



ADVANCING INTEGRATED HEALTHCARE

Welcome

Pharmacy CGM Learning Collaborative | August 22, 2023

Care Transformation Collaborative of RI

Agenda

Topic <i>Presenter</i>	Time
Welcome <i>Susanne Campbell, RN, MS, PCMH CCE, Sr. Program Administrator, CTC-RI</i>	5 min
Housing Insecurity <i>Rahul Vanjani, Medical Director, Amos House and Travis Sherman, United Healthcare</i>	25 min
Practice Updates (~8 mins / practice): PCHC Miriam Hospital MARI Integra/RIPCPC Coastal Anchor <i>Kelley Sanzen, Pharm.D., Clinical Pharmacist, Pharmacy Quality Improvement Facilitator</i>	55 min
Next Steps	5 min

Housing Discussion

Rahul Vanjani
Medical Director, Amos House

Travis Sherman
United Healthcare

amos HOUSE

Helping the Housing Insecure

Warm handoff

- MCO
- Local non-profit
- United Way 211
- Local CAP



Street homeless person?

Consider community mental health agency

- House of Hope
- Better Lives RI



Housing insecure d/t financial reasons (rent/utilities)

CAP
Crossroads
Amos House



Civil legal issues

Legal Aid
Center for Justice

Housing Discussion

Rahul Vanjani
Medical Director, Amos House

Travis Sherman
UnitedHealthcare

Housing Resources

- [Coordinated Entry System | End Homelessness RI \(rihomeless.org\)](https://rihomeless.org)
- [RHODE ISLAND RENTAL RESOURCE GUIDE \(rihousing.com\)](https://rihousing.com)
- [Eviction Prevention Rhode Island | RIHousing](#)
- [HousingSearchRI.org | Rhode Island Apartments | Rhode Island Rental Homes](https://HousingSearchRI.org)
- [2-1-1 @ United Way of RI | Linktree](#)
- [Recovery Housing Public List 2023 - 1/6/23.docx \(ricares.org\)](#)
- [RI Housing | Apartments in Providence, RI \(waitlist-centralri.com\)](#)
- [Rhode Island Judiciary Public Portal \(ri.gov\)](https://ri.gov)



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Providence Community Health Centers

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What population was missing?

- People with diabetes experiencing housing insecurity (homelessness, transient housing) and/or food insecurity

- Found to be more likely to have ED visits

Difficult to manage diabetes:

- Irregular eating patterns
 - Mistrust of systems
 - Cost of Medications

What population was missing?

Pro-CGM Clinic at Crossroads RI:

- Crossroads RI: A provider of housing and services to the homeless population in Providence RI
- Crossroads provides permanent housing in “The Towers” on Broad St in Providence, RI
- PCHC Clinic located at the bottom of “The Towers”
- Clinic includes in-house case management and medical services
- Many residents of Crossroads have their medical care in the same place as their home

What interventions were made?

- Pro-CGM clinic at Crossroads:
 - Thursdays from 1-3pm
 - Pro-CGM sensor placement for patients identified by pharmacy or referred by providers at Crossroads
- General Workflow:
 - Patients identified by Crossroads Providers or target list provided by our Population Health Analytics Team
 - Outreach by pharmacy
 - Initial appointment: Pro-CGM placement
 - Medication/Allergy History (Assess medication adherence and barriers to adherence)
 - Eating and SMBG habits
 - SDOH needs (housing, food, costs)
 - 2-week follow-up: Pro-CGM removal
 - Assess glucose patterns
 - Make recommendations to provider:
 - Medication changes
 - Determine if the patient would like personal CGM
 - Work with provider to work on coverage for personal CGM

What did you learn based on data (including patient feedback)?

- Patients **are** interested in obtaining personal CGM:
 - Based on experience with pro-CGM or presence in their community
 - “I seen my sister has one. She just scans it.”
 - Insurance and coverage barriers: may take some time to obtain from pro-CGM
 - Pharmacy, DME, PAs
- Patients **are not** interested in obtaining personal CGM:
 - “It is itchy”

What did you learn based on data (including patient feedback)?

- Some patients in our population tend to lose their CGM sensors
 - Driven by social determinants (housing insecurity, environment)
 - Climate: very hot summer in RI in urban environments
 - “I lost it while picking up trash”
 - Working on incentives such as gift cards
 - Trialing shorter follow-ups for these patients (7 day vs. 14 days) after losing first sensor

Patient Case

- SB: 52M
- PMH: DM (Nephropathy and Retinopathy), HTN, ED, Obesity
- Labs: a1c: 13.9%, eGFR: 101 Albumin/Cr: 1466
- Vitals: BP at goal, BMI 32.9
- Meds: metformin ER 500mg daily, Trulicity 1.5mg weekly, Humulin 70/30 50 units BID, lisinopril-hctz 20mg-25mg daily, amlodipine 5 mg daily, atorvastatin 40mg daily

Patient Case

- Pharmacy Visit 1: attachment of pro-CGM
 - HPI:
 - “I just returned from vacation and I feel a cough”
 - Medication history:
 - “I feel good with my meds”
 - Lifestyle/Diet:
 - “I haven’t been eating that much with my Trulicity”
 - “I’ve lost some weight recently”
 - Plan:
 - Triage to Internal Medicine for sick visit → COVID
 - Sick day and hypoglycemia plan

Patient Case

- Pharmacy Visit 2: Removal of pro-CGM:

GLUCOSE STATISTICS AND TARGETS

Time CGM Active: 14 Days
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 387 mg/dL
Glucose Management Indicator (GMI) 12.6%
Glucose Variability 31.4%
 Defined as percent coefficient of variation (%CV)

