



T1D
Exchange

Improve AID Use at T1D Diagnosis (IMPROVAID)

February 2025

Centers participating in the project

Pediatric

- NYU Mineola, Dr. Accacha
- Children's Mercy, Dr. Clements
- Cincinnati Children's, Dr. Delsart
- University of Wisconsin, Dr. Mann
- Children's Healthcare of Atlanta, Dr. Cossen
- UC Davis, Dr. Crossen or Dr. Schulmeister

Adult

- Stanford Medicine, Dr. Basina
- UC Davis, Dr. Plante
- Northwestern, Dr. Aleppo
- Icahn School at Mt Sinai, Dr. O'Malley
- Washington University, Dr. Jones
- Johns Hopkins University, Dr. Mathioudakis

Project Aims

- Aim 1: Accelerate AID data collection and conduct AID real world analysis.
- Aim 2: Analysis to understand factors that influence diabetes providers recommendations of AID systems.
- Aim 3: Reduce therapeutic inertia and enhance AID Prescription for newly diagnosed people with T1D.

Project Milestones September 2024 – December 2025

Month	Milestones
July 2024	<ul style="list-style-type: none">• Aim 1 (Real World AID data analysis) Kick off• Aim 2 (Understanding barriers and facilitators) Kick off
September - December 2024	<ul style="list-style-type: none">• Ongoing analysis on Aim 1 and 2• QI engagement with centers on Aim 3• ADA 2025 Abstract submission
February 2025	<ul style="list-style-type: none">• Aim 3 QI Centers recruitment and kick Off



Aim 1

Accelerate AID data collection and conduct AID real world analysis.

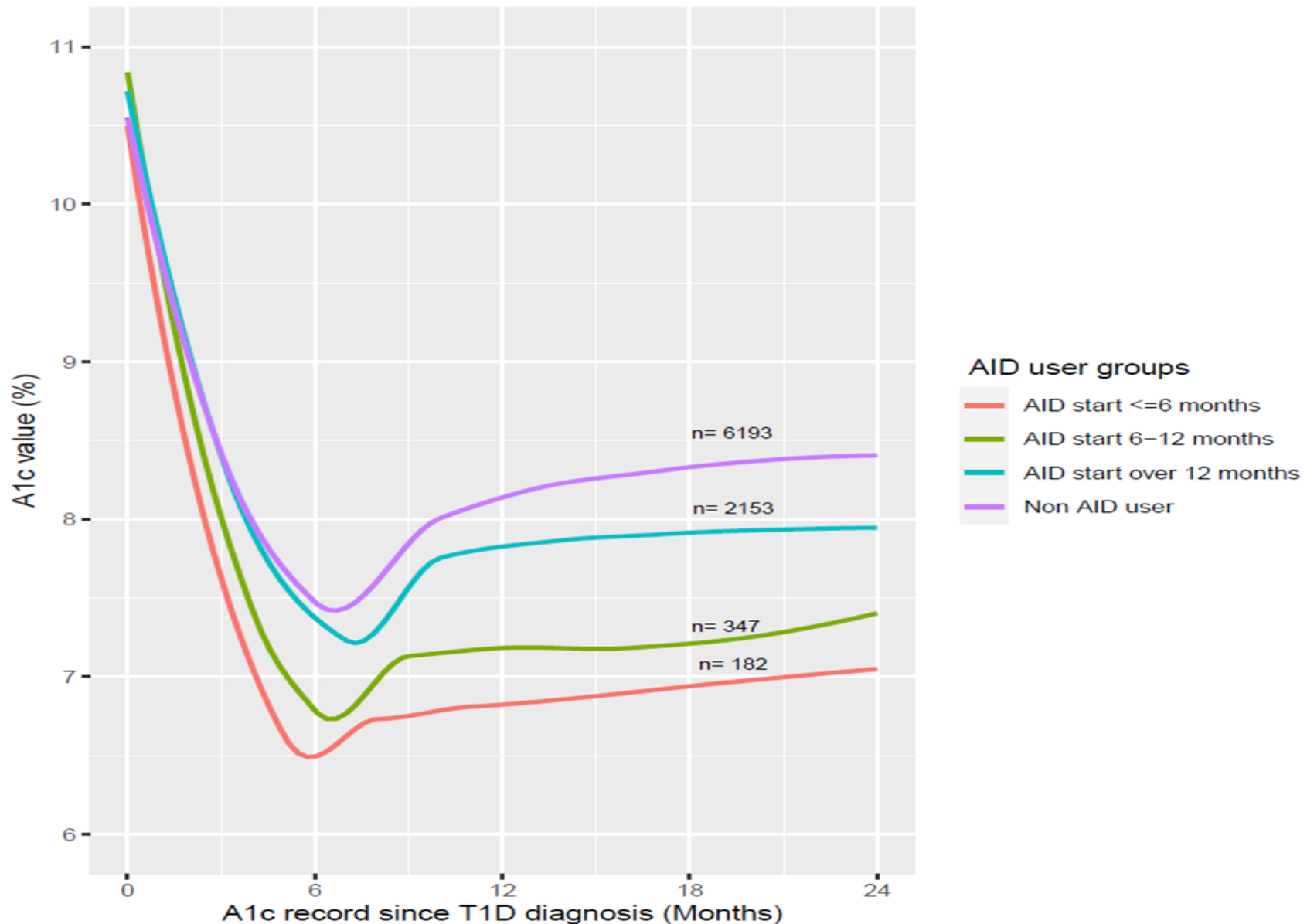
TDX-QI EMR PwT1D Database Profile (N=97,494)

