T1D Exchange

QI Collaborative Call

3/16/23

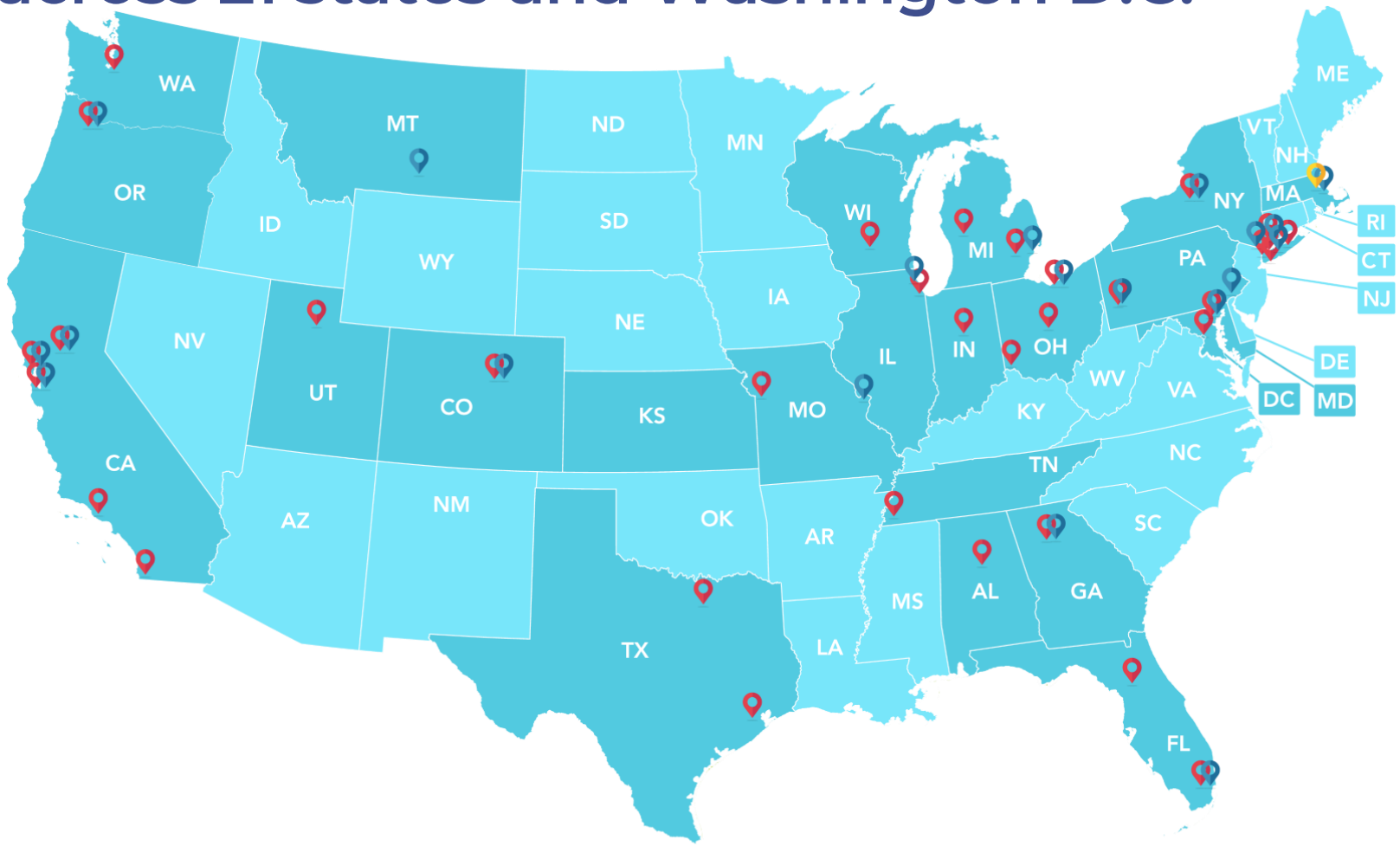
Welcome & introductions

Agenda

- Updates from the Collaborative
- Northwestern presentation: Dr. Grazia Aleppo
- Diabetes Eye Health and the Mary Tyler Moore Vision Initiative: Drs. Thomas Gardner and Jennifer Sun

T1D Exchange Updates

T1DX-QI network of 54 centers, caring for 85,000+ T1D patients across 21 states and Washington D.C.



Pediatric Adult T1D Exchange HQ

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

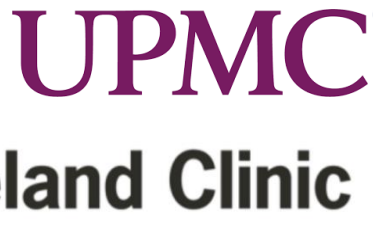
20 adult clinics – caring for 28,000 patients with T1D

20 participating adult clinics

Albert Einstein Shivani Agarwal MD MPH	Mount Sinai Carol Levy MD
Billings Clinic Haleigh James MD	NYU Langone Lauren Golden MD
Boston Medical Center Devin Steenkamp MD	Oregon Health & Science University Andrew Ahmann MD
Grady Memorial Hospital Sonya Haw MD	Stanford University Marina Basina MD
Northwestern Medicine Grazia Aleppo MD	SUNY Ruth Weinstock MD PhD
Penn Medicine Ilona Lorincz MD	UC Davis Prasanth Surampudi MD
Washington University Alexis McKee MD	UCSF Umesh Masharani MD
Barbara Davis Center Halis Akturk MD	UPMC Jason Ng MD
Cleveland Clinic, Pratibha Rao, MD, MPH & Mary Vouyiouklis, MD	University of Miami Francesco Vendrame, MD PhD
Johns Hopkins Nestoras Mathioudakis MD MHS	

T1D Exchange

34 pediatric clinics – caring for 54,000 patients with T1D



34 participating pediatric clinics

Barbara Davis Center Todd Alonso MD	Helen Devos Children's Donna Eng MD	Rady Children's Carla Demeterco Berggren MD PhD	University of Florida Laura Jacobsen, MD
Children's Mercy Hospital Mark Clements MD PhD	Indiana University Health Anna Neyman MD	Seattle Children's Hospital, Faisal Malik MD, MSHS and Alissa Roberts MD	UPMC Alissa Guarneri, MD, MBOE
Children's Hospital Los Angeles Brian Miyazaki, MD	Johns Hopkins, Risa Wolf MD	Stanford University Priya Prahalad MD	University of Miami Janine Sanchez MD
Cincinnati Children's Hospital Sarah Corathers MD	Le Bonheur Children's, U TN Grace Bazan MD	SUNY Roberto Izquierdo MD	UC Davis Stephanie Crossen MD & Caroline Schulmeister, MD
CHOA Kristina Cossen MD	Lurie Children's Naomi Fogel MD	Texas Children's, Daniel DeSalvo MD	UCSF Jenise Wong MD
Cleveland Clinic, Andrea Mucci MD MASc	Mott Children's Joyce Lee MD	NYU Langone: Accacha MD. Hassenfeld Children's Hospital at NYU Mary Pat Gallagher MD	University of Utah, Intermountain Healthcare Vandana Raman MD
Cohen Children's Medical Center, Northwell Health, Jennifer Sarhis MD & Allison Mekhoubad MD	Mount Sinai Robert Rapaport MD	Oregon Health & Science University Ines Guttmann-Bauman MD	University of Wisconsin, Madison Liz Mann MD
Cook Children's Paul Thornton MD & Susan Hsieh	Nationwide Children's Manu Kamboj MD	University of Alabama Mary Lauren Scott MD	Weill Cornell Alexis Feuer MD

T1D Exchange

New Publications

ClinicalDIABETES

Current Browse Info & About Podcasts Subsc

QUALITY IMPROVEMENT SUCCESS STORY | FEBRUARY 15 2023

Connecting From Afar: Implementation of Remote Data-Sharing for Patients With Type 1 Diabetes on Insulin Pump Therapy

Monica Grimaldi; Lisania Cardenas; Aleida Maria Saenz; Maddison Saalinger; Ori Odugbesan; Nicole Rioles; Osagie Ebekozien; Ernesto Bernal-Mizrachi; Francesco Vendrame

Check for updates

Corresponding author: Francesco Vendrame, fvendrame@med.miami.edu

Clin Diabetes cd220084

https://doi.org/10.2337/cd22-0084

Share Cite Get Permissions

Quality Improvement Success Stories are published by the American Diabetes Association in collaboration with the American College of Physicians and the National Diabetes Education Program. This series is intended to highlight best practices and strategies from programs and clinics that have successfully improved the quality of care for people with diabetes or related conditions. Each article in the series is reviewed and follows a standard format developed by the editors of *Clinical Diabetes*. The following article describes an effort to improve the remote collection of insulin pump data in an academic center in South Florida.

New Publications

Psychosocial Aspects (J Pierce, Section Editor) | Published: 20 December 2022

Implementation of Psychosocial Screening into Diabetes Clinics: Experience from the Type 1 Diabetes Exchange Quality Improvement Network

Sarah Corathers, Desireé N. Williford, Jessica Kichler, Laura Smith, Emma Ospelt, Saketh Rompicherla, Alissa Roberts, Priya Prahalad, Marina Basina, Cynthia Muñoz & Osagie Ebekozien

Current Diabetes Reports (2022) | Cite this article

A Correction to this article was published on 28 January 2023

This article has been updated

Abstract

ATTD 2023 Accepted Abstracts

1. **Practical Strategies to Increase Continuous Glucose Monitors (CGM) Use for Underserved Patients: Results from the T1D Exchange Multicenter Study**

   Ori Odugbesan, Ann Mungmode, Nicole Rioles, Don Buckingham, Grace Nelson, Shivani Agarwal, Amy Grant, Trevon Wright, Emilie Hess, Osagie Ebekozien

2. **Multi-Center Provider Perspective on Barriers to Smart Insulin Pen**

   Ori Odugbesan, Ann Mungmode, Trevon Wright, Grace Nelson Grazia Aleppo, Alyson Meyers, Grenye O'Malley, Alexis McKee, Priya Prahalad, Sandra Tsai, Brian Miyazaki, Osagie Ebekozien

3. **Patient reported Diabetic Ketoacidosis among Hybrid Close Loop System (HCLS) users: Real world evidence form a multi-center study for people with Type 1 Diabetes**

   Osagie Ebekozien, Carla Demeterco-Berggren, Mark Clements, Shideh Majidi, Faisal Malik, Susan Hsieh, Sonya Haw, Manmohan Kamboj, Nudrat Noor

4. **Hemoglobin A1c levels among people with Type 1 Diabetes switching from self-monitoring of blood glucose to real-time CGM use: A retrospective longitudinal study**

   Nudrat Noor, Elizabeth Mann, Daniel J DeSalvo, Janine Sanchez, Carol Levy, Halis K Akturk, Todd Alonso, Osagie Ebekozien

5. **Distribution of Continuous Glucose Monitoring (CGM) derived glycemic outcomes among real-time CGM vs. isCGM users in a large multi-center EMR database for people with T1D**

   Nudrat Noor, Osagie Ebekozien, Francesco Vendrame, Laura Jacobsen, Ruth S. Weinstock, Mary Pat Gallagher, Sarah Corathers, Siham Accacha, Priya Prahalad, Robert Rapaport

6. ***Patient reported Severe Hypoglycemia among Hybrid Closed Loop System (HCLS) users: Real world evidence from a multi-center study for people with Type 1 Diabetes**

   Osagie Ebekozien, Nudrat Noor, Joyce Lee, Roberto Izquierdo, Lauren Golden, Brian Miyazaki, Meredith Wilkes, Mary L Scott, Allison Mekhoubad, Janine Sanchez

T1D Exchange

ATTD 2023 Press Highlights

February 24, 2023 | 1 min read SAVE

Hybrid closed-loop systems present lower risk for severe hypoglycemia in type 1 diabetes

ADD TOPIC TO EMAIL ALERTS

People with type 1 diabetes using a hybrid closed-loop insulin delivery system are less likely to experience severe hypoglycemia than nonusers, according to study data.

Osagie Ebekozein

Nudrat Noor

"Our real-world observational study demonstrates the strong association of the use of hybrid closed-loop systems and reduced odds of severe hypoglycemia," **Osagie Ebekozien, MD, MPH,** chief medical officer at T1D Exchange, and **Nudrat Noor, PhD,** associate

Endocrinetoday

By Michael Monostra

Fact checked by Richard Smith

+ Source/Disclosures

February 23, 2023 | 2 min read SAVE

Quality improvement interventions reduce disparities with CGM use in type 1 diabetes

ADD TOPIC TO EMAIL ALERTS

Interventions that incorporate shared decision-making, reduce racial-ethnic bias and provide language-specific instruction can reduce disparities with continuous glucose monitoring use in type 1 diabetes, according to two presenters.

In findings presented at the International Conference on Advanced Technologies & Treatments for Diabetes, five clinics participating in the T1D Exchange Quality Improvement Collaborative were able to boost CGM use among patients through a variety of interventions. The largest increases in CGM use were observed among non-Hispanic Black and Hispanic people with type 1 diabetes.

ADA 2023 Accepted Abstracts

Invited Oral Presentations

- ADA Standards of Care and Quality Improvement
- What Can Diabetes Quality Teams Learn from Engineers and Designers?

Oral Presentation

CGM initiation within 6 months of T1D diagnosis associated with lower HbA1c at 3 years (Received President Award)

Poster Presentations

1. Health Care Transition Practices in the T1D Exchange Quality Improvement Collaborative
2. Reproductive health counseling in the T1D Exchange Quality Improvement Collaborative (T1DX-QI)
3. 2022 State of Type 1 Diabetes in the US: Real World T1D Exchange Multicenter Data from over 60,000 people
4. Incorporating Shared Decision Making (SDM) to improve adoption of Connected Insulin Pens (CIP)
5. Current Practices in Racial Equity—Findings from the T1D Exchange Quality Improvement Collaborative
6. Multi-Center Quality Improvement Project: Increasing Social Determinants of Health (SDOH) Screening Across Six Diabetes Centers in the United States
7. Provider Perceptions of Barriers and Benefits to T1D Autoantibody Testing Among Patients and Relatives
8. Food Insecurity in People with Type 1 Diabetes and Glycemic Outcomes
9. Qualitative Study: Provider Awareness and Attitudes towards Type 1 Diabetes Antibody Screening
10. LGBTQ+ Supportive and Inclusive Care Practices in the T1D Exchange Quality Improvement Collaborative
11. Advancing Quality Improvement Culture among 27 Pediatric and Adult Diabetes Centers
12. Walking the Talk—Improving Use of the T1D Exchange Quality Improvement Portal Using QI Methodology

Center Contribution Metrics

- 15 presentations
- 51 T1DX-QI centers represented
- 21 centers with at least 2 authors represented
- 24 centers represented at least twice
- 84 unique authors from T1DX-QI centers

T1D Exchange

Endocrinology and Metabolism Clinics of North America Special Issue

Number	Proposed Title	First Author	First Author Affiliation	Senior Author	Senior Author Affiliation
1	Type 1 Diabetes Population Health Improvement	Holly Hardison, BS	T1D Exchange	Osagie Ebekozien MD	T1D Exchange
2	Type 1 Diabetes Screening and Diagnosis	Patricia Gomez, MD	University of Miami	Janine Sanchez, MD	University of Miami
3	Young Adults with Type 1 Diabetes	Priyanka Mathias, MD	Albert Einstein College of Medicine	Shivani Agarwal, MD,MPH	Albert Einstein College of Medicine
4	Optimizing Glycemic Outcomes for Children with Type 1 Diabetes	Vickie Wu, MD	Icahn School of Medicine at Mt Sinai	Meredith Wilkes MD	Icahn School of Medicine at Mt Sinai
5	Transitions of Care from Pediatrics to Adults	Faisal Malik, MD, MSHS	Seattle Children's	Kathryn Weaver, MD	Seattle Children's Hospital
6	Optimizing Glycemic Targets for Adults with Type 1 Diabetes	Devin Steenkamp, MD	Boston Medical Center	Howard Wolpert, MD	Boston Medical Center
7	Access to Care for Type 1 Diabetes	Anna Cymbaluk, MD	Rady Children's Hospital	Carla Demeterco -Berggren, MD, PhD	Rady Children's Hospital
8	Emerging Technologies and Therapeutics	Halis K Akturk, MD	Barbara Davis Center	Alexis McKee, MD	Washington University at St Louis
9	Social Determinants of Health (SDOH) in Type 1 Diabetes	Nana Hawa Yayah -Jones, MD	Cincinnati Children's	Osagie Ebekozien	T1D Exchange
10	Psychosocial care in T1D	Jill Weissberg -Benchell PhD	Lurie Children's	Cynthia Munoz. MD	CHLA
11	Acute and Chronic Adverse Outcomes of Type 1 Diabetes	Rachel Longendyke, MD	Children's National	Shideh Majidi, MD	Children's National Hospital
12	Type 1 Diabetes and Cardiovascular Health	Maria Pesantez, MD	University of Miami Miller School of Medicine	Francesco Vendrame, MD	University of Miami Miller School of Medicine
13	Patient/Parent Engagement in Type 1 Diabetes Research	Risa Wolf MD	Johns Hopkins University	Nicole Rioles, MA	T1D Exchange

Learning Session DATE CHANGE to November 14-15

November Learning Session dates will now be Tuesday November 14th and Wednesday November 15th (instead of Mon-Tues.)

