



Weill Cornell
Medicine

Annual WCM
Quality Improvement & Patient Safety
Poster Symposium

Abstracts and Posters

22 May 2024
Weill Cornell Medicine

Co-Sponsored by:

Quality Improvement Academy
and
Physician Organization | Division of Quality and Patient Safety
and
NewYork-Presbyterian Department of Nursing



Weill Cornell Medicine

May 22, 2024

Dear Colleagues,

First organized in 2012 through the Weill Department of Medicine, the **Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium** is now co-sponsored through Weill Cornell's Quality Improvement Academy (QIA), NYP's Department of Nursing and the Physician Organization's division of Quality and Patient Safety. We are proud to continue this interdepartmental and interdisciplinary celebration of quality and patient safety initiatives and innovations from all of our Weill Cornell campuses.

This year's event honors the 17 members of the graduating QIA Class of 2024 and includes 42 projects from 15 departments across WCM, Lower Manhattan, and NYP- Queens. Projects were selected through a peer-review process by QIA alumni, the Weill Department of Medicine's Quality Improvement Patient Safety Committee, NYP Nursing, and the WCM Housestaff Quality Council. They exemplify the commitment to the ongoing pursuit of proactive improvement initiatives and the promotion of scholarly activities in quality and patient safety.

We are proud to present all the projects featured at this year's event within this e-catalog. Congratulations and thank you to our students, residents, fellows, nurses, faculty and clinical staff for their achievements and ongoing commitment to patient care.

With gratitude,

Jennifer I. Lee, MD
Director
Quality Improvement Academy

Robert J. Kim, MD
Co- Director
Quality Improvement Academy

Klaus Kjaer, MD
Chief Quality and Patient Safety
Officer Physician Organization
Division of Quality and Patient Safety

Joan Halpern, MS, RNC-NIC, NNP, NEA-BC
Vice President & Chief Nursing Officer
NewYork-Presbyterian/WCM and
Ambulatory Care Network – East

6/3/2024

Projects Featured

Quality Improvement Academy: Graduating Class of 2024

Connecting Art & Medicine

Emily Finkelstein; et al.
Weill Department of Medicine

Telemetry Reduction: A QI Initiative

Ashwin Kelkar, MD; et al.
Weill Department of Medicine

Who's My Doctor? Using Personalized Introduction Cards to Improve Hospitalized Patients' Experience

Paul B. Martin, MD; et al.
Weill Department of Medicine

Improvement of Documentation of Medications for HSS In-patients Discharged with Home Intravenous Antibiotic Orders

Michael Henry, MD; et al.
Department of Medicine (HSS)

Implementing Patient Health Questionnaire Depression Screening in Inflammatory Arthritis Clinic

Jeong Min (April) Yu, MD; et al.
Weill Department of Medicine

A Sweet Solution: Implementing Continuous Glucose Monitoring in Gestational Diabetes

Rachel Stahl Salzman, MS, RD, CDN; et al.
Weill Department of Medicine

Guided Heart Failure Education in the Home

Shudhanshu Alishetti, MD; et al.
Weill Department of Medicine (NYP-BM)

The NYP Methodist Hospital MASLD Screening and Improvement Pathway: Implementation of a Clinical Care Pathway to Improve the Quality of Health Delivery for Brooklyn Patients with Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD)

Ilan Weisberg, MD; et al.
Weill Department of Medicine (NYP-BM)

Retained Gastric Content in GLP-1 Receptor Agonists

Marissa Weber, MD; et al.
Department of Anesthesiology

Assessing Emergency Department Quality Experience in Chinese Patients

Pon-Hsiu Yeh, MD; et al.
Department of Emergency Medicine

Implementing a Bleeding Severity Scoring Algorithm for Pediatric Patients after Cardiac Surgery in the PICU

Kelly D. Haque; et al.
Department of Pediatrics

Implementation of Early Onset Peanut Introduction Guidelines in a Public Payer Clinic

Miriam Samstein, MD, PhD; et al.
Department of Pediatrics

Implementing a Clinical Pathway for Somatic Symptom Disorders in the Inpatient Pediatrics Setting

Georgina Hartzell, MD; et al.
Department of Psychiatry

Multidisciplinary Verbal De-Escalation Refresher Training Sessions for Psychiatric Residents

Maria De Pena-Nowak, MD; et al.
Department of Psychiatry

Reducing Pressure Injuries in the Pediatric Inpatient Population

Ariel Rudd, MBA, MSN, RN; et al.
NYP-Department of Nursing

Delirium Screening in Non-ICU Patients

Karolina Walichnowska DNP, APRN-CNS; et al.
NYP-Department of Nursing

Infographic Postoperative Instructions in a Low English Proficiency (LEP) Urogynecology Population vs. Epic After Visit Summary (AVS)

Laura Sook Kim, MD; et al.
Department of Obstetrics & Gynecology

Projects Featured

QIPS Poster Symposium

Development, Implementation, and Institutional Engagement in Quality Improvement Initiatives: The Quality Improvement Academy

Ericka Fong, MBA; et al.

Quality Improvement Academy

Implementation of a Formalized Handoff in the Preoperative Block Space

Jennifer Min, MD; et al.

Department of Anesthesiology

Implementation of a Feeding Guideline on Enteral Feeding Practices and Central Line Placements in VLBW Infants on a Low NEC Unit: A Quality Improvement (QI) Initiative

Megan Mataga, MS, RD, CDN, CNSC; et al.

Department of Clinical Nutrition

Standardization of Discharge Instructions for Mild Traumatic Brain Injury/Concussion in Children Presenting to ED: A Quality Improvement Project

Niralee Rana, BS; et al.

Department of Emergency Medicine

Improving Antibiotic Therapy for Outpatient Community Acquired Pneumonia

Nicole Gerber, MD; et al.

Department of Emergency Medicine

Safety of a Community Tele-Paramedicine Program: Results of a Quality Assurance Review

Emilee Nawa, PA; et al.

Department of Emergency Medicine

Initiating a Centers for Medicare and Medicaid Services Pilot Program: Emergency Triage, Treat, and Transport (ET3)

Matthew Laghezza, PA; et al.

Department of Emergency Medicine

A Window of Opportunity – Integration of Cancer Genetic Risk Assessment Into Obstetrical Care with a Smartphone-based Tool

Benjamin Grant; et al.

Medical School

Enhancing Diagnosis and Management of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) through a Targeted Education Intervention in an Outpatient Endocrinology Clinic: A Real-World Quality Improvement Project

Joyce Lee; et al.

Medical School

Barriers to Removal and Extraction of Cardiac Implantable Electronic Devices Associated with Device and Systemic Infections: A Single-Center Experience

Jacob Groenendyk, MD; et al.

Weill Department of Medicine

Six Minutes to Success

Joseph Mailman, MD; et al.

Weill Department of Medicine

Successful Implementation of Multi-Disciplinary Care in the Division of Neurodegenerative Diseases

Melissa Lopez, NP; et al.

Department of Neurology

Increasing the Life of a Midline Catheter

Aneta Bannout, RN; et al.

NYP-Department of Nursing

Adult ED BCMA Scanning Compliance

Nicole Brisker, JD, RN; et al.

NYP-Department of Nursing

C.Diff Diagnostic Stewardship: C-diff-errent Results

Gary Camelo, DNP, LMSW; et al.

NYP-Department of Nursing

Projects Featured

QIPS Poster Symposium

Implementing a Bedside Shift Report Handoff Sheet

Maeve Cusack, RNC-IAP; et al.
NYP-Department of Nursing

Reducing Time Toxicity & Improving Access to Care: A Pilot Project to Decrease Wait Times for Blood Transfusions for Patients with Cancer Using a Haemobank

Justine Enriquez, RN; et al.
NYP-Department of Nursing

ICU RN-Driven Palliative Care Consult Referrals

Anna Krakowski, MSPC, RN; et al.
NYP-Department of Nursing

Implementation of PeriGen at NewYork Presbyterian Lower Manhattan Hospital

Lyubov Osagie, RNC-OB; et al.
NYP-Department of Nursing

Improving Obstetric Nurse Knowledge on Discharge Before Noon (DBN) by Implementing a Discharge Checklist on Admission

Amy Park, BSN-RNC-IAP; et al.
NYP-Department of Nursing

Utilization of Midline Catheters for Vasopressor Administration in the MICU

Allison Sladek, RN; et al.
NYP-Department of Nursing

Work Experience, Birth Attitudes, Education, and their Relation to Nurse Cesarean Rates

Katie Roberts, RNC-OB; et al.
NYP-Department of Nursing

Improving Physician Assistants' and Nurses' Knowledge, Attitudes, and Practice of Diagnostic Stewardship and HAI Prevention at Lower Manhattan Campus

Cynthia Cain, PA; et al.
NYP-PA/Critical Care

Collaborative Care Model Reduces Perinatal Mood and Anxiety Symptoms

Semra Etyemez, MD; et al.
Department of Obstetrics & Gynecology

Obstetric Patients with Reported Penicillin Allergies: A Way to Improve Beta Lactam Usage

Sarah Weingarten, MD; et al.
Department of Obstetrics & Gynecology

Management of Orbital Compartment Syndrome - Inter Departmental Workshop

Sruti Akula, MD; et al.
Department of Ophthalmology

Cost and Inpatient Burden of Orbital Fracture Management: A 14-year Analysis

Eli Stein, MD; et al.
Department of Otolaryngology

Utilization of Quality Metrics for Improving Diagnostic Outcomes: A Focus Review of Thyroid Fine Needle Aspirations

Susan Alperstein, MD; et al.
Department of Pathology and Laboratory Medicine

Novel Implementation of Smart, Remote Blood Bank Refrigerators to Provide Efficient Transfusion Support for Labor and Delivery Patients

Tobias Cohen, MD; et al.
Department of Pathology and Laboratory Medicine

Resident Led Quality Improvement Project to Improve Postpartum Depression Screening and Referrals for High Risk Mothers in an Urban Pediatric Primary Care Clinic

Kelly Banks, MD; et al.
Department of Pediatrics

Improving Care for Newborns with Jaundice in Concordance with the American Academy of Pediatrics (AAP) Hyperbilirubinemia Management Guidelines

Cynthia Isedeh, MD; et al.
Department of Pediatrics

Initiating Infant Driven Feeding™ In A Level 3 Community NICU, A Quality Improvement Project

Tatyana Kopp, MD; et al.
Department of Pediatrics

Projects Featured

QIPS Poster Symposium

Improving Anxiety Screening Rates Among Pediatric and Adolescent Patients at a Community-Based Clinic: A Quality Improvement Approach

Rebecca Kow, MD; et al.
Department of Pediatrics

Quality Improvement Initiative to Reduce Pediatric Harm Due to Nephrotoxic Medication Exposure

Diane Liu, MD; et al.
Department of Pediatrics

Reducing the Strain: A Multidisciplinary Collaboration to Standardize Care for Children with Constipation while Improving Patient Care and Healthcare Resource Utilization

Michelle Ramos, MD; et al.
Department of Pediatrics

A Multidisciplinary Quality Improvement Initiative to Improve the Komansky Children's Hospital's Emergency Escalation System

Megan Toal, MD; et al.
Department of Pediatrics

Implementing Emotional Health Assessments in a Pediatric Subspecialty Clinic for Children with Chronic Medical Conditions

Kalliope Tsirilakis, MD; et al.
Department of Pediatrics

Improving Cytomegalovirus and Hepatitis Genotype inappropriate testing with Diagnostic Stewardship

Christian Darren Baguistan, MLS; et al.
Department of Population Health Sciences

Improving the Autistic Patient Experience on Inpatient Psychiatric Units via a Consult/Liaison service

Connor Black, MD; et al.
Department of Psychiatry

Liver Transplant Fast Track: A Multidisciplinary Approach to Reducing Length of Stay

Mia Genovese, PA; et al.
Department of Surgery

Trainee-driven Quality Initiative to Increase Appropriate Medication Regimens at Discharge Following Vascular Evaluation

Alyssa Greenwood Francis, MD; et al.
Department of Surgery

Connecting Art and Medicine

Quality Improvement Academy | May 2024

Emily S. Finkelstein, Jasmine Lucena, Ericka Fong, Robert J. Kim

PROBLEM STATEMENT

Over 50% of US physicians report experiencing professional burnout.

Previous studies have shown that providing physicians with opportunities to connect with art can:

- 1) help ameliorate burnout
- 2) prevent empathy erosion and
- 3) promote overall well-being

Many wellness programs "talk" about wellness, but do not actually provide opportunities to engage in wellness activities

PROGRAM OBJECTIVES

Program already demonstrated positive impact on participants in the following areas in 2022-2023:

- promoting overall well-being
- providing opportunities for self-reflection
- providing opportunities for community building with colleagues

Project goals for 2023-2024 were to increase:

- accessibility
- awareness
- participation in the program

AIM STATEMENT

The aim of this project is to increase visibility, accessibility and participation of the Connecting Art and Medicine curriculum for advanced trainees and clinical faculty at Weill Cornell Medical Center using a multimodal approach between **September 2023 through April 2024** with a goal of **increase in total participation by 50% from last year's overall total number of participants** (measured between a similar duration 9/2022 - 4/2023)

DESIGN/METHODS

Multimodal approach towards achieving stated goals:

1. to enhance provider interest
2. to increase awareness of the program
3. to optimize accessibility to the program

Additional measures:

