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Group Visits Hold Great Potential For Improving Diabetes Care And Outcomes, But Best Practices Must Be Developed

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ABSTRACT A diagnosis of diabetes can require multiple changes in a person's behavior, diet, and lifestyle. Efforts to sustain these changes and manage this complex chronic disease can be difficult. Group visits, in which several patients meet together with a primary care provider and transdisciplinary team, have tremendous potential to improve health care quality, cost, and access. When group-based diabetes self-management education and a primary care visit occur within a single appointment, people with the disease can address multiple needs in one visit and take advantage of peer groups for support and motivation. A review of the literature demonstrates that the efficacy of group visits has a promising evidence base—but more needs to be learned about optimal group size and aspects of the model that should be standardized. An important first step is introducing a procedural code for group visits, so that providers and researchers can better track the efficacy of the group-visit model and develop best practices before the model is adopted systemwide.

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Diabetes is a nationwide epidemic, affecting 25.8 million people, or 8.3 percent of the US population.¹ More alarming, the number of older US adults with diabetes is estimated to reach 68 million, or 25 percent of the population, by 2030.²

In 2007, estimated direct and indirect costs associated with diabetes ranged from \$174 billion to \$218 billion, and the majority of costs were attributed to high rates of hospital admissions in adults age sixty-five and older with diabetes.^{3,4} Other direct costs associated with diabetes include medications, glucose monitoring supplies, and use of health care. Indirect costs include work absenteeism, reduced or lost productivity because of early morbidity and mortality, and reduced quality of life among patients and their family members who care for them.^{3,4}

Up to 95 percent of diabetes is type 2, which is largely attributed to increasing age, obesity, and physical inactivity. In many cases, type 2 diabetes

can be prevented or delayed, or its devastating effects mitigated, through healthy food choices, physical activity, and weight loss. Oral medication or injectable insulin also may be necessary.¹

Healthy People 2020⁵ and the American Diabetes Association⁶ outline several objectives to improve the quality of life and reduce the disease burden for all people with diabetes. To achieve these goals, they recommend three key components for effective disease management planning: regular medical care, self-management education, and ongoing diabetes support.

Health care visits for patients with diabetes are typically scheduled in fifteen-minute intervals. This appointment time is used to address a patient's personal needs along with all of the evidence-based and patient-centered recommendations outlined by Healthy People 2020 and the American Diabetes Association. These include screening and treatment for psychosocial needs, heart disease, kidney disease, and neuropathy (loss of sensation in limbs), in addition to nu-

trition counseling, recommendations for physical activity, foot care, smoking cessation counseling, immunizations, and help with strategies for managing disease complications (for example, low blood sugar) and personal self-management goals.

Fifteen minutes is clearly insufficient to accomplish all of these tasks, and it can frustrate people with diabetes who struggle with how to manage and live with their disease. Consequently, many patients require additional health care services, resulting in increased use of urgent care and emergency department services.⁷

Recognizing the limitations of traditional office visits, the Centers for Medicare and Medicaid Services (CMS) began providing Medicare patients diagnosed with diabetes with coverage for self-management training.⁸ Such training is a continuous process of engaging patients that helps them gain the knowledge, skill, and ability necessary for diabetes self-care. It is guided by evidence-based standards and incorporates the needs, goals, and life experiences of people with diabetes through active collaboration with the health care team.⁹

Despite the availability of this coverage, approximately 50 percent of Medicare patients with diabetes do not receive any formal diabetes self-management education.¹⁰ Some primary care practices find coordinating these visits to be a challenge because of time constraints and scheduling conflicts (at both staff and patient levels) in a busy practice, while patients may find it difficult to make additional trips to the office for these sessions.¹¹

Group Visits

The group-visit model is a primary care system change designed to overcome the challenges of the traditional fifteen-minute visit and underused self-management education. The notion is to integrate group-based diabetes self-management education and training along with a primary care visit during or immediately after the group session. This transdisciplinary model affords peer support and motivation that can help participants better cope with and manage their diabetes through the shared life experiences of group members.

Such peer interactions are instrumental in facilitating positive lifestyle and behavior changes by creating a supportive clinical and social environment.⁹ In addition, group visits shift the responsibility away from the provider, as expert imparting knowledge, to the patient and peer-group members, with each member taking an active role in the process.

Exhibit 1 presents a comparison of group visits

to group diabetes self-management education.

The group-visit model is a primary care system redesign associated with the Chronic Care Model,^{7,12,13} the Future of Family Medicine's new model for family practice,¹⁴ and the patient-centered medical home.¹⁵ Numerous group-visit models have emerged for various medical conditions, including diabetes, high blood pressure, high cholesterol, heart failure, osteoporosis, and asthma.^{12,16}

Each interpretation of the model has subtle variations relating to transdisciplinary team composition, group facilitator, group size, visit duration, frequency of meetings, educational format, and primary care component (Exhibit 2). Yet the models share several characteristics, in that they are patient-centered, interactive, and empowering.

