Welcome

Pharmacy CGM Learning Collaborative | February 27, 2024

Care Transformation Collaborative of RI

Agenda

Topic *Presenter*	Time
Welcome *Susanne Campbell, RN, MS, PCMH CCE, Sr. Program Administrator, CTC-RI*	**5 min**

Practice Updates (~9 mins / practice):
    MARI
    Integra/RIPCPC
    Miriam Hospital
    PCHC
    Coastal
    Anchor
Kelley Sanzen, PharmD, PAHM, CDOE, Clinical Pharmacist, Pharmacy Quality Improvement Facilitator
	60 min

Data Summary *Stephen Kogut, PhD, MBA, RPh*	**20 min**
Next Steps	**5 min**

Medical Associates of Rhode Island

Pharmacy CGM Learning Collaborative | February 27, 2024

Care Transformation Collaborative of RI

PDSA Update

New Test of Change: Sustainability

➔Expand Billing
  ➔Addition of CPT 95251

➔Optimize Workflow
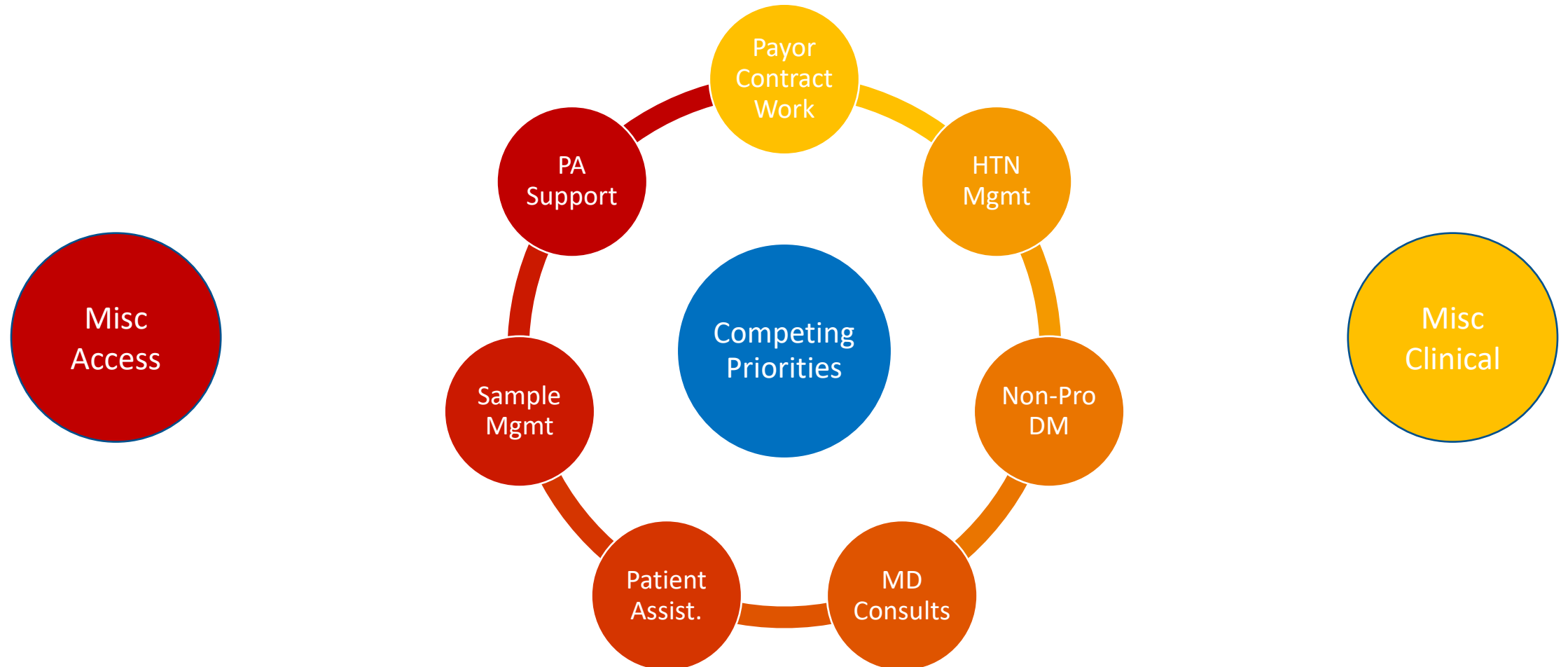 ➔Proactive Review of and Intervention on Prior Year Non-Compliant A1c

➔Increase Access/Improve Experience for non-English Speaking Patients
  ➔Train MAs to place and educate, utilize for translation

- 64 unique patients and 6 repeats
- Billing: Started using 95251 (100% success rate; 4/4 adjudicated)
- Workflow: Inaccurate data on first attempt at 2023 failures
- Access: Trained 1 of 2 Portuguese-speaking MAs

# How are you engaging other team members? What are the challenges? How best to overcome these challenges?

Competing Priorities

- Payor Contract Work
- HTN Mgmt
- Non-Pro DM
- MD Consults
- Patient Assist.
- Sample Mgmt
- PA Support

Misc Access

Misc Clinical

How are you engaging other team members? What are the challenges? How best to overcome these challenges?

Care Team Member	Pharmacist	Pharmacy Intern	NCM	Provider	Medical Assistant
Duties	• Patient Identification/ Referral • Sensor Placement/ Education • proCGM Interpretation • DM Education • Medication Adjustment • Data Collection/ Aggregation	• Sensor Placement/ Education • Data Collection/ Aggregation • PA and Patient Assistance, Sample Mgmt Support	• Patient Identification/ Referral • Sensor Placement/ Education • DM Education	• Patient Identification/ Referral • Medication Adjustment	• Sensor Placement/ Education • Translation

What criteria are you using to graduate patients from Pro CGM?