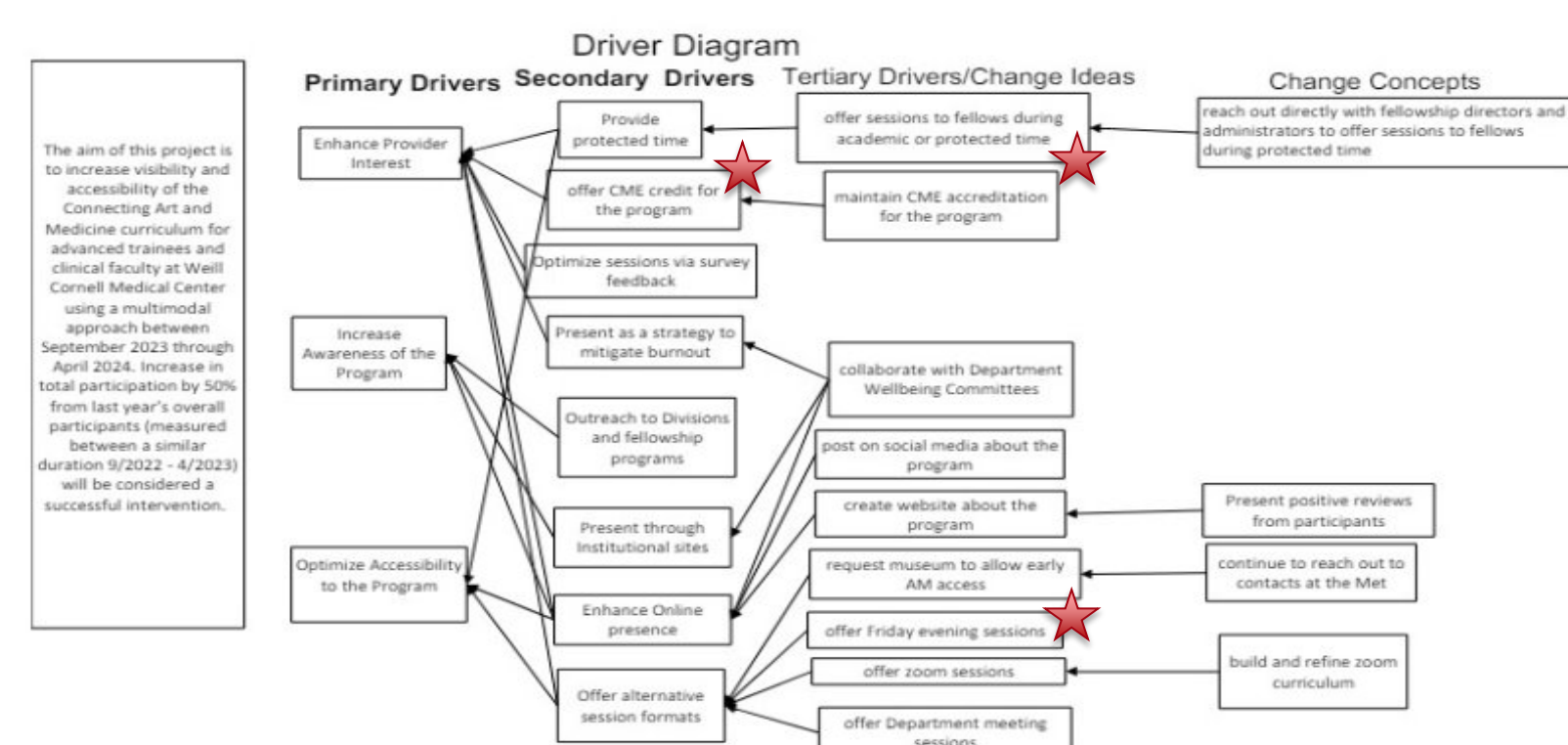
Attendance and participation rate

Feedback measures

Differences in feedback between in-person and zoom sessions

Cancellations and reasons for unavailability

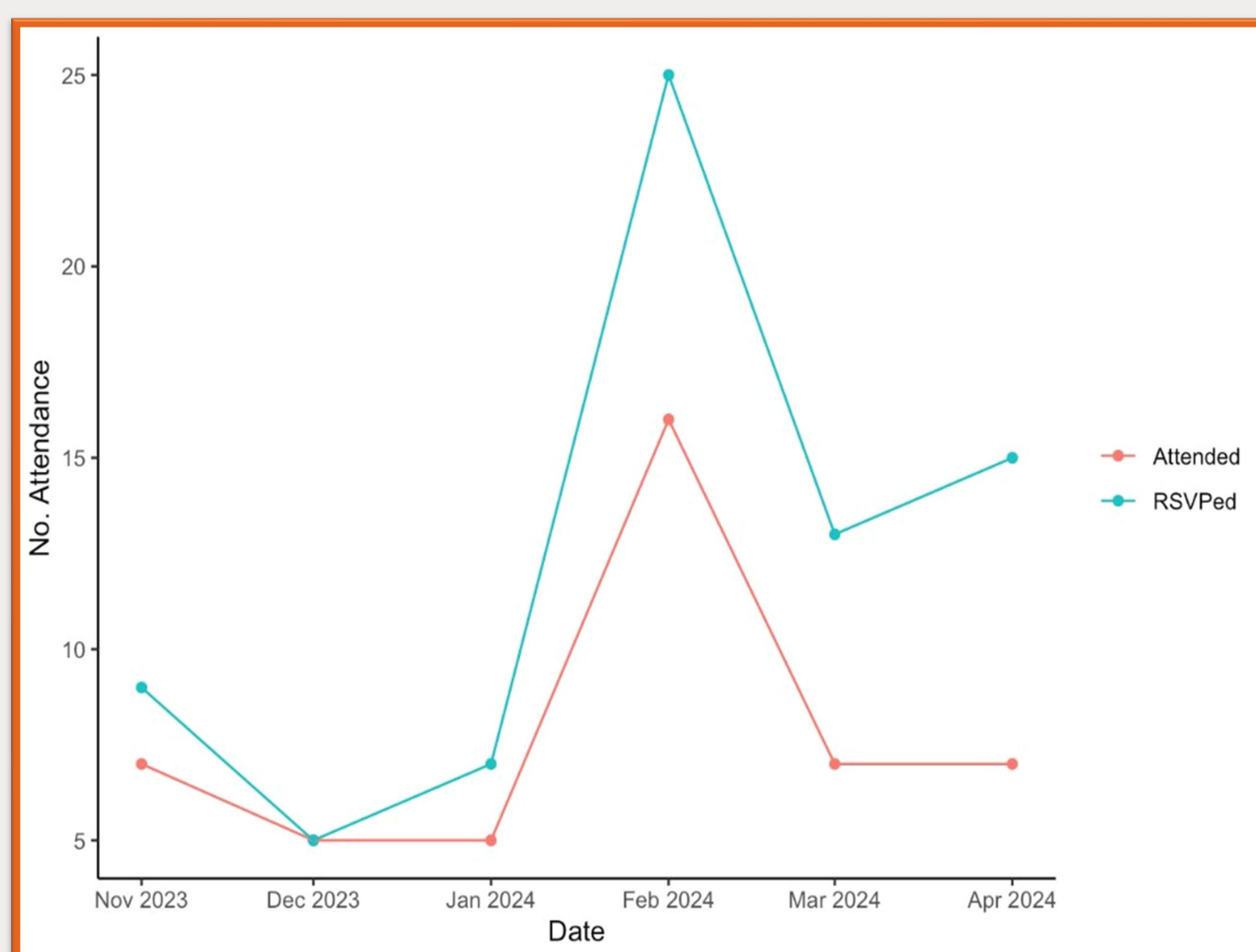
DRIVER DIAGRAM



PARTICIPATION DATA

	2022-2023	2023-2024
In person	38	47
zoom	0	38
total	38	85

Total in person sessions: 12 offered / 11 complete
Total zoom sessions: 1

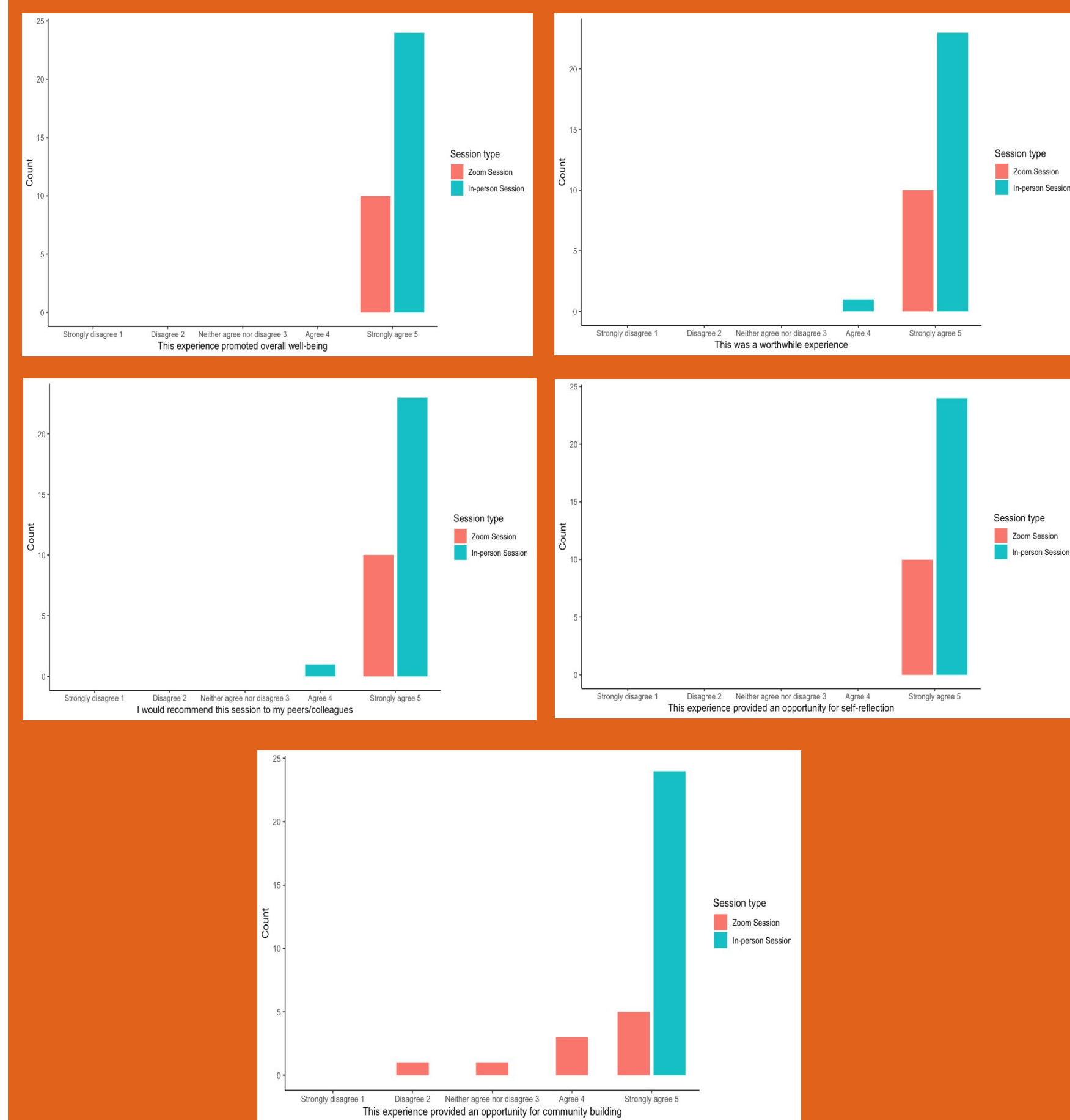


OPEN-ENDED FEEDBACK

Feedback quotes include:
 "It was amazing to actually engage in well-being activities instead of learning about them in lecture format. It was highly efficient and didn't detract from a full day of academic obligations."
 "Wonderful opportunity to meet colleagues, reflect in a refreshing and stimulating setting, and use art as a medium for guided discussions to process many of the challenges, as well as sources of resilience, that we encounter in clinical practice. Wonderfully restorative and meaningful during a period of unique and sustained challenges at the hospital."
 "This was inspiring and insightful and stimulated productive and empowering reflections about the ways in which art can express feelings and phenomena in the healthcare system such as fragmented perceptions of patients, frenetic pacing, feelings of isolation, despair and hope, etc..."
 "Helped me become more professional, control my emotions, and connect with my coworkers"



SURVEY RESULTS



51% (in person) and 26% (zoom) survey response rate

CONCLUSIONS/LESSONS LEARNED

Successful outcomes

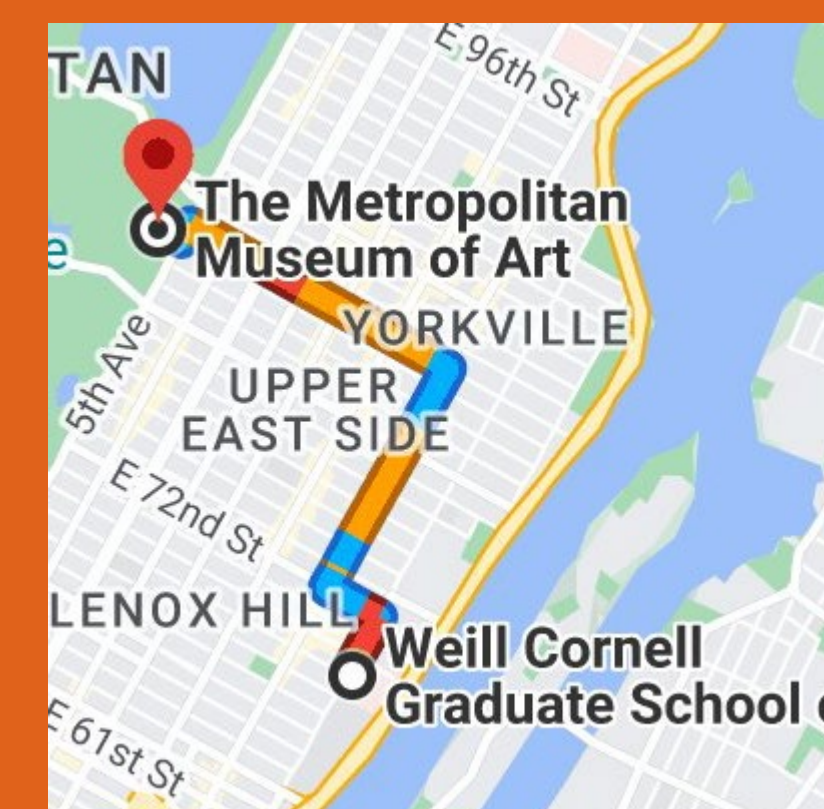
Attendance metrics

- >100% increase in participation from last year

Feedback metrics

- Highly positive on the following measures:
 - Was worthwhile
 - Promoted well-being
 - Provided opportunities for self-reflection
 - Provided opportunities for community building (in person only)

Barriers/Challenges	Steps to Overcome
Last minute cancellations (faculty participants)	Promote zoom options for faculty
Lack of protected time for interested participants	Consider early AM and or weekend sessions
Poor survey response rate	Reminder emails



NEXT STEPS

- Residency and fellowship program director outreach
- Medical school curriculum collaborations
- Explore museum partnership
- Maintain CME accreditation
- Outreach to more clinical departments

Telemetry Reduction: A QI Initiative

Weill Cornell Medicine Quality Improvement and Patient Safety Symposium

Ashwin D Kelkar, Adam Gomez, Itzel Nino, Wenna Xi, Jennifer I Lee, | May 2024

Problem Statement

Telemetry is vital to monitor patients for arrhythmia and acute coronary syndromes.

However, it is labor-intensive and expensive

It has been linked to:

- Increased unnecessary testing
- Increased hospital stays
- Hospital delirium
- Hospital falls

Telemetry overuse additionally prevents those patients who require telemetry from receiving it.

Objective/Aim Statement

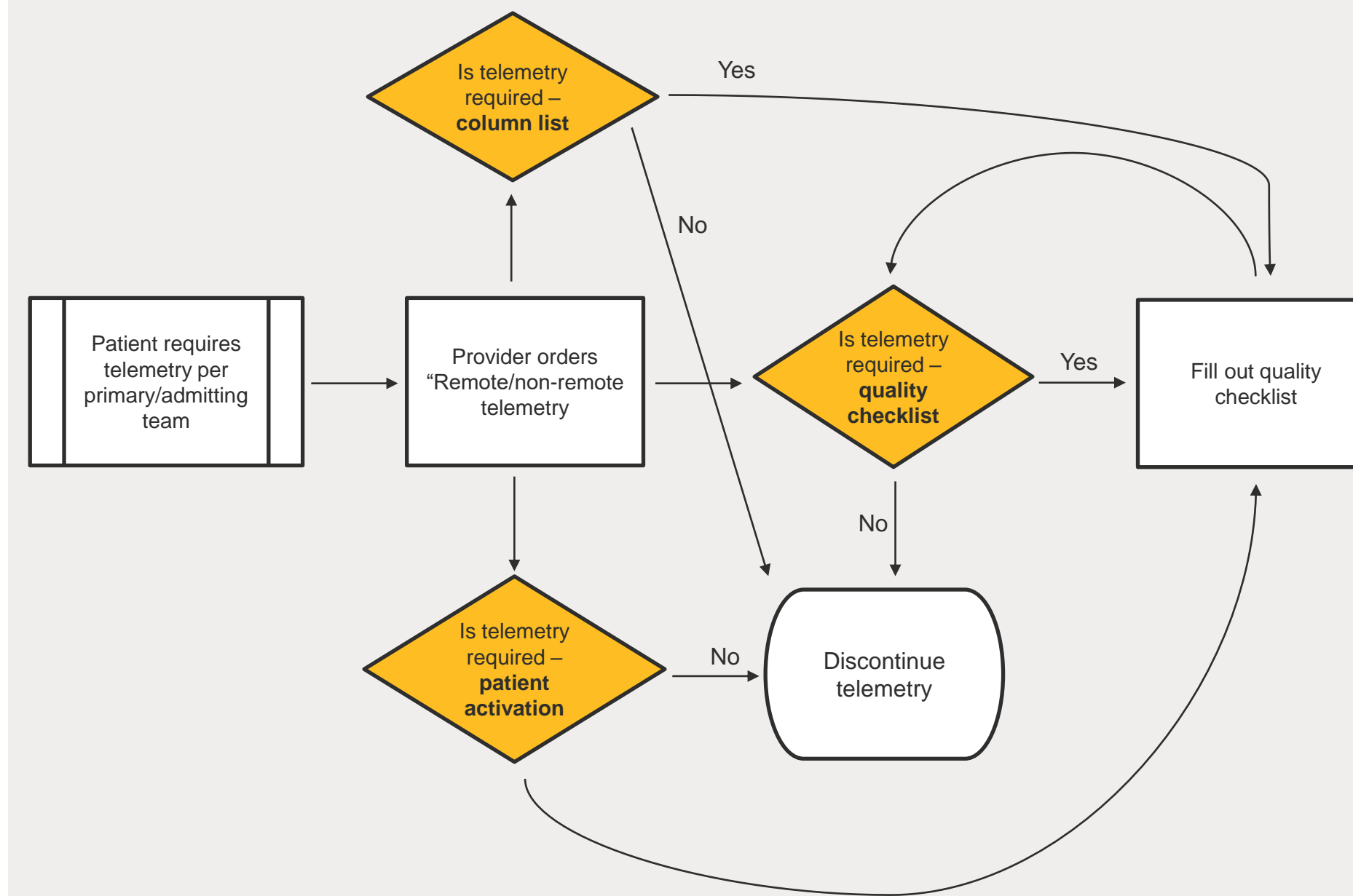
The aim of this study is to reduce the median active telemetry order age from 5 days to 4 days after implementation of an educational intervention, quality checklist, addition of telemetry column to the patient list, and patient activation over 12 weeks.

Design/Methods

Multipronged interventional study involving all patients on housestaff services with remote telemetry orders.

- Use of a quality checklist
- Use of telemetry column in patient list
- Housestaff education on ACC/AHA appropriate telemetry use
- Patient activation with cue card/sticker

PROPOSED PROCESS MAP



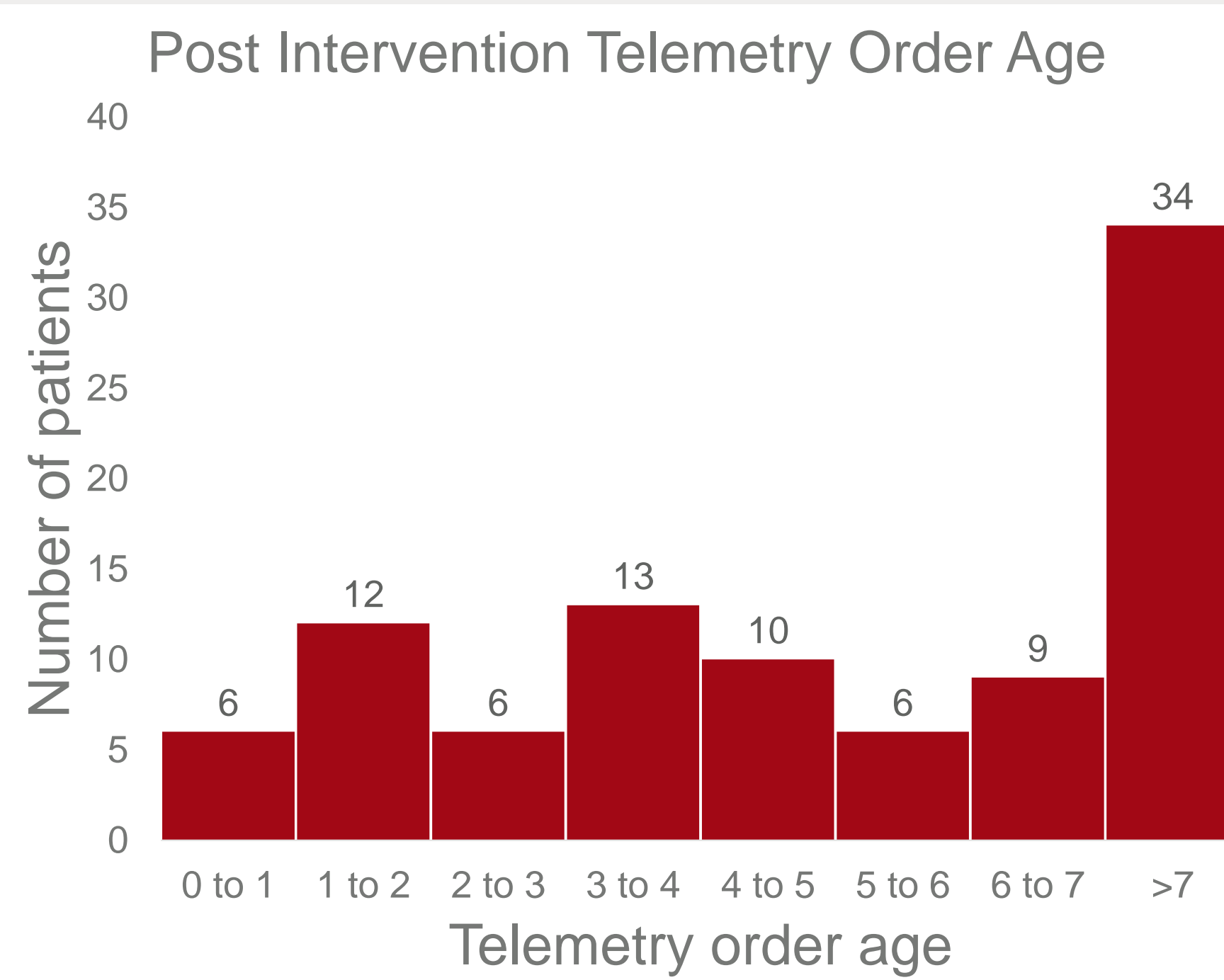
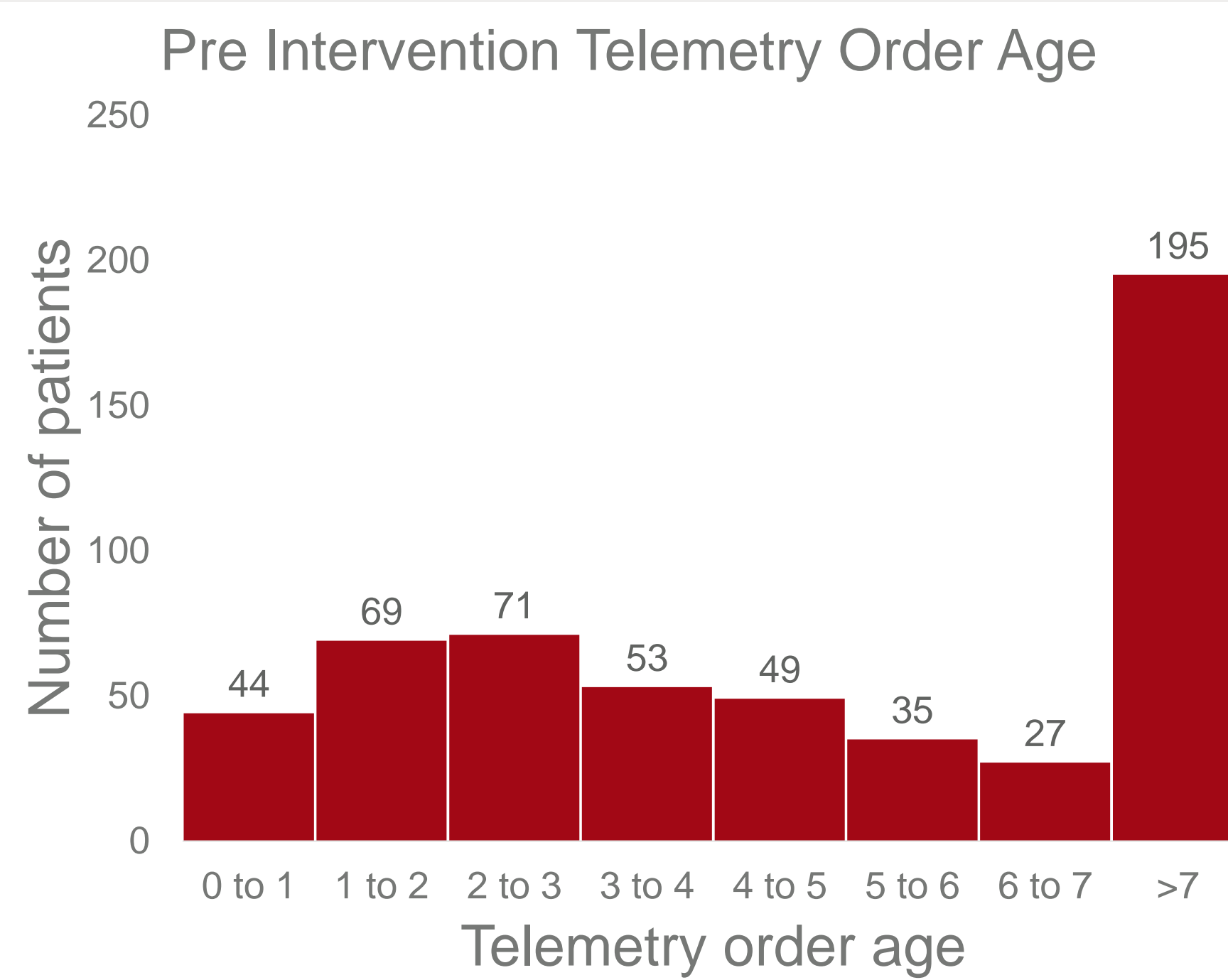
Ask your provider if you still require this device.