TIME IN RANGES

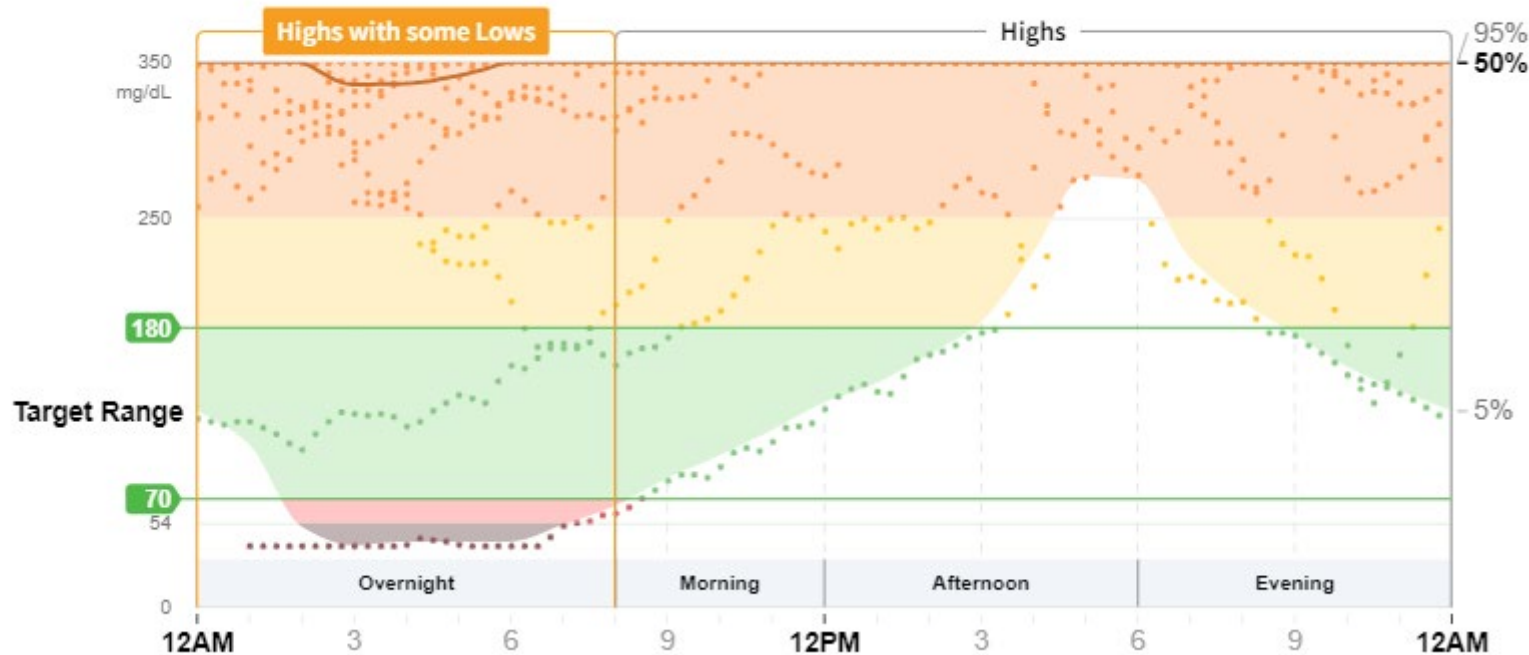
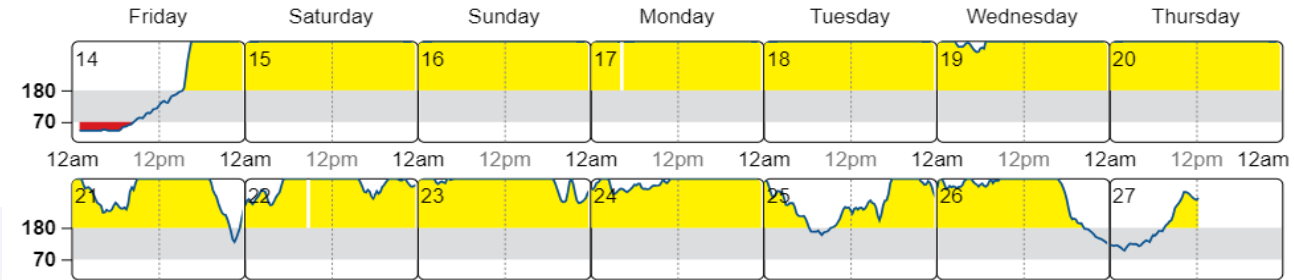


Patient Case

Glucose Patterns (14 Days)

DAILY GLUCOSE PROFILES

Each daily profile represents a midnight to midnight period with the date displayed in the upper left corner.



- Low: sick day (COVID)
- High Across the Board

Patient Case

- **Plan:**

- A1c due → ordered
- Increase Metformin 500mg daily to 1000mg BID → ordered
- Increase Trulicity 1.5mg to 3mg → ordered
 - Patient was already happy with being on Trulicity (10 lb weight reduction with 1.5mg)
- Initiate Personal CGM Prior Authorization → ordered
- Communicated to provider in Electronic Health Record and in warm handoff

- **Follow-up:**

- A1c immediately following pro-CGM was 11.3% (down 2.6%)
- Coordinated Trulicity dose increase (patient had just picked up)
- Future:
 - Prior Authorization for personal CGM
 - Trulicity dose increase (patient call)
 - A1c in 3 months due 11/5/23



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TMH Medical Clinic – Suite C

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What population was missing?

- Ages:
 - 75% of patients are between 50-69 years old
 - Work on including more patients between ages of 30-49 years old
 - Work on including more patients >70 years old
- Insurance Status
 - UHC - 37% of population
 - Medicare patients – 38% of population
 - Medicaid patients – 20% of population

Data from Suite C ProCGM Population

Glucose variability (mean)	27.8%
Glucose variability (SD)	11.5%
Glucose variability: % of results \geq 33%	31.0%
Glucose variability: % of results \geq 36%	31.0%
Glucose variability (Min)	0.0%
Glucose variability (Max)	62.9%
Glucose Management Indicator % (mean)	8.7
Glucose Management Indicator % (SD)	1.9
Glucose Management Indicator % (Min)	6.5
Glucose Management Indicator % (Max)	12.6
TIME IN TARGET	
>250 mg/dL	31%
180-250 mg/dL	26%
70-180 mg/dL	41%
< 70 mg / dL	2%
% of pts with > half of readings >250 mg/dL	26%
% of pts with 1+ reading < 70 mg/dL	24%

Data from Suite C ProCGM

OUTCOMES		# obs	missing
avg follow-up A1C (3 mo)	8.468421053	27	8
avg point diff from avg baseline	1.9		
followup A1C (6 mo)	7.4	14	21
difference from baseline	-6.5		
		count	
New DM diagnosis	3%	1	
DM med added	35%	12	
Med dose change	76%	26	
Goal achieved at 6 mo	#DIV/0!	0	
Continuing use of personal CGM (yes)	29%	11	
Med w ASCVD and/or CKD Benefit			
SGLT2 Inh	17%	7	
GLP-1	20%	8	
Both	10%	4	
None	54%	22	
Missing	0%		

What interventions were made?

