



**T1D**  
*Exchange*

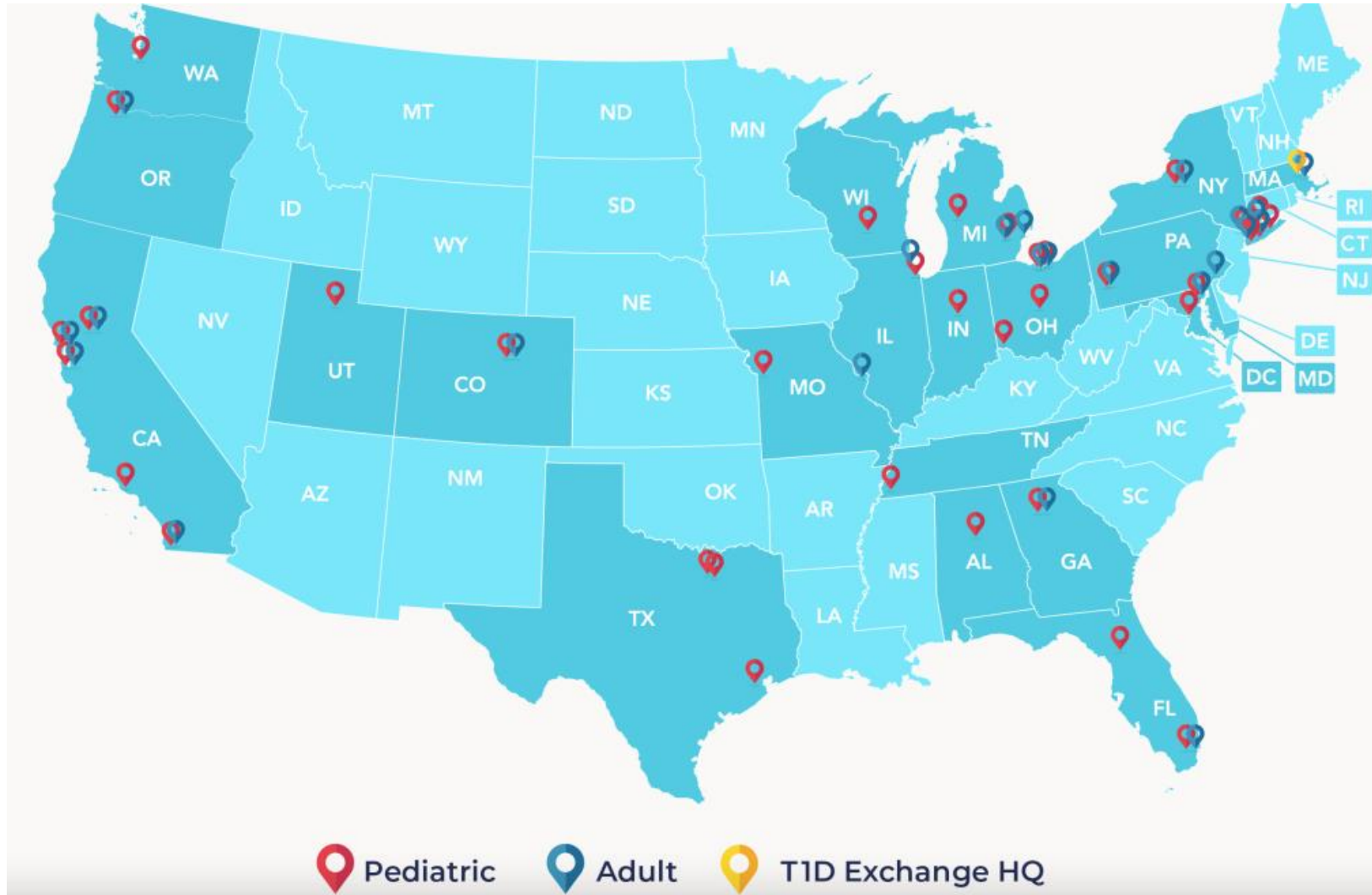
# T1D-QI Collaborative Call with Pediatric Centers

January 25, 2024

# Agenda

- Welcome & introductions, Osagie Ebekoziem, MD, MPH, CPHQ
- Clinical center presentations
  - Children's Healthcare of Atlanta, Kristina Cossen, MD
  - University of Miami, Veronica Figueredo, MD
  - University of Pittsburgh Medical Center, Alissa Guarneri, MD
- Collaborative Updates, Holly Hardison, BS
  - Invoicing reminders and deadline for 2023 work
  - Committee Chair opportunities and transition timelines
  - Evaluation feedback from the November 2023 Learning Session

# T1DX-QI network of 60 centers, caring for 100,000+ PWD across 22 states and Washington D.C.

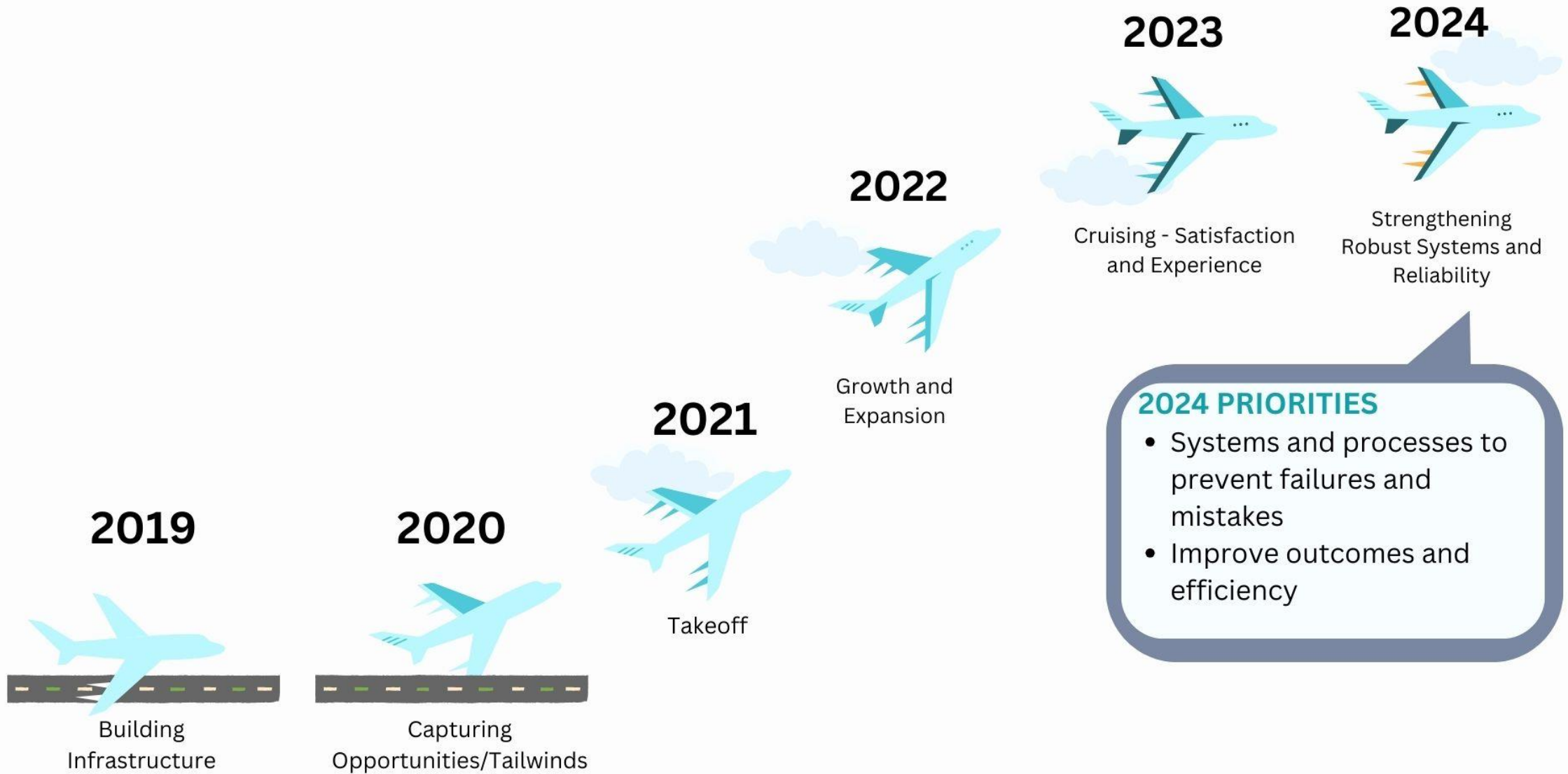


Priya Prahalad, Nicole Riales et al. T1D Exchange Quality Improvement Collaborative: Accelerating Change through Benchmarking and Improvement Science for People with Type 1 Diabetes. Journal of Diabetes. November 2021