	Total	<6 years	6-13 years	13-18 years	18-26 years	26-50 years	50-65 years	>65 years
N	97494	2940	17105	27620	29796	12047	4911	3075
Sex (Female)	47528 (49)	1392 (49)	1392 (47)	47 (8541)	8541 (50)	50 (13026)	13026 (47)	14126 (47)
Race/Eth								
NH White	61894 (63)	1860 (63)	10550(62)	16972 (61)	20029 (67)	7278 (60)	3065 (62)	2140 (70)
NH Black	13417 (14)	360 (12)	2465 (14)	4184 (15)	3769 (13)	1563 (13)	724 (15)	352 (11)
Hispanic	12157 (12)	343 (12)	2053 (12)	3685 (13)	3407 (11)	1698 (14)	683 (14)	288 (9)
Other	10026 (10)	377 (13)	2037 (12)	2779 (10)	2591 (9)	1508 (13)	439 (9)	295 (10)
Insurance (Private)	47600 (49)	1357 (46)	7986 (47)	13263 (48)	15898 (53)	6412 (53)	2359 (48)	325 (11)

^a Missing data; column totals may not add up to 100%; ^b Device information available on a subset of the population Unpublished data



T1DX-QI data initiating AID early makes a difference for children less than 19 years.



Lesser acute complications

	AID initiation in 6 months within diagnosis (N=182)	AID initiation 6-12 months post diagnosis (N=347)	AID initiation 12+ months post diagnosis (N=2153)	Non-AID user at 24 months (N=6193)
Age (years), Mean (SD)	14 (9)	13 (6.5)	14 (7.4)	16 (10.8)
Sex (Female)	91 (50)	172 (50)	1043 (48)	2800 (45)
Race/Ethnicity				
NH White	119 (65)	230 (66)	1169 (54)	2608 (42)
NH Black	10 (5)	27 (8)	195 (9)	998 (16)
Hispanic	25 (14)	47 (14)	267 (12)	949 (15)
Other/ Unknown	28 (15)	43 (12)	522 (24)	1638 (26)
Insurance (Private)	80 (44)	204 (59)	1282 (60)	2585 (42)
Median A1c at 24 months (IQR)	7 (6.4,7.7)	7.2 (6.6,7.9)	7.4 (6.7,8.3)	7.9 (6.8,9.4)
Median time in range (IQR)	70 (56,80)	54 (54,75.8)	60 (45,71)	56 (37,73.2)
DKA per 100 persons year	2.3	2.9	4.7	7.1
SH per 100 persons year	0.9	1.5	2.1	2.7

AID glycemetic benefit sustained despite adjusting for different confounders

Outcome: HbA1c less than 7% at diagnosis

AID initiation group	ODDS RATIO (CONFIDENCE INTERVAL)	
AID initiation within 6 months of diagnosis	Ref	
AID initiation 6-12 months post diagnosis	0.67 (0.46, 0.98)	0.04
AID initiation over 12 months post diagnosis	0.59 (0.42, 0.81)	0.002
Non-AID User at 24 months	0.47 (0.34, 0.65)	<0.001

Adjusted for age, gender, race/ethnicity, insurance, language, duration of diabetes, baseline HbA1c.

