



**T1D**  
*Exchange*

# Data Science Committee Meeting

April 2024

Co-chairs: Joyce Lee, Marina Basina

# Agenda

- Introductions- Dr. Lee and Dr. Basina
- In Patient data request discussion- Dr. Plante
- T2D Data Specification discussion- Dr. Zupa
- Patient Questionnaire Introduction- Dr Lee

# Welcome To Our New DSC Co-Chairs

Dr. Ryan McDonough from Childrens Mercy



“My role as Chief Medical Information Officer has given me a unique opportunity to leverage informatics approaches to ensure highly reliable and quality data. Expanding to chair this committee would allow me to share that expertise with the group more readily.”

Dr. Nirali Shah, Icahn School of Mt. Sinai Adult



“Through comprehensive data analysis, we would seek to identify patterns, uncover novel insights, and contribute to cutting-edge research in the field. Additionally, fostering interdisciplinary collaborations, promoting data-sharing initiatives, and advancing digital health technologies would be integral to the committee's vision.”

# Type 1 Diabetes Mapping Updates

- 35 centers fully mapped (from 34 centers in Q1)
- 4 in validation phase
- Data completeness scorecards
  - Scorecards will be distributed in Q2

# Type 2 Diabetes Mapping Update

- 3 centers fully mapped
- 2 centers still in the mapping process



# Enhancing Inpatient T1D Care Quality using Glucometrics and Performance measures

Deb Plante, MD

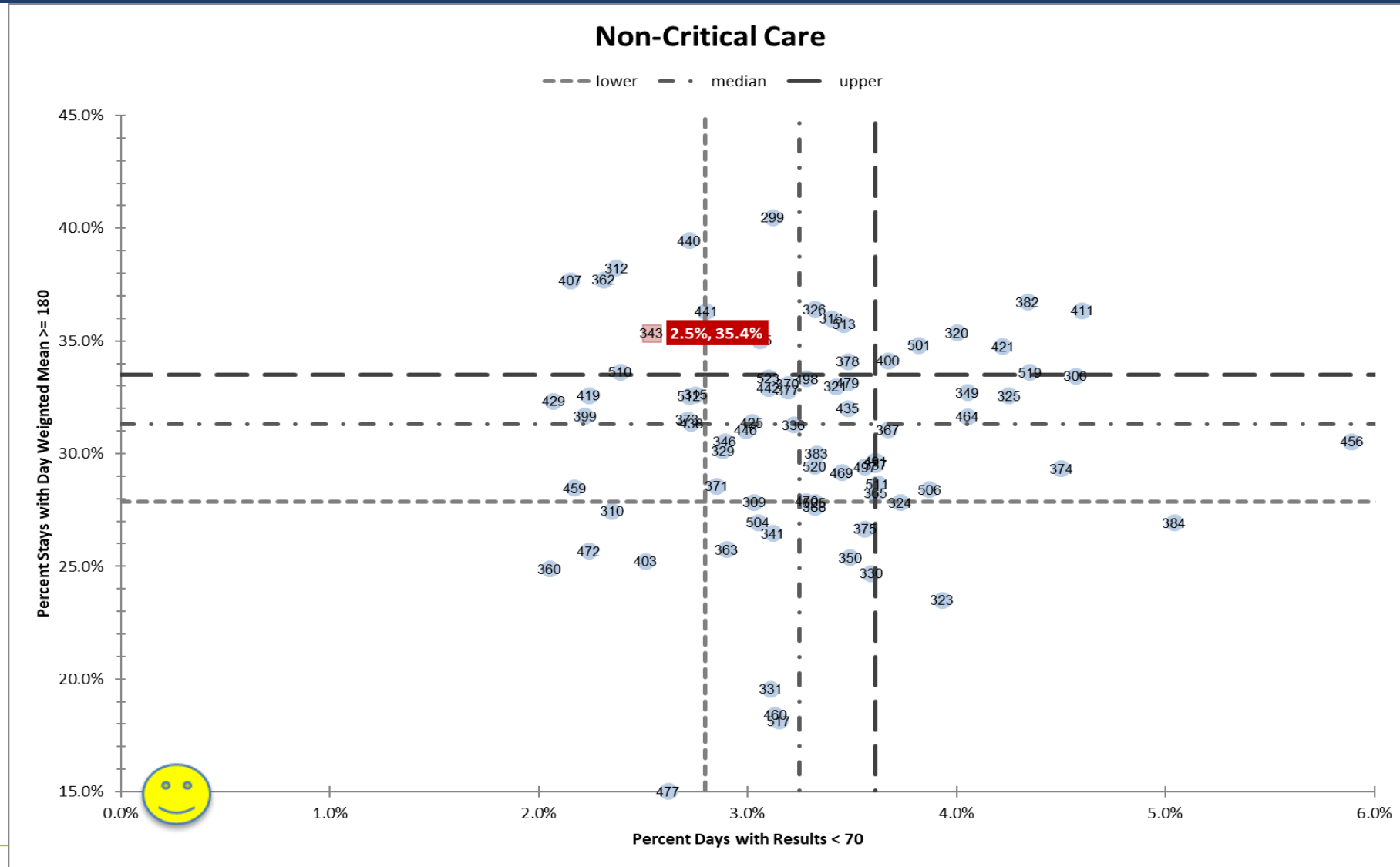
Director, Inpatient Glycemic Team

Clinical Professor of Internal Medicine,  
Endocrinology, Diabetes and metabolism

# Objectives

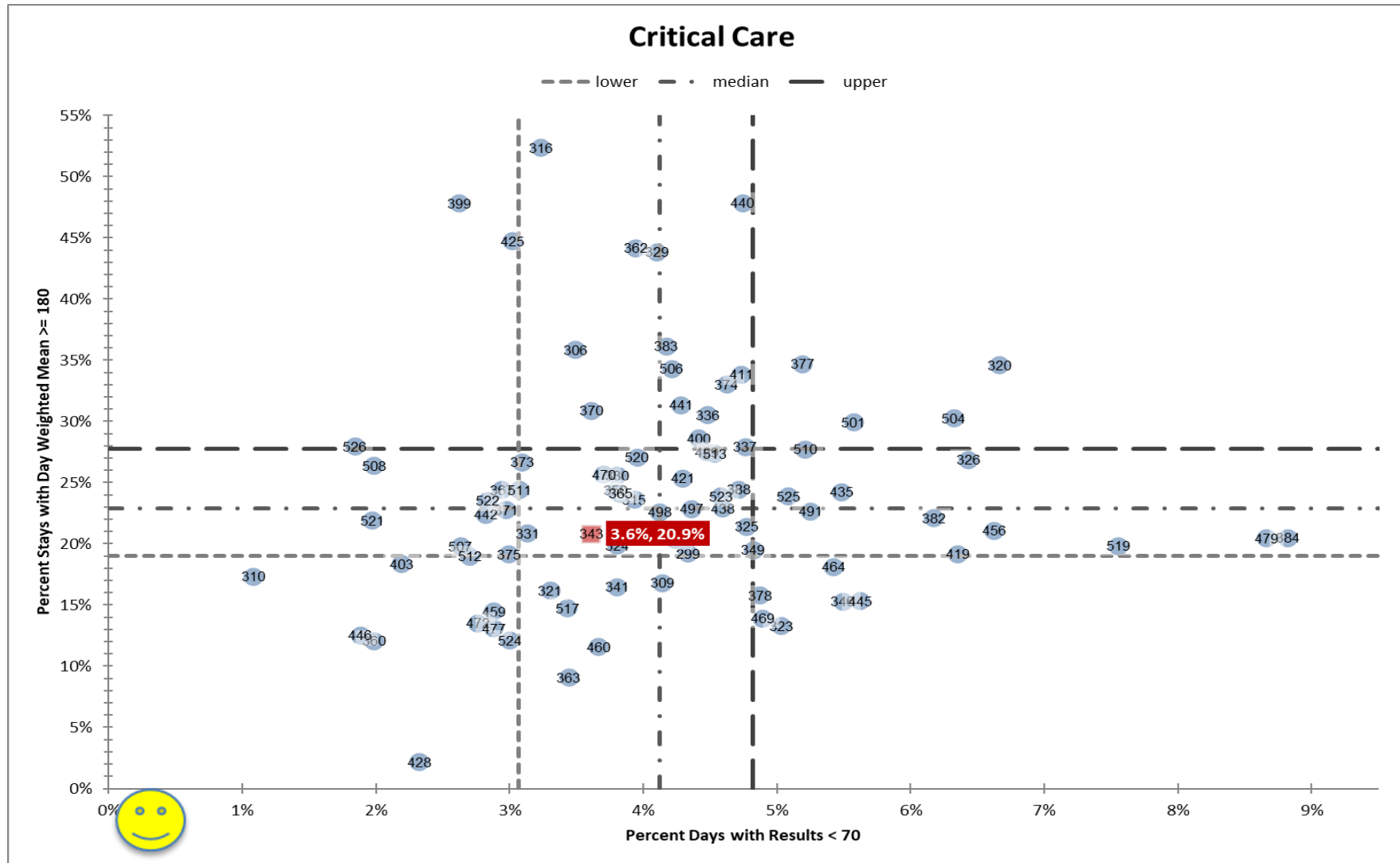
- Utilize SHM benchmarking (or new NHSN) standardized data collection to compare T1D care performance against national standards, identifying areas for improvement and sharing best practices
  - UCD SHM Fall Benchmarking
  - eCQMs/NHSN
- Diabetes Technology Integration
  - Track/incorporate diabetes technology, CGM, and insulin pumps (AID systems) to optimize glucose management during hospitalization and monitor the impact on patient outcomes.
- DKA Management
  - Monitor metrics such as time to resolution, rebound hyperglycemia, use of protocols (including SQ for mild to moderate DKA)
- Other Inpatient Data specifications
  - UCD versus outside patient, LOS, 30-day readmission rate to assess transition of care

