

Schweitzer Final Report

Optimizing Glucometer Use in a Free Clinic in Southeast Michigan.

Introduction:

Despite advances in the medical science, diabetes and poor glycemic control continue to be a growing concern. In addition to the potential acute and chronic complications of the disease process, one out of every four dollars of US health care costs is spent on caring for people with diabetes (American Diabetes Association, 2017). Traditionally, people with diabetes utilize glucometers as a tool to measure their blood glucose, so they can better manage the acute or chronic negative health outcomes associated with uncontrolled diabetes. While the use of continuous glucose monitors increases, this project focuses on the use of traditional glucometers.

Glucometer user error is a critically important element to glucometer adherence, and it is thought that poor understanding of glucometer use, and its importance, is partly to blame, diabetic interventions rely on accurate and consistent glucometer data. Without this data, patients and providers will struggle to keep glycemic control, and prevent complications. While hemoglobin A1C and other labs are used to assess glucometer control, if a patient does not use their glucometers consistently at home, it is likely that their glucose is not well-controlled. At the University of Michigan Student Run Free Clinic, we noticed that many type-II diabetes report not knowing how to properly use, and care for their glucometers. Upon further questioning, we found these people had a poor understand of the diabetic disease process. Below are two quotes from two patients enrolled in the program:

“No one ever explained to me what diabetes actually is, and why it is so important. I have been afraid to ask. I don’t want to be seen as dumb.”

“Why are these glucometers so tricky to use? I don’t think anyone has actually shown me how to use it.”

Given the striking number of patients requesting diabetic education, we chose to create a program that seeks to reframe diabetic care as something one should actively participate in. The clinic provides the education, devices, resources, and referrals to free Michigan Medicine care, as well as fresh food dietary and exercise referrals.

Setting

The UMSRFC is a free clinic that serves uninsured and underinsured individuals in Southeast Michigan. The clinic serves a population that is a mixture of people living in rural, sub-rural, suburban, and urban environments. The clinic provides primary care, as well as social services. The potential participants are already being seen as patients at the clinic.

This initiative seeks to serve the health needs of small family farmers, which have a strong presence unique to Michigan.

Community

Michigan has a unique heritage of small family farmers that resist the consolidation of commercial farming, and profit margins are razor thin. Often, the produce is sold at local farmers markets. Faced with poor financial prospects, many of these farmers are self-employed and do not have health insurance. Like many farmers, these individuals are proud of their work and are fiercely independent. Traditional hierarchical approaches to improving blood glucose and glucometer management needs to be reevaluated.

For chronic health conditions, success can only occur if we allow the patient themselves to be active in their care. I have had several folks at clinic say they are “sick” of one-sided conversations with doctors.

Optimizing glucometer control through a lens of optimizing their mobility, independence and in turn, their farms. Many of these individuals have voiced distrust of traditional health delivery systems, and requires an approach that allows participants feel they are an active member in their health care plan.

Objectives

Primary Objective:

