu-

cation as outlined by the national standards of DSME.[10]

CHWs can also be used effectively to draw attention to patients' key diabetes biomarkers (e.g., A1C, blood pressure, and LDL cholesterol) and thus facilitate dialogues between patients and providers that result in action.[11,12] In one community-based education project,[11] only 15% of 221 participants with diabetes demonstrated understanding or "awareness" of the A1C test (could recall a reasonable A1C value and give broad interpretation of the significance if it was above or below target). This awareness improved significantly compared to control subjects after delivery of targeted diabetes messages by CHWs.

Thus, as roles of nontraditional health care providers have been effectively increasing, and while the need for diabetes education in primary care settings remains high, it is logical to explore additional methods and office personnel who can work in concert with PCPs to ensure the delivery of accurate diabetes information and ongoing support.

Increasing MOS Roles in Diabetes Care

MOS (typically including medical assistants, licensed practical nurses, receptionists, laboratory personnel, and sometime nurses and other midlevel professionals) represent an often underutilized, yet readily available resource to assist the diabetes care team in providing basic education and self-management support in primary care settings.[13] Training in diabetes for MOS is often limited, which potentially affects both their confidence and skills. For example, one of the most important functions of diabetes care is measuring blood pressure. However, office-based blood pressure measurement is often inaccurate. Office-based blood pressure readings more often end in zero, resulting in the misclassification of patients and corresponding over- or under-treatment.[14] Part of this inaccuracy may be based in a lack of knowledge of the importance blood pressure plays in diabetes management.

Additionally, there are many other tasks associated with diabetes care and adherence to clinical guidelines that are not required to be performed by PCPs. Offices using flow sheets or templates have demonstrated improved adherence to clinical guidelines.[15] Checklists of quality measures, including whether routine laboratory tests or examinations have been performed and whether recommended counseling services have been provided, can be maintained by MOS either in the form of diabetes flow sheets in paper charts or corresponding templates in electronic health records (EHRs). With minimal training, MOS can effectively reduce the burden of such tasks on PCPs, help to ensure that high-quality diabetes care is delivered, and increase patient awareness of the importance of this care. Such training can empower MOS to be active members of the health care team.

A 2006 article[16] reported on the effectiveness of an intervention with MOS that involved CDEs delivering a 2-hour training program with follow-up ongoing support provided to 1,370 MOS in basic diabetes care and education. This initiative demonstrated a variety of improvements in both patients' confidence in self-care and A1C levels. In addition, participation in the program significantly and consistently increased MOS confidence in their ability to help patients manage their diabetes. The success of this project led to another pilot study, which is reported here.

Journey in Caring Pilot Study

The Journey in Caring (JIC) initiative involved training MOS to assist with diabetes-related care tasks. At least one MOS was designated as a "diabetes champion" at each site to assist in the implementation and maintenance of the program. Materials and a 2-hour training curriculum were designed to improve MOS knowledge of diabetes, emphasize practical office procedures such as accurate measurement of blood pressure, and encourage the use of diabetes flow sheets based on American Diabetes Association clinical practice guidelines.[5] A set of basic diabetes education tear-sheets and a "Diabetes Care Plan" handout that could be individualized for each patient were also provided. Based on our work demonstrating the importance of helping increase patient awareness of diabetes biomarkers, emphasis was placed on helping MOS understand the rationale for these laboratory tests and how to talk about them to patients in the office setting. CDEs trained in program delivery implemented the programs and provided the training and follow-up to each office.

During the pilot phase, data were collected from 57 offices and 244 MOS. MOS completing the training not only showed significant improvements in knowledge and confidence, but also were more likely to talk with patients about the importance of dilated eye exams (26.6 vs. 43.0%, $P < 0.001$), foot care (39.8 vs. 59.4%, $P < 0.001$), and microalbumin tests (53.1 vs. 61.7%, $P < 0.001$). In addition, as shown in Figure 1, the pilot intervention showed that patients whose medical records incorporated flow sheets were more likely to experience an A1C reduction than patients whose medical records did not use diabetes flow sheets ($n = 56$, odds ratio 3.67, $P = 0.025$).[17]