- **79% of Patients had an intervention made**
- Insulin Adjustments – Lifespan CPA
- Adding SGLT2 Inhibitor
- Adding GLP1 or GLP1/GIP Agonist
- Adding Additional DM Med – DPP4 or Pioglitazone
- Continue to Personal CGM
- 2 Patients stopped insulin based on results of CGM
- Application for Manufacturer Assistance / Patient Assistance
- Diabetes education – nutrition, exercise, sick day, stress, sleep, etc.
- Nutrition Referrals

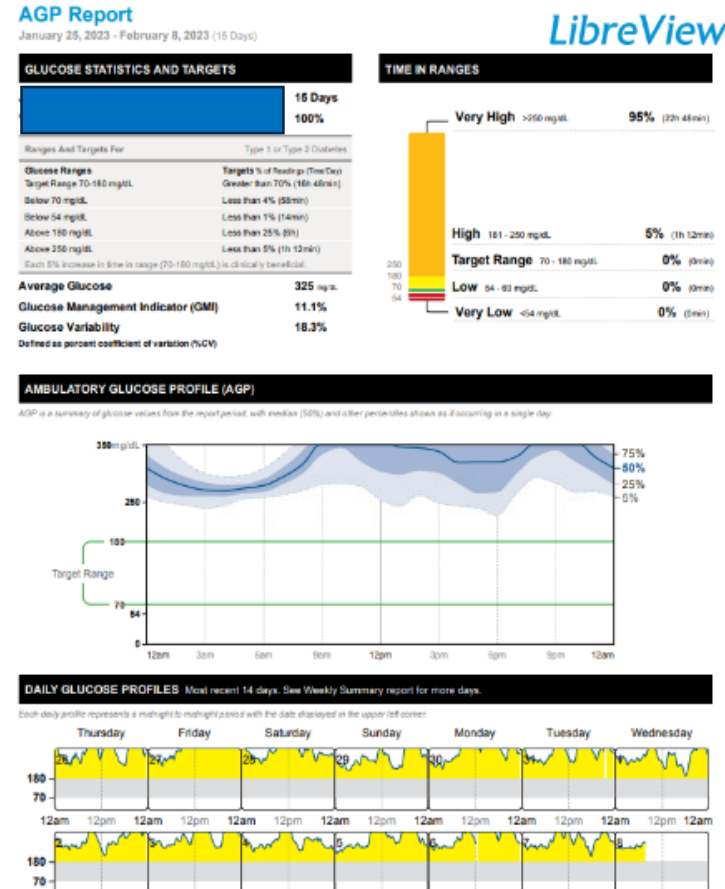
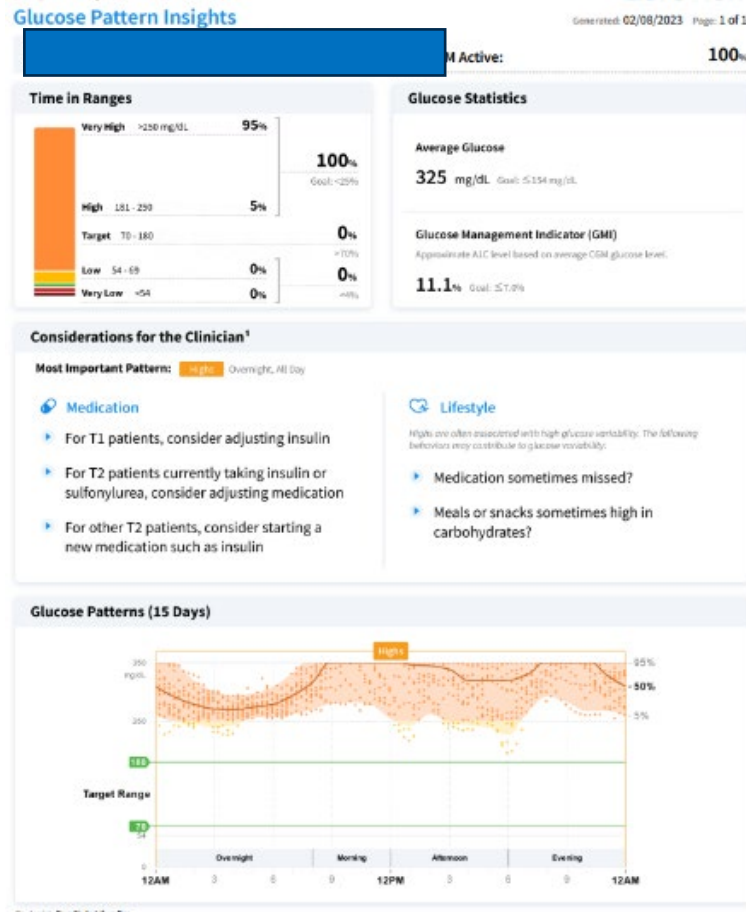
Patient Feedback Data

- 78% of Patients reported wanting to continuing using CGM
- Those that did not reported:
 - "Don't want sensor attached to me all the time"
 - "Technology frustrates me"
 - "It would make my anxiety worse, I would be scanning all the time"
- All the patients reported agreeing or strongly agreeing with:
 - Understanding benefits of wearing device
 - The device being useful to medical care
 - Satisfied with using device

TMH ProCGM Patient Case

- RA is 41 y.o. male, newly diagnosed Type 2 DM
- PMH: Asthma, obesity, sepsis, GERD
- Current: Height: 5'5" Weight: 227 lbs
- A1C: 10.7%
- No insurance
- MD started:
 - Metformin 500 mg po daily with meal and titrated up to 1000 mg po twice daily with meals
 - Insulin: Novolin 70/30 inject 8 units with am breakfast and 4 units with pm dinner
 - Follow up with PharmD for insulin titration and possible ProCGM

LibrePro CGM Results RA



Case ProCGM

- RA received
 - DM education with PharmD, both, in-person and remote telephone visits
 - Even though patient without insurance, he has decided to pay out of pocket for Libre 3 Personal CGM. He wears CGM for 2 weeks out of each month to help save on cost but to help keep him on track with blood sugars
 - Application for Novonordisk manufacturer assistance for semaglutide (Ozempic) filed, patient has been accepted.
 - Treatment Plan: continue metformin, start semaglutide, and patient would like to try to taper off insulin. Continue exercise and healthy meal planning and diet
 - Patient reports feeling great, repeat A1C% is 6.7



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Medical Associates of Rhode Island

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What population was missing?

