



T1D
Exchange

T1DX-QI Combined Call

April 14, 2026

Agenda

- Coordinating Center Updates
- Measures/Data Spec Update (Alyssa Cabrera)
- Cincinnati Adult Presentation: Transitions of Care (Andrew Welch, DO)
- Le Bonheur Children's Presentation: Implementation of T1D Adult Transition Process (Jordan Ross, MD)
- Texas Children's Presentation: DKA Prediction (David D Schwartz, PHD, ABPP; Selorm A. Dei-Tutu, MD, MPH)

Suggest a Topic for the 2026 Annual Survey

We are collecting annual survey topic proposals now through **May 1, 2026**.

Guidance

- Please limit to no more than 8 questions.
- Questions should be multiple choice;
- Ranking and metric tables are suggested; free text is discouraged.

Expectations

- You will create an abstract and a manuscript based on the survey responses

To submit a topic

- Email qi@t1dexchange.org
- cc nrioles@t1dexchange.org and crainey@t1dexchange.org



Call for Abstracts

The Learning Session Call for Abstracts is now open!

- [Call for Abstracts](#)
- [Submission Link](#)

Abstracts are due on **July 31, 2026.**

Please bookmark the [2026 Learning Session](#) page on our member website to stay in the loop.

Conference registration will open in May.



We Value Your Engagement in the Collaborative!

This [survey](#) will be used to evaluate engagement opportunities based on your level of participation and the value that they provide to your center.



Please take the next 2-3 minutes to complete the survey.



2026 Publications thus far (½)

- DeLacey S, Rompicherla S, Grundman J, et al. Young Adult Diabetes Technology Use in Pediatric as Compared to Adult Practices. *Endocrine Practice*. 2026;32(1):11-15. doi:10.1016/j.eprac.2025.09.001
- Kathryn L Fantasia, Stefanie Lanzinger, Saketh Rompicherla, Jennifer J Grammes, Grenye O'Malley, Julia K Mader, Lauren Golden, Florian Kopp, David M Maahs, Peter M Jehle, Osagie Ebekozen, Reinhard W Holl, Missed opportunities for risk reduction: type 1 diabetes management in older adults in DPV and T1DX-QI registries, *Journal of the Endocrine Society*, Volume 10, Issue 3, March 2026, bvag007, <https://doi.org/10.1210/jendso/bvag007>
- Ashley N. Garrity, Jacqueline S. Fisher, Inas H. Thomas, Joyce M. Lee; Closing the Gap: Strategies for Broader Adoption and Use of Continuous Glucose Monitors Among Children and Adolescents With Type 1 Diabetes. *Diabetes, Obesity, and Cardiometabolic CARE* 11 February 2026; 1 (1): 40–44. <https://doi.org/10.2337/doc25-0042>

2026 Publications thus far (2/2)

- Iyengar J, Steenkamp D, Abdelhadi M, et al. It Is Time to Act: Making Diabetes Distress Screening Standard in Clinical Practice. *Endocrine Practice*. doi:10.1016/j.eprac.2026.01.011
- (2026), November 11–12, 2025, T1DX-QI Learning Session, *Journal of Diabetes*. *Journal of Diabetes*, 18: e70182. <https://doi.org/10.1111/1753-0407.70182>
- Jacobsen LM, Wright T, Demeterco-Berggren C. Beta-Cell Preservation in the Wild—Need for Real-World Monitoring, Treatment Protocols, and Efficacy Measures of Potential Disease-Modifying Therapies in Type 1 Diabetes. *Diabetes Technology and Obesity Medicine*. 2026;2. doi:10.1177/29986702261435426
- Crossen, S.S., Riales, N., Rainey, C. and Akturk, H.K. (2026), Commentary on the T1D Exchange Quality Improvement Collaborative Learning Session November 2025 Abstracts. *Journal of Diabetes*, 18: e70214. <https://doi.org/10.1111/1753-0407.70214>



2026 **SCIENTIFIC
SESSIONS**

NEW ORLEANS, LA | JUNE 5–8

The QI Team will share a poster template with first authors by the end of the week.

- First authors should complete a first draft by **Monday, May 4th**
- Co-authors should share feedback by **Monday, May 11th**
- Please share back final draft by **Friday, May 15th**

- ADA deadline is Friday, May 22nd





**2026 SCIENTIFIC
SESSIONS**

NEW ORLEANS, LA | JUNE 5-8

T1DX-QI will be hosting breakfast at a nearby restaurant TBD (within a 10-minute walk of the ADA convention center), on Sunday, June 7th from 7:00-8:30am CST. Please complete this short survey to RSVP.



Poster Presentations, Saturday June 6th, 12:30-1:30 pm

- 2026-A-3226-Diabetes
 - Common barriers to health equity and factors actively addressed to improve health equity in the T1D Exchange QI Collaborative
 - Ms. Riales/Dr. Wong
- 2026-A-2185-Diabetes
 - International Comparison of Adjunctive Pharmacotherapy Use in Type 1 Diabetes 2018-2024
 - Dr. Lyons
- 2026-A-2192-Diabetes
 - How Specific Features May Shape The Shared-Decision Making Process Involved In Clinicians Recommending Automated Insulin Delivery (AID) Systems For People With Type 1 Diabetes (PwT1D): A Qualitative Study
 - Dr. Mann
- 2026-A-3150-Diabetes
 - Increasing Adoption of Diabetes Technology among Adults with Type 1 Diabetes in a National Quality Improvement Collaborative: Results from Type 1 Diabetes Exchange
 - Dr. Odugbesan
- 2026-A-3176-Diabetes
 - Advancing Equity in Diabetes Technology: Type 1 Diabetes Exchange QI Collaborative Multicenter Quality Improvement Project across Adult and Pediatric Centers
 - Dr. Odugbesan, Ms. Riales

Poster Presentations, Sunday June 7th, 12:30-1:30 pm

- 2026-A-4111-Diabetes
 - Correlation Of Minoritized Ethnicity Representation Between Patients And Staff Of Diabetes Centers Involved In The T1D Exchange Quality Improvement Collaborative
 - Dr. Jones
- 2026-A-2631-Diabetes
 - Diabetes Dietitians in Clinical Practice: Real World Billing and Practice Data from T1DX-QI
 - Dr. Mann
- 2026-A-3216--Diabetes
 - Describing The FTE Of Diabetes Care Teams Across The T1D Exchange QI Collaborative
 - Ms. Rioles
- 2026-A-2264-Diabetes
 - Practice patterns for CGM initiation after diagnosis of Type 1 diabetes in pediatric and adult settings: A T1D Exchange Quality Improvement Collaborative study
 - Ms. Bishop
- 2026-A-2202-Diabetes
 - Using The Consolidated Framework For Implementation Research (CFIR) To Identify Barriers And Facilitators To Adoption Of A Digital Quality Improvement Portal Across A National T1D Collaborative
 - Ms. Cabrera

Late Breaking Posters and ePoster Presentations, Sunday June 7th, 12:30-1:30 pm

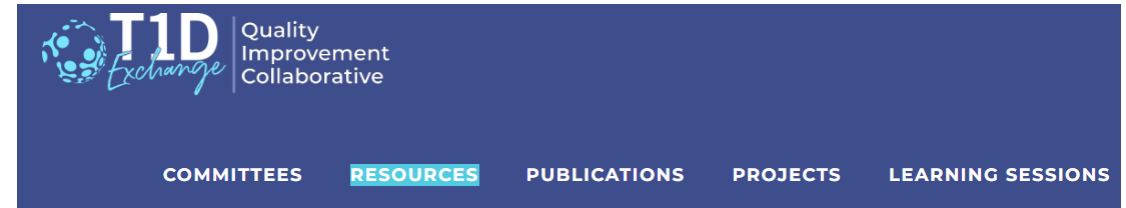
- 2026-LB-5322
 - Economic Policy Impacts on Diabetes Programs in the T1D Exchange QI Collaborative, Dr. Addala
- 2026-LB-5229
 - Formal Health Care Transition Policies Among Adult and Pediatric Diabetes Centers, Dr. Corathers
- 2026-LB-5328-Diabetes
 - Prescribing Practices and Clinical Support for GLP-1 Receptor Agonists in Youth-Onset Type 2 Diabetes: Data from the T1DX QI Collaborative, Dr. Naik
- 2026-LB-5104-Diabetes
 - Trends in Automated Insulin Delivery Initiation Among Newly Diagnosed Adults with Type 1 Diabetes: A T1D Exchange Multi-Center Study, Dr. Basina
- 2026-LB
 - Using Quality Improvement Strategies to Advance Early Automated Insulin Delivery Initiation in Pediatric Type 1 Diabetes: A T1D Exchange Multi-Center Study, Dr. Crossen
- EPoster presentation: 2026-A-3135
 - Increasing Adoption Of Diabetes Technology Among Children and Youth with T1D, Dr. Odugbesan

Oral Presentations

- 2026-A-3208
 - Operationalizing Early-Stage 1 Type 1 Diabetes and Monitoring
 - Ms. Holly, Friday June 5
- 2026-A-2696
 - Emerging T1D Screening and Intervention Programs
 - Dr. DeSalvo, Monday June 8

Updated 2026-2028 Measures & Data Spec

- Updated measures are posted under "Resources" on our member website, as well as another document highlighting the changes for this new 3-year period.



2026-2028 Measures and KDD

+ Adult Measures and KDD

- Overview of Changes

Adult Measures: Overview of Changes

+ Pediatric Measures and KDD

- Overview of Changes

Pediatric Measures: Overview of Changes

High Level Measure Changes

- "Hybrid closed loop" users will transition to "AID users" and no separate pump use measure
- DKA hospitalizations will be tied to an event date and not when it was patient-reported
- SH events requiring medical care will include ED visits and urgent care visits too (but not patient-reported data)
- SH event where PWD required assistance (=glucagon) ★
- Median Glucose Management Indicator ★
- Diabetes distress screening (PAID-T and TI-DDAS are the preferred tools) ★
- PWDs prescribed Incretin Mimetic Drugs (GIPs/GLP-1s) ★
- Depression screening + positive screens performed in period (no longer excludes patients with multiple screens who may be at higher risk) ★



= **New Measure**

Will some measures stay the same?

Yes, many of the CGM measures and HbA1c measures will stay the same. This includes:

- HbA1c < 7%
- HbA1c > 9%
- Median HbA1c
- TIR > 70%
- Time in Hypo <70 mg/dL < 4%
- Time in **Significant** Hypo <54 mg/dL <1%

However, we will be removing A1C <8%, TIR > 50%, HbA1c Improved $\geq 0.5\%$, Pump use**

If you need any portal data related to these metrics, please download your reports by **May 29th before their removal. This data will continue to exist in our EMR database however (just not visible on the portal).

Ensure your IT Analyst is using the v04.0 Data Spec


QIT1DSpec_v_0_4_0

File Edit View Insert Format Data Tools Extensions Help

Menus 100% View only

	A	B	C	D
1	Core Spec Change			
2	Version	Date		Reason
3	0.4.0	2026-01-01	Formatting changes: Patients file - variables race_1 , race_2 are no longer supported. Change variable to race change date_of_death to death_date Providers file - remove pos_id, dea_id, other_id, and ophtr_id_type Encounter file - remove status_reason addition to endo_visit to capture primary care encounters Observations file - remove low_test_value, high_test_value change to category to collect only social-history, vital-signs, laboratory, and survey observations Conditions file - remove provider_id_type, category, clinical_status, verification_status rename date_recorded to recorded_date Medication file - remove prescriber_id_type change date_written to written_date Diabetes file - change effective_date to encounter_date remove low_test_value, high_test_value, interpretation add source_value, source_units	
4	0.4.0	2026-01-01	Addition to capture diabetes distress screenings: Data is captured in Observation file. Screeners supported include: T1-DDAS CORE, T1-DDAS SOURCE, T1-DDAS COMBINED, PAID-T	
5	0.4.0	2026-01-01	Addition to capture PROMIS depression screening. Data is captured in the Observations file using LOINC code 91535-5 and captured via t-score.	
6	0.4.0	2026-01-01	Addition to capture date of altered mental and/or physical status requiring assistance (meaning they were administered glucagon) but did not result in a subsequent ED visit/urgent care or hospital visit. This is captured with the new diabetes code sh_events_assistance_pro_dt	
7	0.4.0	2026-01-01	Change to how DKA and SH data is captured. Previously this captured number of events since last visit. Moving forward we will capture the date of each event. To incorporate this, diabetes code would change from dka_events_inp -> dka_events_inp_dt The value for each code changes to capture YYYYMMDD of event.	To more accurately capture the number of events in reporting period

Pay attention to the first tab on the google sheet, where changes in the spec are tracked



Transitions of Care from Pediatric to Adult Endocrinology in Diabetes: An Adult Endocrinology Perspective

4.2026

Andrew Welch DO

Assistant Professor of Clinical Medicine

University of Cincinnati
Division of Endocrinology

Objectives



Understand joint transition efforts between U of Cincinnati Endocrinology and Cincinnati Children's Hospital Endo

