Andrea Fjelstul-Bonert
SDT Project - Final
3/15/2025

Reducing Complications of Gestational Diabetes in Immigrant Populations at the Free OB Clinic by Providing Educational Resources

Introduction

The Iowa City Free Medical and Dental Clinic, founded in 1971, is a non-profit organization in Iowa City which provides free medical and dental care to patients in the area who would not otherwise have access to care. In terms of medical care, the clinic provides general medical care for acute concerns, care for chronic conditions, obstetrical care, and even some specialty care. Funding for the clinic is mostly through local resources – Johnson County, United Way of Johnson and Washington counties, cities of Iowa City, Coralville, and North Liberty, as well as area businesses, clubs, and churches (About Us, n.d.).

Most of the patients who this clinic serves are refugees to the area and/or are new immigrants, who would otherwise not have access to medical care. My personal experiences with the Free Medical Clinic are through helping care for obstetrics patients. Many of these patients receive late prenatal care due to lack of access, and even when they do begin having care, this obstetric care is usually a bit different from routine prenatal care. The clinic does an incredible job of providing these patients with care, but due to lack of time, resources, volunteers, and other barriers, we aren't able to see these patients as frequently as they would otherwise be seen with routine care. And due to barriers with access to insurance, many don't receive their entire new OB workup until 20 weeks gestation, when we are able to see them at UIHC and help them enroll in Medicaid. This

specific form of Medicaid is initiated at this visit and not sooner, because the coverage is limited to only two months, and at 20 weeks, an anatomy ultrasound is very important for prenatal care.

Fortunately, after I had been volunteering at the Free Medical Clinic several months, the University chose to incorporate this clinic into the Family Medicine Department to take place at the Iowa Health Care main campus hospital. Transferring the clinic over proved to have many hurdles at first but has overall been a good transition. Because of this, we can now see the patients before 20 weeks, due to the financial assistance the University provides.

Additionally, likely in part to the patients' social determinants of health – including low socioeconomic status, stress of moving to a new country, etc., we see many patients with pregnancy complications, leading to high-risk pregnancies. These include, but are not limited to, gestational diabetes, gestational hypertension, and pre-eclampsia. Many of these patients also have chronic conditions before becoming pregnant, including obesity, hypertension, and type 2 diabetes mellitus. Having these complications during pregnancy can lead to poor outcomes in both moms and in babies. Moms who have uncontrolled hypertension can have strokes. Pre-eclampsia can lead to organ damage. Babies born to mothers with diabetes can be large for gestational age, leading to problems with blood glucose management. These babies can also have a complication during labor of a shoulder dystocia, which can have many of its own complications for both the baby and

the mother. This is just a short list of the many complications associated with some of these conditions.

Many the obstetric patients that we help take care of at the clinic are refugees from Africa, especially from the Democratic Republic of the Congo and Sudan. Through my experiences in volunteering with this patient population, and especially through my mentor, Dr. Walter's, experiences, a need has clearly been identified in this particular patient population. Through our experiences, we have noticed that many of these patients have type 2 diabetes or develop gestational diabetes in their pregnancies. This isn't necessarily different from patients we see with other home countries; however, what is different is our resources that we are able to provide these patients – both educational on what these diagnoses mean and also on how to control these diseases. Many of our other patients are Hispanic and have a primary language of Spanish. We have a much better understanding of the diet and culture of these patients and have educational handouts to give them. However, for our patients who are African immigrants, we really lack these resources.

This lack of resources is multifactorial, but I think a large part of it is a cultural barrier. The resources we do have – handouts and our (as providers) own biases on foods that spike blood sugar – are not culturally tailored to the specific diets and cultural beliefs of these patient populations. We are also less likely to have in-person interpreters during our visits with these patients, which adds another barrier to education. Because of these things, we have noticed that these patients seem to have more difficulty controlling their diabetes,

which can then lead to a myriad of other complications during the pregnancy and for mom and baby during and after delivery.

The goal of this project is to help close this care gap by providing a resource that is culturally tailored to our African immigrant patients who have diabetes, whether type 2 diabetes prior to pregnancy or gestational diabetes in pregnancy, to help them be better able to both understand and control their diabetes. We hope this will then create not only overall better healthcare and health management in these patients, but also provide better health outcomes for these moms and babies both in pregnancy and beyond.