- Capacity?
  - ~275 CGM patients under varying levels of surveillance and management
- 6+ Months of Adequate Glycemic Control
  - Consecutive A1Cs
  - A1C + 90 Additional Days of CGM data
  - 180 Days of CGM data

Enrollment → Intervention → Graduation
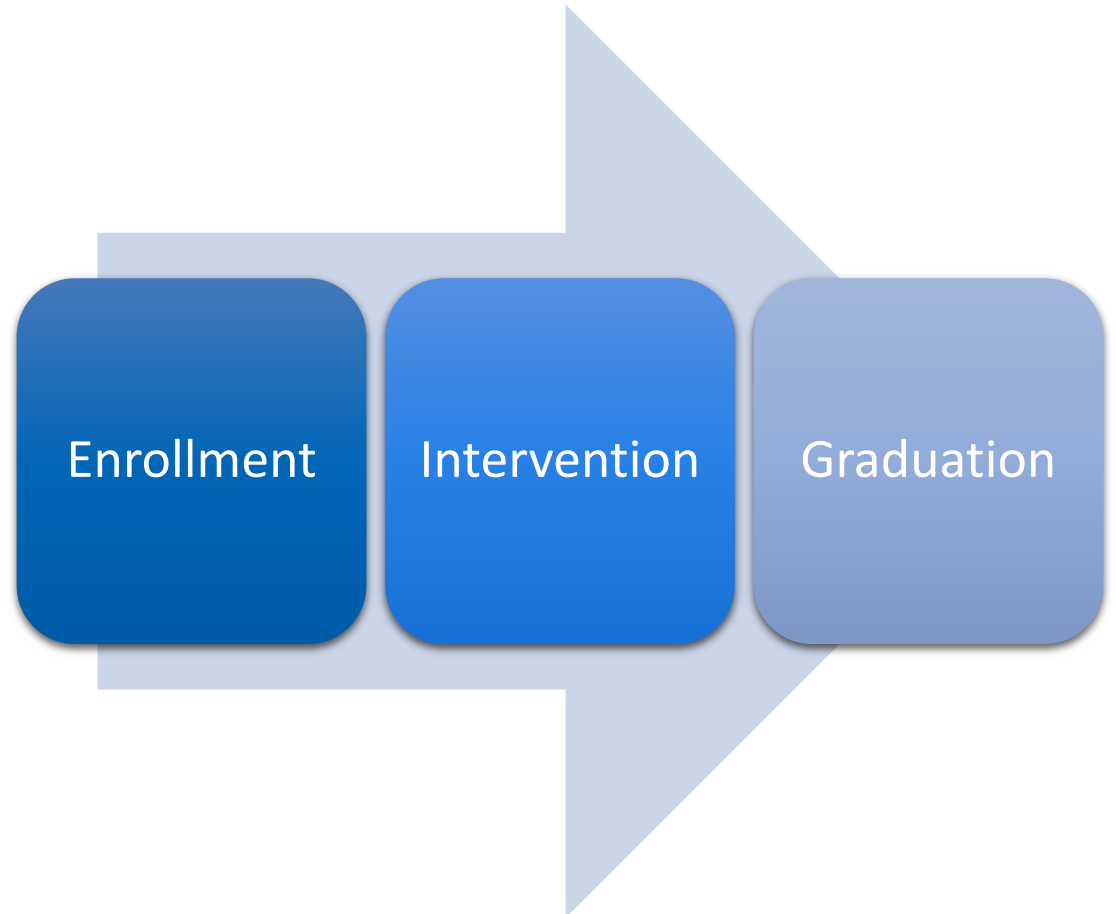
RIPCPC / Integra

Pharmacy CGM Learning Collaborative | February 27, 2024

Care Transformation Collaborative of RI

PDSA Update (what have you learned?)

New Test of Change - *Sustainability Goals*

Goals:
1.   **Access expansion:** lower socioeconomic background
2.   **Workflow optimization:** leverage of alternate care team members

Action Taken:
1.   **Access expansion:**
     - Inclusion of:
       - Medicaid patients
       - Patients' w/ difficulty adhering to SMBG recommendations secondary to cognitive impairment
       - Lower health literacy, addressing CGM hesitancy
2.   **Workflow optimization:**
     - Care Team involvement has led to easier access and patient engagement with the program
     - Increased patient "buy-in" due to provider involvement and engagement
     - Improved time management for care team and pharmacy team members
       - Helping w/ capacity and scheduling issues.

How are you engaging other team members? What are the challenges? How best to overcome these challenges?

Team Members:

- Pharmacy:
  - **Clinical Pharmacist:** sensor placement and interpretation, medication management, provider collaboration
  - **Pharmacy Resident:** incorporated into learning experience as an additional resource to enhance current diabetes service provided
  - **Pharm Students:** conducting medication reconciliations and other tasks while pharmacist is reviewing prCGM report to expedite appt and maintain engagement
- Nurse Care Managers:
  - Referral and collaboration for care management-related patient needs
- Providers:
  - Referrals/patient identification, co-management of medications, some interpretation of proCGM results
- Support Staff:
  - **Medical Assistant(s):** identification of patients as part of previsit planning (lab reviews A1C > 8%) and during rooming process
  - **Front Desk Staff:** Scheduling patients for follow up

Challenges:

- Scheduling limitations for pharmacists and time in the sites
  - **Steps Taken:** incorporation of additional care team members
- Provider referrals for personal CGM and/or medication therapy
  - **Steps Taken:** education regarding coverage for personal CGMs
- Medical resident exposure to CGM
  - **Steps Taken:** 1-on-1 education opportunities

What criteria are you using to graduate patients from Pro CGM?