Outcome: HbA1c more than 7% at diagnosis

AID initiation group	ODDS RATIO (CONFIDENCE INTERVAL)	
AID initiation within 6 months of diagnosis	Ref	
AID initiation 6-12 months post diagnosis	1.42 (0.74, 2.88)	0.3
AID initiation over 12 months post diagnosis	1.83 (1.05, 3.46)	0.05
Non-AID User at 24 months	3.29 (1.90, 6.20)	<0.001

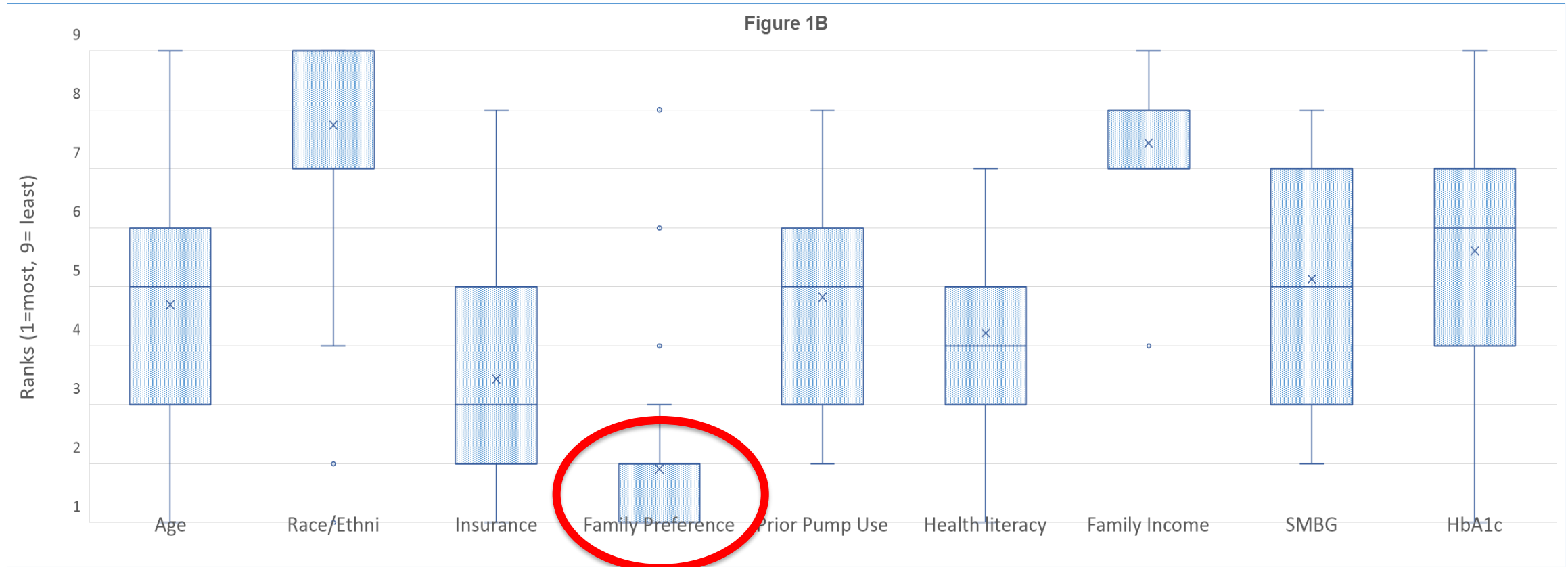
Adjusted for age, gender, race/ethnicity, insurance, language, duration of diabetes, baseline HbA1c.



