

Running head: SHARED MEDICAL VISITS FOR PATIENTS WITH DIABETES

Shared Medical Visits for Patients with Diabetes

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Abstract

Obesity in Arizona is above the national average along with rates of diabetes. Diabetes is a progressive chronic disease that can be controlled through diet, exercise, and healthy behaviors. The Chronic Illness Model is one way that providers have used to help patients and physicians meet their goals. Through this model, patients are educated regarding their illness in partnership with their provider to improve their health while providers are able to bill insurance companies for a shared medical visit for several patients in a relatively short amount of time. The model is a win-win for all stakeholders. Five patients with diabetes mellitus were given a class on diabetes and all of them found it to be helpful.

### Shared Medical Visits for Patients with Diabetes

*"In the 10 cities with the nation's highest obesity rates, the direct costs connected with obesity and obesity-related diseases are roughly \$50 million per 100,000 residents. And if these 10 cities just cut their obesity rates down to the national average, all added up they combine to save nearly \$500 million in healthcare costs each year."—Michelle Obama at the National League of Cities conference, 3/15/2011*

### Introduction

Phoenix, Arizona is the sixth most populous city in the nation with nearly 1.5 million residents (U.S. Census Bureau, 2011). This accounts for 25% of the population of the state of Arizona. Among Arizona's adults over age 18, the majority or 2/3 were overweight with a Body Mass (BMI) of 25 or higher (Center for Disease Control, 2012). Of the adolescents, 27.8% of high school students were overweight or obese. Of children ages 2-5 years old, 29% were overweight or obese. Arizona's residents are either very young or very old (Department of Health and Human Services, 2012). Named after Ohio, the Buckeye state by its founders, it lies 35 miles west of Phoenix (Buckeye, 2012). Diabetes Mellitus, also known as adult-onset, or type II diabetes is a progressive and chronic disease that affects 11.4% of Phoenicians (National Center for Chronic Disease, 2011). This is higher than the overall United States national average of 8.7% that amounts to about half a million people.

### Adelante Healthcare and Community Health Centers

According to the orientation presentation by Tiffanie Dillard, community health centers have roots in South African during the Apartheid. When that movement moved towards the United States it began in the 1960s in the Southern states. Adelante Community health centers are Federally Qualified Health Centers (FQHC). They provide primary care comprehensive health services so that the medically underserved avoid using the emergency room and save costs. There are 19 requirements to become a federally funded FQHC. There are nearly 50 million Americans that lack health insurance in 2010 and 56 million Americans who lacked access to a doctor. Gila Bend is a great example of what that looks like. Gila Bend is an even further community from Phoenix and they have only one provider in the entire town and she is from Adelante Healthcare. Not only is Gila Bend a Medically Underserved Area (MUA) and Medically Underserved Population (MUP), but they are a Health Professional Shortage Area (HPSA). (Dillard, 2012). The Adelante HCHs provide primary and preventive services and a few provide WIC (Women, Infants, Children), oral care in addition. Adelante does have a sliding fee scale for those who don't have insurance. FQHCs receive federal funding and get cost-based reimbursement and medical mal-practice coverage, allowing some cost savings. Along with these benefits, they are required to comply with the 19 requirements and provide improvement on certain quality measures. One of these measures includes that diabetic patients HgA1c (Hemoglobin A 1 C) levels. The American Diabetic Association (ADA) goal for patients with diabetes is an HgA1C of 7% or less, which is the equivalent to a fasting blood glucose of 131. If able to return to this site for a second externship, the goal would be to take a cohort of patients and track their HgA1c levels over time.

Adelante's history stems from a grassroots movement beginning with Cesar Chavez. Al Jimenez who worked alongside Cesar Chavez (a fellow Phoenician) worked the onion fields

where the current Center Support Office of Adelante Healthcare stands today. The original founding was in 1979 and the clinic helped serve migrant farm workers. In the following 33 years, several cities got a health center and mobile unit. Despite the continual growth of the number of Adelante CHCs, Maricopa county, where Phoenix is located, continues to have underserved residents. Currently, about 700,000 residents are underserved in Maricopa despite Adelante serving nearly 30,000 patients.

