



HASSENFELD
**CHILDREN'S
HOSPITAL**
AT NYU LANGONE

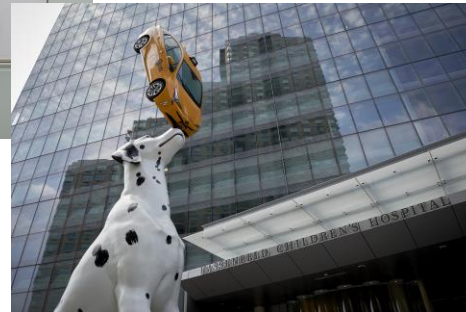
Ongoing Efforts for Increasing Retinopathy Screening at a Pediatric Diabetes Center

Jeniece Ilkowitz, RN, MA, CDCES, Rebecca Chong, RN, Mary Pat
Gallagher, MD

Presenter: Jeniece Ilkowitz, RN, MA, CDCES

November 11, 2024

Hassenfeld Children's Hospital at NYU Langone Health, Pediatric Diabetes Center (PDC)



Patient population:
~700 PWD
~70 new diagnoses/year

- 5 pediatric endocrinologists
- 1 nurse practitioner CDCES
- 3 fellows
- 1 RN
- 5 CDCES (3 RD, 2 RN)
- 1 SW
- Shared: psychologist, child life specialist, child and adolescent psychiatrist, neuropsychologist
- Family and youth advisors
- Research team

Retinopathy Screening at the PDC and ADA Recommendations

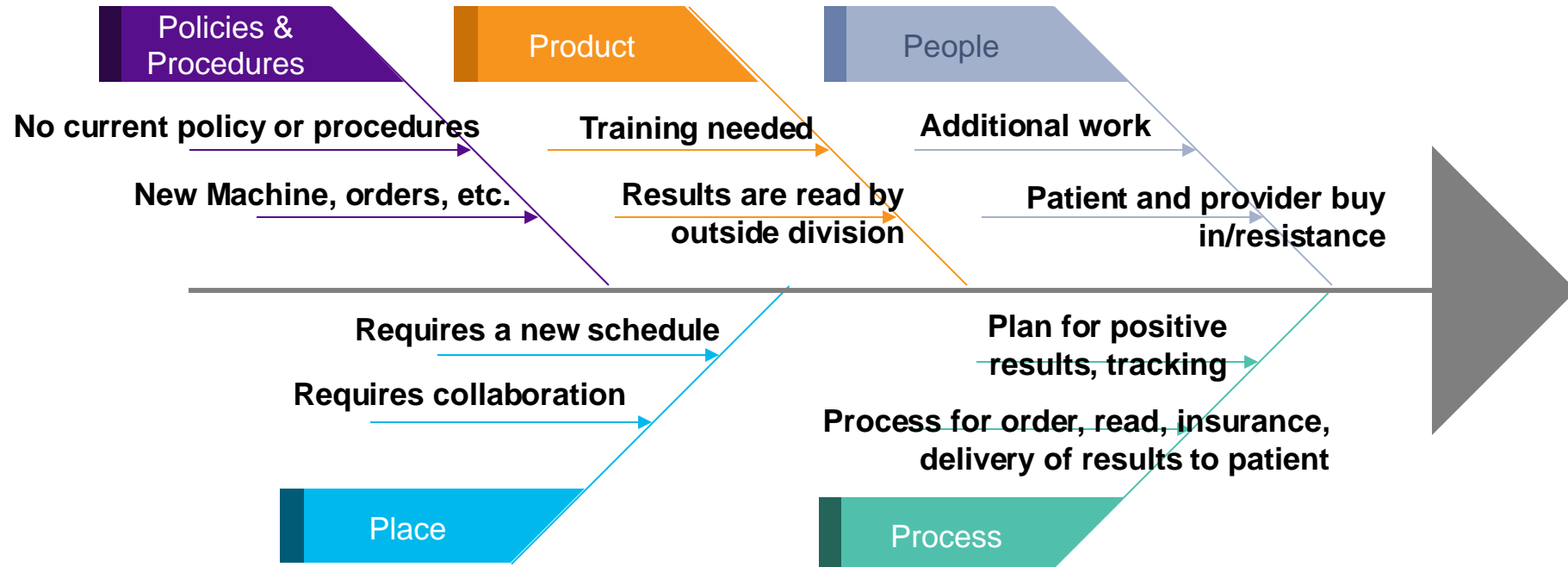
- Adults with T1D: Initial dilated/comprehensive eye exam w/in 5 yrs of diabetes
 - If no evidence of retinopathy from ≥ 1 annual eye exams and glycemic indicators are in goal range, screen every 1–2 yrs
- Children/young adults with T1D: start screening at puberty or ≥ 11 yrs old, whichever is earlier, and diabetes duration 3-5 yrs
 - If normal consider every 2 yrs or less often
- Programs should use retinal photography with remote reading to improve access
 - Need to provide pathways for timely referral for a comprehensive eye examination when indicated
 - Individuals with any level of retinopathy may be asymptomatic
 - Interpretation of high-quality fundus photos should be performed by trained eye care professional and can detect most clinically significant diabetes retinopathy
 - Retinal photos are not a substitute for dilated comprehensive eye exams, which should be performed at least initially and then yearly or as recommended

QI to Increase Retinopathy Screening

- This QI began after acquiring the Optos at the PDC
- Before Optos, documentation was a challenge because patients and families unsure of last eye exam date and results were not being sent to PDC team
- Optos introduced ultra-widefield retinal imaging which captures 82% of the retina in a single capture, clinically validated
- The Optos is utilized to provide retinopathy screening for eligible patients at the PDC:
 - T1D \geq 5 years
 - Age \geq 10 years
 - No retinopathy screen in the past 1-2 years as self-reported by patient or documented in EMR



Challenges



Quality Improvement (QI) to Increase Retinopathy Screening at the PDC

- Baseline data and set up from November 2023 - January 2024
 - Reviewed any patients with documentation of retinopathy screen who attended a visit during that period
- While collecting baseline data, coordination was needed for:
 - MCIT
 - Facilities
 - Clinical and team training
 - Ordering and Billing
 - Scheduling
 - Tracking

Aim: Increase documented retinopathy screening of eligible youth and young adults living with T1D by 10% in 6 months

Multiple Plan-Do-Study-Act (PDSA) cycles were performed

Pre- 2024

- Staff training, Optos/EMR scheduling, machine and computer set-up completed

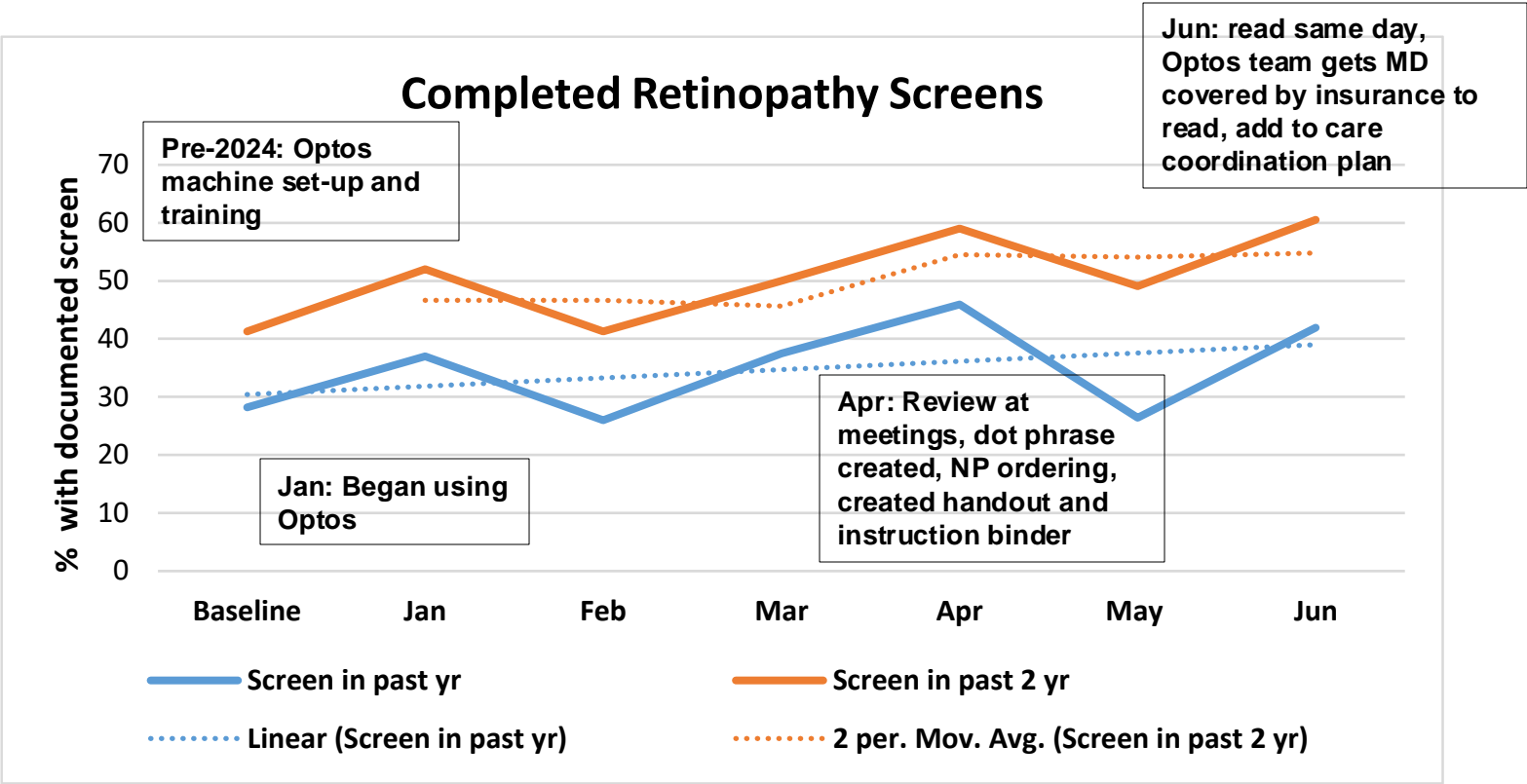
January 2024

- identified 3 potential patients, screened 1
- ordered and worked out challenges (including logging in and reading results)

- April 2024

- screening continued to be monitored, and changes made
- dot phrase created for EMR documentation
- educational handouts created (for both child, teen/young adult, and family)
- training and information binder created by RN

Results



Results

	<u>Baseline</u>	Jan	Feb	%Mar	Apr	May	Jun	<u>Avg</u>
Avg % documented retinopathy screening in past 2 years	41%	52%	41%	50%	59%	49%	61%	52%
Avg % documented retinopathy screening in past 1 year	28%	37%	26%	38%	46%	26%	42%	36%

Conclusions

- The Optos device, along with multiple initiatives, helped increase documentation of retinopathy screening and on average increased retinopathy screening rates
- Clinicians reported improvement in:
 - workflow
 - timeliness of results
 - youth and family satisfaction
- Future efforts should identify:
 - barriers to youth getting retinopathy screening at the PDC
 - initiatives to continue increasing screening rates
 - documentation by all PDC providers



HASSENFELD
**CHILDREN'S
HOSPITAL**
AT NYU LANGONE

Thank you!

Age-appropriate Self-management of Type 1 Diabetes

Claire Moore, MD,

Naomi Fogel, MD, and Sean DeLacey, MD

Ann & Robert H. Lurie Children's Hospital of Chicago

November 11, 2024



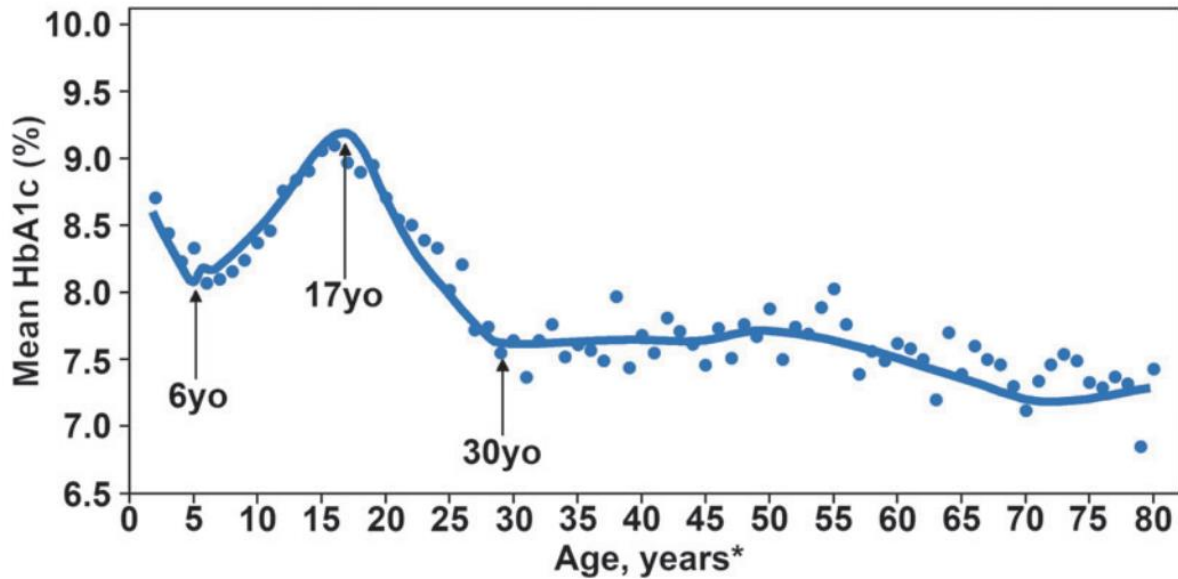
Disclosures and agenda

There are no relevant disclosures.