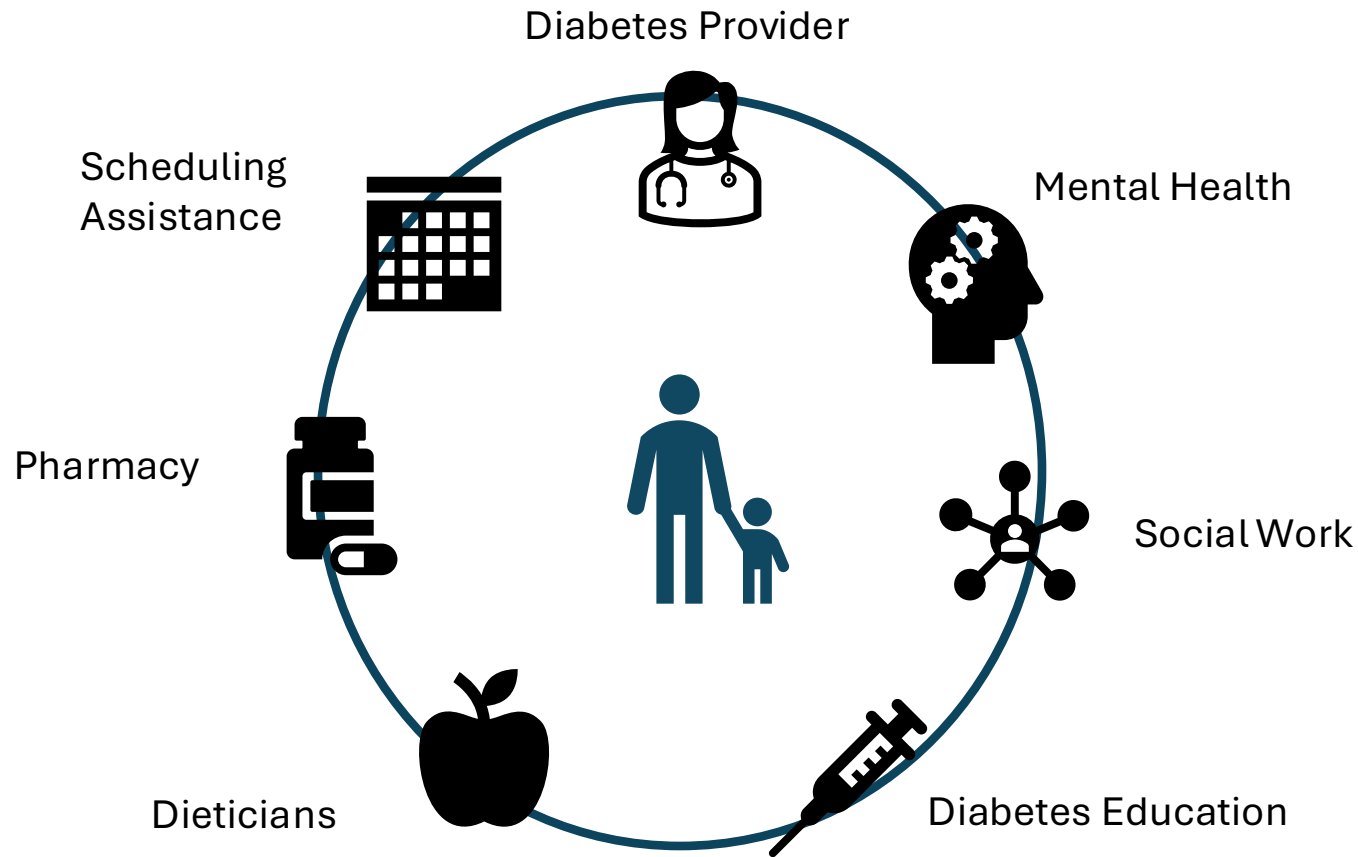


Review transition data at University of Cincinnati

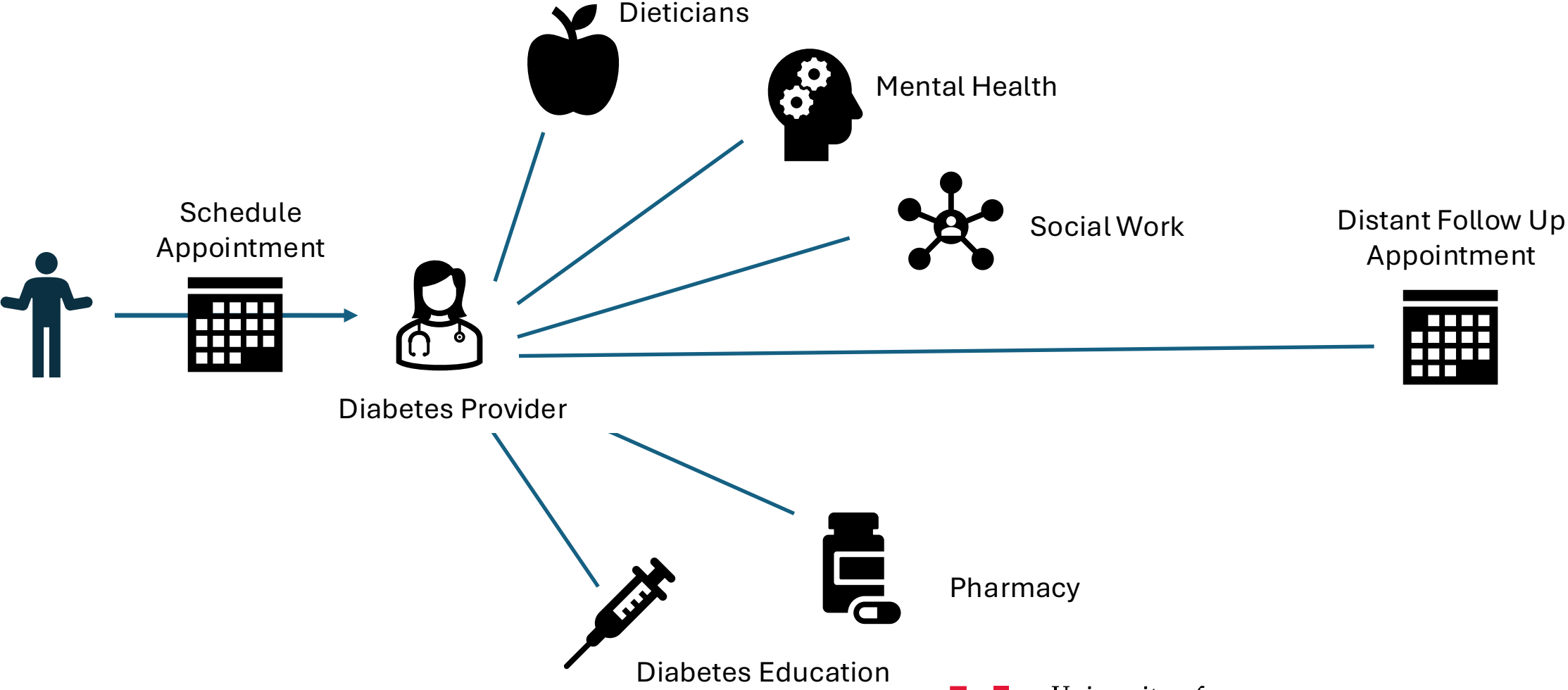


Please help me to know how to build better systems

Pediatric Care Model



Adult Care Model



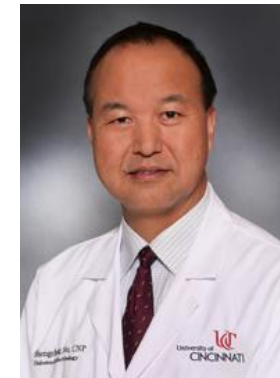
Diabetes Resilience in Emerging adult Clinical Transitions (**DIRECT** Clinic)



Erin Black CNP



Andrew Welch DO



Sheng Su CNP



Medical Arts Building, Clifton



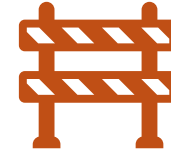
Briana Vitucci RD
CDCES



West Chester North Building



Referral Process



Step 1. Fax referral to UC (513-584-2599)

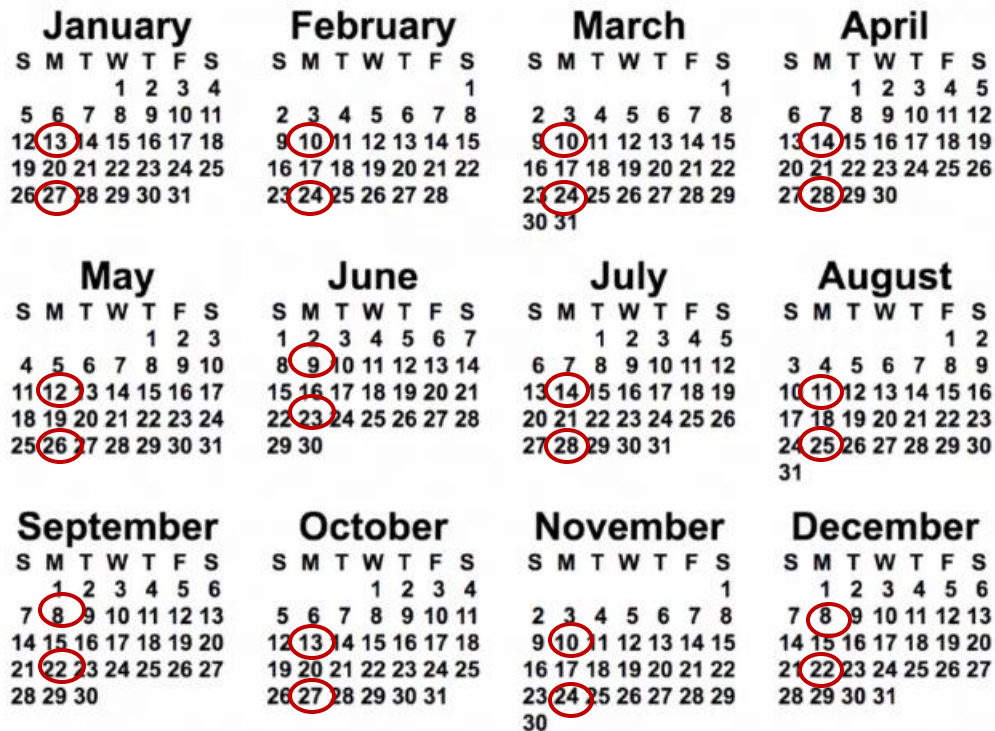
Step 2. Send encrypted email to UC Endocrinology at WCMC-endocrinology@uchealth.com providing name, DOB, and phone number of patient.

Endocrinology scheduling specialist will call and set up the appointment

Step 3. Call Briana Vitucci #513-584-4792. Land line.

Diabetes Resilience in Emerging adult Clinical Transitions (**DIRECT** Clinic): 1st Visit

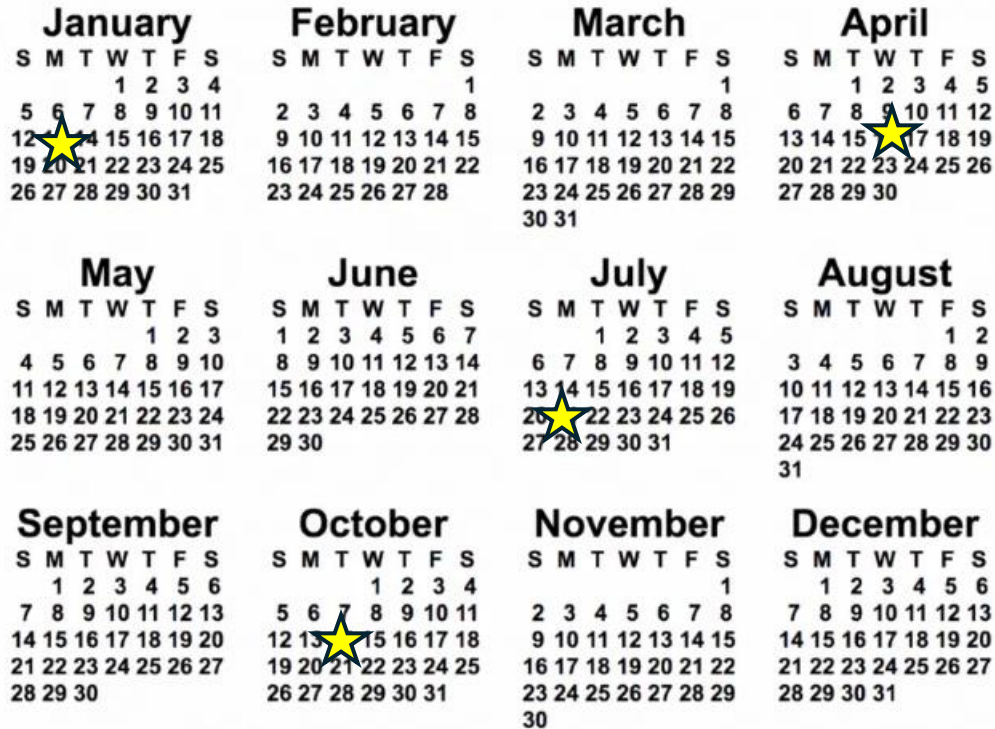
2025



- Afternoon of every 2nd and 4th Monday in Medical Arts Building (Clifton)
- 30-minute appointment slots
- Clinic slots are held in reserve for Transition Patients (Available 3 months out)
- All prescription medications are ordered by adult provider during visit
- Introduction to members of their care team
- I send an encrypted email to the referring provider and CCHMC transition coordinator to alert them we made contact and ask any follow up questions

Diabetes Resilience in Emerging adult Clinical Transitions (**DIRECT** Clinic): Follow up Visits