Facts about Buckeye (Dillard, 2012)

- 247 Employees
- 33 Medical Providers
- 3 dentists
- 3 Pharmacists
- \$20 million in Revenue
- 27,000+ medical visits
- 75,000 medical visits
- 6,000+ monthly medical visits

Current Patient Profile (Dillard, 2012)

- 75% Below Federal Poverty Level (FPL)
- 89% Below 200% FPL
- 4.8% Migrant Farm Works
- Nearly 52% of patients are Latino
- 52% receive Arizona state Medicaid (AHCCCS)
- 22% are uninsured
- 8 sites as of Fall 2012
- (FPL is \$22,350 for a family of 4)

## Challenge

With nearly 0.5 million resident in Arizona living with diabetes, a large opportunity exists to improve their quality of life. The Buckeye staff currently has no licensed medical health interpreter. Medical assistants are stand-in interpreters for patients who speak monolingual-Spanish. This makes the patient-provider education challenging. Although providers want to spend their time giving patients the information that they need, they have to spend twice as long communicating through an interpreter. A typical visit for a patient with diabetes is 45-minutes. For Spanish speaking patients that time is essentially converted into half, therefore cutting out the detail of patient education. The idea to have patient education for patients with diabetes in Spanish was so that patients could understand in their own language and have time to ask questions.

## Data Collection

### *Methods*

After weeks of observing Dr. Gallagher interact with several types of patients an intervention with patients was discussed. The intervention was aimed at monolingual Spanish speaking patients with diabetes mellitus. At the end of patient visits, those who had diabetes mellitus were asked by the Family Nurse Practitioner (FNP) or student if they would be interested in a group class to learn about diabetes. Those who said yes were tracked. Not all patients with diabetes were asked to participate. Aside from those were asked in their appointment, the office manager Diana Ibarra ran two reports on the NextGen Electronic Health Record. These two reports were one of all the patients who had a patient contact with the FNP in the past 40 days (July 1-August 8, 2012) and then those who were Spanish speaking. Contact information was included in the report. After cross-referencing the lists, the patients who had a diagnosis of diabetes mellitus and were Spanish speaking were contacted by phone a few days prior to the class and again the day before the class. This process gleaned 20 total patients. They were asked to attend the community health center and ask for the instructor Crystal. They were asked to attend on Thursday at 9 AM on August 9, 2012.

On the day of the class five patients showed up. They attended a 90-minute workshop where everything from the pathophysiology of diabetes, nutrition, physical activity, and medications were discussed (see outline below). To help aid the education, 13 posters drawn by the student to describe the organs involved in diabetes, medications, and to answer questions visually. Food models were borrowed from the Buckeye WIC department next door to describe food portions and nutrition labels. Several food posters were also hung in the learning area that the Buckeye clinic already had. The Post-It Poster and markers were provided by Adelante's Center Support Office (thank you Audrey).

At the end of the class, participants were given two pamphlets in Spanish about nutrition and diabetes. These pamphlets are always available at the health center, but they sit in a cabinet. As an incentive, patients were also given two pill-trays for morning and evening medication. At the end of the class, patients were asked to anonymously answer an 8-question survey evaluating the class. Upon completing the survey, patients also had the opportunity to schedule an appointment with the front-desk.

### Evaluación de la clase de Diabetes

1. Completamente en acuerdo
2. En acuerdo
3. En desacuerdo
4. Completamente desacuerdo

Por favor contesta la pregunta marque el número que corresponde con su respuesta.

- |   |       |   |   |   |
|---|-------|---|---|---|
| A. Me disfrute en esta clase.                             | 1     | 2 | 3 | 4 |
| A. Me ayudo tener la clase en español.                    | 1     | 2 | 3 | 4 |
| B. Esta clase me ayudo entender mis medicamentos.         |       | 1 | 2 | 3 |
| 4   |       |   |   |   |
| C. Esta clase me ayudo entender mi diabetes               |       | 1 | 2 | 3 |
| 4   |       |   |   |   |
| D. Esta clase me ayudo entender come comer saludable.     | 1     | 2 | 3 | 4 |
| E. Me gusto conocer otras personas con diabetes.          | 1     | 2 | 3 | 4 |
| F. ¿Cuales temas gustaría aprender para la próxima clase? | _____ |   |   |   |

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- G. ¿Que se pudiera ser diferente o mejor para esta clase? \_\_\_\_\_
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### Evaluation of the Diabetes Class

1. Completely Agree
2. Agree
3. Disagree
4. Completely Disagree

Please chose the answer that best corresponds to the number above.