Pregúntele a su doctor si todavía necesitas este aparato.

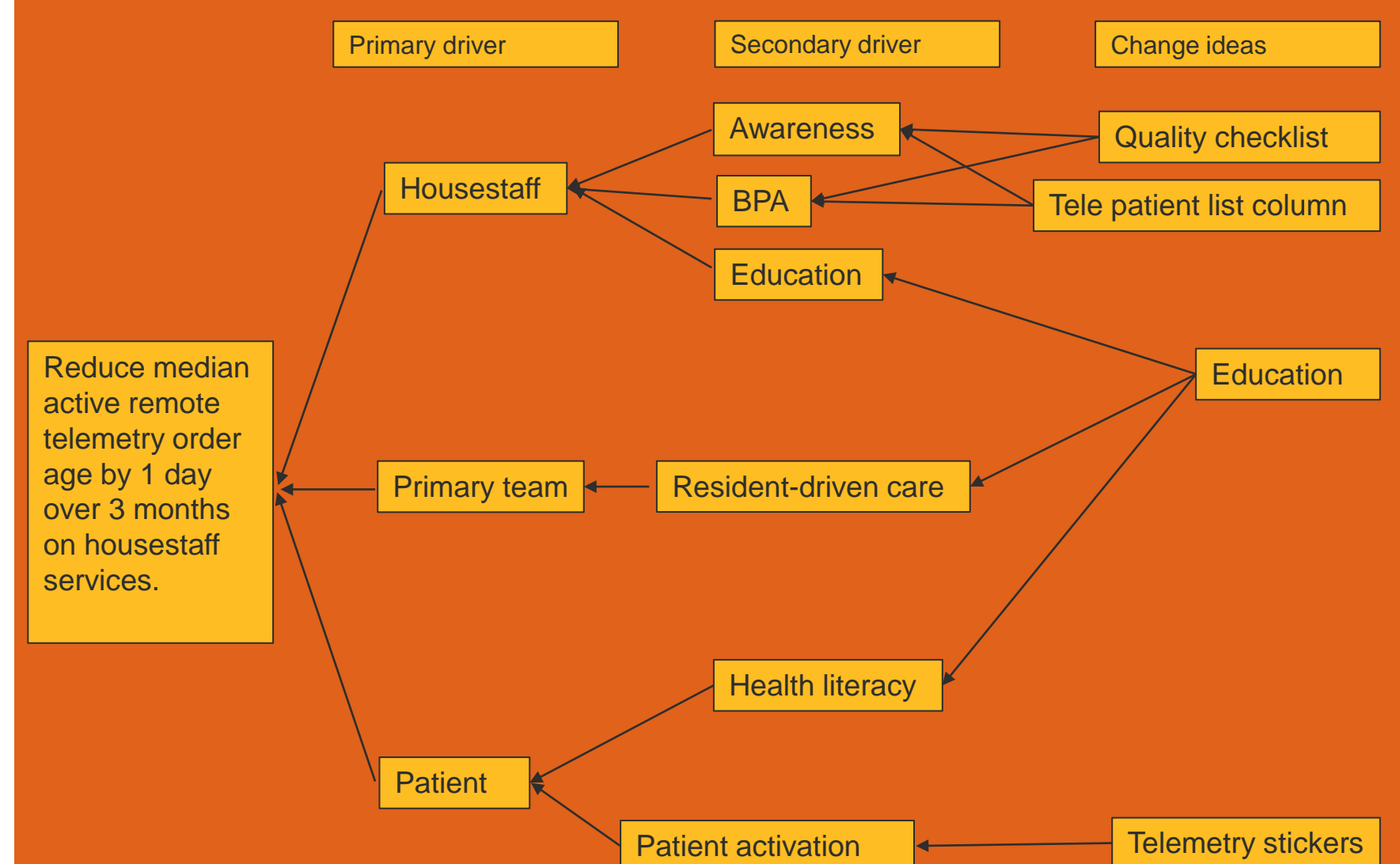
Спросите вашего врача если вам нужно это устройство.

询问您的提供商是否仍然需要此设备。

अपने डॉक्टर से पुछो के तुम्हे इस device की जरुरी है क्या



DRIVER DIAGRAM



Results

- Mean telemetry age decreased from 8 days to 7 days post intervention
- Median telemetry age pre and post intervention was 5 days
- Percent of telemetry age >7 days pre and post intervention was 35%

Conclusions/Lessons Learned

- Unclear which intervention was the most effective at improving appropriate telemetry use
- Data collection regarding telemetry orders can be challenging with our current orderset
- Anecdotally, there was increased awareness of telemetry utilization shortly after housestaff education, but this was not long-lasting

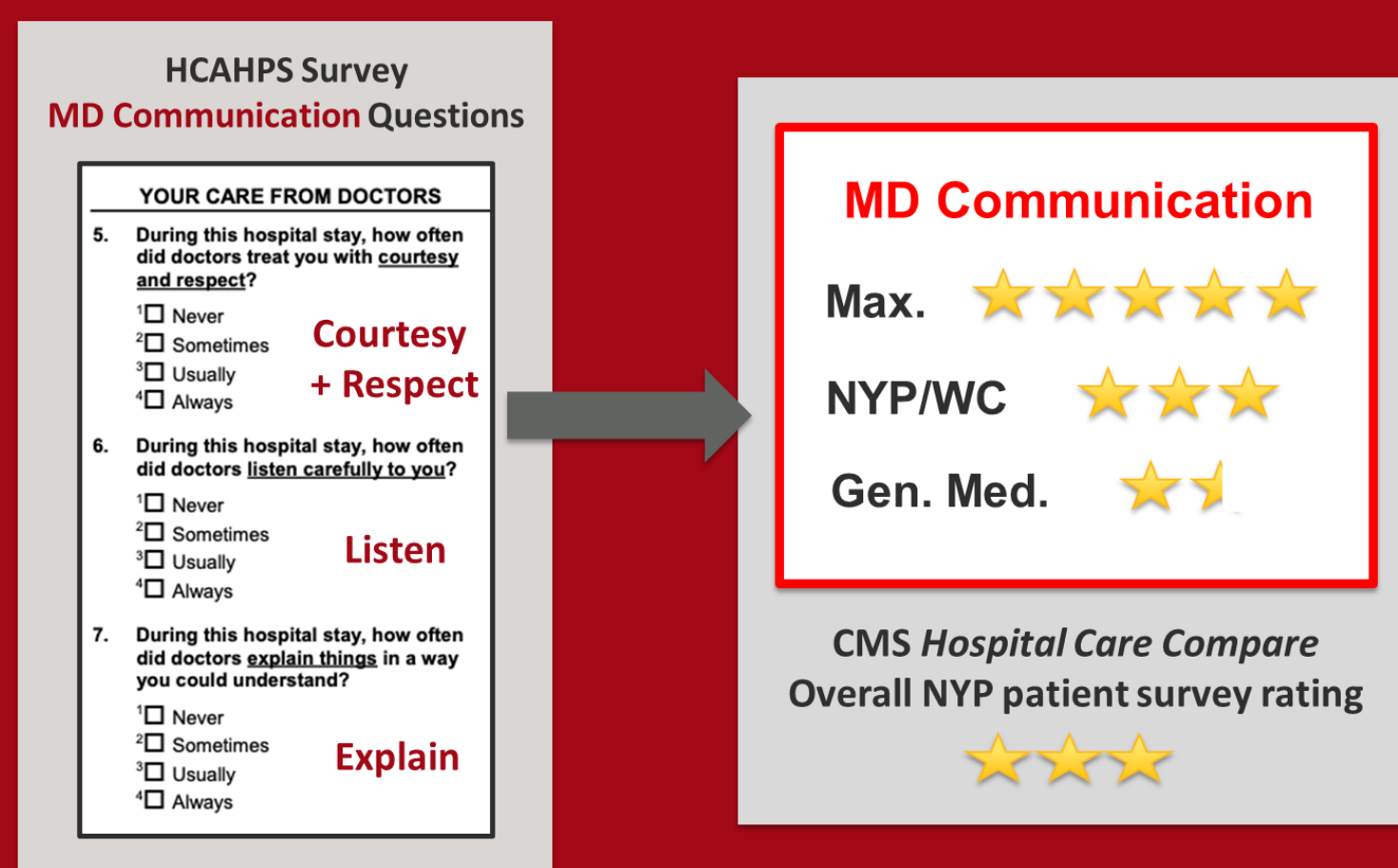
Next Steps

- Implementation of patient activation with cue card/sticker
- Telemetry orderset overhaul
- Creation of a BPA regarding telemetry use
- Creation of a documented policy regarding appropriate telemetry usage following national guidelines

Paul B. Martin, MD; Anita Dong, BA; Rebecca Berger, MD; Jennifer I. Lee MD

Background

- Improved patient experience is associated with increased patient compliance, positive health outcomes and reduced medico-legal risk
- Enhancing the care experience part of Institute of Healthcare Improvement's original **Triple Aim** to improve health system performance
- Patient experience does not mean patient satisfaction, but rather how patients experience the care they receive
- Improving communication is at the core of enhancing the patient experience
- Physician communication ratings (HCAHPS) on NYP/WCMC Gen Med units are below goal:



- Successful approaches to improve physician communication have largely relied on resource-intensive, difficult to scale and to sustain interventions, e.g., communication skills coaching
- A recent study utilizing simple standardized hospitalist introduction cards showed improved ratings of Hospitalist's communication skills

Project Aim

- To develop, implement, and evaluate a practical tool used by NYP/WC Hospitalists to increase the number of Medicine PA-service patients who rate their attendings' communication skills as "excellent" by 15 percentage points [absolute increase] compared with non-intervention patients between November 2023 and March 2024.

Design / Methods

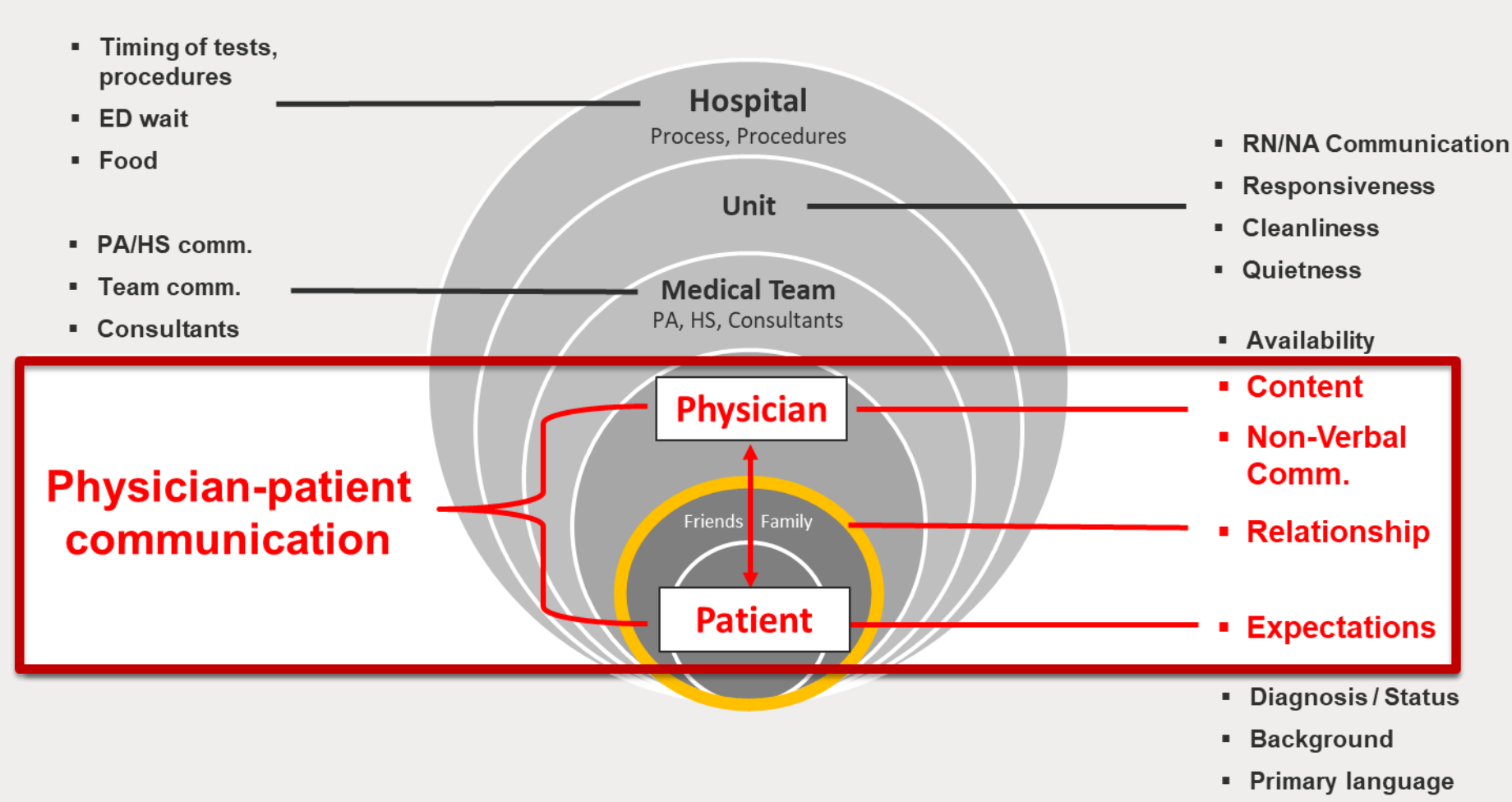
- Quasi-experimental intervention/survey design
- Conducted at NYP/Weill Cornell Medical Center
- Patients admitted to General Medicine Hospitalist / PA-Service

Intervention

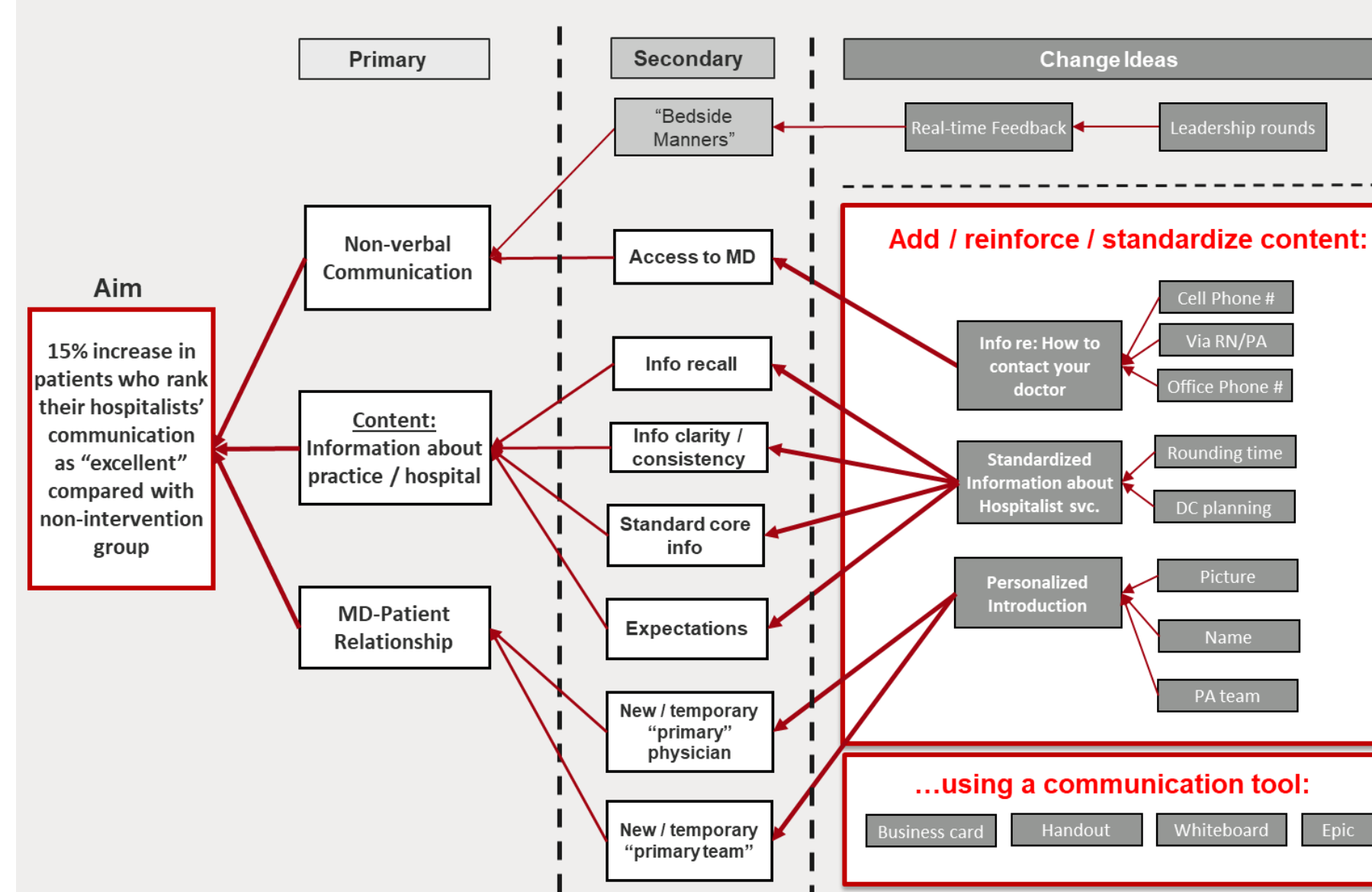
Personalized Hospitalist Introduction Cards

- Clearly identify primary hospital doctor
- Information about rounds
- Introduce PA role
- Hospitalist contact info
- Expectation setting: Information about rounds, hospital flow, discharge planning