Literature Review

I started my literature research looking for data on barriers to diabetes management among African immigrants to the United States. One study looked at diabetes management among West African immigrants living in Rhode Island who had type II diabetes. They interviewed participants, and they reported barriers to diabetes management include: financial difficulties, poor dietary habits, nonadherence to daily maintenance, cultural attachment to traditional management of diabetes, cultural beliefs, negative relationship with primary care doctor, nonadherence to medication, and their practitioner's inadequate knowledge of cultural care (Abioye-Akanji, 2013).

Another study interviewed the offspring of African immigrants to determine barriers to eating healthy and getting adequate physical activity. Four themes were found in this study,

which included: family, community, and religious ties to traditional African foods; traditional African cuisine as healthy and American food as nonhealthy; eating patterns vary according to availability and resources; exercise patterns have familial, peer-driven, and generational influences (Jakub, Turk, & Zoucha). Another study had similar methods and looked at Nigerian and Congolese immigrants living in Illinois. They had very similar results, concluding that participants were interested in learning about healthier options, had a negative view on American diet, and overall preferred to eat traditional, cultural foods (Akingbule, Teran-Garcia, & Alston, 2024).

Another paper had pre- and post- data after initiating culturally tailored educational intervention, with a focus on diet, physical activity, and stress management in African immigrants in the United States. This intervention proved to be very beneficial, with all participants having significant improvements in knowledge of diet, physical activity, and stress management (Abioye-Akanji O. G., 2015).

Finally, another paper looked specifically at type 2 diabetes outcomes in immigrant patients through culturally tailored community health worker intervention. Participants in the intervention group received five group-based educational sessions and two one-on-one visits from community health workers. This was a very successful trial, and they found that those in the intervention group had decreases in A1c, systolic and diastolic blood pressure, cholesterol, triglycerides, weight, BMI, and increased knowledge and behavior related to type 2 diabetes management (Islam, et al., 2018).

From these studies alone, it is evident that many barriers exist for African immigrants to quality health. An overall theme between the studies, though, is that there are cultural barriers between clinicians and patients, which makes it difficult for clinicians to help patients control their chronic conditions, especially obesity and type 2 diabetes. Especially notable, though, is the barrier of not understanding how to counsel on diabetes management in a way that is specific to the culture and traditional diet. With further clinician understanding of these cultural barriers, it seems we could help close some of these care gaps and barriers to better health outcomes, which is evidenced by the interventions mentioned above and subsequent improvements in health outcomes.

Finally, I wanted to touch on some data specific to the patients who we serve at the Free Medical Clinic. I pulled the data of all the patients who were FMC patients and delivered in the last year (since June 2023). There were 68 total deliveries over the last year. Of these 68, 25 of them were African immigrants. 10 of these 25 started their pregnancy with a diagnosis of obesity, and 1 started pregnancy with type 2 diabetes. An additional 5 developed gestational diabetes, 3 delivered babies who were large for gestational age, and 3 had birth complications of shoulder dystocia.

Description of Project

To start, I continued to conduct literature reviews and educate myself even further on the diet and culture of this population who we aim to help. I had plans to speak with patients who Dr. Walter has great contact with and who are willing to help; however, this did not work out. We did, however, discuss with Ameera Haroun, who is an MA in the Family Medicine Clinic. She speaks Arabic and helped with both translation and provided insight into the Sudanese diet.