Program Expansion

After a successful pilot test, JIC was extended nationally from 2009 to

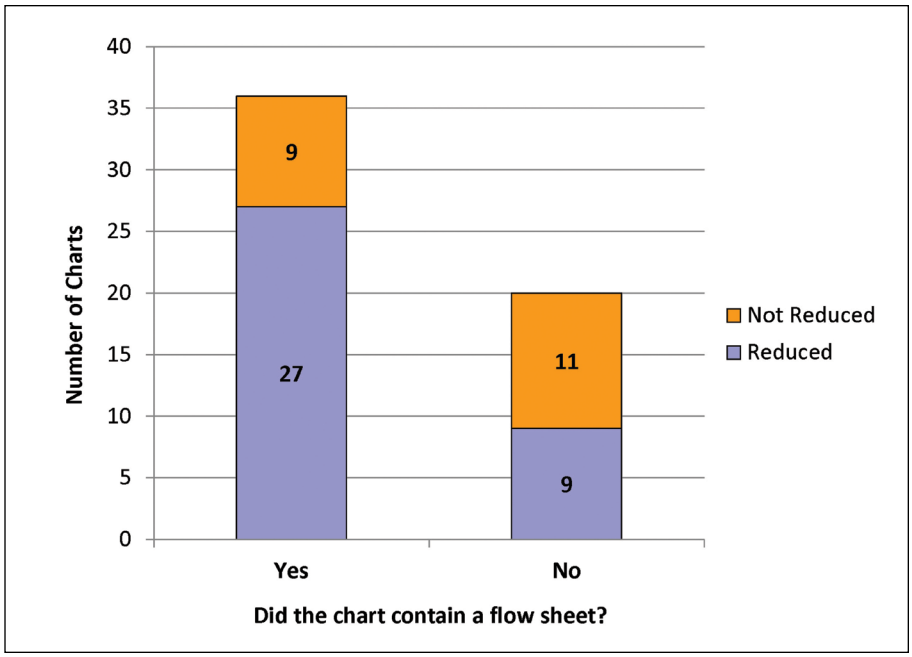

Figure 1. Patients whose charts incorporated flow sheets were more likely to experience A1C reduction than those whose charts did not include a flow sheet.

2011. The initiative was implemented in 189 medical offices reaching 1,623 MOS, of which the largest percentage were medical assistants (44%) and the remainder included a wide range of office employees including clinical (licensed practical nurses) and non-clinical (receptionists) staff. MOS team members who completed training received attendance certificates, and one individual earned the title of "diabetes champion" for his or her office.

Physician satisfaction with the program was high, and 96% of the 82 physicians who completed an evaluation survey reported improvement in MOS knowledge and skills related to diabetes care. MOS knowledge and confidence increased (particularly in the areas of meal planning and physical activity counseling), and there was a significant increase in the frequency with which MOS talked with patients about basic medical aspects of diabetes, self-monitoring of blood glucose (SMBG), meal planning, and exercise (Table 1).

Significant improvements were also shown in a number of diabetes office systems activities. Offices were assessed by CDEs and MOS for whether they performed specific activities "not at all," "somewhat," or "well" at the beginning of the program and again 6–8 weeks after the program. The number of offices that used a diabetes flow sheet "well" increased from 37% before the program to 63% after the program. Offices that were successful at making diabetes educational resources (including the handouts provided as part of the program) available to patients improved from 48 to 85% (Figure 2).

Training MOS improves their confidence in the quality of their interactions with patients, which may ultimately translate into clinical benefits for patients. Training also results in improvements in office systems by improving documentation, communication, and consistency of messages to patients. A wait list–controlled study (in which randomized intervention offices receive the program immediately, whereas control offices wait for 6 months before receiving the program) is underway with a payer provider network to compare biometric outcomes, health care utilization, and costs between patients at offices that receive the JIC initiative and those at offices that do not have the program.

Takeaway Messages for PCPs

1. Complete an office gap analysis and create an action plan.
The diabetes office assessment provided in Table 2 can help PCPs identify gaps in care and areas in which to initiate quality improvement initiatives. Develop a plan for what your office might do to enhance diabetes care and education and to specifically enhance the role of MOS.

