

# Collaborative Connections-Impacting Care Learning Collaborative

## Diabetes Care – The Parkland Experience

**Luigi Meneghini, MD, MBA**

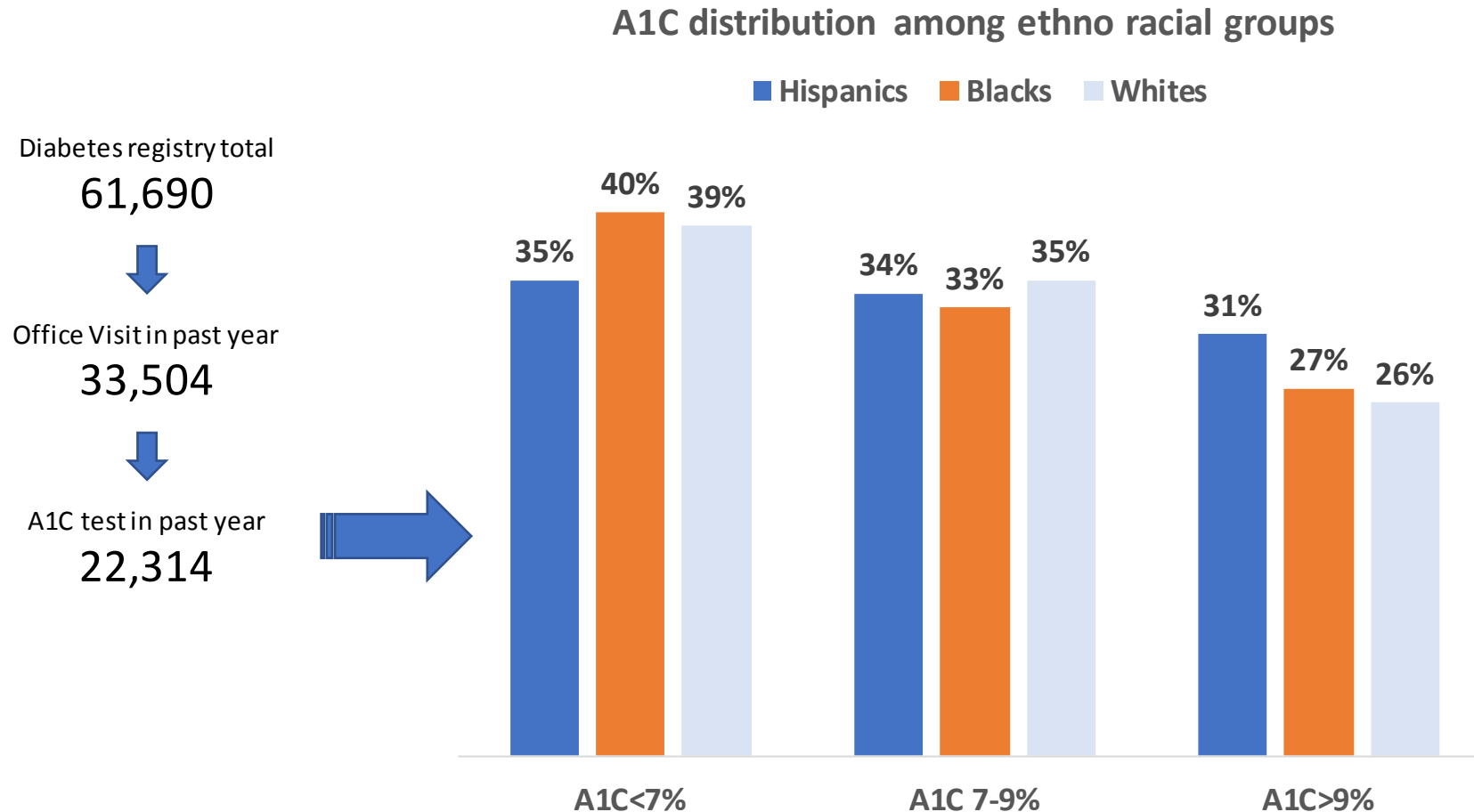
*Professor, UT Southwestern Medical Center*

*Executive Director, Global Diabetes Program, Parkland Health & Hospital System*

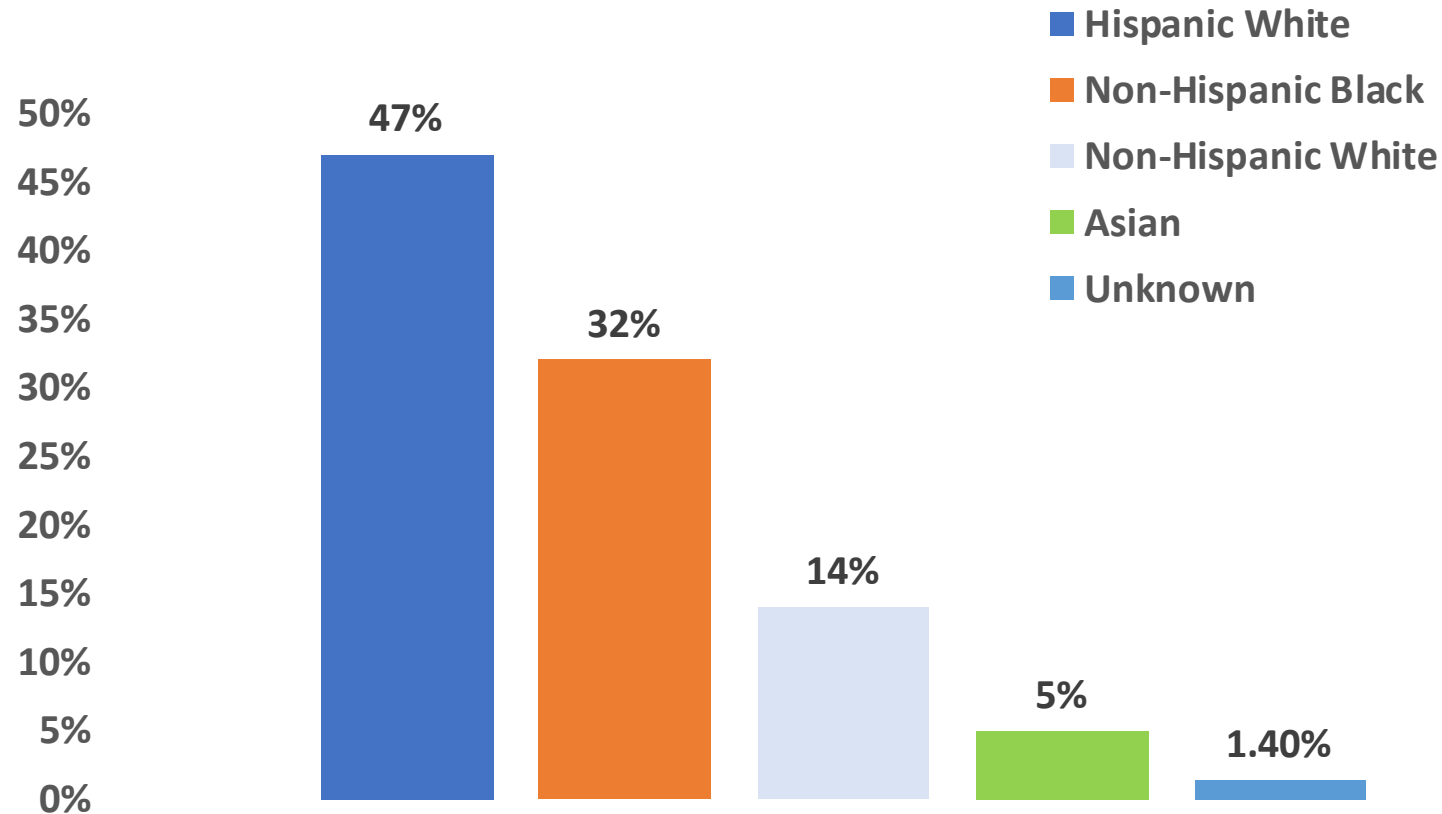


Parkland

# Diabetes Registry: Office visits & A1C testing



# Diabetes Registry: Ethno-Racial Distribution



# 1115 Waiver Program projects that touch diabetes

Lower # with  
A1C>9%



Expand specialty  
access



Retinal screening  
annually



Diabetic foot  
exams



All cause readmission rates  
for people with diabetes



Annual monitoring for  
patients on ACEi/ARBs



Surgical site  
infection rates





Parkland

GLOBAL DIABETES

PROGRAM





## MISSION

Provide integrated diabetes management, education, support and research that will improve outcomes for individuals and communities entrusted to our care