Evidence On Diabetes Group Visits

We reviewed recent literature on group visits to identify the highest level of evidence on the subject (systematic reviews and meta-analyses). Our search strategy and terms are described in the notes to Exhibit 2.

The evidence on adult patients with diabetes from these studies includes data on more than 2,000 patients, predominantly in their fifties and sixties, in the United States, Germany, and Italy. A majority of the long-term outcomes (greater than two years) have been reported only in the European studies.

Five studies addressed racial and ethnic disparities. Four of them had a majority of African American participants, and one was limited to Hmong patients. Three of these trials also addressed the role of group visits for people experiencing economic disparities, and one specifically explored group visits in a rural primary care practice setting.¹⁶⁻²⁰

Our reviews suggest a benefit from group visits for patients with diabetes. Positive outcomes include fewer urgent care or emergency department visits and hospitalizations, improved glycemic control, fewer specialty care visits, improved diabetes knowledge and health behavior, increased patient and provider satisfaction, and improved provider productivity.¹⁶⁻²⁰

The outcomes of the meta-analysis demonstrate an appreciable reduction in hemoglobin A1c (the primary marker for glycemic control) and blood pressure, with inconclusive evidence for changes in cholesterol levels. The improvements in glycemic control are clinically important because each 1 percent reduction in mean HbA1c is associated with a 21 percent reduction in diabetes-related death risk, 14 percent reduction in heart attacks, and 37 percent reduction in

EXHIBIT 1

Comparison Of Group Visits And Group Self-Management Education Classes For People With Diabetes

	Group visits	Group self-management education classes
Diabetes self-management education/training	Yes	Yes
Development of behavior changing self-management goals	Yes	Yes
Integrated primary care visit	Yes	No
Discussion of private concerns and individual medical needs		
Physical examination		
Medication reconciliation		
Referrals		
Diagnostic testing (for example, blood testing)		
Vaccinations		
Certified diabetes educator necessary to bill for visit	No	Yes
Signed confidentiality agreements	Yes	Not necessary
Reimbursement for services provided ^a	Yes	Yes

SOURCE Authors' analysis of the published literature. ^aCurrent Procedural Terminology (CPT) codes for group medical visits are currently billable using outpatient evaluation and management (E/M) codes for new and established patients. These codes are traditionally based on the level of complexity of the visit. Most group medical visits are considered low complexity (CPT code 99213) or moderate complexity (CPT code 99214) visits. Higher reimbursement is made for greater complexity. The Centers for Medicare and Medicaid Services (CMS) reimburses diabetes group self-management education through the use of G-codes (for example, G109) when visits are conducted by a multidisciplinary care team that includes a certified diabetes educator. The education component of the group visit is also billable by these G-codes through Medicare and some third-party payers, but their use for Medicaid reimbursement has had only limited success.

microvascular complications (diabetes-related kidney disease, amputations, and blindness).²¹

The reduced numbers of hospital admissions, emergency visits, and specialty care visits suggest a parallel reduction in direct medical costs associated with the adoption of group visits for patients with type 2 diabetes. However, few studies have conducted rigorous cost-effectiveness analyses of these models. Only one study performed a postintervention cost-effectiveness analysis of group visits. In that study, the group-visit model demonstrated a significant reduction in outpatient visit charges of \$3,065.47 per patient per year in an economically underserved area.²²

The evidence suggests that the benefits of group visits for patients with type 2 diabetes are experienced in international settings and in some cultures. Additional well-designed multicenter studies are needed among different cultural groups (such as Hispanic populations), disparate populations, and practice settings (such as rural populations) within the United States to identify the best structure and frequency of group visits to achieve positive clinical and process outcomes.

In addition, it would be worthwhile to study the comparative effectiveness of group visits as compared to traditional office visits and separate diabetes self-management education and training classes, to further validate this model.

Policy Issues

The evidence for group visits suggests their potential value as a model for improving care for patients with diabetes. However, several issues must be addressed before large-scale adoption of this model. Two key issues are the consequences of the lack of a procedural code to identify, monitor, and analyze the impact of group visits outside the published literature, and its billing implications; and the lack of clarity about best practices, given the heterogeneity of group-visit models in the literature.