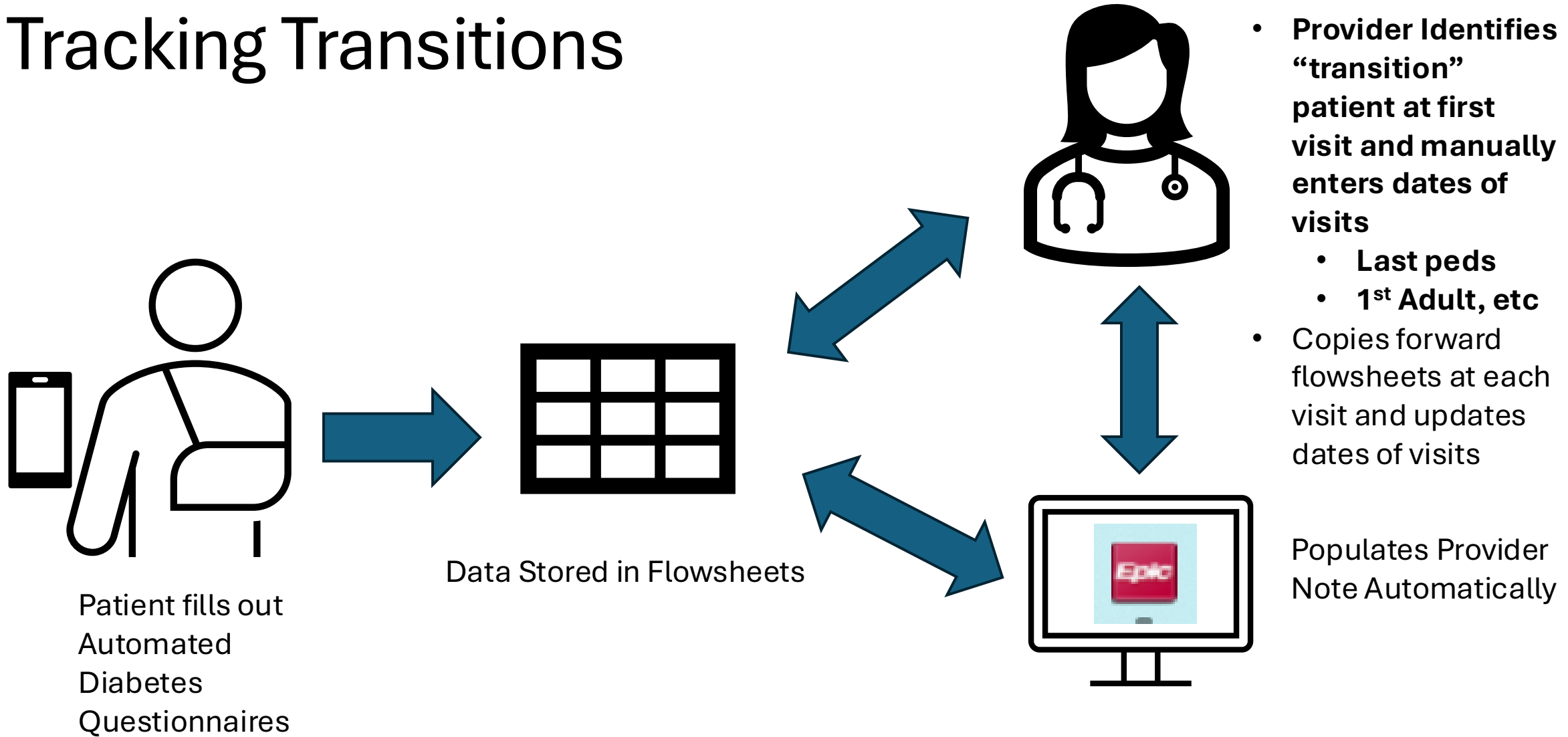
2025



- Simultaneous Scheduling of 3-4 follow up appointments when **scheduling** first appointment OR **at** first appointment

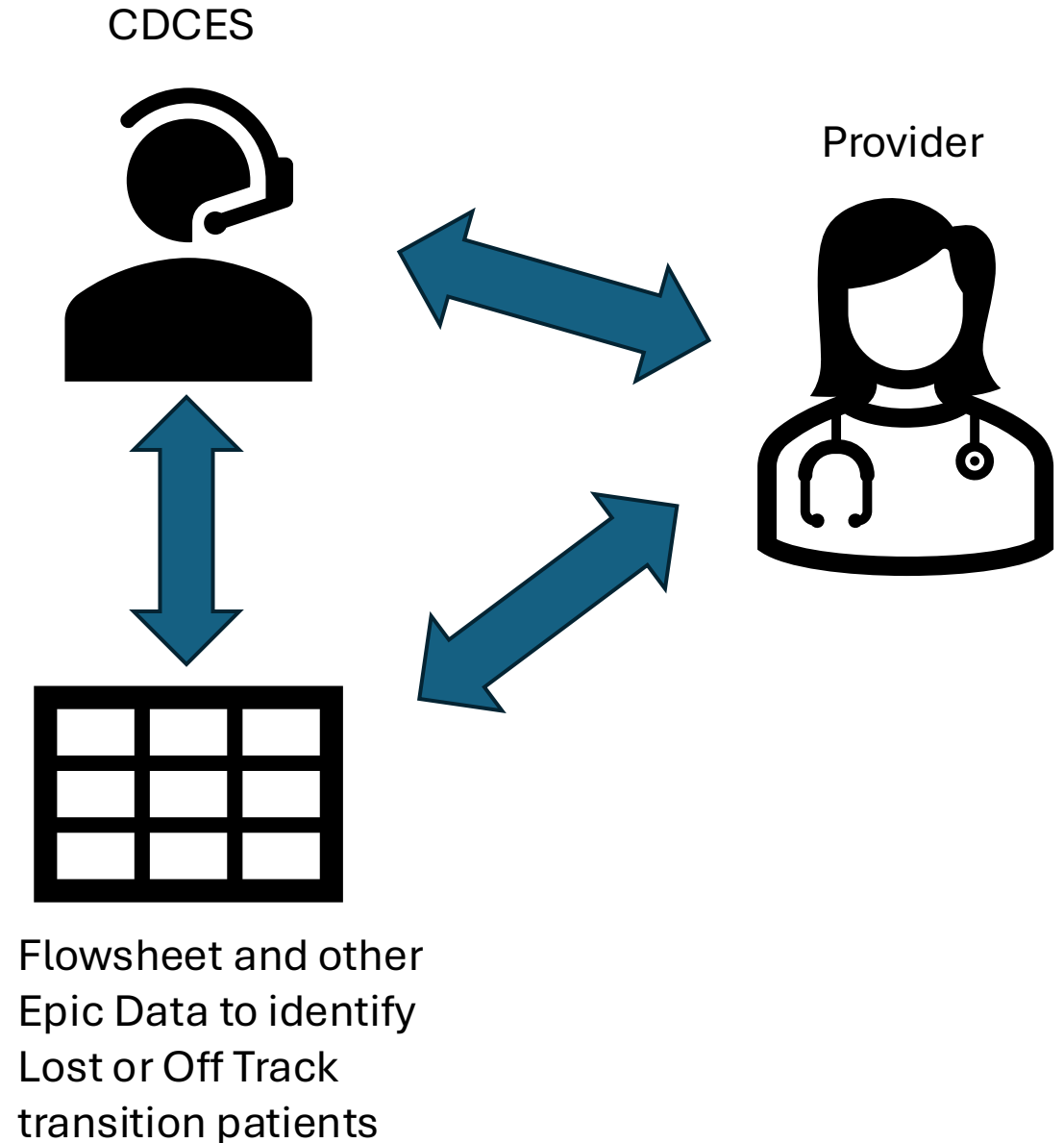


Tracking Transitions



Tracking Transitions

- Report generated from flowsheet data
- Transition coordinator can generate a report of all transition patients in Epic
- This contains important information such as “Last Endocrine Visit” and “**Next Endocrine Visit**”
- CDCES can spend focused time calling those with high A1C or interruptions in follow up



DIRECT Clinic: Inclusion Criteria

- Age >18
- First visit to see an Adult Endocrinologist following Pediatric Endocrinology care
- Has any form of Diabetes
- Came to first appointment at UC Endocrinology
- Provider identified patient as “Transition Patient” and marked this on “Transition Flowsheet”

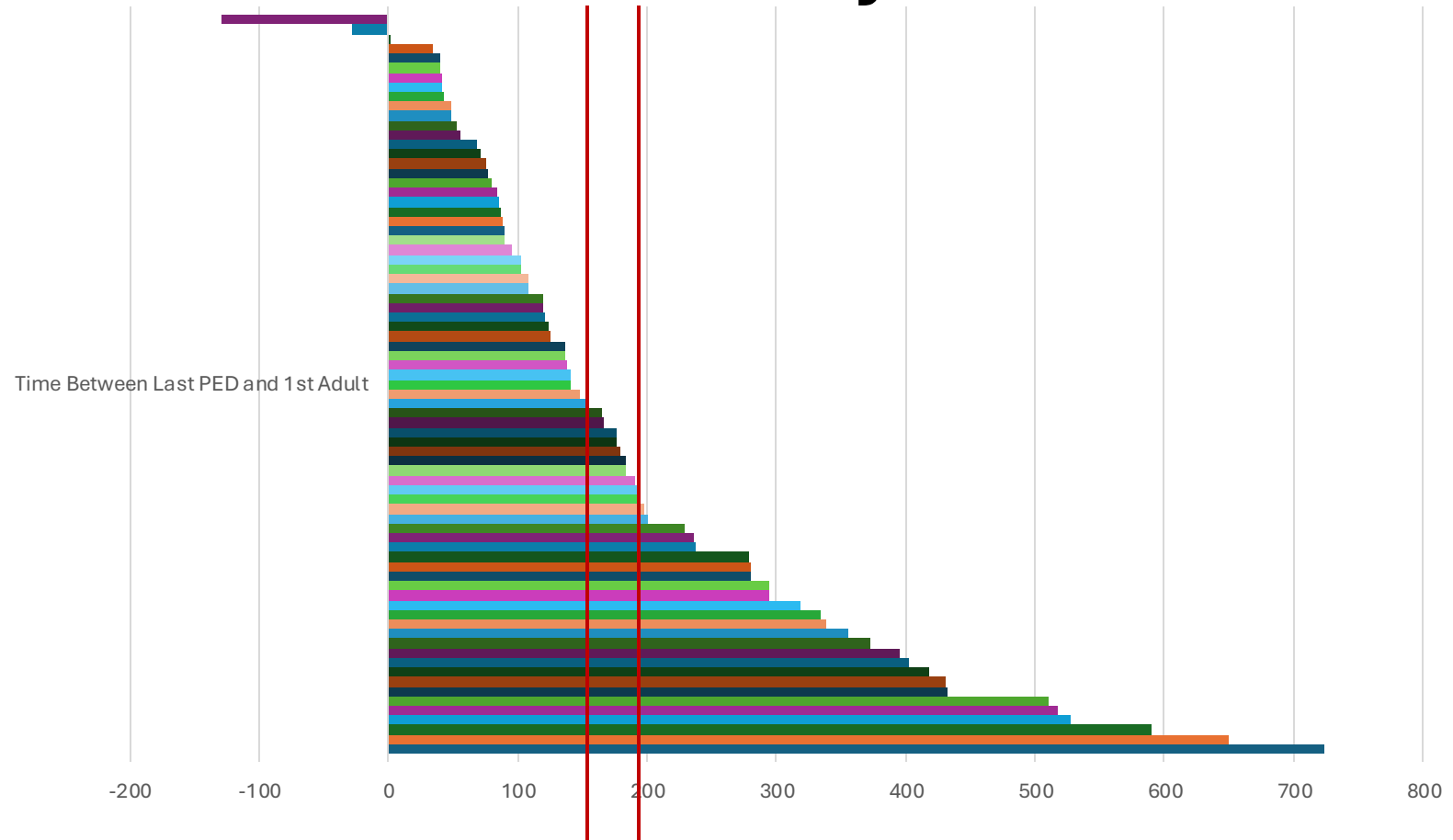
DIRECT Cohort Demographics

- n=78
- Age: mean 22.8 years (range 19-28)
- Last HbA1C: **mean 7.2%** (6.0-11.4%)
 - In Epic at time of data pull
- 95% Type 1 Diabetes
- 93% from CCHMC Endocrinology

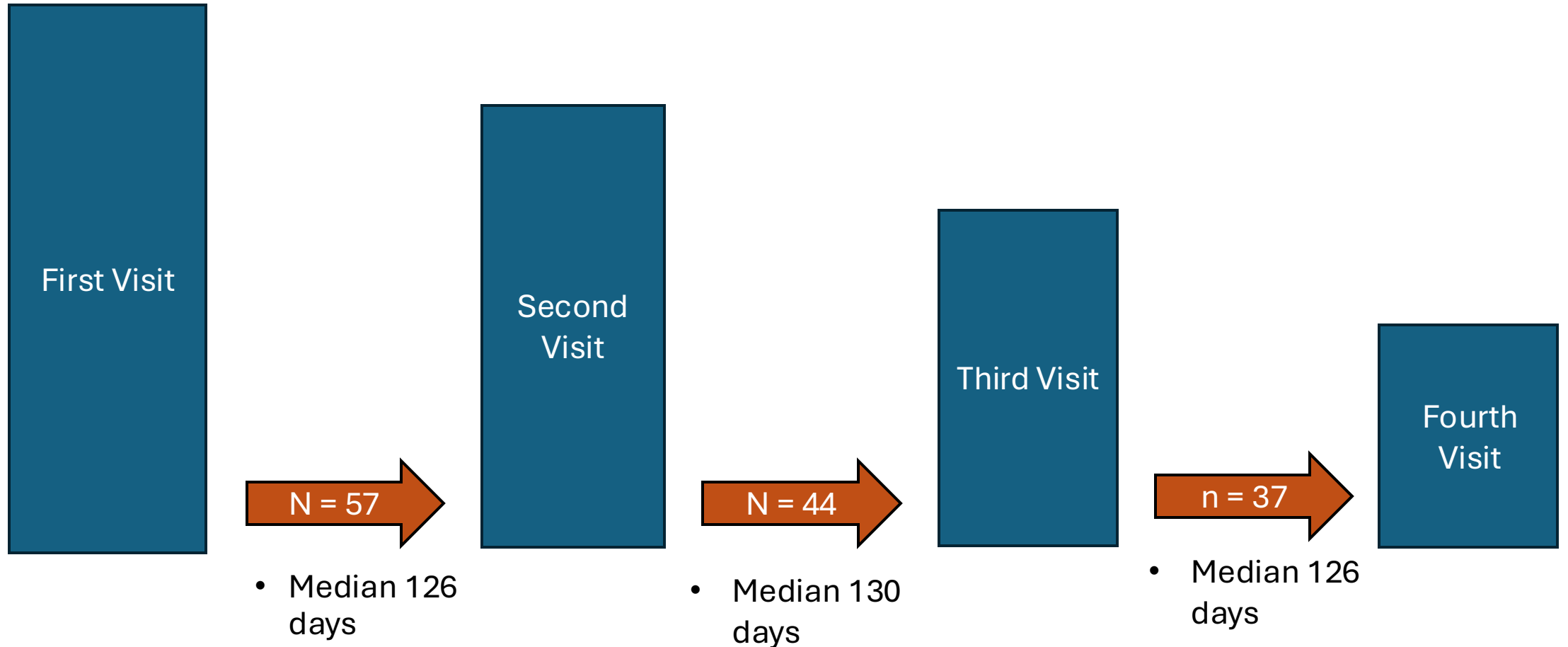


Time from Last Pediatric to First Adult Visit in Days

- n=75
- Mean 195 days
- Median 141 days
- Many outliers who were lost during transition for various reasons