Table 1. MOS Survey Results for JIC Pilot and National Program Expansion

	Pilot		National
MOS reporting that they were "satisfied" or "very satisfied" with how much they know about . . .	**Pre-program**	**Post-program**	**Post-program***
Basic medical aspects of diabetes (%)	52.4	95.3	90.8
SMBG (%)	68.8	96.9	91.7
Diabetes and nutrition/meal planning (%)	30.2	85.2	85.4
Diabetes and physical activity/exercise (%)	41.7	92.1	89.6

**After successful outcomes were demonstrated in the pilot test, only post-program data were collected during the national rollout for scalability.*

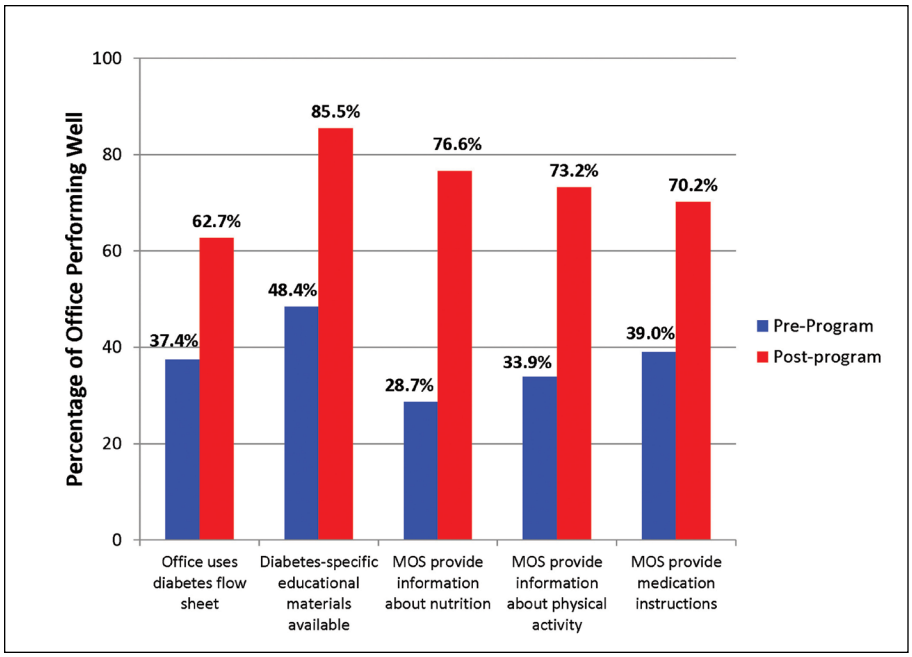

Figure 2. Offices that performed specific diabetes systems activities "well" before and after the JIC intervention.

Excellent free resources are available through the National Diabetes Information Clearinghouse (www.ndep.nih.gov). Other organizations such as the Joslin Diabetes Center also offer a wide variety of downloadable free resources for both office improvement and patient education. (See the Joslin Professional Education Consortium developed for PCPs at www.jpec.joslin.org.)

Consider applying for recognition for meeting minimum quality standards through the National Center for Quality Assurance diabetes recognition program (www.ncqa.org).

2. Plan routine diabetes staff training programs.
All members of the office practice team can benefit from periodic trainings and discussions about diabetes care. Dispel their misunderstandings. Many of them believe the same myths about diabetes that patients do, especially regarding the use of insulin. Although there are some online programs available for this purpose,[18] such education is best when followed by team discussion to ensure that interpretation of the material is aligned with office practices. Discuss ways MOS can be more involved in sharing diabetes resources, providing ongoing support, or assisting in preparing patients for visits, including:

- Asking patients to think ahead about the diabetes questions they want to ask
- Reminding patients to complete laboratory work and eye and dental exams before their office visit
- Asking patients to encourage the eye and dental offices to send reports directly to their PCP
- Reminding patients that they will be asked to remove their shoes and socks for foot examinations
- Ensuring that pertinent test and examination results are recorded in patients' medical records, either on a diabetes flow sheet or the appropriate EHR templates

3. Focus on knowing the numbers.
When MOS know the targets for A1C, blood pressure, LDL cholesterol, microalbumin, and estimated glomerular filtration rate, they can reinforce these for patients and have basic discussions when prepping patients for their medical visits. Ideally, obtaining point-of-care results, especially for A1C, can facilitate timely and relevant discussions.