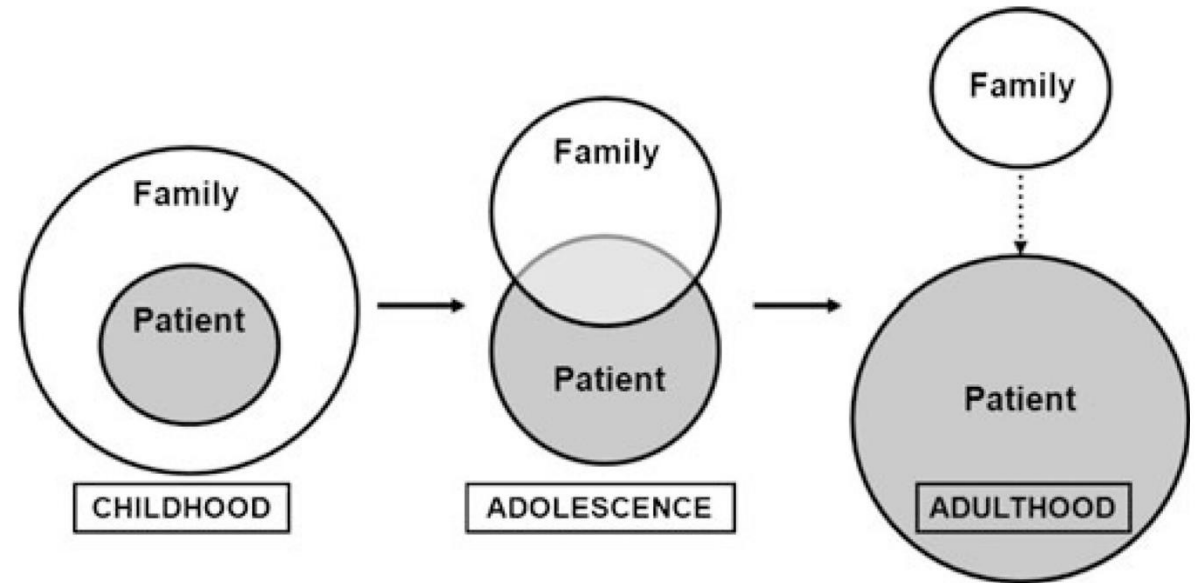
Agenda for today:

- The problem
- Transition readiness
- Existing guidance for ongoing diabetes education
- Our project
- Initial survey findings
- Next steps

The problem



Miller et al. (2020)



Garvey et al. (2012)

Transition readiness

- 66% self-identification as “mostly or completely” prepared for transfer to adult care (Garvey et al., 2013)
- Increasing use of the Readiness of Emerging Adults with Diabetes Diagnosed in Youth (READDY) tool
- Patient report of lowest confidence regarding topics of alcohol, tobacco, sexual health, pregnancy (Kamoun et al., 2022)



Existing guidance for ongoing education

TABLE 1
Curriculum content: stage I, initiative: kindergarten through second grade (5–8 yr)

Content	Activities
Insulin administration	
1. Measuring dose	Count by ones and twos Read numbers No simple addition
2. Asepsis, germs	Do not touch sterile parts of syringe Cleanse bottle top and skin
3. Drawing up insulin	Rotate bottle Draw insulin into syringe Clear air bubbles
4. Injection technique	Check accurate dose with adult Select and prepare site Stabilize needle, draw back for blood Inject self
5. Care of equipment	Discard in safe place Store safely
6. Importance of injection Timing of dose	Learn name of own insulin Arrange clock hands to injection time
Insulin = medicine; never inject for fun (pets, sibs, etc.)	Inject doll for practice
Urine testing	
1. Clinitest is poisonous	Safe handling and storage of Clinitest
2. How to test	Test own urine, recognize colors, record results
Diabetes physiology	
1. Low sugar symptoms and needs for quick sugar snack	Watch puppet show on symptoms of high and low sugar, how to treat, and who to tell
2. High sugar symptoms	
3. Need to tell adult any symptoms	
Hygiene and health	
Cleanliness	Wash hands
Clothes protect from weather	Color in appropriate clothes for weather

TABLE 2
Curriculum content: stage II, industry: third through sixth grade (9–12 yr)

Basic skills: injection techniques and insulin administration, urine testing	
Content	Activities
What is diabetes?	
1. Principles of diabetes and purpose of insulin	Review content on diabetes from 6 to 8-yr-old class
2. Words: hyperglycemia, hypoglycemia, ketoacidosis	Introduce terms and causes for each
a. Meaning	Describe how each feels and relate the words to own feelings Describe appropriate treatment for each
Insulin	
1. Time of action of own insulin	Graph insulin, meals, and sugars
2. Balance of food and insulin	Discuss insulin action as it relates to own daily schedule
Home testing	
1. Interpretation of test results in relation to insulin, diet, and exercise	Interpret meaning of N–5%, and what is % and vol
2. Dose adjustment from looking at record sheet	Normal blood sugars Question/answer session related to the effect of insulin, diet, exercise. Review record sheets.
3. Home blood testing	Test blood with instant fingerstick method
4. Normal blood sugars	Learn normal and dangerous blood sugar ranges
Relationships of:	
1. Insulin, diet, exercise	Discuss effects of exercise, diet, and insulin on blood sugar Have child solve simple everyday situations

TABLE 3
Curriculum content: stage III, identity: junior-high school (12–14 yr)

Basic skills: insulin administration, urine testing, knows what diabetes is and symptoms of high and low sugar, knows insulin and equipment used	
Content	Activities
Physiology of diabetes	
1. Difference between hyperglycemia and ketoacidosis	Recognition of signs and symptoms of each
2. Effects of hormones, stress, growth of on diabetes	Plot own growth and insulin doses Identification of stress circumstances
Monitoring diabetes	
1. Normal blood sugar	Do instant sugar on self and plot on graph Calculate grams sugar in urine
2. Urine sugar, concept of % and volume How to test testing equipment	Check Ketostix with nail polish remover and sugar tests with Coke vs. table sugar
3. Relationship of urine spill to blood sugar	Plot blood and urine tests and review lag time for urine
4. Glycohemoglobin	Review normal range
Management of diabetes	
1. Time of action of different types of insulin	Problem solve insulin dose needs on basis of urine and/or blood tests
2. Effect of insulin, diet, exercise	Record and plan activities and intake
Complications	
1. Long-term problems of diabetes, current concepts of etiology, and prevention	Discuss microvascular, large vessels, polyol pathway using simple terms
2. Rationale for lab tests including cholesterol, triglycerides, glycohemoglobin	Tour laboratory Discuss importance of exercise, foot care, and regular eye checks
Diabetes management	
1. Special situations: partying, dates, social activities	Plan meal in restaurant Plan party, fast foods with exchanges
2. Schedule changes, illness, part-time jobs	Sample activities, Identify problem times

TABLE 4
Curriculum content: stage IV, identity–intimacy: high school (15–18 yr)

Basic skills: injection, urine and blood testing; basic understanding of diabetes and its management; knowledge of insulin and equipment used; knowledge of normal blood sugars	
Content	Activities
Diabetes: management	
1. Problem-solving situations for balance of insulin, diet, exercise, and stress	Adjust insulin and diet with health staff for stimulated extra activities, work, sports, schedule changes, and on basis of sample urine or blood glucose record
2. Sharing your diabetes	Role playing on how to tell whom
Complications	
1. Prevention of complications of diabetes	Discuss role of sugar balance and specific preventive measures
2. Signs, symptoms, and recognition of complications of diabetes	Describe early symptoms of complications as well as clinical and laboratory monitoring for each complication
3. Appropriate treatment for them	Discuss treatment of each complication with guest specialist
Resources	
1. How to get emergency and specialty care	Find medical resources in phone book
2. Roles of various health professionals and medical specialists	Role playing of appointment making and relating to physicians and other health professionals
3. Importance of regular health care	
Future planning	
1. Risks and disadvantages of diabetes in long-living situations	Guest speakers who are diabetic adults
2. Discussion of new research	Demonstration of pumps and other new modalities of care
3. Genetic transmission and reproduction	Discussion with geneticist and obstetrician
4. Job possibilities: what information is necessary to give employer	Fill out sample forms
5. Driving, insurance, medical costs	Budgeting for diabetic care items; shopping for bargains

Existing guidance for ongoing education

TABLE 1
Mean mastery age estimates provided by respondents for 38 diabetes skills and age ranges for corresponding skills recommended by American Diabetes Association (ADA)

Skills	Mean mastery (age ± SD yr)	ADA age range recommendations (yr)
Management of hypo- and hyperglycemia		
Recognizes/reports hypoglycemia	6.5 ± 1.9	8–10
Performs urine ketone test	7.9 ± 2.0	8–10
Treats hypoglycemia	8.2 ± 2.0	10–12
States reasons for wearing diabetic identification	9.1 ± 2.4	
States common symptoms of hyperglycemia	9.6 ± 2.2	10–12
Describes appropriate actions in response to hyperglycemia	11.0 ± 2.3	
Anticipates/prevents hypoglycemia	11.0 ± 2.4	14–16
Anticipates/prevents hyperglycemia	12.4 ± 2.6	
Blood glucose testing		
Uses lancet device to obtain adequate blood sample	8.0 ± 1.7	
Performs blood glucose test with visual reading of reagent strips	9.4 ± 1.7	8–10
Performs blood glucose test with reflectance meter	9.4 ± 1.8	8–10
Records test results in logbook	9.5 ± 1.8	
Insulin injections		
Draws dose with one insulin type	9.2 ± 1.7	10–12
States insulin schedule	9.2 ± 2.0	
Administers injection to self	9.2 ± 1.5	
States insulin type(s) used	9.3 ± 1.9	
States insulin dose(s) used	9.7 ± 1.8	
Rotates injection sites	10.0 ± 1.9	12–14
Draws dose with two insulin types	10.2 ± 1.7	12–14
Records insulin dose/type in logbook	10.3 ± 1.8	
States proper insulin storage method	11.0 ± 2.2	12–14
States peak of action of insulin(s) used	12.0 ± 2.0	12–14
States duration of action of insulin(s) used	12.3 ± 2.1	
Detects/discards defective insulin	12.9 ± 2.6	
Adjusts insulin dose acutely	13.7 ± 1.9	14–16
States indications for insulin dose change	14.0 ± 2.0	14–16
Diet		
Categorizes food into food groups	10.3 ± 2.5	12–14
Uses meal plan	10.9 ± 2.6	12–14
States role of diet in diabetes treatment	11.7 ± 2.9	14–16
Uses meal plan in restaurants	12.5 ± 2.6	12–14
Alters food intake in response to short-term blood glucose fluctuation	12.8 ± 2.5	14–16
States indications for long-term change in dietary regimen	13.7 ± 2.4	
Exercise		
Identifies appropriate preexercise snack	11.4 ± 1.8	10–12
States two safety precautions about exercise and diabetes	12.4 ± 2.3	
States appropriate reasons for avoiding exercise	13.3 ± 2.3	
States that aerobic exercise activities are preferable	13.5 ± 3.0	
Alters physical activity in response to short-term blood glucose fluctuation	13.6 ± 2.7	
Plans exercise routine considering insulin schedule and diet	14.0 ± 2.7	