New calendar invites will be sent today to hold your calendar.

Please update your time off request accordingly.

ADA Scientific Sessions Collaborative Breakfast

- We are excited to partner with Rady Children's Hospital, who will be hosting the T1DX-QI faculty breakfast + clinic tour
- Sunday June 25th from 6:30-8am
- The clinic is 15-20 minutes from the conference center
- If you plan on attending ADA and would like to attend the breakfast, please fill out this short survey RSVP.

Rady Children's

Know Diabetes By Heart (KDBH)

- T1DX-QI is proud to announce a new collaboration with the American Diabetes Association to expand quality improvement interventions that support T2D cardiovascular health. ADA's Diabetes INSIDE's Know Diabetes by Heart (KDBH) initiative's goal is improvement in care delivery with outcome targets of improved glycemic management, improved blood pressure and lipid management, appropriate statin use, improved kidney health screening, and appropriate prescribing of cardio and cardiorenal protective therapies
- T1DX-QI will be inviting eight clinical centers to participate in this one-year project with an aim to build evidence of success for future funding/expansion.
- Priority will go to adult practices in the first year. Opportunities for more pediatric centers to join will come after 2024.

Eight Equity Centers

ADULT

- Grady Memorial
- Wayne State
- Boston Medical
- Barbara Davis Center
- University of Miami
- Penn Medicine

PEDIATRIC

- Cook Children’s
- Children's Mercy Hospital

T1D Exchange

Equity Training- open to all!

- We are hosting a virtual T1DX-QI Equity Training this month.
- We encourage you to join and share this training opportunity with your colleagues.
- Training schedule:
  - Wednesday, March 22nd 1-3pm (EST) OR
  - Friday, March 24th 11am-1pm (EST).
- Please register for the Wednesday meeting or Friday meeting, so we can plan accordingly, before 3/20/2023.

Clinical Leadership Strategy Meeting

Monday May 15th from 11 am – 4pm EST

AGENDA

- Update on T1DX-QI EMR Data
- Review of Quality Measures
- Committees Report Out
- Research Interest Working Groups

2023-2025 reporting

- Q4 2022 data reporting is now overdue. Use the previous Smartsheet table definitions for numerators and denominators.

- Reporting for the 2023-2025 period began 1/1/2023. Jan-Feb 2023 data is now due.

- You can find Reporting Measures on the "New Clinics" page of the T1DX-QI member website.

- Questions about reporting or the Smartsheet access? Ask your QI coach and/or email qi@t1dexchange.org

- Reminder that we are the Data Spec is using version 3.0. Please ensure that your IT is working with the current Spec.

Invoicing Due

T1D Exchange is closing its fiscal books for calendar year 2022 on March 31, 2023.

For your Statements of Work with T1D Exchange, all invoices for deliverables completed on or before December 31, 2022, must be invoiced on or before 5pm EST March 31, 2023.

You can invoice for Q1 2023 now.

- Work with your finance teams to ensure that we receive your invoices. We cannot process past due invoices for calendar year 2022 after 3/31/2023.
- Ensure that your organization has executed the SOW encompassing the deliverables you are invoicing for with T1D Exchange. We cannot pay invoices for work deliverables from unsigned SOWs.
- Ensure that your organization has executed your current SOW if it is new in 2023.

Clinical Presentation:

CGM Data Interpretation:

the EKG of Diabetes Management

Grazia Aleppo, MD, FACE, FACP
Professor of Medicine
Feinberg School of Medicine
Northwestern University, Chicago

NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

Disclosures

- Consultant
  - Dexcom, Eli-Lilly, Insulet, Medscape

- Research support
  - Emmes
  - Fractyl Health
  - Insulet
  - Tandem
  - Welldoc

FEINBERG
SCHOOL OF MEDICINE

A Stepped Approach To CGM Interpretation: Simple, Fast, Efficient!

NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

Anatomy of a Device Report

- Useful reports provide multiple points of information on various levels

- Multilevel method:
  - High level
  - More detailed
  - Most detailed

- Most useful reports:
  - Overview of the previous 2-4 weeks with CGM glucometrics
  - Weekly review
  - Daily review to better understand specific challenges

Stepped Approach to CGM Interpretation

As Easy as 1,2,3!

1) What?
2) Where?
3) How?

Stepped Approach To CGM Interpretation

	Question	Where to find the answer
Before starting	Is there enough data to be analyzed?	% time CGM is active
Step 1 →	**What** is the problem?	CGM metrics
Step 2 →	**Where** is the problem?	Ambulatory Glucose Profile
Step 3 →	**How** to adjust therapy?	Daily glucose data

Szmuilowicz ED. and Aleppo G. Postgraduate Med, 2022

CGM Glucometrics to Review

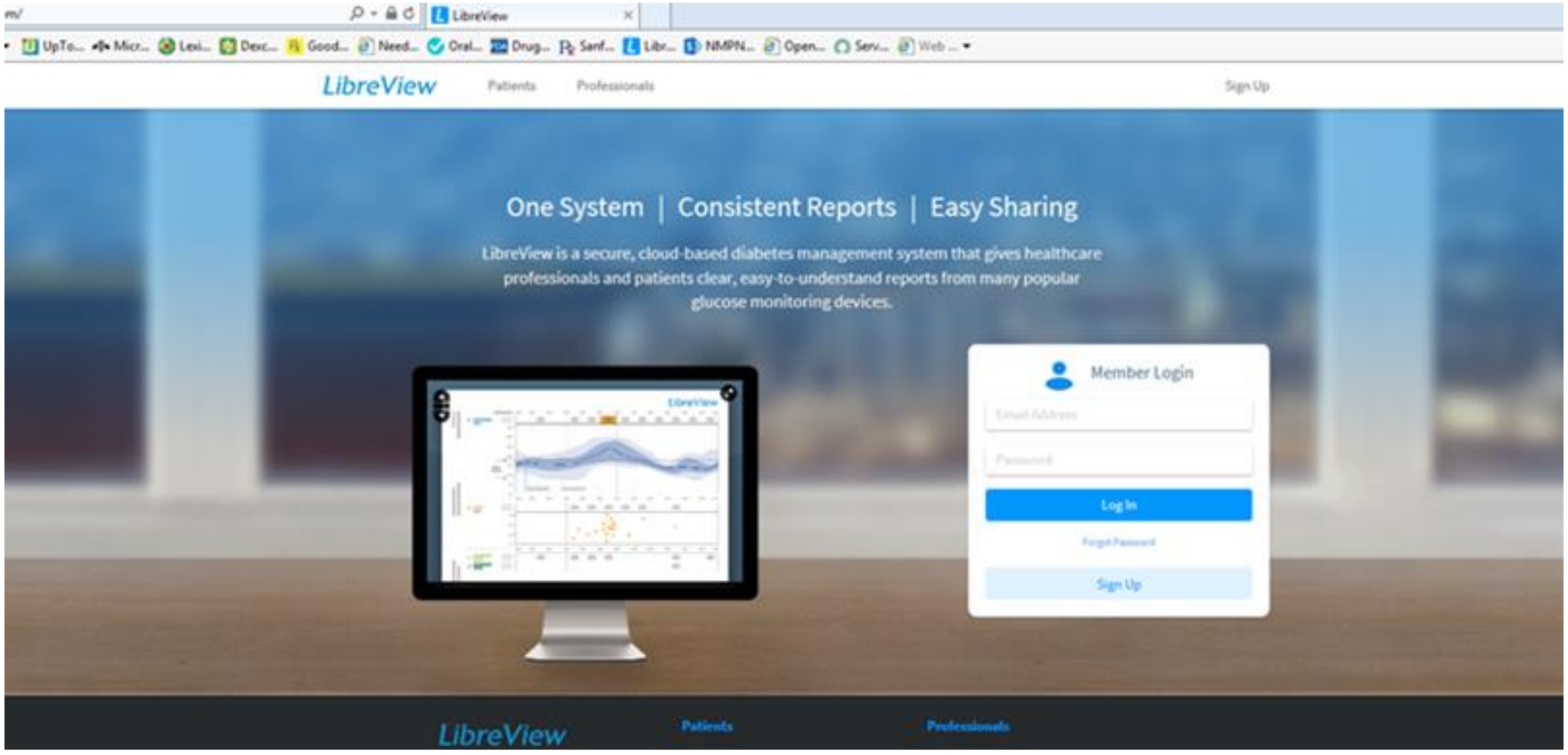
CGM metric	Target for adults with type 1 or 2 DM†
Time above range (TAR): % of readings and time >250 mg/dL	<5% (<1 h, 12 min)
Time above range (TAR): % of readings and time >180 mg/dL	<25% (<6 h)
Time in range (TIR): % of readings and time 70–180 mg/dL	>70% (>16 h, 48 min)
Time below range (TBR): % of readings and time <70 mg/dL	<4% (<1 h)
Time below range (TBR): % of readings and time <54 mg/dL	<1% (<15 min)
Glycemic variability (%CV) target	≤36%

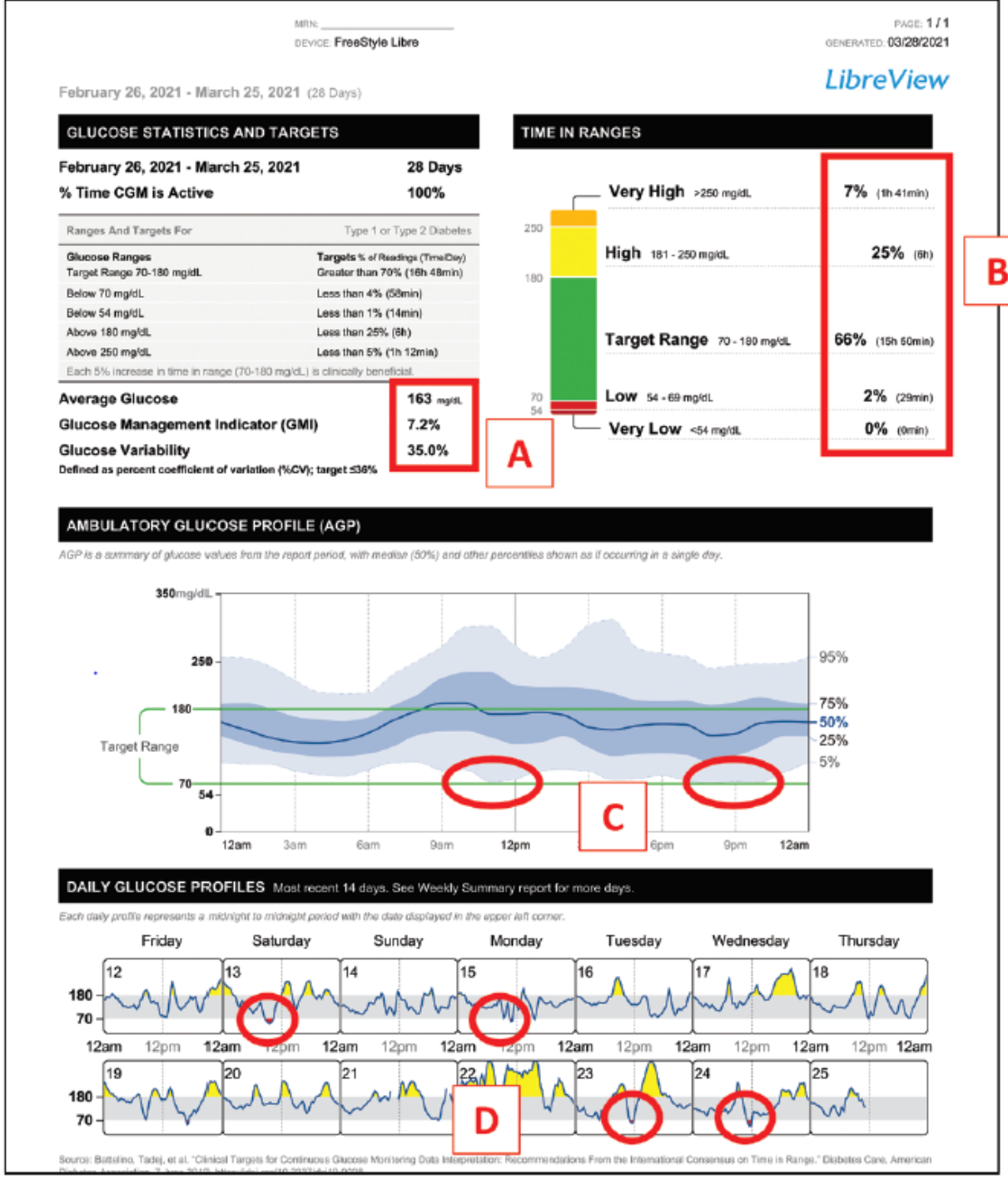
NORTHWESTERN UNIVERSITY FEINBERG SCHOOL OF MEDICINE

Szmuilowicz ED and Aleppo G. Postgraduate Med, 2022

FreeStyle Libre® Reports

www.libreview.com





The Ambulatory Glucose Profile (AGP): recommended standardized report for CGM interpretation