# Glucometrics Non-Critical Care (Fall 2023)





# Glucometrics Critical Care (Fall 2023)



# Hyperglycemia

# Hypoglycemia

Glycemic Exposure, Glycemic Control, and Safety Parameters

		Patient - Stay	Patient - Day
Day weighted mean glucose	Hospital	154.37	152.4
	Top Decile	≤ 143.4	≤ 143.4
	Top Quartile	≤ 148.8	≤ 148.4
	Mean	154.5	154.0
	Median	153.0	152.935
	Range	123.19 - 189.09	123.19 - 195.79
Percent stays or days with uncontrolled hyperglycemia (mean glucose ≥ 180 mg/dL)	Hospital	22.2%	20.7%
	Top Decile	≤ 13.5%	≤ 15.2%
	Top Quartile	≤ 18.0%	≤ 18.7%
	Mean	23.5%	23.4%
	Median	22.1%	22.6%
Range	0.0% - 47.8%	0.0% - 58.6%	
Percent Readings per Stay in Range (71 - 179 mg/dL)	Hospital	75.1%	
	Top Decile	≥ 82.5%	
	Top Quartile	≥ 77.9%	
	Mean	74.2%	
	Median	74.7%	
Range	54.2% - 100.0%		
Percent of days with severe uncontrolled hyperglycemia (>299 mg/dL)	Hospital		5.7%
	Top Decile		≤ 4.0%
	Top Quartile		≤ 5.6%
	Mean		7.7%
	Median		7.0%
	Range		0.0% - 28.6%

Hypoglycemia Management Parameters

Percent of stays or days with hypoglycemia (<70 mg/dL)	Hospital	13.9%	3.7%	Time (minutes) between glucose < 70 mg/dL and next documented reading	Hospital	51.16
	Top Decile	≤ 08.9%	≤ 2.6%		Top Decile	≤ 29.8
	Top Quartile	≤ 11.2%	≤ 3.3%		Top Quartile	≤ 40.4
	Mean	14.2%	4.4%		Mean	53.3
	Median	13.9%	4.3%		Median	51.185
	Range	0.0% - 27.8%	0.0% - 8.3%		Range	0 - 175.48
Percent of stays or days with severe hypoglycemia (<54 mg/dL)	Hospital	4.3%	0.9%	Time (minutes) between glucose < 70 mg/dL and documented resolution of hypoglycemia	Hospital	58.34
	Top Decile	≤ 2.5%	≤ 0.6%		Top Decile	≤ 35.4
	Top Quartile	≤ 3.6%	≤ 0.9%		Top Quartile	≤ 45.4
	Mean	5.3%	1.4%		Mean	60.6
	Median	5.0%	1.3%		Median	58.375
	Range	0.0% - 15.6%	0.0% - 4.2%		Range	0 - 187.49
Percent of stays or days with severe hypoglycemia (<40 mg/dL)	Hospital	1.5%	0.3%	Percent of hypoglycemic events with next reading documented within 30 minutes	Hospital	39.8%
	Top Decile	≤ 0.0%	≤ 0.0%		Top Decile	≥ 66.9%
	Top Quartile	≤ 0.9%	≤ 0.2%		Top Quartile	≥ 56.1%
	Mean	1.9%	0.5%		Mean	43.4%
	Median	1.7%	0.4%		Median	41.8%
	Range	0.0% - 6.1%	0.0% - 1.7%		Range	0.0% - 100.0%