After further educating myself, I created an easy-to-read and understand handout, written in French and in Arabic, to be able to provide to these patients. It was written in simple language and includes many pictures, in case patients aren't able to read the language. The handout can be found in the appendix section. This handout includes information on the diagnosis of gestational diabetes and on how to monitor blood sugars with step-by-step instructions. This is important because we have patients who have diabetes in pregnancy check their blood sugars four times per day, and understanding how to do so is vital. It also includes recommendations on changes to make to their diets/specific foods to decrease intake of, in order to help control blood sugars. The foods included are 2 foods from the typical Congolese diet and 3 foods from the typical Sudanese diet that are high in sugar content. Arguably, this is one of the most important parts of the handout as we simply do not have any resource such as this that is specific to these African refugee populations. It also includes a photo of a pregnant woman walking, stating to go for walks after eating meals to decrease blood sugar. Originally, I had wanted it to include more information on

both the diagnosis of Type 2 Diabetes and on gestational diabetes; however, in aiming to reduce text, only gestational diabetes was included. The handout is colorful, with pictures, and minimal text to make it easily digestible. We decided to have the handouts be in both Arabic and French on the same handout, with an English version available as well for providers and for any patients who read/speak English. In order to ensure this resource is both accurate and helpful, we had hospital interpretive services as well as Ameera Haroun, an MA in the Family Medicine Clinic, review and provide recommendations on language.

For patients who have type 2 diabetes before pregnancy, the goal is to get this handout to them at their first appointment with us. For patients who develop gestational diabetes, we aim to get this handout to them as soon as we know about their diagnosis. The goal was also to provide this handout to patients who have obesity at their first visit, but in order to mitigate confusion over whether or not they have a diagnosis of gestational diabetes, we have elected to not do this.

Unfortunately, creating the handout proved to be timely, so it wasn't given to patients as early as I had intended. It began being given in late winter 2025. My goal was to get this implemented earlier, so that we could have some data collected on its effectiveness. I was hoping to gather data through chart review and through mine and Dr. Walter's experiences in seeing these patients, to see if this handout is helpful in a real clinical setting. I know that controlling diabetes, especially in this patient population, is multifactorial and not simply due to lack of education; however, I hope that this will help bridge a gap in care for them so

that they are more likely to be able to control their diabetes and subsequently have better pregnancy and health outcomes. I look forward to seeing its impact over the next 2 months while I am still a student here. I hope to stay in contact with Dr. Walter to hear about its long-term impacts after I am gone.

Dr. Walter will continue to be the main contact in ensuring that these patients receive this handout. She is directly involved in the care of each of these patients and does weekly chart review before they are seen in clinic to see what needs to be done at the next visit and if any handouts need to be provided to them. I am directly involved, and continue to volunteer at the clinic; however, she has primary contact with all the OB patients seen at the Free OB Clinic.

Results/Findings

Unfortunately, we have not yet been able to collect data due to delay in the handout being completed; however, over the next 2 months while I am still a student, I do hope to gather some data, and Dr. Walter will continue to collect data after that. We will know that this intervention is successful by looking at the data from the blood sugar logs that these patients provide at each visit after their diagnosis. Documentation of how well their blood sugars are controlled is completed at each visit, so we should easily be able to see this data. Additionally, we can look at more long-term outcomes. We will be able to complete similar chart review as I completed above - looking at data from patient deliveries. This data can include obesity status at the start of pregnancy, type 2 diabetes diagnosis prior to

pregnancy, gestational diabetes diagnosis, and then subsequent birth outcomes including shoulder dystocia or babies who are LGA status.

Analysis

I am not able to provide an analysis, since we don't yet have any concrete data. I do think that even if we aren't able to see these large-scale changes right away, we will see a difference on a smaller scale. I believe we will see our patients, at the very least, having a better understanding of their diagnoses. A good measure of if this handout is helpful or not will be simply discussing, subjectively, with patients at subsequent appointments. Often, we explain how and when to check sugars, etc., but at subsequent appointments, patients do not bring sugar logs with them because they didn't understand or are confused about what was explained at their previous appointments. So, if patients even bring logs at all and show some understanding of the disease, this will also show that this handout is successful. But I also think our patients will feel more seen and heard, especially with the inclusion of foods specific to their diets. I look forward to collecting some concrete data.

Challenges

There were some challenges I faced along the way while getting this project up and running. The idea to get the handout into patients' hands was there, but physically getting it into clinic was delayed. We weren't able to get this physically in patients' hands until late winter 2025, which is why there is no concrete data at this point. I struggled with format, trying to make the handout in many different computer applications, and then ultimately found that

Word was the simplest. I spent too much time trying to make the handout perfect and visually appealing, but then I realized it didn't need to be perfect, and instead needed to just get the point across to provide education for patients. Then, once it was completed, we had to rely on a few other people to ensure its accuracy. Since neither Dr. Walter nor I speak Arabic or French, we needed to have interpreting services provide their input. We wanted to make sure they gave their approval before we felt comfortable passing this out to patients in the hospital, which took a little bit of time. Although the handout was completed later than intended, I look forward to seeing the impact it has on our patients as we continue to collect data.