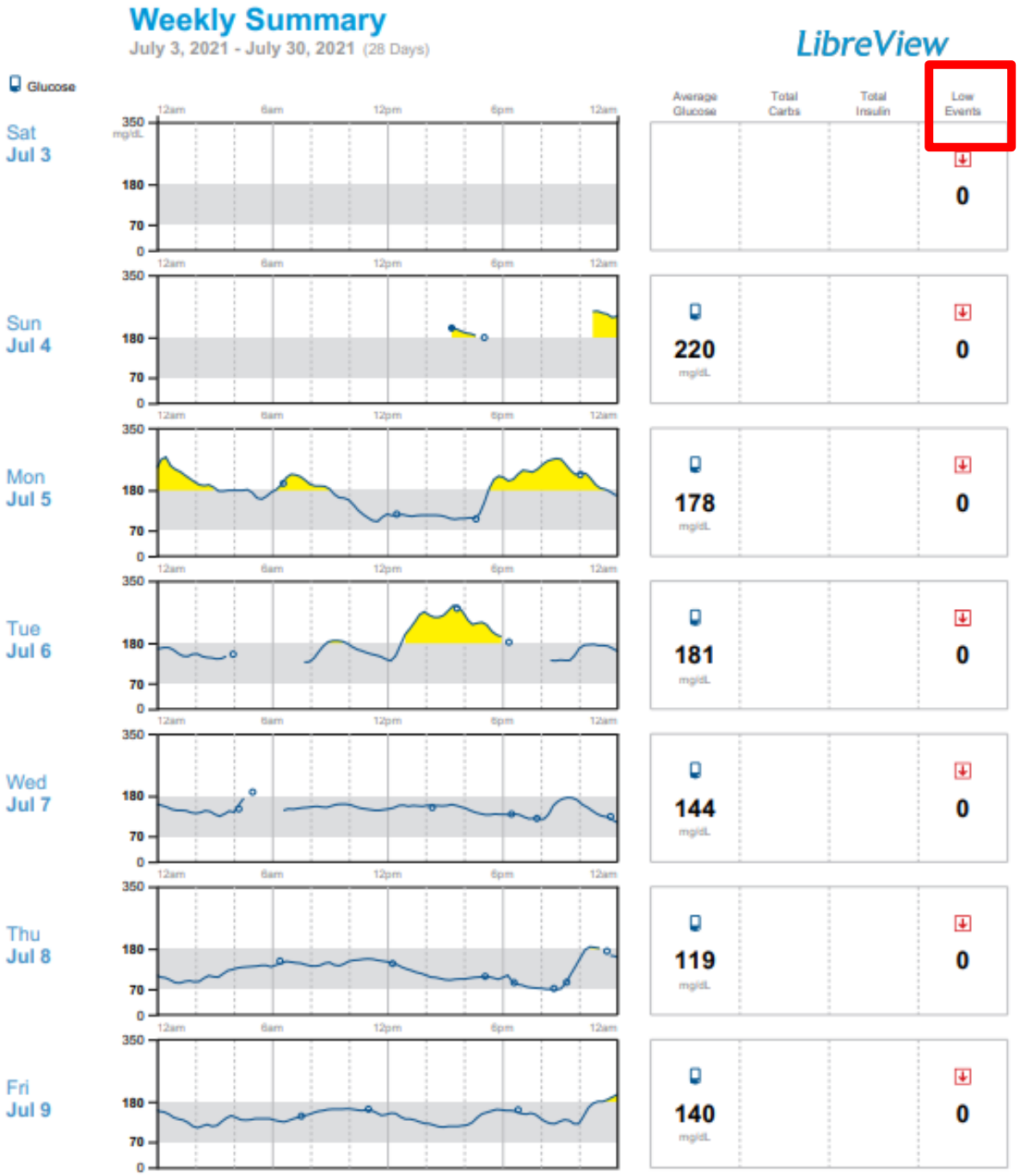
This report has several distinct sections:

- Data sufficiency information
- Glucose average, and Glucose Management Indicator, Glycemic Variability
- Time in ranges values
- 2 weeks of overlapping data in one 24-hours screen
- Daily glucose profiles

Wysham C and Kruger D. JES, 2021

FreeStyle Libre® Reports

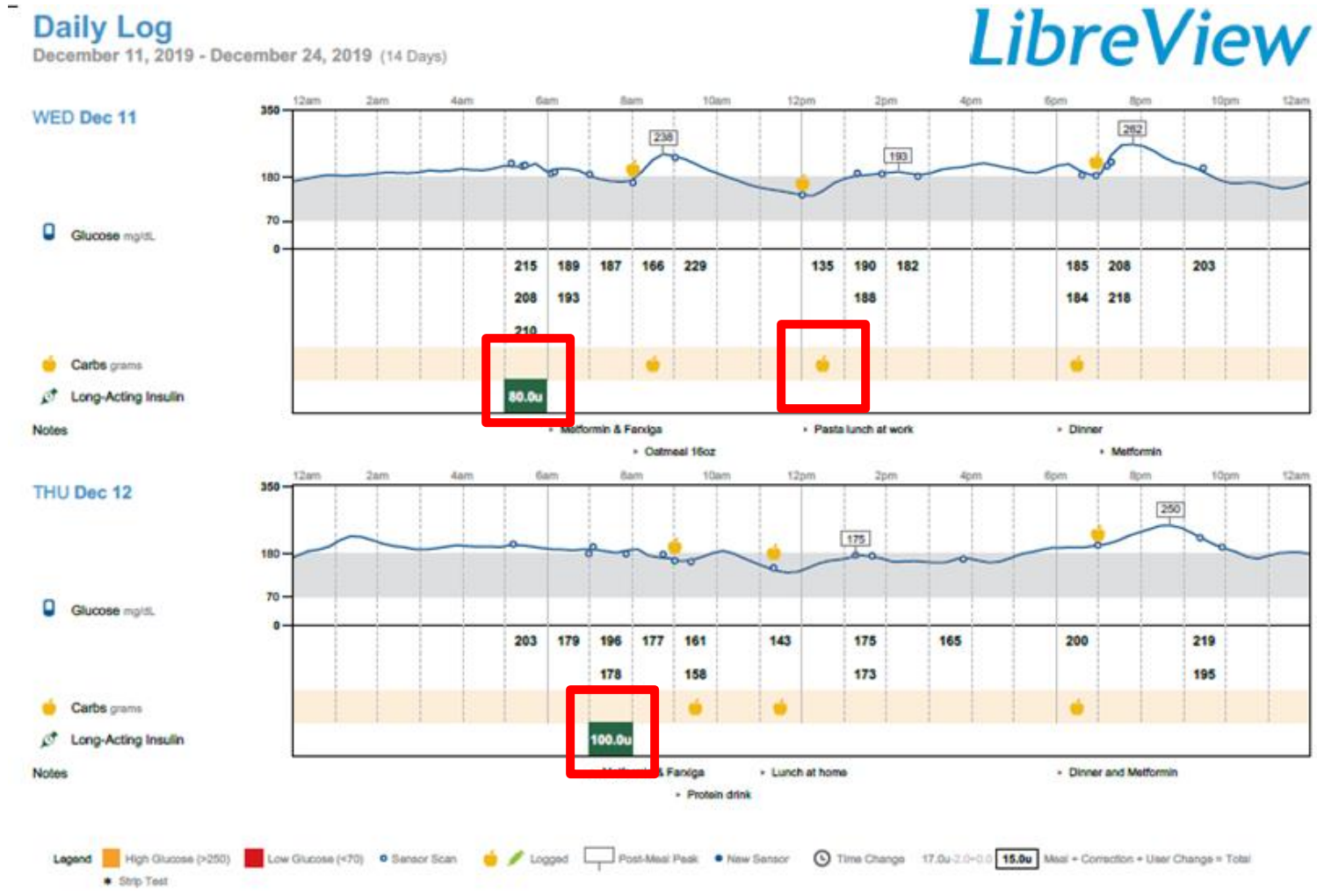
- One page per week
- Sensor Readings
- Sensor Glucose average
- Hypoglycemia events



NORTHWESTERN UNIVERSITY
FEINBERG SCHOOL OF MEDICINE

FreeStyle Libre® Reports – Daily Log

- Several pages long
- Glucose readings/scans
- Patient input (insulin, carbs)



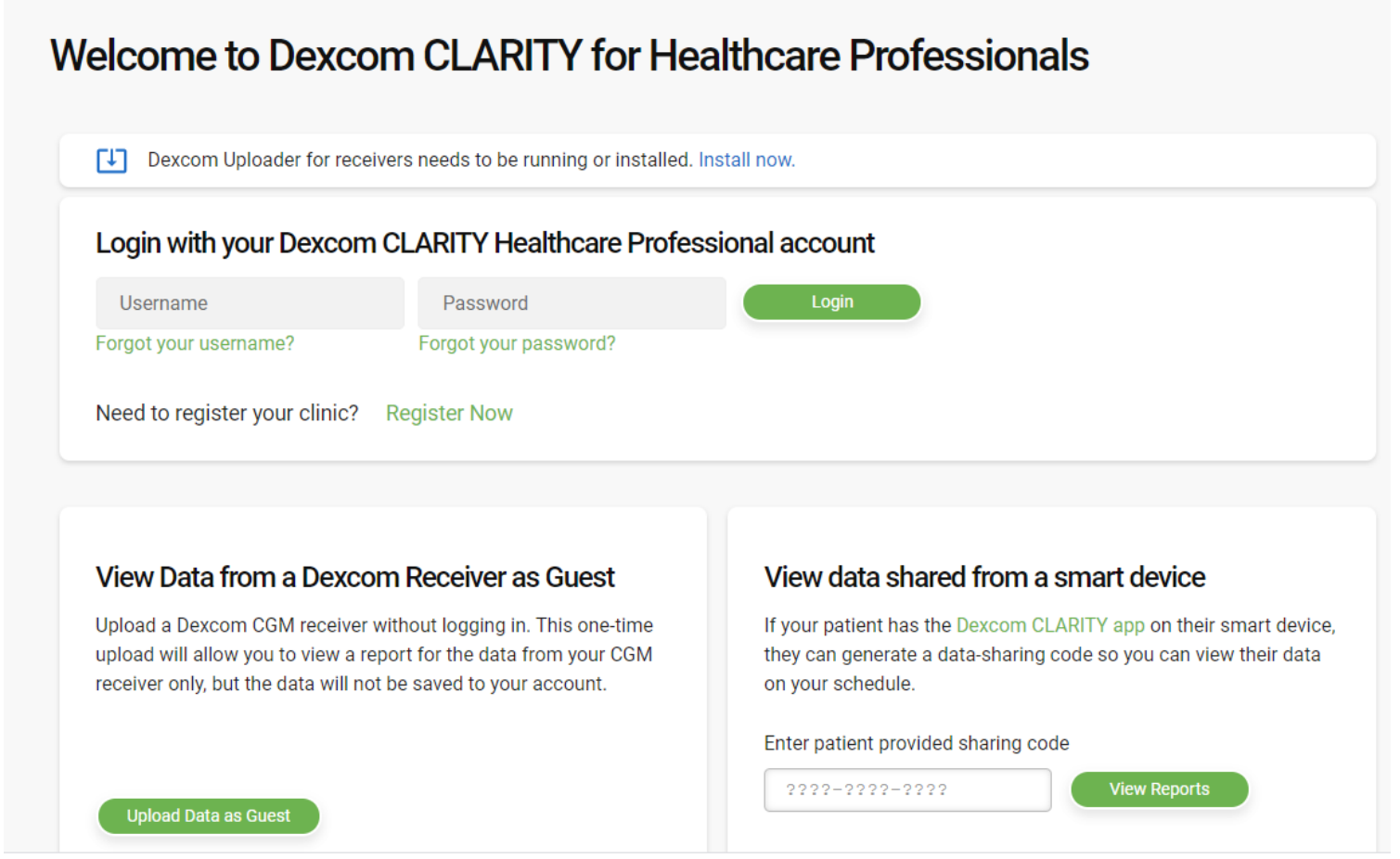
NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