Time between Adult Visits



Successful Transitions:

- **Three visits in first year of establishing care**
 - $34/54 = 63\%$ success
- **Two visits in first 6 months of establishing care**
 - $43/64 = 67\%$ success
- **Have future appointment Scheduled**
 - $64/78 = 82\%$



GOT Transitions

THE SIX CORE ELEMENTS OF HEALTH CARE TRANSITION™ 3.0

Overview: Integrating Young Adults into Adult Health Care

1 TRANSITION AND CARE POLICY/GUIDE

- Develop a transition and care policy/guide with input from young adults that describes the practice's approach to transition, accepting and partnering with new young adult patients, and an adult approach to care in terms of privacy and consent.
- Educate all staff about the practice's approach to transition and distinct roles of the young adult, parent/caregiver, and adult health care team in the transition process, taking into account cultural preferences.
- Display transition and care policy/guide somewhere accessible in practice space, discuss and share with young adult at first visit, and regularly review as part of ongoing care.

2 TRACKING AND MONITORING

- Establish criteria and process for identifying transitioning young adults.
- Develop process to track receipt of the Six Core Elements, integrating with electronic medical records (EMR) when possible.

3 ORIENTATION TO ADULT PRACTICE

- Identify and list adult clinicians within your practice interested in caring for young adults.
- Establish a process to welcome and orient new young adults into practice, including a description of available services.
- Provide young adult-friendly online or written Frequently Asked Questions about the practice.

4 INTEGRATION INTO ADULT PRACTICE

- Communicate with young adult's pediatric clinician(s) and arrange for consultation assistance, if needed.
- Prior to first visit, ensure receipt of transfer package, including final transition readiness assessment, plan of care with transition goals and prioritized actions, medical summary and emergency care plan, and, if needed, legal documents, condition fact sheet, and additional clinical records.
- Make pre-visit appointment reminder welcoming new young adult and identifying any special needs and preferences.

5 INITIAL VISITS

- Prepare for initial visit by reviewing transfer package with appropriate team members.
- Address any concerns young adult has about transferring to adult care and take into account any cultural preferences.
- Clarify an adult approach to care (shared decision-making, privacy and consent, access to information), adherence to care, preferred methods of communication, and health literacy needs.
- Conduct self-care skills assessment if not recently completed and discuss their needs for self-care and how to use health care services.
- Offer education and resources on needed skills identified through the self-care skills assessment.
- Review young adult's health priorities as part of their plan of care.
- Update and share with young adult their medical summary and emergency care plan.

6 ONGOING CARE

- Communicate with pediatric practice confirming completion of transfer into adult practice and consult with pediatric clinician(s), as needed.
- Assist young adult in connecting with adult specialists, as needed, and provide linkages to insurance resources, self-care management information, and community support services.
- Obtain consent from young adult for release of medical information.
- Continue with ongoing care management tailored to each young adult and their cultural preferences.
- Elicit anonymous feedback from young adult on their experience with the transition process.
- Build ongoing and collaborative partnerships with other primary and specialty care clinicians.



Integrating Young Adults into Adult Health Care
Six Core Elements of Health Care Transition™ 3.0

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DIRECT Clinic Future Directions

- Create a Registry for easier tracking
- Offer more virtual visit options
- Implementing checklist approach to transition education at first visit
- More staffing support needed
 - RN/CDCES/Social Worker to call or text patients
 - More protected time for transition coordinator

Practical Transition Tips (from adult endo)

- Make time between **Last Peds Visit** and **Adult Referral** either 0 days or negative days
 - Help the patient make the phone call to schedule Adult Endo during Peds Endo Visit
- Schedule **Adult Visit** for 4-6 months in future, and see them one more time in 2-4 months as **Peds Visit**
- For the nervous: Schedule **Adult Visit** for 6 months and **Peds Visit** for 3 and 9 months – why not alternate?
- Schedule all 4 appointments at beginning of transition

Thank You

- welchaw@ucmail.uc.edu

Implementation of Type 1 Diabetes Adult Transition Process

Jordan Ross, MD
Assistant Professor
Med/Peds Endocrinologist
University of Tennessee Health Science Center

Le Bonheur Children's Hospital University of Tennessee Health Science Center



Geographic Location

We are located in downtown Memphis, TN. We provide care to people from multiple neighboring states because of our location. We see patients from Tennessee, Mississippi, Arkansas, Missouri, Alabama and Louisiana.



Demographic Information

We care for 764 PwT1D and 333 PwT2D annually

PI and Clinic Staff Members

Our PI is Grace Nelson, MD and we have: 7 full time MDs, 1 part time MD, 1 Fellow, 1 part time Psych, 3 DNP's, 9 RNs, 3 CDCES, 1 Community Health Worker, 1 Social Worker and 2 Dietitians.

Active PI Projects

- Active QI Project #1- DKA and HCL pumps
- Active QI Project #2- Little's clinic
- Active QI Project #3- Transition

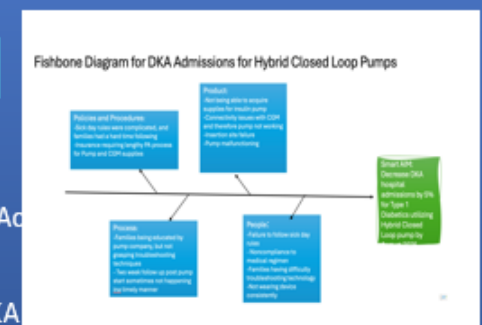
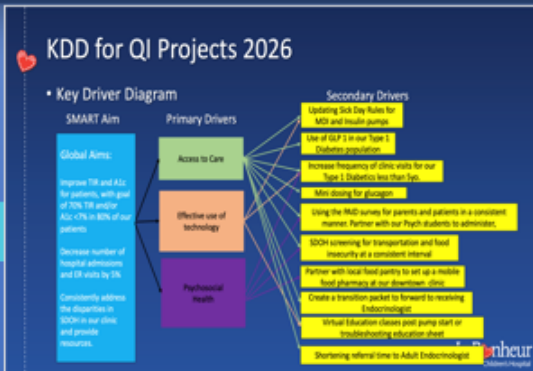
Planned QI Projects

- Planned QI Project #1- Microalbumin Screening
- Planned QI Project #4- CGM- opt out policy
- Planned QI Project-Diabetes Distress

Learning Session Abstracts

- Number of abstracts submitted at the previous learning session: 4
- 2026 Learning Session Abstracts:
 - Transition Confirmation of T1D Pediatric to Adult Care
 - CGM
 - QI Analysis of Sick Day Rule Updates on DKA Admissions in Children with Type 1 Diabetes using HCL Insulin Pumps
 - Comparing Insulin Pump Initiation and Outcomes in Young Children ages 0-5 with Type 1 Diabetes
 - Advancing Equity and Outcomes: A QI Initiative to Increase CGM Use in Children with T2D

QI Tools Routinely Utilized



Team

- Anne Wynn, MD: transition clinic staff endocrinologist
 - Chaundra Wilson, RN: endocrinology nurse / Regional One Health
 - Jordan Ross, MD: endocrinologist / transition QI team member
 - Kayla Zimmerman, BA, BS: medical student / transition QI team member
-
- Blake Adams, BSN: T1DX site coordinator, Le Bonheur
 - Grace Nelson, MD: T1DX site PI, Le Bonheur



SIX CORE ELEMENTS™ APPROACH AND TIMELINE FOR
YOUTH TRANSITIONING FROM PEDIATRIC TO ADULT HEALTH CARE

Background

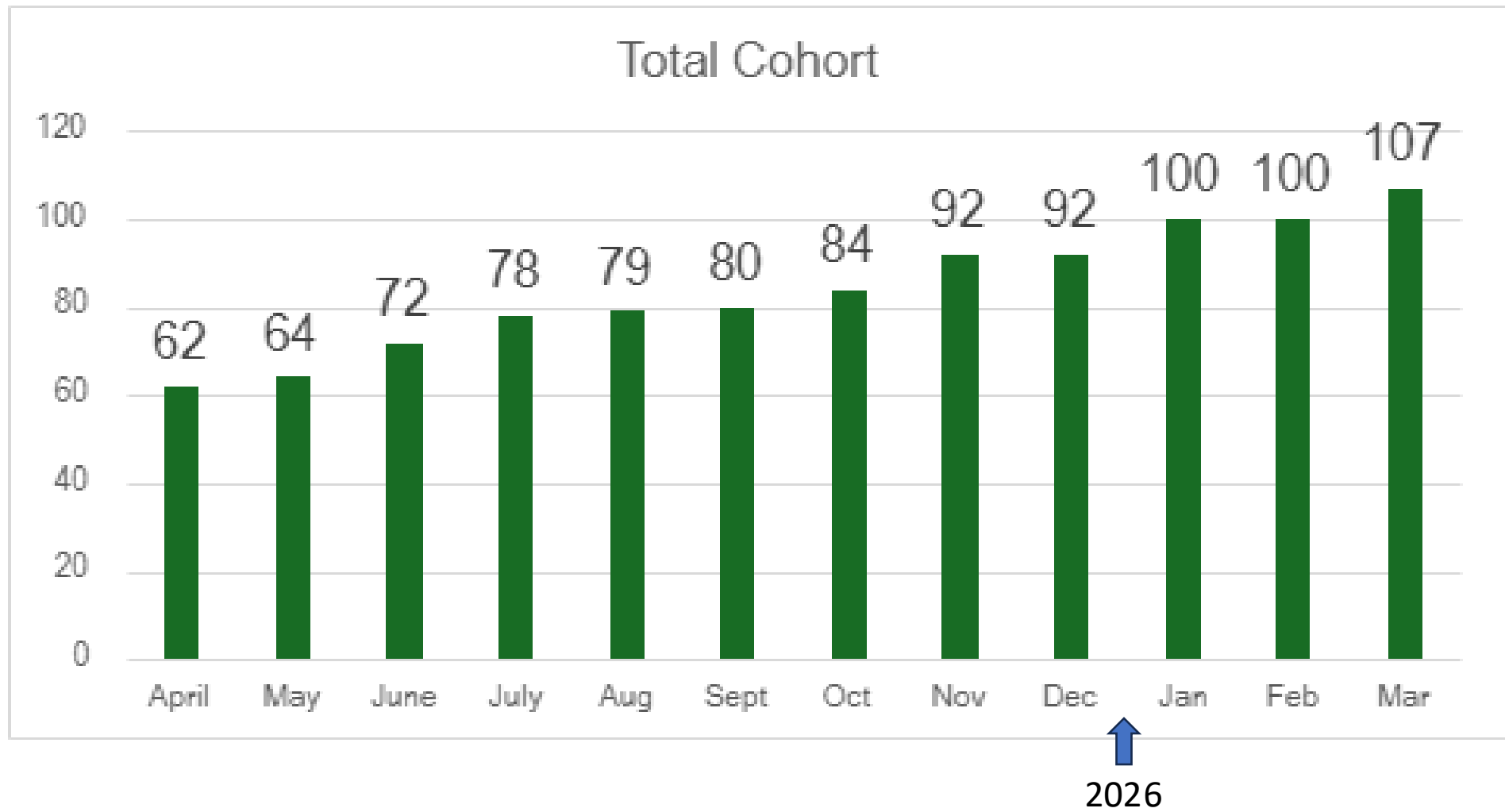


- Lack of unified approaches to transitional care as patients with chronic medical conditions age out of childhood/adolescence
 - Diminished health-related outcomes after transitioning to adult care
- Emerging standards of care
 - Improve the ability of youth and young adults to manage their own health care and effectively use health services
 - Provide an organized process to facilitate transition preparation, transfer of care, and integration into adult health care
- Global Aim:
 - Increase the percentage of patients completing a transition program
 - Increase the percentage of patients who successfully transition to adult care