Sustainability/Future Direction

In terms of sustainability, Dr. Walter has access to the documents and will be able to edit or update them as she sees fit as patients continue to receive these handouts. Therefore, sustainability should not be an issue. In the future, I think the handout can be expanded even further and could even be taken over by another SDT student in the future. We obviously want this to be as inclusive as possible, so as many languages and cultures that can be incorporated, the better. We could include more culturally tailored diet recommendations for some of our other African refugee communities; Sudanese and Congolese make up a large part of the patient population we see, but they are certainly not the only. There are also many more dialects spoken than Arabic and French, so I would love if we'd be able to translate this into even more languages.

Personal Reflection

I have definitely become more self aware while working on this project and in medical school in general. I would say that I have become the most self aware in terms of realizing what really motivates me and what is important to me. Being able to help others in any way, especially those who are disadvantaged, truly motivates me and is one of my strongest values. I have absolutely loved my time in medical school, but especially specifically with volunteering at the free OB clinic and at the international family medicine clinic, because I've truly gotten to feel as though I'm making a difference and then see that difference through. I feel so lucky and so privileged to get to become a physician. I truly can't believe I get to spend the rest of my life helping people. I do think that this project and my work in the SDT influenced my beliefs as a physician. I always knew I wanted to serve underserved communities in my work, but I didn't realize to what extent and in how many communities I could do that. I thought I would just do that through my primary work as a PCP, but now I see all the opportunities to make a difference outside of my primary work as well. This project has taught me ways to overcome barriers that I may have with patients, due to differences in language and in culture. It has helped me realize that it's impossible to be the best physician I can be for a patient without first acknowledging our differences, and then making it a point to educate myself on my patients' cultures. In the future, I will make sure to remember this and make it a priority. I have learned the importance of diversity in our cultures and especially within our healthcare system, despite the political climate we live in today. I have come to understand, even just a sliver, of the hardships refugees have faced before arriving in America, but especially about the hardships they face well after arriving. I

applied family medicine, and I hope to stay in Iowa to complete my training. My goal is to return to rural Iowa, my home, and practice rural, full-scope, family medicine. I hope to provide birth to end-of-life care for entire families in my community. I hope to help close care gaps and make healthcare more accessible to our rural communities. This being my primary work alone, I think, will make a difference in the world. However, after completing this project, I see how there's so much opportunity to continue to do good outside of primary work, too. So, I hope to continue to do some volunteering in my community, sit on boards, and overall work to make the world a better place. I hope that this will lead me to have a happy, fulfilled life.

References

Bibliography

Abioye-Akanji, O. G. (2013). An Exploration of the Barriers to Diabetes Management Among West African Immigrants in the United States. *Semantic Scholar*.

Abioye-Akanji, O. G. (2015, 01 01). *Prevention and Management of Type 2 Diabetes among African Immigrants in the United States: Using a Culturally Tailored Educational Intervention with a Focus on Dietary Plan, Physical Activity, and Stress Management*. Retrieved from University of Massachusetts Amherst DNP Projects.

About Us. (n.d.). Retrieved from Iowa City Free Medical and Dental Clinic: https://freemedicalclinic.org/about-us/

Akingbule, O., Teran-Garcia, M., & Alston, R. (2024). Exploring the dietary practices and perceptions of African immigrants in Illinois- a qualitative study of immigrants from Nigeria and Congo. *Taylor & Francis*, 353-370.

Islam, N. S., Wyatt, L. C., Taher, M., Riley, L., Tandon, D., Tanner, M., . . . Trinh-Shevrin, C. (2018). A Culturally Tailored Community Health Worker Intervention Leads to Improvement in Patient-Centered Outcomes for Immigrant Patients With Type 2 Diabetes. *American Diabetes Association*, 100-111.