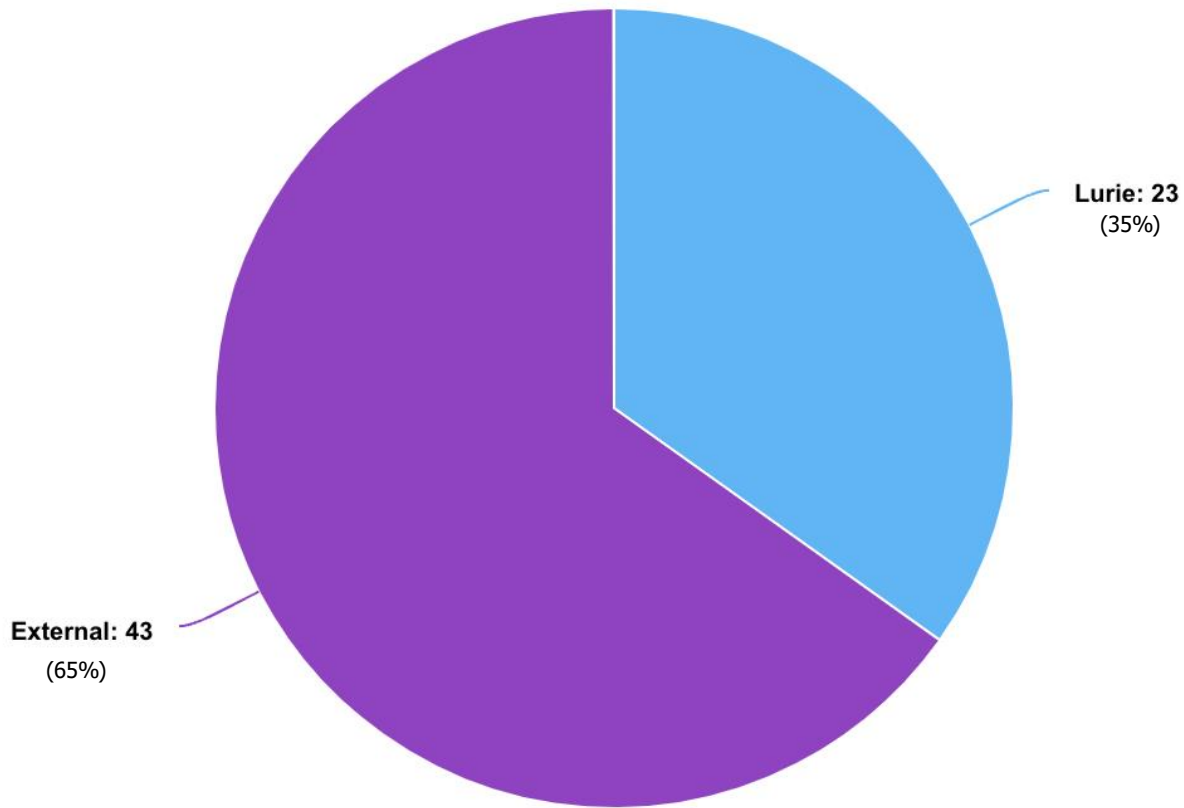
- Survey given at 1988 ADA meeting and mailed to members of PES
- 229 diabetes professionals surveyed regarding the age of mastery of 38 diabetes self-care skills by at least 50% of patients
- 490 parents surveyed regarding the same
- Similar order as to mastery
- For 33 of 38 skills, age indicated by parents was ≥ 1 year older than age indicated by diabetes professionals.

Wysocki et al. (1990 & 1992)

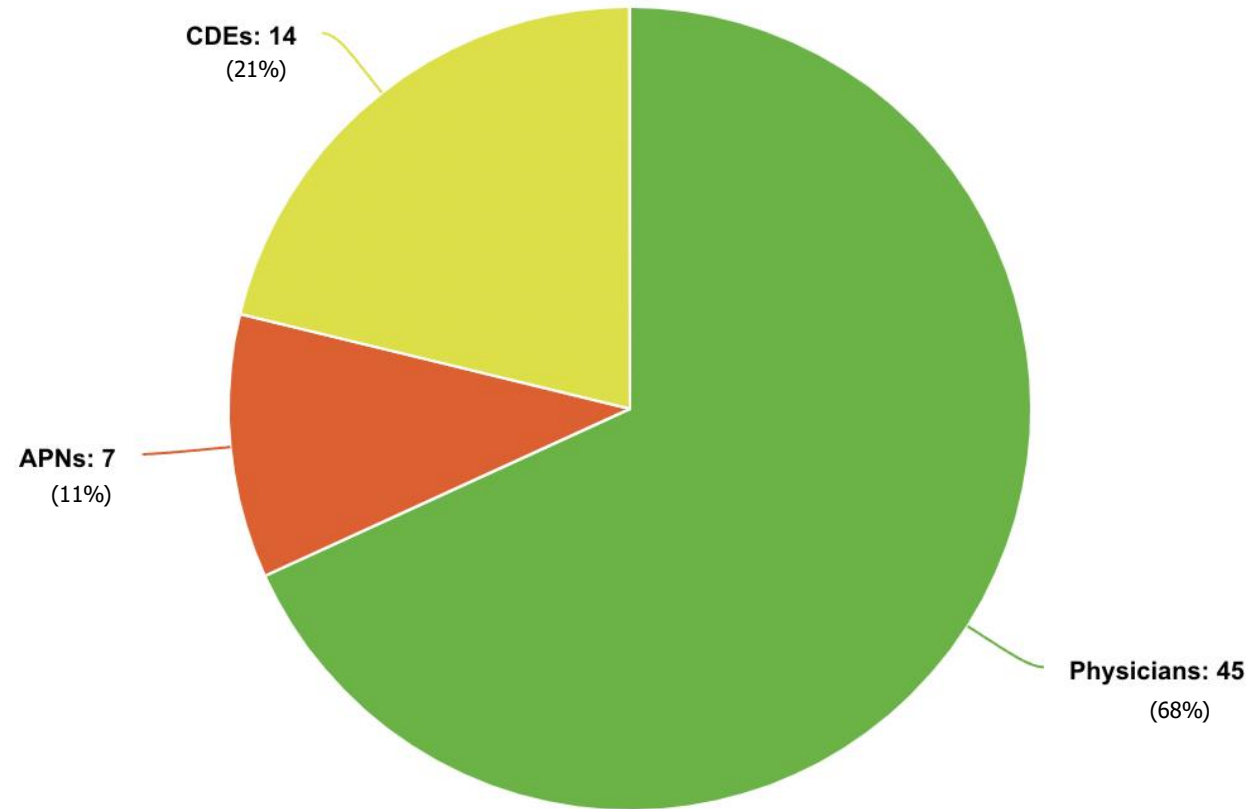
Our project

- Development of a toolkit to support ongoing T1D patient education
- Started with provider survey to:
 - Determine ages at which 40 diabetes topics and skills should be mastered
 - Determine comfort with teaching each topic and skill
 - Consistency of teaching for each
- Sent to all Lurie providers as well as to colleagues within the US

Initial survey results



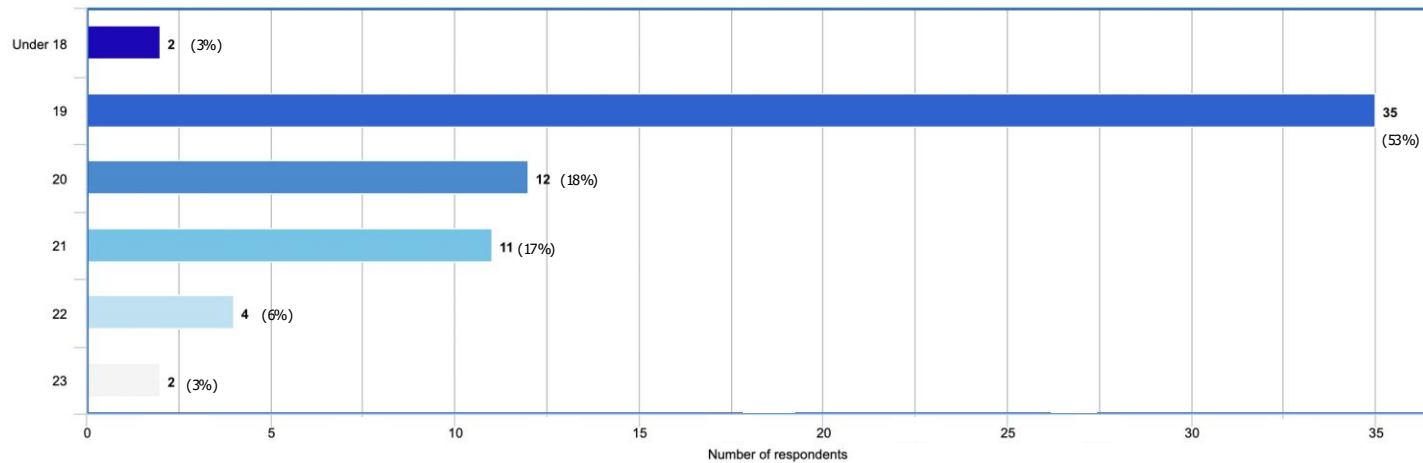
Responses



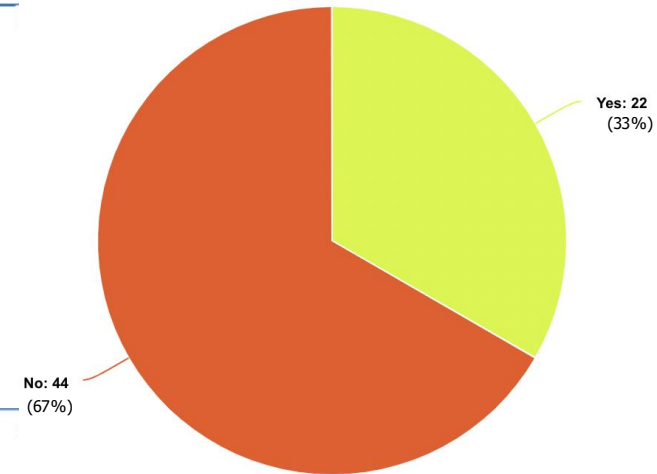
Roles

Initial survey results (continued)

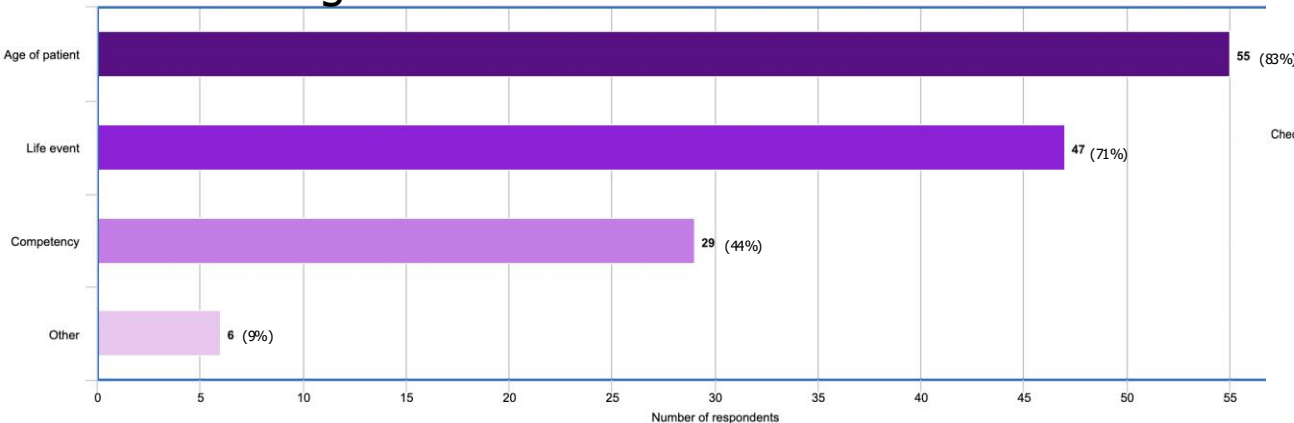
Age of transfer to an adult practice



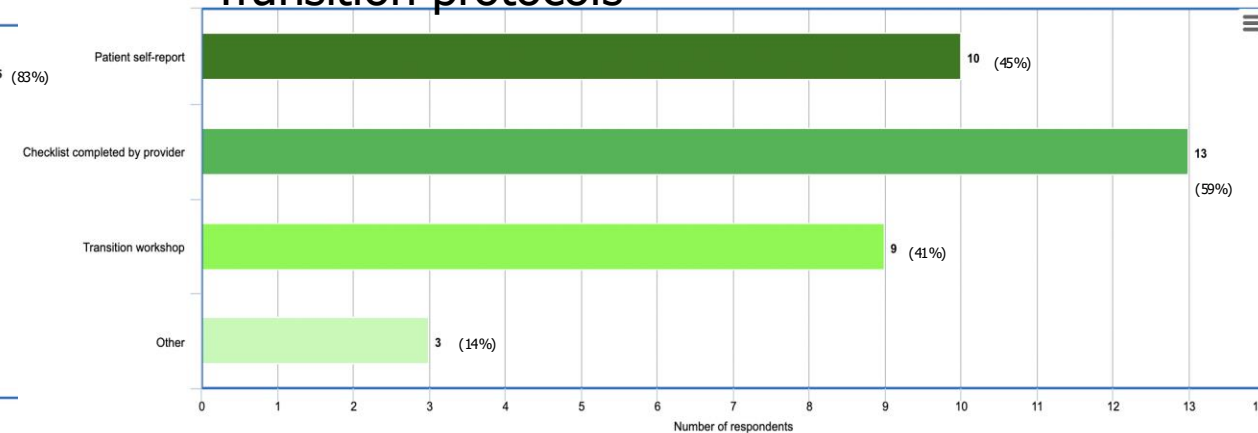
Have a transition protocol?