Goal Met:

- Widespread process in development across the pharmacy team
  - *Potential Consideration:* A1C/TIR at goal and sustained for 3 months

Lost to Follow-up:

- 3 attempts of outreach to pt
  - ACO patients: Re-engaging patient at provider follow up visits

Conversion to Personal:

- Continue to be enrolled in project, however, no longer having sensors placed
- Followed by pharmacy team until one of the above is met

Patient Example:

GLUCOSE STATISTICS AND TARGETS

| October 10, 2023 - October 24, 2023 | 15 Days |
| Time CGM 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	121 mg/dL
Glucose Management Indicator (GMI)	6.2%
Glucose Variability	51.6%
Defined as percent coefficient of variation (%CV); target ≤36%	

TIME IN RANGES

Very High	>250 mg/dL	4%	(58min)
High	181 - 250 mg/dL	12%	(2h 53min)
Target Range	70 - 180 mg/dL	61%	(14h 38min)
Low	54 - 69 mg/dL	12%	(2h 53min)
Very Low	<54 mg/dL	11%	(2h 38min)

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.

67yo female w/ PMH of T2DM, HTN, hyperlipidemia. History of stroke.

Current diabetes regimen:
- Glipizide XL 10 mg every day
- Jardiance 25mg every day
- Metformin 1000mg twice daily
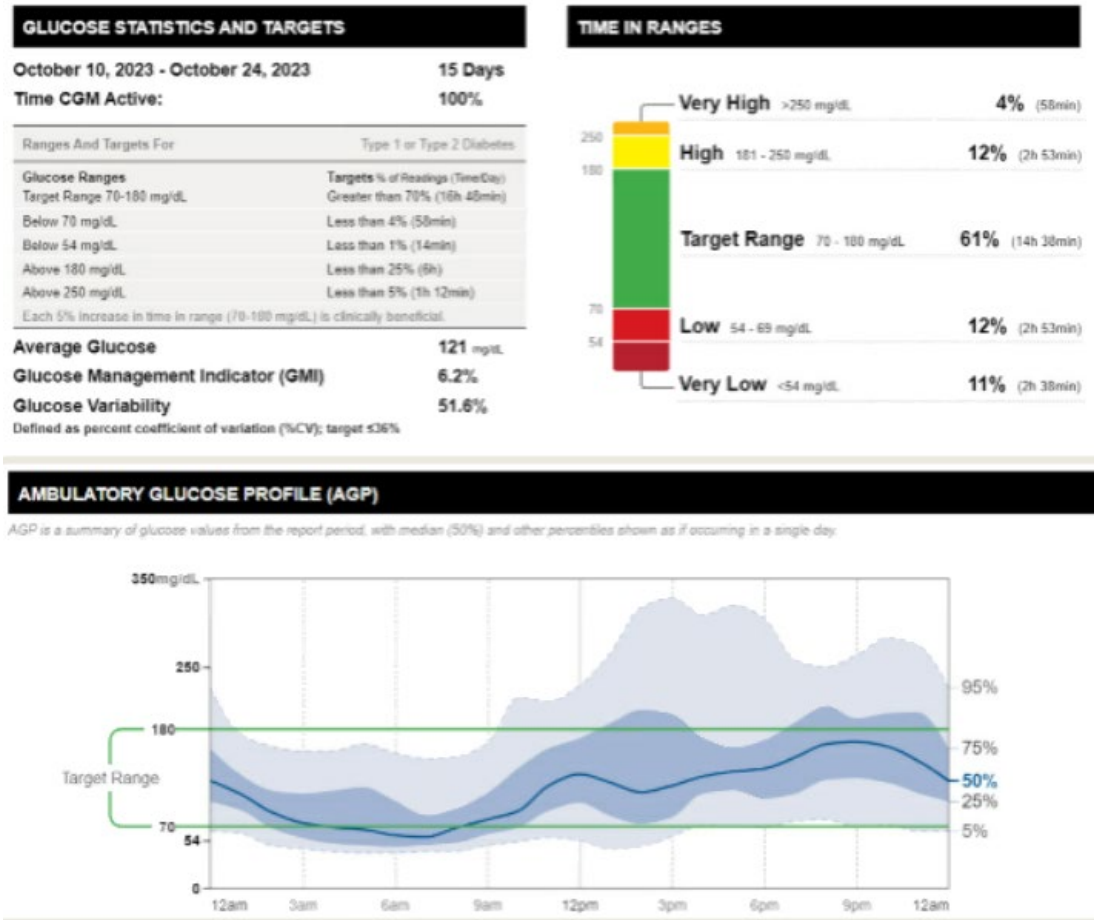- Linagliptin 5mg every day

Pertinent Labs:
A1c: 8.5%

Lifestyle/SDOH:
- Patient lives alone
- Memory impairment
- Unemployed since stroke

Action Taken:
- Enrolled in proCGM program
- Glipizide switched to IR and dose reduced to 5mg, due to cost barrier
- 2nd proCGM sensor placed; awaiting results
- Follow-up A1c down to 7.8%

TMH Suite C
RIH Adult Endocrinology Clinic

Pharmacy CGM Learning Collaborative | February 23, 2024

Care Transformation Collaborative of RI

PDSA Update (what have you learned?)

