

Specialty Group Medical Visits for Patients With Diabetes

Valerie S. Ganetsky,¹ Jeffrey C. Brenner,^{2,3} and Steven T. Kaufman^{4,5}

Diabetes remains a major public health problem that affects ~29 million Americans, or 9.3% of the U.S. population. Diabetes and its complications account for ~\$176 billion in annual direct medical costs (1). The burden of diabetes is disproportionate among the medically underserved, in particular African-American and Hispanic patients, as well as patients with Medicaid (2,3).

Disparities in diabetes care among racial and ethnic minorities can be attributed to a number of factors, including reduced access to care and poorer quality of care (4). Quality diabetes care requires a patient-centered, organized, systematic approach by a coordinated interdisciplinary team of health care professionals (5). Despite advances in diabetes care through the years, 30–50% of patients do not meet their glycemic, blood pressure, or lipid targets (6). Notably, patients with Medicaid tend to have a lower percentage of goal attainment than those with private insurance or Medicare (3). Further complicating these issues is the shortage of adult endocrinologists to treat complex diabetes cases, resulting in overwhelming patient volumes and limited access to care (7).

Addressing these barriers is crucial to providing optimal, patient-centered diabetes care. To overcome these challenges, we pioneered a novel specialty diabetes group medical visit (GMV) model at the Cooper University Hospital Urban Health Institute (UHI) in Camden,

NJ. Camden has a medically underserved, resource-poor population that is largely African American and Hispanic (8). Our patient population with diabetes is medically complex, with high rates of hypertension, hyperlipidemia, and insulin use.

The diabetes GMV model for providing specialty diabetes care serves as a means of solving two intertwined business and clinical problems faced with traditional one-on-one office visits. The clinical rationale for GMVs was based on poor patient experiences, lack of self-management support, and the endocrinologist's frustration at his inability to offer high-quality, comprehensive care in traditional 15-minute office visits. The necessity to innovate was driven by financial losses from low Medicaid reimbursement rates, a 30–40% no-show rate, and long appointment wait times, resulting in poor access to specialty endocrinology care. Under the more traditional previous model of care, a single, high-cost, poorly utilized endocrinologist was practicing with one medical assistant (MA) in Camden and facing high patient volume. The UHI diabetes GMV program was established to provide innovative care in this resource-constrained practice.

Program Description

Patient Recruitment and Selection

Enrollment in the UHI diabetes GMVs focuses on patients insured by Medicare living within Camden's

¹Philadelphia College of Pharmacy, University of the Sciences, Philadelphia, PA

²United Healthcare, Camden, NJ

³Dartmouth Institute, Lebanon, NH

⁴Cooper University Hospital Urban Health Institute, Camden, NJ

⁵Cooper Medical School of Rowan University, Camden, NJ

Corresponding author: Valerie S. Ganetsky, v.ganetsky@uscience.edu

<https://doi.org/10.2337/cd15-0062>

©2017 by the American Diabetes Association. Readers may use this article as long as the work is properly cited, the use is educational and not for profit, and the work is not altered. See <http://creativecommons.org/licenses/by-nc-nd/3.0> for details.

five zip code areas, as well as all patients with Medicaid or who self-pay. Patient selection for the diabetes GMVs initially consisted of the eligible existing patients of the participating endocrinologist and subsequently expanded to include patients newly referred by primary care providers (PCPs) and endocrinologists seeing patients during hospitalizations at Cooper University Hospital. Several strategies were used to increase provider referrals to GMVs, including partnering with hospitalists and inpatient care coordinators, educating the front-desk staff at physicians' offices about how to book patients for GMVs, and encouraging providers to shadow GMVs.

Patients are appropriate for GMVs if they are willing to share their experiences within a group setting. Patients with advanced dementia or severe hearing impairment and those with a significant physical or mental disability that would impair their ability to effectively communicate in a group setting are seen in one-on-one appointments with the endocrinologist. Patients are informed of the group format at the time their appointment is scheduled. Participation in GMVs is optional, and patients sign a consent form at their initial visit.