Hospital Patient Experience Factors

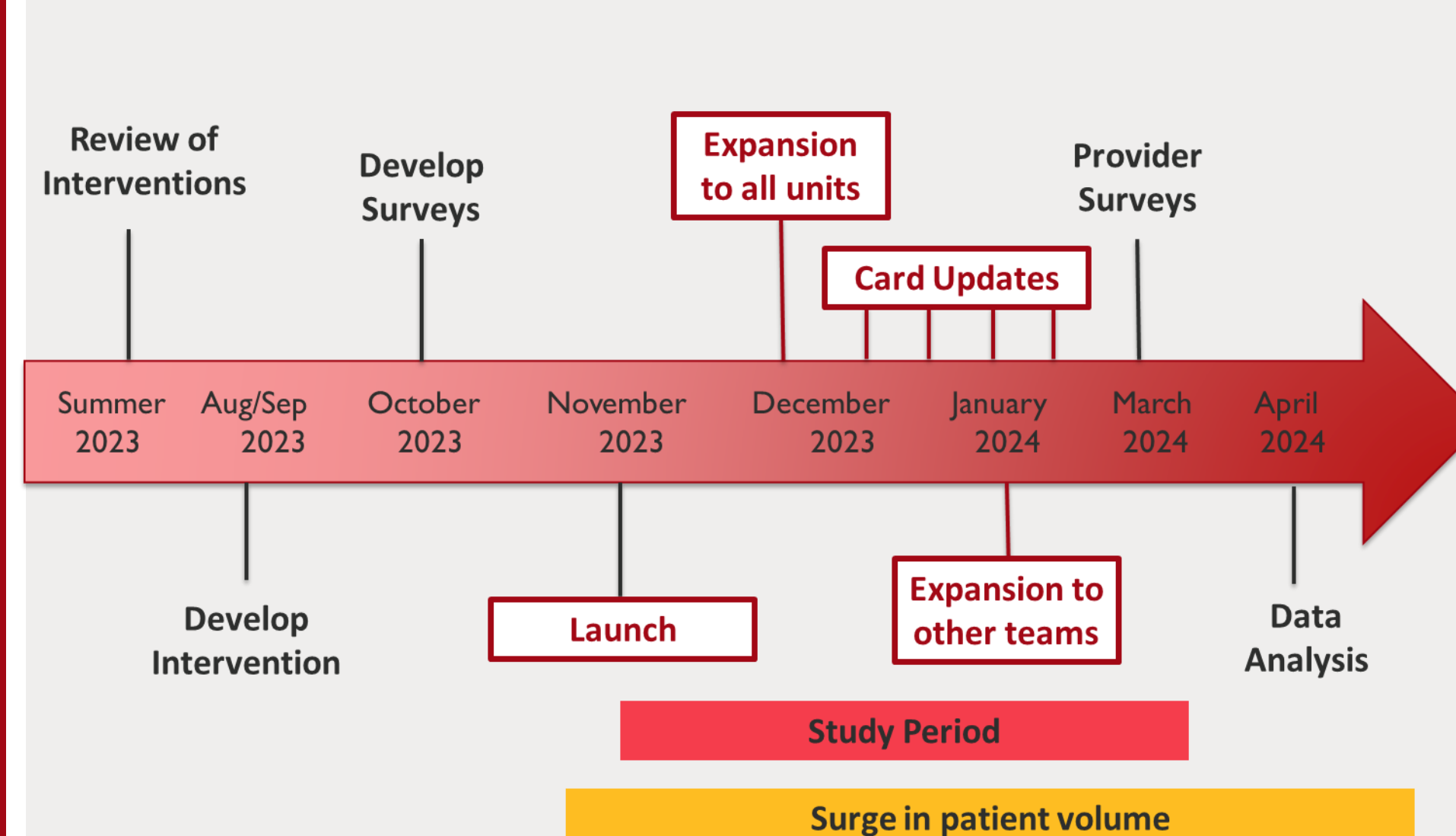


Hospitalist Comm. Rating Driver Diagram

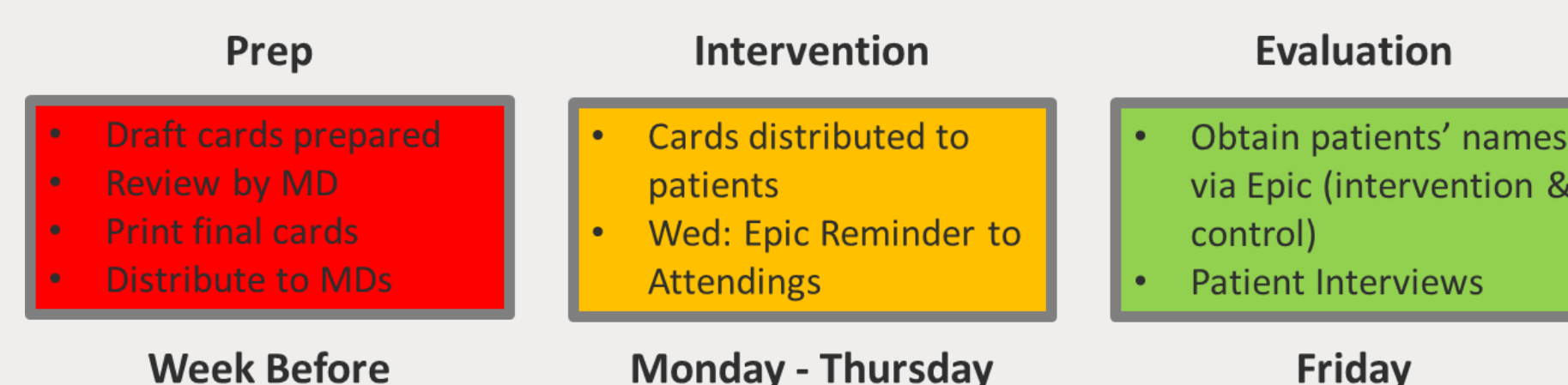


Personalized Hospitalist Intro Card

Project Timeline



Card Distribution Process Outline

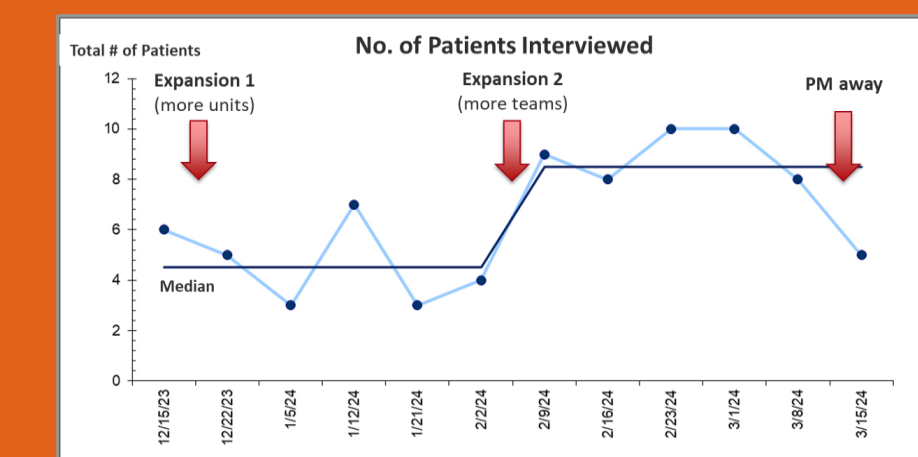


Study Population

INCLUSION CRITERIA	EXCLUSION CRITERIA
<ul style="list-style-type: none"> Newly admitted to a Hospitalist on the Gen Med PA service English-speaking Provider choice (guidelines provided) 	<ul style="list-style-type: none"> Cognitive issues (dementia) Delirium / inappropriate behavior Airborne isolation Declined to participate

Results

Process Measures

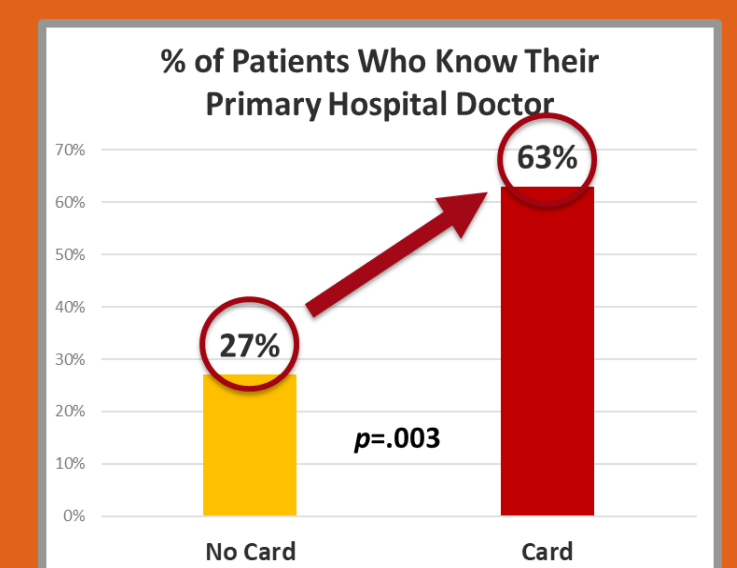
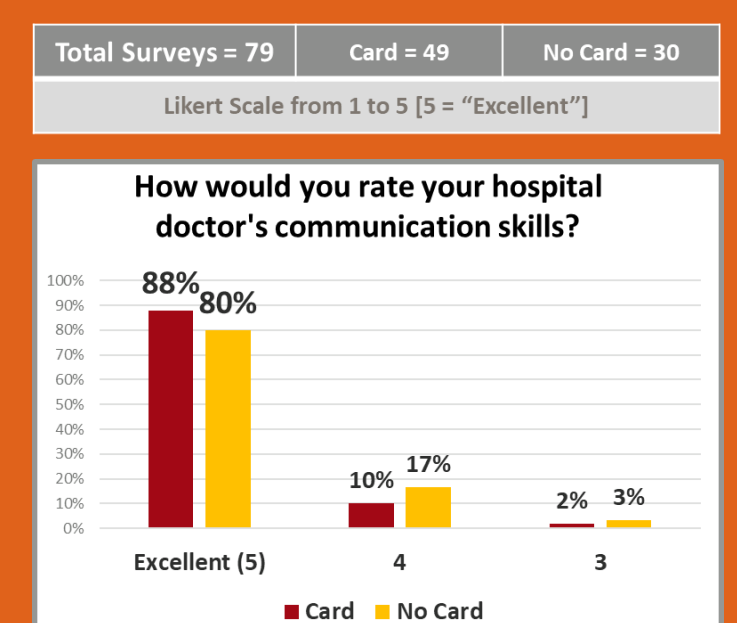


MD Participation:
Over study period, 72% (31/43) of eligible Hospitalists handed out cards

Outcome Measures

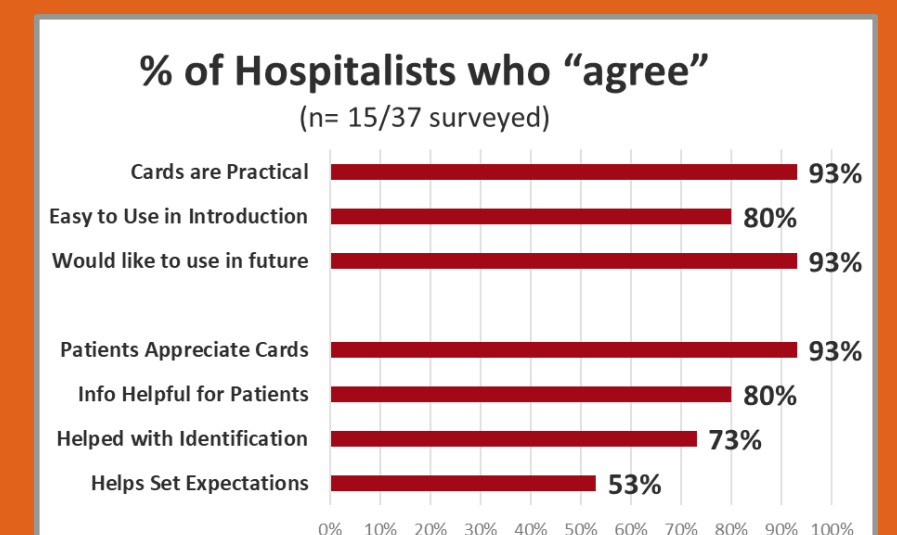
Patient surveys

- Total 79 pts (49 w/ card, 30 w/o card)
- 88% of patients rated comm. skills as "excellent" w/ card vs 80% without ($p=.35$)
- Avg. 4.86 w/ card vs. 4.77 w/o card
- 63% of pts. w/ card knew their primary hospital doctor vs. 27% w/o card ($p=0.003$)



Hospitalist surveys

- 15/37 responded
- Overall positive feedback
- 14/15 would like to use card in future



Lessons Learned

- ✓ High ratings for WCM Hospitalists' communication skills
- ✓ % of patients who knew their primary hospital doctor improved significantly
- ✓ No statistically significant impact on ratings by cards
- ✓ Modest number of appropriate patients, limited engagement by patients with card info
- ✓ Overall, patients & physicians: Cards 👍

Next Steps

- ❖ Review HCAHPS data
- ❖ Work towards sustainability:
 - Re-consider using other tools (e.g., electronic white boards)
 - Optimize process / distribution
 - Re-design of existing business cards

Acknowledgements

QIA: Ericka Fong
WCM Hosp. Med.: J. Contractor, N. Pandya, J. Shin
NYP PX: R. Evans, D. DiCello, S. Plackis

Improvement of Documentation of Medications for HSS In-patients Discharged with Home Intravenous Antibiotic Orders

Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Michael Henry, MD, Kelly Moore, PharmD, Harjot K Singh, MD, Jennifer I. Lee, MD | May 2024

Background

- Unlike all other medications that in-patients at HSS are discharged home on, there was no mechanism to e-prescribe home IV antibiotics.
- The process by which the ID division generated orders for home IV antibiotics was not standardized; these orders were submitted through email, fax, or direct communication with the infusion company pharmacist, none of which was recorded in the EMR
- As a result, the documentation of home IV antibiotic treatment within the EMR was very incomplete.
- Since our ID division treats hundreds of patients a year with home intravenous antibiotics, this lack of mechanism for order entry had a tremendous impact on the large number of the patients we care for. This impacted on accurate medication reconciliation, drug-drug interaction evaluations and accurate communication of treatment plans to other users of the EMR. This lack of documentation also impeded/complicated clinical research retrospective data collection.

SMART Aims

To achieve 50% compliance with the use of a protocol/order set to prescribe and document treatment with home IV antibiotics for in-patients being discharged home from HSS.

Design Methods

Intervention study targeting ID attendings and PA service at HSS. Interventions included:

- Collaboration with IT and HSS Pharmacy to develop protocol within EMR to e-prescribe home IV antibiotic
- Educating ID Attending staff, Floor PA team and Case Management department on the new process
- Collaboration with the infusion company pharmacies (Option Care and Optum) to ensure orders were being transmitted accurately.

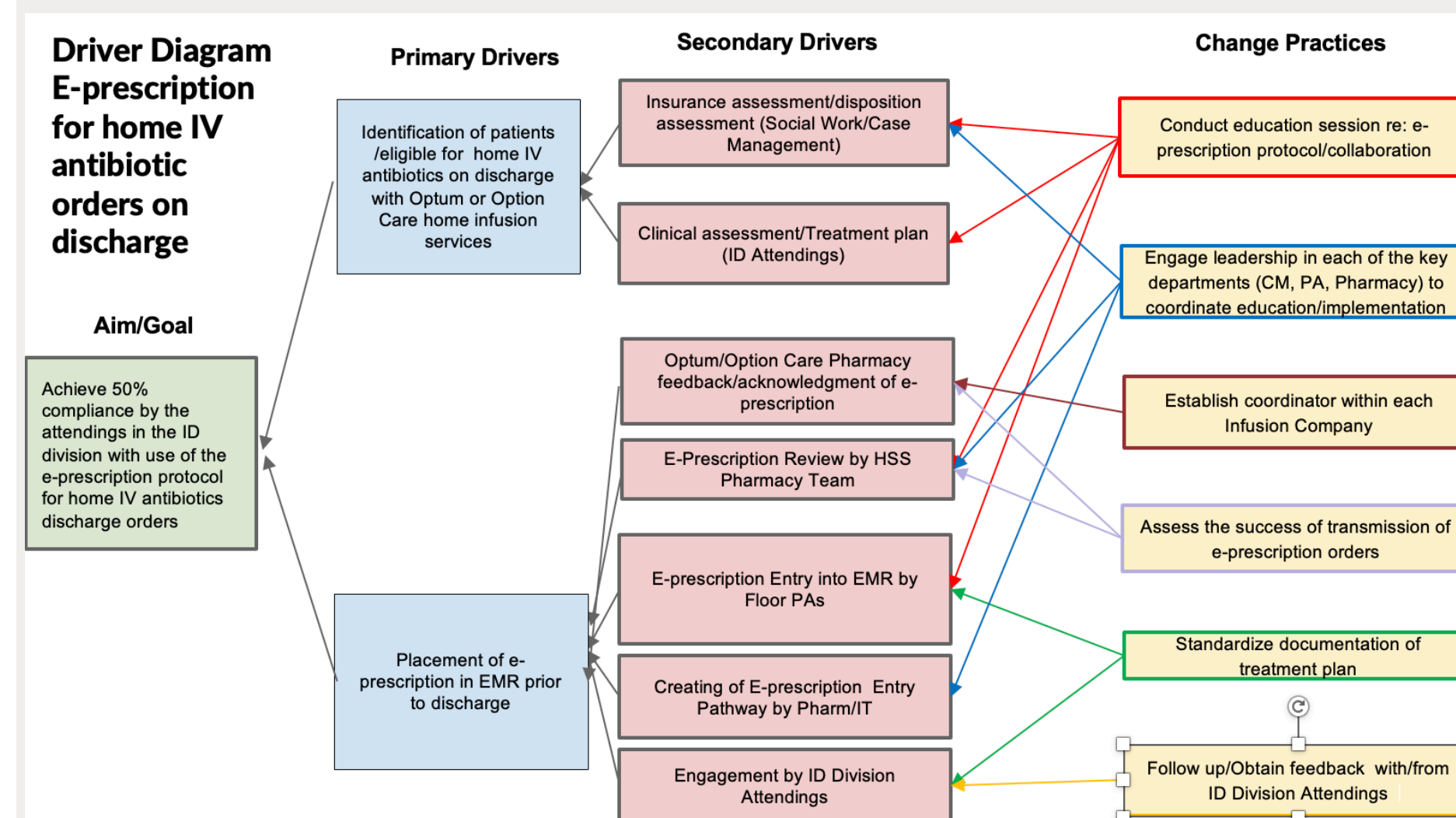
Study Population

Inclusion criteria: All HSS in-patients 18 and older who are referred to either Option Care or Optum home infusion pharmacies for home IV antibiotics services

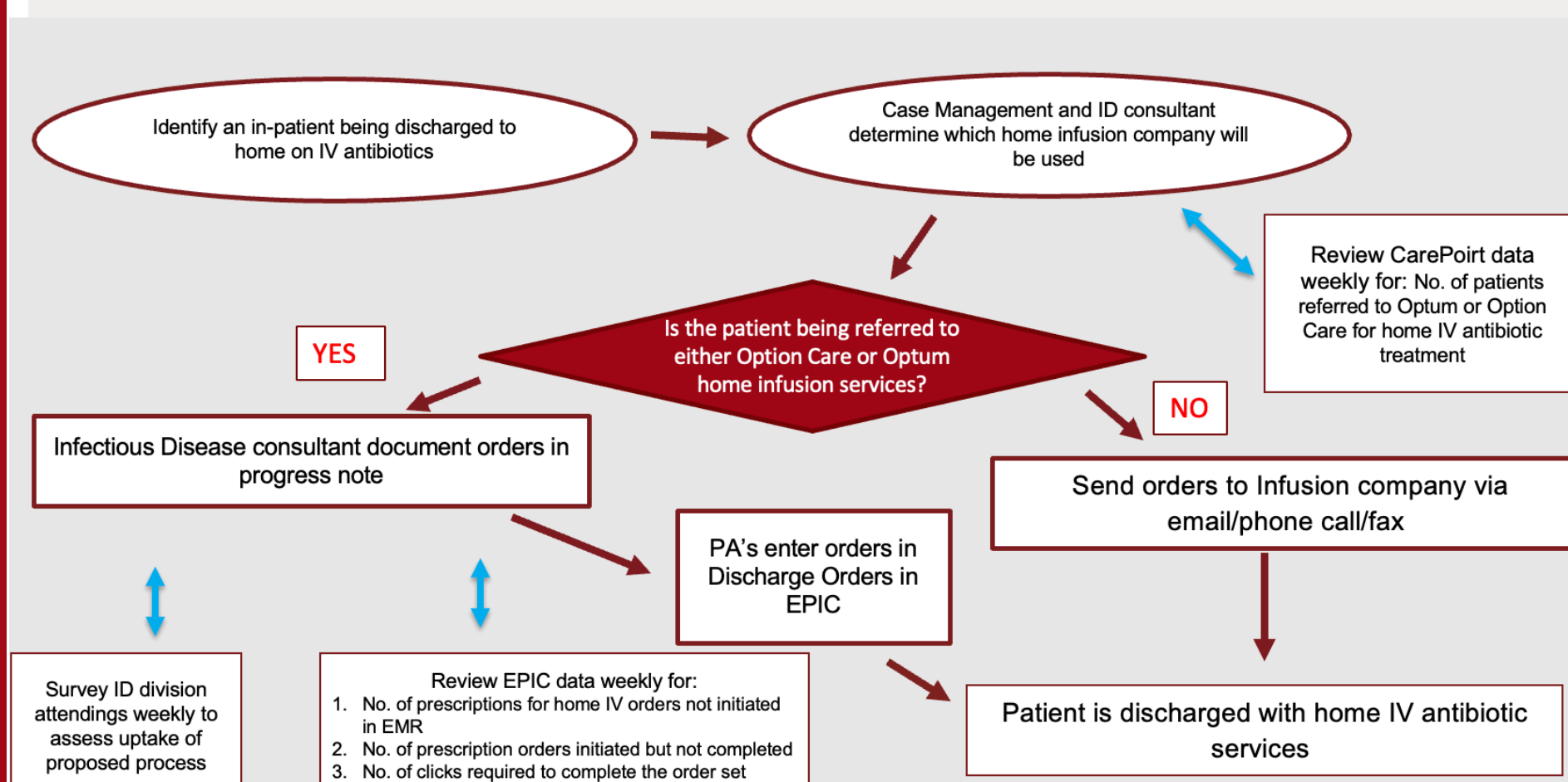
Exclusion Criteria: patients being discharged to skilled nursing facilities; patients who will receive their home IV antibiotics treatment at a designated out-patient infusion center; Patients who have will be receiving their home IV antibiotic services from a pharmacy other than Option Care or Optum

Outcome Measure	Frequency of use of the new protocol/order set
Process Measure	Order entry correctly – content Order entry correctly – technical Identification of barriers to use of protocol by ID attendings and PA team
Balancing Measures	Number of pharmacy interventions Number of e-prescription generated by non-ID/PA prescribers