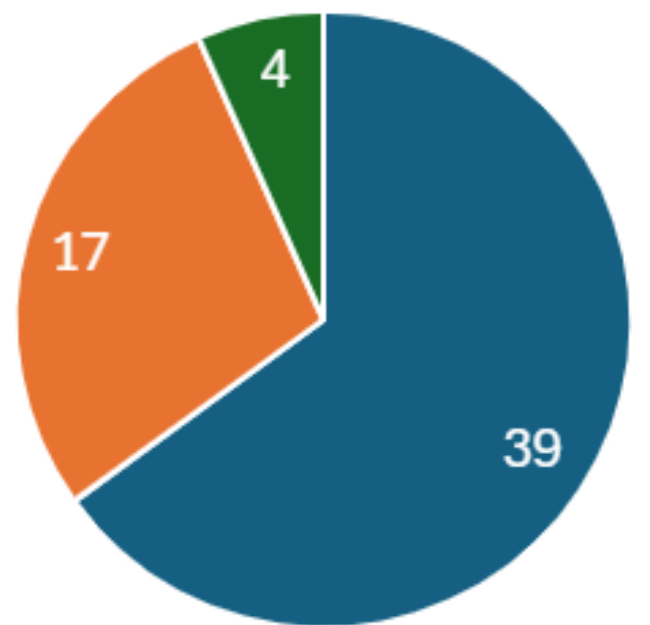
Implementation of transition clinic

- Internal referral of any adolescents with diabetes (typically no younger than 15 years)
- Visit every six months, alternating quarterly visits with the adolescent's primary endocrinologist
 - Two half-days a month started in 2018 with Dr. Anne Wynn
 - Increase to four half-days a month in September 2023
- Orientation to clinic with booklet

Total cohort of youth actively part of the transition clinic registry



Distribution of diabetes type (back to May 2025)



■ T1DM ■ T2DM ■ Other

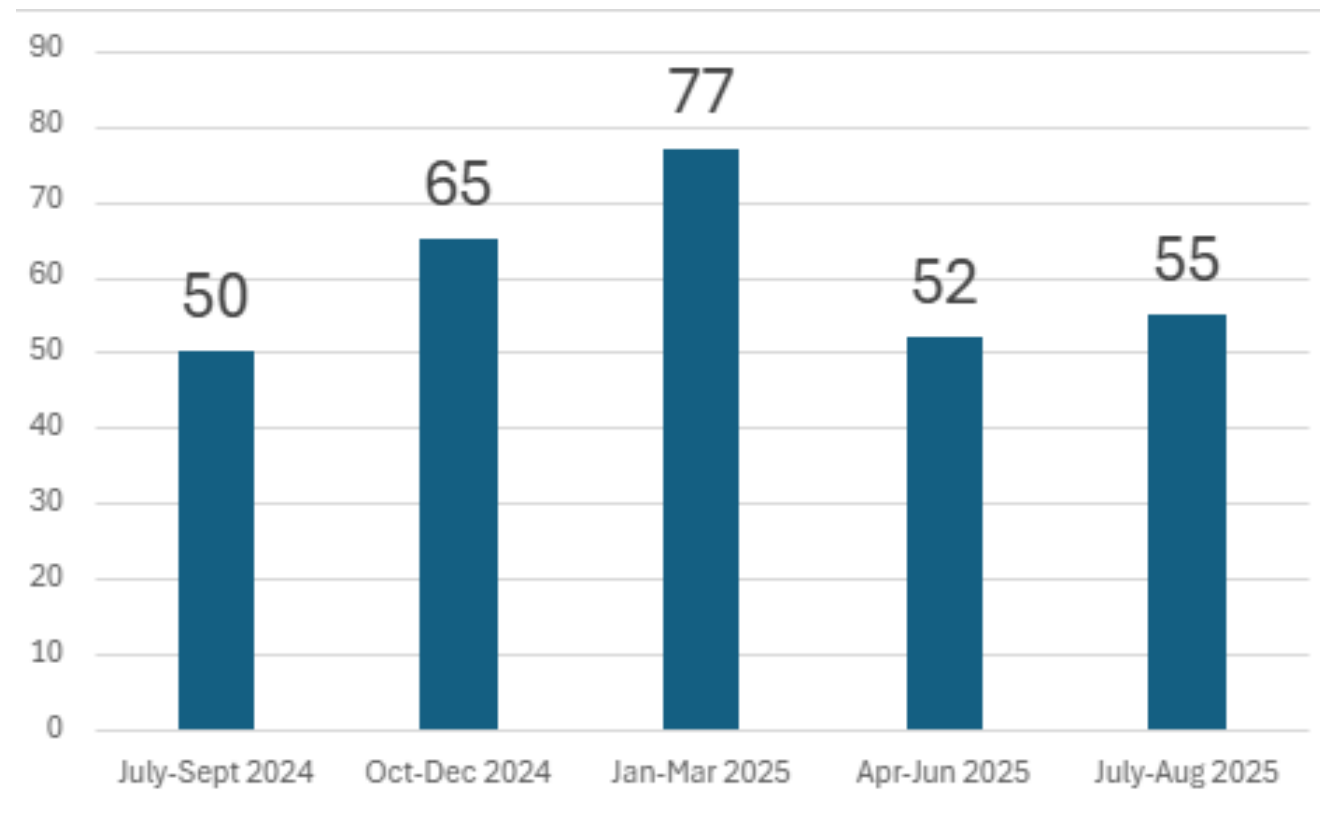
Transition Visit Checklist

- Highlight key tasks and educational topics to cover throughout the patient's transitional period
- Update the list throughout the transition period
- Able to adapted for use outside of transition clinic or by the endocrinology team in between transition clinic visit

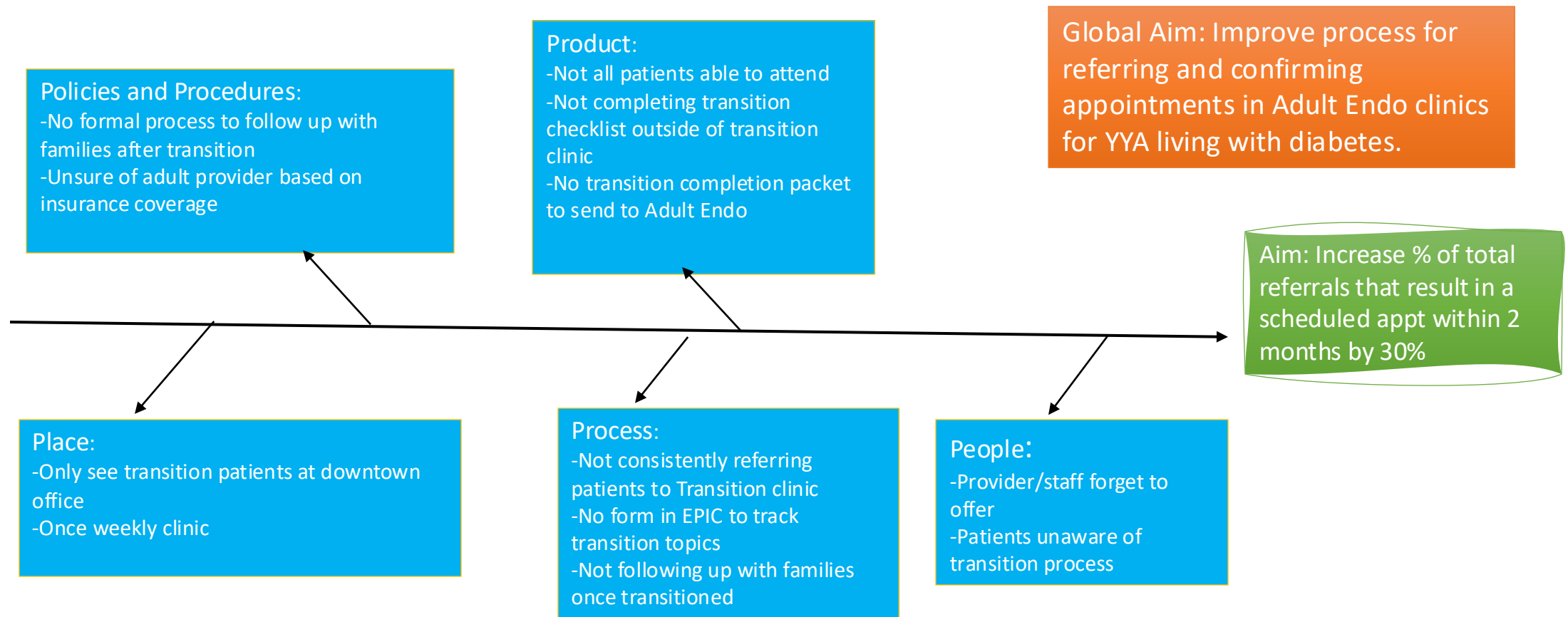
Transition clinic program checklist

- Transition Policy given
- Transition Booklet given
- Driving
- Knowing medications (list) and dangers of rationing
- Review important numbers/refs for CGM/pump technology questions
- Sexual Activity and Pregnancy with Diabetes
- Alcohol/substance use
- College Diabetes Network
- FMLA and workplace rights
- Health insurance
- Expectations for adult endocrinology team
- Graduation Packet

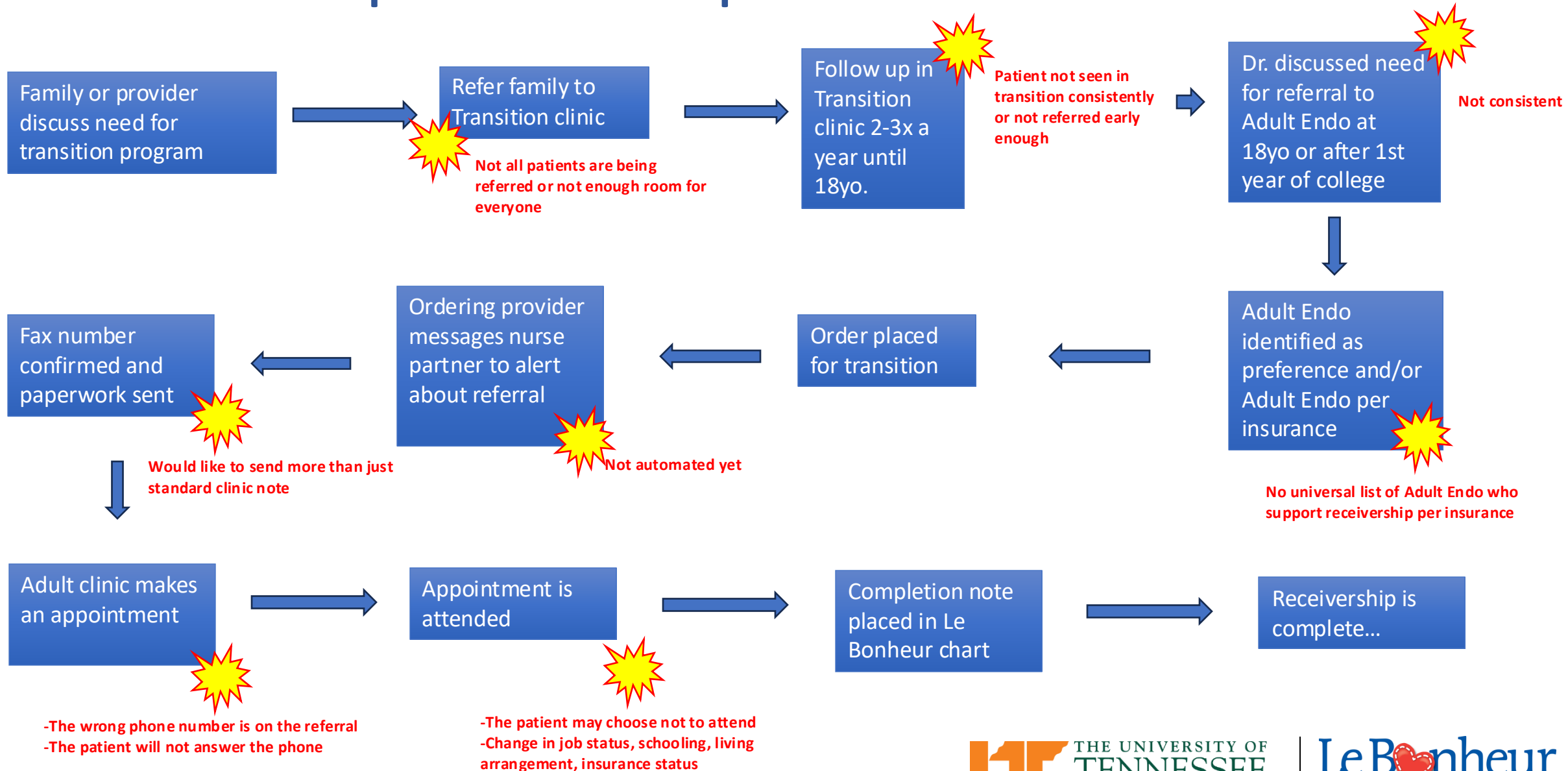
Percent of patients with completed transition checklist at each visit