Team Members

The diabetes GMV core clinical team consists of an endocrinologist, an advanced practice nurse (APN), a clinical pharmacy faculty member, licensed practical nurses (LPNs), and MAs. The APN, LPNs, and clinical pharmacist serve as the core group of patient "navigators" during the GMVs. The clinical work performed by the APN in the GMV was eventually task-shifted to LPNs. Additional individuals who serve as navigators include endocrinology fellows and pharmacy students. All clinical team members, regardless of discipline, function similarly in the GMVs. Other GMV participants include

medical students, health coaches, and AmeriCorps volunteers.

Structure

The diabetes GMVs are conducted one afternoon per week and are divided into four 1-hour visits that include four different groups of patients. All clinical team members, including the endocrinologist, are present during each visit. Up to 14 patients are scheduled per hour, with an expected attendance of ~8–10 patients, given our 30–40% no-show rate. Given the high percentage of Hispanic patients in Camden, GMVs are offered in both English and Spanish. Figure 1 shows the layout of the GMV navigation room.

Navigators conduct pre-visit chart reviews of scheduled patients and complete a huddle sheet for each. Huddle sheets contain information such as the patient's medical history, recent hospitalizations, laboratory results, current medications, and any alerts that navigators need to be aware of during the visit (e.g., out-of-range laboratory values). Navigators use the summary of patient information on the huddle sheets to expedite patient interviews during the visit.

Table 1 lists the components of the GMV, which include medical management and facilitated group discussions on disease-related topics. The goal ratio is no more than three patients per navigator per GMV session. Patients complete a Likert-scaled questionnaire about their experience after every visit.

Billing and Provider Compensation

GMV visits are billed under the same Current Procedural Terminology codes that the endocrinologist leading the group uses for standard one-on-one office visits. Clinical team members are salaried employees of Cooper University Hospital, with the exception of the clinical pharmacy faculty member who is fully compensated by her university employer and does not receive an additional salary from the hospital for participating in GMVs.



FIGURE 1. Diabetes GMV navigation room layout.

Group Facilitation and Patient Education

The goal of the endocrinologist-facilitated question-and-answer discussion is to allow patients to discuss their concerns and receive support and problem-solving strategies from their peers and thus to enhance their self-management capability. The relationships built among patients and between patients and navigators combat the isolation of health care. Individual questions are held for the group component to promote a shared learning experience.

The topics during the 15-minute facilitated discussion are based on questions and concerns of patients that arise during the navigation sessions. For example, a patient's recent episode of hypoglycemia will prompt a discussion on appropriate monitoring and treatment of hypoglycemia. The clinician facilitates a discussion of the patient's issue to encourage patients' participation through the sharing of stories and experiences to maximize learning.

Providing ongoing diabetes self-management education and support (DSMES) is an important element of comprehensive diabetes care (9). Although our model provides disease-related education, it does not take the place of DSMES classes. Patients in need of more advanced self-care education are referred to DSMES classes in the area.

TABLE 1. Diabetes GMV Format

1. Team members conduct pre-visit chart reviews and complete huddle sheets.
2. Patients check in for the GMV and complete the consent form (initial visit only).
3. Patients gather in the group education room, and an MA obtains vital signs for each. Patients waiting for navigation watch educational videos.
4. Patients are called individually into the navigation room and are assigned to a navigator (clinical pharmacist, pharmacy student, LPN, or endocrinology fellow).
5. The navigator conducts a patient interview, performs medication reconciliation, and completes a questionnaire in the patient's EMR. A medical review is conducted by the endocrinologist (30 minutes).
6. The endocrinologist facilitates a group discussion about disease-related topics (15 minutes). Discussions are repeated for each hour for each GMV group scheduled for the afternoon.
7. Navigators review medical plans with individual patients (5 minutes).
8. Patients complete a post-visit survey, check out with support staff, receive an after-visit summary, and schedule their next GMV.
9. Navigators complete documentation, order medications and laboratory tests, and make referrals to specialty providers as needed. They prepare the room for the next hour-long GMV (10 minutes).