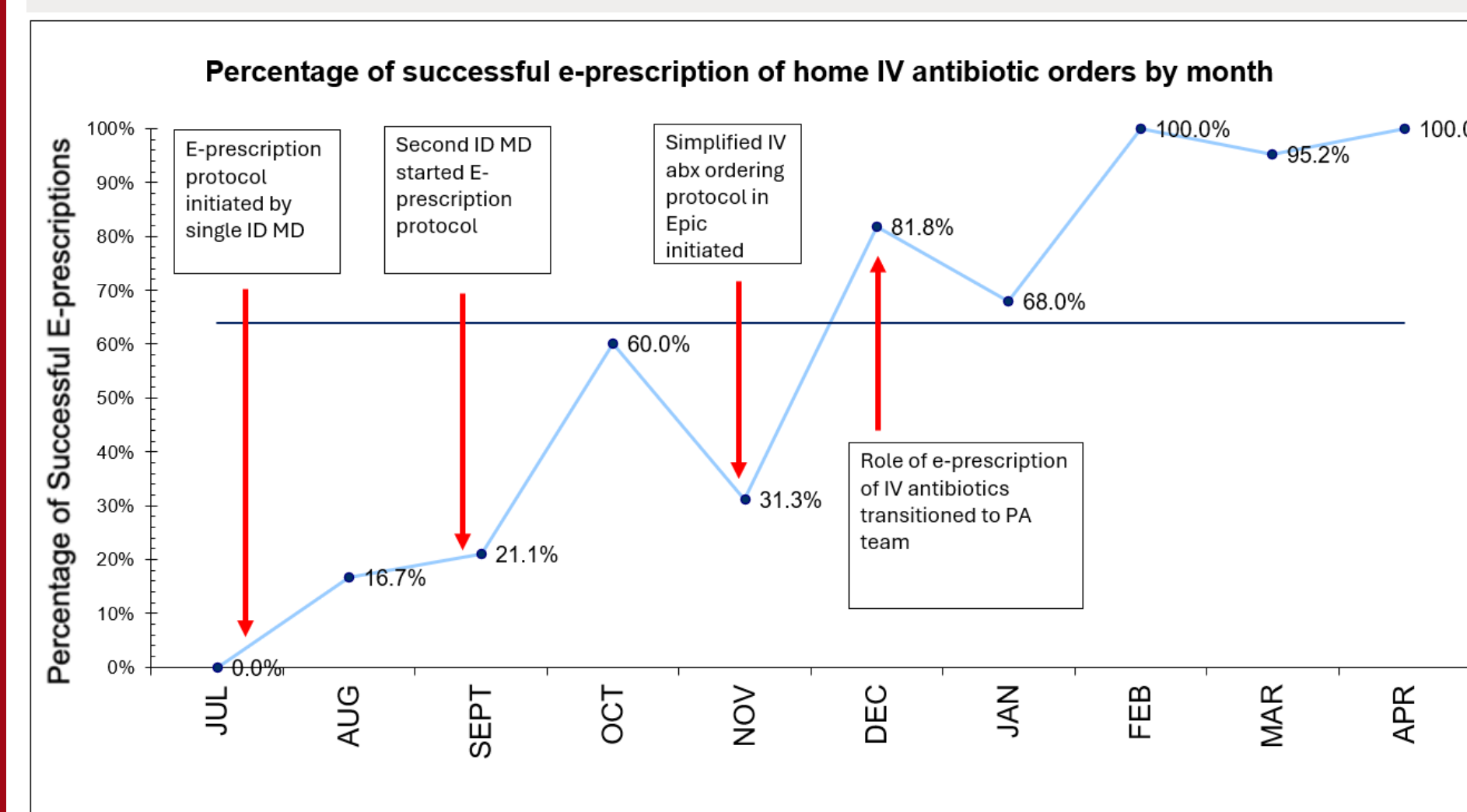
Driver Diagram



Process Map



Run Chart



Results

- 192 patients during the study period were discharged home with IV antibiotic treatment.
- 98 of these patients were discharged using the e-prescription protocol.
- The number of patients being discharged using the e-prescription protocol increased during the study period, moving in the direction of a new steady state as shown by the signal for non-random change on the run chart (too few runs).
- The SMART aim was exceeded by approaching 100% compliance.
- The decrease in November to 31.25% occurred because only 2 of the 3 ID attendings at the time were using the new protocol. In the month of November, the majority of the patients discharged on home IV antibiotics were under the care of the 3rd ID Attending who was not yet using the new protocol. As a result, the overall all percentage of patients being discharged with e-prescriptions for home IV antibiotics dropped sharply in November.

Conclusions

- The current EMR can be modified and utilized to allow home IV antibiotic orders to be e-prescribed
- A multidisciplinary collaboration between ID, pharmacy, PA service, Case Management and IT was successful creating a new work electronic protocol to improve treatment and discharge planning documentation in the EMR and achieve the SMART aim. This allows for better documentation of the discharge orders and treatment plan for patients being discharged on home IV antibiotics in the EMR.
- ID MD team and PA team were able to adapt to new protocol with minimal disruption in workflow.

Next Steps

Establish and document clinical endpoints of patient care for patients being discharged with home IV antibiotics.

- Drug-drug interaction alerts.
- Accurate medicine reconciliation
- Periodically monitoring of on-going performance

Problem Statement

- Depression in rheumatoid arthritis is associated with decreased medication adherence, increased disease activity, reduced odds of reaching clinical remission, and increased risk of all-cause mortality [1-2].
- Depression and anxiety in psoriatic arthritis are associated with decreased treatment adherence, negative health behaviors, and negative perceived health [3-4].
- Depression is a common comorbidity in inflammatory arthritis (IA) and there is a growing body of literature that supports rheumatologists screening for comorbid depression in their patients with IA to improve IA outcomes [1-4].
- Patient Health Questionnaire (PHQ) is a validated depression screening survey with a short (PHQ-2) and long (PHQ-9) forms that are widely adopted in various clinical settings [5].

Objective/Aim Statement

- To assess the feasibility and sustainability of implementing PHQ-2 and PHQ-9 into routine clinical care at a rheumatology fellows' IA clinic at a large tertiary center in New York City.
- **SMART AIM: To achieve 50% compliance in documentation of PHQ-2 and PHQ-9 by the providers using standardized electronic health record (EHR) dotphrases after 5 months.**

Design/Methods

- A retrospective analysis of patient charts of three randomly chosen IA clinic days using an online app was undertaken from February 2023 to July 2023 to get a baseline depression documentation rate.
- Providers received 30-minute education on the importance of depression screening in patients with IA.
- A week after the education, two-step depression screening with PHQ-2 followed by PHQ-9 if PHQ-2 is positive was implemented.
- Nurses performed PHQ-2 at each IA clinic visit verbally and documented the results while rooming patients using an EHR dotphrase. Patients completed paper forms of the PHQ-9 only if PHQ-2 was positive.
- Fellows then reviewed PHQ-9 during the clinic visit and documented it using a separate EHR dotphrase.
- **Project dates:** July 24th, 2023 to December 18th, 2023
- The plan-do-study-act (PDSA) cycles (Figure 3) were developed based on identified drivers (Figure 1); data was collected and analyzed every week.
- **Outcome measure:** proportion of patient encounters in the IA clinic day with PHQ-2 documentation and proportion of patients encounters in the IA clinic day that had positive PHQ-2 with PHQ-9 documentation.
- **Balancing measures:** length of rooming patients by the nurses and the length patient encounters.