## Inpatient Quality Reporting Program: 2 New eCQM (electronic clinical quality metrics)

### Severe hypoglycemia:

- % patient stays BG < 40mg/dL within 24 hours of administration of insulin/anti-hyperglycemic agent

### Severe hyperglycemia:

- % hospital days with one or more BG > 300mg/dL, excluding the first 24-hour period after admission

# Nursing Hypoglycemia Dashboard

- To align with TJC recommendations, we are developing a nursing hypoglycemia dashboard to track rates of hypoglycemia, nursing management, and documentation.
  - This tool will help us identify and implement quality improvement measures with the goal of inpatient hypoglycemia prevention and reduction.

Glucose monitoring	
POC Glucose	
Hypoglycemia Protocol/Action Taken	
Possible Contributing Indicators Ident...	
FS schedule	

Hypoglycemia Protocol/Action Taken	
Possible Contributing Indicators Ident...	Notify MD
FS schedule	No Treatment Given

Medication IV Fluid	
Credit (mL)	4 oz / 15 gm oral carbohydrates given
Amount (mL)	8 oz / 30gm oral carbohydrates given
Concentration (number)	Glucose tablets given - see MAR
Concentration (xx / mL)	With IV: Dextrose given - see MAR
	Without IV: Glucagon given - see MAR
	Other (see comments)



Insulin IV Continuous Infusion - I	
Possible Contributing Indicators Ident...	
FS schedule	TF stopped

Medication IV Fluid	
Credit (mL)	NPO
Amount (mL)	decreased steroids
Concentration (number)	Insulin not adjusted
Concentration (xx / mL)	poor PO intake
	TPN changes

Insulin IV Continuous Infusion - I	
Dose (units/kg/hr)	disease process
Rate (mL/hr)	increased activity
Credit (mL)	emesis
Amount (mL)	

### Glucose Control Dashboard

Percent Blood Glucose <70 having Insulin - Documented Summary

Enter Discharge Date Range  
1/1/2021 - 11/21/2023

Census Service  
(Multiple values)

#### Census Departments by volume

Census Department	Is 70Less	within 30 Minutes	Pct Less 70 within 30 mins	Pct Documented
E3 ADULT ACUTE CARE	203.0	148.0	72.9%	33.5%
D6 CARDIOLOGY	200.0	136.0	68.0%	15.5%
E4 ACCELERATED ACCESS	185.0	127.0	68.6%	21.1%
E8 MEDICAL/SURGICAL S...	175.0	127.0	72.6%	13.7%
T4 ENT/INTERNAL MEDICI..	147.0	98.0	66.7%	49.7%
T8 TRANSPLANT/SPECIAL ..	145.0	85.0	58.6%	31.0%
D11 TRAUMA NURSING U..	131.0	88.0	67.2%	25.2%
D12 SURGICAL SPECIALTL..	124.0	71.0	57.3%	35.5%
D14 ORTHOPEDICS/TRAU..	112.0	87.0	77.7%	25.9%
E6 CARDIOTHORACIC	107.0	71.0	66.4%	17.8%
S1 ADULT ANNEX	103.0	65.0	63.1%	30.1%