|                         |   |   |   |  |
|-------------------------|---|---|---|--|
| B. I enjoyed this class | 1 | 2 | 3 |  |
| 4                       |   |   |   |  |

|  |   |   |   |   |
|--|---|---|---|---|
| C. It helped to have the class in Spanish. | 1 | 2 | 3 | 4 |
|--|---|---|---|---|

|  |   |   |   |  |
|--|---|---|---|--|
| D. This class helped me understand my medications. | 1 | 2 | 3 |  |
| 4  |   |   |   |  |

|  |   |   |   |   |
|--|---|---|---|---|
| E. This class helped me understand my diabetes | 1 | 2 | 3 | 4 |
|--|---|---|---|---|

|  |   |   |   |   |
|--|---|---|---|---|
| F. This class helped me understand healthier foods | 1 | 2 | 3 | 4 |
|--|---|---|---|---|

|   |   |   |   |   |
|---|---|---|---|---|
| G. I enjoyed meeting others with diabetes | 1 | 2 | 3 | 4 |
|---|---|---|---|---|

H. What topics would you like to learn in future classes? \_\_\_\_\_

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I. What could be improved in this class? \_\_\_\_\_

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## Diabetes Education Outline

1. Introduction & Objectives- 5 minutes
  - a. Crystal, RN, MPH
    - i. Strong family history of diabetes
    - ii. Passion for working in the community
  - b. Objectives
    - i. Understand how sugar moves in the body
    - ii. Learn the different types of calories (fat, carbs, protein)
    - iii. Understand HbA1C goals for diabetics
    - iv. Understand reading nutrition labels
    - v. Understand appropriate portion sizes
    - vi. Understand calories in sugary drinks
2. Ice breaker/patient introduction- 5 minutes
  - a. Name
  - b. Hardest thing about having diabetes
3. Diabetes Overview-10 minutes
  - a. Pancreas
    - i. Creates Insulin=Hormone=Protein
    - ii. Insulin allows glucose to enter cells for energy
    - iii. When the body is overweight, the cells are not
    - iv. Insulin will be digested if taken orally
  - b. Insulin/Glucose
    - i. Normal Fasting <100
    - ii. Diabetic Fasting goal: < 120
  - c. HbA1C
    - i. Normal <5%
    - ii. Diabetic < 7%
4. Cardiovascular Complications- 5 minutes
  - a. Atherosclerosis
    - i. Glycosylated Proteins
    - ii. Inflammation
  - b. Neuropathy
    - i. Microvascular damage
    - ii. Eyes, Feet, Hands, Penis (erectile dysfunction)
5. Medication Overview-10 minutes
  - a. Insulin Graph
    - i. Short, Intermediate, Long-term acting
    - ii. Maximum Peak
    - iii. Duration of medication
  - b. Non-Insulin
    - i. Glipizide
    - ii. Metformin
    - iii. Sulfonylureas
    - iv. Bactos
    - v. Byetta

## vi. Glyuride

6. Nutrition Labels- 10 minutes
  - a. Where to find them
  - b. Protein-5 calories/g
  - c. Carbohydrates- 4 calories/g
  - d. Fat- 9 calories/g
    - i. 1 tb Butter doubles the calories for that food 170 calories (egg, green beans 70 calories)
  - e. Alcohol- 7 calories/g
7. Portion Sizes- 5 minutes
  - a. MyPlate.gov
  - b.  $\frac{1}{2}$  fruits & vegetables,  $\frac{1}{4}$  protein,  $\frac{1}{4}$  carbohydrates, water
  - c. Food Models
8. Liquid Calories- 5 minutes
  - a. Gatorade, Soda, Juice
  - b. Substitute Water with \_\_\_\_\_ (strawberries, cucumber, orange, and lemon), carbonated water, and Lipton tea w/honey packets.
9. Questions- 5 minutes
10. Evaluation- 5 minutes

Photos

USTED  
 esta' en el centro  
 de un plan exitoso para  
 mejorar su control del azucar  
 en la sangre. Todo el poder  
 que necesita para manejar su  
 diabetes viene de:  
USTED.