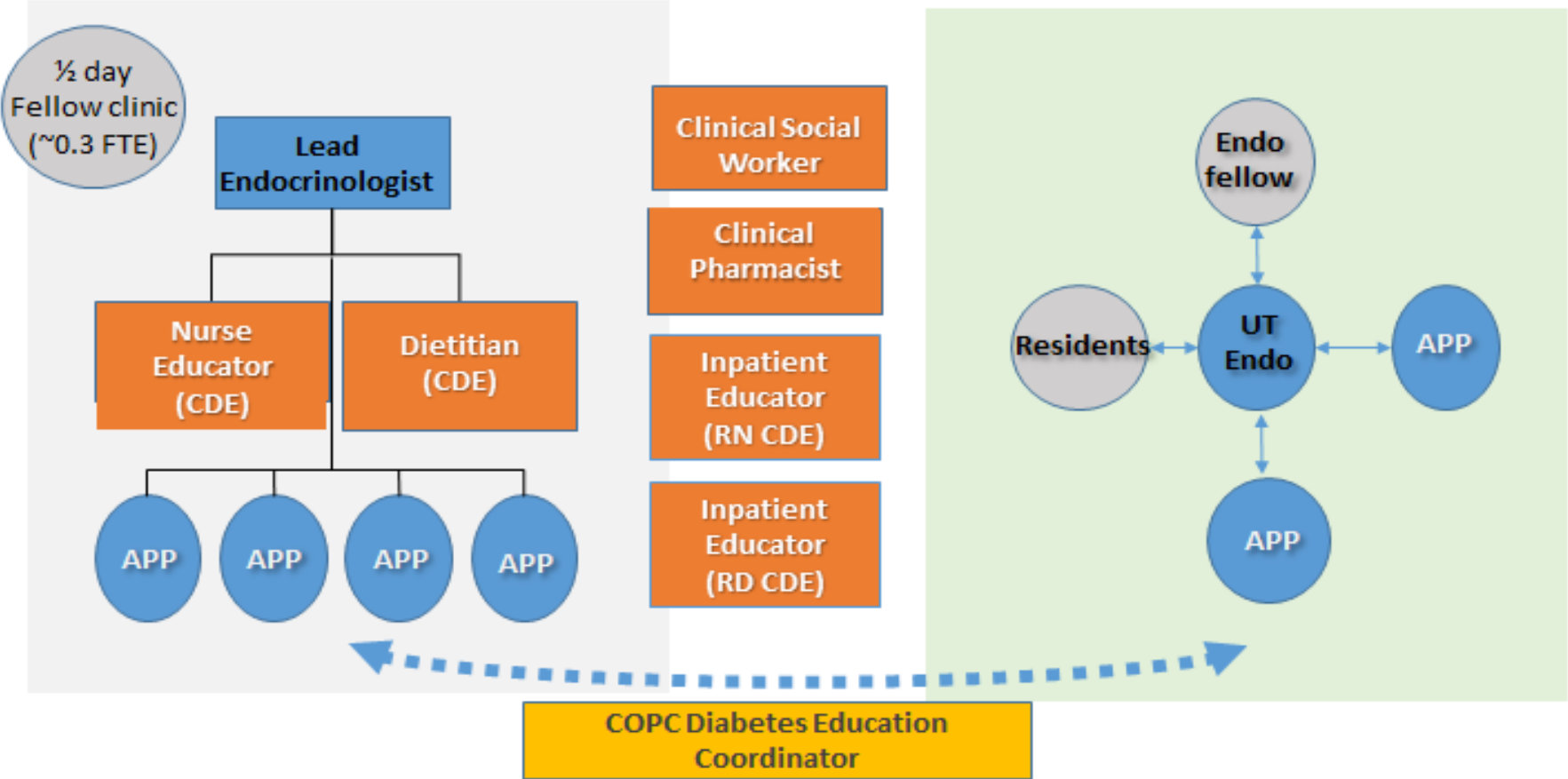
## VISION

Establish Parkland as an internationally recognized safety net health system for diabetes care