- Patients like seeing their blood sugars readings in real time and being alerted, especially when hypoglycemic, so we have decided to use unblinded CGMs in some of our patients
  - RIH Adult Endocrinology Clinic: 4 out of 20 patients on unblinded CGM – better feedback
- Some patients have been able to decrease medication dosages and insulin requirements with use of CGM therapy
- CGM therapy has been helpful for :
  - Adjusting insulin and other medications
  - Identifying trends, as well as patients with hypoglycemic unawareness and high glycemic variability
  - Counseling patients on how to manage their diet, as well as seeing the impact of exercise on blood sugars
  - Caretakers of patients/peace of mind
- Follow up has been more difficult than anticipated
- Initially, many patients referred for professional CGM, but this has slowed down because of more patients having coverage for personal CGM

How are you engaging other team members? What are the challenges? How best to overcome these challenges?

- Team members roles/responsibilities
  - Providers: refer patients and collaborate on care
  - Nurses: applying sensors in clinic
  - Medical Assistants: download data, print reports, and upload into EMR
  - Pharmacists: interpretation and recording of data
    - Also assisting with identifying potential patients for professional CGm use and sensor placement when needed
  - Med Access team (tech/pharm): starting to help support Endo team for Prior Auth support
- Challenges
  - Personnel changes
  - Patients wanted to know readings in real time, especially when they are low → Dexcom solution
  - Continuity of care wtih resident/fellow providers can be challenging
  - Low income, low health literacy, and psychosocial issues
  - LibrePro falls off → Skin Tac and overpatches have been helpful in some patients
  - Capacity issues to volume and competing priorities

What criteria are you using to graduate patients from Professional CGM?

- RIH Adult Endocrinology Clinic workflow:
  - Visits with MD annually
    - Sooner if other endocrine comorbidities are present
  - Follow up with PharmD as needed in between MD visits for medication titration/adjustment

- No written definitions or criteria to graduate patients from proCGM use currently
  - Why? Patient specific:
    - Have they met their A1C/TIR goal?
    - Have their episodes of hypoglycemia decreased?
    - Has their glycemic variability decreased?
    - Are they on a stable medication regimen?
    - How many times per day are they able to check BG via fingerstick?

- If patients are insured:
  - Continue to Personal CGM use per insurance (appreciate MAP team assistance)
  - Real-time CGMs preferred over intermittently-scanned CGMs

Patient Case

GV is a 77 y/o F with longstanding T2DM (dx age 34). She was initially treated with metformin and was transitioned to insulin therapy around 2016. She recently moved to the US from Guatemala and does not have insurance. She has a very strong family history of T2DM. She recently returned home from a 3 month stay at Golden Crest Nursing Home after her most recent hospitalization (8/21/23 - 9/3/23 for a CHF exacerbation and UTI). She lives with her granddaughter, but is home alone much of the day. She was discharged home on Novolin 70/30 45 units with breakfast and 15 units with dinner. She is only fingersticking once daily because it hurts her fingers.

Lab Results

Component	Value	Date
HGBA1C	6.9 (H)	07/15/2023
HGBA1C	9.3 (H)	01/13/2023

Component Ref Range & Units	5 mo ago (9/3/23)
Glucose 67 - 99 MG/DL	384 ↑
BUN 6 - 24 MG/DL	63 ↑
Creatinine 0.44 - 1.03 MG/DL	2.59 ↑
Sodium 135 - 145 MEQ/L	130 ↓
Potassium 3.6 - 5.1 MEQ/L	3.9
Chloride 98 - 110 MEQ/L	89 ↓
CO2 22 - 32 MEQ/L	29
Anion Gap 3 - 13	12
Calcium 8.5 - 10.5 MG/DL	9.4
eGFR Abnormal <60 ML/MIN/1.73M	18 ↓
Resulting Agency	The Miriam Hospital Laboratory

Patient Case

Why is GV a good candidate for a proCGM?