Medical Decision-Making and Documentation

Navigators document assessments and plans for blood glucose, hypertension, and dyslipidemia management and antiplatelet therapy in electronic medical records (EMRs) through the use of a questionnaire, which is embedded into the endocrinologist's progress note. Navigators also order laboratory tests, medications, and specialist referrals for patients, as needed. All medical plans, including proposed changes to therapy, are discussed with the endocrinologist, who also signs off on all medication and laboratory orders and notes written by navigators. The endocrinologist performs a detailed physical exam for all new patients and documents the findings in the progress note. Follow-up patients receive an abbreviated physical exam, including an annual monofilament test. Private exam rooms are available in the GMV suite to use if necessary.

Patient Engagement

One benefit of shared medical appointments is that patients become more engaged in their diabetes self-management (10). To enhance patient engagement between office

visits, the Coach Assisted Patient Engagement (CAPE) program was initiated. Fourth-year medical students on their chronic care clerkship rotation serve as coaches. The purpose of the CAPE program is to reinforce elements of continuity of care and engage patients in improving their health behaviors. Patients enroll in a 4-week engagement program, in which they receive telephone calls from a coach to assist them with behavioral changes.

Another option for patient engagement is enrollment in the LPN insulin titration protocol. GMV patients who require additional education and insulin dose titration between GMV office visits can enroll in this program and receive weekly face-to-face visits with an LPN. This also helps with continuity of care, trust-building, and patient engagement.

Patient Follow-Up

The enhanced access to care enabled by GMVs allows patients to be seen in follow-up visits more quickly than in individual specialist visits (11). Patients requiring changes in their medication regimen or experiencing diabetes-related complications

(e.g., frequent hypoglycemia) receive prompt follow-up in a GMV within 2–4 weeks. A longer follow-up time of 3–6 months is used when no medication changes are made or when diabetes is well controlled. Patients are encouraged to get any ordered laboratory tests completed 1–2 weeks before their next GMV. At any time, patients have the option to opt out of the GMVs and see the endocrinologist in individual visits.

Clinical Outcomes

The goals of the UHI diabetes GMV model are to improve diabetes-related outcomes, enhance access to care, decrease costs of care, and improve patient satisfaction. Our GMV model has been shown to improve access to endocrine care for a medically complex patient population by decreasing the number of days new patients must wait for an available appointment time and reducing the lag time between follow-up visits. The model has also improved provider productivity by allowing the endocrinologist to see approximately twice the number of patients in a group versus an individual setting (11). We are now performing a retrospective cohort study evaluating the clinical outcomes (i.e., A1C, blood pressure, and lipids) and economic outcomes (i.e., utilization of inpatient and outpatient services) of the diabetes GMVs versus individual endocrinology visits at the UHI.

Lessons Learned in Program Development

Multiple partners are required to ensure a successful GMV model. The hospital administration recognized the high start-up costs and staff learning curve necessary to initiate an innovative program. Despite multiple examples of group visits to emulate, the time and personnel required to initiate this new project were substantial. To learn about innovative delivery models and service reallocation, several GMV clinical and operational team members traveled to the Aravind Eye Hospitals in Madurai, India, where eye surgeons perform

only 30% of the work for each patient (12). The GMV team incorporated lessons learned about standardization, protocol development, task-shifting, and delivery of high-quality, affordable health services.

The GMV model was funded in part by a large start-up grant from the Nicholson Foundation. The buy-in and participation of multiple partners were required to carry out the GMV's design and implementation, starting with the approval of Cooper Health System's leadership for the redesign of existing space for GMV activities. The clinical team received administrative support from the health system's administrative director and program manager to operationalize the design and work with institutional partners in the legal, compliance, medical informatics, and information technology departments. A clinical pharmacy faculty member joined the group through the collaborative relationship between the Cooper Medical School of Rowan University and the University of the Sciences to promote pharmacy students' exposure to new clinical settings.