#### Critical Care/Non-Critical Care by volume

Care Type	Pct Documented
Non-Critical Care	24.4%
Critical Care	12.2%

#### Percent Documented - Surgery/Peds Neonatal/General

Category	Percent Documented
General	23.4%
Peds	28.6%
Surgery	21.4%

#### Census Departments by volume

Census Department	Pct Documented
T4 ENT/INTERNAL MEDICI..	49.7%
D7 PEDIATRICS	38.0%
S3 ADULT ANNEX	35.7%
D12 SURGICAL SPECIALTIES	35.5%
E3 ADULT ACUTE CARE	33.5%
P4 PACU SURGE	33.3%
T8 TRANSPLANT/SPECIAL...	31.0%
S1 ADULT ANNEX	30.1%
R3 ADULT ANNEX	28.6%
E5 NEUROSCIENCES	26.7%
D14 ORTHOPEDICS/TRAU..	25.9%
D11 TRAUMA NURSING U..	25.2%
D10 PICU	25.0%
T6 ACUTE CARE UNIT	24.0%
E5 REHABILITATION	23.4%
T3 WOMEN'S HEALTH PAV..	22.2%
E4 ACCELERATED ACCESS	21.1%
T2 SURGICAL ICU	20.3%
P2 BURN ICU	19.0%
T6 MED SURG	18.9%
D8 MEDICAL/SURGICAL O..	17.8%
E6 CARDIOTHORACIC	17.8%
T7 MEDICAL SURGICAL IC..	15.7%
D6 CARDIOLOGY	15.5%
E8 MEDICAL/SURGICAL SP..	13.7%
EMERGENCY - PAVILION	13.0%
UT LIST FLOOR RENAL SUR..	13.3%
T7 MEDICAL SURGICAL IC..	12.3%
P3 CARDIOTHORACIC ICU	8.5%
T5 MEDICAL ICU	6.1%
P3 NEUROSURGICAL ICU	2.2%
CV SUPPORT SURGE	0.0%

# SHM Glycemic Overview (2/2022-2/2023) Critical Care Only

		University of California Davis			
		Patient-Stays		Patient-Days	
Glycemic Exposure	Number (count)	2509		13981	
	Mean (mg/dL)	151.07		149.3	
	Median (mg/dL)	143.39		141.5	
Glycemic Control	Percent Day Weighted Mean $\geq$ 180	19.01%		18.14%	
	Readings In Range (Stay-weighted)	77.57		(n/a)	
Safety	Count With Glucose < 40	44	1.75%	50	0.36%
	Count With Glucose < 54	126	5.02%	153	1.09%
	Count With Glucose < 70	386	15.38%	554	3.96%
	Count With Glucose $\geq$ 300	467	18.61%	718	5.14%
	Count Of Hypoglycemic Patients with a recurrent hypoglycemic day	106	27.46%	(n/a)	
		Totals			
Hypoglycemic Management	Count of Hypoglycemic events	742			
	Mean time between Glucose < 70 and next documented Glucose	51.21 min			
	Median time between Glucose < 70 and next documented Glucose	37.00 min			
	Mean time between Glucose < 70 and documented resolution of Hypoglycemia	60.41 min			
	Median time between Glucose < 70 and documented resolution of Hypoglycemia	42.00 min			
	Count Glucose < 70 and next Documented Glucose within 15 mins	30	4.04%		
	Count Glucose < 70 and next Documented Glucose within 30 mins	260	35.04%		

# What is a co-managed insulin protocol?

## Co-Managed Consult Note

ICU pharmacists will co-manage medication orders and lab tests associated with SQ insulin therapy and IV to SQ transition.

Implementation through an embedded order within insulin infusion order-sets.

Access restricted exclusively to ICU pharmacists.

User SmartPhrase – RXICUGLYCEMICNOTE [1609842]

Do not include PHI or patient-specific data in SmartPhrases.

Insert SmartText    Insert SmartList

**ICU Pharmacist Glycemic Co-Management Consult Note**

The glycemic control for @NAME@ has been reviewed.  
Primary etiology for dysglycemia: {rxglycemic:32203}  
A1c \*\*\* % @LABBRIEF(hgba1c)@  
The target BG goal for this critically ill patient is {glucosegoal:33571}

The last 24 hours of blood glucose (BG) values are listed here:  
@UCDLABRCNT24(PGLU:\*@

The current diet ordered for this patient is the following: {rxdiet:33572}  
The current nutritional intake (type, rate, goal): \*\*\*

The insulin regimen is being modified, taking into consideration the following additional factors: \*\*\*

The insulin {rxinsulinadj:33573} was updated as follows:  
Basal: \*\*\*

Nutritional: \*\*\*

Correctional Scale: \*\*\*

**Signed By:**  
\*\*\*

*\*\*Insulin adjustments are being made by ICU clinical pharmacists per P&T approved protocol for ICU primary patients between the hours of 0600 - 1530 on weekdays only. All other hours (evening/weekends/holidays), the primary team will be responsible for adjustments.*

# Adding Insulin Pumps to the EMR

**BX**

**Baby Boy Xxtestfmpplt**  
Male, 8yr, 5/10/2012  
MRN: 3351918  
Bed: TRAINING DEPARTMENT POOL ROOM  
Code: Not on file  
ACP Docs: None on file

Search

COVID-19: Unknown  
Care Team: No PCP  
Ins: SELF/SELF PAY  
Allergies: Not on File  
Implants: Insulin Pump, CGM

No vital signs recorded for this patient.