Dexcom™ Reports

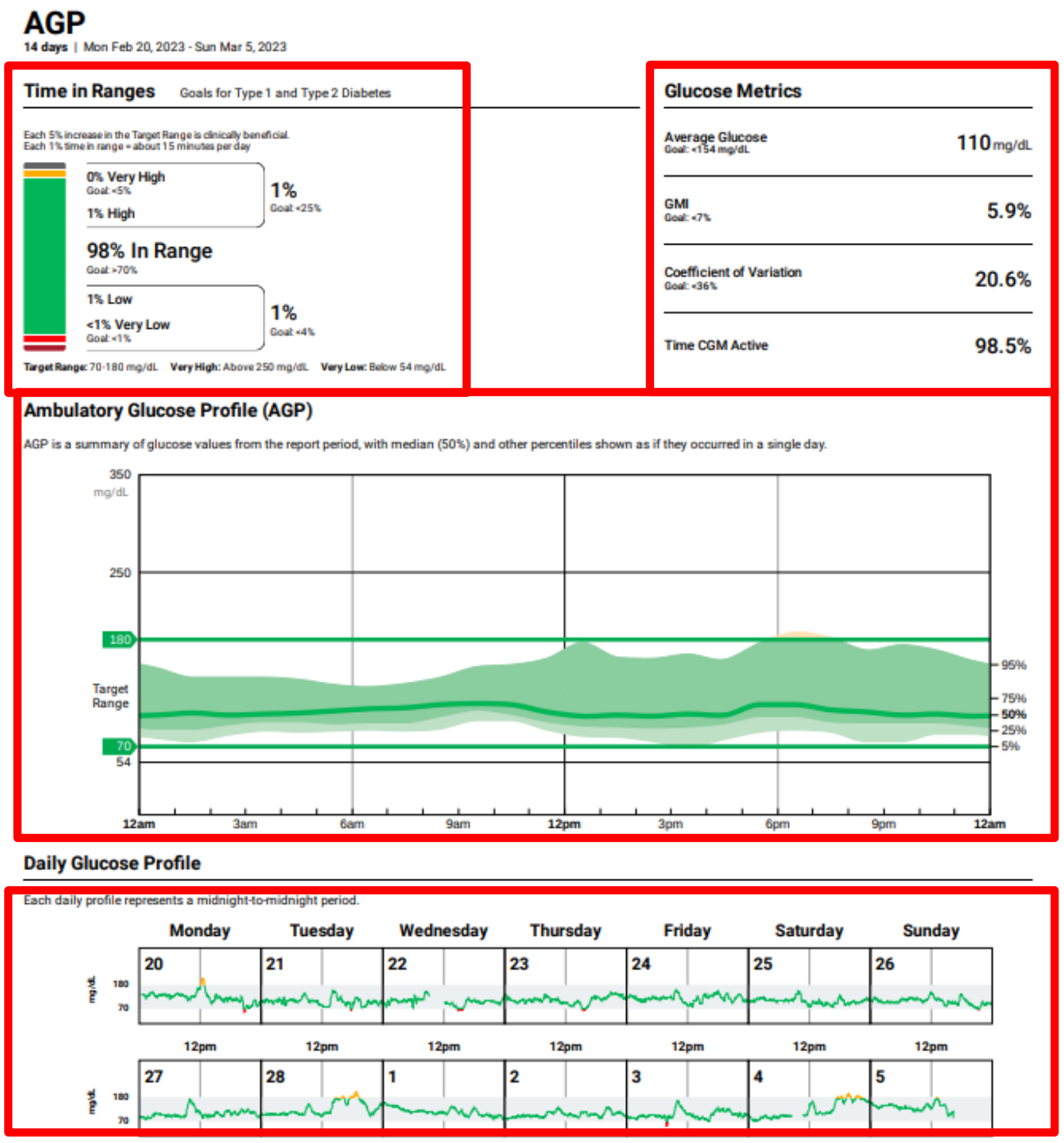
clarity.dexcom.com

Automatically uploads patient information if they accept the clinic's invitation

Register your clinic for free at **clarity.dexcom.com/professional**



NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

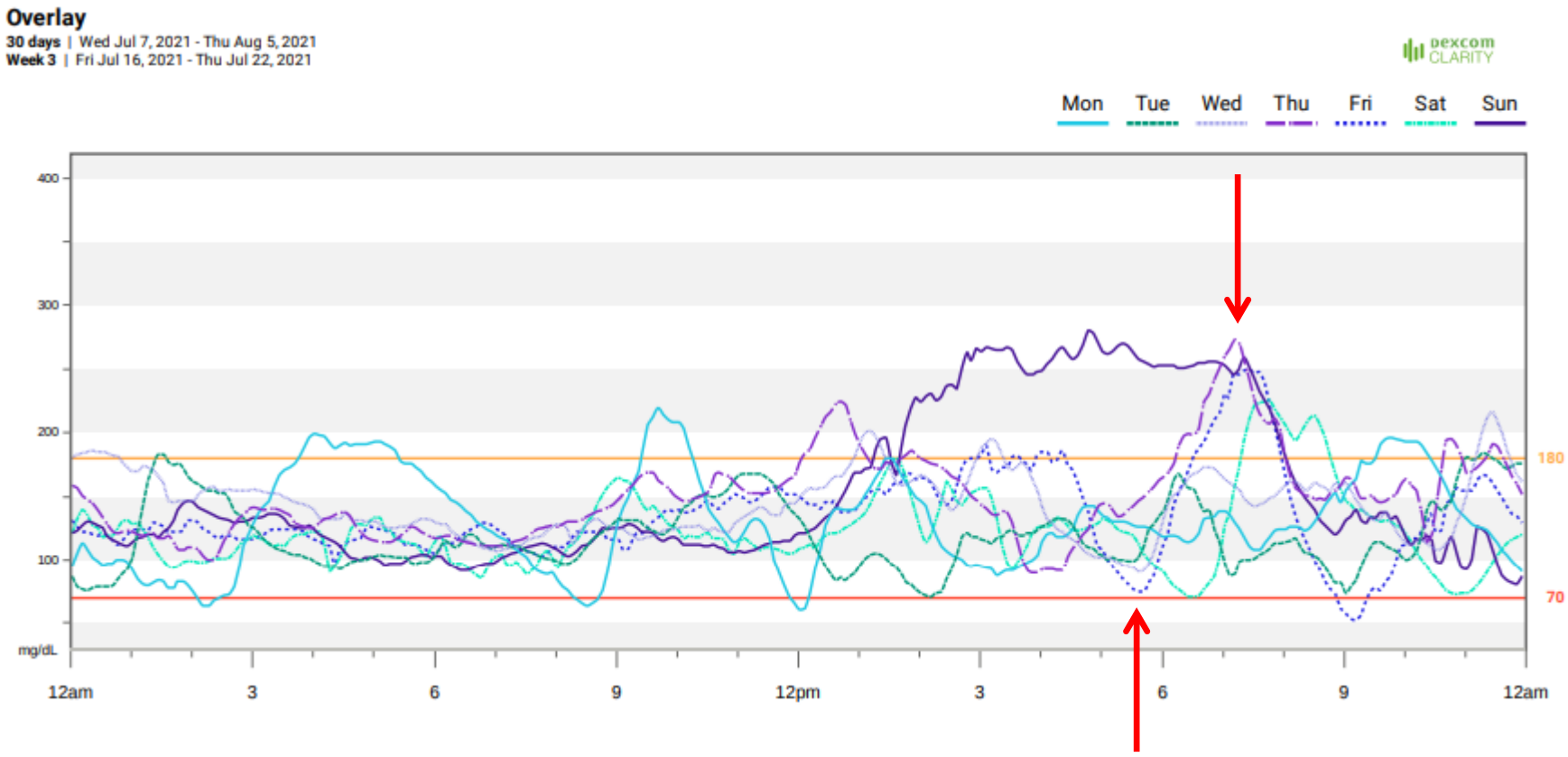


The Ambulatory Glucose Profile (AGP):the recommended standardized report for retrospective CGM interpretation

This report has several distinct section:

- Data sufficiency information
- Glucose average, Glycemic Variability
- Time in ranges values
- 2 weeks of overlapping data in one 24-hours screen
- Daily glucose profiles

Dexcom™ Reports – Overlay



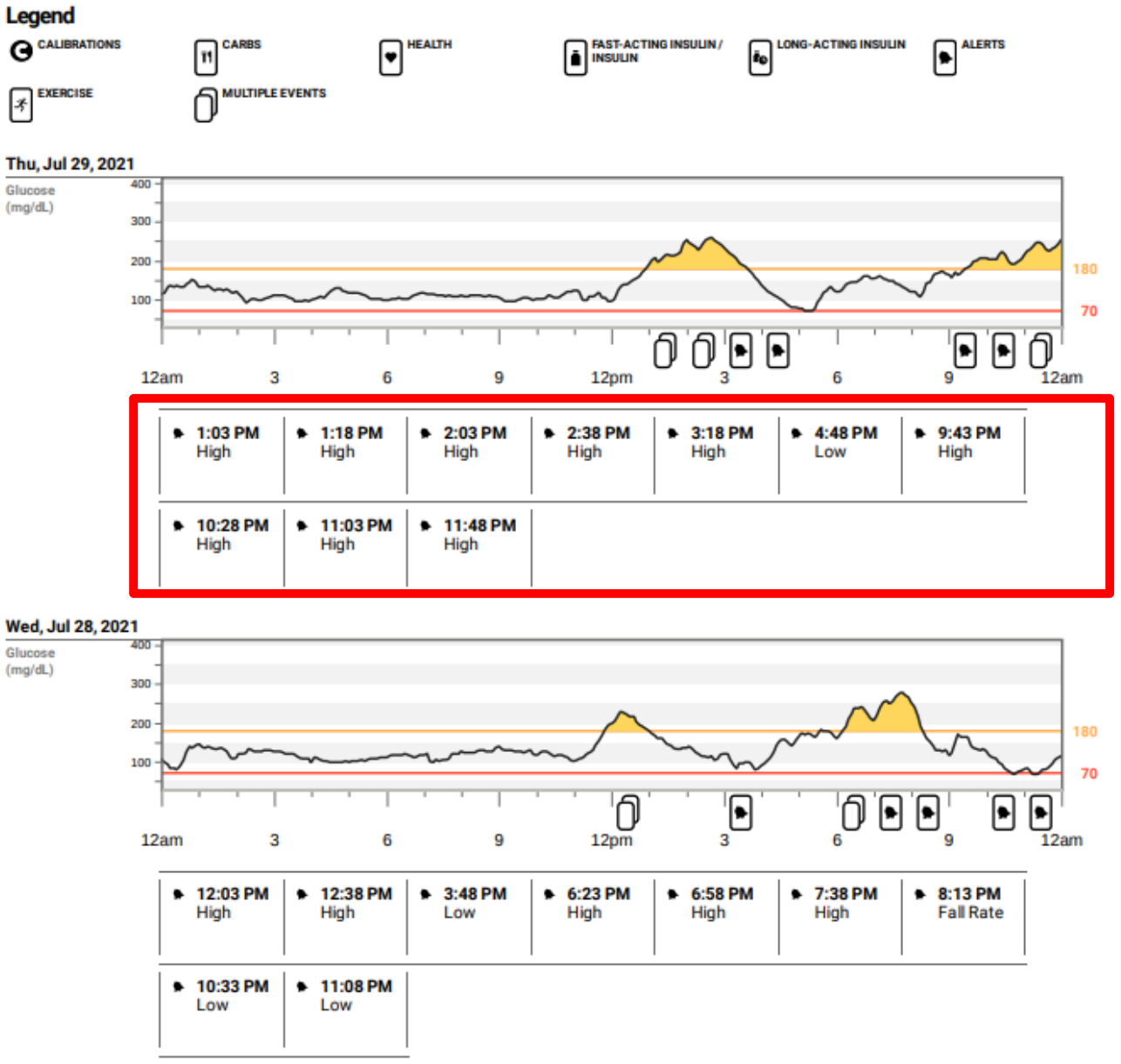
The Overlay features all CGM data points to help patients visualize patterns and individual events.

- Identify patterns of patients with irregular schedules.
- Filter data by day, daytime or nighttime, highs and lows, rebounds

Dexcom™ Reports – Daily

Daily View

- Several pages long
- Contains all glucose readings from each day
- Insulin doses/meals if patient inputs information
- High and low glucose alerts



AGP Report

Name

MRN

GLUCOSE STATISTICS AND TARGETS

26 Feb 2019 - 10 Mar 2019 — 13 days
% Time CGM is Active — 99.9%

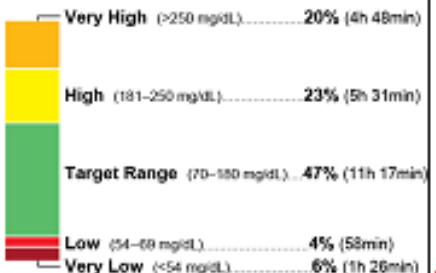
Glucose Ranges	Targets [% of Readings (Time/Day)]
Target Range 70-180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 250 mg/dL	Less than 5% (1h 12min)

Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.

Average Glucose	173 mg/dL
Glucose Management Indicator (GMI)	7.6%
Glucose Variability	49.5%

Defined as percent coefficient of variation (%CV); target ≤36%

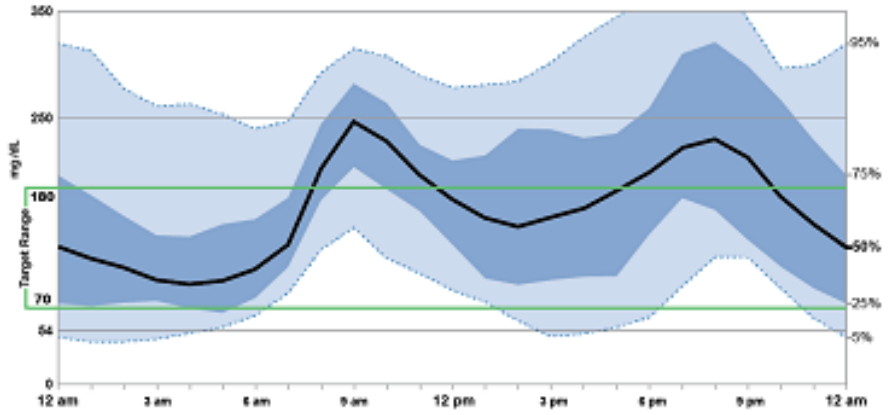
TIME IN RANGES



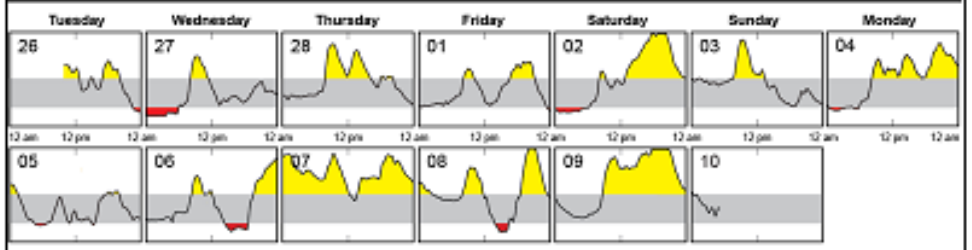
Very High (>250 mg/dL) 20% (4h 48min)
High (181–250 mg/dL) 23% (5h 31min)
Target Range (70–180 mg/dL) 47% (11h 17min)
Low (54–69 mg/dL) 4% (58min)
Very Low (<54 mg/dL) 6% (1h 26min)

AMBULATORY GLUCOSE PROFILE (AGP)

AGP is a summary of glucose values from the report period, with median (50%) and other percentiles shown as if occurring in a single day.



DAILY GLUCOSE PROFILES



Each daily profile represents a midnight to midnight period.

captürAGP v4.0

A B C D E F

AGP

14 days | Mon Feb 20, 2023 - Sun Mar 5, 2023

Time in Ranges

Goals for Type 1 and Type 2 Diabetes

Each 5% increase in the Target Range is clinically beneficial.
Each 1% time in range = about 15 minutes per day

4% Very High — Goal: <5%
20% High
24% — Goal: <25%

76% In Range — Goal: >70%

0% Low
0% Very Low — Goal: <1%
0% — Goal: <4%

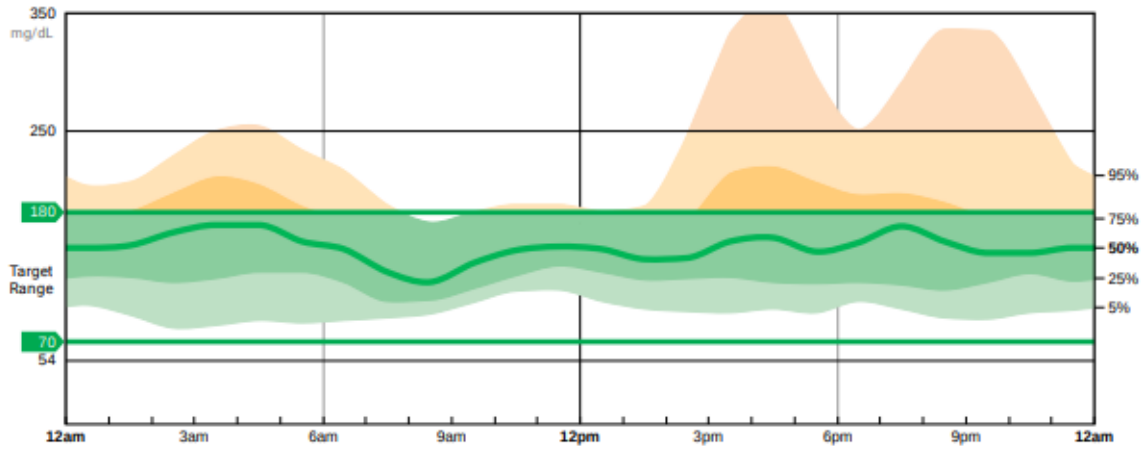
Target Range: 70-180 mg/dL **Very High:** Above 250 mg/dL **Very Low:** Below 54 mg/dL

Glucose Metrics

Average Glucose (Goal: <154 mg/dL)	156 mg/dL
GMI (Goal: <7%)	7.0%
Coefficient of Variation (Goal: <36%)	31.2%
Time CGM Active	99.0%

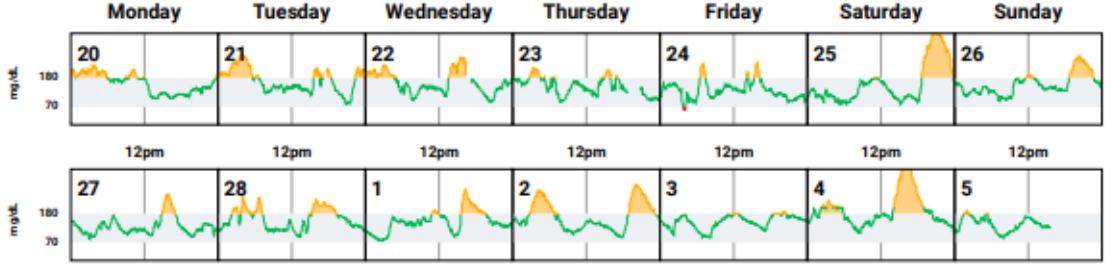
Ambulatory Glucose Profile (AGP)

AGP is a summary of glucose values from the report period, with median (50%) and other percentiles shown as if they occurred in a single day.



Daily Glucose Profile

Each daily profile represents a midnight-to-midnight period.