# Where we are today

## Outpatient Diabetes & Foot Wound Clinic

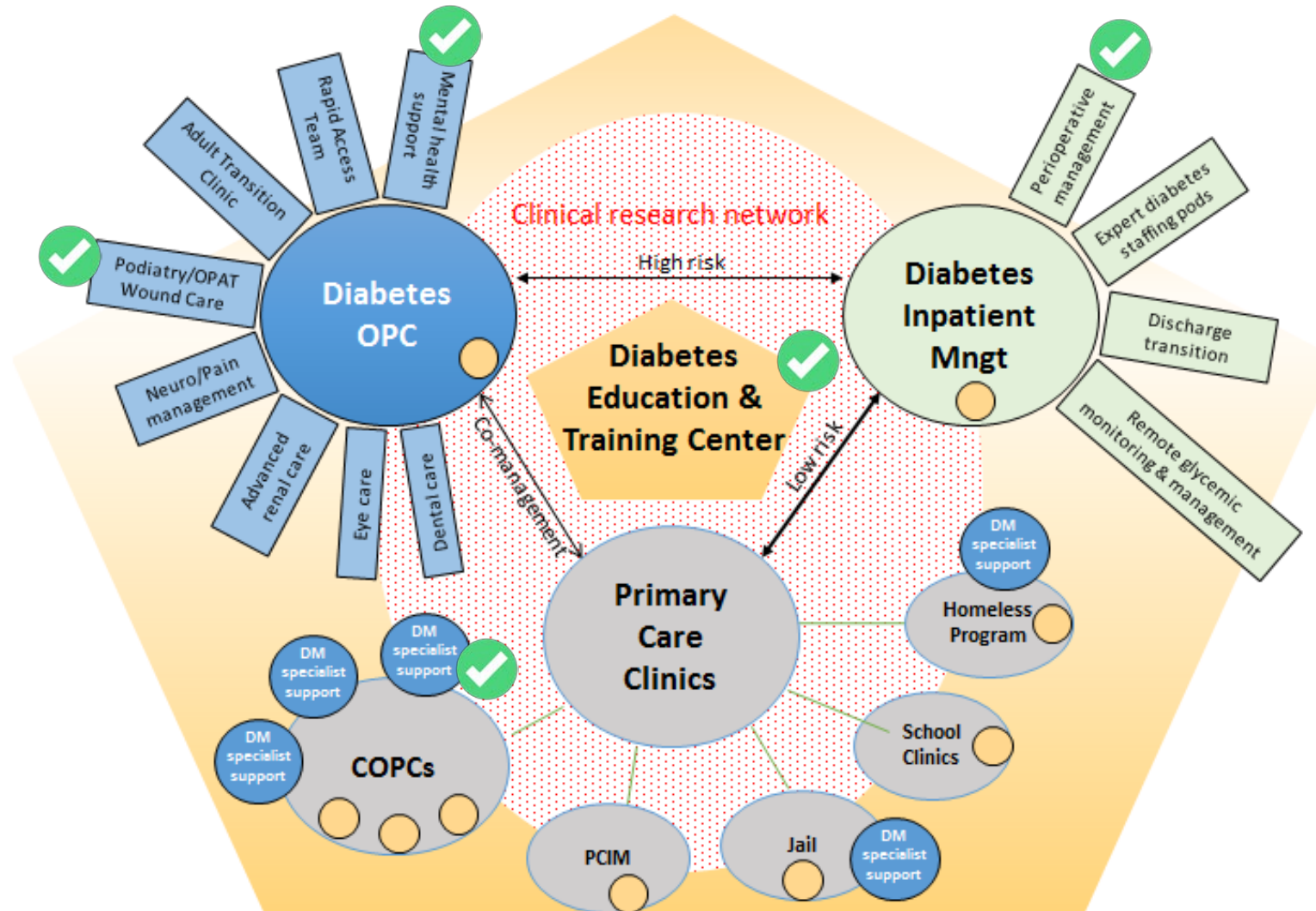
## Inpatient Diabetes Consult Service



**Executive Director**  
Luigi Meneghini, MD, MBA

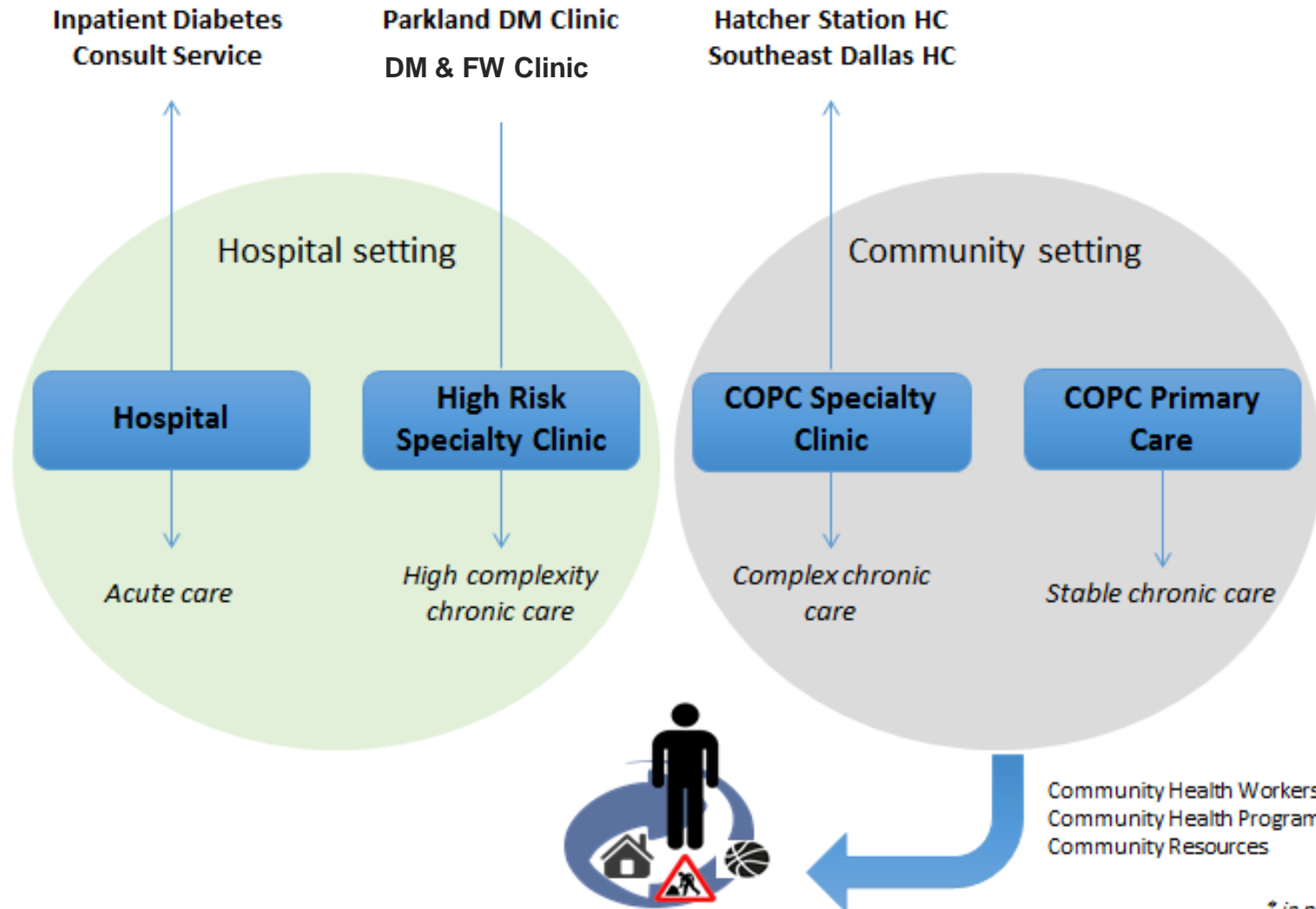
**Director**  
Kellie Rodriguez, MSN, MBA, CDE

# What we hope to achieve





# Bringing specialty care to the patient



# Connecting the Stakeholders

## DOQ-In Committee



Meet monthly F2F &/or WebEx

### Members:

#### Physicians

Uma Gunasekaran  
Neelima Kale  
Sentayehu Kassa  
Perveen Malik  
Elizabeth Obialo  
Emran Rahman