Currently Admi  
Demographics  
Specialty Com

Hyperspace - Production - IP PED ENDOCRINE SERVICE - DANNIKA P SCHAUER

Summary | Chart Review | Manage Orders | MAR | Flowsheets | Notes | Care Everywhere | Education | Navigators

Summary  
Kardex | Glycemic Management | Prof Exchange Report | Snapshot

Low Fall Risk

Orders to be Acknowledged  
(From admission, onward)

Acknowledge All

New Orders Placed on 10/11/21 at 1405

Ordered	Order	Start	End	Frequency	Ordering Provider
10/11/21 1405	Ketone Blood Test (NOVAMAX PLUS KETONE) Strip	10/11/21 0000	10/06/22 2359	1 strip, Miscell. (Med.Supl.;Non-Drugs), THREE TO FOUR TIMES DAILY OR AS DIRECTED, Routine	Rasmussen, Mary A, MD

New Orders Placed on 10/11/21 at 1404

Ordered	Order	Start	End	Frequency	Ordering Provider
10/11/21 1404	TRANSFER PATIENT (INPATIENT)	10/11/21 1400	10/11/21 1400	ONCE, Routine	Rasmussen, Mary

New Discontinued Orders

Discontinued	Order	Start	End	Frequency	Discontinuing Pro
10/11/21 1404	CARDIAC MONITORING	10/10/21 1200	EVERY 1 HOUR, Routine	Discontinue Reason: Cancelled, Status: Canceled	Rasmussen, Mary

Modified Orders

Ordered	Order	Start	End	Frequency	Ordering Provider
10/11/21 1404	PHYSICIAN CONTACT INFORMATION FOR PRIMARY SERVICE	10/11/21 1400	CONTINUOUS, Routine	Comments: - Intern: x7503 - 1st call	Rasmussen, Mary
10/11/21 1404	NEUROLOGICAL CHECKS	10/11/21 1400	EVERY 4 HOURS, Routine	Comments: while on insulin drip, Then pe...	Rasmussen, Mary

Update Collection Status

PRN Labs & POC Orders  
(From admission to next 72h)

Start	Order	Notify Me
Unscheduled	Magnesium (Mg) PRN (1 of 99999 released) Release References: Test Information: Question: Release to patient Answer: Immediate	10/10/21 1150
Unscheduled	POC GLUCOSE PRN PRN (0 of 99999 released) Release Comments: HYPOGLYCEMIA TREATMENT:	10/11/21 1024

Order Links

Active Orders | Signed & Held Orders

Medication Links

View-Only MAR | Due Medications

Physician Contact Information  
(From admission to next 24h)

Start	Order	
10/11/21 1400	PHYSICIAN CONTACT INFORMATION FOR PRIMARY SERVICE [285355239] CONTINUOUS Comments: - Intern: x7503 - 1st call - Senior: x0269 (if no response from intern)	10/11/21 1404

Respiratory Care  
(From admission to next)

Cardiology  
(From admission to next)

Right sidebar menu:  
Ambulatory Activities  
Assessments  
Beacon and Therapy Plans  
Charge Capture  
Code  
Medications  
MyChart Administration  
Print Patient Labels  
Radiation Tracking  
Results Review  
RN Discharge  
Screening Tools  
Segd Message  
Snapshot  
Telehealth  
Rarely Used  
Acknowledge Discontinue  
Acknowledge Section  
Acknowledge Modify  
Acknowledge Modify  
Collapse | Hide  
Order Management  
Order Set  
Patient List Membership  
PRINTAHS  
Questionnaires  
Quick Disclosure  
Reconcile Outside Information  
Reference  
Request Outside Records  
Review Flowsheets  
RN Admission  
TPN  
Work List