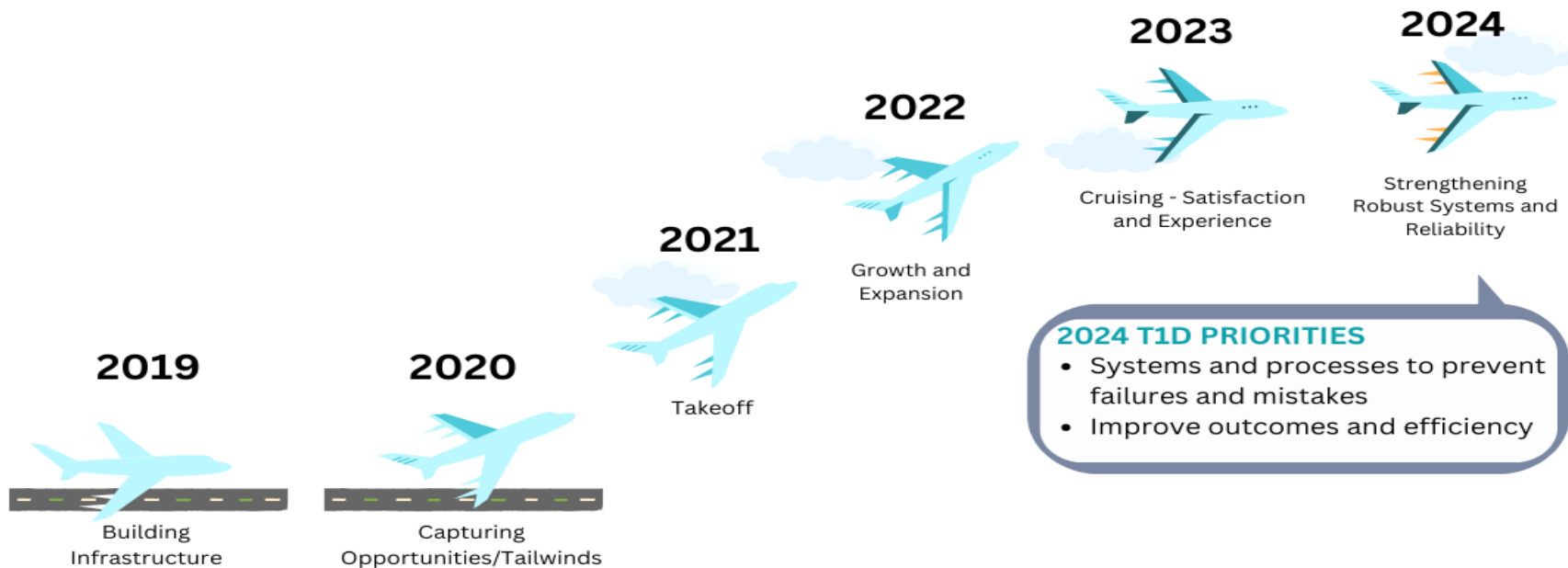


# QI and Population Health Team Priorities

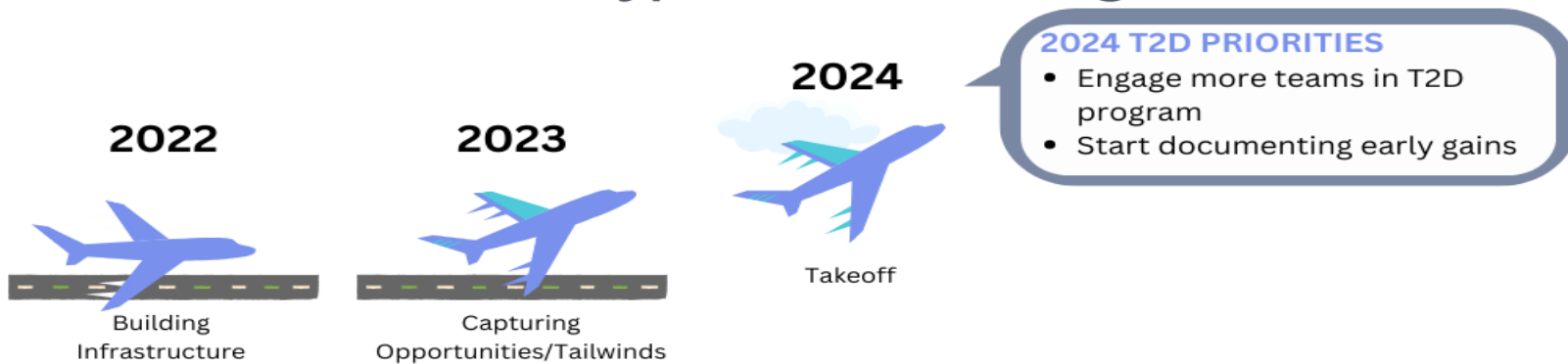




## Type 1 Diabetes Program



## Type 2 Diabetes Program



# Quality Improvement Collaborative Accomplishments



**135,000+** People with diabetes served

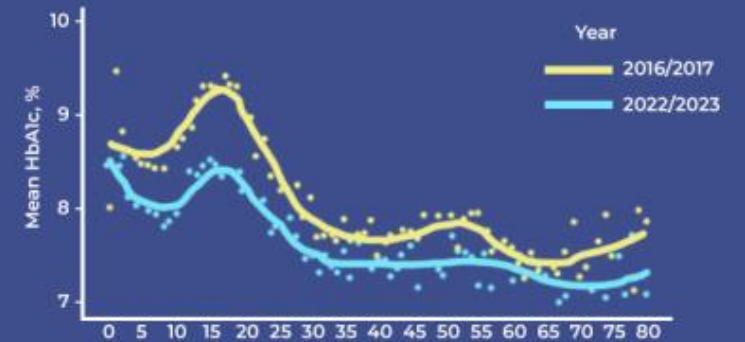
Improved QI Portal Benchmarking Tool



**60** T1D Centers



Improvement in **A1c** trends



**42 Centers** are data mapped



**10** T2D Centers

**82** publications in top journals



**190** presentations at international conferences

**95+** active projects



**Expanded** Health Equity Program

# Welcome new clinical centers!

1. The Berrie Center, New York, NY



2. Rainbow Babies & Children's Hospital, Cleveland, OH







# Center Presentations





EMORY  
UNIVERSITY

# From Registry to Health Maintenance: Improving EMR for Diabetes Care

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**Kristina Cossen, MD**

**Sobenna George, MD**

**Tonya Bennett, LPN BSHI**



# Questions

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- 1) What is the frequency of microalbuminuria reported by NIH in 2022 for pediatric patients with T1D?
  - A. 10%
  - B. 15%
  - C. 25%
  - D. 30%
  
- 2) Utilizing tools within EMR can successfully improve adherence to the ADA recommended guidelines for youth with T1D
  - A. True
  - B. False

# Learning Objectives

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Review struggles of building a registry

Review rationale for using Health Maintenance Topics

Share PDSA cycles intended to improve data entry

# Children's Healthcare of Atlanta

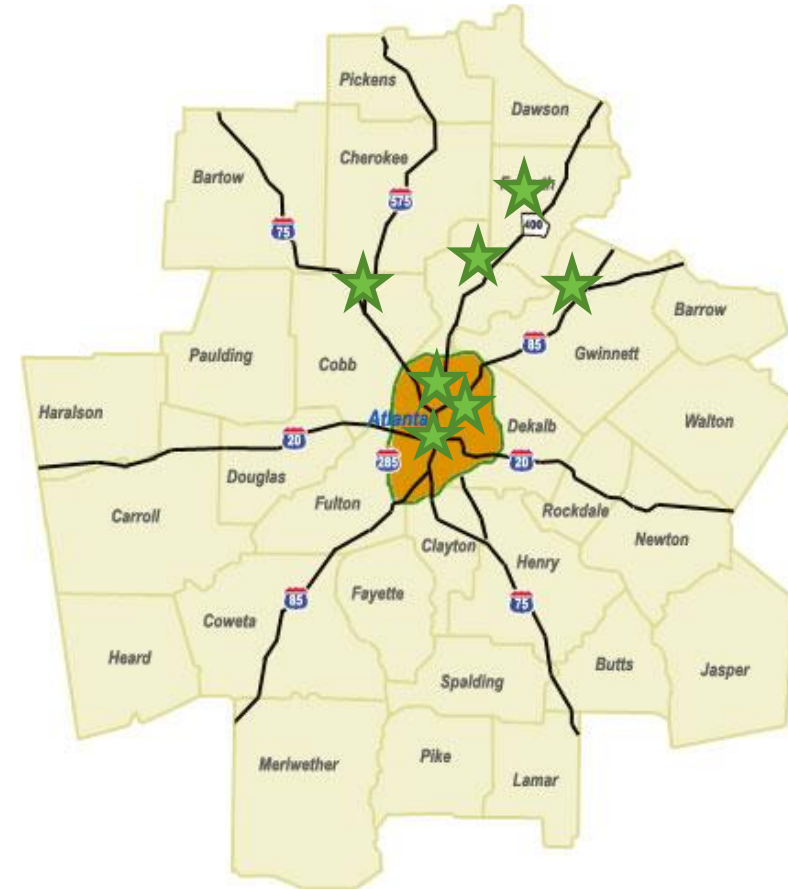
Caring for 3500 T1D and 1500 T2D <21yo in Georgia.