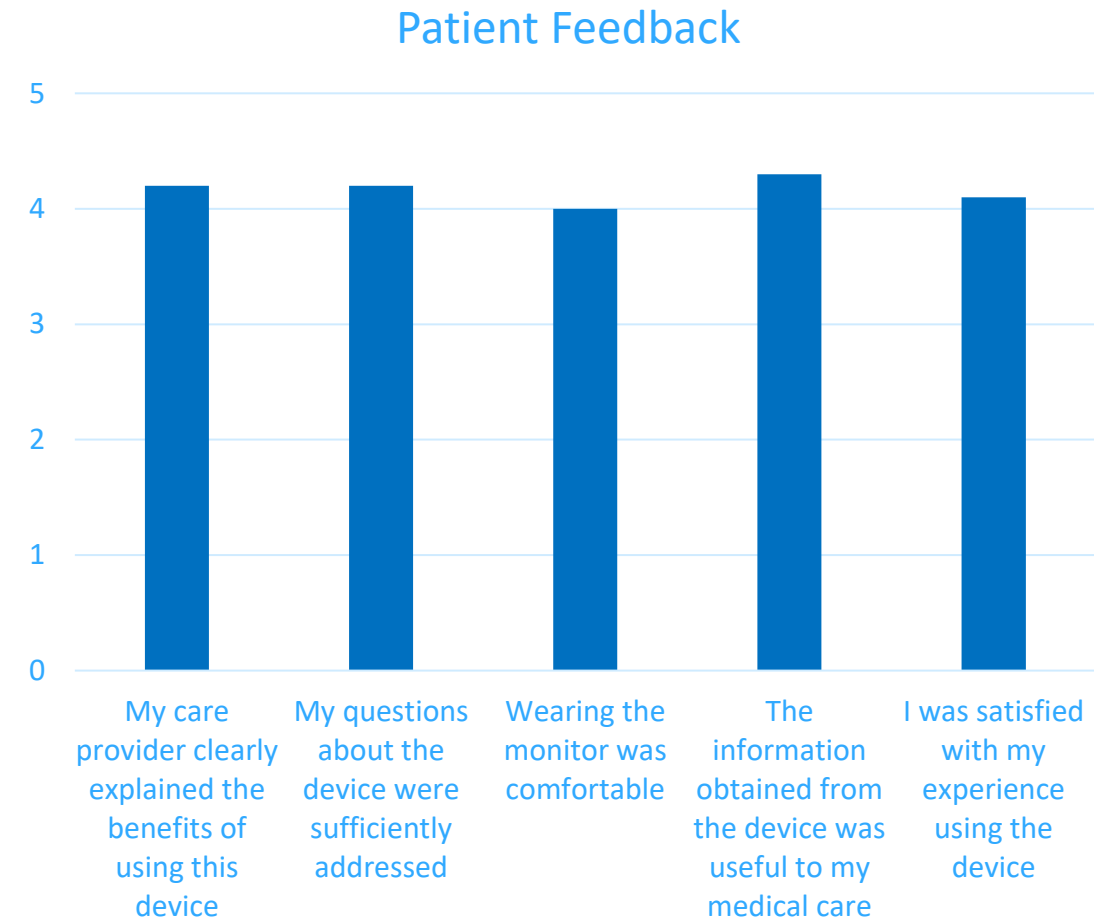
- Complex/High-Risk
 - > 8 medications
 - ≥ 2 ED visits in last 6 months or 3 visits in last 12 months
 - ≥ 2 hospital admissions within the last 12 months
 - Multiple risk factors (i.e. advanced age, lack of insurance, dementia, previous nonadherence to treatment plan, history or high risk of falls)
 - Multiple co-morbidities
 - Discretion of healthcare provider
- Non-English Speaking
 - 0 studies completed

What interventions were made?

- Difficulties extracting data led to a significant delay in identification and recruitment of complex/high-risk and non-English speaking patients.
 - Problems with registry reporting corrected by eCW technical support.
- Pool of eligible non-English speaking patients significantly smaller than expected (7 total w/ current A1c >8.0).
 - Problem identified with provider workflow as it relates to language information recorded in EMR.