- Non-insured

- Recent hospitalization/SNF stay x 3 months

- Risk for hypoglycemia
  - Age
  - Insulin monotherapy
  - Poor kidney function

- High dose of insulin for weight

- Not willing to check BG by fingerstick more than 1x/day

- Home by herself a majority of the day

- A1C is well below goal of <8% with a large decrease over the past 6 months – suspect asymptomatic hypoglycemia
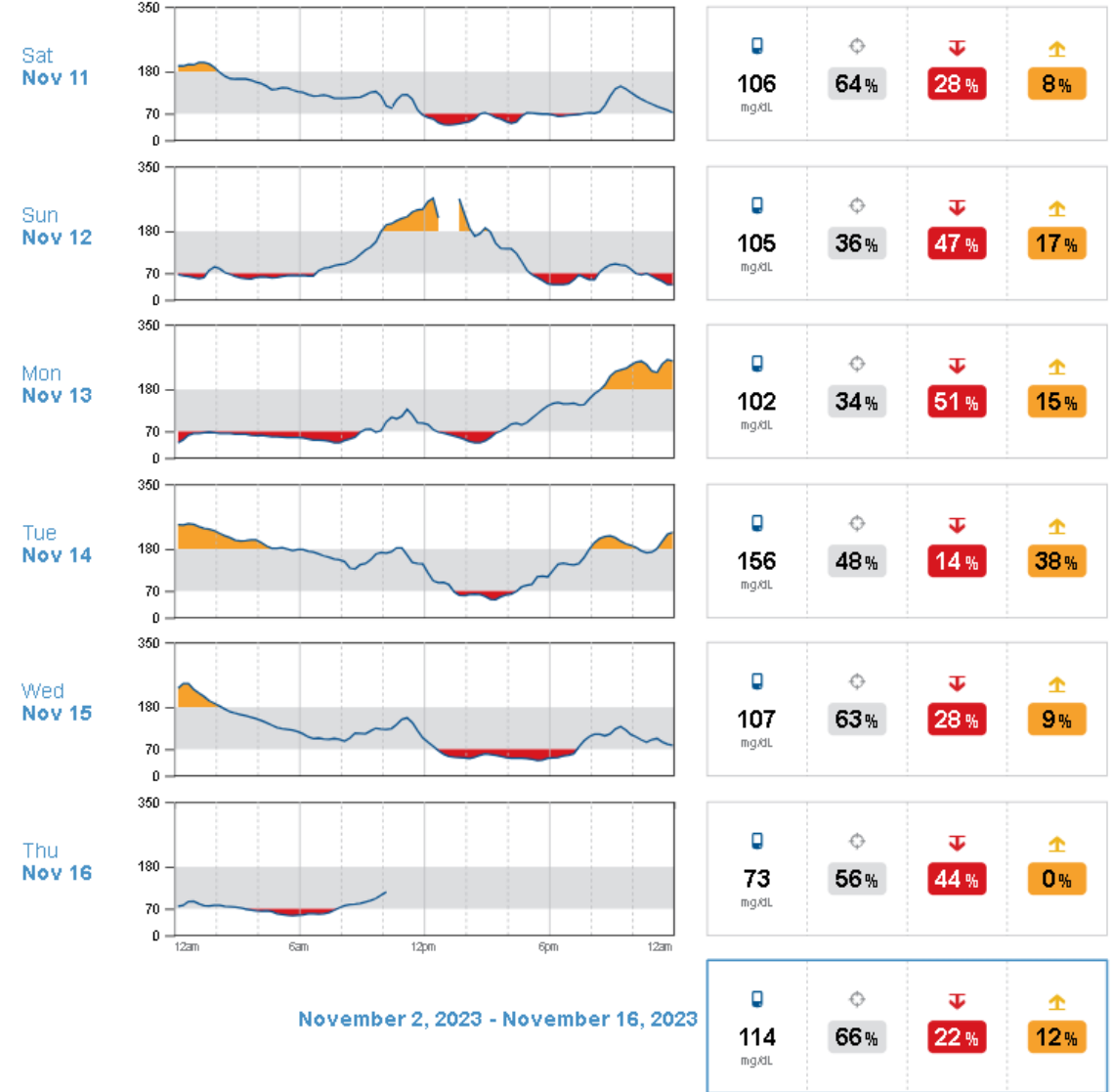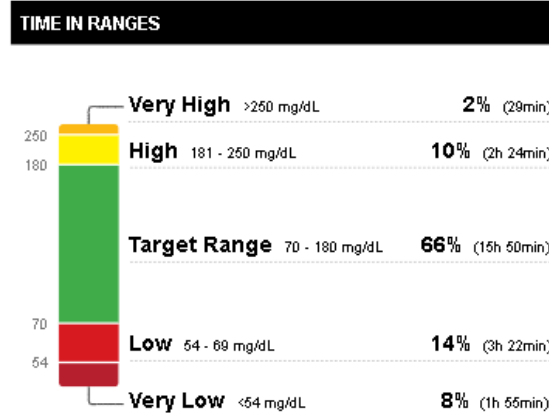
Patient Case

What was done in response to this data?

- Doses of Novolin 70/30 were reduced to account for significant asymptomatic hypoglycemia

- Another professional CGM was placed, which showed less hypoglycemia with doses changes

- GV was eventually switched off mixed insulin to reduce risk of hypoglycemia
  - Switched to once daily basal insulin (Basaglar) through Lilly Insulin Affordability program ($35/month)
    - This was a cost savings for her since she was requiring 2 vials of Novolin 70/30 per month
  - Pens were easier for her to utilize and see compared to Novolin 70/30 vials

- How is GV doing now?
  - Remains on Basaglar, but at a more appropriate dose for her weight
  - Most recent A1c 7.4%
  - Now fingersticking 2-3x/day - rare hypoglycemia
  - eGFR has improved – considering SGLT2 inhibitor therapy through PAP to decrease insulin requirements
    - Also follows with nephrology

Thank you!

Any Questions?

Care Transformation Collaborative of RI

Providence Community Health Center

Pharmacy CGM Learning Collaborative | February 27, 2024

Care Transformation Collaborative of RI

PDSA Update (what have you learned?)

New Test of Change: Sustainability Goals:

To expand pro-CGM pharmacy services to all PCHC clinic locations to include a targeted population of patients with T2DM with an A1C of ≥ 9% AND have had an IP/ED admission since July 1st, 2023.

- Updated reporting has expanded the targeted population to capture more patients
  - Needed to eliminate insulin from the original plan
  - Able to readily identify patients not on evidence-based therapies

- Project management support has helped to eliminate barriers by facilitating deliverables completion

- Provider training yielded referrals
  - Some referrals don't meet criteria b/c they don't meet the ED/IP visit

How are you engaging other team members? What are the challenges? How best to overcome these challenges?