Figure 1: Driver Diagram

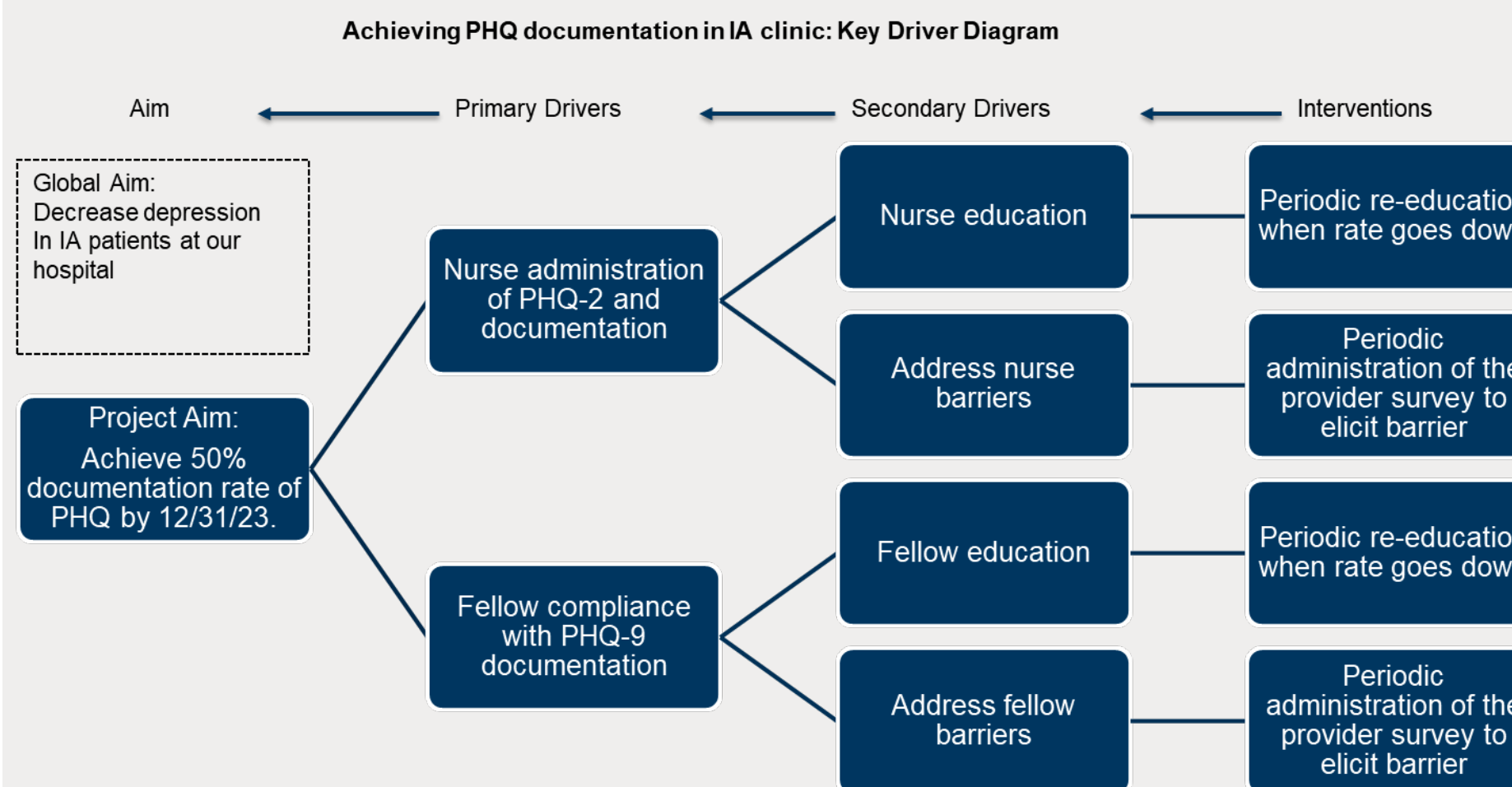


Figure 2: Root Causes

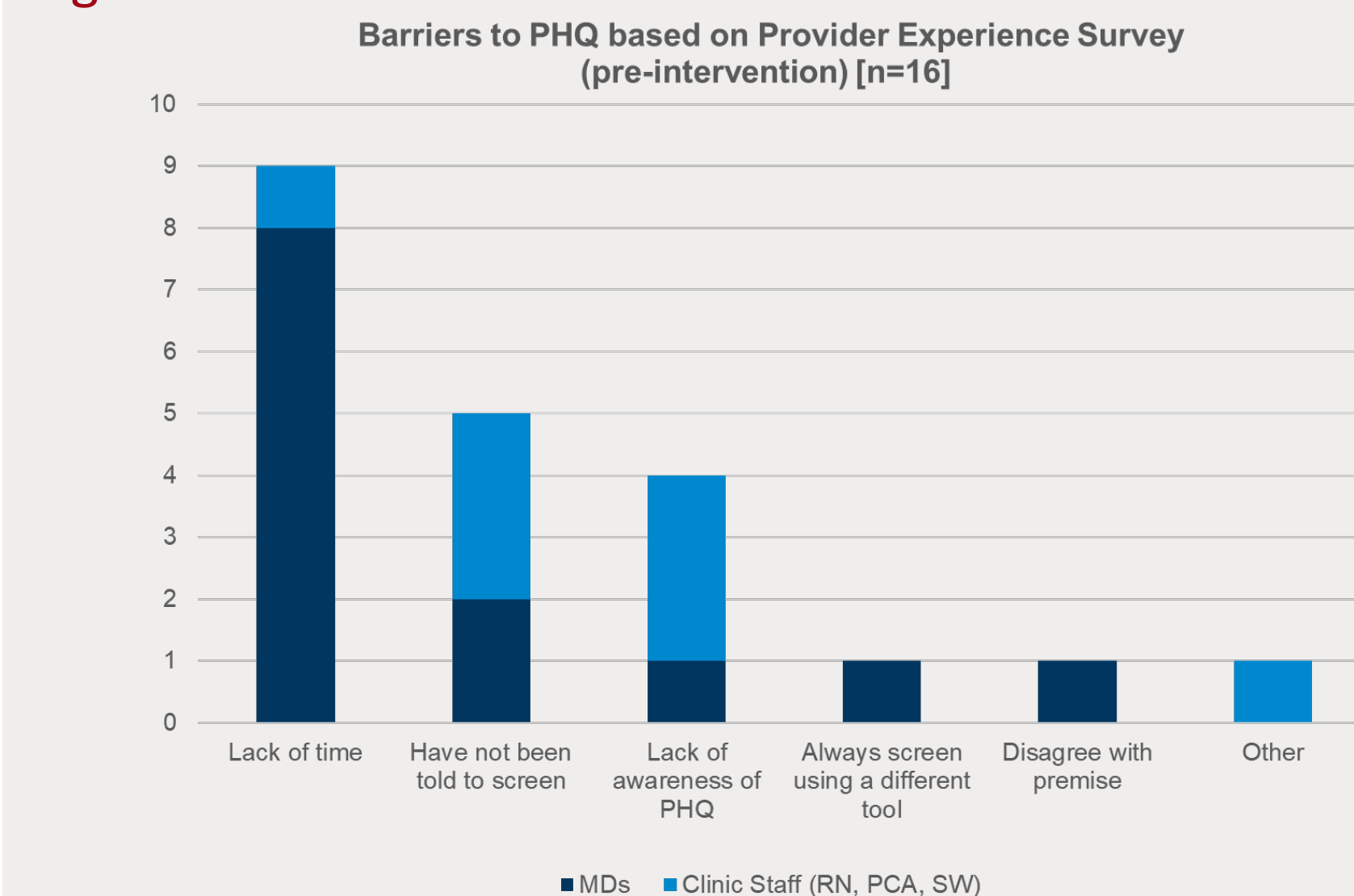


Figure 3: PDSA Cycles

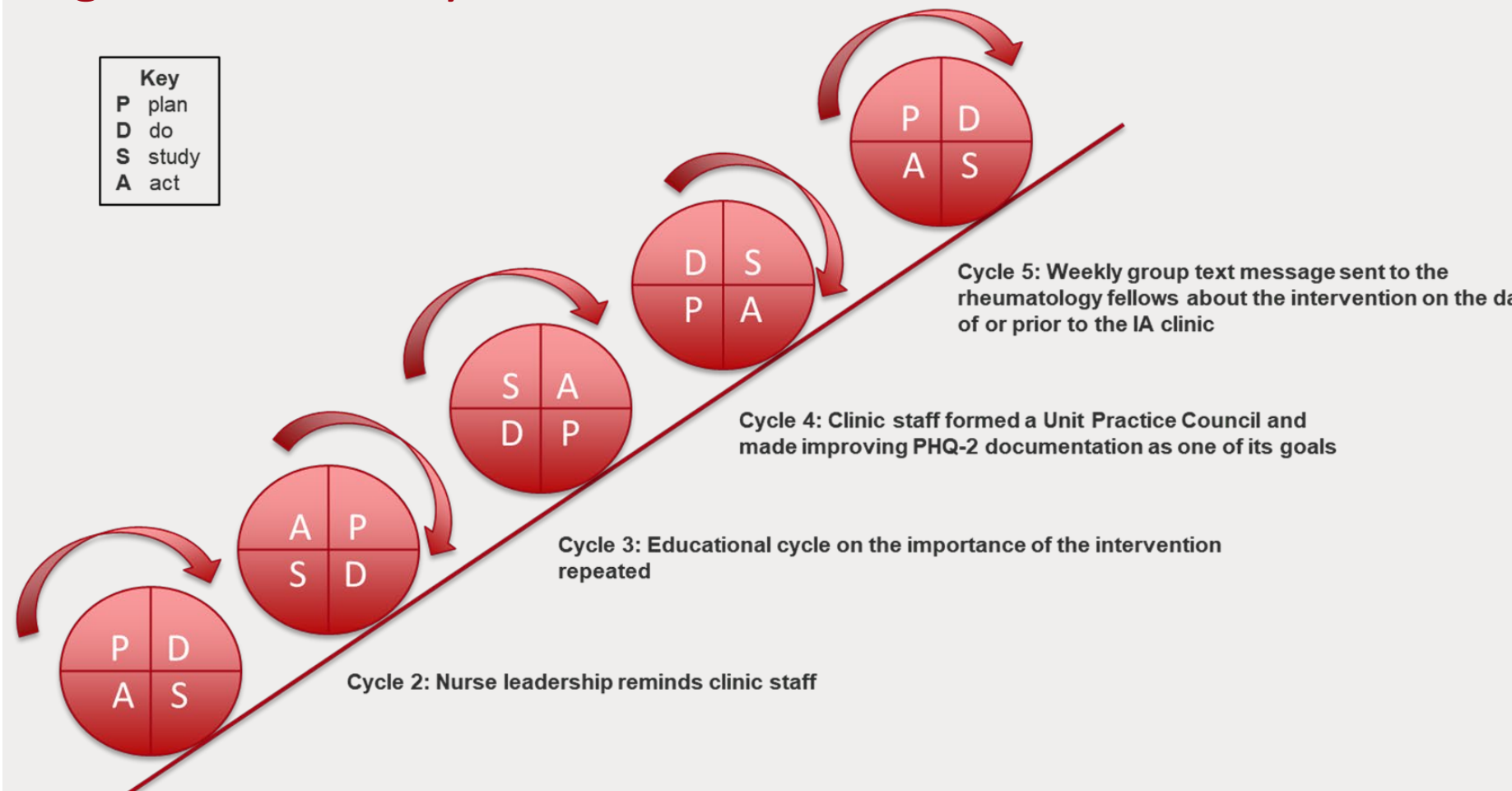


Figure 4: PHQ-2 Shewhart Chart

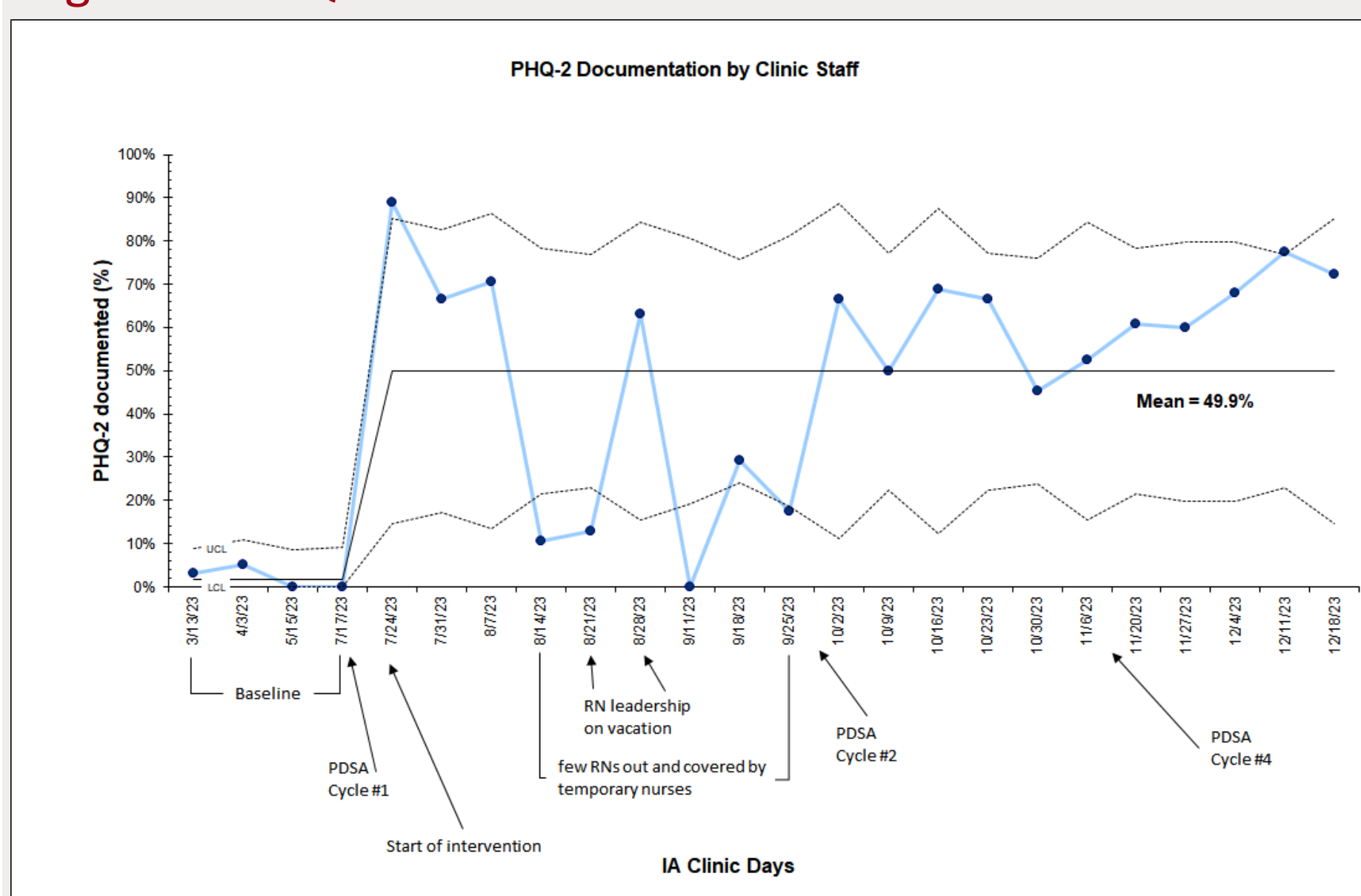
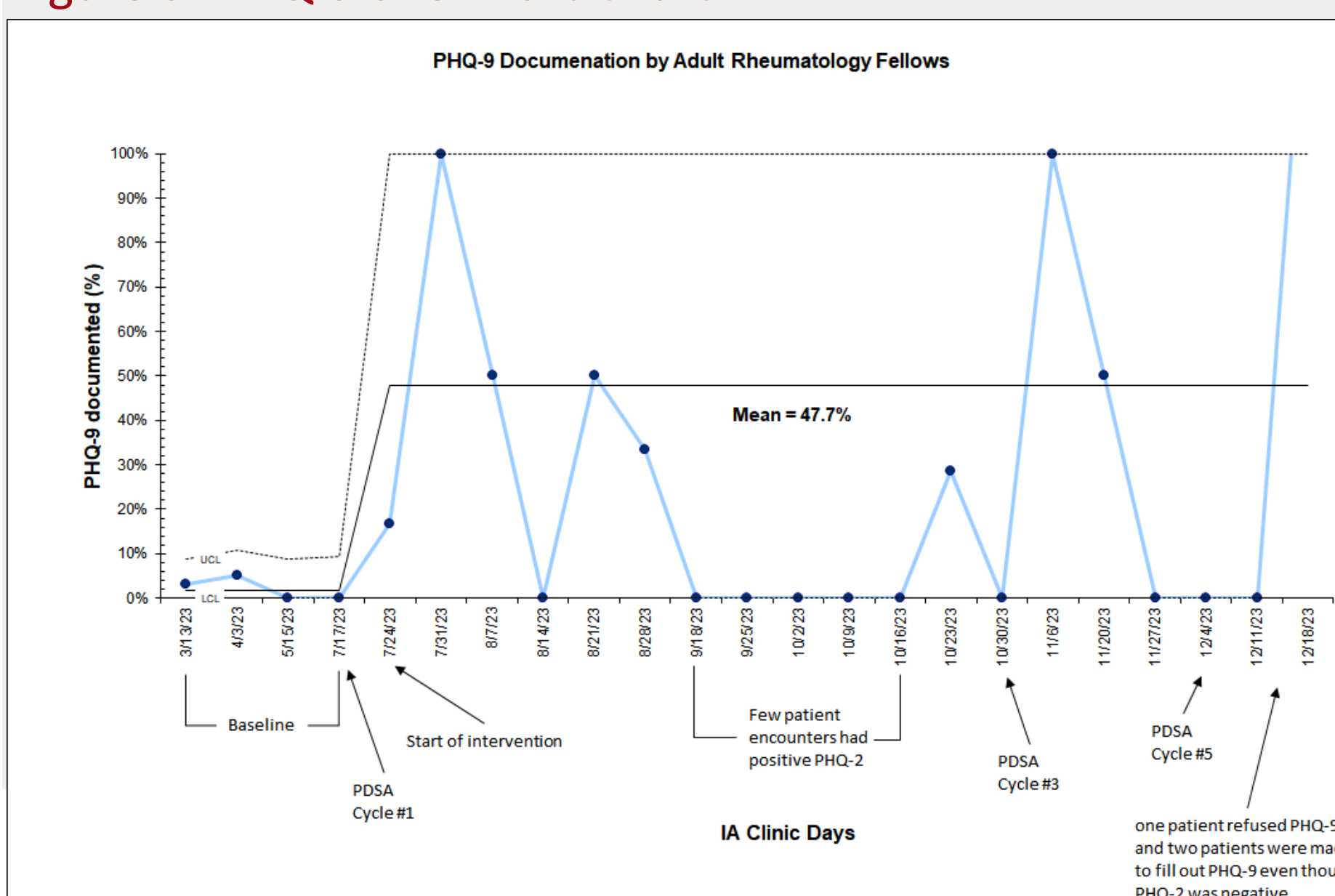


Figure 5: PHQ-9 Shewhart Chart



Results

- Prior to the intervention, depression documentation rate was only 2% during the 6-month run-in period.
- Pre-intervention survey to understand barriers to depression screening revealed insufficient time and uncertainty about whose responsibility it is to screen for depression to be the most significant barriers (Figure 2).
- After initial poor participation, **nurses achieved the aim after repeated reminders and ongoing education by the senior nurse (Figure 4).**
- Fellows failed to achieve the aim despite repeated reminders and education (Figure 5).
- Lack of time during clinic visit was found to be the biggest challenge. However, none of the 5 fellows and 5 clinic staff who responded to the post-intervention survey felt that there was a significant increase in the length of rooming patient and patient encounter.

Conclusions/Lessons Learned

- **By standardizing depression screening using the PHQ tool, standardizing documentation, engaging stakeholders, creating an automated EHR report, and developing workflow process, we significantly increased the documentation rate of depression in patient encounters compared to baseline, demonstrating feasibility of the intervention.**
- Sustained adoption of PHQ was difficult to achieve and this suggests that education and reminders alone are not enough to result in sustainable changes in practice.
- Additional support at the health systems level that prioritizes depression screening may need to take place.
- Understand ways to incorporate PHQ-9 more reliably so that it could lead to a durable change in practice.
- Partnership with mental health and primary care practices to benefit patients with positive PHQ-9 screens to facilitate ongoing treatment for depression.
- Additional research demonstrating improved IA outcomes in screened patients may also be helpful to gain more buy-in from rheumatology providers which could help sustain the adoption of the intervention.

Acknowledgements

- We acknowledge all adult rheumatology fellows, rheumatology supervisory attending physicians in the IA clinic, nurses, PCAs, social workers, receptionists, and IT personnel who helped created the EHR report. A special thanks to Dr. Juliet Aizer and Dr. Nancy Pan in the division of Rheumatology for their advice on the project.

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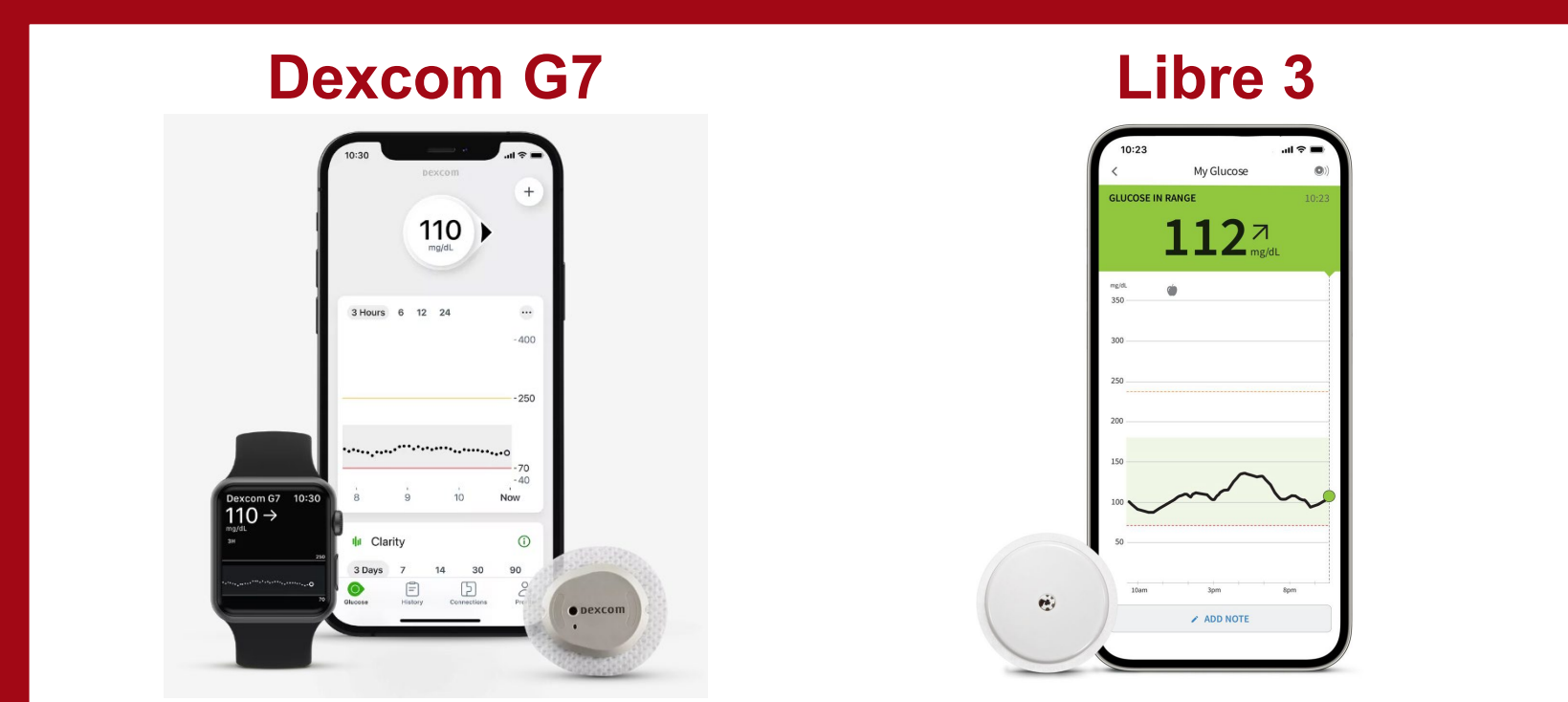
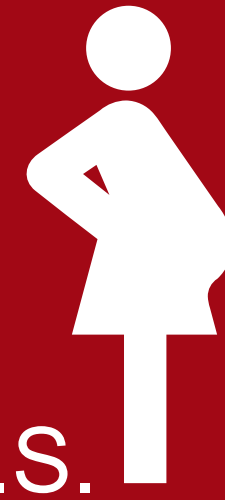
A Sweet Solution: Implementing Continuous Glucose Monitoring in Gestational Diabetes

Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium | May 2024

Rachel Stahl Salzman MS, RD, Felicia A. Mendelsohn MD, Jane Seley DNP, MPH, Gwendolyn A. Jack MD, MPH, Karen Hyams MS RD, Maryanne Richardson RD, Shantelle Pryce MSHI, BIDA, Evan Sholle MS, Wenna Xi PhD, Jennifer I. Lee MD

Background

- The prevalence of Gestational Diabetes (GDM) is rising with one out of every six pregnant women developing GDM in the U.S.
- GDM contributes to increased maternal, fetal and neonatal complications
- Blood glucose monitoring (BGM) has been the standard of care for glucose monitoring in GDM, but has **several limitations** including inconvenient, painful and lack of adequate data
- Since 2022, Dexcom G7, Freestyle Libre 2 & 3 Continuous Glucose Monitoring (CGM) devices are FDA-approved for use in GDM



CGM offers many advantages over BGM such as:

- Provides **real-time feedback** on the effect of dietary choices and activity on glucose levels
- Offers **alerts and alarms** to help prevent impending hypoglycemia or hyperglycemia

Problem Statement

- Given the growing adoption of CGM in GDM, there is a need for guidance to develop best practices for CGM utilization in GDM

Project Goals

- Develop and implement a Virtual GDM Program
- Evaluate satisfaction with CGM among people with GDM

Aim Statement: Implement a standardized process where at least 30% of people with GDM who are referred to the Virtual GDM Program, over a 4.5-month period, wear and continue to use a CGM for at least 70% of the time over 14 consecutive days.

Virtual GDM Program

Ask about our Virtual Gestational Diabetes Classes

Planning a Healthy Pregnancy with Gestational Diabetes:
Learn about Monitoring Glucose, Meal Planning, Physical Activity and More

Our program is led by a team of Registered Dietitians/Certified Diabetes Care and Education Specialists (RD/CDCES) within the Division of Endocrinology, Diabetes and Metabolism at Weill Cornell Medicine.

Learners will be scheduled for one or two virtual group classes, an individual visit with a RD/CDCES for nutrition counseling, and a visit with an endocrinologist if needed.

If you're interested, speak with your health care team to sign up. For questions, please call 646-962-8890.

Classes:

- Part I - Planning a Healthy Pregnancy with Gestational Diabetes: Monitoring Glucose, Meals, Physical Activity and More (Wednesdays: 5:00-6:00 pm EST (via WC Connect))
- New for 2024: Part II - Continuous Glucose Monitoring (CGM): Knowing Your Glucose Levels 24/7 (Tuesdays: 4:00-5:00 pm EST (via WC Connect))

Part I open to all learners; Part II is for those wishing to learn more about CGM.

TOPICS INCLUDE:

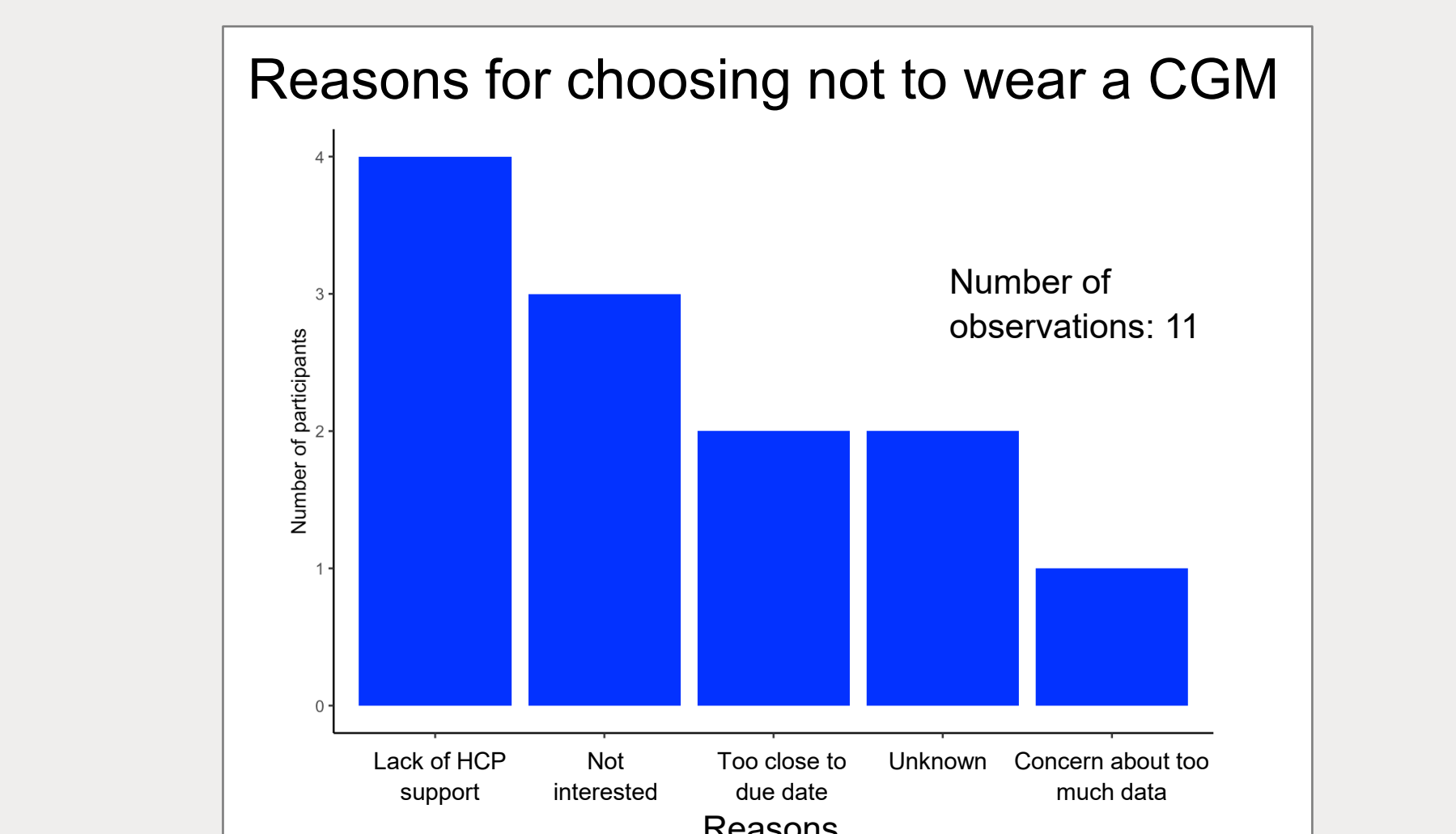
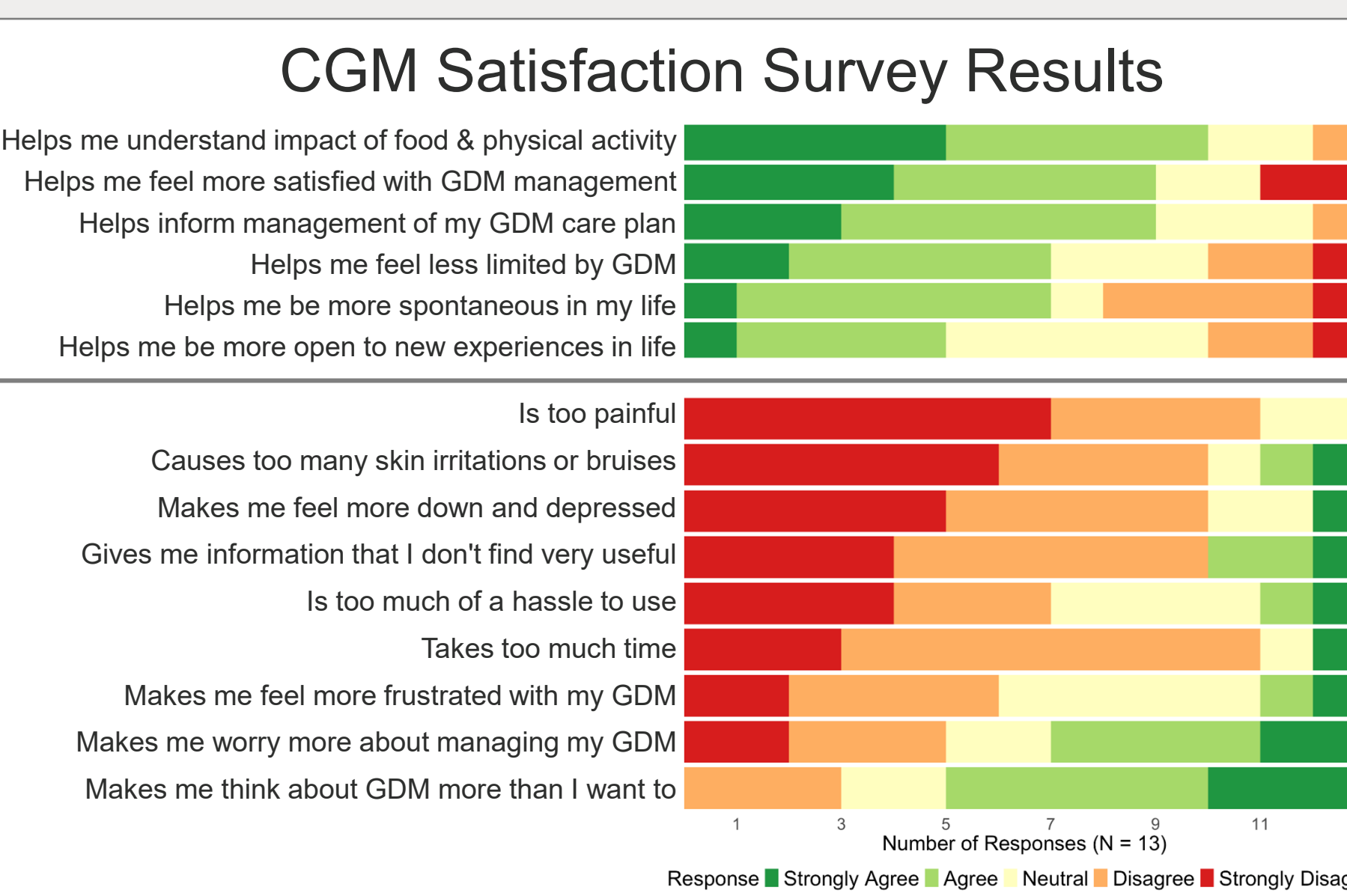
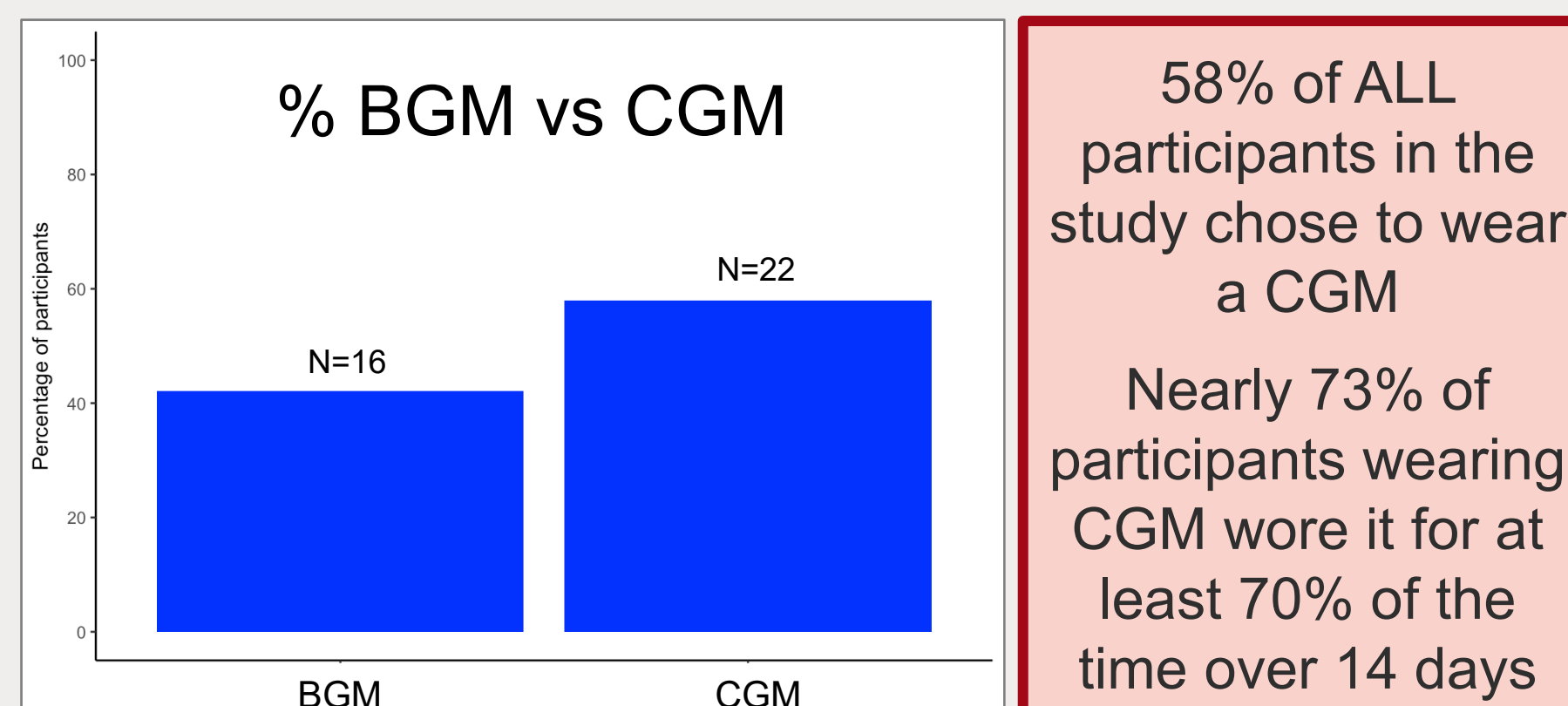
- Monitoring Glucose Levels: Tips & Tools
- Healthy Eating: Fueling Mom & Baby
- Physical Activity