48% Medicaid, 48% Private

42% non-white

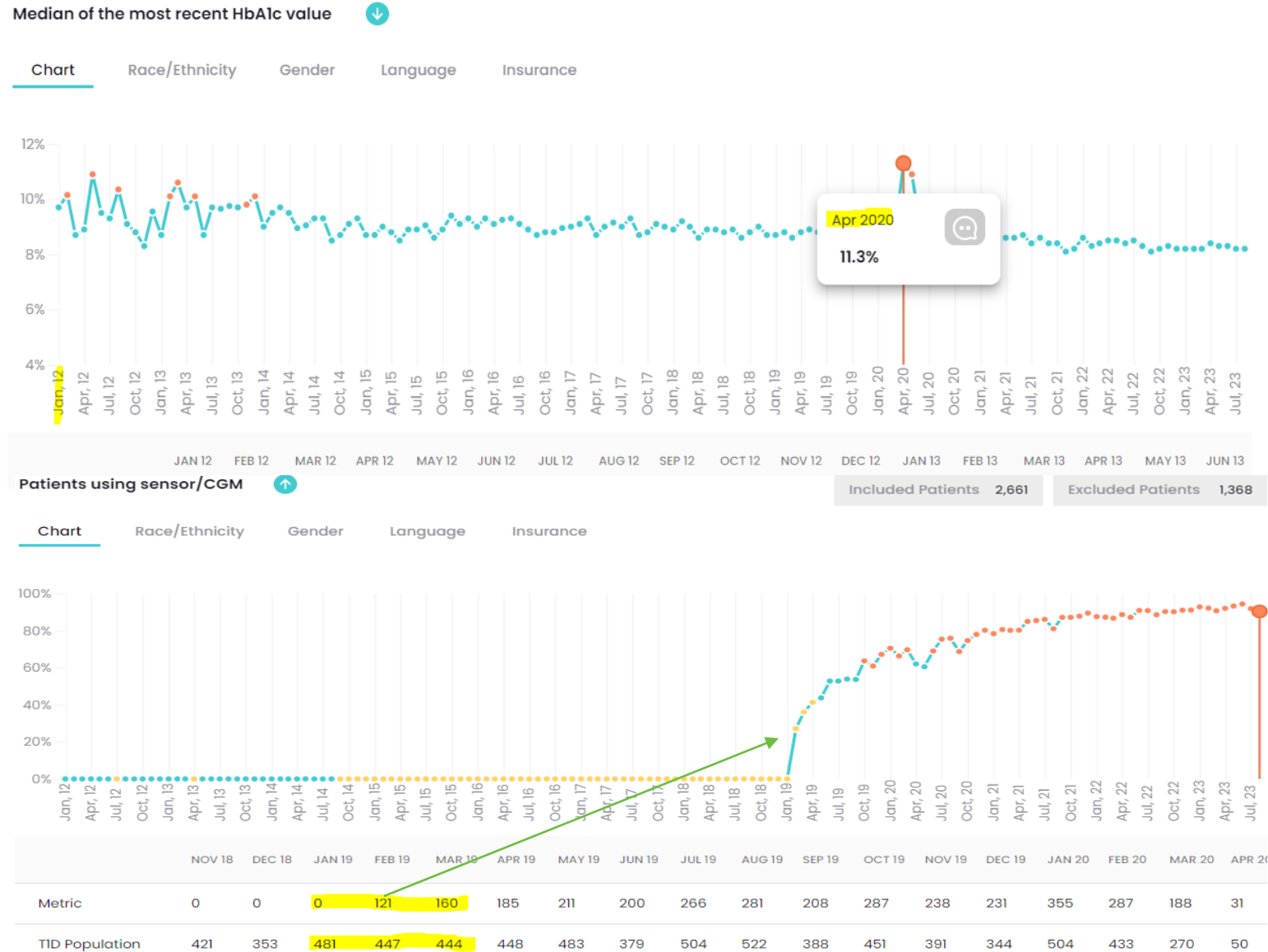
2023: 478 new T1D, 251 new T2D

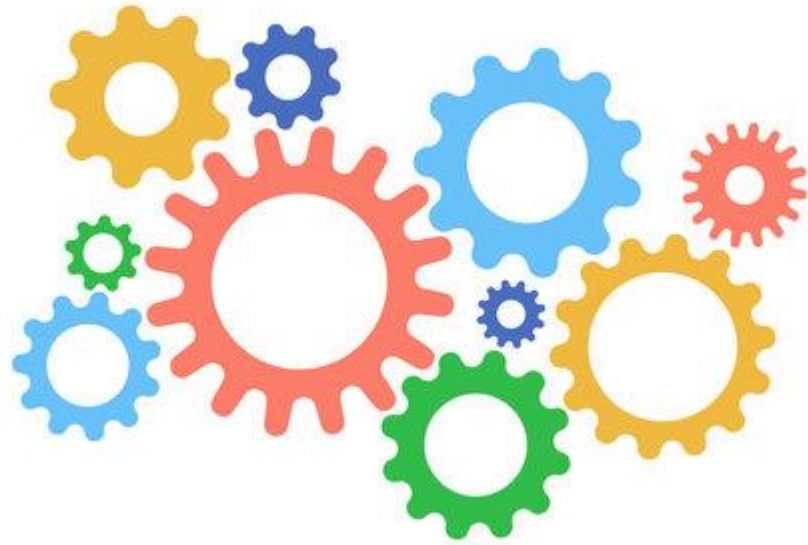
- Providers: **14.2**
- APPs: **7.2**
- Social workers: **2.8**
- Psychologists: **2.0**
- RNs: **10.9**
- Registered dietitians: **6.0** (w/ CDCES)
- Registered Nurses: **4.2** (w/ CDCES)
  
- 12 month A1c Range: **8.1-8.4%**
- Patient with A1c >9%: **31-38%**





# Having data, not pulling it





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- **PROBLEM**

- Attempts with Best Practice Alerts/Advisories in the past were not well constructed and found to be ineffective at CHOA for diabetes comorbidities screenings
- Rates of urine microalbumin screening 75% (USWNR)

- **ISSUE**

- Diabetes registry had flaws in initial build

- **AIM STATEMENT**

- Improve build of diabetes registry that would correctly identify type of diabetes 95% of time thus allowing creating of HEALTH MAINTENANCE tools within Epic to improve urine microalbumin screening to 80% (USWNR)

# How to PULL Diabetes Diagnosis Correctly

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- Issues getting T1D and T2D pulled correctly
  - Diagnosis codes
  - Problem list
  - Visit codes
- We also wanted ENDO specific patients for reporting
- CHOA doesn't get antibodies on all newly diagnosed patients







# Healthy Planet / Care Gaps / Health Maintenance

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- Healthy Planet: Functionality that supports population management by providing tools to collect data to aid in **identifying patients** that may require more immediate attention and to give **providers metrics** they need to make important clinical decisions
- BPA: A pop-up that **notifies clinicians** when they need to tend to important tasks, such as reviewing a patient's allergies, writing orders and completing charting. BPAs serve as **provider reminders** or warnings and can appear during clinical workflows based on specific criteria.

# Completing HealthMaintenance

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Diabetes HM Due	Patient	Age/Gender
🔴	<i>Endo, Mario</i>	17y / M
	<i>Endo, Princess P.</i>	16y / F
🔴	<i>Endo, Luigi</i>	11y / M
🔴	<i>Endo, Toad</i>	6m / M

## Status Legend

🔴 Overdue 🟡 Due Soon



# Completing HealthMaintenance

**Health Maintenance**

[+ Address Topic](#) [X Remove Override](#) [+ Add Topic](#) [Edit Modifiers](#) [Report](#) [Refresh](#) [Guidelines](#)

**Some patient topics are filtered.** [Load Filtered Topics](#)

**New information available.** [Check for Updates](#)

Current Care Gaps

<b>DM Urine Microalbumin</b>	<b>Never done</b>	1 year(s)
<b>DM Thyroid Peroxidase Antibody</b>	<b>Never done</b>	Once
<b>DM Antithyroglobulin Antibody</b>	<b>Never done</b>	Once
<b>DM Lipid Panel</b>	<b>Never done</b>	3 year(s)
<b>DM Tissue Transglutaminase 5 Yrs Post Dx</b>	<b>Never done</b>	Once

Upcoming

DM Diabetic Eye Exam	Next due on 11/9/2025	2 year(s)
DM TSH	Next due on 11/17/2025	2 year(s)

# Completing HealthMaintenance

Address Topic ×

**DM Urine Microalbumin**  
New completion will be added

Completion Date  
11/1/2023

Completion Reason  
Previously completed

Comments  
**Completed at Kaiser**

**Never done**  
Next due on 11/1/2024

# Completing HealthMaintenance

**Health Maintenance**

Address Topic Remove Override Add Topic Edit Modifiers Report Refresh Guidelines

Some patient topics are filtered. Load Filtered Topics

New information available. Check for Updates

Current Care Gaps

DM Thyroid Peroxidase Antibody	Never done	Once
DM Antithyroglobulin Antibody	Never done	Once
DM Lipid Panel	Never done	3 year(s)
DM Tissue Transglutaminase 5 Yrs Post Dx	Never done	Once

Upcoming

DM Urine Microalbumin	Next due on 11/1/2024	1 year(s)	11/1/24
DM Diabetic Eye Exam	Next due on 11/9/2025	2 year(s)	11/9/25
DM TSH	Next due on 11/17/2025	2 year(s)	11/17/25

Completed or No Longer Recommended

Influenza Vaccine	Completed	Imm Details	11/8/24
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**Health Maintenance Plans**

- Anti-Thyroglobulin Antibody at Diagnosis
- COVID-19
- DM Diabetic Eye Exam T1DM
- HMP COVID-19 Immunization Given
- Influenza Vaccine
- Lipid Panel Every 3 Years T1DM
- Pneumococcal Vaccine: Pediatrics (0 to 5 Years) and At-Risk Patients (6 to 64 Years)
- Thyroid Peroxidase Antibody
- Thyroid Stim Hormone Every 2 Years
- Tissue Transglutaminase 5 Years Post Diabetes Dx
- Urine Microalbumin T1DM

**Status Legend**

- Overdue
- Due Soon
- Postponed
- Ordered
- Tentative

**Definitions**

- Completed: Done with the required satisfactions
- Addressed: Overridden with the intention of not completing the topic
- Aged Out: No longer eligible based on patient's age to complete this topic
- Discontinued: Patient no longer due for this topic
- Sequential: Due dates may have irregular spacing

**Override Type Abbreviations**

- Done: Done
- Declined: Declined
- Postponed: Postponed
- Prv Comp: Previously completed
- (N/S): Reason not specified

Place order for LIPID PROFILE

Address topic

# Storyboard HealthMaintenance

The screenshot displays a user interface for health maintenance. On the left, a sidebar contains a 'No results' indicator, a 'CARE GAPS' section with three items: 'DM Lipid Panel', 'COVID-19 Vaccine (1)', and 'Influenza Vaccine (1)', and a 'PROBLEM LIST (0)' section. The main content area is titled 'Care Gaps' and includes a 'Close care gaps' link. Under the 'Overdue' heading, three items are listed: 'DM Lipid Panel (Yearly)', 'DM Urine Microalbumin (Yearly)', and 'DM Comprehensive Metabolic Panel (Yearly)'. A 'Dx Association' and 'Edit Multiple' button are visible. Below this, an 'After Visit' section shows details for 'DM HM COMPLETING URINE MICROALBUMIN PROCEDURES', specifically 'Microalbumin with Creatinine Urine'. It includes a 'Routine' status, an expiration date of '3/21/2024', and collection instructions: 'Random or Timed Collection (specify hours): RAN' and 'First morning urine.' A second sidebar on the bottom left shows the 'CARE GAPS' section with 'DM Urine Microalbumin' selected. A context menu is open over this item, offering 'Place order for MICROALBUMIN WITH CREATININE URINE' and 'Address topic'. The main content area below shows 'DM Urine Microalbumin' with a note: 'No completion history for this topic.' and a link to 'View complete topic history'.