How timing of transfer is determined



Transition protocols

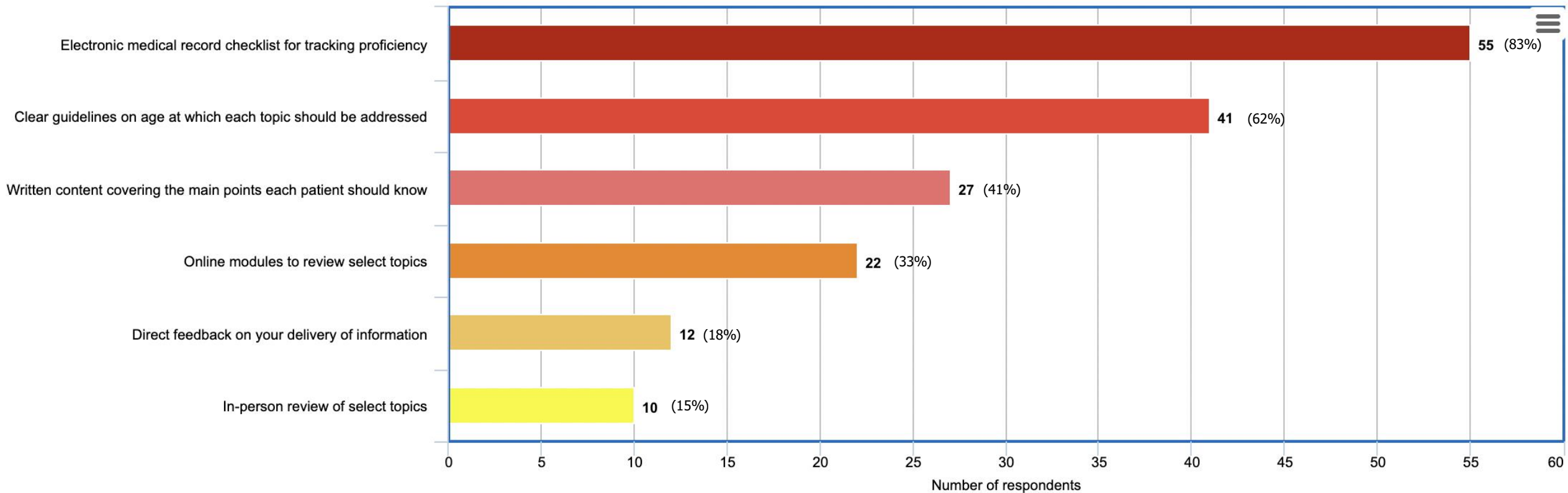


Initial survey results (continued)

- Comfort
 - Scores <4/5:
 - Change infusion sets and fill insulin reservoirs
 - Identify providers that take their insurance
- Consistency
 - Scores <4/5:
 - Explain concern regarding tobacco use for patients with diabetes
 - Name two people they would contact if struggling physically or psychologically
 - Know what their insurance provider is and when their insurance may change
 - Explain impact of suboptimal diabetes control on pregnancy (if biologically capable of carrying a pregnancy)
 - Identify providers that take their insurance
 - Contact the pharmacy to refill a prescription

Initial survey results (continued)

What clinical tools would help?



Toolkit

Education

Assessment
Education

Active
All

- OP Type 1 Diabetes Education Plan
 - Ages 6-10
 - Explain when to check glucose
 - Explain Type 1 Diabetes in basic terms (i.e. ...
 - List symptoms of hypoglycemia and hypergl...
 - Skill: Check glucose with a glucometer
 - Skill: Give themselves an injection
 - Skill: Explain how to treat hypoglycemia orally
 - Skill: Use dose calculator in pump
 - Explain differences in short- and long-acting...
 - Ages 11-13
 - Explain what a Hemoglobin A1C is
 - Explain differences in short- and long-acting...
 - Explain what ketones are and how generally ...
 - Recite insulin regimen when prompted (or lo...
 - Explain symptoms for which they should se...
 - Understand how to manage their diabetes d...
 - Name two (2) people they would contact if st...
 - State supplies that they should have on thei...
 - Skill: Identify the total number of carbohydr...
 - Skill: Calculate insulin dosing for carbohydr...
 - Skill: Calculate correction dosing with formula
 - Skill: Place a continuous glucose monitor
 - Skill: Explain when and how to check for ket...
 - Ages 14-16
 - State own current A1C and how it compares ...
 - State or locate recent time in range and how...
 - Explain complications of hypoglycemia

OP Type 1 Diabetes Education Plan

Ages 6-10

Explain when to check glucose

Not started

Explain Type 1 Diabetes in basic terms (i.e. need for exogenous insulin to control blood sugar)

Not started

List symptoms of hypoglycemia and hyperglycemia

Not started

Skill: Check glucose with a glucometer

Not started

Skill: Give themselves an injection

Not started

Skill: Explain how to treat hypoglycemia orally

Not started

Skill: Use dose calculator in pump

Not started

Explain differences in short- and long-acting insulin in terms of when to give and duration of action

Not started

Toolkit (continued)

Ages 6-10

- Explain when to check glucose
- Explain type 1 diabetes in basic terms (i.e. need for exogenous insulin to control blood sugar)
- List symptoms of hypoglycemia and hyperglycemia
- Skill: Check glucose with a glucometer
- Skill: Give themselves an injection
- Skill: Explain how to treat hypoglycemia orally
- Skill: Use dose calculator in pump

Ages 11-13

- Explain what a hemoglobin A1c is
- Explain differences in short- and long-acting insulin in terms of when to give and duration of action
- Explain what ketones are and how generally to clear them
- Recite insulin regimen when prompted (or locate in pump or on written documentation)
- Explain symptoms for which they should seek emergency care
- Understand how to manage their diabetes during exercise/activity
- Name two people they would contact if struggling physically or psychologically
- State supplies that they should have on their person at all times
- Skill: Identify the total number of carbohydrates for a meal
- Skill: Calculate insulin dosing for carbohydrates for a meal
- Skill: Calculate correction dosing with formula
- Skill: Place a continuous glucose monitor
- Skill: Explain when and how to check for ketones

Ages 14-16

- State own current A1c and how it compares to goal A1c
- State or locate recent time in range and how it compares to goal time in range
- Explain complications of hypoglycemia
- Explain diabetic ketoacidosis (DKA) in broad terms and understand gravity and complications
- Explain how to approach diabetes safety when driving
- Explain concern regarding tobacco use for patients with diabetes
- If on pump, identify how to determine basal/bolus plan to give in case of pump malfunction
- Explain how alcohol affects glucose
- Skill: Program basal rates and bolus dose information in pump
- Skill: Explain steps to take if feeling sick for diabetic ketoacidosis (DKA) prevention
- Skill: Recognize a pump site failure
- Skill: Change infusion sets and fill insulin reservoirs
- Skill: Propose change to insulin regimen in response to pattern seen (when basal, meal-related, correction-related)
- Skill: Demonstrate how to use glucagon (using test kit)

Ages 17-18

- Know the long-term complications of suboptimal diabetes control and recognize the tests needed to screen for them
- Know what their insurance provider is and when their insurance may change
- Explain impact of suboptimal diabetes control on pregnancy (if biologically capable of carrying a pregnancy)
- Skill: Identify providers that take their insurance
- Skill: Contact the pharmacy to refill a prescription
- Skill: Contact the doctor's office about needs or appointments

Next steps

- Education tab to go live in the next month at Lurie
- Post-survey administered three months later

References

- Corathers SD, Yi-Frazier JP, Kichler JC, Gilliam LK, Watts G, Houchen A, Beal S. Development and Implementation of the Readiness Assessment of Emerging Adults With Type 1 Diabetes Diagnosed in Youth (READDY) Tool. *Diabetes Spectr*. 2020 Feb;33(1):99-103.
- Garvey KC, Markowitz JT, Laffel LM. Transition to adult care for youth with type 1 diabetes. *Curr Diab Rep*. 2012 Oct;12(5):533-41.
- Garvey KC, Wolpert HA, Laffel LM, Rhodes ET, Wolfsdorf JI, Finkelstein JA. Health care transition in young adults with type 1 diabetes: barriers to timely establishment of adult diabetes care. *Endocr Pract*. 2013 Nov-Dec;19(6):946-52.
- Hamman RF, Bell RA, Dabelea D, D'Agostino RB Jr, Dolan L, Imperatore G, Lawrence JM, Linder B, Marcovina SM, Mayer-Davis EJ, Pihoker C, Rodriguez BL, Saydah S; SEARCH for Diabetes in Youth Study Group. The SEARCH for Diabetes in Youth study: rationale, findings, and future directions. *Diabetes Care*. 2014 Dec;37(12):3336-44.
- Kamoun C, Khoury JC, Beal SJ, Crimmins N, Corathers SD. Opportunities for Enhanced Transition of Care Preparation for Adolescents and Emerging Adults With Type 1 Diabetes: Use of the READDY Transition Tool. *Diabetes Spectr*. 2022 Feb 15;35(1):57-65.
- Lange K, Sassmann H, von Schütz W, Kordonouri O, Danne T. Prerequisites for age-appropriate education in type 1 diabetes: a model programme for paediatric diabetes education in Germany. *Pediatr Diabetes*. 2007 Oct;8 Suppl 6:63-71.
- Lindholm Olinder A, DeAbreu M, Greene S, Haugstvedt A, Lange K, Majaliwa ES, Pais V, Pelicand J, Town M, Mahmud FH. ISPAD Clinical Practice Consensus Guidelines 2022: Diabetes education in children and adolescents. *Pediatr Diabetes*. 2022 Dec;23(8):1229-1242.
- Lotstein DS, Seid M, Klingensmith G, Case D, Lawrence JM, Pihoker C, Dabelea D, Mayer-Davis EJ, Gilliam LK, Corathers S, Imperatore G, Dolan L, Anderson A, Bell RA, Waitzfelder B; SEARCH for Diabetes in Youth Study Group. Transition from pediatric to adult care for youth diagnosed with type 1 diabetes in adolescence. *Pediatrics*. 2013 Apr;131(4):e1062-70.
- Maahs DM, Hermann JM, Holman N, Foster NC, Kapellen TM, Allgrove J, Schatz DA, Hofer SE, Campbell F, Steigleder-Schweiger C, Beck RW, Warner JT, Holl RW; National Paediatric Diabetes Audit and the Royal College of Paediatrics and Child Health, the DPV Initiative, and the T1D Exchange Clinic Network. Rates of diabetic ketoacidosis: international comparison with 49,859 pediatric patients with type 1 diabetes from England, Wales, the U.S., Austria, and Germany. *Diabetes Care*. 2015 Oct;38(10):1876-82.
- Martin D, Lange K, Sima A, Kownatka D, Skovlund S, Danne T, Robert JJ; SWEET group. Recommendations for age-appropriate education of children and adolescents with diabetes and their parents in the European Union. *Pediatr Diabetes*. 2012 Sep;13 Suppl 16:20-8.
- Miller KM, Beck RW, Foster NC, Maahs DM. HbA1c Levels in Type 1 Diabetes from Early Childhood to Older Adults: A Deeper Dive into the Influence of Technology and Socioeconomic Status on HbA1c in the T1D Exchange Clinic Registry Findings. *Diabetes Technol Ther*. 2020 Sep;22(9):645-650.
- Peters A, Laffel L; American Diabetes Association Transitions Working Group. Diabetes care for emerging adults: recommendations for transition from pediatric to adult diabetes care systems: a position statement of the American Diabetes Association, with representation by the American College of Osteopathic Family Physicians, the American Academy of Pediatrics, the American Association of Clinical Endocrinologists, the American Osteopathic Association, the Centers for Disease Control and Prevention, Children with Diabetes, The Endocrine Society, the International Society for Pediatric and Adolescent Diabetes, Juvenile Diabetes Research Foundation International, the National Diabetes Education Program, and the Pediatric Endocrine Society (formerly Lawson Wilkins Pediatric Endocrine Society). *Diabetes Care*. 2011 Nov;34(11):2477-85.
- Rewers A, Chase HP, Mackenzie T, Walravens P, Roback M, Rewers M, Hamman RF, Klingensmith G. Predictors of acute complications in children with type 1 diabetes. *JAMA*. 2002 May 15;287(19):2511-8. 3.
- Wysocki T, Meinhold PA, Abrams KC, Barnard MU, Clarke WL, Bellando BJ, Bourgeois MJ. Parental and professional estimates of self-care independence of children and adolescents with IDDM. *Diabetes Care*. 1992 Jan;15(1):43-52.
- Wysocki T, Meinhold P, Cox DJ, Clarke WL. Survey of diabetes professionals regarding developmental changes in diabetes self-care. *Diabetes Care*. 1990 Jan;13(1):65-8.