The structure and processes of the GMV have evolved over time to promote the sharing of experiences and group learning. Through the use of weekly de-briefing sessions with team members after every GMV, as well as multiple trials of various structures, the current GMV structure came to fruition. Mock visits, in which administrative personnel served as "patients," played an important role in helping to iron out the details of the GMV flow. Monthly "experimental" sessions with fewer patients enabled the GMV team to run performance improvement initiatives using the Plan-Do-Study-Act cycle (13). Weekly clinical team meetings have allowed the GMV clinical team to discuss the previous week's visits and plan for upcoming visits. Efficiencies developed slowly during a 2-year period allowed the GMV team to increase the number of

patients scheduled per 4-hour (multiple group) sessions from 16 to 52.

Building a new practice model takes time and resources, but the cost is repaid through increased efficiency. To achieve this efficiency and improve patient access to care, additional time and resources were needed as the program grew. Starting with navigation by a higher-functioning APN and clinical pharmacist who were comfortable with the clinical components of endocrine specialty care allowed the model to be built more rapidly. Once the GMV structure was stabilized, the work previously done by the APN was task-shifted to LPNs to make the groups more cost-effective.

Weekly training sessions were initiated to prepare LPNs for their role as navigators. The curriculum for these training sessions includes items such as patient engagement, documentation, insulin review, and appropriate ordering of medications and testing supplies. An insulin titration protocol was developed to be used by navigators to accelerate the medical decision-making process.

Discussion

GMVs offer an innovative delivery model to address the challenges facing diabetes care. Given the expanding epidemic of diabetes, health care delivery models that enhance patients' experience and provide comprehensive diabetes care in a cost-effective manner are essential. In this article, we have described a novel diabetes GMV model that incorporates an interdisciplinary health care team led by an endocrinologist in an urban, resource-poor patient population. Our model restructures interactions between patients and providers and reallocates service tasks among multiple team members to improve efficiency and professional satisfaction (14).

Previous studies have shown that diabetes GMVs decrease hospital utilization and improve clinical outcomes, quality of life, patient

satisfaction, and provider productivity (15–22). Our diabetes GMV model differs from those already published in the literature in that an endocrinologist, rather than a PCP or nonphysician health care provider, leads the visits. Patients referred to an endocrinologist tend to represent more complex diabetes cases and are an important niche for GMVs, which can potentially improve clinical outcomes, increase disease-related knowledge, and enhance patients' diabetes self-management abilities.

With regard to the Institute for Healthcare Improvement's "triple aim" of improving the experience of care and health of populations at lower costs, the UHI diabetes GMV has improved access to care and physician utilization (11,23). With the current and projected shortage of adult endocrinologists, diabetes GMVs that allow endocrinologists to see a larger number of patients in a given appointment time and improve access to care are an important innovation. Furthermore, specialty medical care is costly and often involves long wait times. The diabetes GMV program improves access to specialty care and task-shifts activities, and the efficiency of the GMVs helps to offset the cost of additional personnel. Future work at the UHI diabetes GMV program will focus on making continued improvements in efficiency and demonstrating improvements in diabetes-related clinical and economic outcomes.

Acknowledgments

The authors acknowledge the executive director of the Urban Health Institute, Kathleen Stillo, MBA, for her support of this program and Rachel Adams, APNc, for her role in the design and implementation of and navigation for diabetes GMVs.

Funding

Support for this article was provided by a grant from The Nicholson Foundation.

Duality of Interest

No potential conflicts of interest relevant to this article were reported.