No results

CARE GAPS

- DM Lipid Panel
- COVID-19 Vaccine (1)
- Influenza Vaccine (1)

PROBLEM LIST (0)

### Care Gaps

Close care gaps

Overdue

- Never done DM Lipid Panel (Yearly)
- Never done DM Urine Microalbumin (Yearly)
- Never done DM Comprehensive Metabolic Panel (Yearly)
- Never

Dx Association Edit Multiple Options

#### After Visit

DM HM COMPLETING URINE MICROALBUMIN PROCEDURES

#### Microalbumin with Creatinine Urine

Routine • Expires: 3/21/2024 • Lab Collect

Tube Type: Urine

Random or Timed Collection (specify hours): RAN

First morning urine.

No results

CARE GAPS

- DM Lipid Panel
- DM Urine Microalbumin

PROBLEM LIST (0)

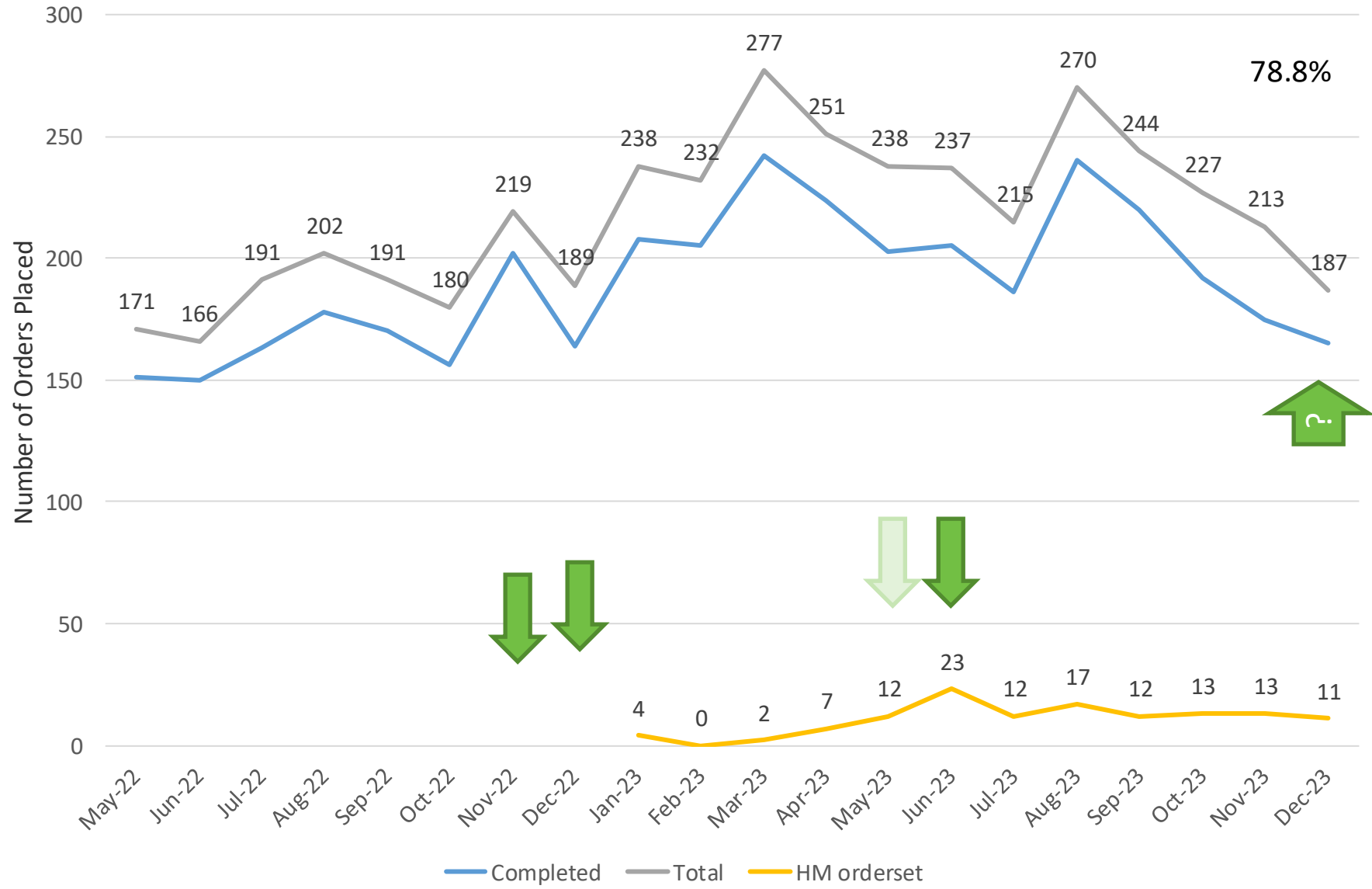
- Place order for MICROALBUMIN WITH CREATININE URINE
- Address topic

### DM Urine Microalbumin

No completion history for this topic.

[View complete topic history](#)

# Urine Microalbumin Orders



## Next steps

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- We did see improvement in percentage completing comorbidity screenings
  - We did increase our USNWR group urine microalbumin completion rate
  - Expanding to other screenings (feet/eye)
- Difficulties in EPIC
  - Looking retrospectively at who needed testing and completed causing data collection issues
- Ongoing review of use of HM for providers is evident by the decline after initial use
  - Plan for twice yearly updates (summer for new fellows and winter with ADA updates)

# Questions?

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# **Integrated Behavioral Healthcare for Low-Income Ethnic Minority Youth with Type 1 Diabetes**

Veronica Figueredo, MD; Luiza Vianna Mali,  
Ph.D.; Joelle Dorsett, B.S.

University of Miami

# Discussion Questions

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What are some barriers to youth receiving behavioral health care?

- a) Attitudinal barriers
- b) Structural barriers
- c) Both

Studies have shown that ethnic minority youths have significantly worse glycemic control.

- a) True
- b) False

## Key Driver Diagram

### Global Aim

Among people ages 1-25 with T1D\*, increase proportion of patients achieving glycemic targets in an equitable manner

\*Duration > 1 year, ages 1-25, with at least one in-person or telemedicine visit in the last 12 months.

### Primary Drivers

Diabetes Devices

Access to care

Psychosocial Support

Health Equity

### Secondary Drivers

- Glucose monitoring
- Insulin therapy
- Hybrid closed looped systems

- Clinic appointments
- Transition to adult care
- Health literacy

- Psychosocial support
- Depression Screening
- Diabetes Distress

- Social Determinants of Health
- Data stratification
- Develop equity-based interventions

# Learning Objectives:

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1. Provide rationale for integrated behavioral healthcare approach
2. Review model of care at University of Miami
3. Describe how ongoing research can fill a gap in provision of care

1

# Rationale for Integrated Behavioral Healthcare

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# Why Integrated Behavioral Care?

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- Being diagnosed with diabetes in childhood or adolescence can interfere with normative development and interact with psychological and social factors in youth and their families.
- Low-income ethnic minority youth with T1D often experience structural and attitudinal barriers to access of mental health care and have significantly worse glycemic control.
- Integrated behavioral health care can help overcome many of these barriers and may help improve glycemic control in low-income ethnic minority youth with T1D.
- Integrated, collaborative care is therefore necessary.

# Demographic Factors and Diabetes Management

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- Studies have shown that ethnic minority youths, have significantly worse glycemic control (GC) and more acute and long-term complications than their majority counterparts [1,2,3].
- Larger increases in the annual incidence of diabetes rates among Latino youth have been documented compared to White Non-Latino youth [4].
- Few potential explanations for the observed racial/ethnic disparities in GC: sociodemographic factors such as parent education level and marital status.
- Lower regimen adherence and single-parent status has been found to partially explain poorer GC of minority youths.
- Findings have also shown that lower-income ethnic minority children with T1D are less often using intensive insulin regimens [5].

1. Wood, J.R., et al., Most youth with type 1 diabetes in the T1D exchange clinic registry do not meet American Diabetes Association or International Society for Pediatric and Adolescent Diabetes Clinical Guidelines. *Diabetes Care*, 2013. 36(7): p. 2035-2037.

2. Delamater, A.M., et al., Risk for metabolic control problems in minority youth with diabetes. *Diabetes Care*, 1999. 22(5): p. 700-705.

3. Petitti, D.B., et al., Glycemic control in youth with diabetes: The SEARCH for diabetes in youth study. *The Journal of Pediatrics*, 2009. 155(5): p. 668-672.e3.

4. Mayer-Davis EJ, Lawrence JM, Dabelea D, Divers J, Isom S, Dolan L, et al. Incidence trends of type 1 and type 2 diabetes among youths, 2002-2012. (2017) *New England Journal of Medicine*, 376(15):1419-29.

5. Valenzuela, J.M., et al., Prescribed regimen intensity in diverse youth with type 1 diabetes: role of family and provider perceptions. *Pediatric Diabetes*, 2011. 12(8): p. 696-703.



# Barriers to Receiving Behavioral Health Services

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## Attitudinal

- Stigma
- Perceptions of mental health problems

## Structural

- Financial barriers
- Inconvenience
- Distance
- Long wait times

# Psychosocial and Behavioral Interventions

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- There is substantial literature addressing psychosocial and behavioral interventions for the treatment of children and adolescents with T1D.
- Systematic reviews including meta-analyses have shown the efficacy of various approaches including family-based interventions.
- While methodological limitations have been noted, it can generally be concluded that there is a solid evidence base for psychosocial and behavioral interventions although the effects on glycemic outcomes are inconsistent.

- Although integrated behavioral health care can overcome common barriers related to access of mental health care for patients with T1D, more research is needed to demonstrate its effectiveness.
- This is especially the case for low-income ethnic minority youth with T1D, who are at high risk for GC problems and are often not included in controlled studies examining the efficacy of psychosocial and behavioral interventions for youth with diabetes.