Diabetes Autonomy Milestones: Educator and Family Expectations

Jessica Schmitt, MD MSHQS
Assistant Professor
University of Alabama at Birmingham Heersink School of Medicine

Background

Outpatient

- “It’s his diabetes.”
- “She’s old enough to know better.”
- “I don’t want to do this for them since they will need to do it themselves.”

Inpatient

- “I didn’t know he wasn’t taking his insulin; he told me he took it.”
- “I can’t be responsible for her diabetes and everything else too.”

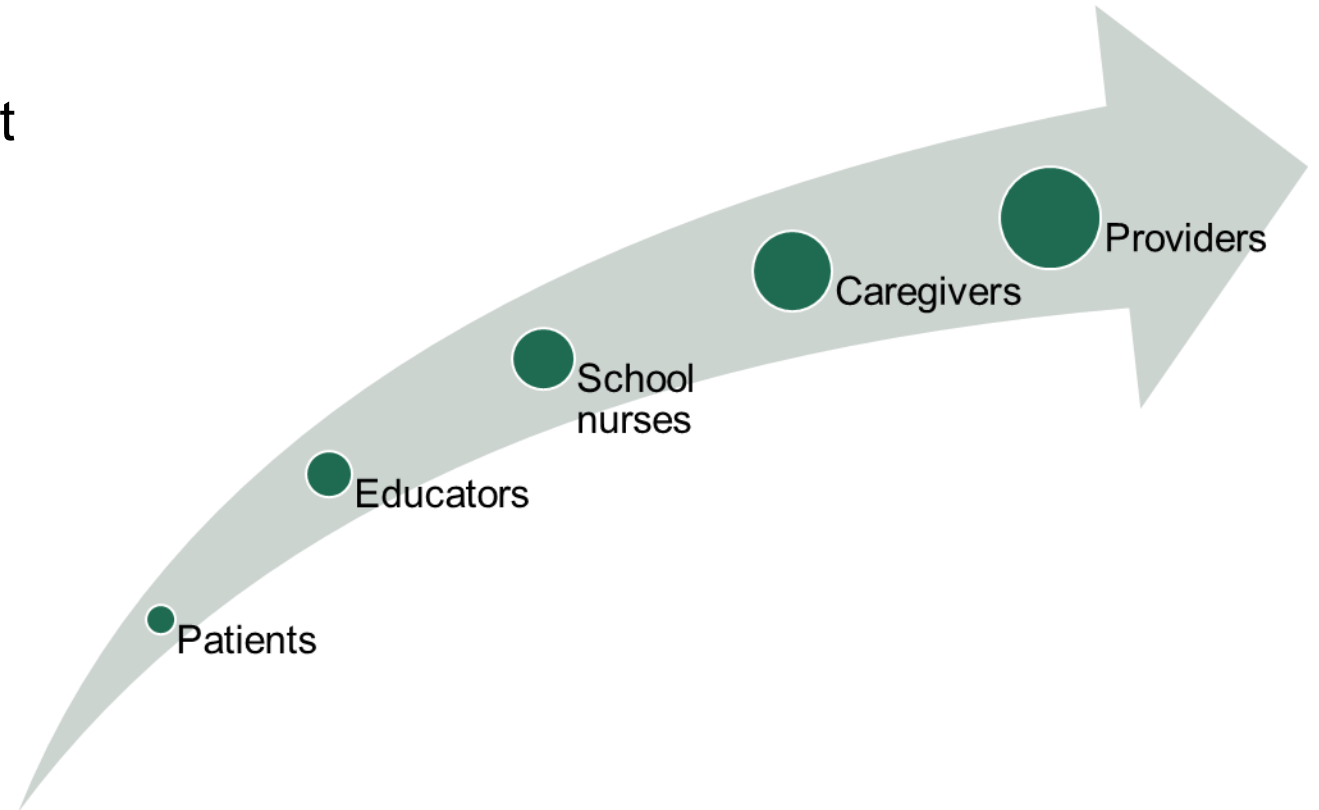
Situation



Team

- Physician representatives: Christy Foster (team lead) and Jessica Schmitt
- Diabetes educator representatives: Stephanie Duggan and Sheila Benton
- *Additional support:*
- Joycelyn Atchison
- Regan Jennings
- COA Translation services
- Leah Black
- Becky Earman

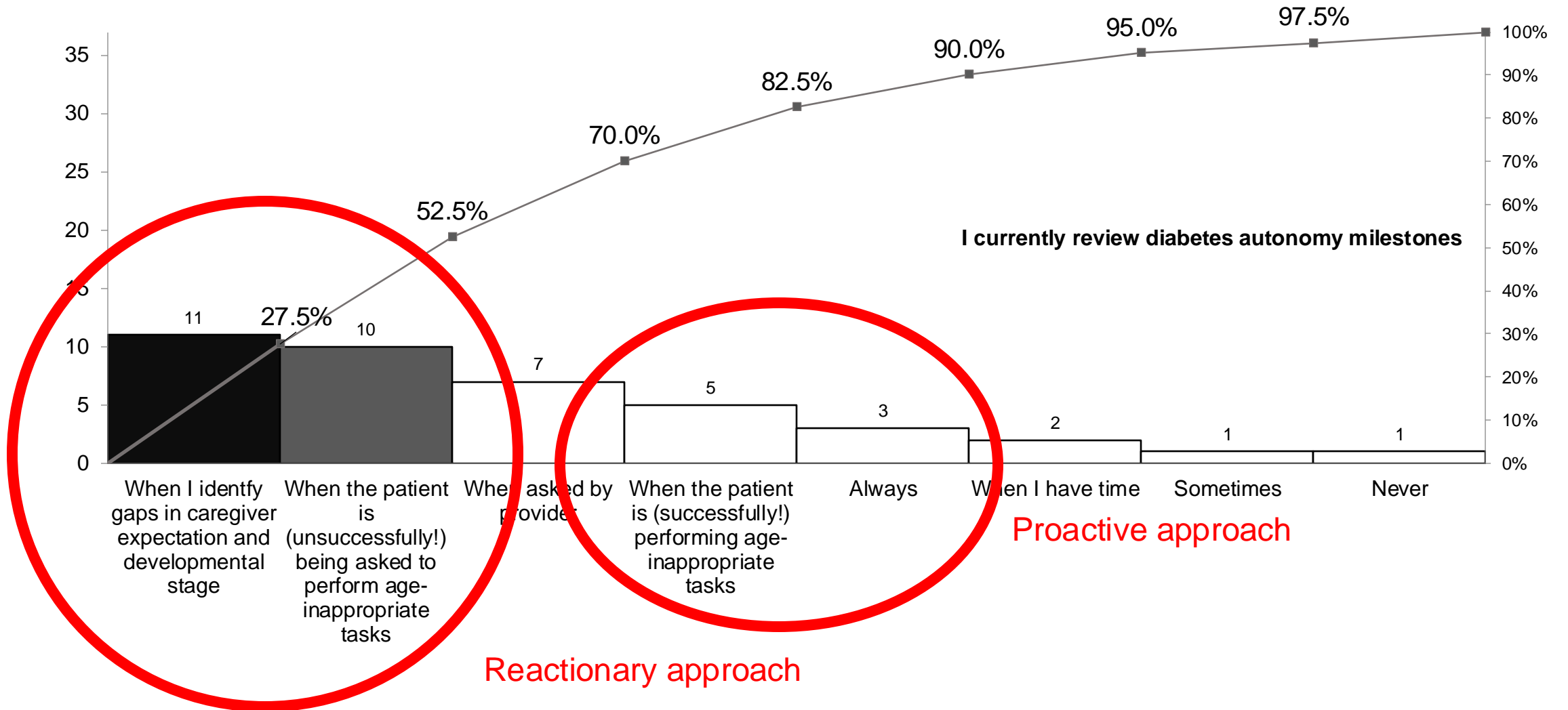
Stakeholders



Diabetes educators

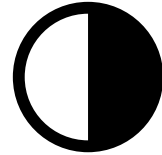
- Email survey
- Better than expected engagement rate (apx 70%)
 - Short (3 questions) related to teaching age-appropriate diabetes care-tasks (diabetes autonomy milestones)
 - Do you have what you need?
 - When do you review diabetes autonomy milestones?
 - What do you want?
 - Peer engagement

Diabetes educators



Diabetes educators:

- Do you have what you need?



- Feedback:
 - Caregivers expect too much of younger children, so they burn out as they reach teenage years
 - Checklist please
 - Clear, readable, concise handouts
 - Bullets of age-appropriate management tasks

Patients and caregivers

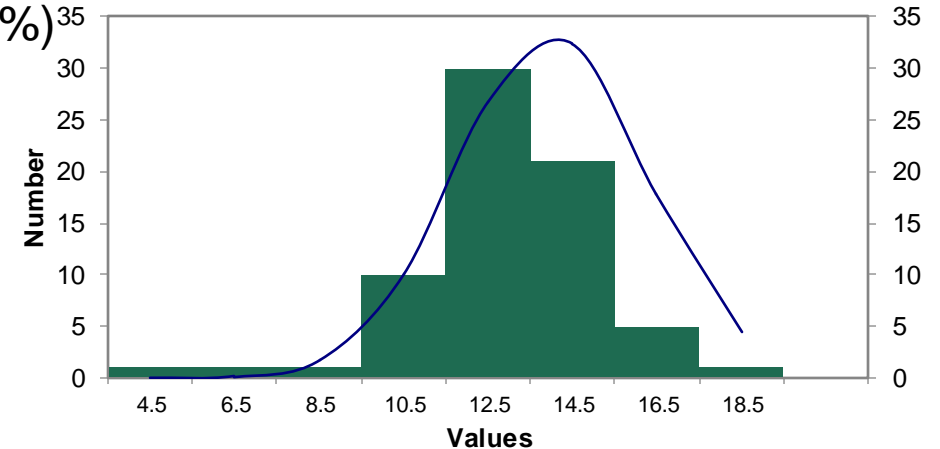
- Convenience sample in clinic
- Paper survey of multiple-choice questions and opt-in to be contacted to assist with tool development.
- Target questions:
 - Age to begin to learn how to administer insulin via injection (multiple choice)
 - Appropriate tasks for 6-yo child with diabetes
 - Age to count carbohydrates unsupervised (multiple choice)

Patients and caregivers: Responses

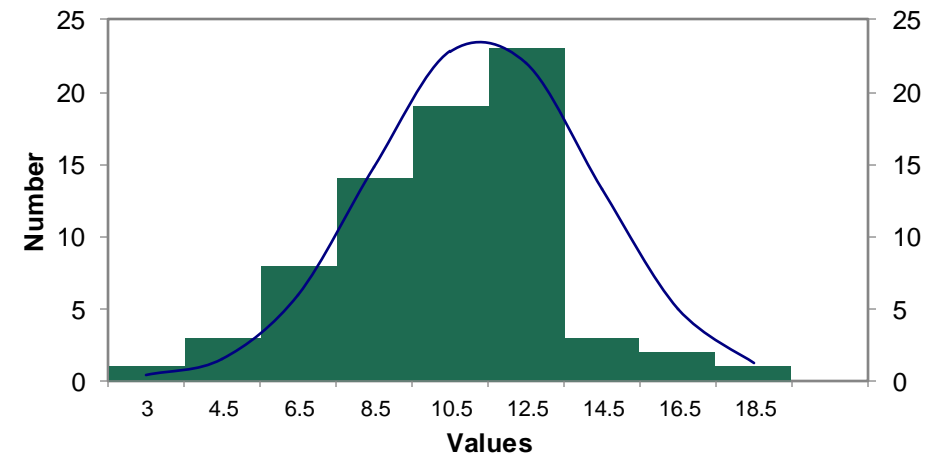
n=74; 32 caregivers (43.2%), 35 patients (47.3%), 7 unknown (9.5%)

- At what age should patients begin to learn how to give their own shot:
 - Age 7 or younger: 16.2%
 - Age 8 or older: 83.8%
- When asked to select appropriate tasks for a 6-yo with diabetes:
 - Check glucose without supervision: 19.4%
 - Treat a low blood glucose without supervision: 10.8%
- At what age should patients be able to carb count without supervision:
 - Median: 12.5 (IQR: 12.5-14.5)
 - Educational standards: fractions, decimals, multiplication, division.
 - Decimals: grade 4 to 5 (9-11 yo)
 - Word problems with decimal/fraction conversion: grade 6+ (age 12+)
 - Alabama = 31% grade-level proficiency in math in 2023