Jakub, K. E., Turk, M. T., & Zoucha, R. (n.d.).

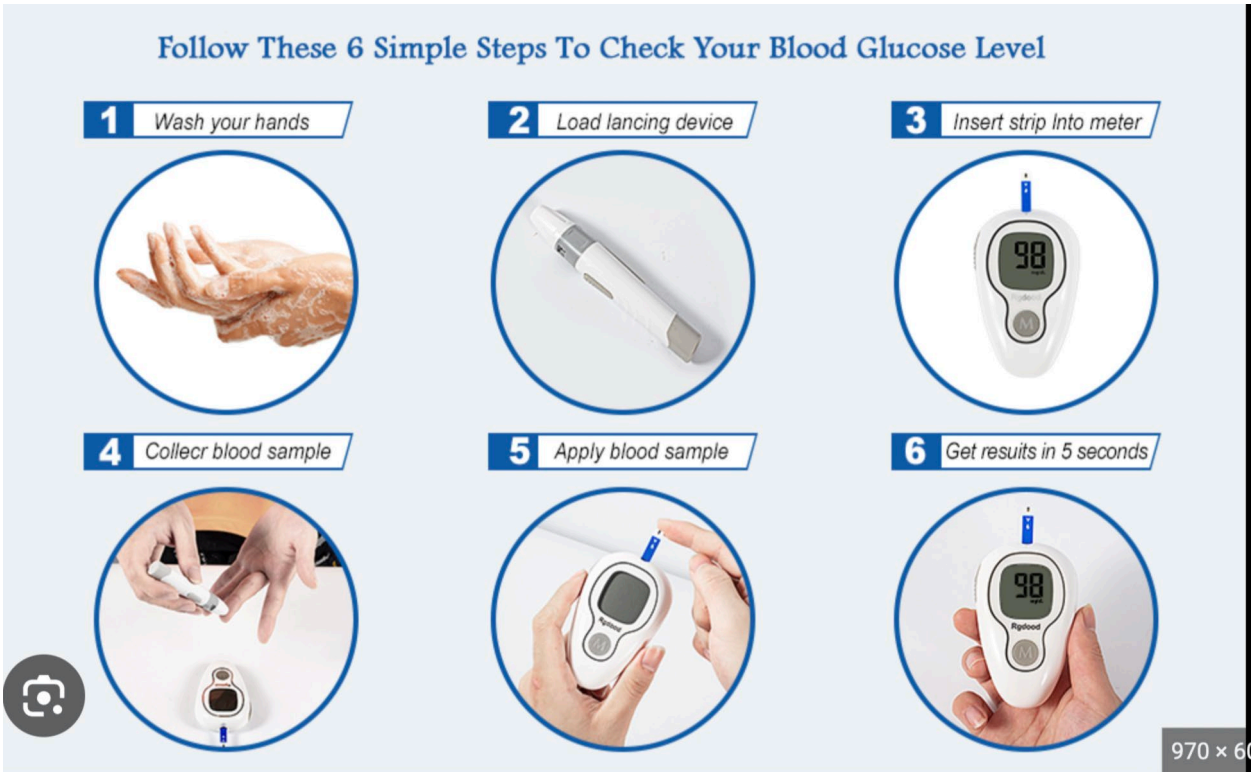
Appendix

The Handout for Providers - English:

Diabetes in Pregnancy

What is it?

An elevated blood sugar that can be harmful to you and to your baby.



Check your blood sugar in the morning and one hour after every meal

Go for walks after your meals

Eat less of these foods that cause blood sugar to rise.

Fufu/Ugali – Congolese: Cassava and/or corn flour. Rolled into egg-size balls and dipped in stew.

Igikoma – Congolese: corn, sorghum, wheat flour, sugar and water. Eaten as porridge at breakfast.

Kisra – Sudanese: Special type of bread, which is made of durra or corn. It is traditionally eaten with a stew and has become a main dish.

Aseeda – Sudanese: Porridge made with wheat or corn flour.

Goraasa – Sudanese: type of bread, similar to a pancake or a flatbread that is spongy, soft, and doughy. It is made with wheat flour and corn. It is eaten for breakfast, lunch, and dinner.