2

# The University of Miami's Model of Care

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# University of Miami, Pediatric Endocrinology

## Location

- Main clinic at University of Miami Miller School of Medicine (private)
- Satellite clinic in South Miami
- Inpatient: Jackson Memorial Holtz Children's Hospital and Jackson North Medical Center (public)



## Multidisciplinary Team Members

- 5 Board Certified Pediatric Endocrinologists
- 3 Fellows
- 1 Advanced Practice Provider
- 2 Certified Diabetes Care and Education Specialists
- 1 Psychologist and 5 trainees
- 2 Registered Dietician (DRI)
- 1 Social Worker (JMH)
- 1 Child Life Specialist (JMH)

# Patient Population

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75 new/newly diagnosed  
T1D patients seen annually

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452 established T1D  
patients

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0-19 years old

# Insurance

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**PRIVATE:**  
58%

**MEDICAID:**  
40%

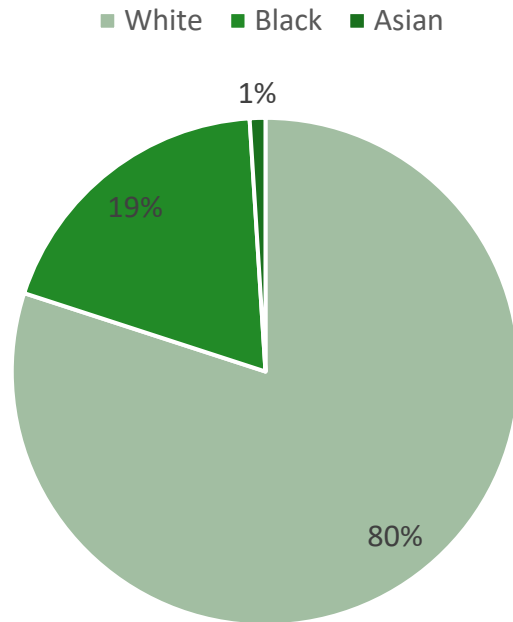
**UNINSURED:**  
2%



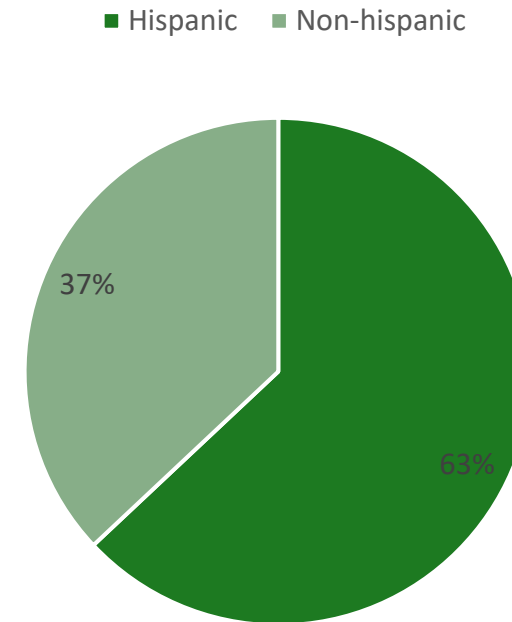
# Ethnic/Racial Composition

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Race



Ethnicity



# Comprehensive Psychology Screening

- Following recommendations from ISPAD guidelines for psychological care in pediatric diabetes
- Guidelines also emphasize:
  - Preventive interventions targeting family support, problem-solving, self-management, realistic expectations
  - Use of motivational interviewing to clarify goals and resolve ambivalence
  - Increasing responsibility/transition of care
  - Evidence-based interventions with active consideration of developmental needs

<b>Patient Name</b>	
<b>Patient DOB</b>	
<b>Date of screening</b>	
<b>Measure</b>	<b>Positive (Y/N)</b>
Suicide Risk	N
Life Satisfaction	N
PHQ-9	N
GAD-7	N
Diabetes Stress	N
Family Conflict	N
Blood Glucose Monitoring	N
Self-Management	N
Eating Disorder	N
Motivation	N
<b>Summary:</b> Patient completed the mental health screen. He did not screen positive in any of the areas assessed.	
<b>Follow-up:</b> Patient will be rescreened in one year.	

# Services Provided at UM

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## What we do:

- Consultation and brief intervention during and between visits
- Linkage with services
- *Ability to follow patients over time depends on insurance and is facilitated through adjacent pediatric psychology clinic.*

## What we cannot currently do:

- Psychology unable to provide ongoing support for patients with Medicaid/CMS.

3

# Research Study

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**Integrated Behavioral Healthcare  
for Low-Income Ethnic Minority  
Youth with Type 1 Diabetes**

# Eligibility

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## INCLUSION CRITERIA

- Youth (ages 10-17) with T1D diagnosed for 1+ years
- Latino or Black ethnicity/race
- English or Spanish oral and reading proficiency
- Medicaid insurance (low-income status)
- Elevated psychosocial screen and/or A1c greater than 8% or history of DKA in the previous year

## EXCLUSION CRITERIA

- Significant developmental disability
- Serious psychiatric disorder
- Another serious chronic illness (except thyroid disease or celiac disease)

# Study Design

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- Recruitment during clinic visit.
- After informed consent and assent, education will be provided about participation in clinical research, to enhance retention over the course of the study.
- Participants will complete an assessment of behavioral and psychosocial measures via surveys, after which they will be randomized (25 participants receiving the 4-month integrated behavioral health care intervention/ 25 referred to behavioral health care in the community).
- After 4 months, participants will repeat the same assessment battery.
- Each adolescent-parent dyad will receive gift coupons worth \$30 for completion of the baseline assessment and \$70 for completion of the 4-month assessment.

# Assessment Measures

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## Demographic Variables

- Questionnaire assessing age, gender, ethnic status, preferred language, parental education, occupation, and marital status.
- Social determinants of health assessed by 15-item questionnaire from the American Academy of Family Physicians (baseline assessment only).

## Glycemic Control Variables

- Glycosylated hemoglobin A1c
- Meter or CGM data to provide mean, SD, and range, of BG and % time in range
- Chart review to establish health care utilization (DKA or severe hypoglycemia requiring medical attention or hospitalization).

# Assessment Measures

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## Behavioral Variables

- Diabetes Management Questionnaire (DMQ): 20 items assessing five domains (physical activity, meals/snacks, low blood sugars, high blood sugars and insulin/glucose monitoring).
- Meter or CGM data to provide mean daily BG monitoring frequency; for patients on insulin pumps, bolus activity documented using pump data.

## Psychosocial Variables

- Diabetes Family Conflict Scale: 19-items measuring conflict between parents and children regarding DM tasks.
- Collaborative Parental Involvement Scale: 12-items measuring collaborative parental involvement in DM tasks.
- Patient Health Questionnaire (PHQ-8): 8-item measure assessing for depression.



# Assessment Measures

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## Psychosocial Variables cont.

- Pediatric QOL Scale (PedsQL), and the PedsQL-Diabetes Module: General and diabetes-specific QOL
- Intrinsic Motivation Inventory for Diabetes Management (IMI-DM): 12-item modified version of Intrinsic Motivation Inventory (IMI) to assess diabetes-specific IM
- The Perceived Stress Scale: 14-items assessing degree of parental perceived stress (parental only measure)
- Consumer satisfaction measure to evaluate youth and parent perceptions of care received (for both treatment and control groups; 4-month assessment only)
- For control group receiving care in the community, parental interview to document types of behavioral health services received, number of sessions attended, the types of professionals providing services, and communications with the diabetes clinic team (4-month assessment only)

# Intervention

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- Average of 8 sessions with the first 4 held weekly and the rest held bi-weekly, monthly, or as-needed.
- Flexible, modular approach, with order of intervention components varying with each patient.
- Family-based, with the goal of promoting teamwork between parents and youth.
- Modules targeting self-management habits associated with improved glycemic control (e.g., regular glucose checks or use of continuous glucose monitor; appropriate timing and frequency of boluses; reviewing glucose data since last clinic visit)
- Motivational interviewing (MI) techniques and evidence-based behavior management strategies, including self-monitoring, goal-setting, behavioral contracting, and positive reinforcement.
- Culturally-sensitive and case formulation that incorporates the impact of a range of social, health, and living factors

# Objectives

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- To evaluate the feasibility (with attention to recruitment, attendance, retention, and acceptability) of an intervention by conducting a field test over a four-month period
- To increase access to evidence-based, integrated behavioral health care services for high-risk low-income, ethnic minority youth with type 1 diabetes (T1D) to promote diabetes management and improve glycemic control

## **Key Drivers:**

- Access to Care
- Psychosocial Support
- Health Equity

# Project Update

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- Project is ongoing (2 families have been recruited)
- Recruitment challenges, particularly follow through
- Inform future efforts to integrate care



Questions?