Fishbone diagram for transition



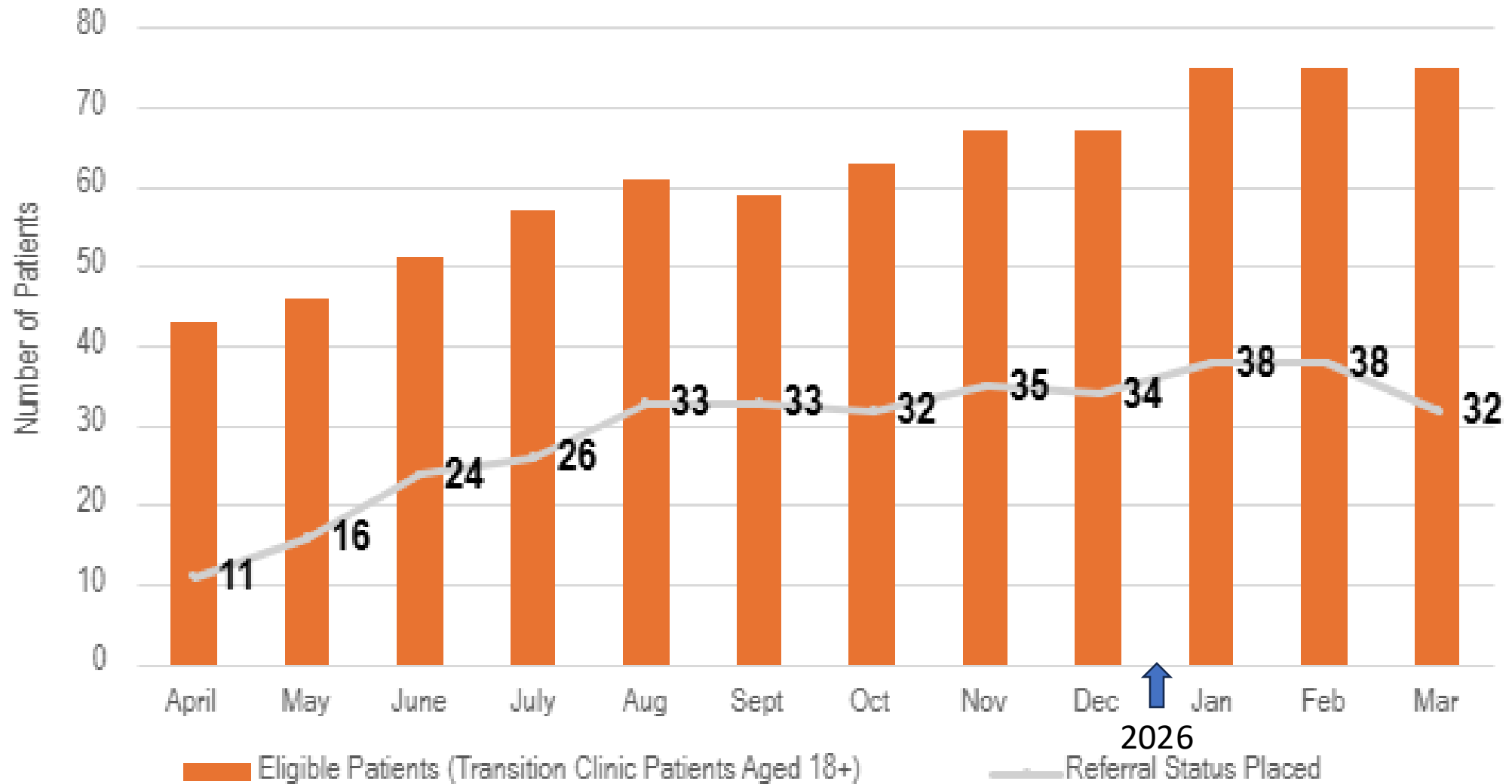
Transition process map



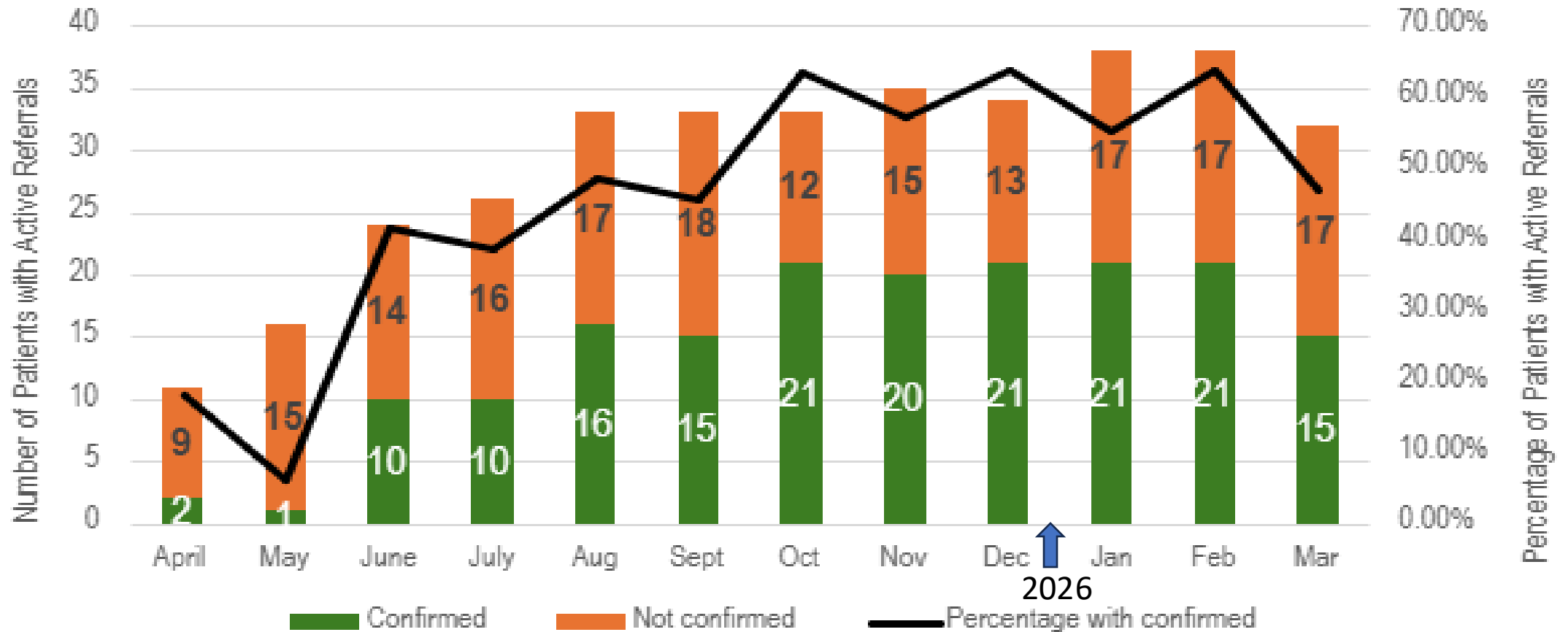
Transition registry

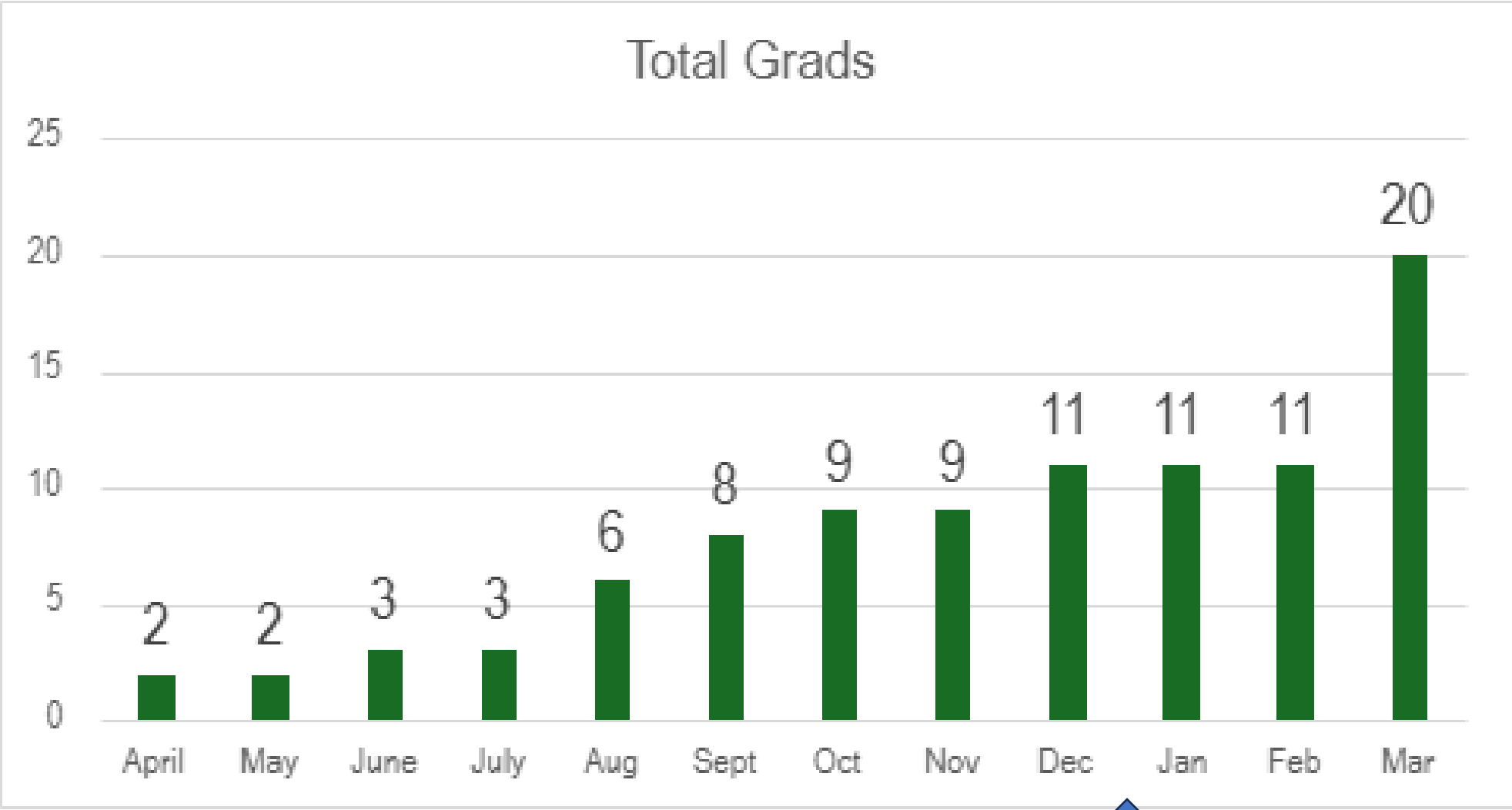
TOC?	Packet?	Our calls	Notes*	Date of referral	Date of appointment	Length of time (months)	Completion note?	Month in which pt off list
no			Telephone msg from Dr. Wynn (dated 10/17/25) stating "Patient's contact information forwarded to ROH scheduling nurse, we will attempt to get her booked for February." No referral has been placed at this time-needs one.					
no								
no		indefinite at LEB, complex care						
yes			To Baba	10/15/2025	[REDACTED]	4.9		
yes			to ROH East	9/3/2025	[REDACTED]	7.9		
no								
no								
no								
yes			Dr Karabell	9/3/2025	[REDACTED]	4.2	yes	March 2-26
no								
no								
yes		call 1:4/23/25- Clinic said they have no record of this patient at this time. Will message Kelly. call 2: 6/4 JDR, this clinic is OON, will try somewhere else call 3: _____ (pending)	first referral 3/19/25, out of network new referral pending	3/19/2025				
no								
no								
yes			to ROH East	9/3/2025	[REDACTED]	8.0		
yes		updated note 12/29; need ROH appt? PCP in the meantime? JDR faxed records 6/9/25	ROH Referral placed to ROH East with Dr. Wynn on 4/02/2025.	6/9/2025 4/2/2025	[REDACTED] [REDACTED]	12.3		
no								
yes		5/13 JDR called ROH, confirmed referral received then called pt on personal number to facilitate	To ROH downtonw, fax sent 4/17/25 NEED TO KNOW COLLEGE ENDO	4/16/2025	[REDACTED]	10.4	yes	March 2026
no								

Referral Status of Eligible Patients



Confirmed Adult Provider Appointment of Those with Active Referrals





↑
2026

Next steps

- Build a transition clinic note template in Epic
- Build a transition checklist SmartForm in Epic
- Transfer the registry from Excel to Epic
- Develop a graduation packet to send with each referral to an adult receivership program
- Build our team so we can also look at patients who have been lost to follow-up from transition clinic

Baylor
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Medicine

DEPARTMENT OF
PEDIATRICS



Predicting DKA Risk and Driving Interventions in Children with Type 1 Diabetes

David D Schwartz, PHD, ABPP
Selorm A. Dei-Tutu, MD, MPH

04/14/2026



Diabetes Program Information

Locations

Houston: 6 clinics and 3 hospitals
Austin: 1 clinic and hospital

Faculty and staff

Pediatric endocrinologists: 35
Advanced practice providers: 9
Fellows: 12 (4 per year)
CDCES FTE: 29 (includes 3 remote)
RD FTE: 10
Social workers FTE: 6
Psychologists: FTE: 2

FY2024 patient demographics

Type 1 population: 3396, new onset: 358/yr

Insurance: 38% public

Race/ethnicity: 40% non-Hispanic white, 31% Hispanic, 21% non-Hispanic Black, 8% other

Type 2 population: 779, new onset: 124



The Problem And The Goal

- Problem: Too many children with DKA & recurrent DKA episodes
- Goal: Reduce or prevent DKA in children with T1DM



The Process

- **Identify the population**
- Identify the team players
- Determine desired outcomes
- Standardize workflow
- Standardize documentation
- Track outcomes



Risk Screening For DKA In Pediatric T1D

Aim: To identify patients at-risk for DKA and intervene preventively

- Clinical judgment - misses many patients
- Need *system* for screening/surveillance

→ Automated risk prediction tool:

The Risk Index for Diabetic Ketoacidosis (RI-DKA)

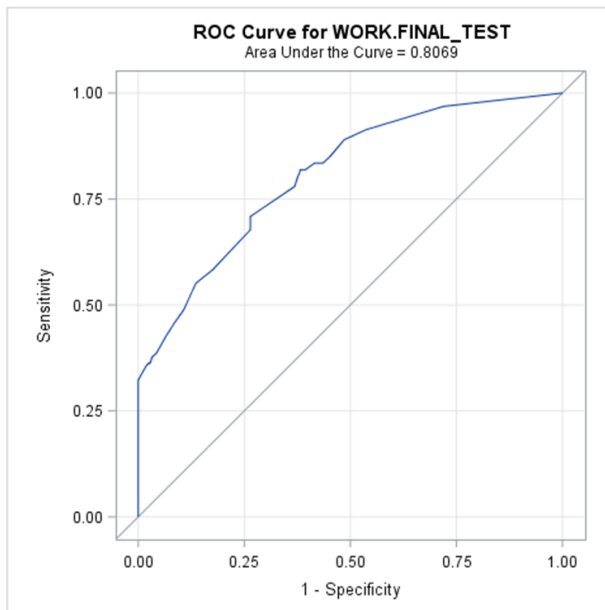
Development & Validation Of The RI-DKA

- Predictors IDed based on lit review & High Risk CPT
- Had to be able to be extracted automatically from EMR
 - Patient age
 - Sex
 - Race/ethnicity
 - Health insurance (public/self-pay vs. private)
 - Most recent A1c
 - DKA in prior 2 years* (*not* including DKA at diagnosis)
 - Insulin regimen (fixed vs. IIM vs. pump)
- Series of univariate analyses & multivariable analysis

Final Model

Variable	Comparison	Adjusted OR (95% CI)	P
Last A1C result*	–	1.29 (1.16-1.45)	<0.0001
Insurance	Public/self-pay vs. private/other	2.27 (1.38-3.74)	0.001
DKA in prior two FYs	Yes vs. no	3.10 (1.81-5.23)	<0.0001

*For A1C, change in odds was associated with each 1% increase in the variable.