- Team Members
  - Pharmacists – placing sensors, downloading/uploading data and interpreting reports
  - Technicians - Outreaching patients and scheduling appt, collecting med histories, SDoH screening, interpreter services, and sensor placement
  - Providers - Referrals to pharmacists, following up on pharmacists' recommendations
  - Behavioral Health – Accepting patients who consent and screen positive on diabetes stress test
  - Community Health Advocates – Helping w/ transportation needs, connecting w/ social services/local services

- Challenges:
  - Need to better define roles/responsibilities across the spectrum of diabetes patient – Pending Board Approval of DM Strategic Plan-Pending project approval of Performance Improved Committee
  - SDoH screenings on hold due to tab not yet added to Pharmacy MTM visit type
    - Patients mention financial challenges with rising food costs
  - Patients not returning calls from technicians who are outreaching for the program -> Coaching provided, script developed- found pharmacy direct line not working- ticket submitted and resolved
  - Some patients have not returned to clinic w/ their CGM- incentives in place

What criteria are you using to graduate patients from Pro CGM?

- A1C at goal

- Conversion to Personal use CGM

Coastal Medical

Pharmacy CGM Learning Collaborative | February 27, 2024

Care Transformation Collaborative of RI

PDSA Update (what have you learned?)

- Applied 73 Libre Pro sensors to date

- Currently have a Freestyle Libre Pro reader at 5 different sites

- Future Opportunities:
  - Pharmacy intern involvement
  - Increased Clinician/MA involvement
  - Unblinded Pro sensors (Dexcom)
  - Billing for sustainability

How are you engaging other team members? What are the challenges? How best to overcome these challenges?

- **Nurse Diabetes Educators** and **Diabetes Care Navigators** have been an integral part of this pilot.
  - Diabetes Nurse Educators have been involved in identification of patients, development of workflow, application of sensors and download/interpretation of readings.
  - Diabetes Care Navigators have been involved in application of sensors & download of readings.

- **Challenges:** Expired sensors, Transportation barriers, Competing priorities (Lifechart migration), Provider Transitions, Lack of clinician/MA involvement

- **Looking forward:**
  - Anticipate pharmacy intern involvement in inventory management, identification of patients, application of sensors and coordinating follow up A1c results.
  - Anticipate more clinician/MA involvement after Lifechart migration
  - Care team will look to place sensor during PCP visit for patients with transportation barriers if possible, some have performed home visits
  - Plan to involve additional care team members including: role based pharmacists, HTN RN, HTN navigators, etc.

What criteria are you using to graduate patients from Pro CGM?

- Most patients are only receiving service once to identify patterns, some repeating every 3 months for medication adjustments if unable to convert to personal CGM. May repeat sooner if hypoglycemia persists.

- Current criteria for unenrollment from Diabetes Management Program includes:
  1. Patient has reached acceptable glycemic control target and maintains a low overall risk of hypoglycemia (see tool for reference).
  2. Patient or clinician declines DMP services.

Tool Inputs

- How many times has the patient ever had hypoglycemia-related utilization in an ED (primary diagnosis of hypoglycemia[a]) or hospital (principal diagnosis of hypoglycemia[a]) (0, 1-2, ≥3 times)?
- How many times has the patient gone to an ED for any reason in the prior 12 months (<2, ≥2 times)?
- Does the patient use insulin (yes/no)?
- Does the patient use sulfonylurea (yes/no)?
- Does the patient have severe or end-stage kidney disease (CKD stage 4 or 5) (yes/no)?
- Is the patient <77 years old (yes/no)?

Instructions: The 6 inputs above are used to identify one of the mutually exclusive exposure groups and the corresponding risk category (high, low, or intermediate) for hypoglycemia-related ED or hospital utilization[b] in the following 12 months. The first 5 options are defined by unique combinations of predictor variables, while the sixth option is indicated only after ruling out the first 5 options.

	Criteria	Risk
☐	≥3 Prior hypoglycemia-related ED or hospital utilization	High risk (>5%)
☐	1-2 Prior hypoglycemia-related ED or hospital utilization AND Insulin user	
☐	No prior hypoglycemia-related ED or hospital utilization AND No insulin AND No sulfonylurea use	Low risk (<1%)
☐	No prior hypoglycemia-related ED or hospital utilization AND No insulin AND Uses sulfonylurea AND Age <77 years AND Does not have severe or end-stage kidney disease	
☐	No prior hypoglycemia-related ED or hospital utilization AND Uses insulin AND Age <77 years AND <2 ED visits in prior year	
☐	All other risk factor combinations	Intermediate risk (1%-5%)

Patient Success Story

Patient JA, **A1c 12.6%** on 10/26/23 (5.4% prior), not on any DM medications. Newly diagnosed with Type 2 diabetes.

Metformin ER 500mg daily initiated, DM education provided. Pro CGM sensor applied & downloaded (see results). Prior to & during Pro CGM sensor wear, patient had eliminated juice, energy drinks and soda from diet.

Repeat A1c: awaiting completion

November 20, 2023 - December 4, 2023 (15 Days)

GLUCOSE STATISTICS AND TARGETS

November 20, 2023 - December 4, 2023	15 Days
Time CGM Active:	100%

Ranges And Targets For	Type 1 or Type 2 Diabetes
Glucose Ranges Target Range 70-180 mg/dL	Targets % of Readings (Time/Day) 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	163 mg/dL
Glucose Management Indicator (GMI)	7.2%
Glucose Variability	25.4%

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

TIME IN RANGES

Very High	>250 mg/dL	5%	(1h 12min)
High	181 - 250 mg/dL	21%	(5h 2min)
Target Range	70 - 180 mg/dL	74%	(17h 46min)
Low	54 - 69 mg/dL	0%	(0min)
Very Low	<54 mg/dL	0%	(0min)

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.