Age to carb count alone



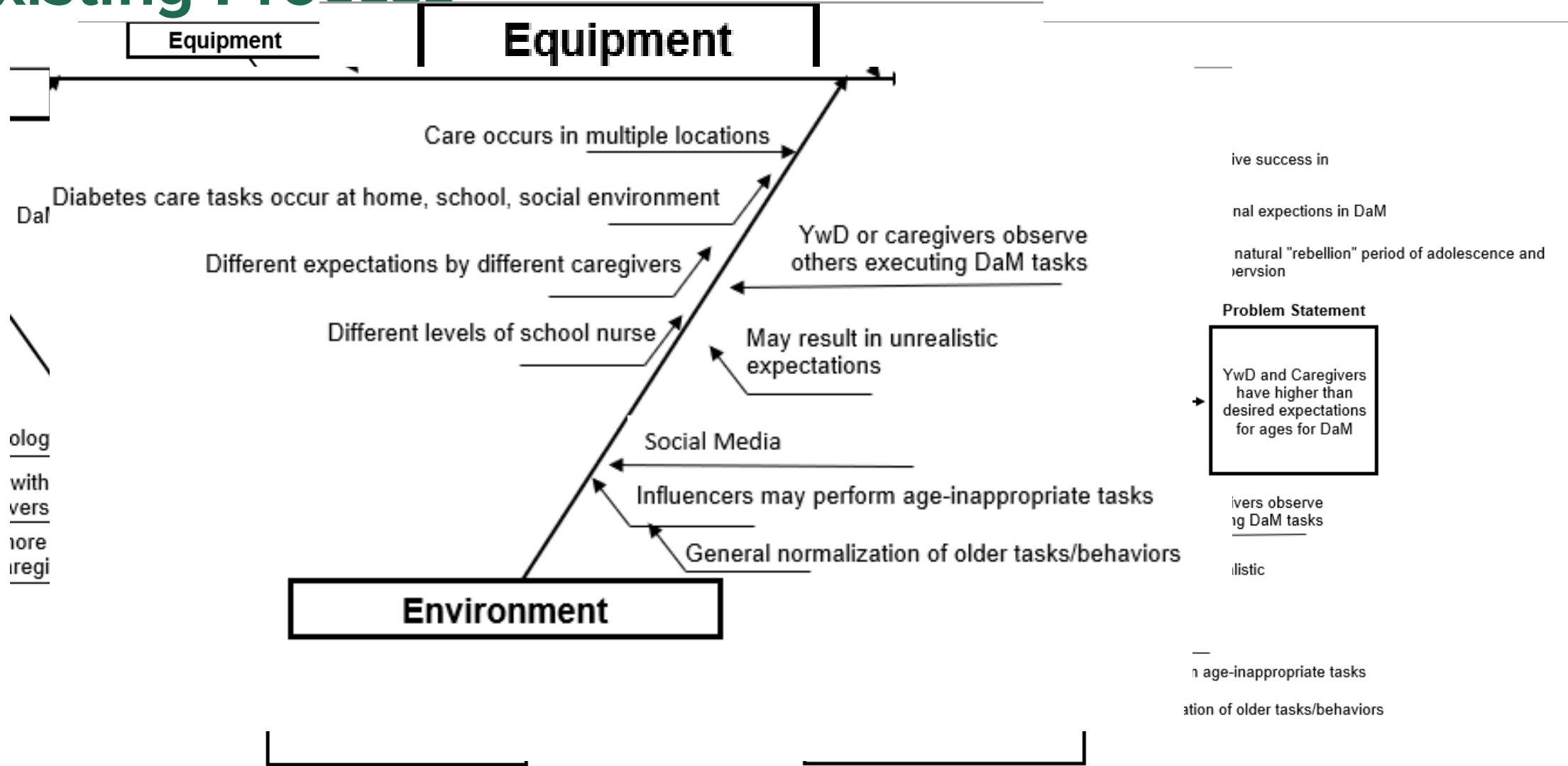
Age to start learning shots



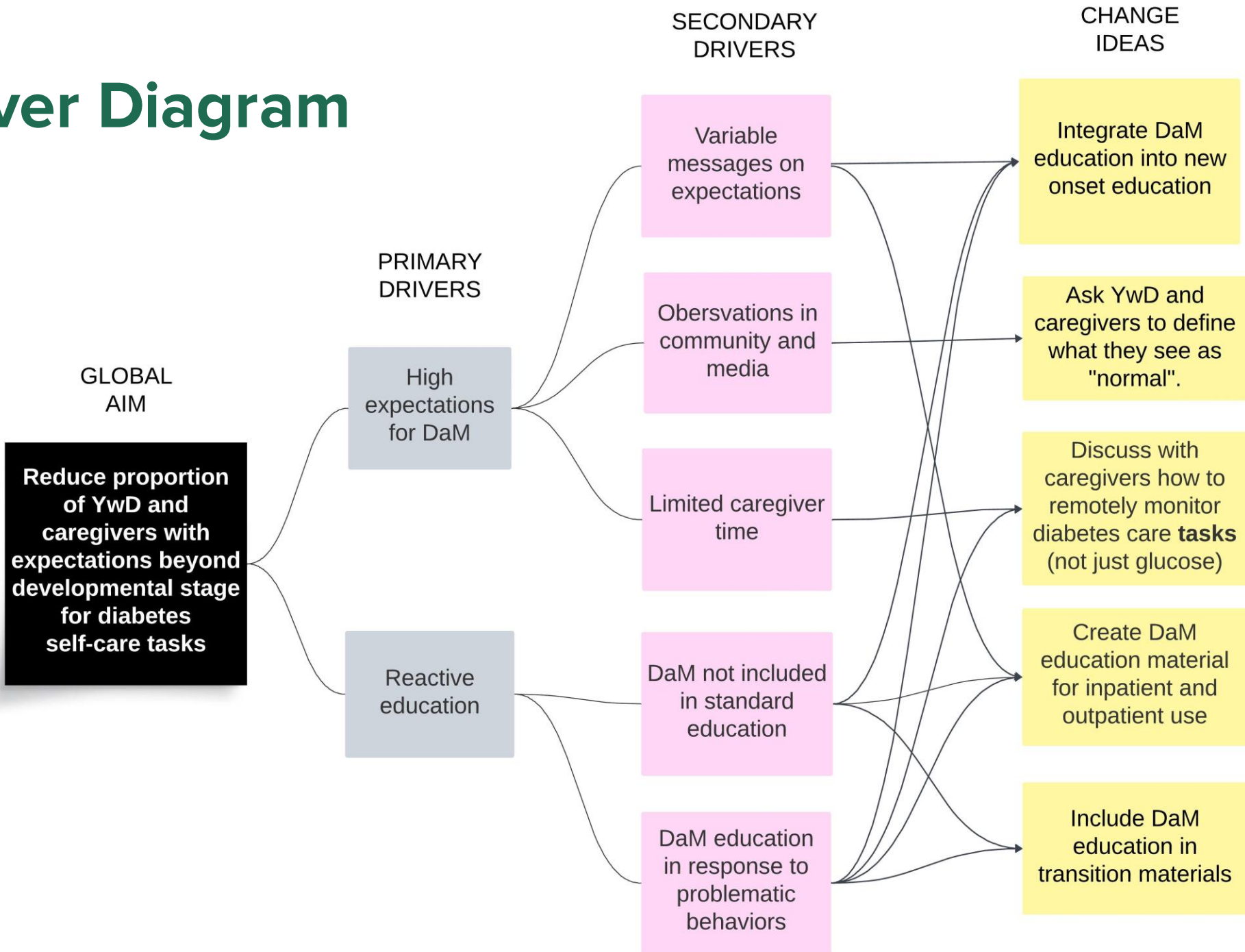
Conclusions from stakeholder input

- “Caregiver and YwD expectations for self-management are not in sync with diabetes educator expectations.”

Existing Process



Key Driver Diagram



Educational Tool:

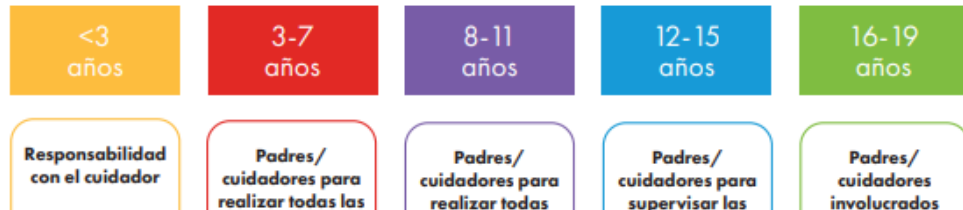
- Variable modes of delivery

Es la diabetes de mi hijo: ¿Cómo puedo ayudar?

It's My Child's Diabetes: How Can I Help

1600 7th Ave S • Birmingham, AL 35233 • 205.638.9100

¡Su hijo necesita su ayuda! A medida que crece, el apoyo que necesita cambia. Vea a continuación cómo se espera que cambie el apoyo relacionado con la diabetes a medida que su hijo crezca.



Children's of Alabama®

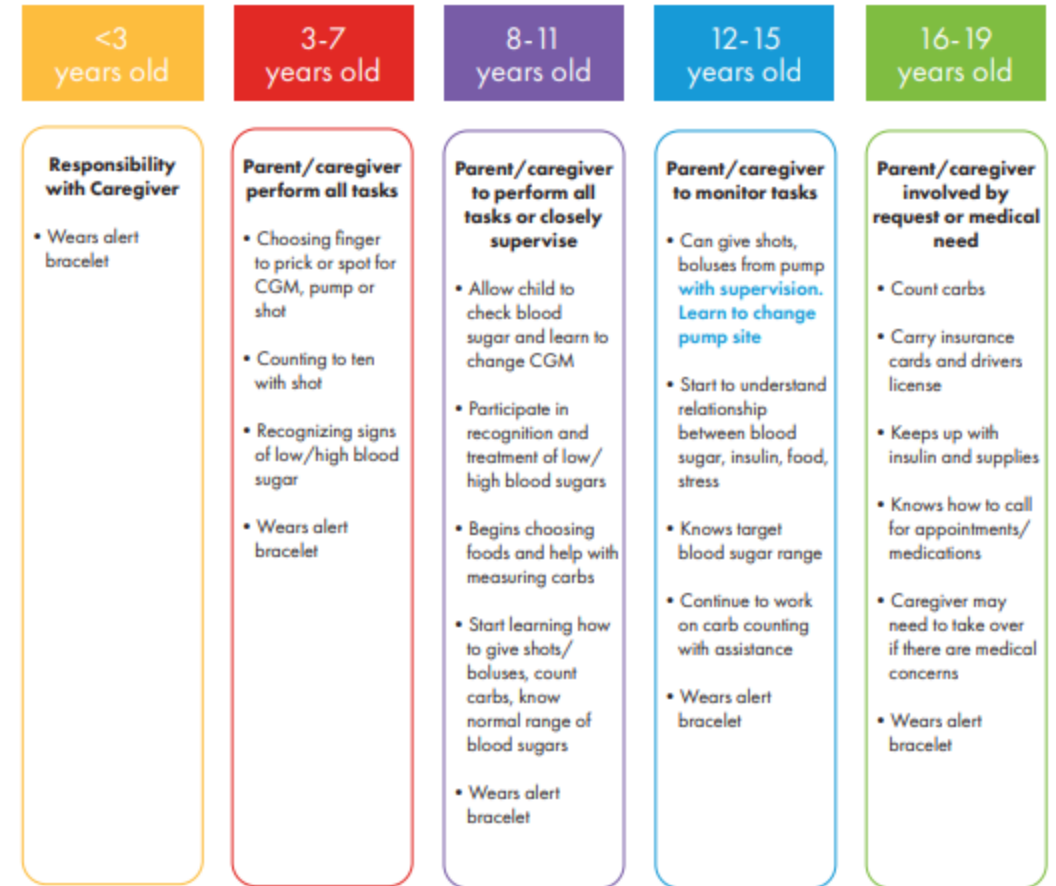
It's My Diabetes: What Can I Do



Children's of Alabama®

1600 7th Ave S • Birmingham, AL 35233 • 205.638.9100

The below chart shows age-appropriate tasks for children with diabetes to perform, and what would be expected for them to start learning as they grow.



We understand that children develop, grow, and learn differently so do not worry if your child is unable to do everything listed under their age bracket. We will continue to educate and encourage you/your child so they are able to reach these milestones. We encourage you to continue assisting them at home so they can be successful with their diabetes care as they grow.