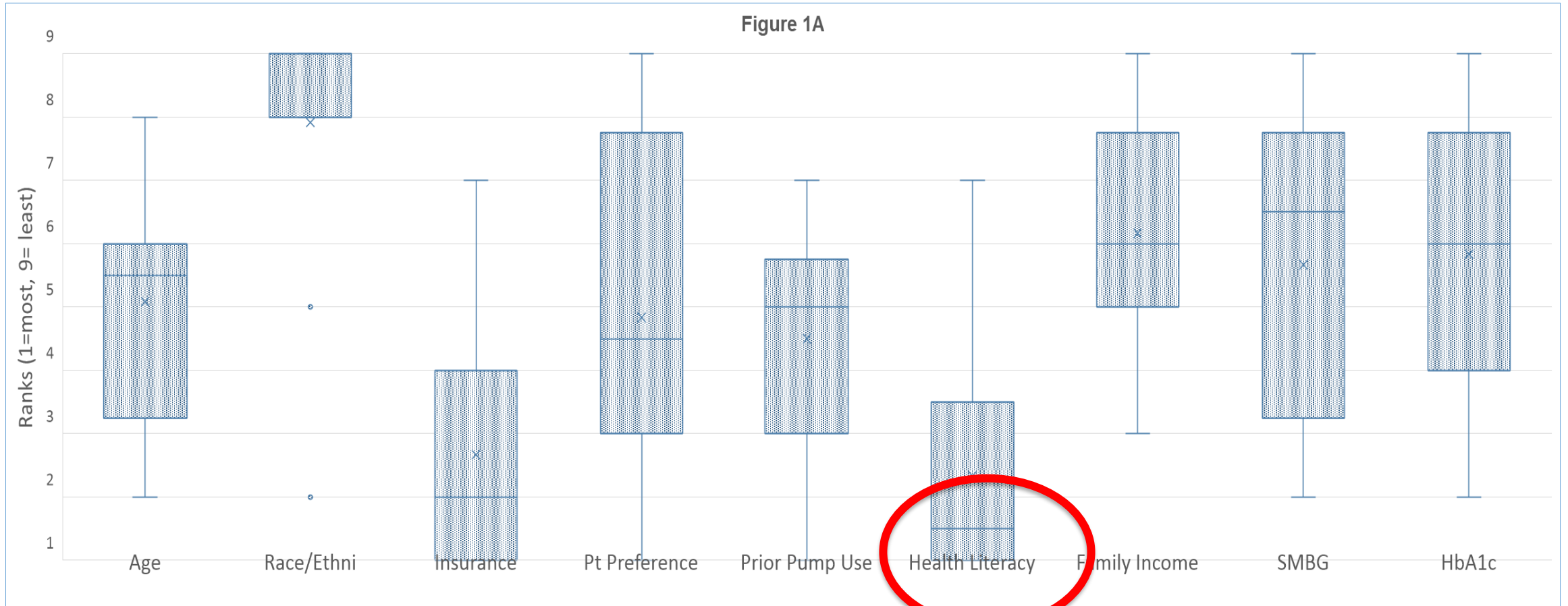
Aim 2

Analysis to understand factors that influence diabetes providers recommendations of AID systems.

Pediatric provider ranking of factors considered for AID recommendation (lower is stronger ranked) N=44



Adult provider ranking of factors considered for A1D recommendation (lower is stronger ranked) N=23