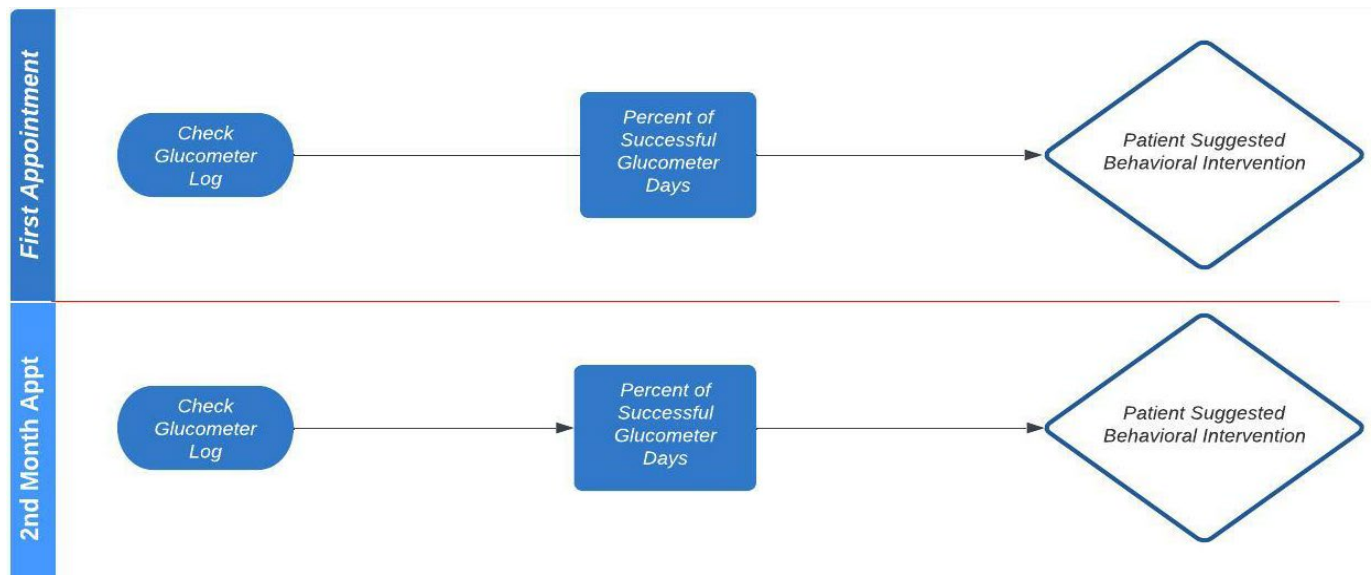
Improve the glucometer use for type-II diabetic patients at the UMSRFC through patient-suggested behavioral intervention at monthly appointments over three month period

Each participant is offered Prescription for Health vouchers (for Farmer’s Market), ParkRx referral, and assistance in enrollment in Msupport, Michigan Medicine’s financial assistance program. It pays 100% of medically necessary services performed by Michigan Medicine providers at Michigan Medicine facilities.

Methods

Qualified participants will be seen monthly by facilitators for a two-three month period at the clinic. At the first meeting, the participant and facilitator will review the glucometer data, if available, review clarified education material, and record a behavioral intervention to improve use, to be assessed the following month. Glucometer and clarified instruction packet offered to each participant.

Success is assessed at the second and third meeting by using the percentage of days the participant successfully used their glucometer in accordance to their diabetic monitoring plan since the last patient appointment. This value is recorded from the glucometer, and is used to compare the success before and after the behavioral intervention. A word cloud will be used to display the interventions. Surveys will evaluate the usefulness of the mutual intervention and the education materials. Use of this value can be used to augment the patient’s A1C, urine microalbumin, or any other labs the health provider wishes to monitor.



Outreach

We utilized a number of outreach efforts, using the established social activities of the towns in Livingston County. Many of these efforts were suggested by the patients themselves. This primarily included “pillars of the community”, including health departments, churches, schools, and high school sports functions. We found using the social networks already established in a community worked most effectively. Often, when speaking to folks at the community gatherings mentioned above, you are not necessarily trying to reach individuals present. These outreach events are more about reaching people who might know someone in need, within their extended social circles. Rural communities tend to be tightknit, so struggling persons are often well known in a given community. Outreach should be started immediately.

Results

Overall, the patients who completed the program demonstrated significant improvements in their glucometer use. We need to allow patients greater involvement in their care. Patient-centric care is the model of the future.

