



1

Specialized Technology Education for Pumps & Pens in Underserved Populations with Diabetes

The STEPP-UP Project: Designing Low Literacy Teaching Tools for Use of Devices in a Minority Population

Authors: Valerie F. Ruelas, MSW, LCSW,
Martha Walker, RD, Anne Peters, MD
AADE 19 - Houston, Texas
August 8, 2019

Presented by: Valerie Ruelas, MSW, LCSW
Program Director, USC Diabetes Research

Keck School of Medicine of USC USC Diabetes Research

2

Disclosures to Participants

Notice of Requirements For Successful Completion

- Please refer to learning goals and objectives
- Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours

• Conflict of Interest (COI) and Financial Relationship Disclosures:

- Valerie Ruelas – None
- Anne Peters, M.D. - None

• Non-Endorsement of Products:

- Accredited status does not imply endorsement by AADE, ANCC, ACPE or CDR of any commercial products displayed in conjunction with this educational activity

• Off-Label Use:

- Participants will be notified by speakers to any product used for a purpose other than for which it was approved by the Food and Drug Administration. **No Off-label products used**

Keck Medicine of USC USC Diabetes Research

3

Learning Objectives

1. Define key components of creating low-literacy educational materials.
 2. Discuss how utilization of target audience focus groups can enhance educational material development.
1. Utilize the guides provided with their patients.

Keck Medicine
of USC

USC Diabetes Research

4

Specialized Technology Education for Pumps & Pens in Underserved Populations with Diabetes (STEPP-UP)



- ❖ After the implementation of the Affordable Care Act (ACA or Obamacare) and the expansion of MediCal, insulin pens and pumps became available to more patients through the new coverage options these plan provided.
- ❖ But insurance coverage wasn't enough, there was still a barrier to learning how to use new devices because all of the training guides were written at an 11th grade reading level.
- ❖ A grant from the Leona M. and Harry B. Helmsley Charitable Trust and input from our patient and community advisors, we were able to develop a series of simple language 5th grade level guides that introduced the basics of how insulin pens and pump work and described how patients could improve their diabetes treatment.

Keck School of
Medicine of USC

USC Diabetes Research

5

Steps to Achieving Lower Literacy Guides



- ❖ Gathered available material
- ❖ Created draft guides
- ❖ Held Focus groups: English and Spanish speaking adults with type 1 diabetes attended a total of 8 focus groups to provide before and after guide development feedback.
- ❖ Key Requests from patient/community advisors:
 - Illustrations to break up the text
 - Question and answer conversation format between patients and diabetes care team providers
 - Use of "Clear Language" simplified wording
 - More information on basic diabetes management
 - Glossary of terms
 - Classes to accompany the guides

Keck School of
Medicine of USC

USC Diabetes Research

6

Most Challenging Aspect to Lower Literacy Guides



- ❖ Medical and technology terms
 - The use of over 100 illustrations along with the glossary of terms was reported to have significantly increased the readers understanding of the information presented. Fran Milner, Illustrator
- A readability consensus of 8 scales scored the material text at an “easy to read” reading level with a grade level of “5” and a reader’s age of “8 - 9 (grades 4 and 5) Lorena Sprager, Clear Language Specialist
- ❖ Creating non-branded images
 - Developed generic images with detailed labels
 - In some instances used pictures of actual devices

Keck School of
Medicine of USC

USC Diabetes Research

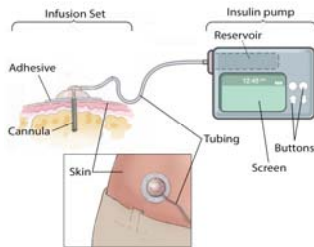
7

Detail of Clear Language and Unbranded Pictures



What are the Types of Pumps?

PUMP WITH TUBING
Some pumps have tubing. These pumps look like a small box that has tubing. The tubing attaches to a little “button” that you put on yourself every 3 days.



Keck School of
Medicine of USC

USC Diabetes Research

8

Conversation Format – Use of Humor and Real Speech



What is carb counting? And why does it matter in type 1 diabetes?



Carb counting means learning how many carbs you eat in a meal or snack. This is so you can give just the right amount of insulin for the carbs you are eating.

Keck School of
Medicine of USC

USC Diabetes Research

9

Conversation Format – Repetition and Safety

If your blood sugar does not come down with a correction dose through your pump, it is possible that your pump is not giving you insulin. This could be due to clogged tubing, a bad site or other reasons. **The only way you can be sure you are getting insulin in your body is if you give it with a shot.**

Keck School of Medicine of USC USC Diabetes Research

10

Some Data

64 adults with type 1 diabetes were enrolled in an observation trial to see the effects of diabetes education using low-literacy education guides.

- 50 completed baseline and 6 month - post education measures:
 - No statistically significant changes in A1C, overall health, depression, diabetes distress, or incidents in severe hypoglycemic or DKA events.
 - Statistically significant increase in Diabetes Knowledge (p = 0.03097) and Hypoglycemic Fear (p = less than 0.0001)

Mode of Delivery	Baseline	6 Months
Pump	6	7
Injection	16	9
Pen	13	14
Injection and Pen	15	20
Total	50	50

Keck School of Medicine of USC USC Diabetes Research

11

Open Source PDF Versions Are Freely Available

<http://www.uscdiabetes.com/#pens>

[How Can I Manage My Type 1 Diabetes Better?](#)
[¿Cómo puedo controlar mejor mi diabetes tipo 1?](#)


[Is the Insulin Pen Right for Me?](#)
[¿La pluma de insulina es adecuada para mí?](#)

[Is the Insulin Pump Right for Me?](#)
[¿La bomba de insulina es adecuada para mí?](#)

[How Do I Use an Insulin Pump?](#)
[¿Cómo se usa la bomba de insulina?](#)

Keck School of Medicine of USC USC Diabetes Research

12

Next Steps 

- ❖ Developing Pediatric Guides
- ❖ Developing guides for continuous glucose monitoring for providers, adult and pediatric populations (current working titles)
 - Is CGM Right For Me?
 - How do I Use CGM ?
 - How Can Carb Counting and Using CGM Help Me Manage My Type 1 Diabetes Better?
 - Beyond the basics of CGM - How do you interpret CGM data for diabetes management

Keck School of Medicine of USC USC Diabetes Research

13



Questions?

Keck Medicine of USC USC Diabetes Research

14

Acknowledgements

- Anne Peters, M.D.
- Martha Walker, RD, CDE
- Valerie Ruelas, MSW
- Latino Health Access
- Fran Milner, Illustrator
- Lorena Sprager, Clear Language Specialist
- Patient/Community Advisors: America Bracho, Rosy De Prado González, Gloria Giraldo, Ofelia Hernandez, Yadira Molina, Jessica Porras, Carmen Rodriguez, Sandra Betancourt, Edward F. Garcia, Shawn K. Wahinehookae, Sara Serafin-Dokhan and Marina Perez
- Medtronic, Insulet Omnipod, Animas Corporation and Tandem
- Funding provided by the Leona M. and Harry B. Helmsley Charitable Trust.

Keck Medicine of USC USC Diabetes Research

15