People with GDM are also scheduled for an individual visit with a RD/CDCES, and an Endocrinologist if needed

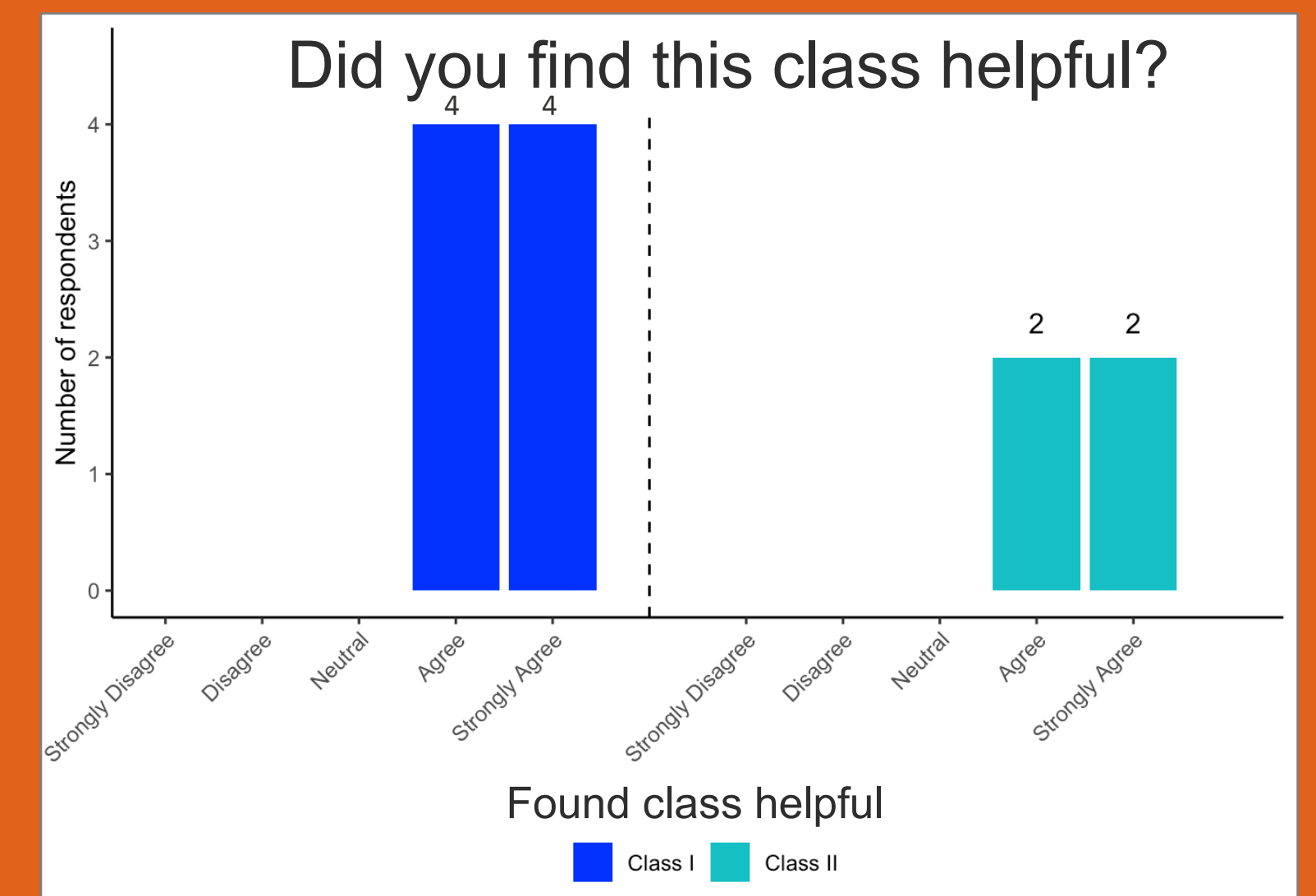
Methods

- Study Design:** Implementation Study
- Setting:** Division of Endocrinology, Diabetes and Metabolism; Department of Obstetrics and Gynecology
- Data Collection:** REDCap and Qualtrics
- Survey Tools:** Glucose Monitoring Satisfaction Survey for GDM adapted from Type 2 diabetes
- Study Period:** December 13th 2023 - April 30th 2024

Results



Results



Conclusions & Lessons Learned

- High acceptance of CGM in GDM with majority wearing CGM for at least 70% of the time over 14 days
- Results suggest positive satisfaction with CGM
- 100% of participants would recommend the classes to others
- Continued collaboration and support between Endocrinology and OB/GYN is key to facilitate ongoing CGM use in GDM

Next Steps

- Continue data collection
- Offer ongoing educational initiatives aimed at enhancing HCP knowledge and comfort with CGM
- Evaluate additional metrics such as need for insulin in BGM vs CGM
- Analyze gaps and identify barriers in CGM use in GDM, and develop possible solutions
- Establish a GDM registry at WCM to develop strategies that mitigate risk of future prediabetes and type 2 diabetes

Acknowledgements

Laura Alonso MD and the Endocrine Team, Laura Riley MD and the OB/MFM Team, Quality Improvement Academy, William Polonsky PhD, CDCES

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Guided Heart Failure Education in the Home

Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium
May 2024



Quality in Care Symposium

Shudhanshu Alishetti MD, Wenna Xi PHD, Michael Fragner MD, Jude Elsaygh MD, Tiffany Ossi MD,
Gurinder Sunner MD, Shaheen-Ahmed Rizly MD, Dhaval Trivedi MD, Daniel Oren MD, Catherine Chun Pharm D,
Brock Daniels MD

Problem Statement:

- Heart failure impacts about 7 million people in the US, with an incidence of about 650k new cases a year. It is the leading discharge diagnosis amongst Medicare patients.
- While improved heart failure targeted medical therapy has had a significant positive impact on the outcomes of treated patients, outcomes are significantly worse in communities with socioeconomic deprivation.
- In Brooklyn, 18% of residents live below the poverty line and over half of households earn less than \$60k. Many face food insecurity and poor access to healthy food. Some may have an ingrained distrust in the medical system due to historic discrimination. Many have poor access to resources on the internet or limited comprehension of medical terminology. Such factors can lead to low medical literacy.
- Poor understanding of heart failure, the benefits of therapies, recommended lifestyle adjustments, and the role a patient can play in their care can lead to poor compliance with medical therapy, and regular follow up, reluctance to proceed with recommended procedures, and ultimately to higher rates of rehospitalization and mortality.

Objective/Aim Statement:

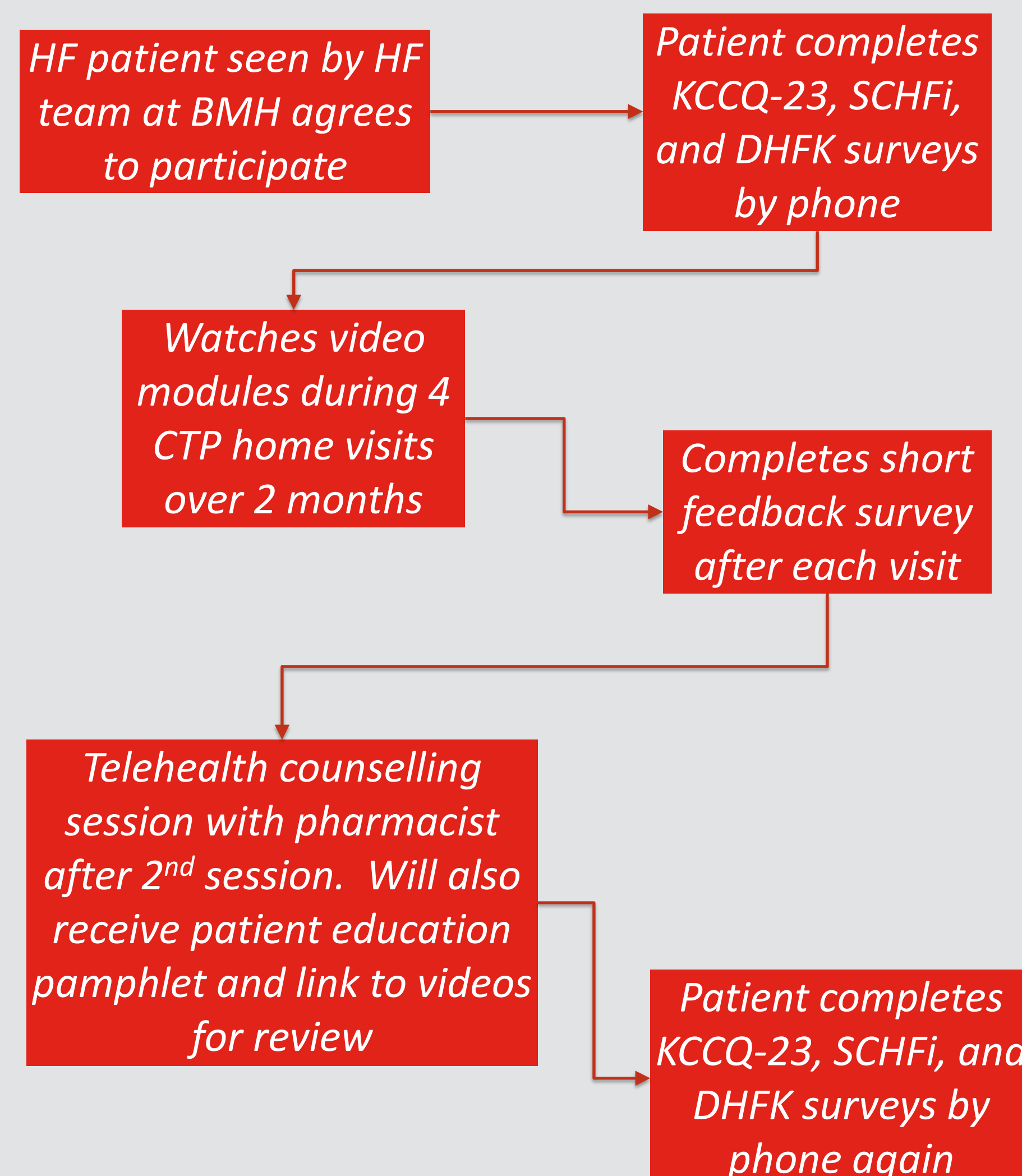
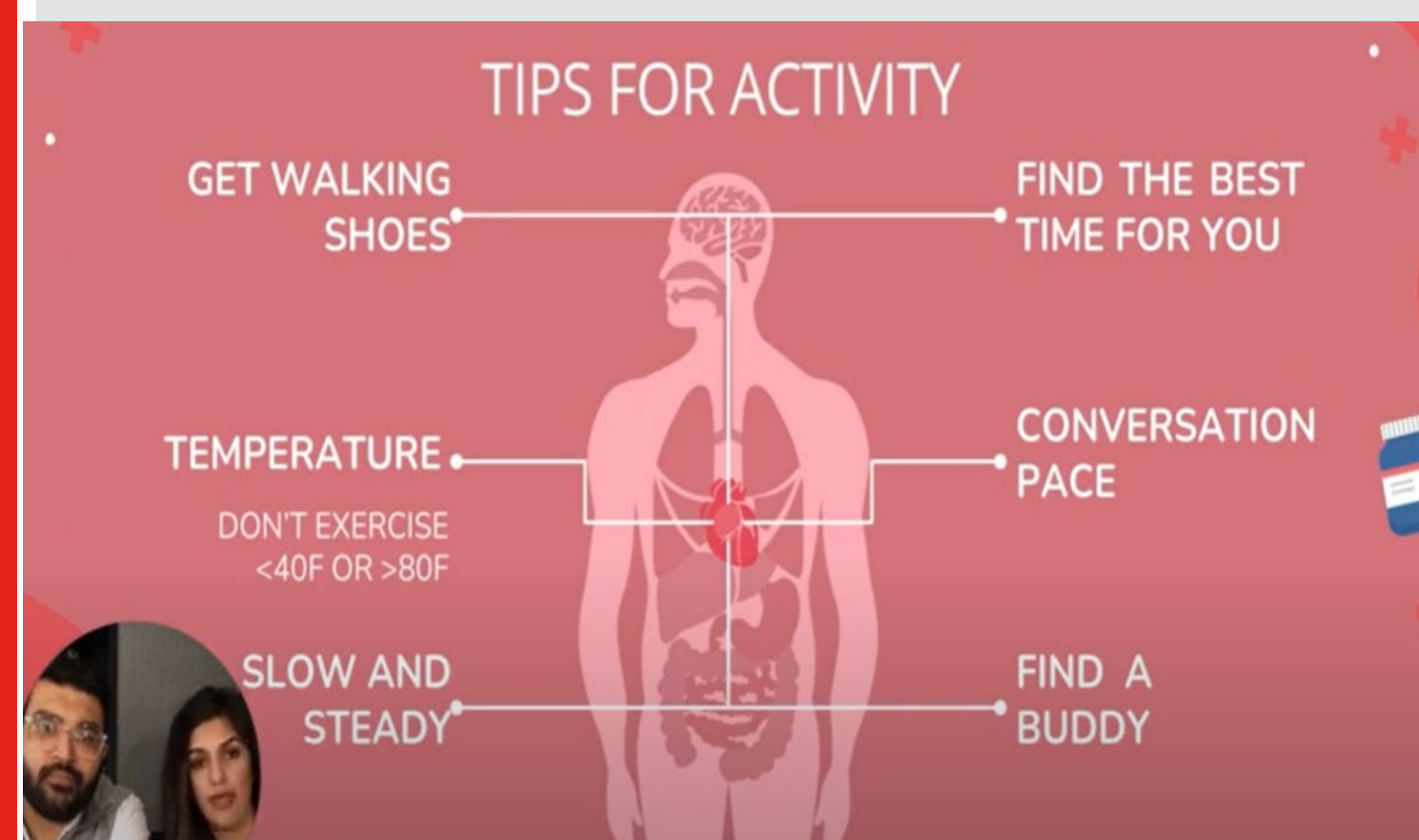
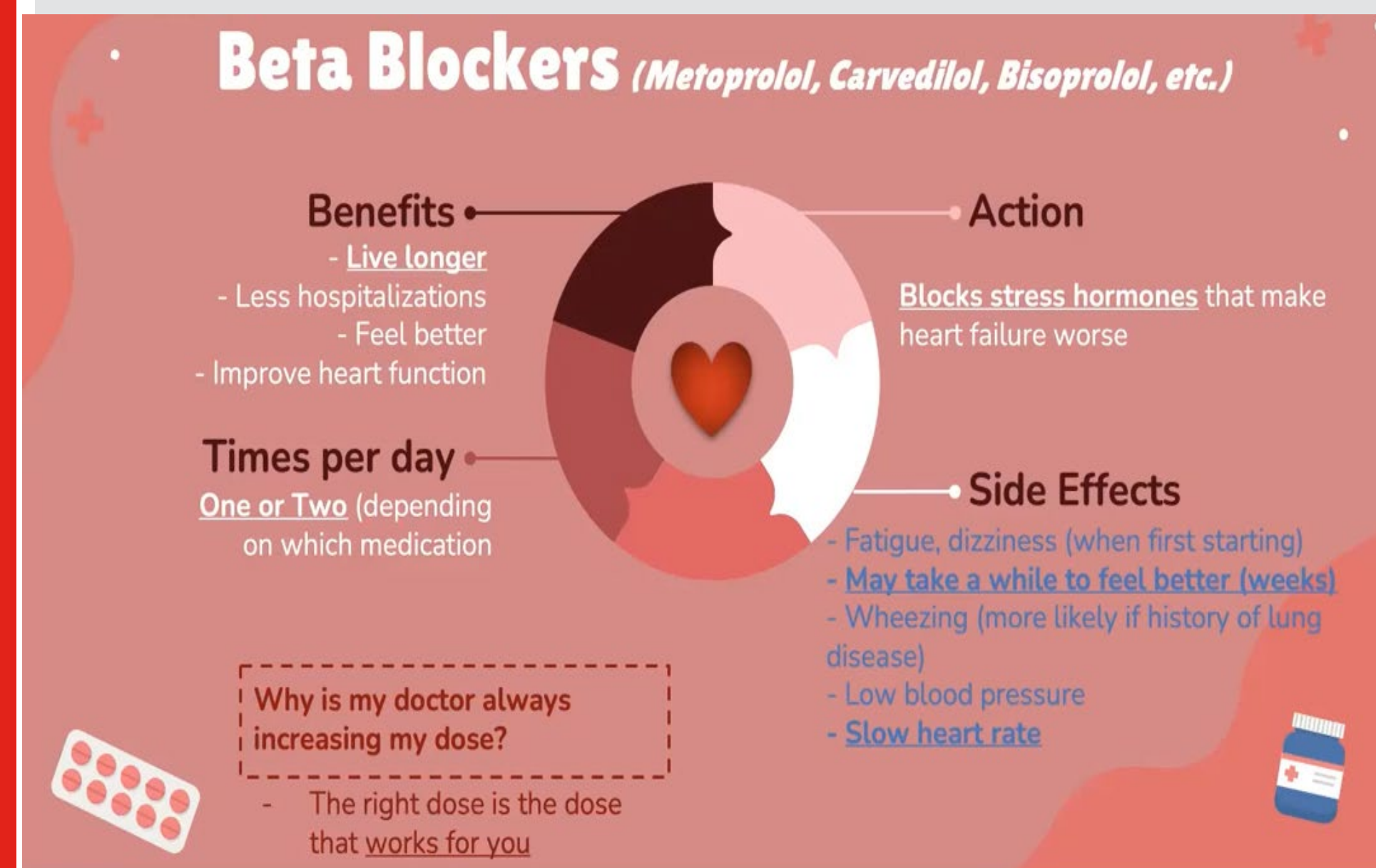
The aim of this initiative is to first develop a high quality, interactive, and easy to understand multimedia heart failure education program with a team of resident physicians. Then to implement the program over the course of four in-home sessions with trained paramedics, spaced out over two months, paired with a counselling session with a pharmacist, with the goal of improving patient understanding of heart failure, comfort with self care, and quality of life.