Any DKA: AUC = 0.81

Severe DKA: AUC = 0.86

Recurrent DKA: AUC = 0.91

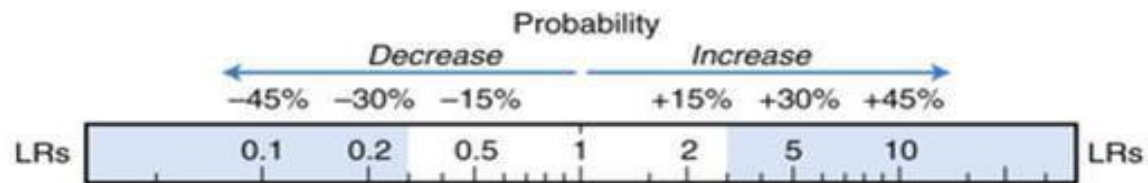


Risk Scores & Risk Categories

- Used regression coefficients (beta values) to weight scores

	Beta	Beta x 4
Last A1c	0.25	1
Insurance	0.82	3
Prior DKA	1.13	5

- Generated positive likelihood ratios for each score
- LR+ used to set risk category cutoffs

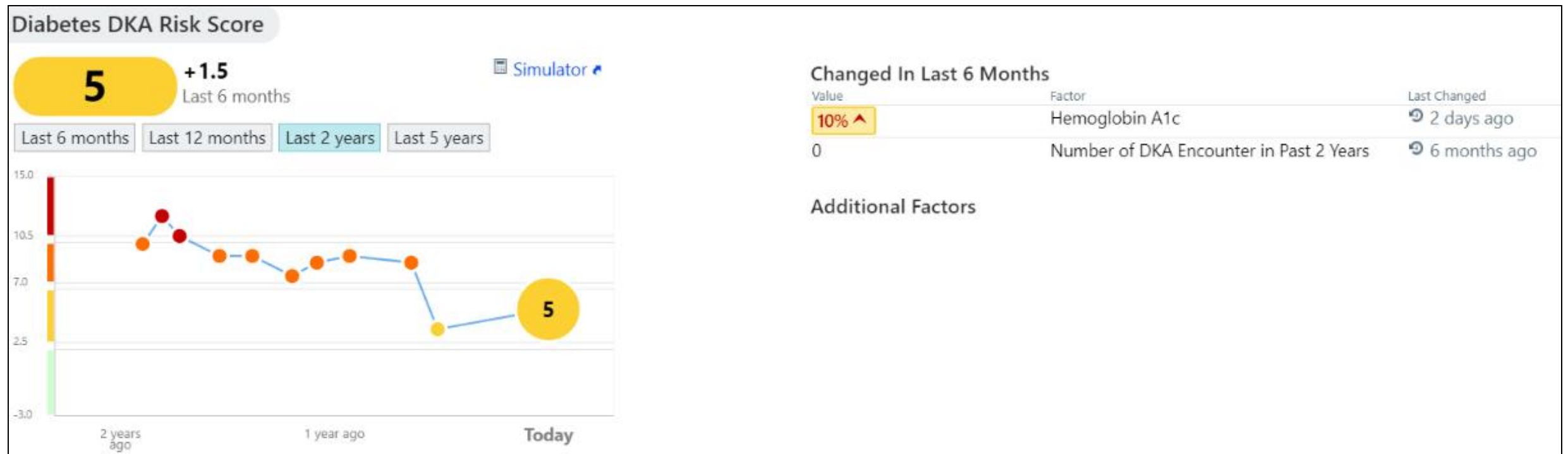


Likelihood ratio (+)	Change in likelihood of disease after test
1 – 2	Minimal increase
2 – 5	Small increase
5-10	Moderate increase
>10	Large increase

Score	AVG LR+	Risk Level	n	%	DKA				
-3.5	1.0	Low	881	55%	3%				
-3	1.0								
-2.5	1.0								
-2	1.0								
-1.5	1.1								
-1	1.1								
-0.5	1.2								
0	1.3								
0.5	1.5								
1	1.6								
1.5	1.7	Moderate	544	34%	9%				
2	1.8								
2.5	2.0								
3	2.3								
3.5	2.5								
4	2.8								
4.5	3.2								
5	3.7								
5.5	4.0								
6	4.3								
6.5	4.8	High	131	8%	24%				
7	5.0								
7.5	5.6								
8	5.9								
8.5	6.3								
9	5.9								
9.5	9.1								
10	9.4								
10.5	10.4					Very High	54	3%	47%
11	11.0								
11.5	11.8								
12	13.3								
12.5	15.3								
13	14.6								
13.5	14.9								
14	21.3								

RI-DKA Implementation Into EMR

- Worked with data architects, data analysts, and IS to build index into EMR (Epic)
- Score updates automatically (e.g., new A1c)
- Risk score color-coded, can see change over user-specified timeframe & factors contributing to score



RI-DKA Implementation Into EMR

The screenshot displays an EMR interface with a sidebar on the left and a main content area. The sidebar includes sections for 'Code: Prior', 'Social Drivers', 'Risk Scores', and 'Patient Contacts'. The 'Risk Scores' section is highlighted with a red box and a red arrow pointing to the 'Diabetes DKA Risk Score' which has a value of 12. The main content area shows a 'Patient Care Team' section with 'Add PCP' and 'Add Team Member' buttons. Below this is a table of team members with columns for 'Team Member', 'Address', 'Start', and 'End'. The table lists several members, including a General (Emergency Medicine) member and several Endocrinology members. A red arrow points to the 'Diabetes DKA Risk Score' in the sidebar.

CALL INTIMATION Contacts Reason for Conversation Outreach Reason Care Teams

+ Care Coordination Note

Patient Care Team

Add PCP: + Add Me Off

Add Team Member: + Add Me + Free Text Member

Team Member	Address	Start	End
PCPs			
General (Emergency Medicine)			End
Additional Team Members			
(Endocrinology)	6701 FANNIN ST STE 1100 HOUSTON TX 77030		
(Endocrinology)	6701 FANNIN ST SUITE 1020 HOUSTON TX 77030		
Care Coordinator - Complex Care (Pediatrics)	6621 FANNIN ST HOUSTON TX 77030		
Clinic APP/Off Service (Endocrinology)	6701 FANNIN SUITE 1020 HOUSTON TX 77030		
Registered Nurse (Endocrinology)	6621 FANNIN ST HOUSTON TX 77030		



Clinical Leverage Of RI-DKA Score

Type 1 Diabetes Extra Care Registry

RI-DKA > 2.5
OR
2+ DKA in the past year

Type 1 Diabetes HELLO Cohort

(Help for youth with Elevated glucose Levels to improve Outcomes)

RI-DKA > 2.5 (start with > 5)
plus 2 Years from Diagnosis
plus A1c ≥ 9
plus has not been enrolled in REACH prior

Type 1 Diabetes REACH Cohort

(Resources And Care to improve Health outcomes)

RI-DKA > 7
plus 2 Years from Diagnosis
OR
RI-DKA > 2.5 plus DKA in past year (365 days)
plus 1 year from Diagnosis
OR
2 or more DKA in past year (365 days)
regardless of risk score and date of diagnosis



The Process

- Identify the population
- **Identify the team players**
- **Determine desired outcomes**
- Standardize workflow
- Standardize documentation
- Track outcomes



The Team And Desired Outcomes

- QI Team
- Social workers
- Nurse coordinator
- Reduce DKA
- Improve A1c
- Improve technology use



The Process

- Identify the population
- Identify the team players
- Determine desired outcomes
- **Standardize workflow**
- **Standardize documentation**
- Track outcomes

The Workflow



Documentation Tools

Diabetes REACH Cohort Intake

Extra Care Cohort Intake

Extra Care Cohort Status: **active** dismissed reactivated step-down graduated

Reason for enrollment: **DKA** risk score increase (clinic)

Enrollment Date:

Primary location of care: **Medical Center** West Campus Woodlands Sugar Land
Clear Lake Cy Fair Austin

Documentation Tools

Diabetes REACH Clinic

Care Management

Clinic Visit Topic(s) Discussed

adherence	diabetes distress/burnout	utilizing school nurse	home environment/SDOH
prescription assistance/refill	troubleshoot technology		

Coordination of Services

adherence plan reviewed	school orders provided	referral to CDCES	referral to dietitian
mental health referral	coordination to other clinic	school nurse contact	SDOH referral/assistance
transportation assistance	transition to adult care	multiple DM visits	CPS referral
order refills/supplies	insurance assistance		

Outcome

visit kept	complete/review of labs	decrease A1c by 1% or more	increase A1c by 1% or more
met with high risk RN	met with high risk SW	met with dietitian	met with CDCES
no DKA 6 months	no DKA 7-12 months	no DKA over 12 months	no EC visit
Increase risk score	decrease risk score	use pump <50%	use pump >50%
use CGM <50%	use CGM >50%	attend mental health appointment	CPS referral

Time/Follow Up

Social Work

SW next outreach date

RN/CDCES

RN/CDE time spent with patient/care coordination

RN/CDCES next outreach date

Diabetes REACH Phone

REACH Outreach

Outreach topic

appointment assistance	return call	appointment reminder	monthly outreach
SDOH referral	contact school nurse	2 wk DKA follow up	Rx refill request

Diabetes Management

Overall feeling

well	not well
------	----------

Diabetes management since last visit

good	fair	frustrating	difficult
------	------	-------------	-----------

Do you have enough pump or insulin supplies, including ketone strips for the month?

yes	no
-----	----

How do you get your insulin?

pump	shots
------	-------

Who is supervising/giving long-acting insulin on the weekends?

guardian	self	no one
----------	------	--------

Are you on CGM?

yes	no
-----	----

Do you visit the school nurse?

yes	no	sometimes	NA
-----	----	-----------	----

Are teacher(s)/nurse aware of insulin administration at school?

yes	no
-----	----

Any recent ER or hospital visits?

yes	no
-----	----

Reviewed PHQ-9 referral, if needed

yes	no
-----	----

Outcome

Outcome

appointment made	form completion/insurance	referral to mental health
appointment confirmed	referral for SDOH	transportation need for appointment
appointment canceled	referral to team member(s)	left message
refill request/supplies	school orders	

EMR Tools

TCH Diabetes Registry Dashboard | Summary Level | Facility | Select a Date

My Diabetes Patient Reports

- Diabetes Qlikview Application
 - Qlikview Application
- REACH: RN/CDCES Outreach Tasks
- REACH: SW Outreach Tasks
- REACH Patients by Location
 - Report completed: Wed 7/30 04:34 PM

Next Endo Appt Dept	# of Patients
AN DIABETES/ENDOCRINE	3
CL ENDOCRINE CLNC	24
CY ENDOCRINE CLNC	40
MW ENDOCRINE CLNC	127
SU ENDOCRINE CLNC	17
WC DIABETES/ENDOCRINE	28
WL DIABETES/ENDOCRINE	73
[No Value]	104

New REACH Patients

Report completed: Wed 7/30 03:25 PM

109 New Patients

Inactive Patients with Rising Risk

Report completed: Wed 7/30 03:30 PM

DKA Risk Score	# of Patients
# Dismissed With Rising Risk	5
Total count	5

REACH Registry Summary

Report completed: Wed 7/30 04:34 PM

REACH Patients (All)	416
Active Patients	226
Inactive Patients	1
[No Value]	174

Registry Reports

Last Refresh: 04:55:11 PM

- REACH
 - My REACH Patients (Care Team)
 - Current REACH Patients
 - Inactive Patients
 - Inactive Patients With Rising Risk
- Outreach Reports
 - Canceled/No Show Appointments: Past 2 Weeks
 - HELLO/REACH No Show Summary
- HELLO
 - HELLO Only Patients

REACH Registry Panel Metrics

Diabetes Patients Reports

Last Refresh: 04:55:10 PM

- Diabetes Registry Administration- primary
- T1/T2 Bulk Communication Report
- Diabetes Care Coordinator Report
- Diabetes Patients Scheduled Next 2 Weeks
- Diabetes Registry USWNR- primary