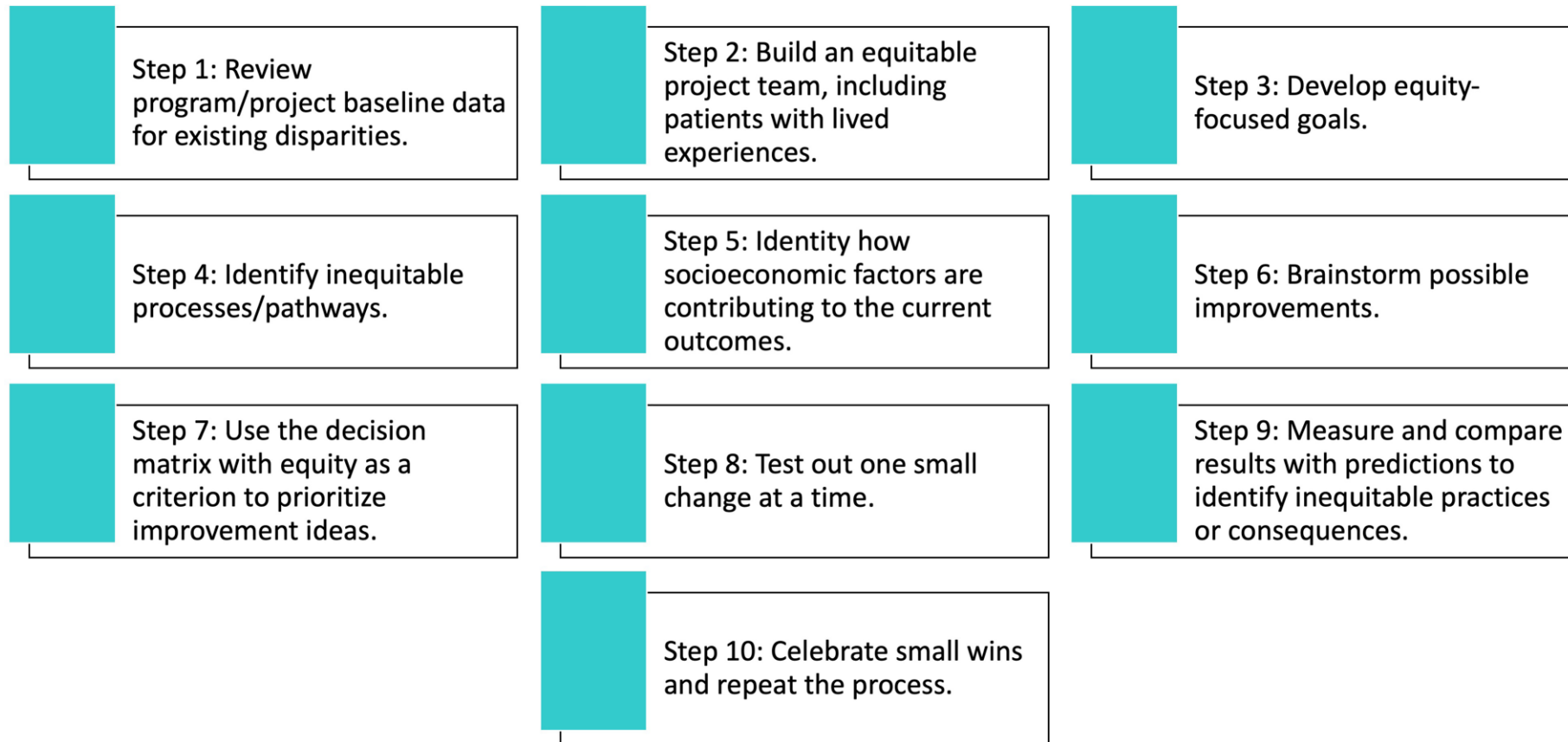




**Aim 3: QI Project to reduce therapeutic inertia
and enhance AID Prescription for newly
diagnosed people with T1D.**

Aim 3

Use the Ten-Step Equity Framework and quality improvement (QI) methodologies to identify best-practice recommendations in prescribing AID in new-onset patients and describe results in pilot centers.



Data plans

Examples of the aggregate data variables to be analyzed include:

- Demographic information (race/ethnicity, insurance)
- Glycemic outcomes
 - A1c
 - A1D uptake
 - Device use data (CGM, pump)
- A1D use at baseline and follow up
- Trends in use
- Incidence and prevalence

Monthly Meetings

Timeline	Expectations
March 2025	<ul style="list-style-type: none">• Share Smartsheet with participating centers. Data reporting begins.
March 2025	<ul style="list-style-type: none">• Participating center share clinic process for AID
April 2025	<ul style="list-style-type: none">• Participating centers create a fishbone diagram
May 2025	<ul style="list-style-type: none">• Brainstorm interventions & create KDD
June-Dec 2025	<ul style="list-style-type: none">• Teams will use QI tools to test changes in clinic to improve AID use. Teams will meet monthly and share insights
Deliverables	<ul style="list-style-type: none">• Qualitative analysis, Abstracts, manuscripts

Next Steps?

- Create a monthly meeting schedule for the group
- Baseline data reporting and monthly data sharing