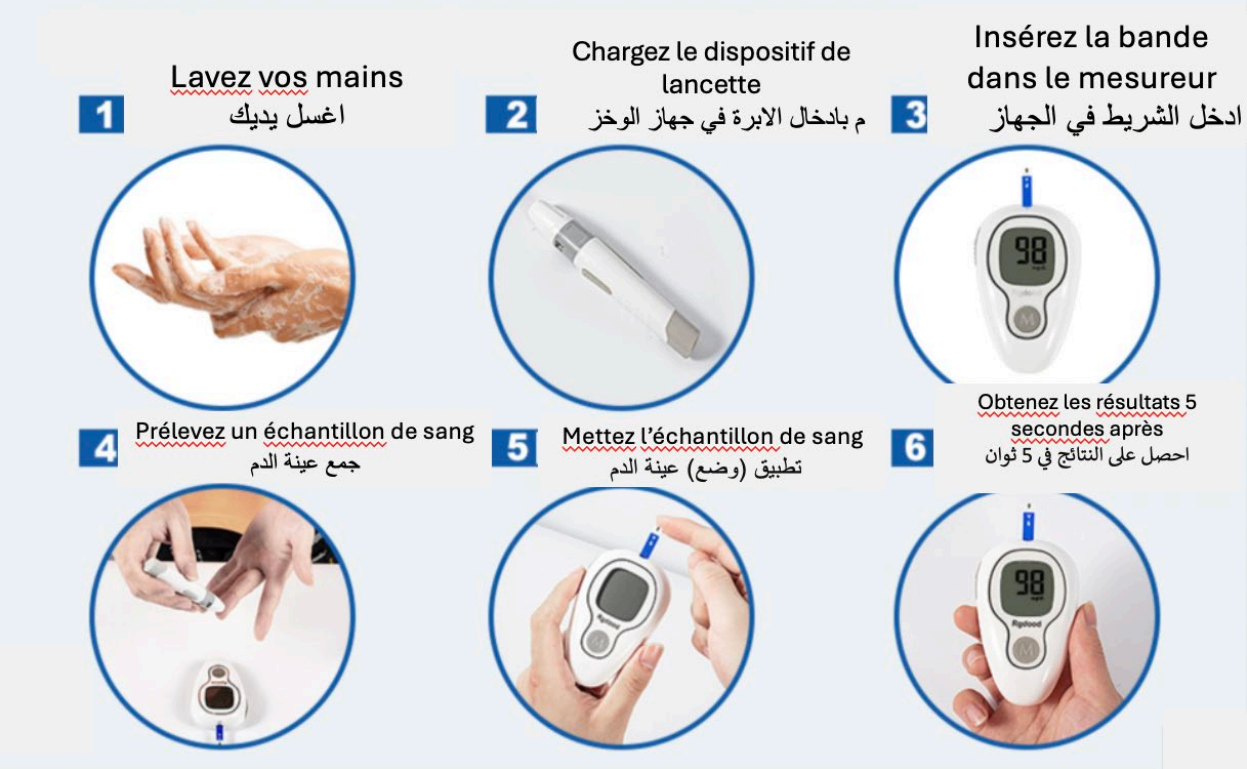
The Handout Given to Patients – French and Arabic:

Le diabète pendant la grossesse
مرض السكري في الحمل

Qu'est-ce que c'est?/ ما هو:

Une élévation du taux de sucre dans le sang qui peut être nocive pour vous et votre bébé
ولطفلك لك ضارًا يكون قد مما الدم في السكر نسبة ارتفاع

Suivez ces 6 étapes simples pour vérifier votre glycémie
اتبع هذه الخطوات ال 6 البسيطة للتحقق من مستوى الجلوكوزفي الدم



Contrôlez votre glycémie le matin et une heure après chaque repas
افحص نسبة السكر في الدم في الصباح قبل الأكل وبعد ساعة من كل وجبة

Mangez moins de ces aliments qui entraînent une augmentation de la glycémie

تناول كميات أقل من هذه الأطعمة التي تسبب زيادة نسبة السكر في الدم