# MDCC Redesign of Glycemic Management in the ED

- Monthly design meetings
- Patient Flag Triage
  - Insulin pump
  - T1DM
  - BG >349 mg/dL
- Inservice Education
- Insulin Pump Workflows
- Ambulatory Follow-up

The screenshot displays a clinical interface with two order entry sections at the top, each with a checked checkbox:

- POC Glucose Q4H x3 (Diabetic Protocol)
- POC GLUCOSE Q4H  
Routine, EVERY 4 HOURS, First occurrence today at 1055, Last occurrence today at 1855, For 3 occurrences

Below the orders is a 'BestPractice Advisory - Doe, Stockbridge Wm' dialog box with a yellow header and a white body:

- Header:** This patient has high risk diabetes or a glucose over 350. Please order glucose checks every 4 hours when the patient is in the ED.
- Text:** Please ask the patient if they have an insulin pump and add implant below if not documented.
- Buttons:** **Order** (highlighted), Do Not Order, POC GLUCOSE Q4H X 3
- Link:** Implants Activity
- Dismiss Reason:** \_\_\_\_\_
- Dismiss Reason Buttons:** Defer for 30, Not Primary Team, Already ordered, Inappropriate alert
- Footer Buttons:** **Accept**, **Cancel**



# Optimizing Inpatient Diabetes Care

- Glucometrics for T1D (and T2D): focus on most impactful
  - Blood glucose targets
  - Frequency of hypoglycemic and hyperglycemic events
  - Glycemic variability
- Diabetes Technology Utilization: track usage of insulin pumps (AID systems), Continuous glucose monitors (CGM) during hospital stays to evaluate impact on glycemic control
- DKA: monitoring incidence and resolution metrics to assess effectiveness of management protocols
- LOS and Readmission Rates: Efficiency of protocols and effectiveness of transitional care strategies post-discharge (MVP)
- Specialist Involvement: Identifying patients seen by specialized diabetes care teams or endocrinologists
  - Impact of specialized care on outcomes

## Conclusion:

Tracking and analyzing these meaningful inpatient glucometrics and performance indicators are essential for optimizing type 1 diabetes care quality, ensuring patient safety, and driving continuous improvement initiatives.

# T2D Data Specifications Discussion

# Patients/Providers/Encounters

T1DX:(James, Nicole, Ann)

Clinic Collaborators: Lily Chao (CHLA), Kai Jones (WUSTL), Sean Delacey (Lurie), Shylaja Srinivasan (UCSF)

## Patients and Encounters

### Variables to be discussed from current Data Spec:

#### Patient File:

- **Gender:** Gender- (technically, sex) of the respective patient
- **Education Level:** Variables include no High school, High school Graduate, College Graduate, Post Graduate Degree, Unknown
- **Language:** English, Spanish, Chinese, Vietnamese, French, German, Arabic, Other, Unknown

#### Provider File:

- **Provider\_type:** Type of provider - Physician-, Options Include: Doctor of Osteopathic Medicine, Physician Assistant, Nurse Practitioner, Registered Nurse, Registered Dietician, Exercise Physiologist, Psychologist, Social Worker, Certified Diabetes Educator, Pharmacist, Optometrist, Podiatrist, Physical therapist, Occupational therapist, Other person

#### Encounter File:

- **Class: Outpatient-** An encounter during which the patient is not hospitalized overnight.
- **Status/Status Reason** - The status of the encounter record. Encounters should start with a status of planned and then diverge from there to their final status. Reason for the current status; the actor scopes the reason. For instance, an actor of patient and reason is illness would imply the patient was too sick while an actor of provider and reason of illness would imply the provider was sick. Likely exclusively used for canceled or rescheduled encounters.

### Proposed elements for T2D Data Spec:

#### Patient File :

- **Gender:** suggestion was made to separate gender to also include sexual identity
- **Education Level:** potentially add option for some high school and some college
- **Language:** add commonly used languages like korean, Armenian, Russian, Samoan, tagalog  
Language : Also allow for a distinction between patient and family members language spoken (psychosocial) patients vs caregivers preferred language.

#### Provider File:

- **Provider\_type:** include multiple specialties under physician (separate rows for each credential) and consider including specialty category.