Case 1

73-year-old T2DM, CAD, CVA
Glargine 17 units once daily
Glimepiride 1 mg daily
Metformin 1000 mg twice daily

Before starting: Is there enough data to be analyzed?
Yes, there is >70% of data from 14 days

*Step 1: **What** is the problem?*
Time below range (TBR)<70 mg/dL 9+6 =**15%**
Time below range (TBR)<54 mg/ dL: **6%**
Excessive nocturnal hypoglycemia

*Step 2: **Where** is the problem?*
Overnight hypoglycemia

Post meal hyperglycemia

AGP Report

February 11, 2022 - February 25, 2022 (15 Days)

GLUCOSE STATISTICS AND TARGETS

February 11, 2022 - February 25, 2022	**15 Days**
% Time CGM is Active	**100%**

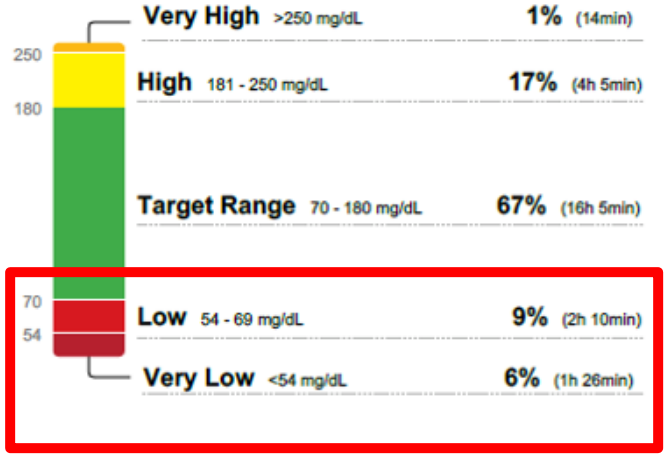
Ranges And Targets For	Type 1 or Type 2 Diabetes
Glucose Ranges	**Targets** % of Readings (Time/Day)
Target Range 70-180 mg/dL	Greater than 70% (16h 48min)
Below 70 mg/dL	Less than 4% (58min)
Below 54 mg/dL	Less than 1% (14min)
Above 180 mg/dL	Less than 25% (6h)
Above 250 mg/dL	Less than 5% (1h 12min)

Each 5% increase in time in range (70-180 mg/dL) is clinically beneficial.

Average Glucose	**122** mg/dL
Glucose Management Indicator (GMI)	**6.2%**
Glucose Variability	**43.0%**

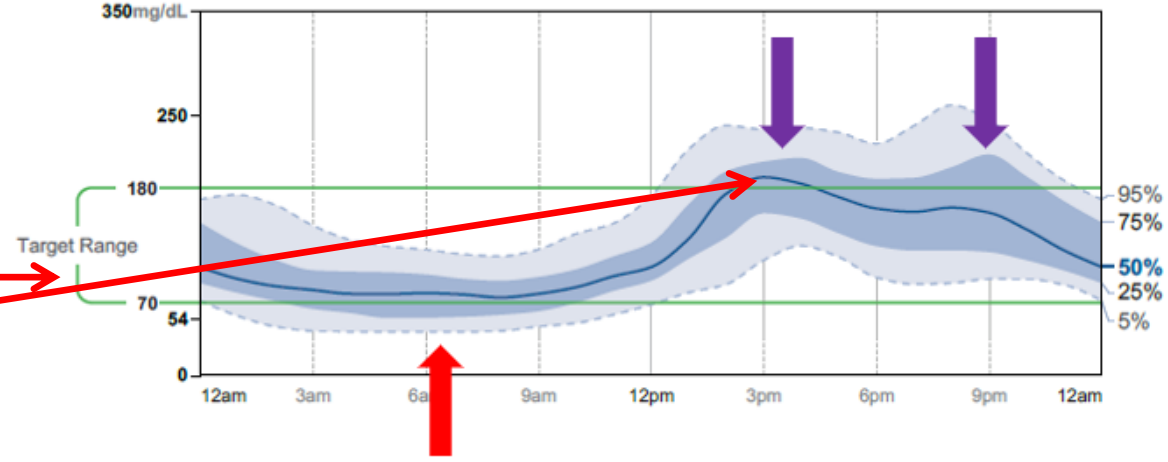
Defined as percent coefficient of variation (%CV); target ≤36%

TIME IN RANGES



AMBULATORY GLUCOSE PROFILE (AGP)

AGP is a summary of glucose values from the report period, with median (50%) and other percentiles shown as if occurring in a single day.



NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

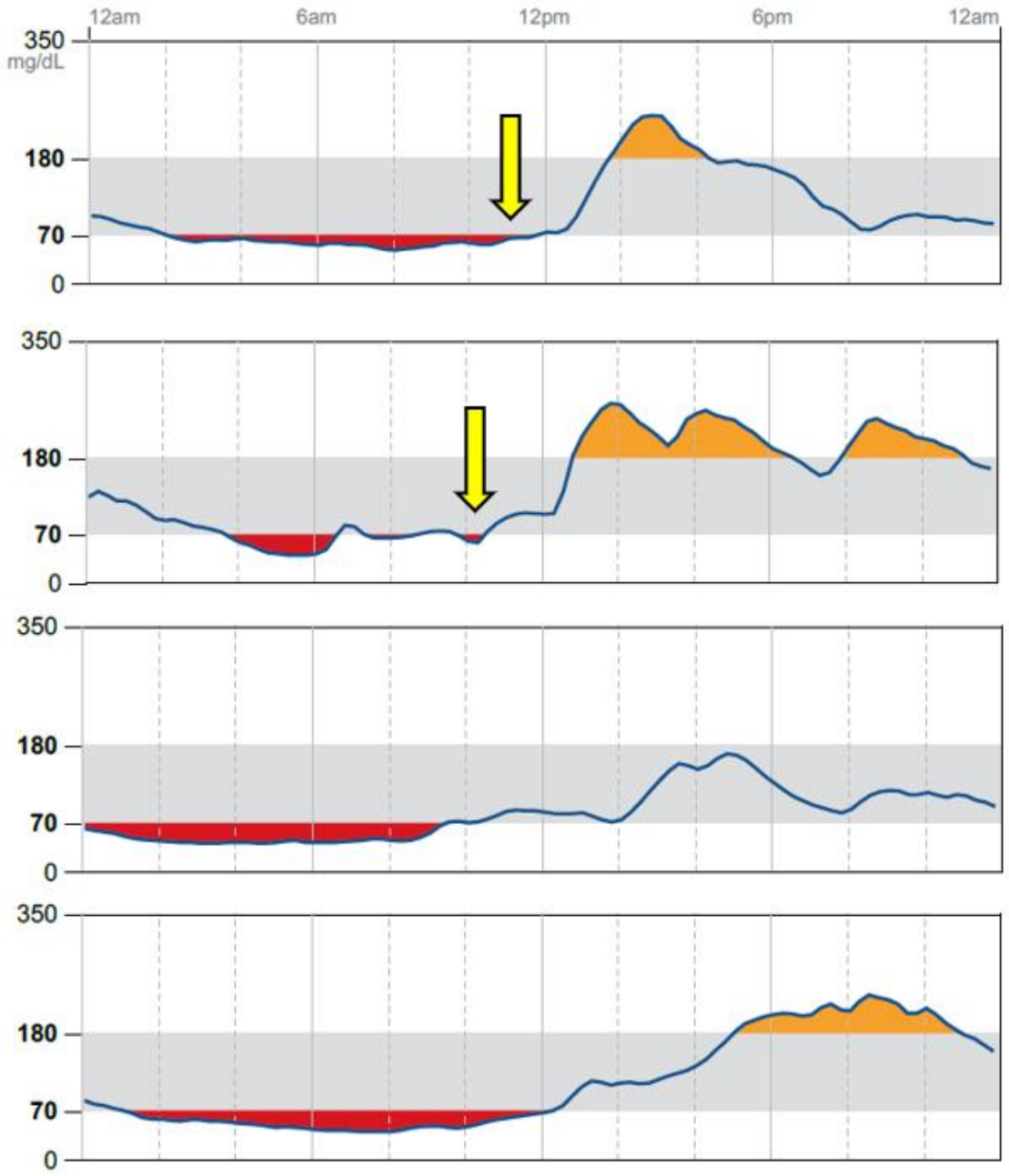
Case 1

73-year-old T2DM, CAD, CVA
Glargine 17 units once daily
Glimepiride 1 mg daily
Metformin 1000 mg twice daily

Before starting: Is there enough data to be analyzed?
Yes, there is >70% of data from 14 days

*Step 1: **What** is the problem?*
Time below range (TBR)<70 mg/dL 9+6 =**15%**
Time below range (TBR)<54 mg/ dL: **6%**
Excessive nocturnal hypoglycemia

*Step 2: **Where** is the problem?*
Overnight hypoglycemia
Post meal hyperglycemia



NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

Case 1

Step 2: ***How to adjust therapy****?*

Excessive long-acting insulin dose and insufficient meal coverage

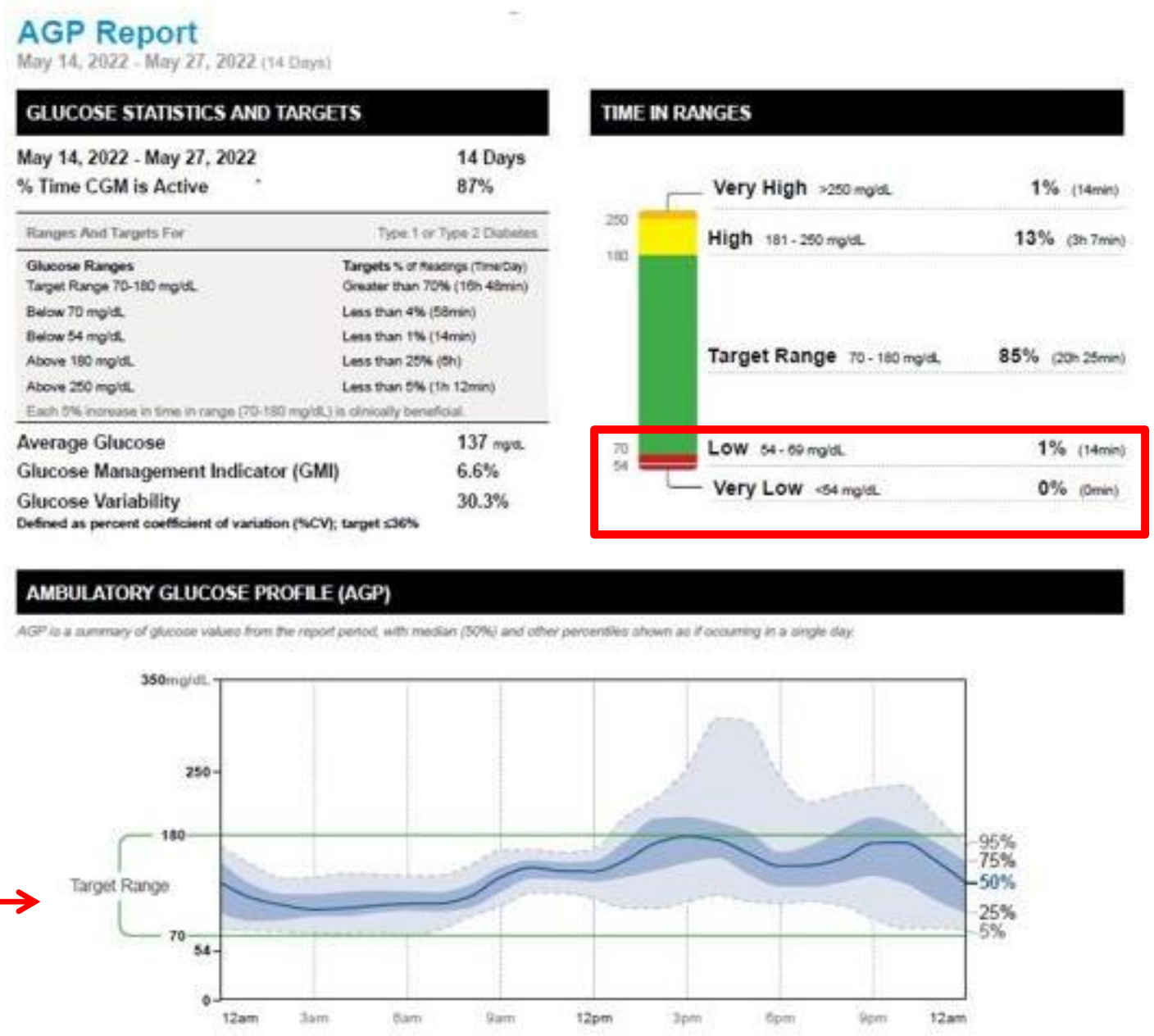
Recommendations:

1) Decrease Glargine to 12 units

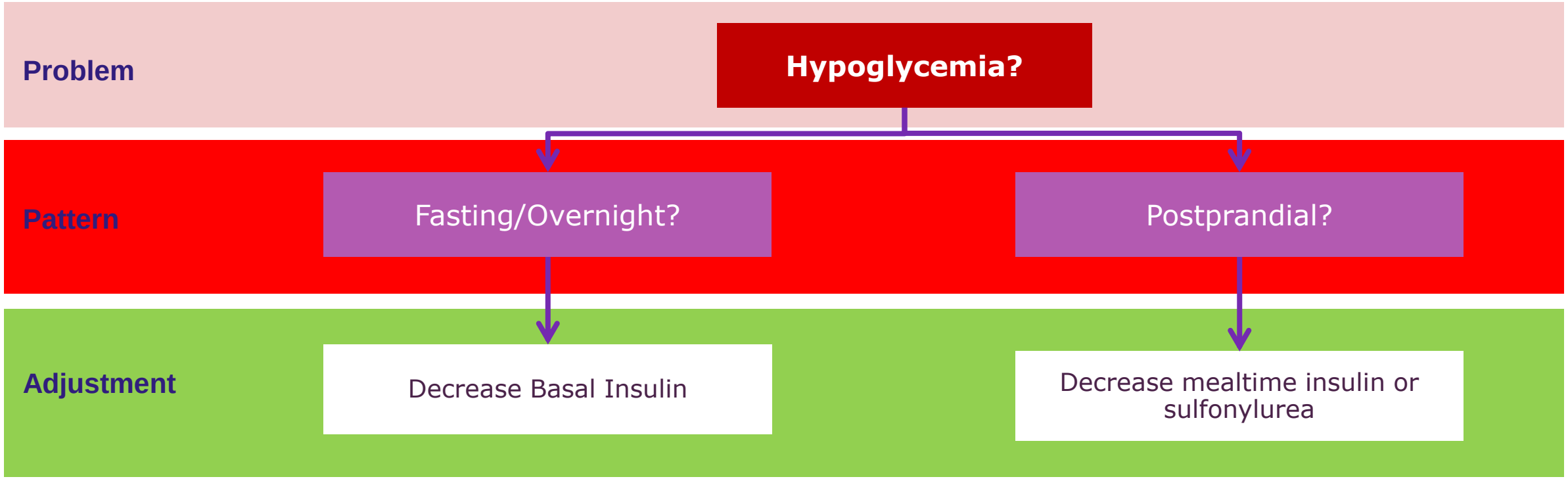
2) Stop glimepiride

3) Continue Metformin

4) Added Dulaglutide for post prandial hyperglycemia



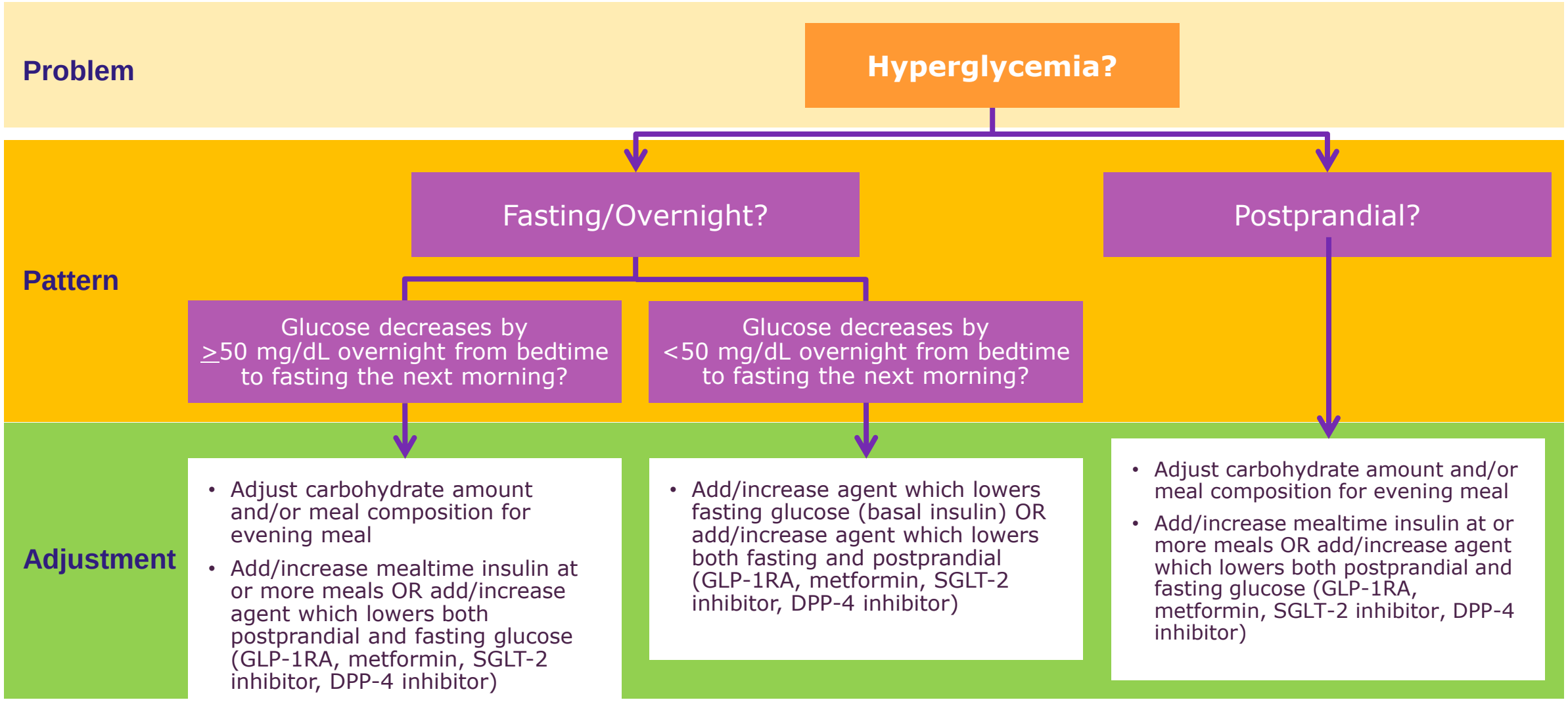
How to adjust therapy for Hypoglycemia



NORTHWESTERN UNIVERSITY FEINBERG SCHOOL OF MEDICINE

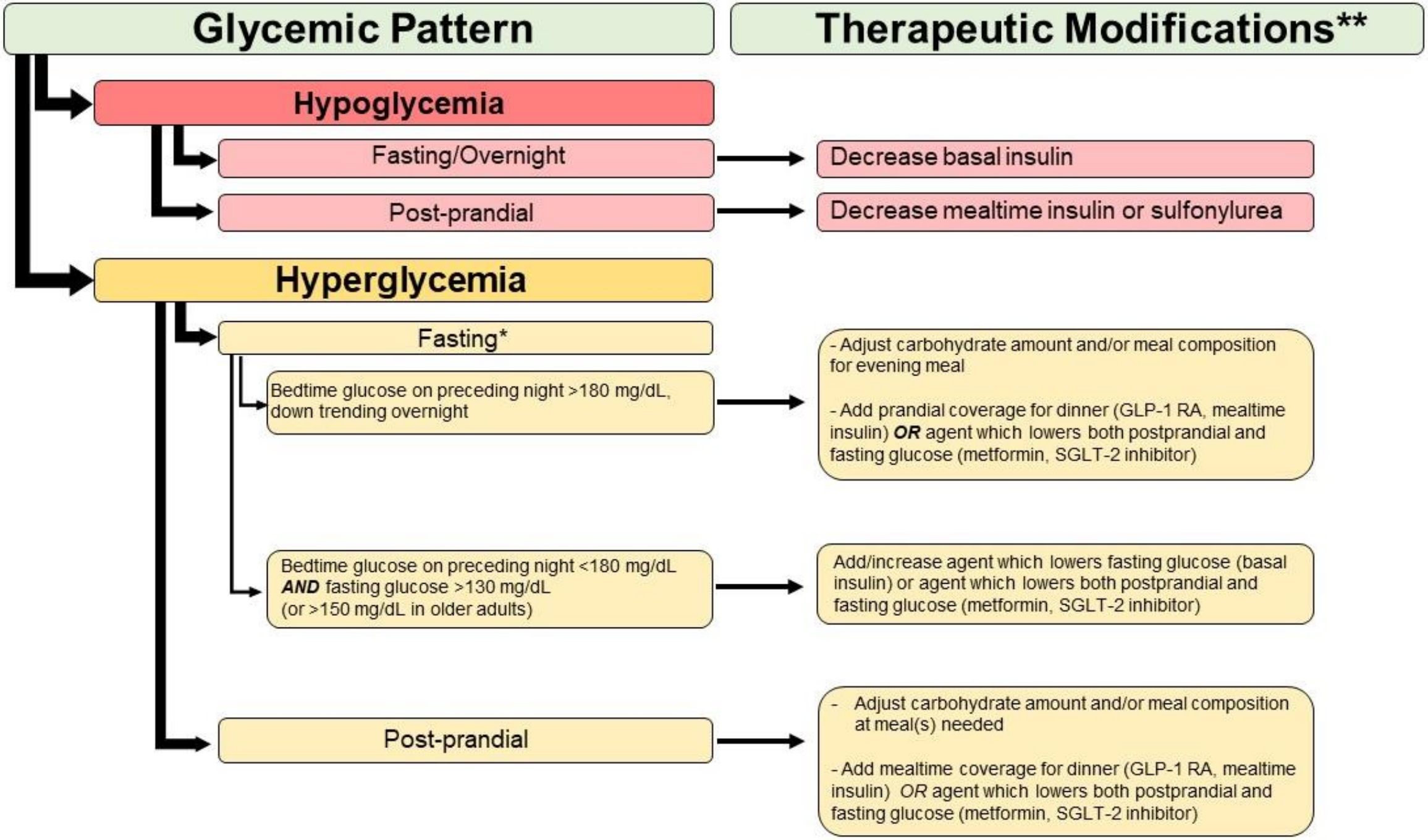
Szmuilowicz ED and Aleppo G. Postgraduate Med, 2022

How to adjust therapy for Hyperglycemia



NORTHWESTERN UNIVERSITY FEINBERG SCHOOL OF MEDICINE

Szmuilowicz ED and Aleppo G. Postgraduate Med, 2022

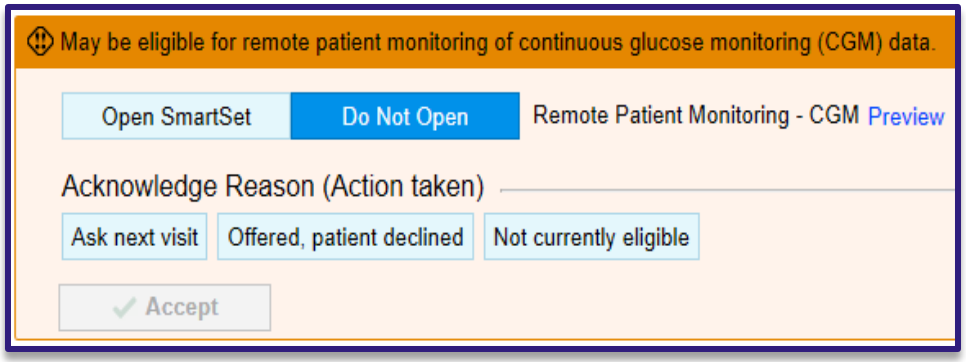


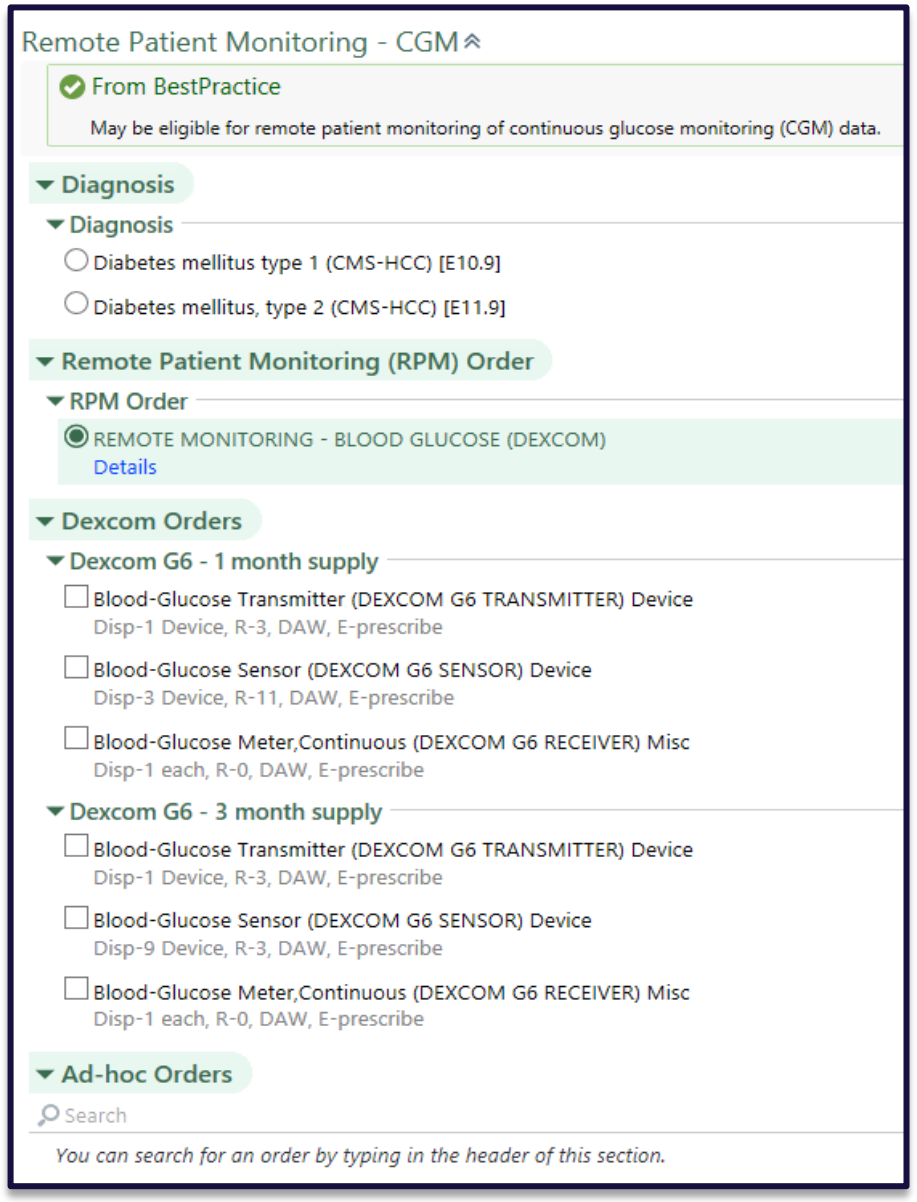
Szmuilowicz ED and Aleppo G. Postgraduate Med, 2022

Upcoming Project:

CGM Integration in EMR

Enrollment

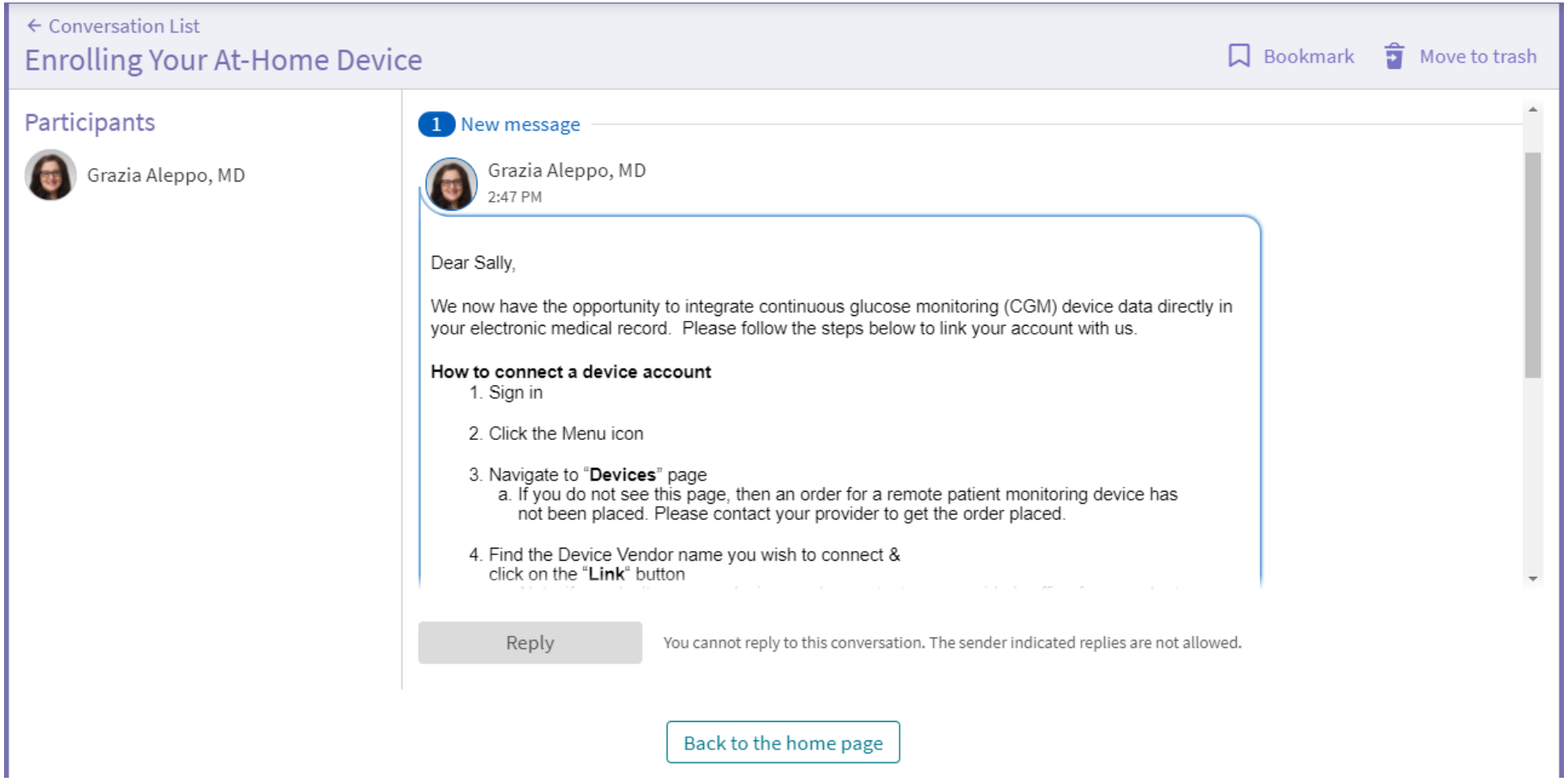




NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

Automated Message

Message sent automatically after the order is placed



Integration in EMR: The NM CGM-RPM Project
AGP Report

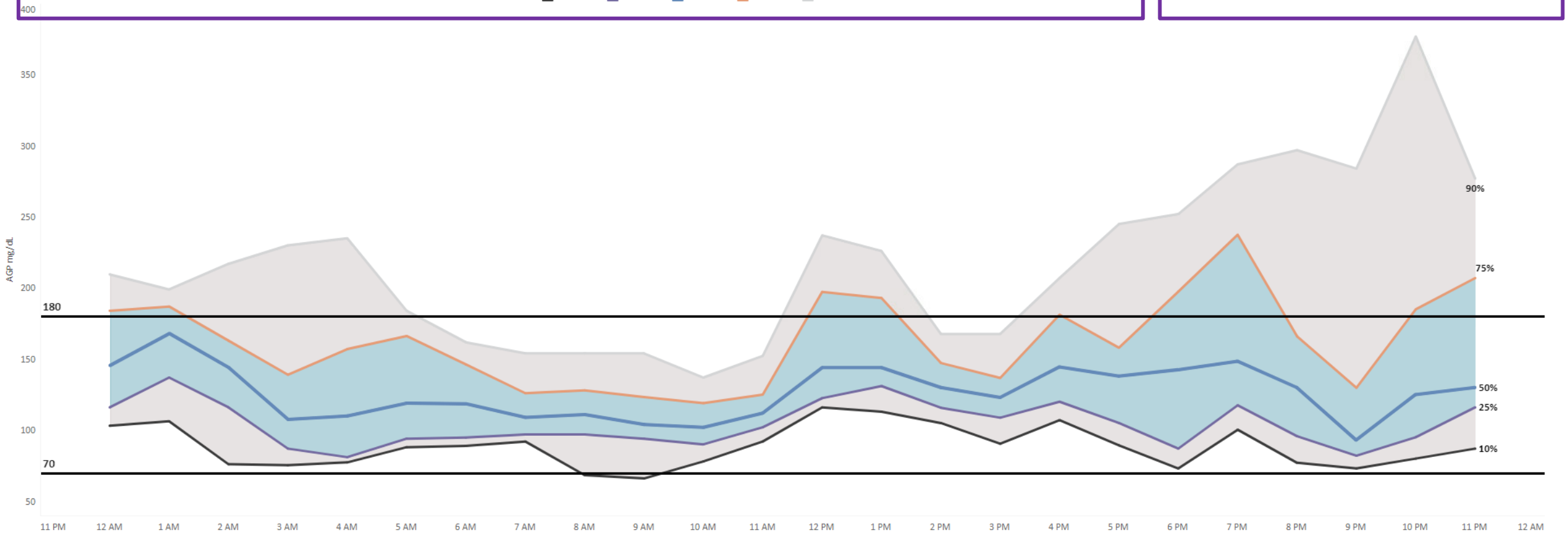
Patient: *Birth Date:* *Last Reading:*

Average Glucose mg/dL	GMI	Standard Deviation mg/dL	Coefficient of Variation	Utilization	Days with Data
138.5	6.6%	56.0	40.5%	98.0%	12

10% 25% 50% 75% 90%

Time in Range

Very High	5%
High	12%
In Range	79%
Low	3%
Very Low	0%

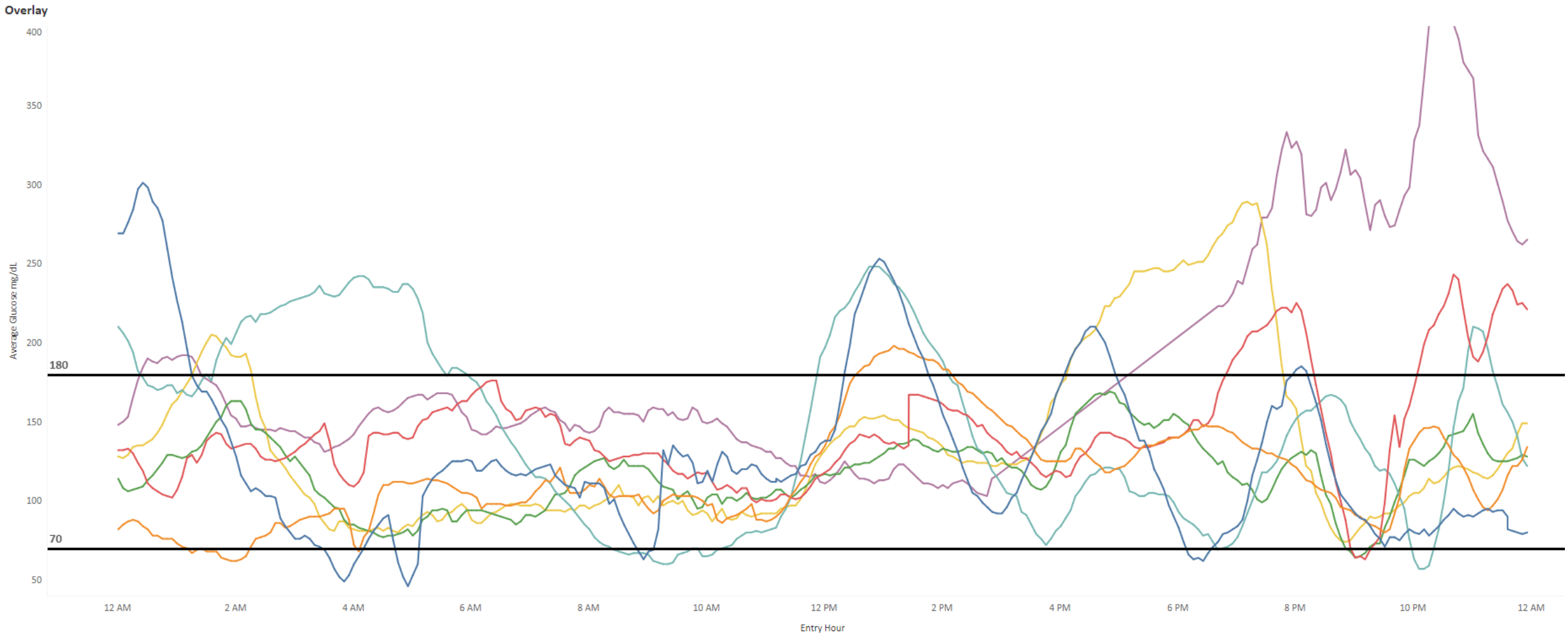


NORTHWESTERN UNIVERSITY FEINBERG SCHOOL OF MEDICINE

Northwestern Medicine

Integration in EMR: The NM CGM-RPM Project Overlay (1 week)

Patient: *Birth Date:* *Last Reading:*



FEINBERG SCHOOL OF MEDICINE

Northwestern Medicine®

Telephone	Me	Medication Adjustment
Patient Message	Me	Gina's bloodsugars a litle high and Dexcom linked

CGM Home | Overlay View

Northwestern Medicine®

NM CGM - Remote Physiologic Monitoring

Start Date 2/7/2023 End Date 2/21/2023

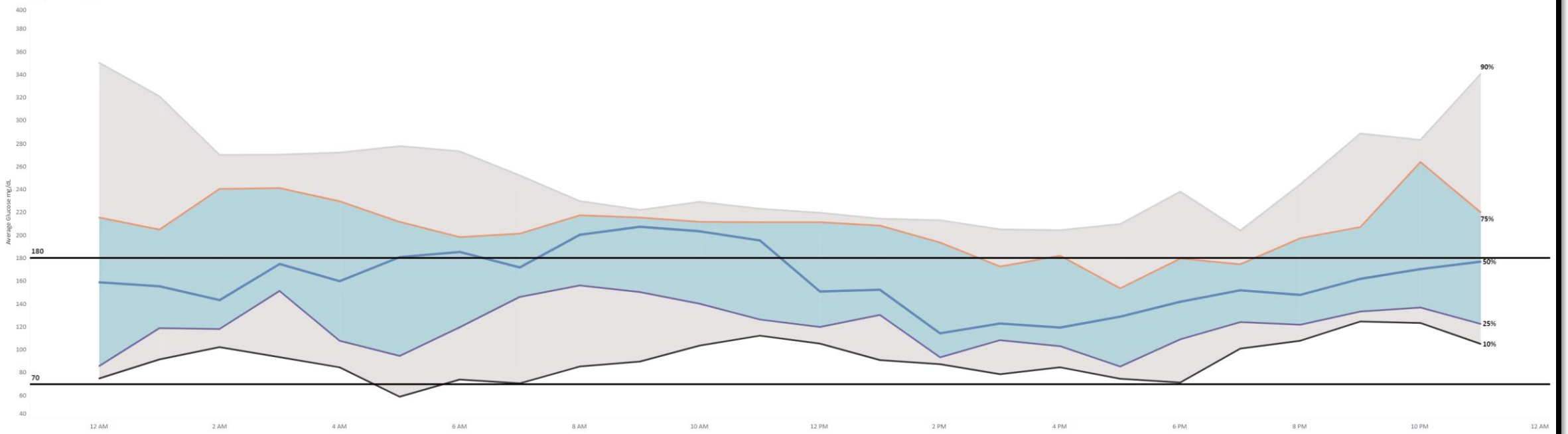
Average Glucose mg/dL	GMI	Standard Deviation mg/dL	Coefficient of Variation	Utilization	Days with Data
165.3	N/A	61.0	36.9%	98.6%	7

Time in Range

Very High >250	8.5%
High 181-250	31.5%
In Range 70-180	57.8%
Low 54-69	1.9%
Very Low <54	0.4%

10% 25% 50% 75% 90%

Ambulatory Glucose Profile



Planning & Implementation

Pilot Strategy: 4 – 5 Endocrinology Providers

1. Begin enrolling patients 01-01-2023
2. Collect and monitor data for accuracy
3. Workflow feedback
4. Identify improvement areas and iterate
5. Agree on measures of success
6. Education and Training
7. Expand
8. More to follow!!!!

Thank You

NORTHWESTERN UNIVERSITY
FEINBERG
SCHOOL OF MEDICINE

Clinical Presentation:

The Mary Tyler Moore Vision Initiative *(The Restoring Vision Moonshot)*

Creating a world without visual loss from diabetes…

JDRF IMPROVING LIVES. CURING TYPE 1 DIABETES.