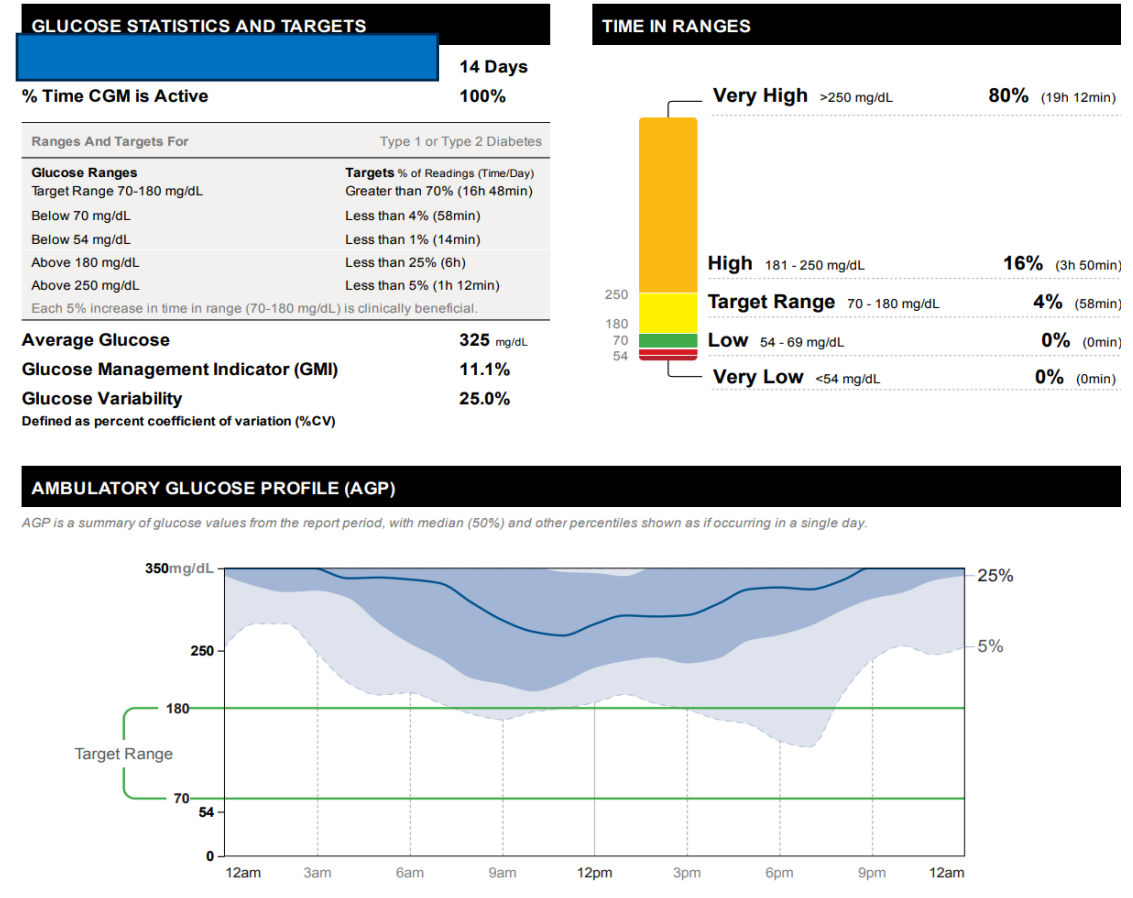
What did you learn based on data (including patient feedback)?

- Standardized workflow for non-compliant A1c values needed as they are reported
 - Capacity issues?
- Patients generally ‘agree’ that 
- Role of proCGM likely to continue to shrink with improved technology of and access to personal CGM.
 - Minimal change to practice CGM protocols, with the exception of billing.



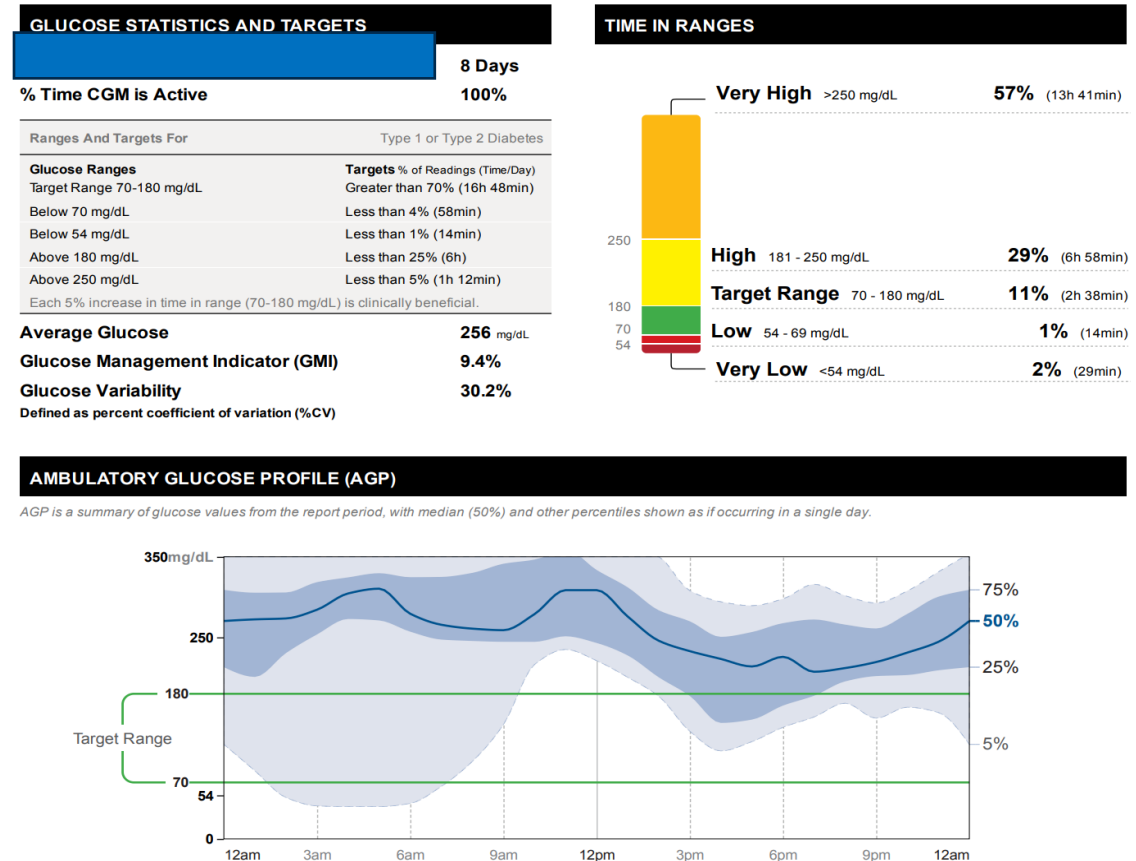
Patient Case – BB

- 57 Y.O. Female, Hx DM2 x 15+ years
- Baseline A1c 12.7; BMI 39
- DM Medications
 - Glargine U-300 90 units QD
 - Metformin 1000 mg BID
 - Previously failed semaglutide 0.5mg (N/V), other OADs
- Needs clearance for spinal surgery to relieve chronic neck and lower back pain
- Resistant to mealtime insulin