Anchor Medical Associates

Pharmacy CGM Learning Collaborative | February 27, 2024

Care Transformation Collaborative of RI

At Risk Population Identified

Reports created using structured EMR Data, schedule cadence TBD

CRITERIA:

- Hypoglycemia ICD10
- Any glucose result < 70 in past 2 years OR
- Age > 60 w/ A1C < 6.5 on sulfonylurea or insulin OR

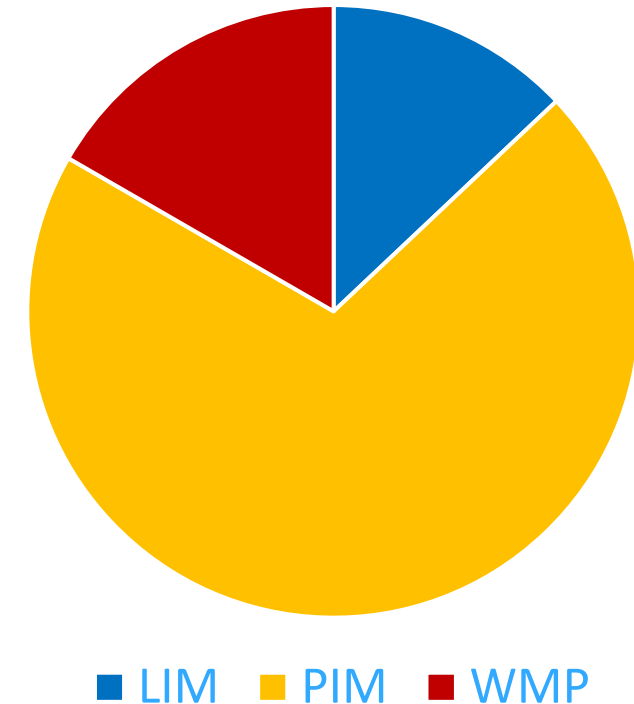| Diagnosis	79.63%
Glucose <70, 2y	17.59%
A1C >60y w <6. Med	2.78%

PDSA Update (what have you learned?)

- 108 patients (.57%) identified as @ risk

DEPT	Active Pts	At Risk Pts	% At Risk
LIM	5934	14	0.24%
PIM	9215	76	0.82%
WMP	3893	18	0.46%
Total	19042	108	0.57%

% At Risk by Department

■ LIM ■ PIM ■ WMP

Demographic Data

% at Risk by Race

A bar chart titled "% at Risk by Race" with y-axis from 0% to 60%:
- Dominican: ~1%
- Other Race: ~2%
- Black or African American: ~13%
- Patient Declined: ~36%
- White: ~48%
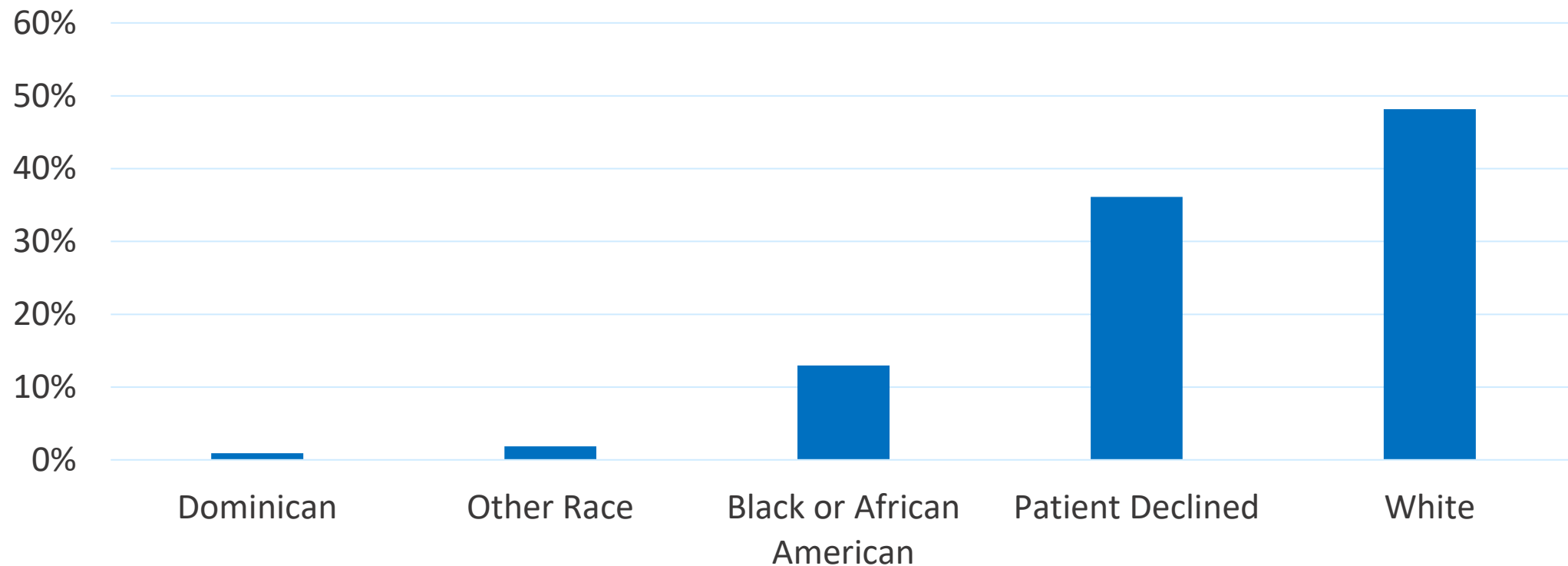
Demographic Data