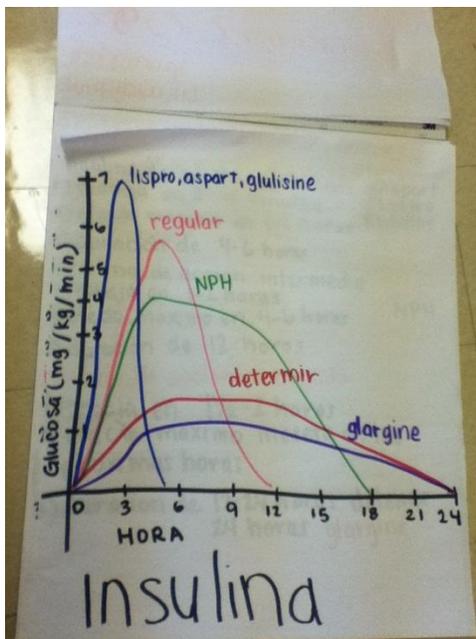
¿Quienes Somos?  
 Crystal (RN) Enfermera de California  
 Maria Chavez - Jalisco, Mexico  
 Rosalva Aguayo - Sinaloa/Sonora, Mexico  
 Ana ~~Grijalva~~ Grijalva - Sonora, Mexico ? mas de diabetes  
 Juana Cruz Ecuadalupe delopez - Chihuahua, Mexico dieta ejercicio  
 Francisco Chavez - Jalisco, Mexico comida

Dieta-comidas saludables  
 Ejercicio - cuanto  
 Medicamento- riesgos  
 Centro de ~~capa~~ senior center: bombas  
 medicamento alternativas.  
 diabetes progresa  
 unfiltered  
 whole grain/wheat  
 fibra corn  
 brxe

metformin  
 glyburide  
 3600 calorías  
 Leche  

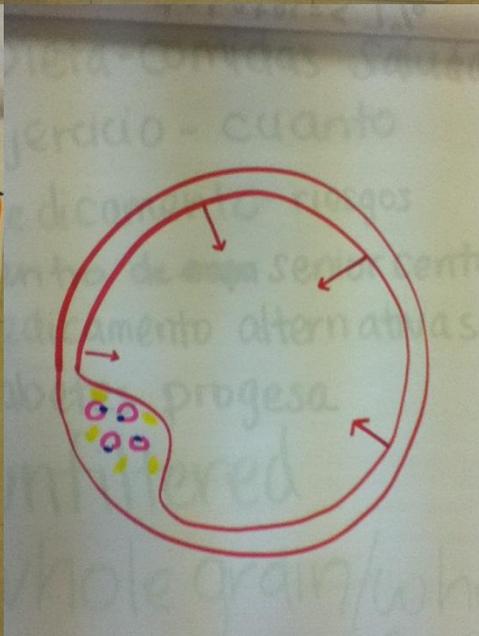
|          |    |
|----------|----|
| Entero:  | 5% |
| Low-fat  | 2% |
| Skim     | 1% |
| Fat-free | 0% |