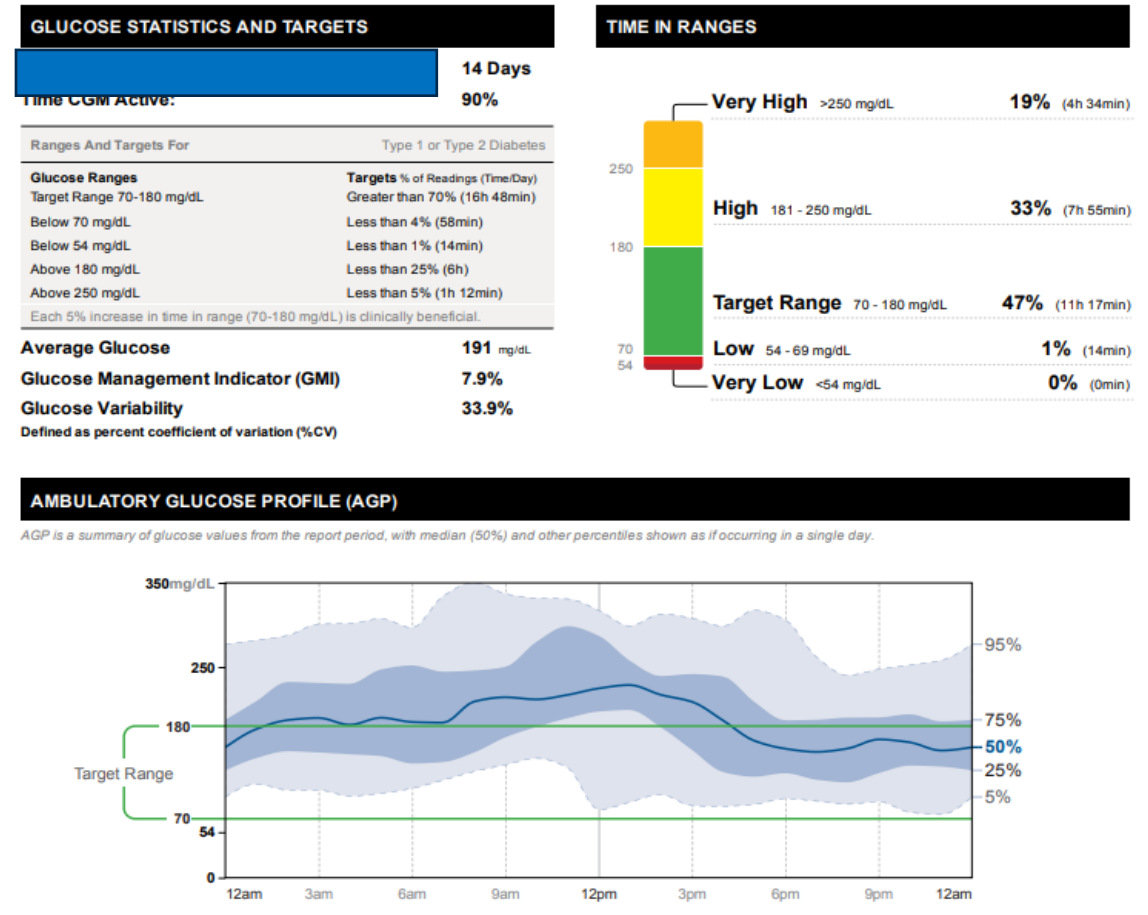
Patient Case – BB

- Started lispro with intention to titrate w/ PharmD assistance; deferred on personal use CGM
 - Patient did not f/u as instructed
- Repeat A1c (11.1) proCGM 4 months later
- Started on personal CGM w/ telephonic insulin titration
- Still ineligible for surgery despite significant improvement



Patient Case – BB

- Started tirzepatide 2.5 mg
 - Further improvement in glycemic control (~1% reduction in GMI)
 - BMI returned to baseline
 - Tolerated w/o AEs
- Cleared for surgery





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RIPCPC/Integra

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What population was missing?

- During last cycle, identified opportunity to expand enrollment of patients of lower socioeconomic status to allow for diversification of cohort
 - **Steps Taken:**
 - Inclusion of additional practice site with diverse patient population → CNEMG Pawtucket – Internal Medicine Clinic
 - Use of ‘Quality Measure’ reports to identify patients with A1c > 8%
 - **Next Steps:**
 - Review list of identified patients with PCP to assess for appropriateness for enrollment

What interventions were made?

1. Medication interventions are summarized below:

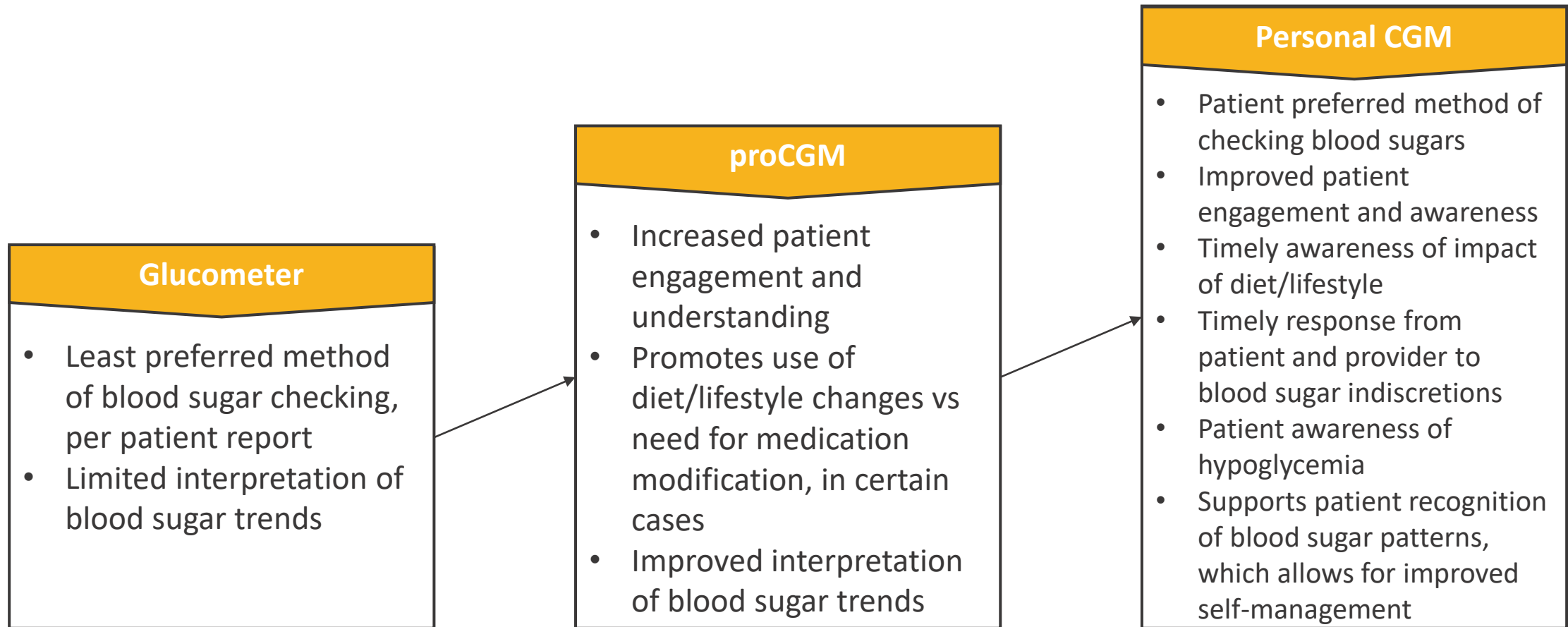
Medication										
Interventions		Basal Insulin	Bolus Insulin	Metformin	GLP1	SGLT2	DPP4	Sulfonylurea	Meglitinide	TZD
	Continued at same dose	6	3	11	3	6	1	3	0	1
	Increased	1	0	0	0	0	0	0	0	0
	Decreased	2	0	0	0	0	0	1	0	0
	Discontinued	0	0	0	0	0	0	1	0	0
	Addition	1	0	1	6	1	0	0	0	0