% of at Risk by Age Group and Gender

Age Group	F	M	Grand Total
25-49	32.39%	5.41%	23.15%
50-64	25.35%	43.24%	31.48%
65-84	36.62%	45.95%	39.81%
85+	5.63%	5.41%	5.56%

% at Risk by Gender at Birth
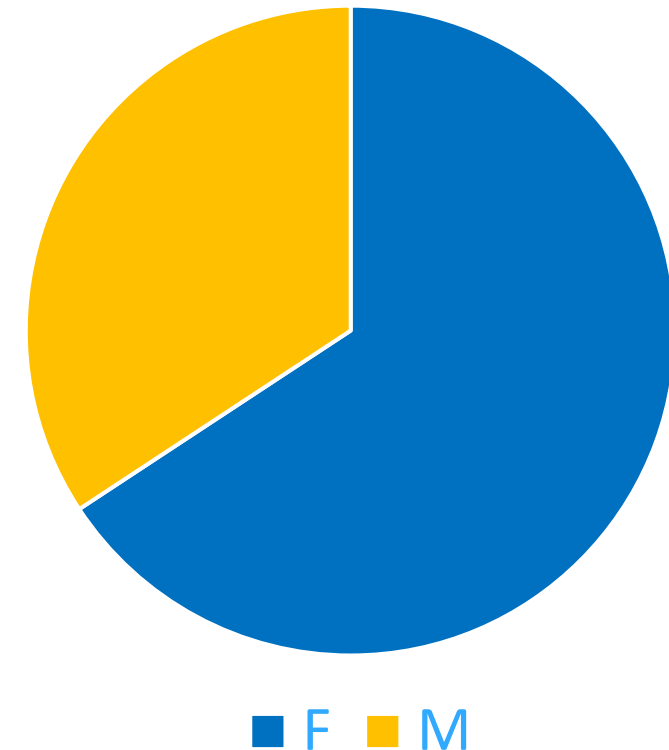
■ F ■ M

How are you engaging other team members? What are the challenges? How best to overcome these challenges?

- Team Members
  - Nurses – Identify/refer patients (ED visits for hypoglycemia) and applying sensors
  - Pharm Tech- Downloading sensor data and sending to Pharm/Provider for review
  - Pharmacist - pro-CGM interpretation, med recommendations/adjustments, data collection/aggregation
  - Providers- Identify/refer patients, collaborating on co-management

- Challenges:
  - Capacity issues
  - Staff turnover -> Onboarding/training for new providers and staff
    - Incremental learning based on the staff role out
    - In-services/trainings
  - Leave of Absence/coverage plans for that time

- Patient Feedback is mostly informal at this time

What criteria are you using to graduate patients from Pro CGM?

- Hypoglycemia resolved per CGM data *(time period at goal??)*

- A1C at goal *(time period at goal??)*

- Transitioned to personal use CGM w/ provider management

Data Summary

Stephen Kogut, PhD, MBA, RPh
University of RI

Pro-CGM readings (updated 2/2024)

Site	A	B	C	D	E	F	Total (n)	%
Total placements	71	90	58	58	20	39	336	100
Age (n)								
18-49	9	7	13	13	3	1	46	14%
50-69	32	34	32	38	13	25	174	52%
70+	30	49	14	7	4	13	117	35%
Payer (n)								
Medicare	37	57	19	21	3	21	158	47%
Medicaid	11	12	22	13	12	5	75	22%
Commercial	21	21	17	11	2	13	85	25%
UHC %	26%	31%	33%	33%	15%	31%	99	29%
Using Insulin								
yes (%)	37%	-	29%	59%	80%	36%	93/197	47%

Pro-CGM readings (updated 2/2024)

Site	A	B	C	D	E	F	ALL
Glucose							
mean	182	185	200	203	230	201	195
sd	83	53	70	73	88	82	71.2
Glucose Variability							
mean	26%	30%	26%	27%	31%	39%	29%*
sd	10	9	9	11	9	12	9.7
Glucose Management Indicator							
mean	7.6	7.7	8.1	8.2	8.8	7.9	7.9*
sd	1.8	3.7	3.0	1.8	2.3	2.1	1.6
Time in Target							
>250 md/dL	18%	18%	25%	27%	39%	25%	23%*
180-250 mg/dL	19%	26%	28%	25%	19%	24%	24%*
70-180 mg/dL	60%	53%	43%	46%	39%	49%	50%*
< 70 mg/dL	3%	3%	4%	2%	3%	2%	3%*
A1c							
Baseline (mean)	8.8	8.6	9.1	10.0	10.4	9.7	9.2*
3 mo. follow up (mean)	7.3	8.2	7.9	8.6	9.5	7.9	8.1*
% follow up A1c missing	7%	34%	41%	41%	30%	46%	
A1c point difference	-1.5	-0.4	-1.2	-1.4	-0.9	-1.8	-1.1*

Next Steps

Aggregate input from patients/care team for qualitative measures	**March 2024**	
Submit updated PDSA	2 weeks prior to May learning collaborative	PDSA to be submitted by 5/7/24. deliverables@ctc-ri.org
Quarterly learning: present QI work plan w/ content expert, as applicable	May 21, 2024	
Aggregate input from patients/care team for qualitative measures	June 2024	
Submit final Storyboard	2 weeks prior to final learning collaborative	PDSA to be submitted by 7/16/24. deliverables@ctc-ri.org
Final learning collaborative	July 30, 2024	