

served as the project lead. She worked closely with two project mentors who are endocrinologists who oversee clinical operations, as well as the nursing and business staff of the DFW Clinic and the University of Texas Southwestern QI faculty and staff.

Describe the *structural* changes you made to your practice through this initiative.

The survey results demonstrated a disconnect between the staff/providers and patients with regard to communication methods used and perceived. This finding led to our intervention. We created flyers in both English and Spanish to post in clinic exam rooms. These were meant to facilitate discussion of the importance of SMBG and the usefulness of bringing glucose meters to clinic appointments. Flyers were placed in work stations and exam rooms so they would be visible to patients while they awaited their provider and would serve as visual prompts to providers to either remind patients to bring their meters to clinic or provide positive reinforcement for those who did so.

A handout was distributed to clinic staff to inform them of the results of the project and to encourage them to continue open communication and dialogue with patients given the positive outcomes of this initiative.

Describe the most important changes you made to your *process* of care delivery.

We determined that increased verbal communication between patients and their provider/clinic staff was the most effective way to remind patients to bring their meters to the clinic, as well as to effect change in their perceptions of SMBG. A staff education session was conducted twice during the intervention period to share our survey findings.

We encouraged staff and providers to continuously verbally remind patients at every opportunity to bring their glucose meter to their appointment. An expectation was set to have every staff/patient interaction include mention of the importance of SMBG and a reminder about bringing the glucose meter to each clinic visit. This interaction took place at several touchpoints, including when the front desk staff called patients to schedule a clinic appointment, when the nursing staff put patients in an exam room during their clinic visit, and during the visit with the provider. Providers were expected to either encourage patients to bring their meter at the next visit if they had forgotten to do so at the current visit or give positive reinforcement if they had indeed brought their

meter to the visit. These various verbal touchpoints appeared to influence patients' beliefs regarding SMBG and the importance of bringing their meters to their clinic appointments.

If you used the “Plan, Do, Study, Act” (PDSA) change model, provide details for one example.

- **Plan:** We wrote patient survey questions and got the surveys approved and translated into both English and Spanish.
- **Do:** We used a convenience sample by interviewing patients while they waited for their clinic appointment.
- **Study:** We analyzed survey responses and answered individual patients' questions.
- **Act:** We reworded some questions to more accurately assess patients' beliefs regarding SMBG and to ensure that they were at a more appropriate health literacy level.

Summarize your final outcome data (at the end of the improvement initiative) and how it compared with your baseline data.

The intervention lasted from July 2019 through February 2020, and data were collected on all patients (new or established) seen in the clinic for diabetes. Because the Glooko software was implemented beginning in May 2018, the data collected from that month were not included in the final analysis.

The monthly percentage of patients who brought glucose meters that were then uploaded to Glooko increased from the baseline of 53.3% (2,541 Glooko uploads over 4,767 patient visits with providers) to 57.76% (2,378 Glooko uploads over 4,117 patient visits with providers). This increase was statistically significant based on a χ^2 test with a probability of <0.0001 .

The original patient surveys demonstrated a substantial mismatch between patient and provider beliefs and expectations regarding SMBG utility and effectiveness in clinic appointments (Supplementary Figures S3 and S4). Providers pointed out that they reviewed and downloaded SMBG data on their computer screens without needing to look at data from meter memory, which may have been one reason for the discrepancy in perception. Providers and staff agreed that explaining to patients the processes of meter downloading and reviewing data on the computer screen would improve their perception of the value of SMBG and the importance of bringing their meter to the clinic. Verbal reminders to bring glucose meters to the

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clinic, along with an explanation of the value of doing so and processes involved in retrieving and reviewing data seemed to be the most effective approach.

Some stakeholders in the project, including clinic staff, mentioned that seeing the small flyers in the room reminded them to close each interaction with patients by reminding them to bring their glucose meter to their next appointment. The flyers also helped create a more open climate with increased dialogue between patients and their providers regarding the value of SMBG; this improved dialogue may have played a role in the increased proportion of patients who brought their glucose meters to their appointments during the intervention period.

The project was self-sustaining in that the flyers stayed posted in exam rooms and throughout the clinic to continue fostering discussion regarding SMBG.

What are your next steps?

The first iteration of the survey demonstrated that there was miscommunication between health care providers and patients regarding the importance of SMBG data in making appropriate treatment care decisions. Many patients did not think their provider reviewed their SMBG data or that these data had any bearing on treatment decisions. We would like to conduct a post-intervention survey to determine whether these perceptions and attitudes regarding SMBG have changed and to possibly use that information to develop a second intervention based on patient feedback.

What lessons did you learn through your QI process that you would like to share with others?

A seemingly simple intervention such as creating awareness of the need to remind patients of the importance of bringing their glucose meters to their diabetes clinic appointment can make a significant difference in patient care if both providers/staff and patients are invested and involved in the process.

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DUALITY OF INTEREST

L.M. is a consultant to or advisory board member for Applied Therapeutics, Novo Nordisk, and Sanofi Aventis. No other potential conflicts of interest relevant to this article were reported.

AUTHOR CONTRIBUTIONS

I.W. created, distributed, and analyzed results of the patient and provider surveys; led the staff education sessions and created and posted flyers; and wrote and edited the manuscript. U.G. compiled data regarding patient visits during the pre-intervention and intervention periods for analysis and edited the manuscript. L.M. provided guidance and support, including coordination of approval for the project by Parkland Health & Hospital System and medical school administrators and assistance with the literature review for and writing of the manuscript. I.W. is the guarantor of this work and, as such, had full access to all the data in the project and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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