LOVE IS ALL AROUND

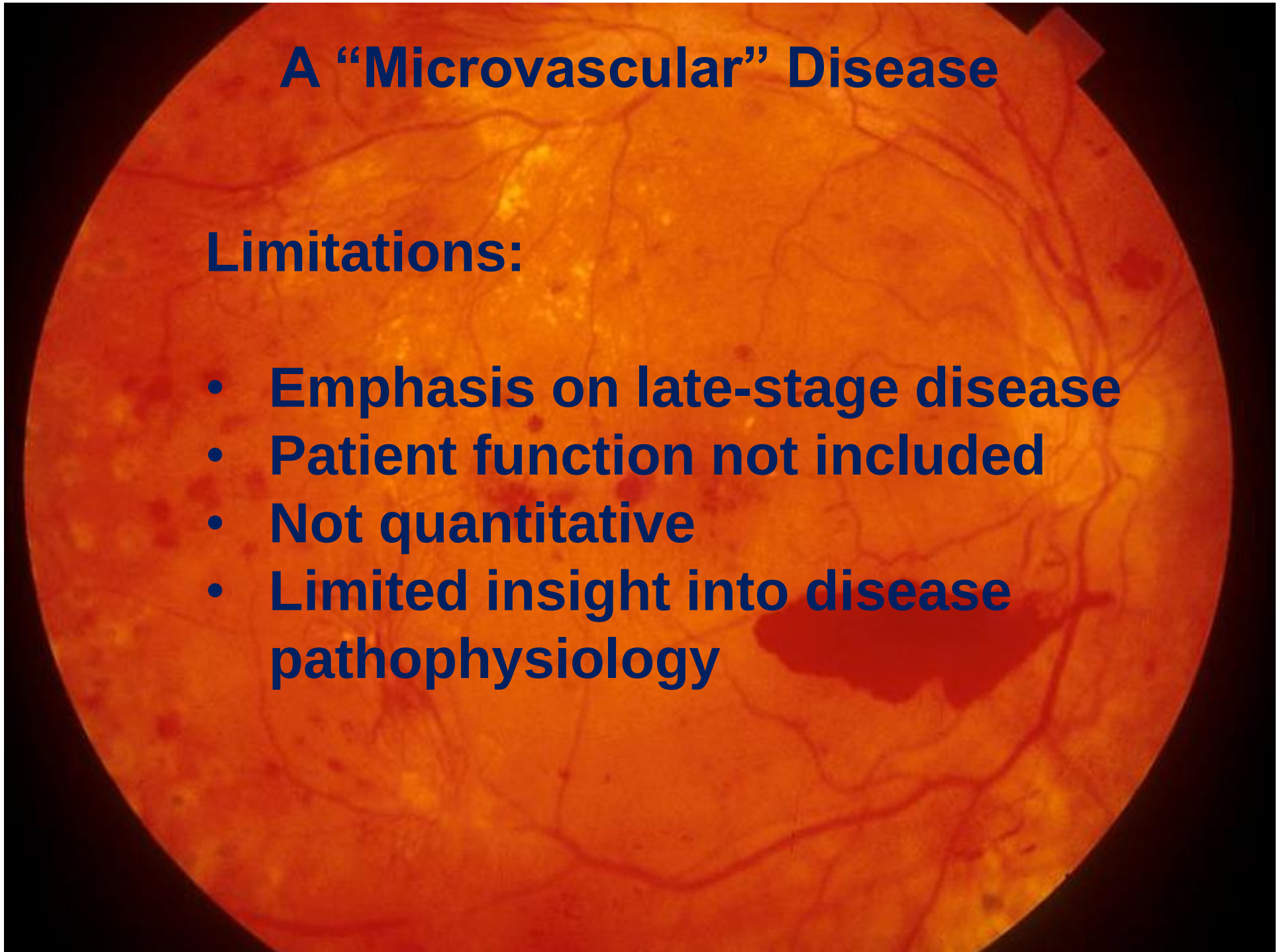
MTM THE MARY TYLER MOORE & S. ROBERT LEVINE, MD CHARITABLE FOUNDATION

ELIZABETH WEISER CASWELL DIABETES INSTITUTE UNIVERSITY OF MICHIGAN

S. Robert Levine, MD

Jennifer K. Sun, MD, MPH

Sanjoy Dutta, PhD



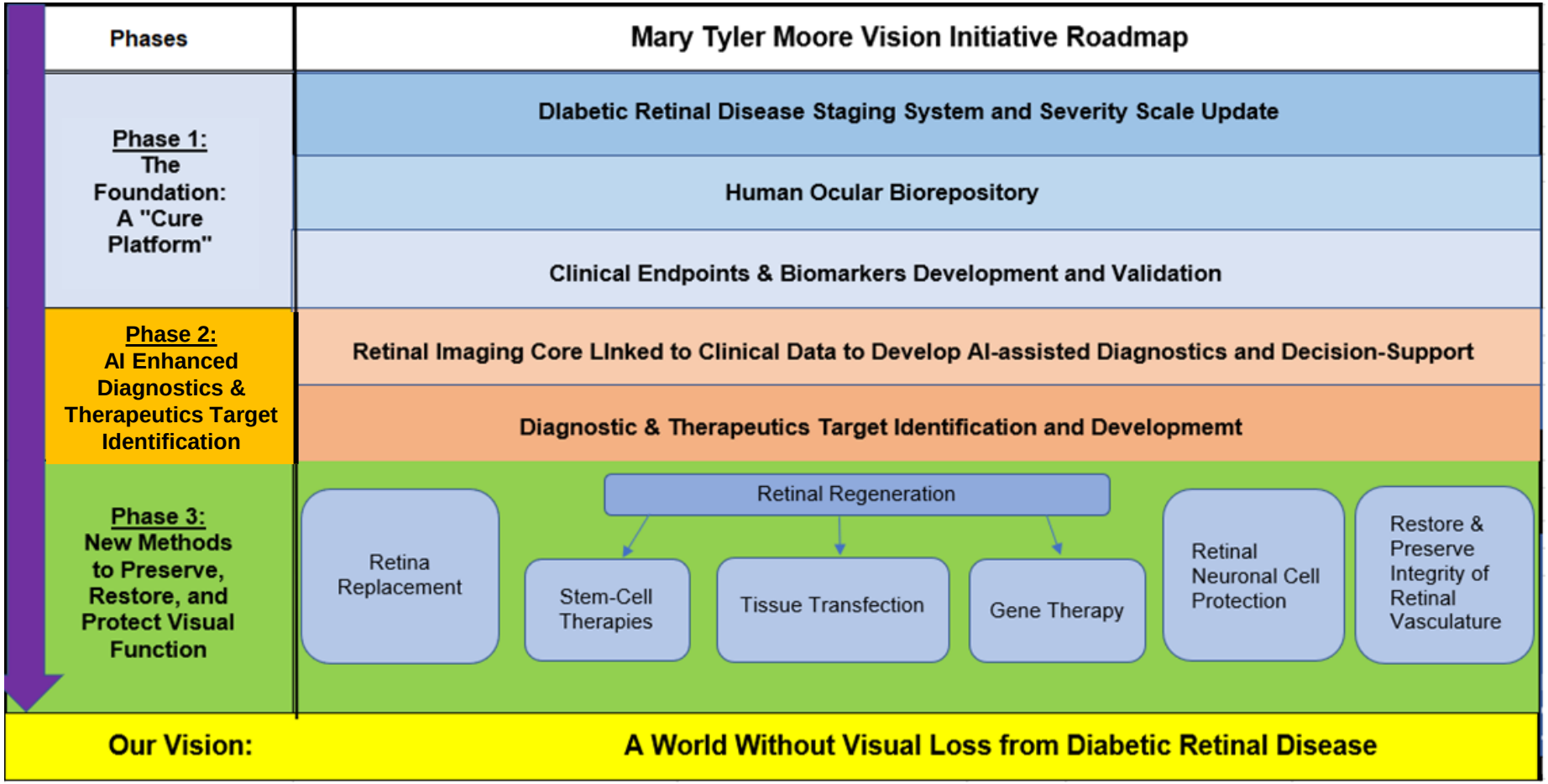
A “Microvascular” Disease

Limitations:

- Emphasis on late-stage disease
- Patient function not included
- Not quantitative
- Limited insight into disease pathophysiology

Diabetic Retinal Disease Clinical Endpoints Workshop

A Phase 1 Accelerator of the Mary Tyler Moore Vision Initiative



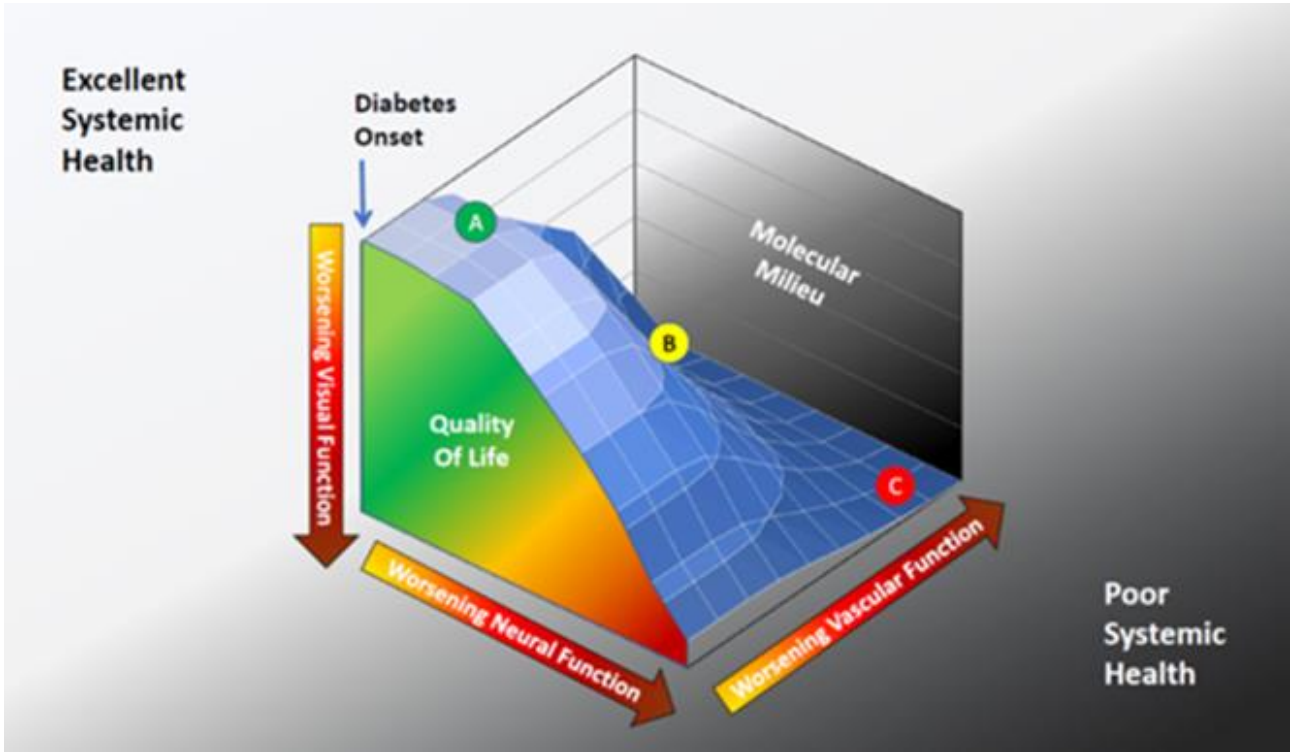
Organizing Sponsors: The Mary Tyler Moore and S. Robert Levine MD Charitable Foundation, the Caswell Diabetes Institute, and JDRF

You can't solve a problem you haven't defined

MTM Vision Phase 1 Response: A Global Initiative to Update the Staging of DRD

The first MTM Vision project was tasked with developing an updated, multidimensional, DRD staging system that can be used to:

- Diagnose DRD earlier in progression;
- Better define DRD severity;
- Incorporate the patient perspective, measures of visual function and retinal physiology, molecular milieu, and systemic factors;
- Predict and measure response to therapy;
- Support clinical trials evaluating novel therapies;
- Identify promising biomarkers and clinical endpoints in need of further development and validation



Sun JK, Aiello LP, Abràmoff MD, Antonetti DA, Dutta S, Pragnell M, Levine SR, Gardner TW. Ophthalmology. 2021 Apr;128(4):490-493.

You can't find cures for human disease without studying the human condition

MTM Vision Phase 1 Response: An Ocular Biorepository and Tissue Sharing Network

ELIZABETH WEISER CASWELL DIABETES INSTITUTE
UNIVERSITY OF MICHIGAN

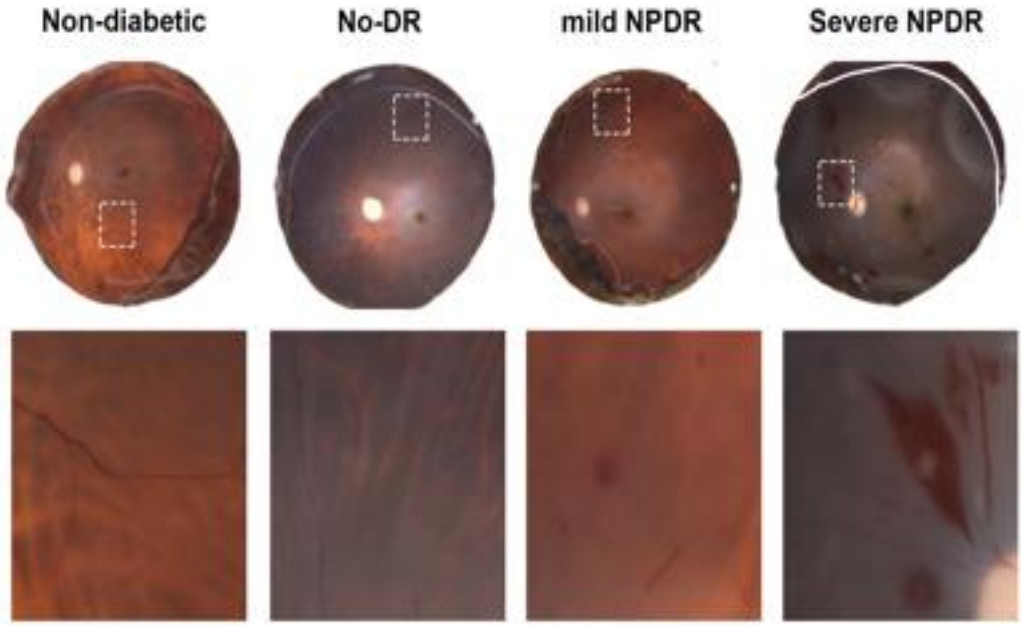
nPOD
Network for Pancreatic Organ Donors with Diabetes

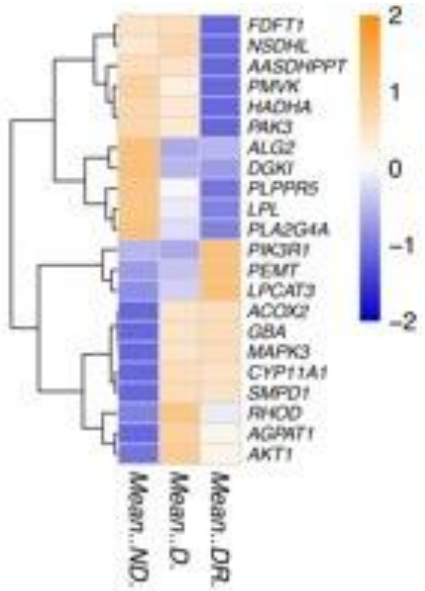
- Established under the scientific direction of Patrice Fort, PhD, MS at the Elizabeth Weiser Caswell Diabetes Institute and Dept. of Ophthalmology, University of Michigan
- Modelled on the highly successful JDRF Network for Pancreatic Organ Donors with Diabetes (nPOD), with Dr. Mark Atkinson as lead Advisor
- Collection, characterization, and sharing of cadaveric human retinal tissue samples
- OMIC analysis of samples to better understand DRD at cellular and molecular level and identify targets for therapeutics development
- Globally accessible, data-sharing platform and searchable database, including support for pre-competitive industry consortium

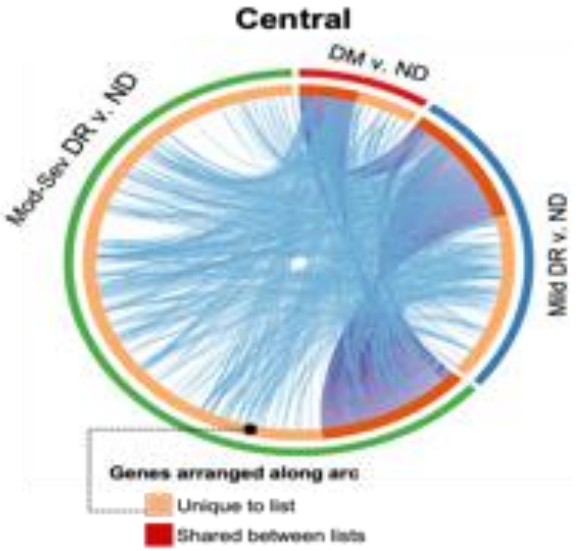
Second project: A Human Eye Biorepository

A Critical Path Accelerator

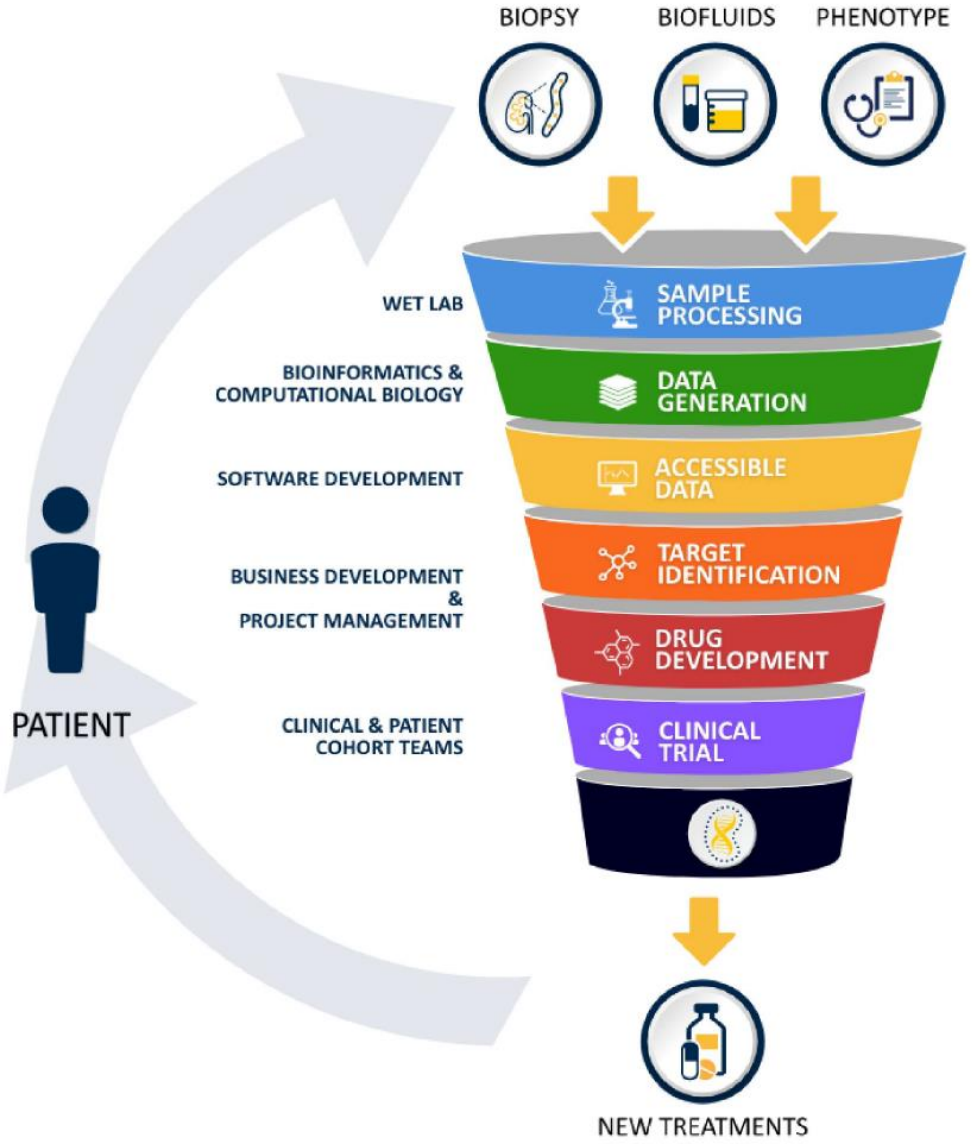
nPOD
Network for Pancreatic Organ Donors with Diabetes







Our Roadmap: Phase 2 – *Therapeutics Target Identification*



With the successful University of Michigan Kidney Translation Core as its model, MTM Vision will establish as a companion to its ocular biorepository a therapeutics target identification core to serve global precision-medicine academic research as well as establish a pre-competitive consortium for industry participation.

Pre/Post learning