35 Glucometers given.

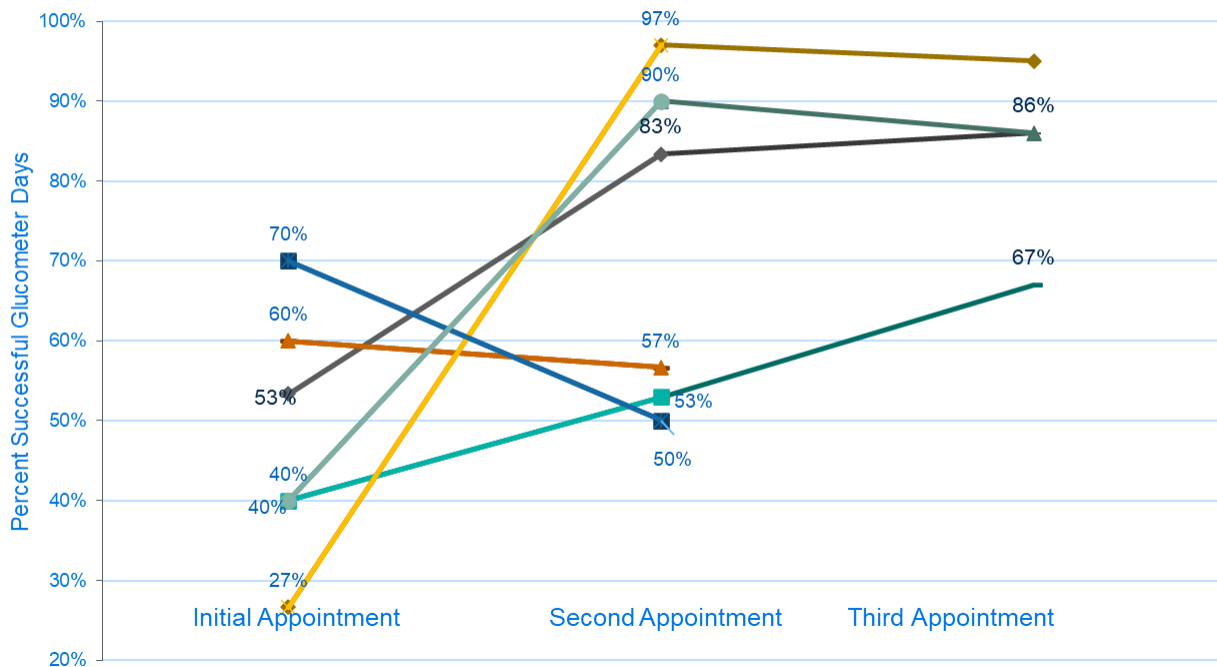
27 patients participated in program.

12 farmers completed program.

92% of participants stated they plan to continue with monitoring plan.

All participants that completed program continue to have relationship at clinic.

Progress of Participating Patients (n=6)



Sustainability

This project is fortunate in that it latches on to existing healthcare infrastructure. The UMSRFC provides the location, health providers, and a variety of basic diabetic supplies, such as lancets, alcohol wipes, and syringes.

The UMSRFC is in an excellent financial position, with a growing endowment and community donations. This project augments the clinic's existing type-II diabetic treatment protocol. Outreach and glucometer education program will be picked up by next year's clinic leadership. The key to sustainability is proactive engagement of everyone potentially impacted by the project. By garnering feedback from clinic stakeholders early on, the project was well-understood and supported by clinic personnel at all levels, from student volunteer, to the faculty advisory board.

Reflections

Compliance vs Optimization: The term “compliance” comes with a potent stigma, as does “adherence”. While these terms are perfectly acceptable in medical lingo, the patients themselves associate these terms with negative emotions.

As young clinicians, we need to accept the “baggage” from mistakes made by previous generations of health professions. Some patients of the clinic are former patients of Dr Robert Anderson patients at clinic. This takes patience and willingness to bear the sins of the past. We need this approach in righting wrongs of people such as Dr Robert Anderson. It can take a long time to earn trust, and only a moment to lose it. It is the task of us young clinicians to “carry the cross” of previous generations.

Additional Participant Quotes to Ponder:

“I have fourteen animals and grandchildren that all depend on me to keep my legs healthy, so I can keep moving. I need to get my blood sugar right for them.”

“There is a decision to make when it comes to diabetes. I don’t like how I am here, but I intend on making the most of it.”

“Whenever I talk to my doctor about my diabetes, it feels like the doctor is waving his finger at me. I am an adult. I expect to be treated as one. Do you understand?”

To receive education resources related to glucometer use, please email charve@umich.edu.