#### Nurses

Juanita Chism  
Anjum Varshney  
Ellen Zignego-Smith

#### Social Worker

Diann Francis

#### Dietitians

Sharon Cox

#### Community Dev. Specialist

Lisa Padilla

#### Clinical Pharmacists

Steven Boatright  
Sheeva Chopra  
Stacy Mathew

#### Administrators

Jane Hunley  
Gretchen Collins  
Ronald Session  
James Perez

#### Practice Operations

Sal Nevarez

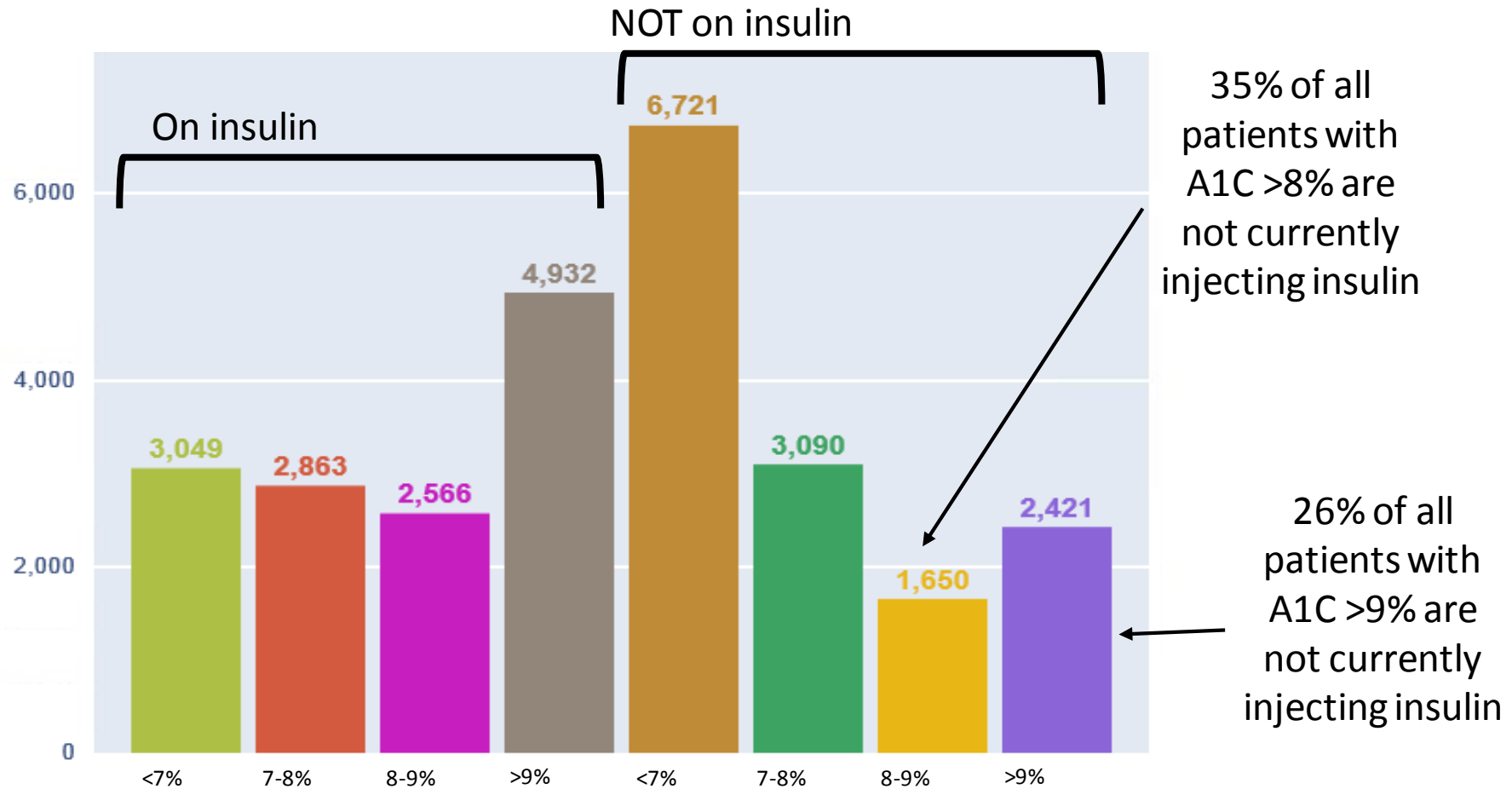
#### Information Technology

Clay Townsend  
Prakash Murthy  
Sridhar Kandukuri

#### Diabetes Education Coordinator

Sarah Solly, MPH, RD, CDE

# Recognizing Opportunity

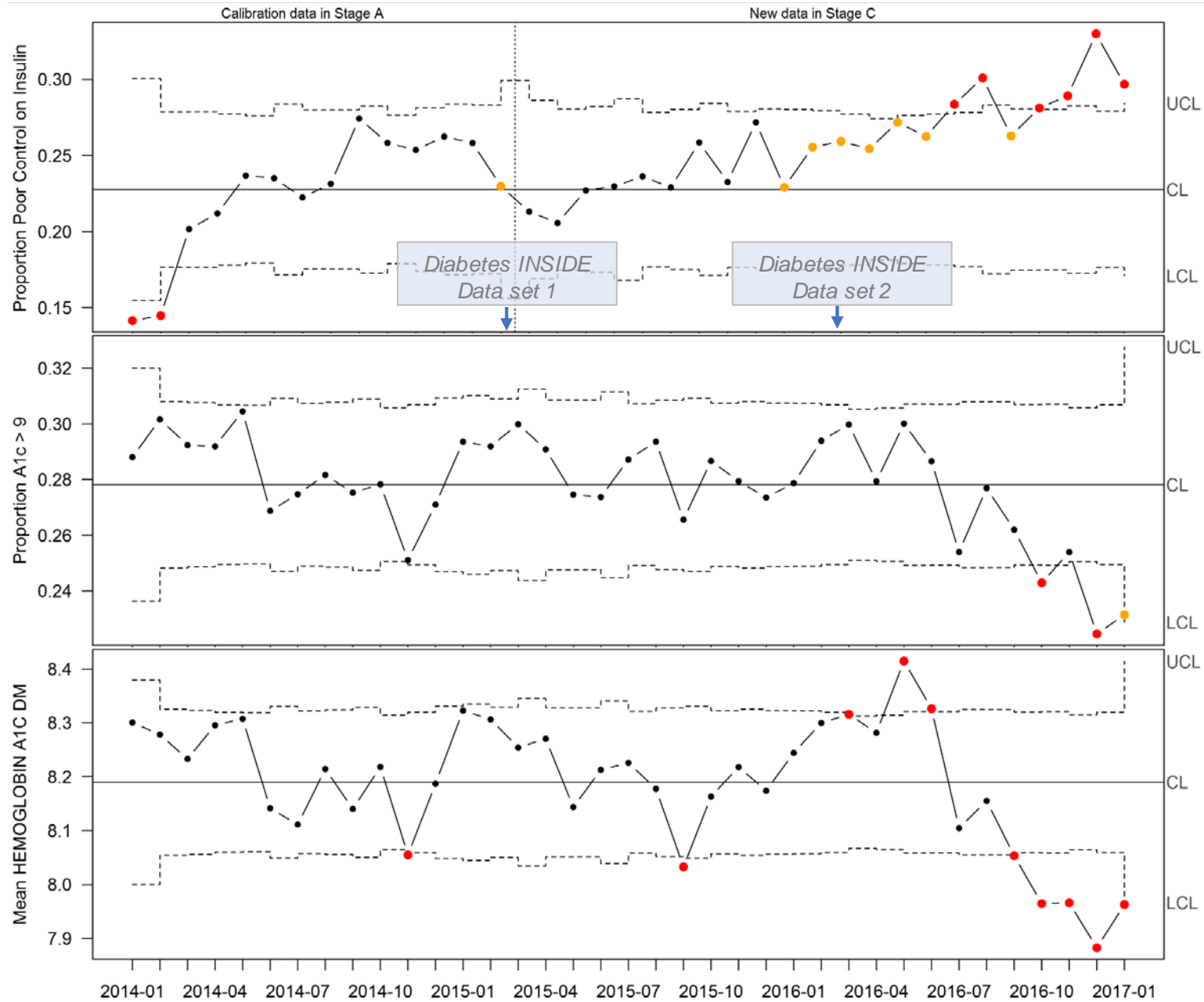


# Forging Collaborations



**Shared Medical Appointments for  
Insulin Initiation & Management**

# Tracking Results



# Standardizing Diabetes Education & Support

# Bilingual Diabetes Education Materials: System-wide standardization

**Parkland**

## Diabetes pills – Where do they work?

**Muscle cells**  
- Metformin (Glucophage)  
- Pioglitazone (Actos)  
Helps muscle cells make better use of your body's insulin

**Liver**  
- Metformin (Glucophage)  
- Pioglitazone (Actos)  
Helps lower the amount of sugar made by your liver

**Kidneys**  
(behind the liver)  
- canagliflozin (Invokana)  
- dapagliflozin (Farisga)  
Lowers the amount of sugar your kidneys keep in the body

**Parkland**

## Causes of high blood sugar

Too many carbohydrates

Gaining weight

Missed medicines

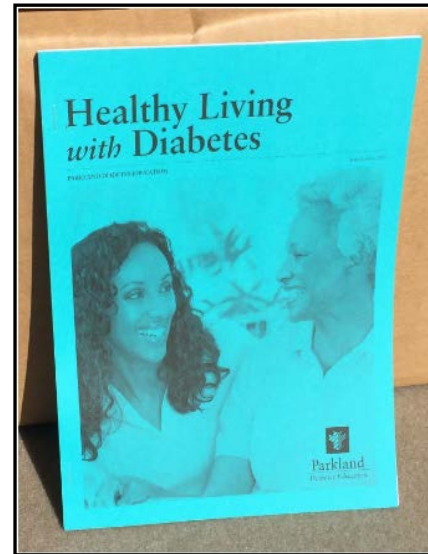
Stress

Sick

Steroids

**Parkland**

- Fingertips give...
- Other places will not keep up with the quick changes in your sugar levels.



**Monitoring your blood sugar**

It is normal to feel scared or anxious about pricking your finger and checking your sugar levels. Use your sugar numbers to give you information about changes you may need to make to control your sugar levels.

**What are your blood sugar goals?**

**Fasting sugar**  
First thing in the morning, before eating or drinking  
80 to 130

**After meal sugars**  
1 to 2 hours after eating a meal  
180 or lower

Your health care provider may have different blood sugar goals for you.

You are not 'bad' if you have high sugar just tells us that something is not working may need to make some changes.

**High blood sugar**

**Raises blood sugar**

- Too much carbohydrate food
- Illness/Stress
- Not enough diabetes medicine
- Weight gain

**Healthy Living with Diabetes**

**Goal Setting**

It is not easy looking after the day-to-day needs of your diabetes. Everything in life can affect your diabetes and diabetes can affect every part of your life.

**you**

Healthy Eating

Health Team

Education

Exercise

Insulin

Monitoring

Pills

Make SMART goals:

|   |            |
|---|------------|
| S | Specific   |
| M | Measurable |
| A | Attainable |
| R | Realistic  |
| T | Timeline   |

Goal setting steps:

- 1 Know the problem
- 2 Think of ways to fix it
- 3 Do you have thoughts about this problem
- 4 Choose a way and try to fix it
- 5 See how it works

Smart goal example:

|   |                                   |
|---|-----------------------------------|
| S | Walk                              |
| M | 10 minutes                        |
| A | Three days a week, in the evening |
| R | "I think I can" level 7 out of 10 |
| T | Starting this week                |

**Healthy Living with Diabetes**

**Type 2 Diabetes**

In Type 2 diabetes, your pancreas still makes less insulin. Also, the insulin that very well. Most people with diabetes (9

**Diabetes**

Life style

Age

Weight

Family history

Pre-diabetes

Thyroid disease

Other medicines

**Signs and symptoms of diabetes**

One of the hardest parts of diabetes is that you may have high blood sugars and not feel anything. When sugars are very high, above 200mg/dL, you may have some of these problems below.

Thirsty

Urination (peeing)

Hungry

Tired

Blurred vision

Weight loss

**Healthy Living with Diabetes**

# Healthy Living With Diabetes



Bluit-Flowers HC



Grand Prairie HC



Garland HC



HOMES



Irving HC



PCIM



Southeast Dallas HC



# Improving efficiency & effectiveness

# Diabetes Overview Snapshot & P-SAM Score

**P-SAM** →

**Diabetes Overview**

Snapshot | Summary | Cancer Registry Rpt | Glucose | **Diabetes Overview** | IP Active Orders | Medication List | Lab Requestion | Facesheet | ICU Report

**P-SAM (Parkland Score for Adherence to Medication)**

| Therapeutic Class                                   | Pharmacy Class                                    | Adherence Rate | Days Adherent | From Date | To Date   | Calculated Date | Insufficient Data |
|---|---|----------------|---------------|-----------|-----------|-----------------|-------------------|
| ACEI/ARB/ARBNI/RI                                   | Example Med: Lisinopril, Losartan                 | 35.34          | 129           | 16-APR-17 | 15-APR-18 | 15-APR-18       |                   |
| ANTI-HYPERGLYCEMICS                                 | INSULINS  | 100            | 363           | 16-APR-17 | 15-APR-18 | 15-APR-18       |                   |
| ANTI-INFLAM.TUMOR NECROSIS FACTOR INHIBITING AGENTS | ANTI-INFLAMMATORY TUMOR NECROSIS FACTOR INHIBITOR | 0              | 0             | 11-APR-18 | 15-APR-18 | 15-APR-18       |                   |
| Biguanides  | Example Med: Metformin                            | 72.02          | 242           | 16-APR-17 | 15-APR-18 | 15-APR-18       |                   |
| CARDIOVASCULAR                                      | LIPOTROPICS                                       | 19.17          | 42            | 16-APR-17 | 20-NOV-17 | 15-APR-18       |                   |
| Incretin/Amylino Mimetics                           | Example Med: Saxagliptin                          | 56.2           | 86            | 16-APR-17 | 15-SEP-17 | 15-APR-18       |                   |
| Serotonin-Norepinephrine Reuptake Inhibitor         | Example Med: duloxetine, venlafaxine              | 66.66          | 44            | 09-FEB-18 | 15-APR-18 | 15-APR-18       |                   |