LACK OF A PROCEDURAL CODE The lack of a procedural code to identify group visits in insurance claims is a major barrier to the model's widespread adoption. Current Procedural Terminology codes are a taxonomy developed, copyrighted, and maintained by the American Medical Association to provide a consistent nationwide communication about medical procedures and services among health care providers, accreditation organizations, and payers, for administrative, financial, and analytic purposes.²³ These codes are then assigned relative value units by CMS to determine reimbursement rates for the specified code.²⁴

Because no Current Procedural Terminology code exists for group visits, CMS recommends that providers use existing codes for individual office visits for each person attending the group.²⁵ These codes are traditionally based on

EXHIBIT 2

Characteristics Of Group Visits For Diabetes Self-Management

Elements	Identified variations in the published literature
Group-visit model nomenclature	Group medical visits Chronic care clinics Cluster visits Shared medical appointments (SMAs) Cooperative health care clinics (CHCCs) Drop-in group medical appointments (DIGMAs)
Transdisciplinary team composition ^a	Clinician prescribers Nurse practitioners Pharmacists Physicians Other team members Medical assistants Health educators Exercise specialists Physical therapists Certified diabetes educators Nutritionists Clinical health psychologists Dietitians Nurses Social workers Specialty care providers (including podiatry, ophthalmology)
Group facilitator	Facilitator can be any licensed health care professional on the transdisciplinary team
Group size	3–30 patients
Visit duration	60–180 minutes
Group frequency	Weekly, monthly, quarterly
Educational component	Content may be borrowed from a diabetes self-management education (DSME) evidence-based curriculum or developed within the agency Teaching style may be facilitator or patient directed
Primary care component	May occur during or after group educational session May include the following: Discussion of private concerns and individual medical needs Physical examination Medication reconciliation Referrals Diagnostic testing (for example, blood testing) Vaccinations

SOURCE Authors' analysis of systematic reviews identified below. **NOTES** The literature review of group visits was conducted on Medline, CINAHL, the Cochrane Library, the Joanna Briggs Institute, and the Center for Reviews and Dissemination (DARE) databases. The search strategy was initiated on EBSCO Host's MEDLINE and revised appropriately for the other databases. The subject headings and keywords for EBSCO Host's MEDLINE included "diabetes," MH "Diabetes Mellitus, Type 2," "shared medical appointment*," "group medical appointment*," "shared appointment*," "group appointment*," "shared visit*," "group visit*," "team appointment*," "team visit*," and "group care."The search strategy identified five systematic reviews that either directly or indirectly related to group visits, including one Cochrane review (Note 17 in text), one qualitative review (Note 16 in text), two systematic reviews (Notes 18 and 19 in text), and one systematic review with a meta-analysis (Note 20 in text). ^aThe specific team composition may vary among agencies. The essential component is a clinician prescriber who addresses primary care needs.

additional services provided by the physician or nurse practitioner, nutritionist, behavioral specialist, or certified diabetes educator, as well as for diagnostic procedures conducted on the day of the visit.^{26–30}

► **ANALYTIC IMPLICATIONS:** The use of individual procedural codes for group visits means that capturing the true clinical or financial impact of group visits is not really possible. Because group visits are billed using codes for individual office visits, it is simply unknown how many health centers, clinics, or private practices in the United States offer group visits. Additional analysis of the efficacy and comparative effectiveness of group visits is also not possible. Creating a code for a group visit and standardizing how the code is administered would improve the visibility of this intervention and enable researchers to begin tracking its impact on the nation's health.

► **BILLING IMPLICATIONS:** Group visits are fraught with the potential for billing errors, abuse, and fraudulent insurance claims. The current recommended billing practices for group visits add another layer of complexity to an already cumbersome and outdated fee-for-service billing model. Because most health care practices are reimbursed based on the quantity, duration, and complexity of services provided, health care practices may be tempted to upcode (bill at a higher level of complexity), bill "counseling" multiple times for multiple people, or add unnecessary procedural codes to achieve greater reimbursement to offset the costs of implementing group visits.

Creating a universal code for group visits, along with clear guidelines for billing compliance, may help prevent fraud and abuse or unintended billing errors. More important, it will encourage delivery systems to be far more efficient in the delivery of services—a core principle of health reform.

LACK OF CLARITY ABOUT BEST PRACTICES
There are a wide variety of group-visit models and no way to track initiatives outside the published literature. As a result, it is unclear which elements are most associated with positive clinical outcomes. Clarification is needed to identify best practices for the makeup of the transdisciplinary team, number of participants in a group, and visit duration and frequency before a Current Procedural Terminology code and relative value unit can be assigned to group visits.

For example, CMS requires that to be eligible for Medicare or Medicaid reimbursement, diabetes self-management education must be delivered by a multidisciplinary team that includes at least one certified diabetes educator. These are health professionals with specialized knowledge

the level of complexity or duration of the visit. Medical practices can also potentially bill for

of diabetes issues who receive regular continuing education in the field of diabetes management and education.³¹ Setting similar core competencies for group facilitation may standardize the quality of group visits; however, it may also hinder innovation and prevent the model's adoption throughout the US health care system.