Current status

PDSA Cycles Total: 10

TITLE	PDSA TYPE
Trial of tool in pump education setting	QI PDSA Template
Educator input on KDD, process map, fishbone	QI PDSA Template
Trial of tool inpatient	QI PDSA Template
Spread use of tool inpatient	QI PDSA Template
Caregiver/caregiver feedback	QI PDSA Template
Quiz patients and parents about diabetes autonomy milestones	QI PDSA Template
CDE satisfaction with current DAM resources	QI PDSA Template
Patient/caregiver feedback on DaM resource	QI PDSA Template
Trial run in limited clinic (PROVIDER-led)	QI PDSA Template
Trial run in limited provider clinic (educator driven)	QI PDSA Template

“ We want them to manage their diabetes when they are older, but we need them to be safe when they are learning. ”

Diabetes Autonomy Milestones Team



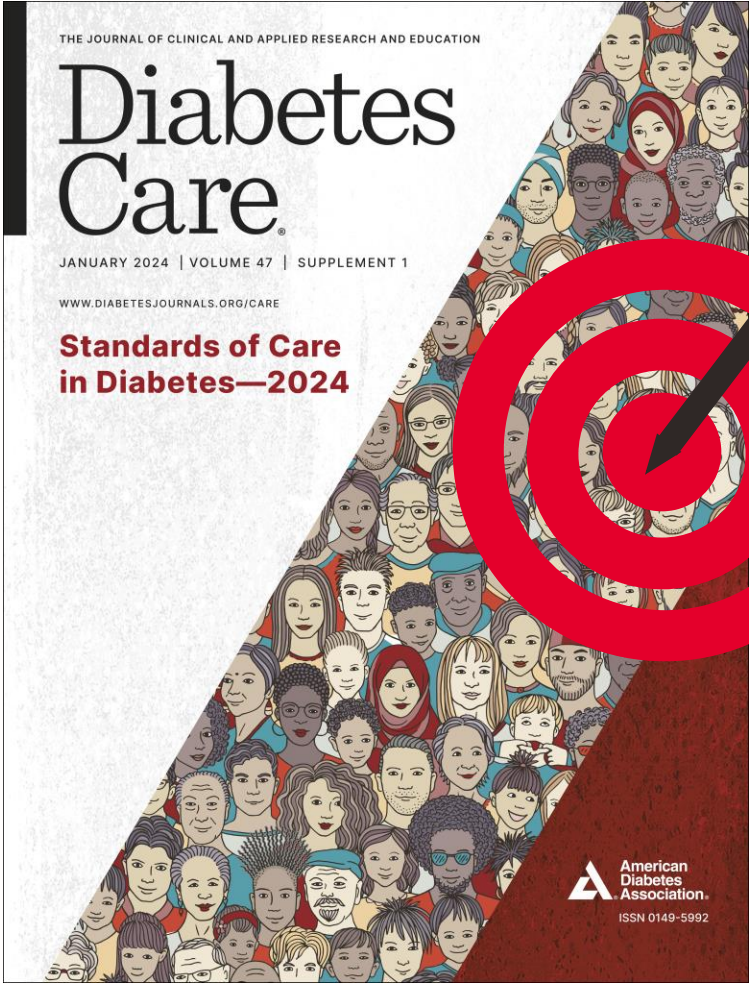
Improving Microalbuminuria Screening Rates Among Pediatric Diabetes Patients: A Clinic-Wide Initiative

November 11, 2024 | Lydia Holly, BSN, RN, Clinical Care Coordinator

Objectives

- Review the importance of microalbuminuria screening
- Highlight challenges and drivers in improving screening
- Describe the quality improvements implemented
- Demonstrate impact through data
- Discuss next steps for sustaining and scaling screening improvements

Why This Project: Missing the Benchmark



Project Aim

Increase urine microalbumin/creatinine
lab screening rates

in Type 1 Diabetes (T1D) patients ≥ 10 years of age with
>5 years since diagnosis seen in the
Diabetes Care Complex (DCC)

from 40% to 80%

by December 2024 and sustain indefinitely.

Diabetes Care Complex (DCC) at Children's National

Clinic Make-Up:

- 6 Endocrinologist with diabetes focus
- 6 Fellows
- 2 Nurse Practitioners
- 7 Certified Diabetes Educators
- 2 Registered Dietitians
- 1 Clinic Nurse
- 3 Patient Care Technicians
- 1 Clinical Care Coordinator
- 1 Research Assistant

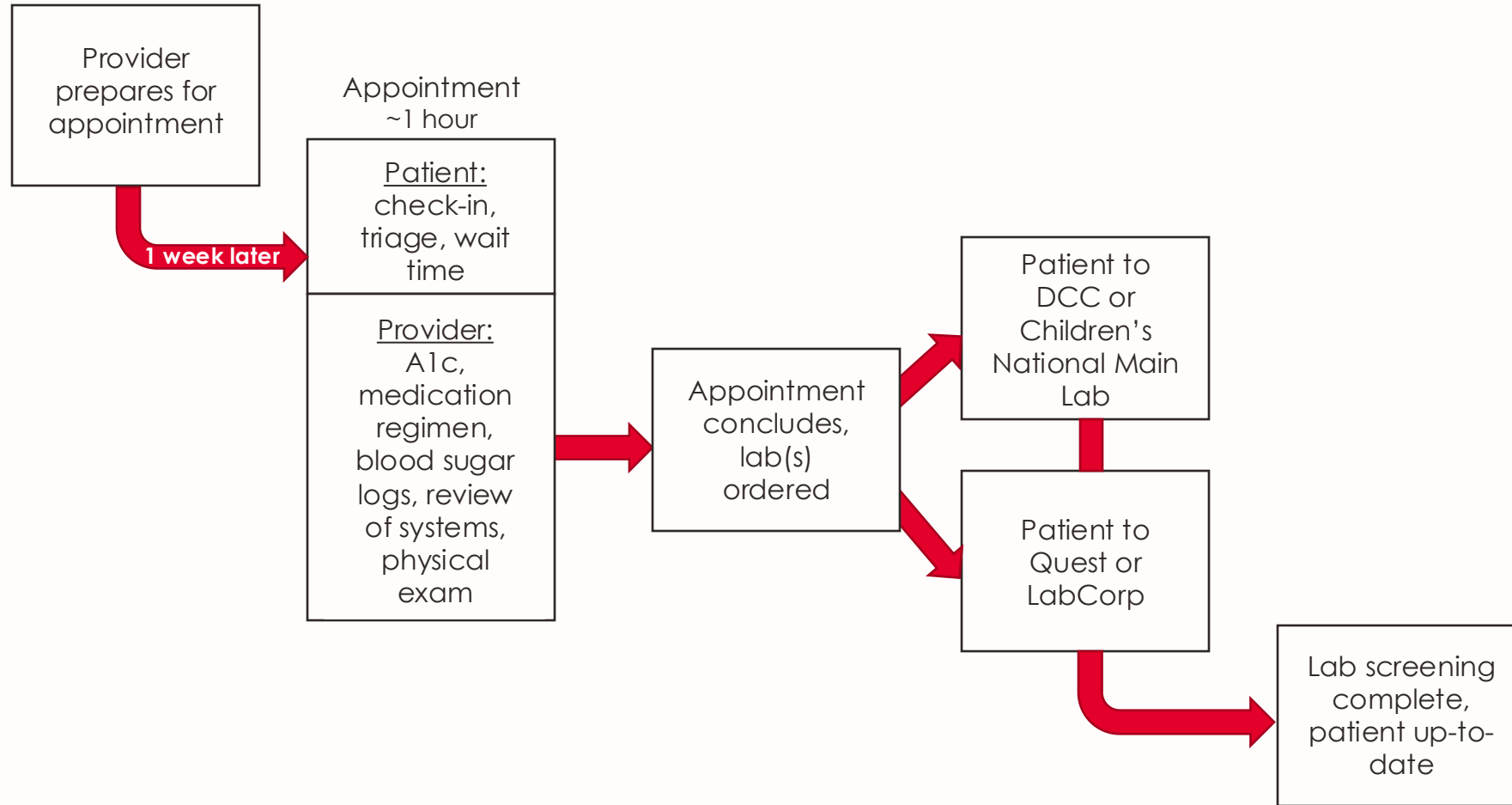
Electronic Medical Record System:

Cerner

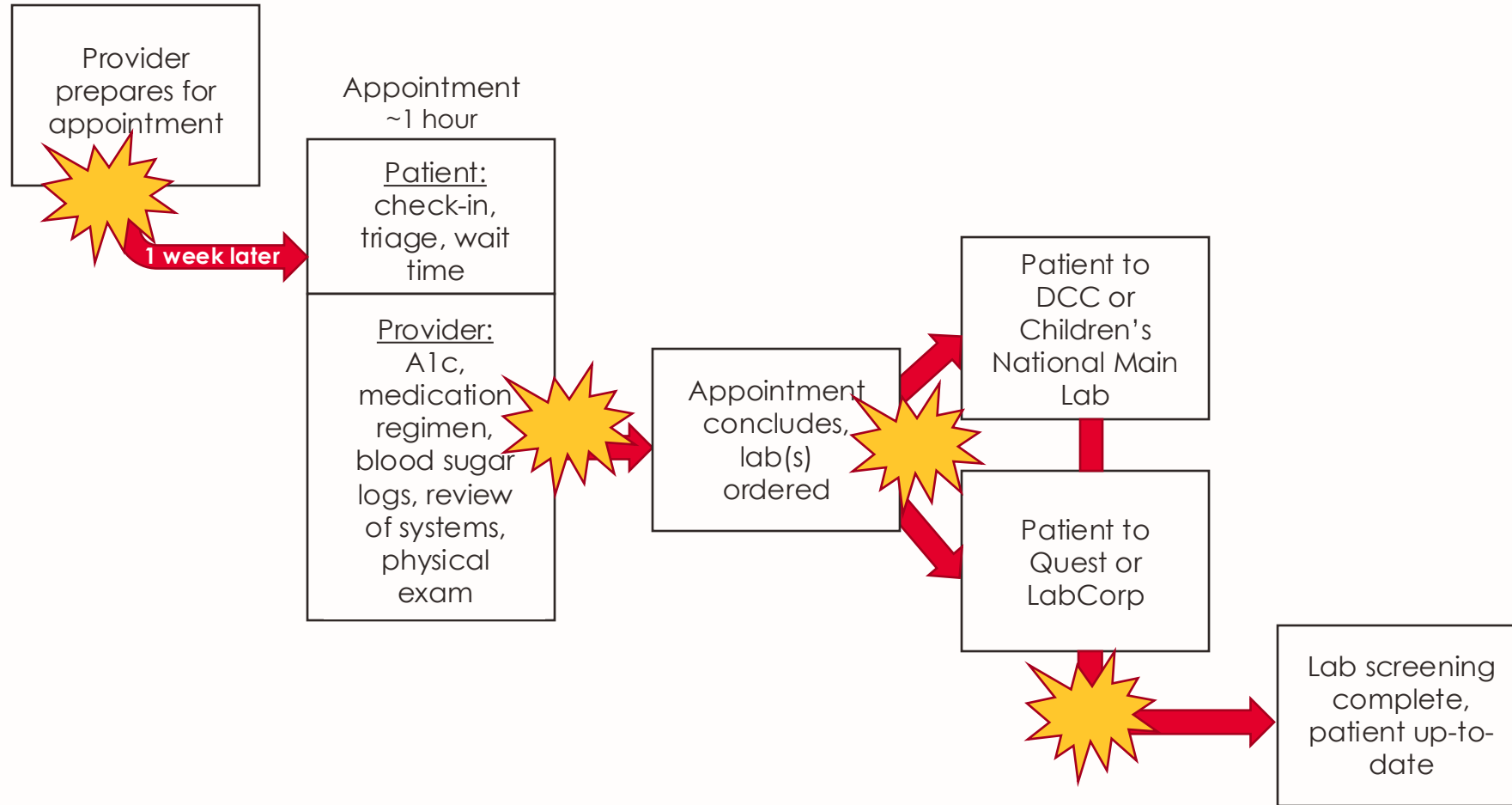
Average of **170 Type 1 patient visits per month**