**Diabetes Composite Score**

0 - 2 Points: High Risk  
**4** 3 - 4 Points: Medium Risk  
 5 Points: Low Risk

Change: ↑

[Details](#)

**Last Diabetes Education Class**

Date: 03/06/2018  
 Type: Education  
 Provider: Marisa C Aguilon, RD, LD

**Last Nutrition Visit**

Date: 12/20/2017  
 Type: Nutrition  
 Provider: Sheral Cade, RD, LD  
 Description: Diabetes (Primary Dx); Obesity; Diabetic gastroparesis

**Recent Outpatient Visits**

| Days ago    | Encounter   | Location             |
|-------------|---|----------------------|
| 4 days ago  | Insulin dependent diabetes mellitus episodic pain | DIABETES CLINIC PCIM |
| 2 weeks ago | Encounter for long term (current) drug use        | LAB RJA              |
| 2 weeks ago | Encounter for long-term (current) drug use        | DERMATOLOGY          |
| 3 weeks ago |   | Cat Scan             |

**Recent ED Visits and Hospitalizations**

| Days ago     | Encounter                                     | Location  |
|--------------|---|---|
| 3 weeks ago  | Deliz Guzman, Claudia A, MD, ED               | Ventral hernia without obstruction or gangrene ... ED (DISCHARGE) |
| 5 months ago | Luong, Shan Renee, MD; Williams, ... 13HOSB   | Single kidney ... ED to Hosp-Admission (Discharged) (ADMIT)       |
| 8 months ago | Furmaga, Jakub Feliks, MD, ED                 | Hyperglycemia ... ED (DISCHARGE)                                  |
| 1 year ago   | Benitez, Fernando L, MD, ED                   | Hydradenitis ... ED (DISCHARGE)                                   |
| 1 year ago   | Benitez, Fernando L, MD, ED                   | Pilonidal cyst ... ED (DISCHARGE)                                 |
| 1 year ago   | Walsh, Teresa Michele, MD; Alcala, ... 8GYNON | Ovarian teratoma, right ... ED to Hosp-Admission (Discharged)     |

**Vitals**

| BP     | Pulse | Weight                    | BMI  |
|--------|-------|---------------------------|------|
| 128/87 | 68    | 150 kg (330 lb 9.6 oz)    | —    |
| 128/54 | 77    | 151.2 kg (333 lb 6.4 oz)  | 59.1 |
| 108/68 | 80    | 148.3 kg (326 lb 14.4 oz) | —    |

**Foot Exam**

| Foot score: | 10/26/2016 | 7/26/2017 |
|-------------|------------|-----------|
|             | 2          | 0         |

**Diabetes Retinal Screening**

**Comorbidities**

| Screening Date                         | Result     |
|--|------------|
| Last Retinal Screening Date            | 12/12/2016 |
| Last Dilated Eye Exam                  | 3/14/2018  |
| PHHS Upcoming Ophth or Opt Appointment | 4/27/2018  |

1. Little interest or pleasure in doing things: 0  
 2. Feeling down, depressed, or hopeless: 0  
 Total of PHQ-9: 0  
 Items 1-9: 0

**Metabolic Lab Values**

| Lab                      | 10/24/2017 | 11/10/2017 | 11/13/2017 | 1/25/2018 | 4/19/2018 |
|--------------------------|------------|------------|------------|-----------|-----------|
| A1C                      | 10.5 (H)   | 10.2 (H)   | 9.9 (H)    | 8.3 (H)   |           |
| Cholesterol              | -          | 188        | 197        | -         | -         |
| Triglycerides            | -          | 192 (H)    | 188 (H)    | -         | -         |
| High Density Cholesterol | -          | 36 (L)     | 44 (L)     | -         | -         |
| Non-HDL Cholesterol      | -          | 152        | 153        | -         | -         |
| LDL CALC                 | -          | 114 (H)    | 115 (H)    | -         | -         |
| CHOL/HDL Ratio           | -          | 5          | 4          | -         | -         |

**Recent Lab Values**

| Lab             | 11/20/2017 | 1/25/2018 | 3/28/2018 | 4/3/2018 |
|-----------------|------------|-----------|-----------|----------|
| Creatinine UR   | 60         | -         | -         | -        |
| Creatinine eGFR | 1.04 (H)   | 0.87      | 1.03 (H)  | 1.12 (H) |
| eGFR            | >60        | >60       | >60       | 55       |

**Current Medications**

| Medication   | Instructions  |
|--|---|
| adalimumab 40mg/0.8mL Sub-Q injection kit  | Inject 160 mg (4 syringes) under the skin, followed by 80 mg (2 syringes) two weeks later (Day 15). Begin 40 mg (1 syringe) weekly dosing two weeks later (Day 29). |
| Alcohol Swabs  | Use as directed.  |
| Blood Sugar Test Strip   | Use as directed 4 times a day and as needed for low blood sugar.  |
| blood-glucose meter  | Use as directed   |
| dicyclomine 10 mg capsule  | Take 1 capsule by mouth 4 times a day, before meals at bedtime  |
| ergocalciferol 50,000 unit capsule   | Take 1 capsule by mouth one time a week   |
| Insulin Regular Hum U-500 Conc 500 unit/mL solution                                      | Inject 135 units (0.27mL) under the skin in the morning before breakfast, 135 units (0.27mL) before lunch and 60 units (0.12mL) before dinner.                      |
| insulin U-500 syringe-needle (BD INSULIN SYRINGE U-500) 1/2 mL 31 gauge x 15/64" syringe | Use 1 New Syringe 3 times a day, before meals to inject insulin under the skin  |
| lancets 30 gauge   | use 1 lancet to test blood sugar three times a day  |
| Levonorgestrel 20 mcg/24 hr (5 years) Device   | 1 Device by INTRAUTERINE route one time   |
| losartan 50 mg tablet  | Take 1 tablet by mouth one time a day   |
| metFORMIN 500 mg tablet  | Take 2 tablets by mouth two times a day with meals  |
| solifenacin (VESICARE) 10 mg tablet  | Take 1 tablet by mouth daily at bedtime   |
| Spirolonactone 50 mg tablet  | Take 1 tablet by mouth daily for 1 week and then increase 1 tablet by mouth twice a day thereafter  |
| SUMatriptan succinate 50 mg tablet   | Take 2 tablets (100mg) at onset of headache, may repeat after 2 hours if needed. Not to exceed 4 tablets in 24 hours.   |

**Upcoming Health Maintenance**

| Screening               | Completion Date | Date Due   |
|-------------------------|-----------------|------------|
| SCREENING PAP SMEAR     | 1/13/2016       | 01/13/2017 |
| DIABETES FOOT SCREENING | 7/26/2017       | 07/26/2018 |
| RETINAL SCREENING       | 4/27/2018       | 04/27/2019 |

**Problem List**

**Pkamb Diabetes Problem List**

Hyperlipidemia  
 Type 2 diabetes mellitus with complication, with long-term current use of insulin

This is a filtered list. 18 active problems are not being displayed here.