References

- Centers for Disease Control and Prevention. National diabetes statistics report: estimates of diabetes and its burden in the United States, 2014 [Internet]. Available from <http://www.cdc.gov/diabetes/pubs/statsreport14/national-diabetes-report-web.pdf>. Accessed 28 March 2017
- Lanting LC, Joung IMA, Mackenbach JP, Lamberts SWJ, Bootsma AH. Ethnic differences in mortality, end-stage complications, and quality of care among diabetic patients: a review. *Diabetes Care* 2005;28:2280–2288
- National Committee for Quality Assurance. The state of health care quality, 2014 [Internet]. Available from <http://www.ncqa.org/report-cards/health-plans/state-of-health-care-quality>. Accessed 28 March 2017
- Peek ME, Cargill A, Huang ES. Diabetes health disparities: a systematic review of health care interventions. *Med Care Res Rev* 2007;64:101S–156S
- American Diabetes Association. *Standards of Medical Care in Diabetes—2017*. *Diabetes Care* 2017;40(Suppl. 1):S1–S135
- Ali MK, Bullard KM, Saaddine JB, Cowie CC, Imperatore G, Gregg EW. Achievement of goals in U.S. diabetes care, 1999–2010. *N Engl J Med* 2013;17:1613–1624
- Vigersky RA, Fish L, Hogan P, et al. The clinical endocrinology workforce: current status and future projections of supply and demand. *J Clin Endocrinol Metab* 2014;99:3112–3121
- U.S. Census Bureau. State and county quick facts, 2015 [Internet]. Available from <https://www.census.gov/quickfacts/table/HCN010212/34007,13039,34>. Accessed 27 March 2017
- Powers MA, Bardsley J, Cypress M, et al. Diabetes self-management education and support in type 2 diabetes: a joint position statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics. *J Acad Nutr Diet* 2015;115:1323–1334
- Burke RE, O’Grady ET. Group visits hold great potential for improving diabetes care and outcomes, but best practices must be developed. *Health Aff (Millwood)* 2012;31:103–109
- Kaufman S, Adams R, Ganetsky VS, Brenner J. An interdisciplinary team-based group visit improves access to specialty endocrine care for a high-risk patient population. Poster (abstract 1363-P) presented at the American Diabetes Association’s 75th Scientific Session, Boston, Mass., 5–9 June 2015
- Rangan VK. Aravind Eye Hospital, Madurai, India: in service for sight [Internet]. Available from <https://hbr.org/product/aravind-eye-hospital-madurai-india-in-service-for-sight/593098-PDF-ENG>. Accessed 27 March 2017
- Institute for Healthcare Improvement. How to improve [Internet]. Available from <http://www.ihl.org/resources/Pages/HowtoImprove/default.aspx>. Accessed 27 March 2017
- Ramdas K, Teisberg E, Tucker A. Four ways to reinvent service delivery [Internet]. Available from <https://hbr.org/2012/12/four-ways-to-reinvent-service-delivery>. Accessed 27 March 2017
- Bray P, Roupe M, Young S, Harrell J, Cummings DM, Whetstone LM. Feasibility and effectiveness of system redesign for diabetes care management in rural areas: the eastern North Carolina experience. *Diabetes Educ* 2005;31:712–718
- Cohen LB, Taveira TH, Khatana SA, Dooley AG, Pirraglia PA, Wu WC. Pharmacist-led shared medical appointments for multiple cardiovascular risk reduction in patients with type 2 diabetes. *Diabetes Educ* 2011;37:801–812
- Trento M, Passera P, Borgo E, et al. A 5-year randomized controlled study of learning, problem solving ability, and quality of life modifications in people with type 2 diabetes managed by group care. *Diabetes Care* 2004;27:670–675
- Trento M, Passera P, Tomalino M, et al. Group visits improve metabolic control in type 2 diabetes: a 2-year follow-up. *Diabetes Care* 2001;24:995–1000
- Taveira TH, Friedmann PD, Cohen LB, et al. Pharmacist-led group medical appointment model in type 2 diabetes. *Diabetes Educ* 2010;36:109–117
- Beck A, Scott J, Williams P, et al. A randomized trial of group outpatient visits for chronically ill older HMO members: the Cooperative Health Care Clinic. *J Am Geriatr Soc* 1997;45:543–549
- Wagner E, Grothaus L, Sandhu N, et al. Chronic care clinics for diabetes in primary care: a system-wide randomized trial. *Diabetes Care* 2001;25:695–700
- Sadur C, Moline N, Costa M, et al. Diabetes management in a health maintenance organization: efficacy of care management using cluster visits. *Diabetes Care* 1999;22:2011–2017
- Institute for Healthcare Improvement. The IHI triple aim [Internet]. Available from <http://www.ihl.org/engage/initiatives/tripleaim/Pages/default.aspx>. Accessed 27 March 2017