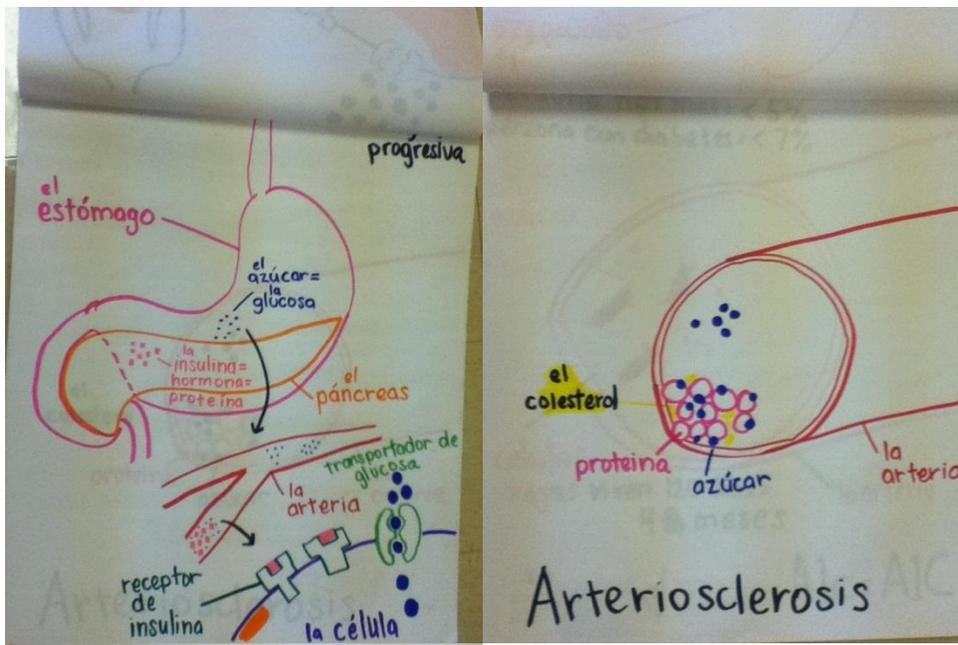




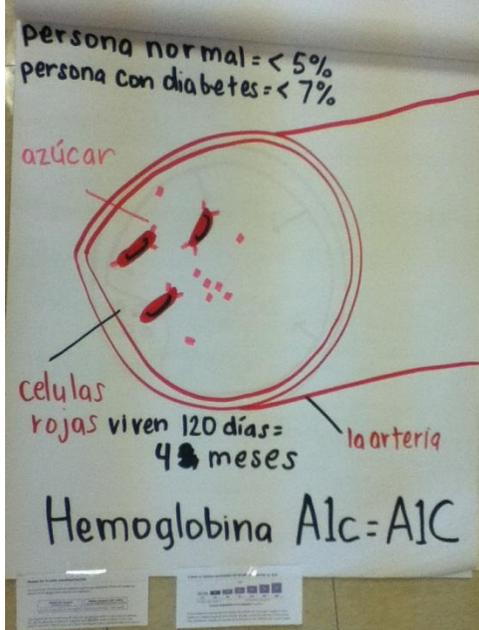
Insulina

- insulina de acción rápida:**
- 1) trabaja en 5-15 minutos
  - 2) efecto máximo en 1-2 horas
  - 3) duración de 4-6 horas
- Aspart  
Lyspro  
Glulisine
- insulina de acción intermedia:**
- 1) trabaja en 1-2 horas
  - 2) efecto máximo en 4-6 horas
  - 3) duración de 12 horas
- NPH
- insulina de acción prolongada:**
- 1) trabaja en 1/2-2 horas
  - 2) efecto máximo meseta en las próximas horas
  - 3) duración de 12-24 horas
- detemir  
24 horas glargine





# Arteriosclerosis



# Hemoglobina A1c = A1C

## Discussion

Shared medical visits for patients with diabetes have benefits for both providers and patients. The patients reported satisfaction with the class. Many said they were never told in this detail how diabetes worked. Many were able to understand the importance of quarterly laboratory blood work after learning about medication, side-effects, and the progression of chronic disease. This helps the provider reach patient goals as set by FQHCs to decrease HgA1c levels to 7% and it helps providers see more patients in a high-quality fashion.

## Lessons Learned

Shared Medical Visits require both patients, providers, and support staff. There is a lot of planning and organizing that goes into the event. Patients suggested that there be weekly classes. Topics to be included were: foods they could eat, how to better control diabetes, and alternative treatments for diabetes. Only insulin visuals charts and explanations were drawn. For the future, other oral hypoglycemic medication should be explained in drawing. Food models were used and created quite a conversation. Using WIC staff to possibly teach this portion of a class would use a resource that the health center already has. WIC staff is knowledgeable about portion sizes, reading food labels, and calorie breakdown. Medical Assistants should also be incorporated to provide foot exams, show how to check insulin or other equipment, and take vital signs. A pre- and post-education test would be able to show if patients learned the information that was taught through the methods used. For future classes, patient's blood work and weight would be compared from baseline to after the class to detect any effect of the education. Some patients who were not able to attend asked for a weekend class or evening class because they worked during the week. Dr. Gallagher recommended using food as an incentive and providing an ADA appropriate breakfast or meal for patients. This would help build community with patients as food is often a social event in the Latino culture.

## Acknowledgements

*I'd like to thank the entire staff of Adelante Healthcare. Especially to those who made it feel like home for those few weeks: Carlos, Joe, Avein, Tiffanie, Beverly, Audrey, and others. Thank you to all of the members of the finance, people services and IT teams for sharing your passion and time with us. I'd like to thank Beverly Gallagher and the Buckeye medical staff for making me feel included even as a temporary extern. Finally, but not least, thank you to GE-PCLP and NMF for providing such a wonderful experience. I grew in leaps and bounds academically as well as personally. I've truly enjoyed this amazing experience and hope to return. Sincerely thank you everyone who made this possible.*

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