2. Based on patient request and patient survey data, workflow was modified to allow for transition to personal CGM and continued enrollment in program

- **Steps Taken:**

- Modification to 'Data Tracking' tool to identify if personal CGM is being used

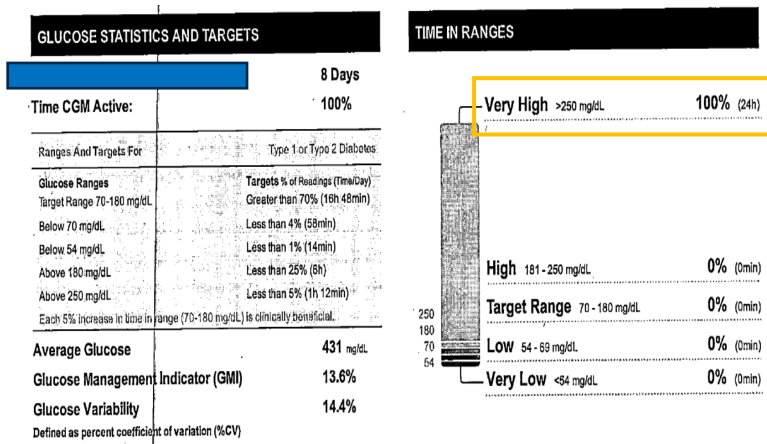
What did you learn based on data (including patient feedback)?



Patient Case

46 yo male with a history of uncontrolled T2DM with concurrent hypertension and depression. Significant history of foot ulcers secondary to uncontrolled diabetes.

Initial Visit:



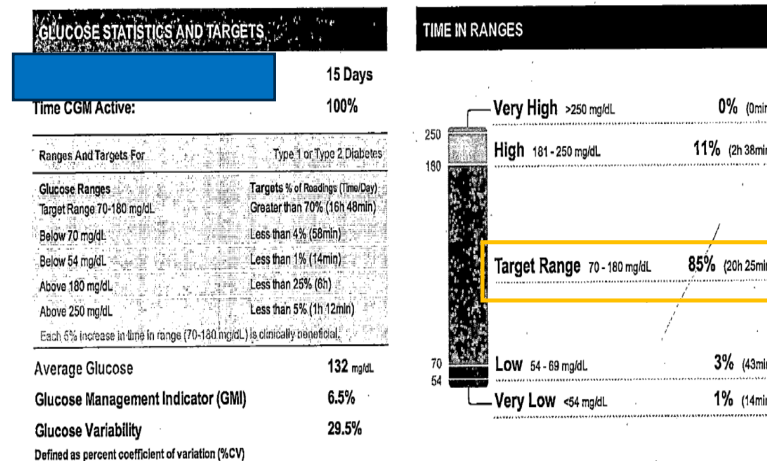
Medication Regimen:

- Glipizide 10mg twice daily

Pertinent Labs:

- A1c: 12.1% (4/23)

3-month Follow-up Visit:



Medication Regimen:

- Glipizide 10mg once daily
- Ozempic 1mg once weekly

Pertinent Labs:

- A1c: 7.3% (7/23)

Successes:

- Significant A1c reduction with initiation of GLP1 therapy
- Decrease in dose of sulfonylurea
 - Likely discontinuation of sulfonylurea with dose escalation of GLP1 therapy
- Improved patient engagement with care team following therapy successes

Challenges:

- SDOH concerns:
 - Delayed initiation of GLP1 therapy due to difficulty affording medication due to deductible
 - Recent job loss resulting in loss of insurance coverage
- Anticipated increase in blood sugars/A1c due to potential gap in care
- Access to medication limited by recent shortages



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“Coastal Medical”

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What population was missing?

- Patients with transportation barriers (need transportation for 2-3 visits per individual patient).
- Patients at Lifespan Physician Group practice → goal to expand to these practices in 2024 after Lifechart conversion.

What interventions were made?

- Insulin titrations
- Diabetes medication titrations (GLP1 RA's, SGLT2 inhibitors, sulfonylurea's, etc.)
- Management of steroid-induced hyperglycemia
- Management of nocturnal hypoglycemia
- Dietary adjustments

What did you learn based on data (including patient feedback)?