Another area of heterogeneity in the literature concerns the delivery of the self-management education and training portion of the group visit. The American Diabetes Association recommends an evidence-based formal curriculum for this training, which avoids didactic teaching using a one-way communication style.⁹ However, findings about delivery methods are not consistent in the literature (Exhibit 2).

Further research is needed to identify the elements to include in a group-visit curriculum, delineating items such as specific learning objectives and priorities, topics to be covered, and appropriate teaching tools. This clarification can be informed by the diabetes self-management education and training literature, but it must be sensitive to the differences between the group-visit and diabetes self-management education models.

How and when to schedule group visits is another essential component in the planning and implementation of this model. Because elements of scheduling are often practice specific, successful implementation of the group-visit model must consider all stakeholders' preferences and available resources. For example, an open dialogue among stakeholders could help determine whether group visits would be better attended and staffed during early mornings, evenings, or weekends.

At this time a central clearinghouse for addressing these questions does not exist; however, a promising bill with bipartisan support was introduced in the 112th Congress in September 2011. The National Diabetes Clinical Care Commission Act (HR 2960) would establish a Diabetes Clinical Care Commission within the Department of Health and Human Services. The proposed legislation does not directly address group visits; however, the commission would provide leadership to slow the growing incidence of diabetes and could be an excellent setting in which to develop standards for group visits, should the proposal become law.

NEED TO DEPLOY THE SCIENCE ON LASTING BEHAVIOR CHANGE Current national standards for diabetes self-management education stress the importance of imparting practical problem-solving skills, supporting behavior change, and sharing strategies to sustain self-management efforts.⁹ Knowledge is only a part of the solution for making dramatic lifestyle changes,

and patients often require help with motivation so they can become far more actively engaged in promoting their own health.

Behavior change is a process that unfolds over time through a sequence of stages. Without skillful intervention, advice giving or knowledge sharing can be counterproductive and can increase a person's resistance to change.³²

As the science on behavior change and what sparks motivation has strengthened, many strategies specific to producing lasting behavior change have emerged, such as appreciative inquiry, motivational interviewing, positive psychology (promoting well-being), and positive deviance, to name a few. All of these could be more fully deployed in the group-visit model.³²⁻³⁴

Infusing the evidence on techniques that raise patients' awareness and inspire motivation must be central to group visits if self-management and lasting behavior change are to be maximized. The large-scale adoption of group visits must not result in sessions that simply consist of experts proffering advice on how to mitigate the consequences of poorly controlled diabetes.

Conclusion

The group-visit model is positioned to play an important role in the reform of the nation's health care delivery system. The Affordable Care Act of 2010, for example, authorized new Medicare payment and health care delivery alternatives, including medical homes and accountable care organizations. These models will encourage practices to engage patients more actively, to be far more innovative at building efficiencies and becoming true learning organizations, and to be focused on strategies that prompt chronically ill patients in particular to change the way they live and relate to their diseases.

The existing evidence on group visits for patients with diabetes shows tremendous potential. Group visits lower the direct medical costs associated with diabetes, improve clinical outcomes, improve patient satisfaction, engage patients powerfully, provide peer support, and maximize the value of patient time spent at the primary care office. In addition, they improve health care providers' satisfaction and enhance teamwork, collaboration, and communication across disciplines.¹⁶⁻²⁰ Given health reform's focus on innovation in health delivery, group visits offer a perfect example of a promising innovation that could be scaled up.

However, as delivery systems explore innovations in patient engagement, studies must be conducted to discover best practices for group visits. As accountable care organizations begin implementing disease management models, it

would behoove all delivery systems to understand the best ways to conduct group visits, build transdisciplinary teams, determine the optimal frequency of visits, address scheduling issues, and determine group sizes, to name a few processes. As noted above, creating a code to accurately capture group visits would be a critical first step toward determining the comparative effectiveness of group visits versus traditional primary care visits.

The value of creating a successful group-visit model for patients with diabetes goes well be-

yond the convenience of combining an educational session with a primary care appointment in a single visit. Effective facilitation by skilled professionals with experience in behavioral change techniques can help raise patients' awareness of the linkage of personal behavior to the disease process. Unless and until we take a keener clinical interest in applying the evidence on motivating people to sustain change, the diabetes epidemic is likely to continue unabated. ■

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In this month's *Health Affairs*, Robert Burke and Eileen O'Grady report that group visits, in which several patients with diabetes meet together with a primary care provider and a transdisciplinary team, have great potential to improve health care quality, cost, and access. They recommend the introduction of a procedural code for group visits so that providers and researchers can better track the efficacy of the group-visit model and can identify and develop best practices before such group visits are widely adopted.

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Burke's research focuses on the evidence base for motivational interviewing in adult patients with diabetes. He is also involved in several evidence-based practice improvement initiatives, including group visits for adolescents with asthma and culturally congruent, patient-centered initiatives for childhood and adolescent obesity.

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