**Goals**

- Lifestyle: Maintain Healthy Weight & Plan Regular Exercise
- Medication: Take medications as recommended

**Future Appointments**

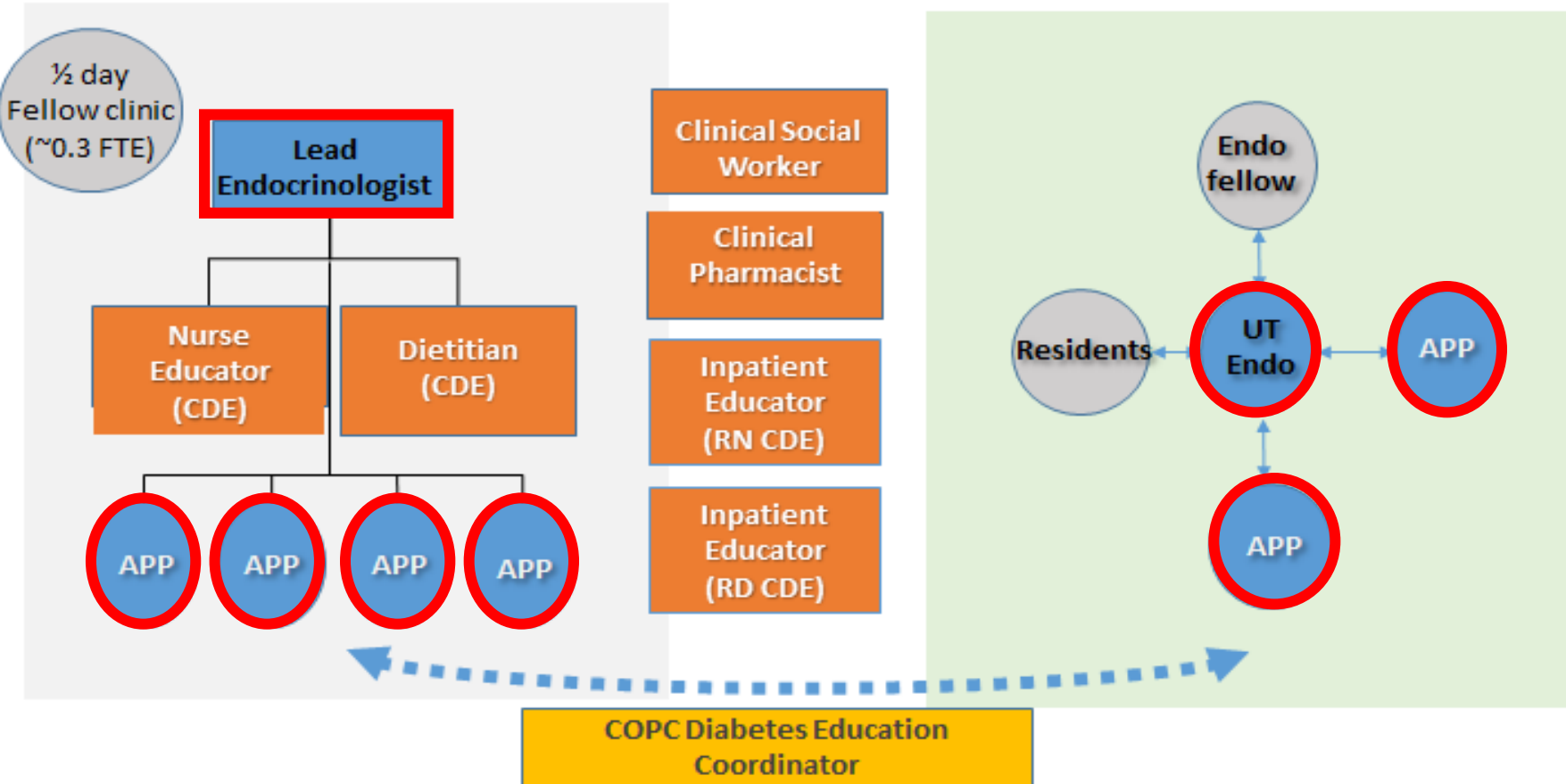
| Date      | Location                          |
|-----------|-----------------------------------|
| 4/27/2018 | OPHTHALMOLOGY CLINIC              |
| 5/8/2018  | DERMATOLOGY                       |
| 5/24/2018 | Guernsey Dia-On Evaluation Clinic |

# Expand Access to Specialty Care

# Specialist-APP Model of Care

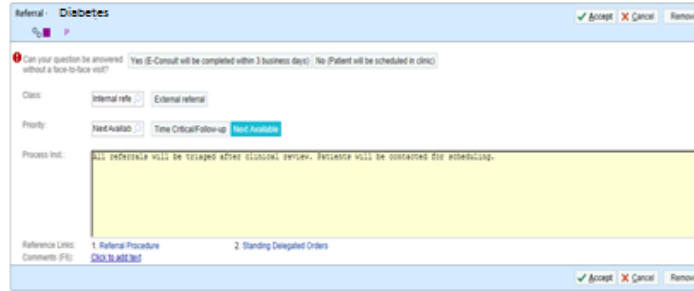
## Outpatient Diabetes & Foot Wound Clinic

## Inpatient Diabetes Consult Service

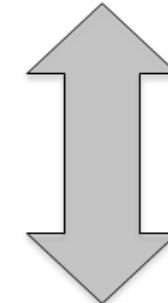
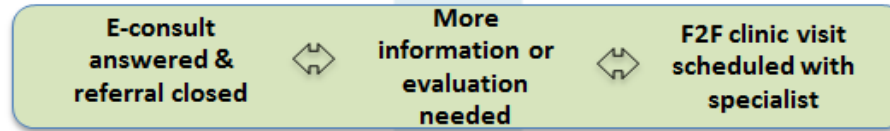


# Diabetes e-Consultations & Education Sessions

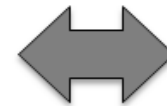
Referral: Choice of F2F or e-consultation



Specialist review and response within 3 business days

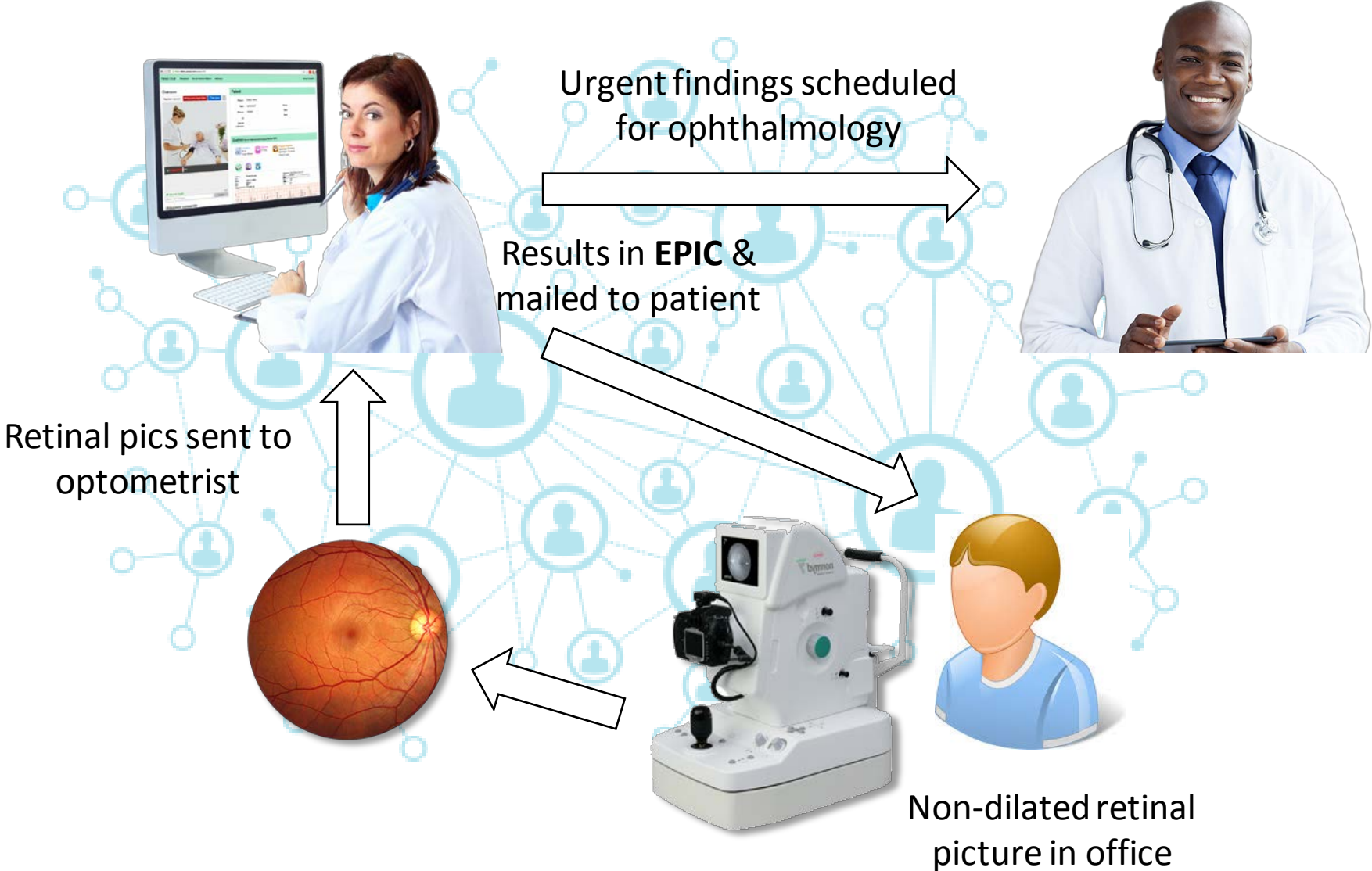


Diabetes Champion Team



Bi-Weekly ECHO-style conferences to discuss cases & learning points

# Expand Retinal Screening in Primary Care



# Diabetic Foot Screening Flowsheet

Hand-Off Diabetic Foot Screening

Mode:

Patient Re...  10/11/17  
 Patient c/o ...  0700  
 Orthopedic...   
 Orthopedic...  **Patient Reported History of Ulcer or Amputation**  
 Dermatolo...  Patient  
 Dermatolo...  **Patient c/o Symptoms**  
 Nails RIGHT  Patient c/o  
 Nails LEFT  **Orthopedic RIGHT**  
 Vascular R...  Orthopedic  
 Vascular L...  **Orthopedic LEFT**  
 Neurologic...  Orthopedic  
 Neurologic...  **Dermatological RIGHT**  
 Diabetic F...  Dermatologica  
 DIABETE...  **Dermatological LEFT**  
 Dermatologica  
**Nails RIGHT**  
 Nails RIGHT  
**Nails LEFT**  
 Nails LEFT  
**Vascular RIGHT**  
 Dorsalis Pedis  
 Posterior  
**Vascular LEFT**  
 Dorsalis Pedis  
 Posterior  
**Neurological RIGHT**  
 Monofilament  
 Vibratory  
**Neurological LEFT**  
 Monofilament  
 Vibratory  
**Diabetic Foot Exam**  
 Education  
**DIABETES FOOT SCREEN SCORING METRIC**  
 DIABETES

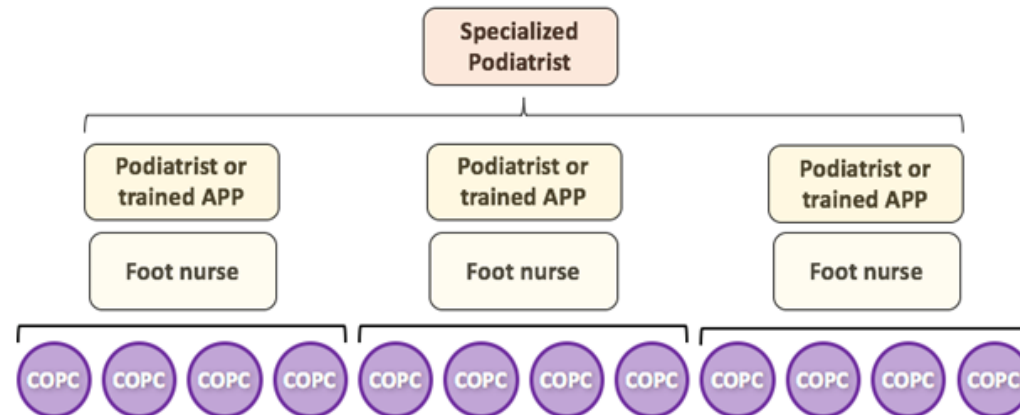
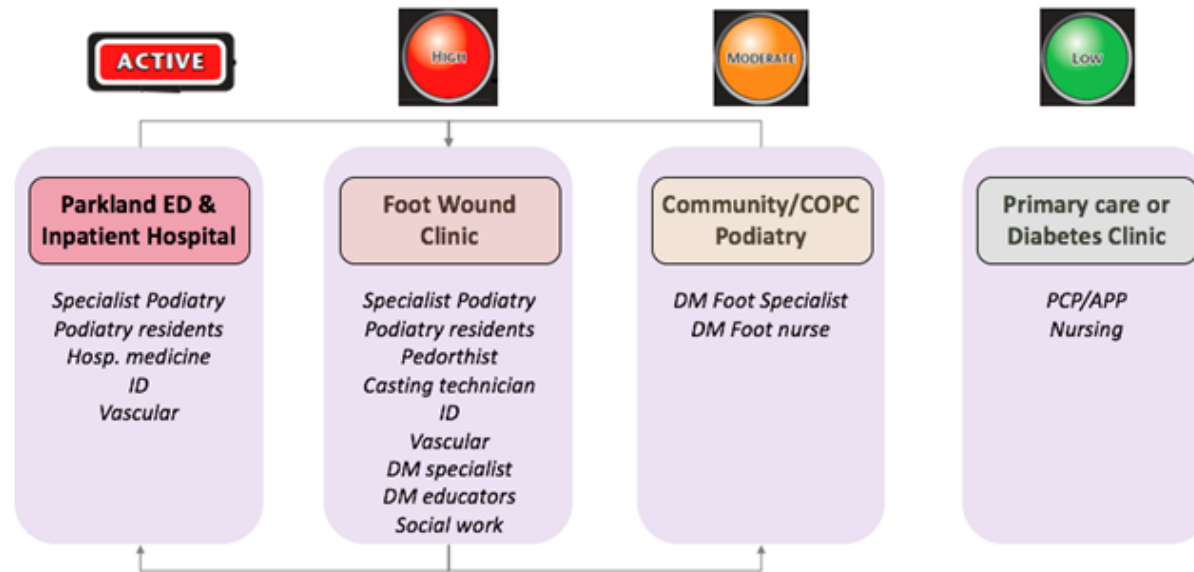
Scores  
**0-4**



Diabetes  
Overview  
Snapshot

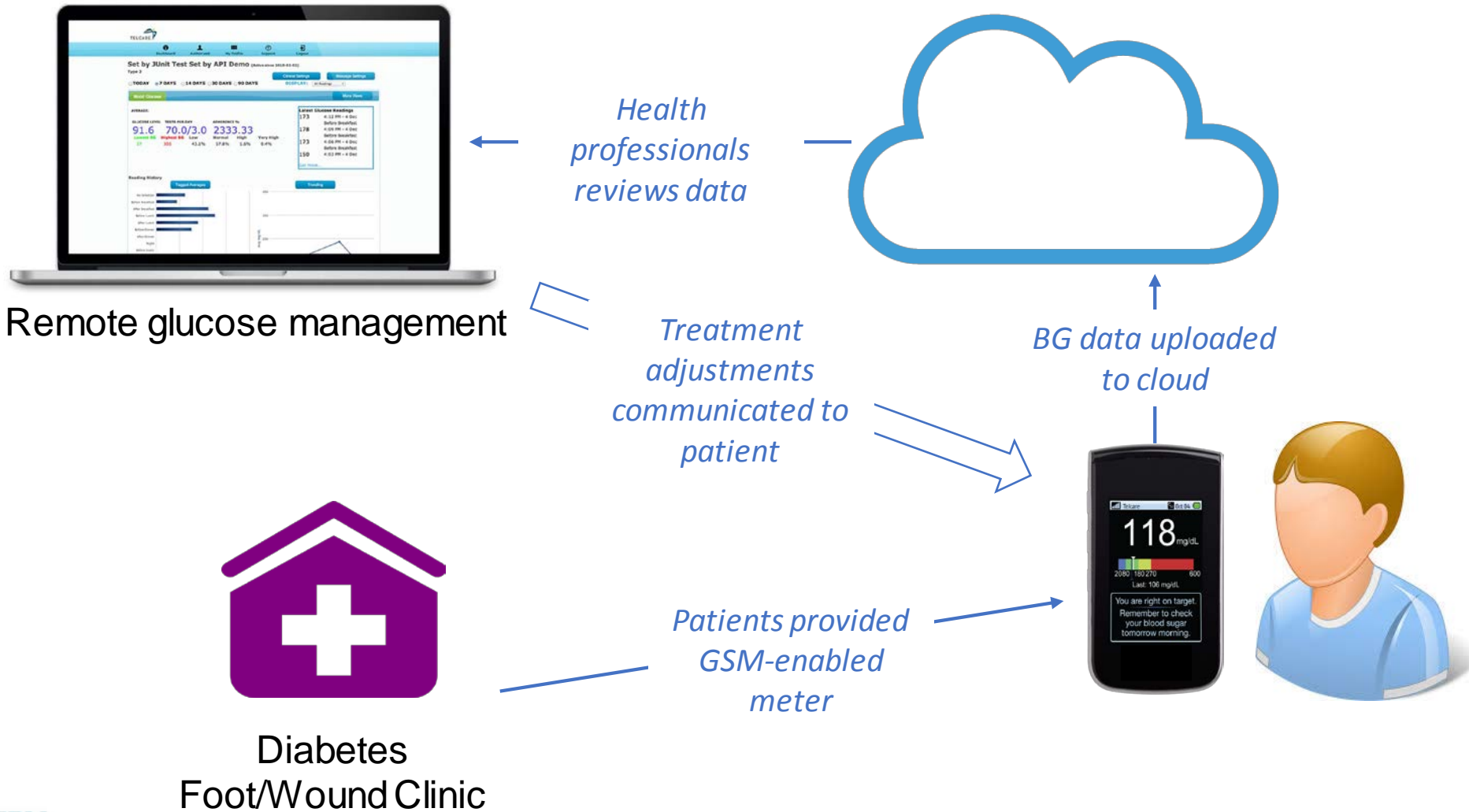
# Healthy Feet Initiative

| Category | Risk Definition   |
|----------|---|
| 4        | Active Foot Ulcer, Charcot                                  |
| 3        | History of Foot Ulcer, Lower Limb Amputation                |
| 2        | Peripheral Vascular Disease – LOPS with Callus or Deformity |
| 1        | Neuropathy – LOPS without Callus or Deformity               |
| 0        | Normal Screening  |