- Providing documented hypoglycemia on professional CGM reports can help to obtain coverage for personal CGMs.
- 66% of patients felt the Freestyle Libre Pro decreased their risk of experiencing hypoglycemia.
- CGMs can help identify patterns of asymptomatic hypoglycemia specifically nocturnal.
- Patients with hypoglycemia unawareness and patients unable to/unwilling to SMBG at home will benefit most from use of professional CGMs.
- Can serve as a great tool for short term management of steroid-induced or chemo-induced hyperglycemia.

Patient Case

Patient AG with Type 2 DM, HTN, CKD, hyperlipidemia ([United Health Medicare](#)) referred to *Diabetes Management Program* on 1/2019. Most recent A1c prior to pro CGM application: **9.27%** on 9/2021. Current DM meds include: Metformin 1000mg twice daily, Basaglar 20 units daily & Trulicity 3mg weekly.

- 1st Pro CGM sensor applied 1/2023 (reason: personal CGM not covered), downloaded 10 days later (3% high, 81% at target, 11% low, 5% very low). Basaglar dose decreased to 16 units daily.
- 2nd Pro CGM sensor placed on after 1 week, downloaded 7 days later (1% very high, 11% high, 88% at target, 0% low). Basaglar d/c'ed on 3/2023.
- Follow up A1c: **7.2%** on 5/2023.
- Personal use freestyle libre 2 approved through insurance given documentation of hypoglycemia on Freestyle Libre Pro download.



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Anchor Medical Associates

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What population was missing?

- Data from these proCGM reports has reenforced data from clinical studies showing the risk of hypoglycemia with certain medications options (especially sulfonylureas and NPH).
- We have also seen benefits in using proCGM in patients with cases where a traditional A1c may not be valid (anemia, end stage CKD, hemoglobinopathies). Which has helped provider better individual care for these patients.
- We developed a workflow/education for the care team and provider emphasizing the need to screen patients for low glucose risk factors and refer to PharmD / DM team for eval when needed
- We have also seen a large increase in the #/% of patients that qualify for personal CGM, so need for professional CGM seems most helpful in patients without access to the personal CGM option.

What interventions were made?

		N=60		
New DM diagnosis	8%	5		
DM med added	49%	29		
DM med dose change	76%	45		
Continue w personal CGM	25%	15		
Was goal achieved at 6 mo: Yes	70%	42	n/a =	8 (not enough time for f/u a1c yet)
Goal achieved at 6 mo	17%	10	n/a =	8

What did you learn based on data (including patient feedback)?

- 42% of patients had some level of hypoglycemia and needed a med change to address this.
- As expected, large discordance between CGM values and A1c for patients with (anemia, end stage CKD, hemoglobinopathies)
- 70% of patient saw A1c improvement within 3-6 months and most hit goal
- Most patients found the CGM info to be helpful/impactful.
 - 60% indicated they wanted to be able to use personal CGM
 - With 25% continuing with personal CGM.
 - Would have been higher but limited by insurance coverage / cost

TIME IN TARGET			
>250 mg/dL	16%		
180-250 mg/dL	18%		
70-180 mg/dL	63%		
< 70 mg / dL	3%		
% of pts with > half of readings >250 mg/dL	10%	5	
% of pts with 1+ reading < 70 mg/dL	42%	21	

Patient Case

- Jh 89 y/o male veteran with DM type 2 referred for DM evl/ mgt after ED visit / admission after fall and hypoglycemia. Previously dx w/ h/o repeated falls (mostly at night) and unsteady gait, working with pt. dependent on walker. Lives alone. No SMBG. Recurrent UTIs/ PVD. Insulin doses recently increase due to a1c > goal.
- Initially on NovoLIN 70/30 20units am and 15 units pm + metformin 1000mg BID, A1c 8.3%
- CGM showed 20% “very low” readings most in the 3-8am range before pt woke up.
- Average glucose 126
- During visit PharmD review s/sx of lows. Novolin 70/30 d/c’d and switched to lantus + s/s Humalog TID
- Started pt on personal CGM w/ data sharing with anchor medical + pt’s daughter
- Over the next 6 months, pt seen 3 additional times for CGM / glucose review
 - Currently pt’s basal insulin 50% of previous starting dose, down to 1 dose of Humalog predinner
 - Pioglitizone 15mg added
 - A1c 8.9% (improved but still > goal)
 - “very low reading” per CGM now < 2%
 - No falls and/or ED visits in past 6 months. **No longer needed walker/ cane.**
- Having the proCGM and then additional of personal CGM has overall improved pt’s care and QOL. Also helped bring in pt’s family into the care team.

>250 mg/dL (very high)	4%
180-250 mg/dL (high)	16%
70-180 mg/dL (in range)	60%
< 70 mg / dL (low/very low)	20%
<i>total time should = 100%</i>	100%

Next Steps



Quarterly learning collaborative: present QI work plan with content expert as applicable	August 22, 2023	<input checked="" type="checkbox"/>
Obtain input from patients/care team for qualitative measures	September 2024	
Spread and sustainability (Months 13-14) <ul style="list-style-type: none"> - Identify plan to spread services to other providers/practices or offer to other populations of focus - Determine who's being missed by current workflow 	September 2023-October 2023	
Submit PDSA with year 1 results and plan for spread and sustainability plan including risk stratification	2 weeks prior to Nov learning collaborative	PDSA to be submitted by 11/14/23. deliverables@ctc-ri.org
Quarterly learning collaborative: present QI work plan with content expert as applicable <ul style="list-style-type: none"> - Teams report out on Risk Stratification plan 	November 28, 2023	
Spread and sustainability (Months 15-23)	November 2023 - July 2024	
Submit updated PDSA including patient engagement and care team engagement data, key findings and adjustments necessary to project plan	2 weeks prior to Feb learning collaborative	PDSA to be submitted by 2/13/24. deliverables@ctc-ri.org
Quarterly learning: present QI work plan w/ content expert, as applicable	February 27, 2024	

Announcements

CTC-RI Annual Conference:
**INVESTING IN PRIMARY CARE &
HEALTH EQUITY**

The Crowne Plaza Hotel - Warwick, RI
Breakfast & Registration at 7:00AM
Event starts at 7:30AM

Thank you to our sponsors:



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CTC-RI Annual Conference Registration *NOW OPEN* <https://www.eventbrite.com/e/579436378807>

NCQA Health Equity Accreditation Training Option for up to *50* Participants