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**UPMC** | **CHILDREN'S**  
HOSPITAL OF PITTSBURGH

# Improving Depression Screening in Youth with Type 1 Diabetes

Alissa Guarneri-Tragone, MD MBOE

Thursday, January 25<sup>th</sup>, 2024

# Pediatric Diabetes Center at UPMC Children's Hospital of Pittsburgh

- 22 MD/DO Faculty
  - 13 APP
    - 7 CDCES
  - 10 Pediatric Endocrine Fellows
  - 18 Diabetes Educators
    - 9 CDCES
  - 3 Registered Dieticians
    - 1 CDCES
  - 9 Endocrine RN
    - 1 CDCES
  - 2 Social Workers
  - 1 Diabetes Psychologist
- Volume and Demographics
    - 2300 patients with type 1 diabetes for more than one year receiving ongoing care
  - Average newly diagnosed patients per year
    - 250
  - Insurance
    - 50% public
  - Race
    - 83% White
    - 10% Black
    - 2% Asian
    - 5% Biracial/unknown/other
    - ~3% Hispanic

# Learning Objectives

- Understand the significance of screening for depression in youth with type 1 diabetes
- Review the importance of a process map in standardizing work for a process
- Discuss PDSA cycles and outcomes
- Discuss next steps





# Pre-Learning Questions

1. True/False: Type 1 diabetes places significant stress on youth in multiple aspects, which can lead to symptoms of anxiety and depression.
  - a. True
  - b. False
  
2. True/False: By optimizing our process, we were able to improve depression screening in eligible patients with type 1 diabetes by nearly 10%.
  - a. True
  - b. False



# Why This Project?

- Mental health in adolescents with chronic conditions has become a public health priority.
- Growing up with type 1 diabetes brings daily demands and responsibilities that, alongside the already difficult physical, psychological, and social changes of adolescence, increase the risk of anxiety and depression.<sup>1</sup>
- Depression alone carries significant potential for disability, but when combined with diabetes, the comorbidity carries the potential for serious long-term consequences. Depression is associated with poorer metabolic control, and thus, such youth may be more at risk for long-term complications.<sup>2</sup>
- The comorbidity of diabetes and depression in children and adolescents is a significant problem, affecting at least 20% of youth with diabetes compared to less than 7% of youth without diabetes.<sup>2</sup>

<sup>1</sup>. Reynolds KA et al. Annals of Behavioral Medicine 2011.

<sup>2</sup> Grey M et al. Journal of Psychosomatic Research 2002.

# Background

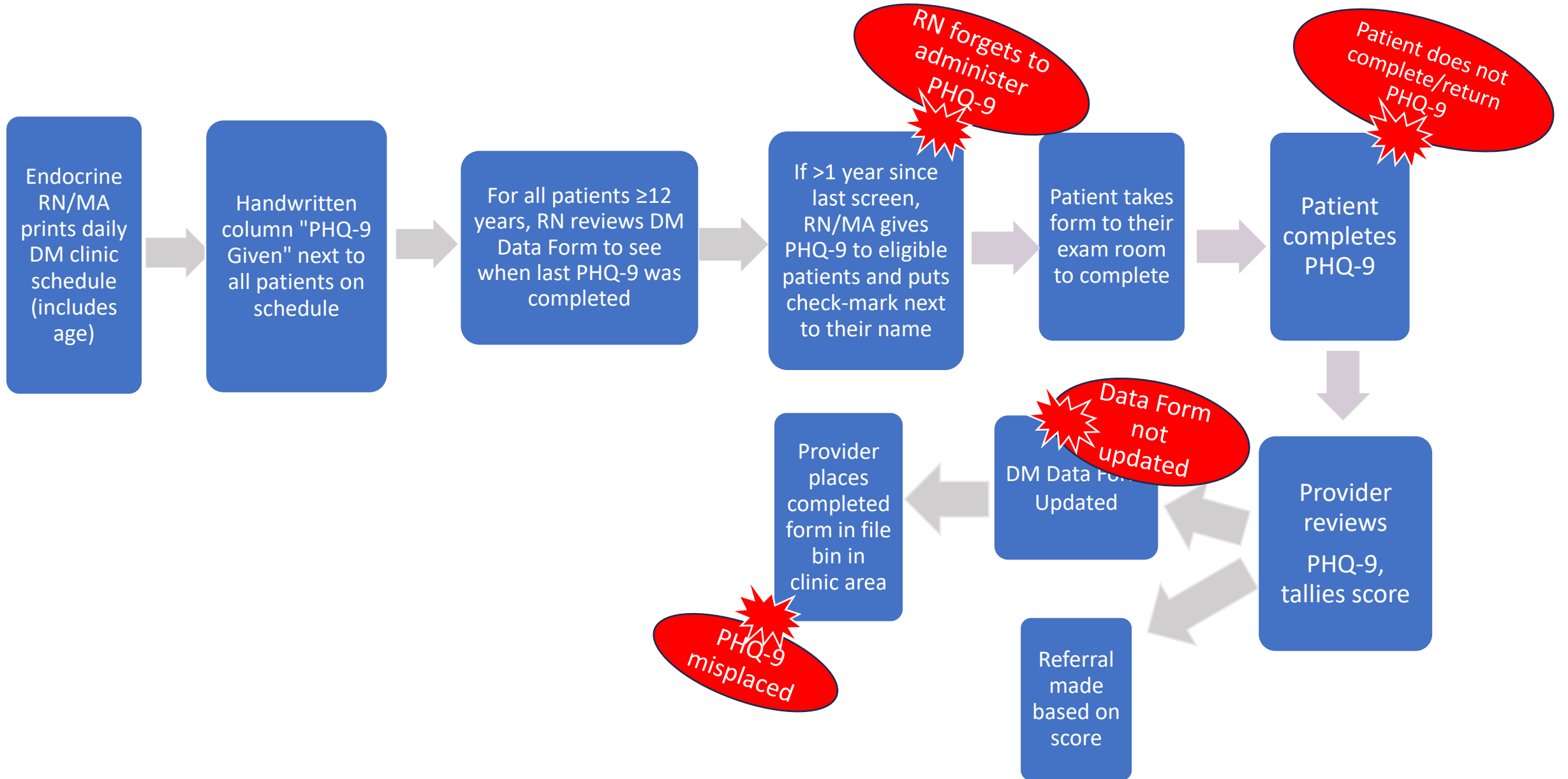
- At our Diabetes Center, eligible youth with type 1 diabetes are screened for depression via a PHQ-9 questionnaire administered between September-December annually.
- Between September-December 2022, in a sample of 20 clinics (43 eligible patients), 35/43 (**81%**) completed a PHQ-9 questionnaire and had appropriate documentation in EMR.
- Problem:  
<100% of eligible patients ( $\geq 12$  years with type 1 diabetes mellitus for >12 months) complete annual PHQ-9 depression screening with appropriate documentation.

# SIPOC

Supplier (Who)	Input (Object/What)	Process (Activity)	Output (Object)	Recipient (Who)
RN/MA	Daily DM clinic schedule	Identifies patients age $\geq 12$ years	Provides PHQ-9 to eligible patients	Patient
Patient	Receives PHQ-9	Completes PHQ-9	Completed PHQ-9	Provider
Provider	Completed PHQ-9	Reviews completed PHQ-9	Score $< 9$	Filing Bin for scanning
Provider	Completed PHQ-9	Score: $> 9 \rightarrow$ SW consult $> 15 \rightarrow$ BH consult Mark 'yes' for SI $\rightarrow$ ED	-SW provides resources -BH appointment made -ED evaluation	Patient



# Process map



# Fishbone Diagram

**Policies & Procedures**

- Screening time frame (4 months) does not capture no-shows
- No process in place to capture patients who did not complete questionnaire during Sept-Dec
- No process to re-screen high-scoring patients more frequently than annually

**Product**

- Suboptimal retrieval of PHQ-9 screen in clinic – some are left behind/patient takes it with them
- Screen not retrieved after visit

**Place:**

- >1 location for completed PHQ-9 to be placed
- PHQ-9 inconsistently located in patient rooms

**Process**

- Handwritten column on daily DM clinic list –RN/MA can forget – human error
- ~~All patients with DM, regardless of type, who are ≥12 years are given PHQ-9~~
- Inconsistent follow-up process for high-scoring patients (if **new** high-scoring patient, we send Cerner message (i.e. delay in care) – no “cutoff” for when more urgent attention is needed (ex. Score >9 warrants SW consult in clinic); what about patients already linked with BH? If they score high, BH provider may not be notified.
- Inconsistent location of documentation for PHQ-9 scores in chart