# Remote Glucose Monitoring



# Reducing Readmissions for Patients with Diabetes

# Reducing Preventable Readmissions for Patients with Diabetes on the Parkland Inpatient Hospitalist Unit

Huan Ting Chang, Benjamin Kirby, Eleanor Phelps BSN, MA, RN, Chanhaeng Rhee, MD, Uma Gunasekaran, MD, Luigi Meneghini, MD



- Implementation of streamlined patient education documentation in EPIC
- Reinforcement of teach-back method technique
- Development of tiered nursing diabetes champions for inpatient support

## Background

- High rates of 30-day readmission is both costly for the hospital and detrimental for the patient<sup>1,2</sup>.
- Patients with diabetes are at a greater risk for 30-day readmissions than patients without diabetes due to the complications associated with diabetes<sup>3</sup>.
- Previous studies have shown that the following best practices can significantly reduce 30-day all-cause readmission rates for patients with diabetes:

1. Nursing-Provided Diabetes Inpatient Education in accordance to the American Diabetes Association (ADA) Guidelines<sup>4,5</sup>
2. 12 Step Standardized Discharge Procedures from Project Re-Engineered Discharge (RED)<sup>6</sup>

## Local Problem

- The national benchmark 30-day all-cause readmission rate for patients with diabetes is 19.8%<sup>7</sup>.
- The 30-day all-cause readmission rate for patients with diabetes at Parkland is 25.7%.
- 50% of the readmitted Parkland diabetes patients originate from the Parkland Hospitalist Unit.

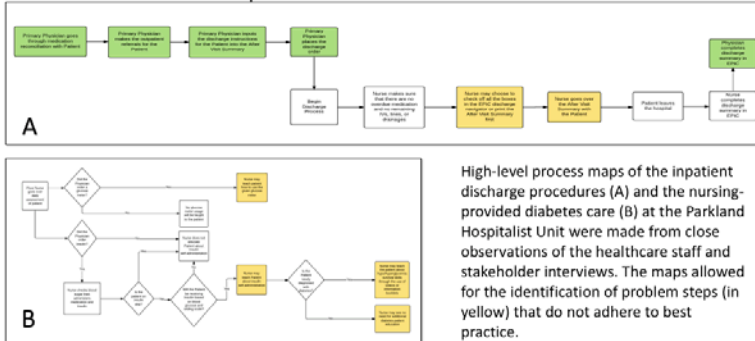
## Aim Statement

The primary aim of this project is to reduce the 30-day all-cause readmission rate for patients with diabetes from the Parkland Hospitalist Unit by 10% at the end of the project in January 2019.

In order to reach our primary objective, we must also improve the rate of compliance to best practices in the Parkland Hospitalist Unit by at least 10% at the end of the project.

## Quality Tools

### Pertinent Diabetes Inpatient Care Process



### Teach-Back Assessment Measuring Tool

| Diabetes Number | Follow-Up Appointment Reason | Follow-Up Appointment Time | Follow-Up Location | Follow-Up Comment | Medication List (To Be Taken) | Medication Side Effects | Medication Occurrence | Total Score |
|-----------------|------------------------------|----------------------------|--------------------|-------------------|-------------------------------|-------------------------|-----------------------|-------------|
| Case 1          | 3                            | 3                          | 3                  | 3                 | 1                             | 0                       | 0                     | 5/7         |

| Standard Diabetes Education (Example)          | Percentage Done Correctly |
|--|---------------------------|
| Diabetes Monitoring with Glucose meter         | 0 1 1 1 3 75%             |
| Insulin types, dosage, and self-administration | 0 1 0 0 0 25%             |
| Hypoglycemia symptoms                          | 1 1 1 1 1 100%            |

Measurement tools were developed from ADA guidelines, Project RED, and expert interviews in order to measure the quality of the inpatient diabetes education (A) and discharge summary teaching (B). Trained observers would randomly sample inpatient diabetes education happening on the Hospitalist Unit (A) or observe the whole discharge process for a patient with diabetes on the Hospitalist Unit (B). The observers will assign 1 point to the education topic if it was taught using the teach-back method. A strict list of definitions and exceptions will be provided along with the tools.

## Results and Conclusions

The Parkland staff policy, training process, and the EPIC EMR do not fully adhere to the best practices for reducing 30-day all-cause readmissions for patients with diabetes. Preliminary measurements on the Hospitalist Unit show that compliance for using the teach-back method is suboptimal.

**Next Steps:** Once the formal baseline compliance rate for using the teach-back method has been collected, a list of recommendations will be made to address the quality gaps. FMEA will be conducted to determine the pilot interventions. Data from the implementation will be collected over a span of 6 months.

## References & Acknowledgements

- References:**
1. Jencks SE, Williams MC, Coleman EA (2009) Rehospitalizations among patients in the Medicare fee-for-service program. *New England Journal of Medicine* 360(24):2252-2262
  2. Rich MW, Beckham V, Wilensberg C, Leven CL, Freedland KE, Carney RM (1995) A multidisciplinary intervention to prevent the readmission of elderly patients with congestive heart failure. *N Engl J Med* 333(12):1200-5 doi:10.1056/NEJM199512033331206
  3. Hines AL, Barrett ML, Jiang H, Steiner CA (2014) Conditions with the largest number of adult hospital readmissions by payer, 2011
  4. Healy JJ, Black S, Harris C, Lerner A, Dungan KM (2013) Inpatient diabetes education is associated with less frequent hospital readmission among patients with poor glycemic control. *Diabetes Care* 36(10):2960-2967
  5. Clement S, Brathwaite SS, Magee MF, et al. (2004) Management of diabetes and hyperglycemia in hospitals. *Diabetes Care* 27(7):1053-1061
  6. Jack B, Greenwald L, Forgyhe N, et al. (2008) Developing the tools to administer a comprehensive hospital discharge program: the Re-Engineered Discharge (RED) program
  7. Elshavuer A, Sliemer C (2013) Readmissions to US hospitals by diagnosis. Agency for Healthcare Research and Quality. Healthcare Cost and Utilization Project, Statistical Brief 133:1-19
- Acknowledgements:**
1. Gary Reed, M.D.
  2. Office of Quality, Safety, and Outcomes Education
  3. UT Southwestern Medical Center
  4. Parkland Health & Hospital System



# Preventing Type 2 Diabetes

# Pre-Diabetes Registry Development



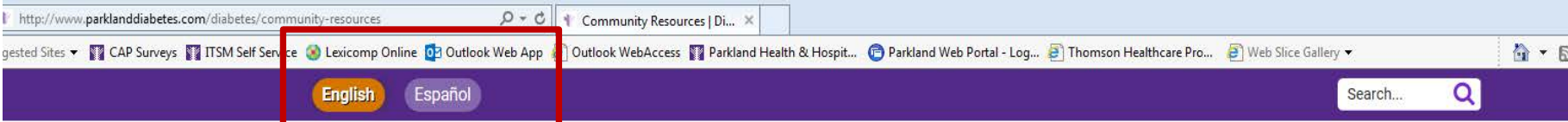
*Retrospectively query for pre-DM A1C in patients not in DM Registry & not taking DM meds*

*Run risk engine and prospectively screen at risk population with lab A1C*

**Pre-Diabetes Registry**

# Reaching Out

# ParklandDiabetes.com



- About
- Living with Diabetes
- Let's Talk
- In the Community
- Getting Help

Home > [Community Resources](#)

## Community Resources

- > Help Stop Diabetes
  - Grocery Stores
  - Activity & Exercise Programs
  - Dental Services
  - Medication Assistance Programs
  - Transportation
  - Prevention Programs
  - Support Groups

## Community Resources

Once you are ready to make lifestyle changes to improve your diabetes condition and overall health, you will likely need support to reach your goals. If you're looking for **grocery stores**, **exercise programs**, **medication assistance programs** or even **support groups**, there are resources available in your community for you.

### In This Section



Help Stop Diabetes



Grocery Stores



Activity & Exercise Programs