ROCKET T1D Registry Summary

ROCKET T1D Reports

RW: Favorites and Saved Results



The Process

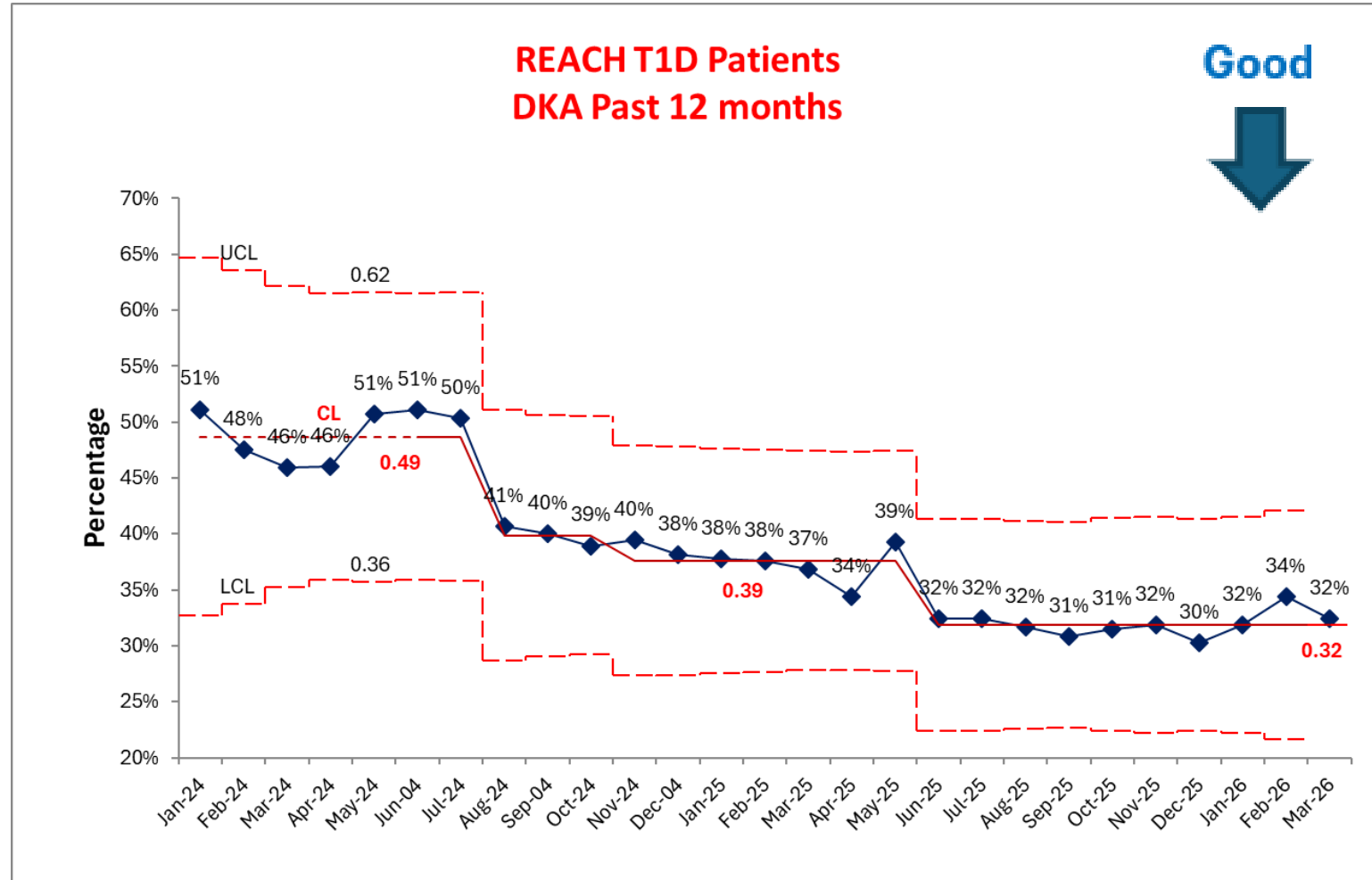
- Identify the population
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- Determine desired outcomes
- Standardize workflow
- Standardize documentation
- **Track outcomes**

REACH Scorecard

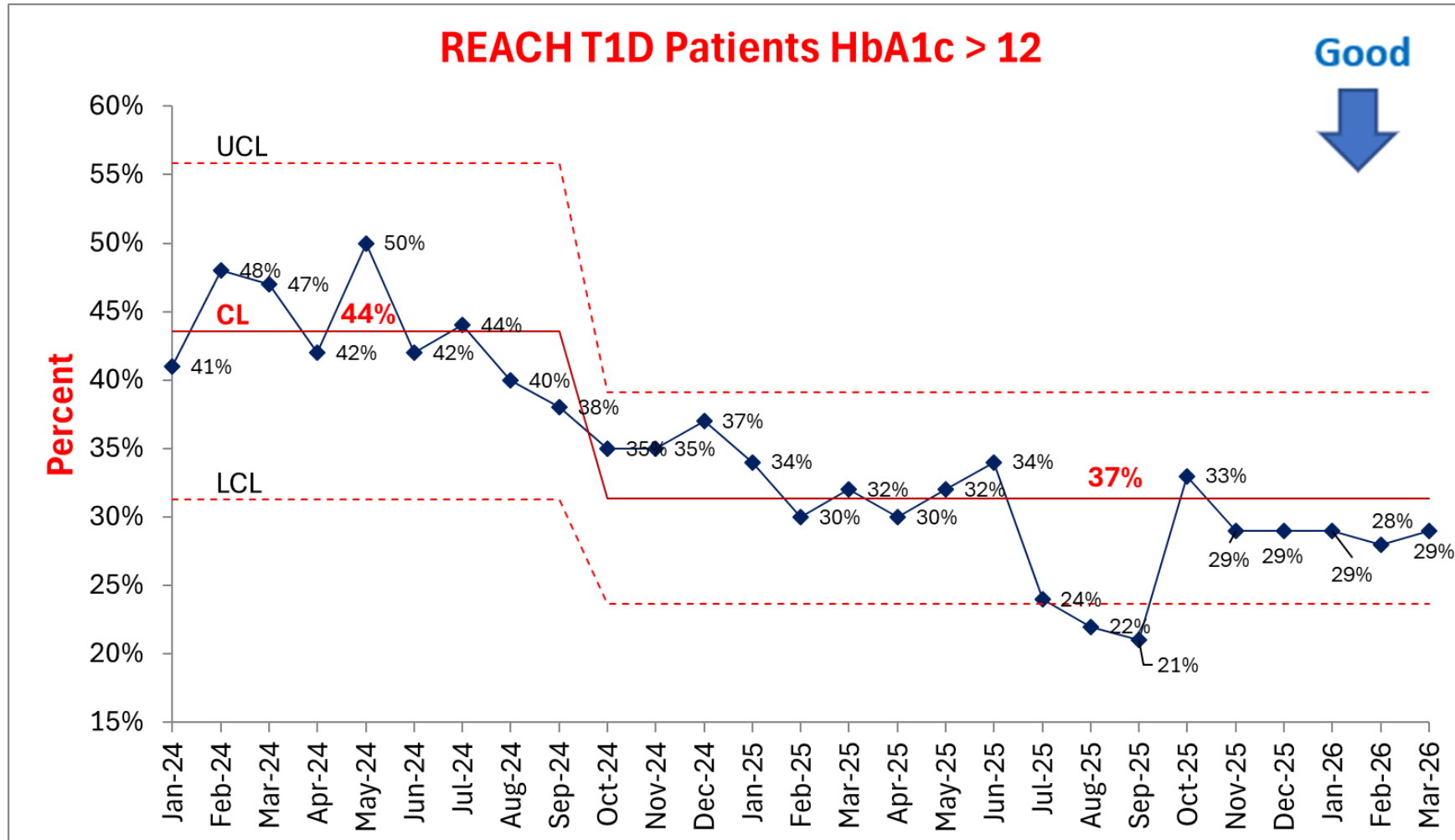
REACH Metrics of Interest		3/4/2026	Avg 2025	Relative Change 2025 Avg.		Prior Month 2/4/2026	1/3/2026	Improvement	
HbA1c	mean	10.5	10.7	2%	decrease	10.5	10.2	lower good	increase bad
%>12		0.29	0.29	2%	decrease	0.28	0.29	lower good	increase bad
%<9		0.24	0.23	13%	increase	0.26	0.28	increase good	lower bad
%<7.5		0.06	0.05	43%	increase	0.08	0.07	increase good	lower bad
DKA past 12 mo.		0.32	0.34	3%	decrease	0.344	0.32	lower good	increase bad
RI-DKA Score	mean	7	7.6	2%	decrease	7.4	7.30	lower good	increase bad
Pump use		0.39	0.40	3%	increase	0.41	0.41	increase uptake good	decrease bad
CGM use		0.72	0.76	4%	increase	0.73	0.72	increase uptake good	decrease bad
PHQ9 administered		0.22	0.25	9%	increase	0.23	0.24	increase uptake good	decrease bad



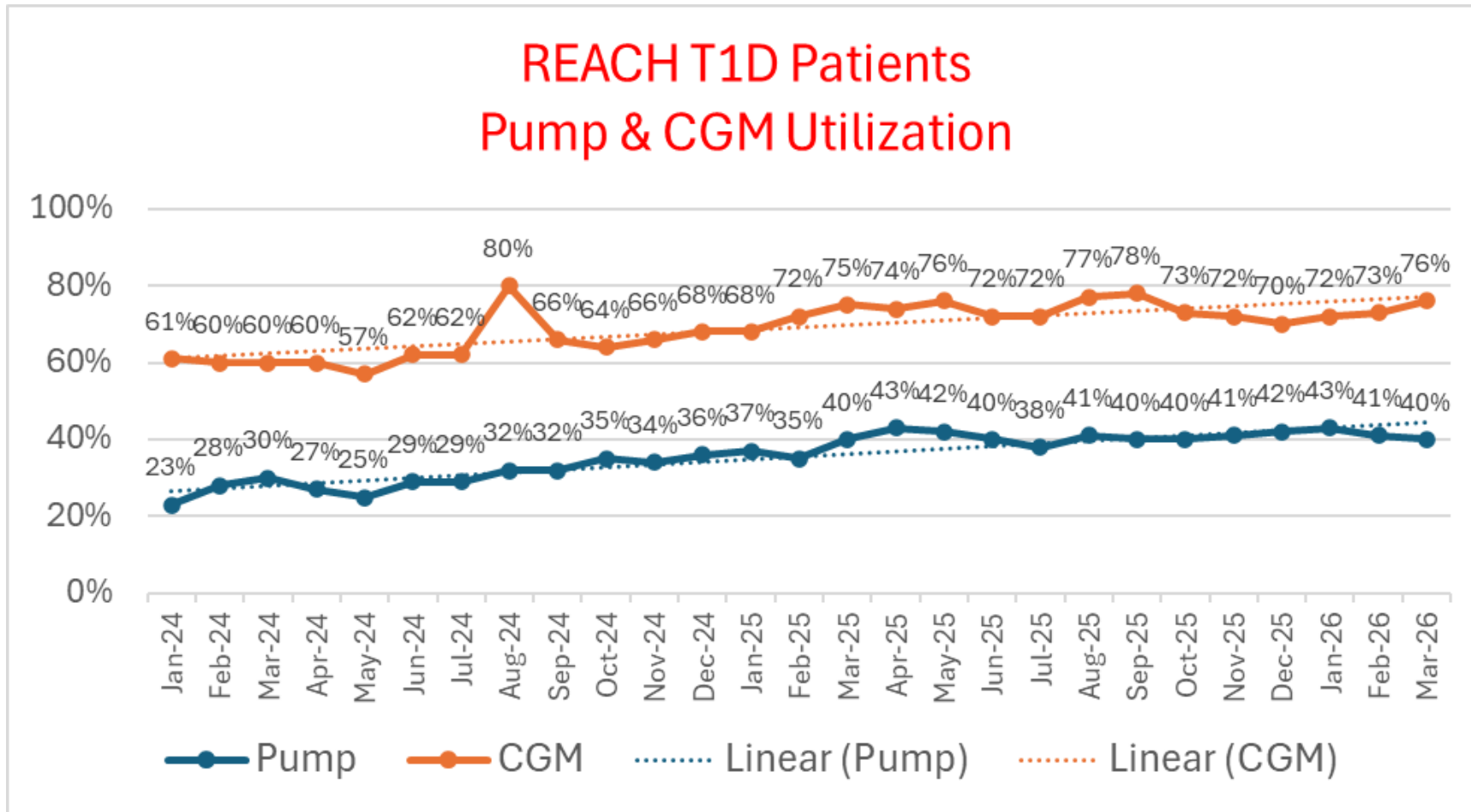
Sustain DKA Percentage At <35%



Sustain A1c >12% at <35%



Increase CGM Use To 80% And Pump Use To 50%





Lessons Learned

- Automated risk score allows for objective way to identify patients who need the most help without relying on staff input.
- Specific, well laid-out documentation has been key
- Leveraging teamwork is critical



Next Steps

- External validation of RI-DKA through the T1DExchange QI Collaborative
- Incorporate psychosocial data (SDOH, PHQ9) into version 2.0
- Consider qualitative outcomes via interviews with REACH cohort participants
- Targeting interventions at moderate risk group



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THE LEONA M. AND HARRY B.
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C H A R I T A B L E T R U S T



Acknowledgements

- ✓ The Leona M and Harry B Helmsley Charitable Trust: Diabetes Care Innovation Award (G2206-05307)
- ✓ Helmsley grant Co-PIs: Daniel DeSalvo, MD, Sarah Lyons, MD
- ✓ Division Chief: Rona Sonabend, MD
- ✓ Patients and families



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T1D

Exchange