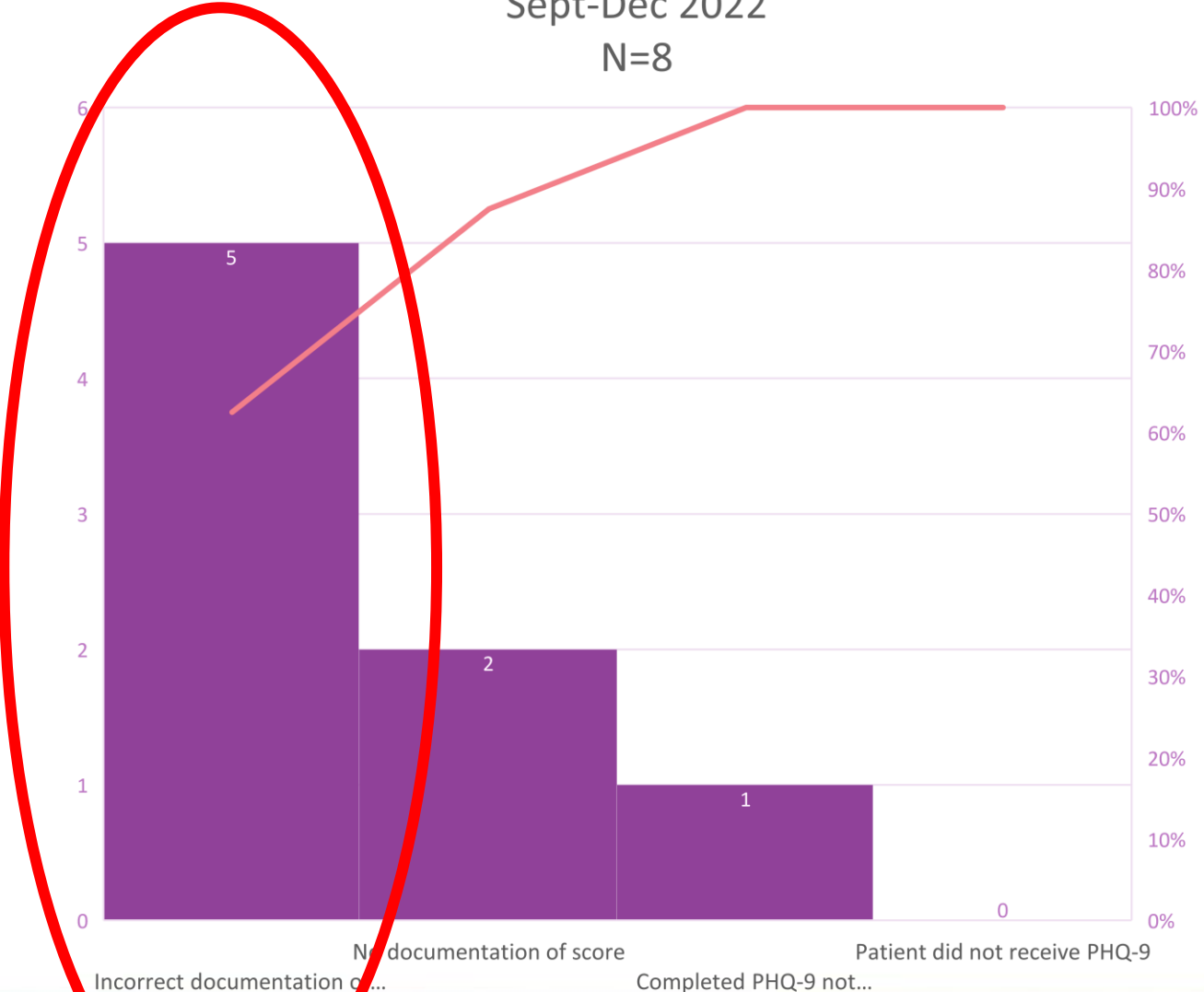
**People**

- Patient: questionnaire fatigue, Literacy barrier (equity) → incomplete questionnaires
- Provider: forgets to document PHQ-9 score; forgets to add score to DM Data Form; Incorrect placement of screen after visit
- Staff: Forgetting screening process

< 100% completion of PHQ-9 screening questionnaires to eligible patients

# Missed PHQ-9 Screening Opportunities

Sept-Dec 2022  
N=8



# Improving Depression Screening in Youth with Type 1 Diabetes

## SMART AIM

## PRIMARY DRIVERS

## INTERVENTIONS

Increase the percentage of eligible patients who successfully complete and have appropriate documentation of annual PHQ-9 depression screening by 10% by January 1, 2025 and sustain for one year.

Process

Policies and Procedures

People

- Automate eligibility list in clinic
- Streamline location of completed screens
- Review proper location of documenting scores
- Provide screens to patients with type 1 only
- Providers prompted to update screening results in EMR
- Create SOW for staff on eligible patients

- Expand access to BH providers
- Formalize referral process

- Process to routinely re-screen high-scoring patients
- Process to update BH on high-scoring patients already linked with BH

**Global Aim: Improve quality of life for pediatric patients living with type 1 diabetes mellitus**



# Impact Effort Matrix

## Prioritize Interventions

- ① Streamline location of completed screen
- ② Automate eligibility list in clinic
- ③ Providers reminded to update screening results in EMR
- ④ Expand access to BH providers
- ⑤ Formalize referral process
- ⑥ Process to routinely re-screen high-scoring patients
- ⑦ Process to update BH on high-scoring patients already linked with BH

Impact Effort Matrix		
	Low Effort	High Effort
High Impact	1 3	4 5 7 6
Low Impact		2

# PDSA Cycles

#1

- Specified location for completed screens
- 2 iterations

#2

- Increase provider awareness of PHQ-9 screening
- Verbal announcement

#3

- Increase provider awareness of PHQ-9 screening
- Visual reminder in provider area in clinic

#4

- Create standard work for staff
- Clearly list responsibilities to minimize error

# RAIL

## Implementation Rolling Action Item List

Key Driver	Interventions	PDSAs	Owner	Check Date	Progress Notes	Next Steps	Status
<b>Process</b>	<del>Automate eligibility list in clinic</del>						Red
	Streamline location of completed screens	1	AG	5/22/2023	Complete	N/A	Green
	Provider awareness -announcement	2	AG	8/1/2023	Complete	N/A	Green
	Provider awareness -visual reminder	3	AG	8/15/2023	Complete	N/A	Green
<b>Policies and Procedures</b>	<del>Expand access to BH providers</del>						Red
	Formalize referral process	2	AG	TBD	In Process		Yellow
	Process to routinely re-screen high-scoring patients			TBD			Yellow
<b>People</b>	Create SW for eligible patients	4	AG	10/1/2023			Green
							In place/Working
							In process
							Problem/Haven't started



# PDSA Cycles

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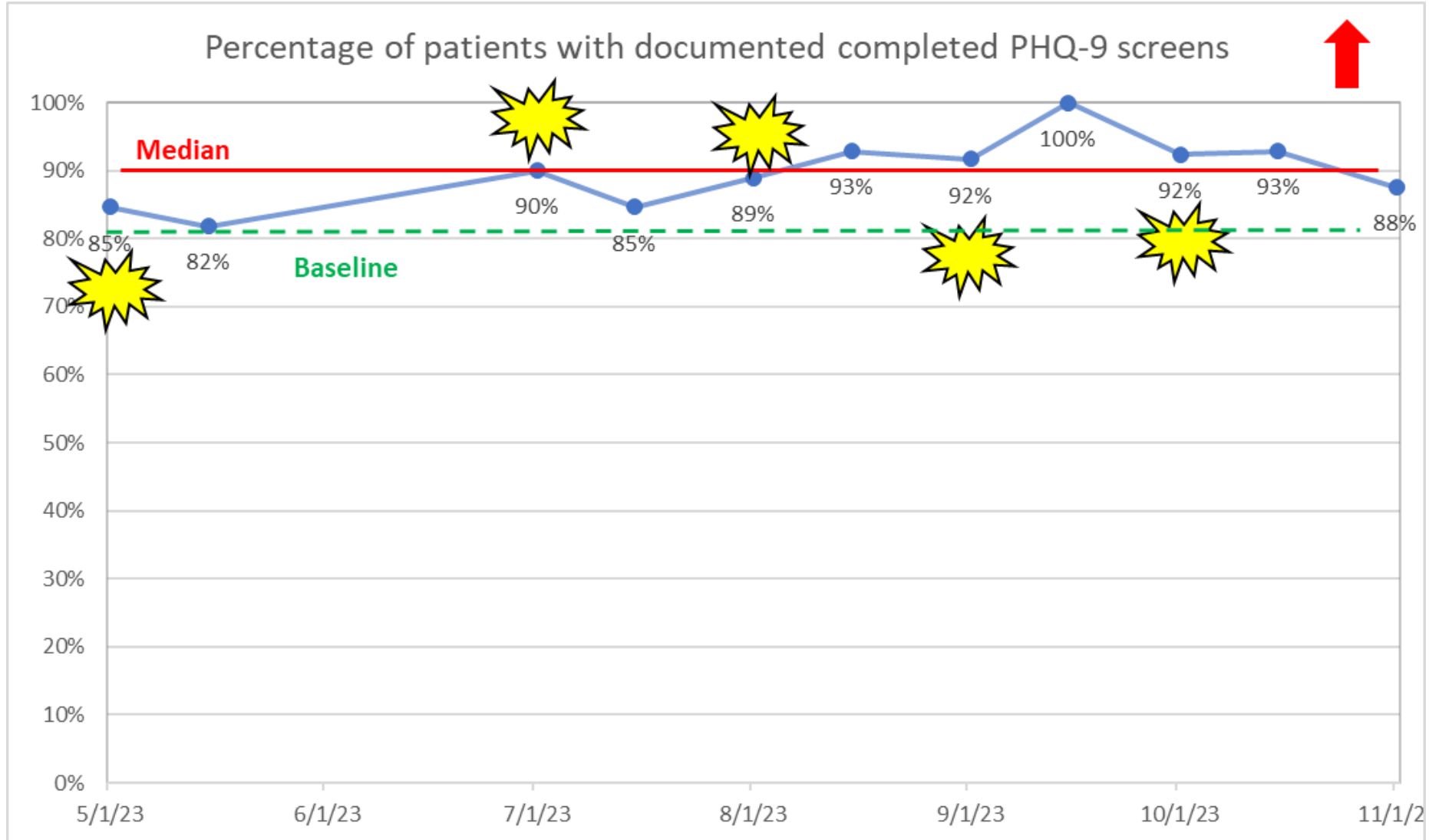
# Results

Period	# of eligible patients with documented depression screening	# patients eligible for depression screening	Percent of patients with documented completed PHQ-9 screens	Baseline median
1-May	11	13	85%	PDSA 1
15-May	9	11	82%	PDSA 1
1-Jul	9	10	90%	PDSA 1
15-Jul	11	13	85%	PDSA 1
1-Aug	16	18	89%	PDSA 2
15-Aug	13	14	93%	PDSA 2
1-Sep	11	12	92%	PDSA 3
15-Sep	9	9	100%	PDSA 3
1-Oct	12	13	92%	PDSA 4
15-Oct	13	14	93%	PDSA 4
1-Nov	7	8	88%	PDSA 4