#### Encounter File

- **Class: Outpatient:** suggestion to include outpatient specialties, as T2D patients typically see other specialists compared to T1D. List of potential specialists: Cardiology, pulm - for sleep apnea, / sleep medicine, Gastroenterology, Cardiothoracic surgery, vascular surgery, ophthalmology, mental health , psychiatry, social work / case management , primary, internal medicine, general medicine, family medicine
- **Status:** identify barriers related to status canceled (example transportation related)  
for **status\_reason** on current data spec.

# Observations/Conditions/Medications

**T1DX:(Emma Ospelt, Trevon Wright)**

**Clinic Collaborators: Talia Hitt (John Hopkins), Margaret Zupa (UPMC), Monica Bianco (Lurie), Carla Demeterco Berggren (Rady)**

## Observations, Conditions, Medications Variables from current Data Spec

### Observations

- **Social-history**
- **Vital-Signs**
- **Survey**
- **Interpretation**

### Conditions

- No changes made

### Medications

- **Drug\_Name**
- **Drug\_Class**

## Proposed elements to T2D Data Spec

### Observations:

- **Social-history**: Add Activity Level Per Day/Week.
- **Vital-sign**: Add Waist Circumference
- **Survey**: Add ASQ Suicide Screening, Substance Use, Beverage and Diet Intake, Sleep Screening, Second Hand Smoke, Medical Literacy, Screen Time, Vaping.
- Suggested Removal from dataspec included: Thyroperoxidase Ab [Units/volume] in Serum or Plasma LOINC 8099-4, Thyroglobulin Ab [Units/ volume] in Serum or Plasma, LOINC 8098-6, Tissue transglutaminase IgA Ab [Units/volume] in Serum LOINC 31017-7, Tissue transglutaminase IgG Ab [Units/volume] in Serum LOINC 32998-7 , IgA [Mass/volume] in Serum or Plasma 2458-8 , Endomysium Ab [Units/ volume] in Serum LOINC 13092-2 and Interpretation

### Conditions

- *No changes-already capturing all problems & diagnoses*

### Medications

- **Drug\_name** and **sub\_class** has been expanded to include many commonly prescribed drugs for T2D
- Additions to **drug\_classes** include: Sulfonylureas, Meglitinides, SGLT-2 inhibitors, Non-sulfonylureas (biguanides), Thiazolidinediones, Alpha-glucosidase inhibitors, GLP-1/GIP analogs, etc.
- Sample of added **drug\_names** includes: Glucotrol, Januvia, Jardiance, Ozempic, etc

# Diabetes

## Disease, Insulin, Monitoring, Glucose

**Clinic Collaborators: Alyssa Roberts (Seattle), Francesco Vendrame (Miami), Sonya Haw (Grady),  
Marina Basina (Stanford), Mark Clements (CMH)**



## Diabetes file

### Variables to be discussed from current Data Spec

- **Diabetes Disease** tab - **Vaccination dates, Exam dates, DKA info,** and **Insecurities**
- **Diabetes Insulin** tab - **Daily Injections, Insulin Regimen, Insulin Pump Delivery, Insulin Pump Company/Model, and Insulin Pen model**
- **Diabetes Monitoring** tab - **CGM Model**
- **Diabetes Glucose** tab - **BGM Model**

### Proposed Elements to T2D Dataspec

- **Diabetes Disease** tab - Suggestions to remove: **flu\_dt, dental\_exam\_dt, dka\_scrub\_bicarb, dka\_blood\_ph, transportation\_insecurity, housing\_insecurity.**
- **Diabetes Disease** tab - Updated language for **DKA** and **Severe Hypoglycemia** descriptions.
- **Diabetes Insulin** tab - Suggestions to add: **mixed\_basal\_bolus\_ins\_daily\_inj variable, inhaled insulin** for ins\_regimen, **manual mode** for ins\_pump\_delivery, addition of **CeQur** and **V-Go** for ins\_pump\_company. Addition of **CeQur Simplicity** and **VGo All-In-One** for Insulin\_pump\_Model and updates to the ins\_pen\_model list.
- **Diabetes Insulin** tab - Suggestions to remove: **predictive/low\_glucose\_suspend** and **close\_loop** from ins\_pump\_delivery.
- **Diabetes Monitoring** tab - Suggestions to add cgm\_model **G7** (for Dexcom), **Freestyle Libre 3** and **Freestyle Libre 3 Pro** (for Abbot)
- **Diabetes Glucose** tab - Updated list for **bgm\_model.**

# Patient Questionnaire Introduction