One clinic lab with limited space and servicing availability

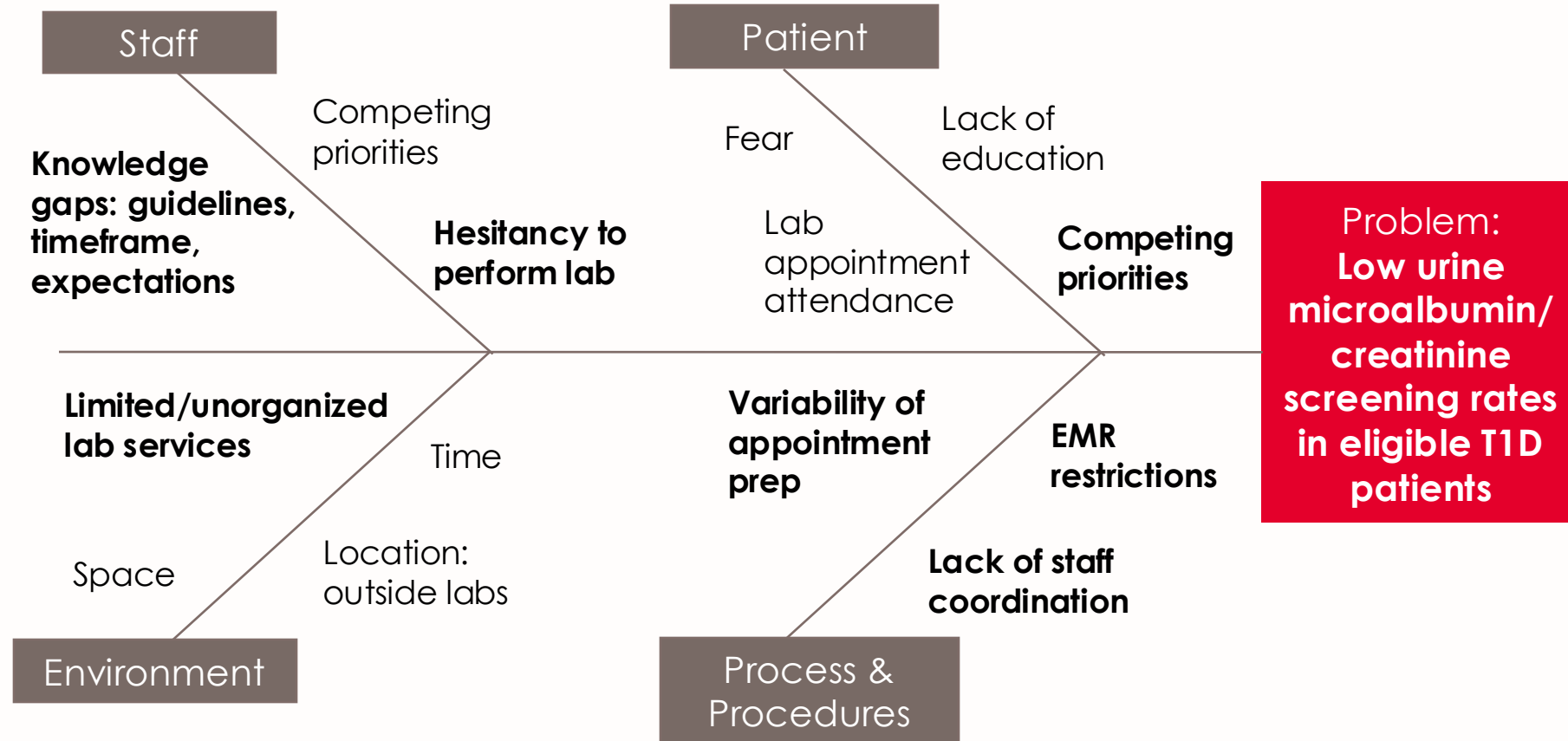
Breaking it Down: Process Map



Breaking it Down: Process Map



Identification of Key Drivers



GLOBAL AIM

Prevent diabetes-related complications

SMART AIM

Increase urine microalbumin/creatinine screening rates in T1D patients ≥ 10 years with >5 years since diagnosis seen in the DCC from 40% to 80% by December 2024 and sustain indefinitely.

KEY DRIVERS

Staff and patient/family engagement

Timely tracking system

Integrative screening process

INTERVENTIONS

Provide education to providers and staff through Diabetes Staff Meeting education series

Increase patient/family knowledge of screening guidelines and importance

Disseminate weekly tracking tool to alert providers of patients who are due for lab

Create EMR dot phrasing to track lab screening status in clinic notes

Incorporate urine specimen collection into patient triage workflow

Obtain POCT urine analyzer

 In Progress  Finished  Paused  Not Started

GLOBAL AIM

Prevent diabetes-related complications

SMART AIM

Increase urine microalbumin/creatinine screening rates in T1D patients ≥ 10 years with >5 years since diagnosis seen in the DCC from 40% to 80% by December 2024 and sustain indefinitely.

KEY DRIVERS

Staff and patient/family engagement

Timely tracking system

Integrative screening process

INTERVENTIONS

Provide education to providers and staff through Diabetes Staff Meeting education series

Increase patient/family knowledge of screening guidelines and importance

Disseminate weekly tracking tool to alert providers of patients who are due for lab

Create EMR dot phrasing to track lab screening status in clinic notes

Incorporate urine specimen collection into patient triage workflow

Obtain POCT urine analyzer

 In Progress  Finished  Paused  Not Started

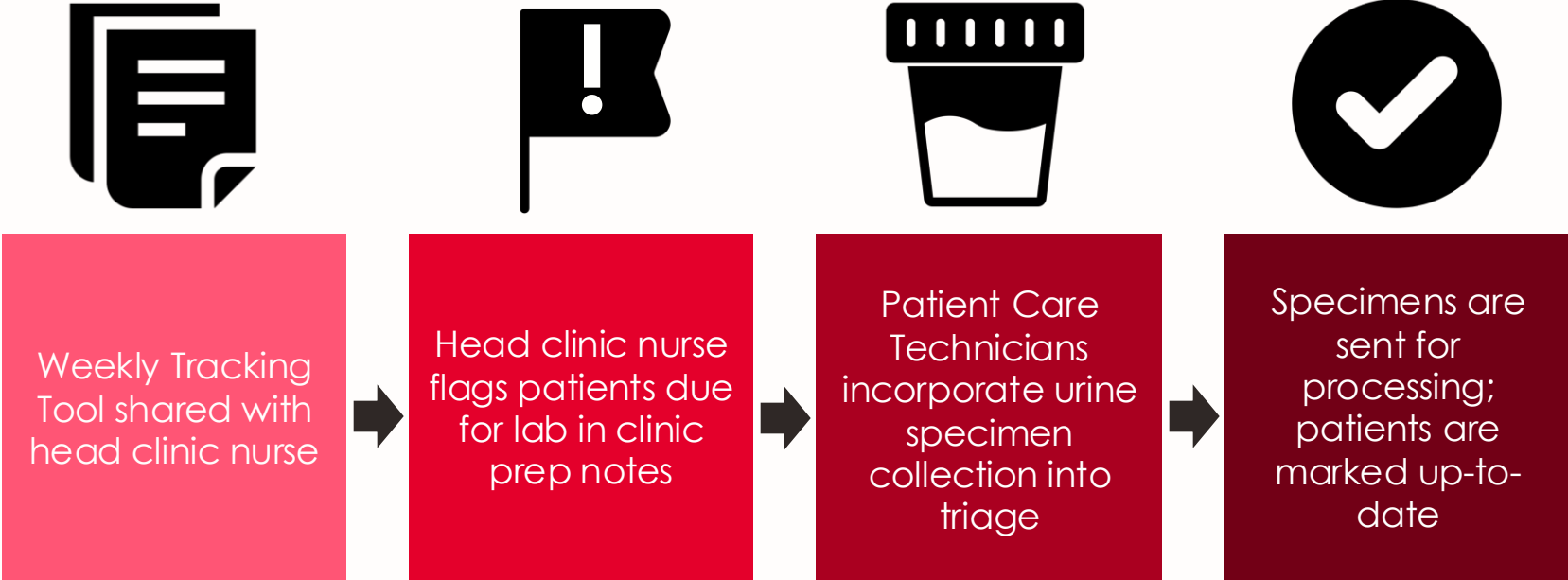


Intervention: Weekly Tracking Tool

Patient MRN	Appointment Date	Time	Type	Location	Provider	Patient Last Name	Patient First Name	Urine M/C	Notes
WEEK OF 11/11/2024									
123456789	11/11/2024	8:00	ENDO DIABETES FUP	Diabetes Care Complex	TEST, TEST MD	TESTA	PATIENT	Y	
234567891	11/11/2024	8:30	ENDO DIABETES FUP	Diabetes Care Complex	TEST, TEST MD	TESTB	PATIENT	N	
345678912	11/11/2024	9:30	ENDO DIABETES FUP	Diabetes Care Complex	TEST, TEST MD	TESTC	PATIENT	X	
456789123	11/11/2024	10:00	ENDO DIABETES FUP	Diabetes Care Complex	TEST, TEST MD	TESTD	PATIENT	Y	Urine expiring before next appointment (exp 12/1/24)
567891234	11/11/2024	10:30	ENDO DIABETES FUP	Diabetes Care Complex	TEST, TEST MD	TESTE	PATIENT	N	

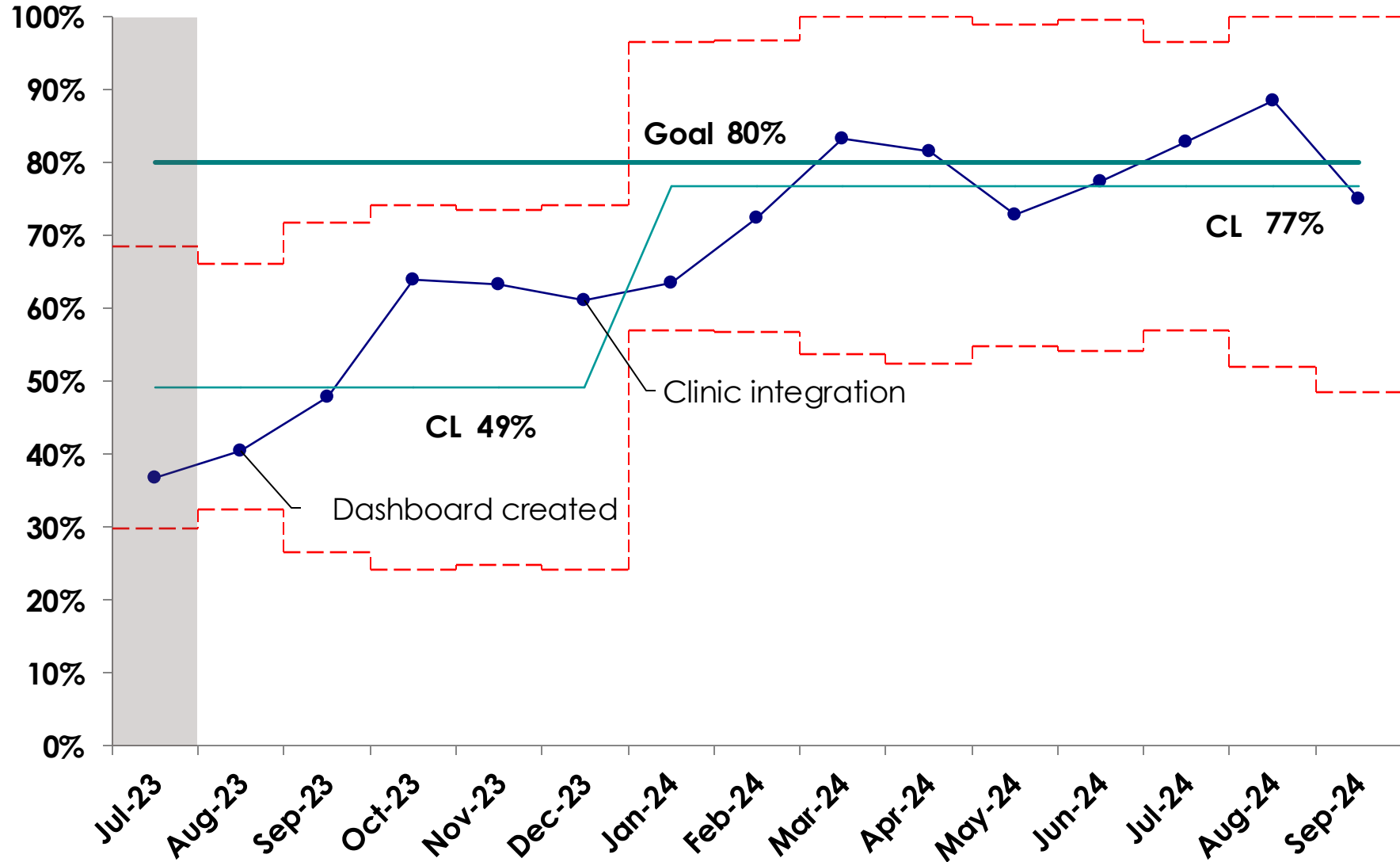
- Emailed weekly on Friday mornings to all providers
- Individual provider tabs
- Measure status denotes course of action
 - Y: up-to-date on lab screening
 - Y: due for lab prior to next appointment
 - N: due for lab
 - X: ineligible

Intervention: Clinic Integration



Percentage of Eligible Patients Screened for Microalbuminuria at the Diabetes Care Complex

p chart, July 2023 to present



Next Steps

- Continue to advocate for increased lab hours to support comprehensive screening
- Integrate other lab screenings into the existing clinic workflow
- Continue efforts to optimize EMR functionality: automated prompts and tracking tools
- Expand screening process across satellite clinics in the DC-Maryland-Virginia area

Thank You



Children's National[®]