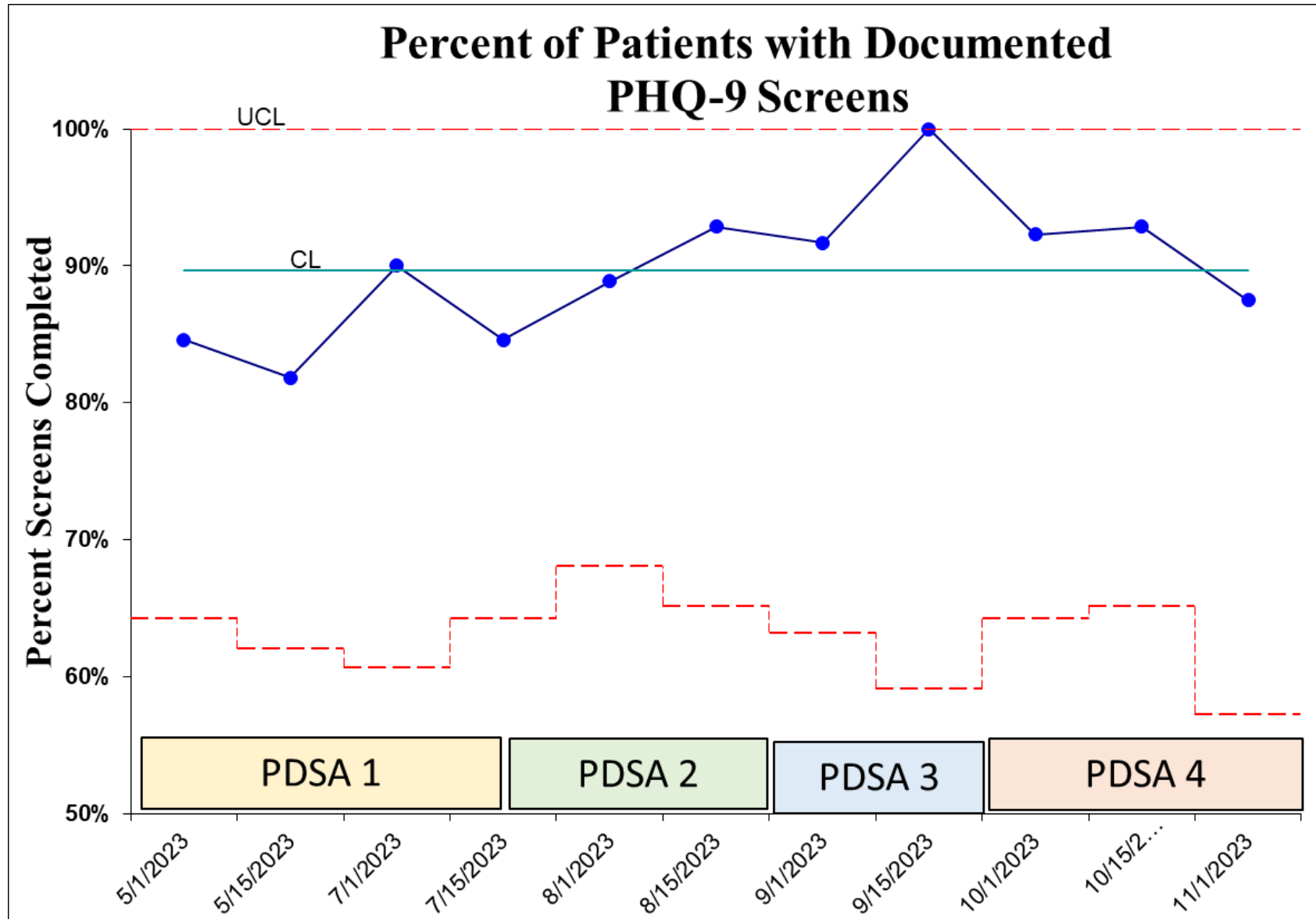




# Results – Run Chart



# Results - Control Chart



# Key Learnings

- Despite baseline percentage of 81%, there was no standard work for process of how PHQ-9 questionnaires were being documented and completed questionnaires triaged
- Balancing Measure: Potential increased frequency of depression identified in youth with type 1 diabetes



# Future Steps

- Did our incidence of depression increase with improved screening documentation?
  - Formalize referral process – PDSA #5
- Sustainability:
  - Revisit in 2024 to see if we sustain our 90% - compare data to next year

# Questions?

Thank you!





# Updates from the Coordinating Center

# Invoicing reminder

*Invoices for work performed in 2023 are due now. Deadline for submitting invoice is March 31, 2024. **Payments will not be made for invoices received after 3/31/2024.***

- Communicate invoicing request to your finance/contracting/grants office
- Consult/reference Statement of Work for details
- Invoices should be sent via email attachment Invoices should be sent via email attachment

To: Nicole Rioles- [nrioles@t1dexchange.org](mailto:nrioles@t1dexchange.org)

CC: Rene Weathers- [rweathers@t1dexchange.org](mailto:rweathers@t1dexchange.org)

Linda Crasco- [linda.crasco@t1dexchange.org](mailto:linda.crasco@t1dexchange.org)  
[qi@t1dexchange.org](mailto:qi@t1dexchange.org)

# Co-Chair Nominations

- New Co-Chair terms will begin June 1<sup>st</sup>
- To learn more about the committees and view the charters please use the following links:
  - [Clinical Leadership Committee](#)
  - [Data Science Committee](#)
  - [Data Governance Committee](#)
  - [Publication Committee](#)
  - [Advisory Committee](#)
  - [QI Champions](#)
  - [HEAL](#)
- Use [this link](#) or scan the QR code to submit nomination
  - Please review the committee charter before nominating







# T1DX-QI 2023 November Learning Session Evaluation

# Claim Your CME Credit

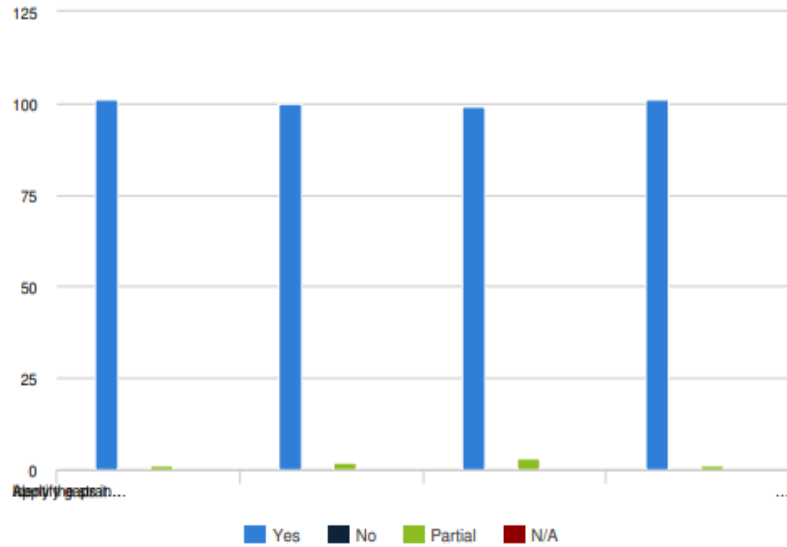
Reminder, if you have not yet claimed your CME credit from the November Learning Session, use this [link](#)!

The screenshot shows the website for the Chobanian & Avedisian School of Medicine, Barry M. Manuel Center for Continuing Education. At the top left is the BU logo and the school's name. To the right is a search bar with the text "Find a course..." and a magnifying glass icon. Below the search bar are social media icons for Facebook, Twitter, LinkedIn, and a share icon. A navigation menu includes links for Home, Catalog, Calendar, About Us, Help, QI Hub, SHIELD, and Grand Rounds (RSS). The main content area features a breadcrumb trail: Home » T1D Exchange - QI Learning Session 2023:.... The course title is "T1D Exchange - QI Learning Session 2023: Improving Diabetes Outcomes, 11/14/2023 - 11/15/2023" with the dates "November 14, 2023 to November 15, 2023" below it. At the bottom of the page is a navigation bar with buttons for Overview, Program, Venue, Faculty, Accreditation, and a prominent red button for Register/Take course.



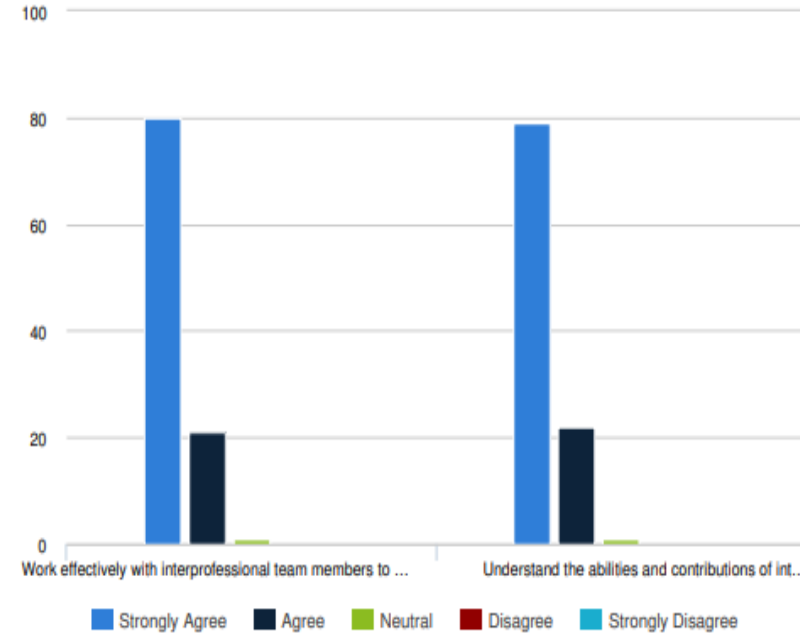
# Evaluation Results

## Learning Objectives



	Yes	No	Partial	N/A
Describe the future of novel therapies, interventions, quality improvements, and solutions to today's diabetes care challenges.	101	0	1	0
Identify gaps in population health needs and state 3 ways that they can provide more equitable care over the next 2 years.	100	0	2	0
Apply the strategies of the T1DX-QI Equity Framework which can help to improve diabetes health outcomes and increase diabetes device access for BIPOC T1D and T2D patients.	99	0	3	0
Discuss expectations for patient care and patient engagement and describe ways to co-design care with patients and family members.	101	0	1	0

## After this activity, I am better able to



	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Work effectively with interprofessional team members to enhance care	80	21	1	0	0
Understand the abilities and contributions of interprofessional team members	79	22	1	0	0

# What You Liked Most

- Breakout Sessions
- Wide Range of Topics
- Collaboration with Other Centers
- In Person and Virtual Options
- Emphasis of Sharing
- Networking
- Shared Success
- Panel Discussions
- PWD Talk and Perspective
- Partnering with Other Who Share the Same Passions
- EVERYTHING!

# What You Want to See in the Future

- Future Technologies Coming Down the Pipeline
- Global Outreach to Middle Income Countries
- Diabetes Education
- EMR Integration
- More Time for Group Discussions
- T2D Presentations and Learning
- History of Diabetes
- AID
- Psychosocial and SDOH
- Including Voice of PWD