When working with MOS, emphasize the importance of recording accurate height, weight, and blood pressure results (not rounding to the nearest 5 or 0) and sharing those results with patients. MOS are not expected to discuss the interpretation of the results with patients, but rather should encourage patients' awareness of the importance of such tests and prepare patients to discuss their results with their PCP during office visits.

4. Designate a diabetes champion.
Although the entire medical office team needs to be prepared to handle patients with diabetes, it is often helpful when one person is given recognition and responsibility related to diabetes activities. For example, the diabetes champion can be in charge of organizing diabetes education materials, stocking an insulin initiation teaching kit, and identifying local resources for diabetes education and support that can be used by other MOS members.

5. Identify community and other support resources.
Encourage the diabetes champion, with input from the entire team, to develop and maintain a list of resources, including diabetes education programs, diabetes educators, registered dietitians with expertise in diabetes care, diabetes support groups, insulin pump trainers, mall walking programs, weight control programs, YMCA prevention programs, online programs, and helpful smartphone applications. Online resources are available that organize local diabetes information into one

Table 2. PCP Office Assessment Tool for Diabetes Support Activities

Assess each diabetes activity and place a check mark (✓) in first column if present. Check at least two goals that are areas for improvement. Re-assess each diabetes activity in 3–6 months and place checks in the last column if improved.

Equipment and Procedures	**Assess**	**✓ If goal**	**Re-check**
Identify and mentor diabetes champion		☐	
Point-of-care A1C devices		☐	
Point-of-care lipid devices		☐	
Tape measures for waist circumference measurement		☐	
Monofilaments for foot checks		☐	
Culturally and linguistically appropriate educational materials		☐	
Diabetes flow sheet or EHR templates for completion of diabetes clinical guidelines		☐	
Computer and printer for meter, continuous glucose monitor, and insulin pump data downloads		☐	
Standing laboratory orders for routine diabetes tests (A1C, lipids, serum creatinine for estimated glomerular filtration rate, urine microalbumin-creatinine ratio)		☐	
Routine A1C or other glucose screening of people at risk for diabetes		☐	
Assess and Improve Skills for MOS	**Assess**	**✓ If goal**	**Re-check**
Blood pressure measurement skills		☐	
Accurate height and weight measurement		☐	
Fingerstick skills and operation of point-of-care devices		☐	
Diabetes basic ABCs (A1C, blood pressure, and cholesterol targets and testing frequencies)		☐	
Patient Education and Referral Follow-Up	**Assess**	**✓ If goal**	**Re-check**
Provide diabetes-specific education material		☐	
Refer to diabetes educators, DSME programs		☐	
Refer to registered dietitians for MNT		☐	
Obtain eye exam reports from ophthalmologist specializing in diabetes eye care		☐	
Remind all patients to obtain routine dental care		☐	
Maintain up-to-date list of local diabetes resources, support groups, and media (phone apps)		☐	
Provide smoking cessation information and referral		☐	
Has system to follow up if a referral was made and kept and if results are included in chart		☐	
Patient Information Given by MOS	**Assess**	**✓ If goal**	**Re-check**
Healthy eating information		☐	

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Table 2. PCP Office Assessment Tool for Diabetes Support Activities , *continued from p. 120*			
Physical activity/exercise information		☐	
SMBG/meter teaching/ketone monitoring, as appropriate		☐	
Insulin/other injectable techniques		☐	
Oral medication use		☐	
Quality Improvement Activities	**Assess**	**✓ If goal**	**Re-check**
Conduct chart reviews of key performance measures; implement continuous quality improvement plan based on results		☐	
Use brief team meetings to discuss patient cases		☐	
Assess MOS knowledge and confidence in performing diabetes support activities		☐	
Complete application for National Center for Quality Assurance diabetes recognition program		☐	

searchable resource guide that can be modified for any practice and population (see www.diabeteslocal.org).

Summary

Although DSME is an essential component of high-quality diabetes care, most patients are never referred, never have access, or never attend formal diabetes education because of systems-level or behavioral barriers. MOS are an underutilized resource and, with minimal structured training in basic diabetes principles, can significantly affect the quality of care and health of patients with diabetes. Most medical encounters for people with diabetes occur in a primary care setting, and the MOS frequently interacts with diabetes patients. Thus, once they receive appropriate resources and training in basic diabetes principles, MOS can be an excellent addition to the care team.

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