Outcome Measure:

- Survey scores, admissions, rates of optimal meds

Process Measures:

- Number of enrolled patients, number of home visits, number of patients completing program



Design/Methods:

- A video patient education program was developed, covering the following eleven topics over the course of 8 short videos: introduction to heart failure, low sodium diet, medications, self care in heart failure, exercise, emotions, tips for family and friends, managing other chronic conditions, other lifestyle choices, heart rhythm issues, and research.
- The curriculum was reviewed thoroughly, then posted to YouTube for easy access.
- Videos were then trialed by some established heart failure patients for initial input.
- English speaking patients seen by the heart failure team at Brooklyn Methodist hospital in the inpatient and outpatient setting are now being approached.
- If interested, they complete 3 surveys: the Kansas City Cardiomyopathy Questionnaire (KCCQ-23), the Self Care of Heart Failure Index (SCHFi), and the Dutch Heart Failure Knowledge Scale.
- Then, the Community Teleparamedicine (CTP) team visits the patient 4 times over the course of 2 months. During each visits, 2 videos are shown, other medical needs are addressed (i.e. IV diuretics if needed), and any questions are answered.
- After the second visit (when the medications module is completed), the patient has a telehealth counselling session with a heart failure pharmacist.
- After completion of the course, the 3 surveys are completed again.

Results:

Enrollment in the program began on 5/1/24. As of 5/15/24, two patients trialed the videos and six patients have initiated the program.

Next Steps:

We hope to enroll 5-10 patients per month in the first 2 months (as a trial period) then increase the capacity of the program by 100-200%. Eventually, we would like to make this program available to non-English speakers.

Ilan S. Weisberg, MD, Pratishta Singh, MD, Makda Bsrat, MD, Gres Karim MD, Sara Huang, DO, Wenna Xi, PhD, Robert Kim, MD

Problem Statement

- Screening to identify high-risk patients for clinically significant fibrosis (CSF, Fibrosis Stage > 2) and linkage to early intervention prevents progression to cirrhosis and improves outcomes.
- Providers are unfamiliar with metabolic dysfunction-associated steatotic liver disease (MASLD) screening and risk stratification tools and are unable to link high-risk patients with advanced practice hepatology care.
- Most patients with MASLD and CSF are underrecognized and are at risk for poor outcomes.

Objective/Aim Statement

To implement the MASLD Clinical Care Pathway (Fig. 1) in 50% of patients seen in the internal medicine, gastroenterology, endocrinology and weight management practices who are at increased risk for CSF by June 1, 2024.

Design/Methods

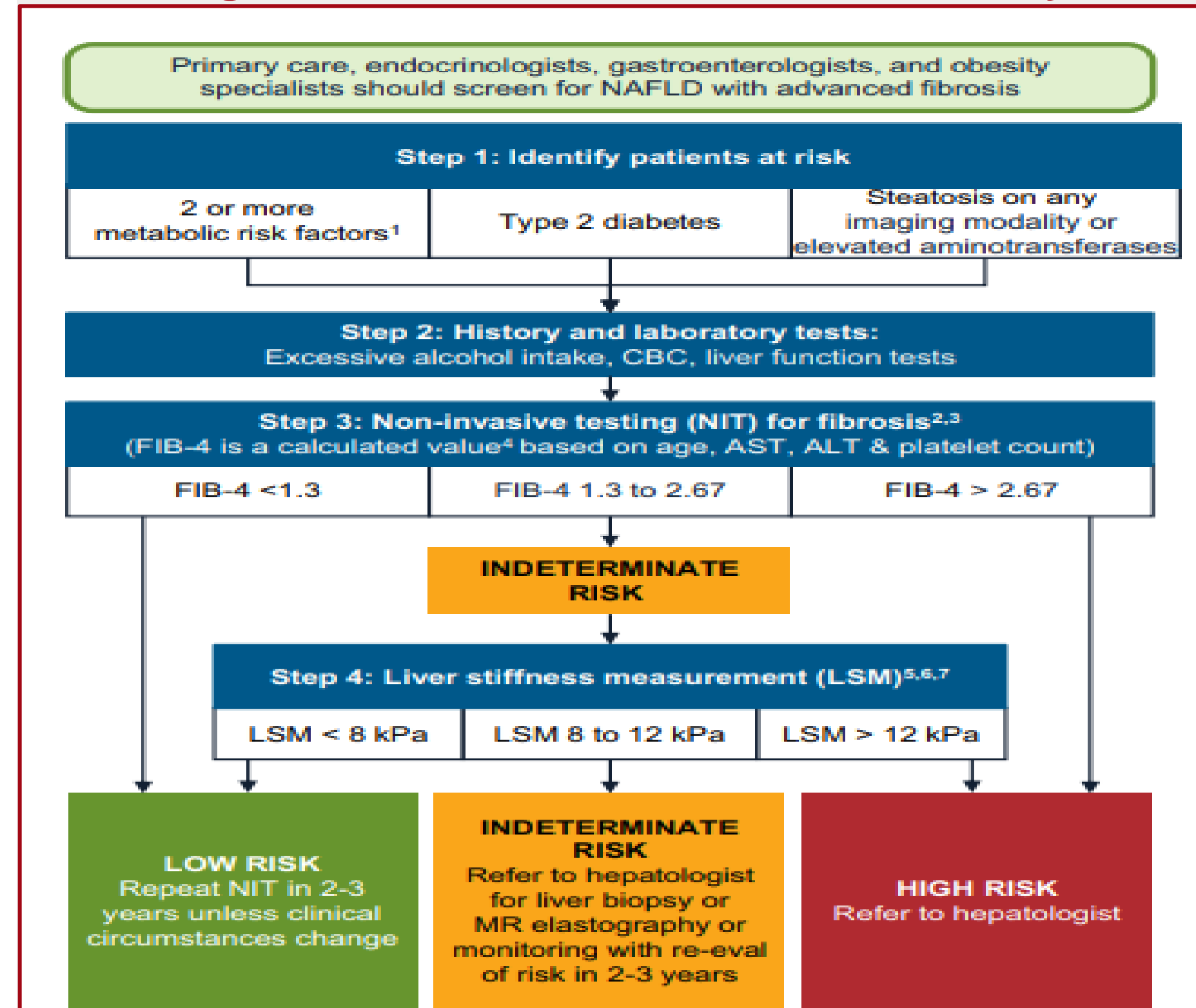
The ACG/ACCE MASLD screening clinical care pathway was implemented at four clinical practice areas of NYP BMH:

- Internal Medicine
- Endocrinology
- Weight Management
- Gastroenterology

Four key elements were implemented to improve the uptake of and adherence to the screening pathway:

- Provider education sessions
- Created screening Epic Smart Tool to identify at risk patients and calculate FIB-4
- Established direct access Fibroscan
- Dedicated MASLD practice established

Figure 1. MASLD Clinical Care Pathway



Kanwal F, et al. *Gastroenterology*, 2021.

Figure 2: Pareto Chart of Cardiometabolic Risk Factors (CRF) among Brooklyn High-Risk MASLD Patients

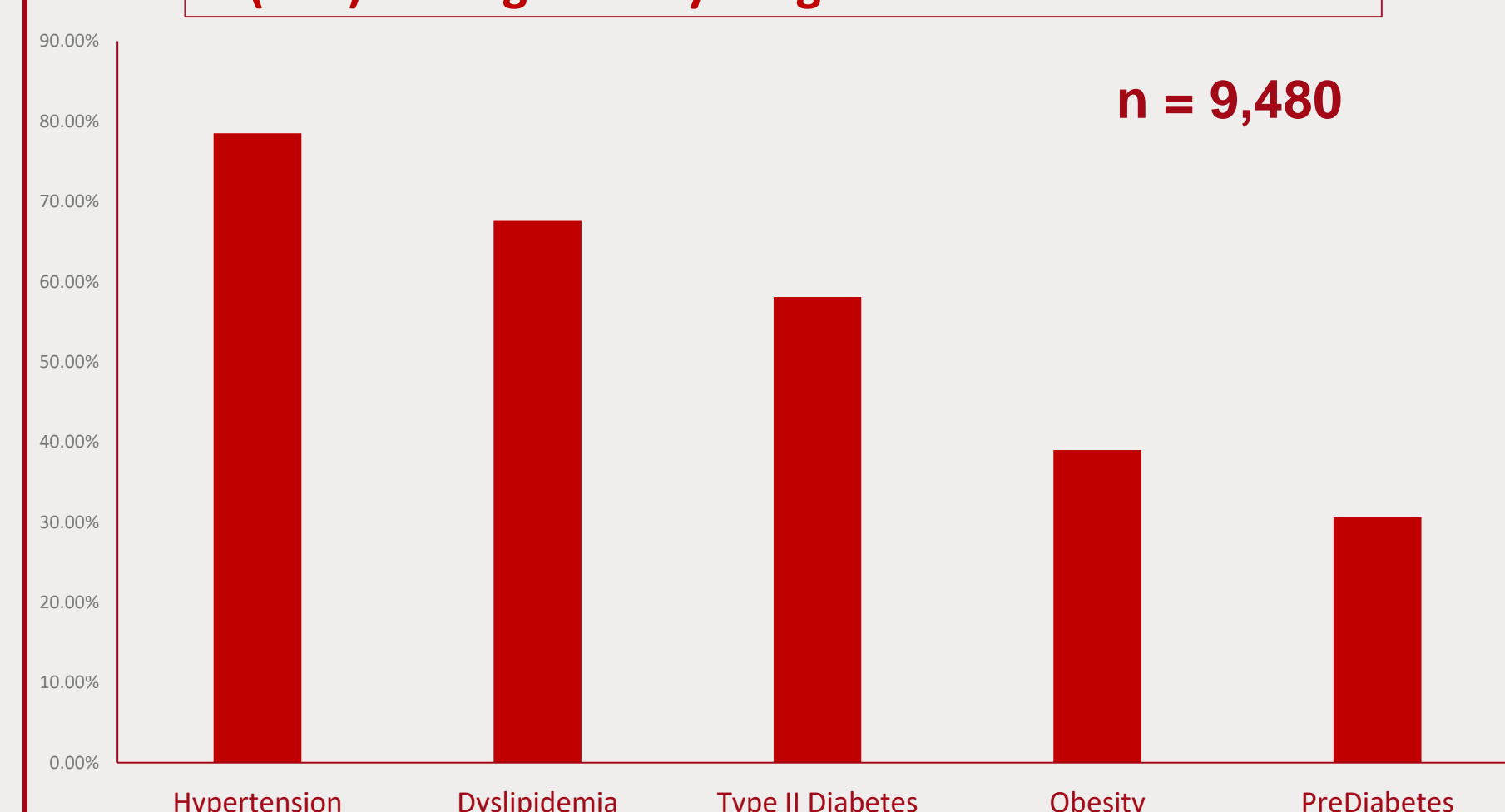


Table 1: Demographics of NYP BMH Patients at increased risk for CSF

		n = 9,480
Age (mean)		60.7 years
Sex	Female	6,163 (65%)
	Male	3,316 (35%)
Race	Black/African American	4,691 (49.5%)
	White	2,434 (25.7%)
	Asian	215 (2.3%)
	American Indian/Alaskan.	13 (0.1%)
	Pacific Islander/Hawaiian	4 (0.1%)
	Other/Not Described	1,257 (13.3%)
	Declined	866 (9.1%)
	Not Hispanic or Latino	6,268 (66.2%)
	Hispanic or Latino	1,334 (14.1%)
	Missing	1,878 (19.8%)

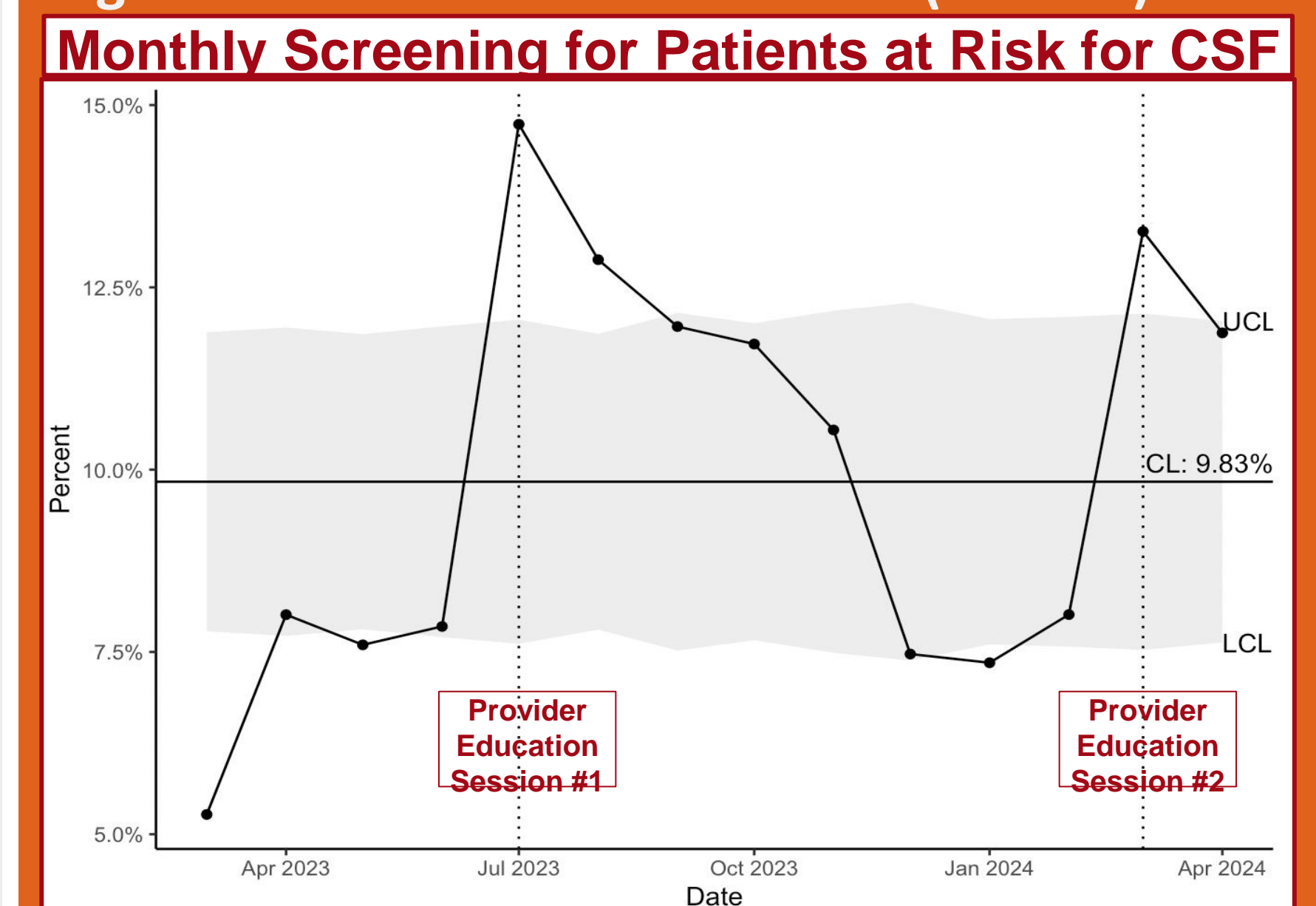
Table 2: Screening and NonInvasive Testing

Total Patients	16,183
High Risk for MASLD and CSF	9,480 (58.6%)
High Risk Patients Screened	2,025 (21.4%)
High Risk Patients with FIB-4 ≥ 1.3	856 (42.3%)
Fibroscan ≥ 8 kPa	99 (11.6%)

Results

- Between April 1, 2023 and April 30, 2024 a total of 16,183 adult patients without a prior diagnosis of MASLD were seen in the four outpatient practice areas of NYP BMH.
- Cardiometabolic risk factors were highly prevalent (Fig. 2). Over half the population had Type II Diabetes (58%) and over a third with obesity (39%).
- Over half of all patients (n = 9,480, 58.6%) met criteria for being at an increased risk for CSF (Table 1), yet only a small proportion of these patients (n = 2,025 21.4%) were screened (Table 2).
- Implementation of this pathway using sequential noninvasive testing resulted in identification of 99 patients with clinically significant advanced fibrosis (Table 2).
- Screening rates were low and not well-sustained (Fig. 3) and required recurrent provider education sessions.

Figure 3: Shewhart Control Chart (P Chart)



Conclusion

Despite not reaching the target screening goal, a significant number of asymptomatic patients with advanced fibrosis (n = 99, 11.6%) were newly-identified through implementation of this pathway.

Next Steps

- Continue provider education on prevalence and screening of MASLD and CSF
- Develop a multidisciplinary program for the management and care of patients with MASLD

Marissa Weber, MD; Carolyn Newberry, MD; Patrica Fogarty-Mack, MD; Reem Sharaiha, MD; Sanjay Salgado, MD; Jason Chua; Adam Buckholz, MD; Haarika Korlipara, MD; Sonal Kumar, MD; Brock Daniels, MD

Problem Statement:

Standard fasting guidelines in Glucagon-like-Peptide-1 Receptor Agonists Users may not be sufficient to reduce the risk of retained gastric contents in users

Objective/Aim Statement:

What is the current incidence of solid residual content in GLP-1RA users undergoing endoscopy vs endoscopy and colonoscopy?

What is the current incidence of excess liquid residual content (>1.5 mL/kg) in GLP-1RA users undergoing endoscopy vs endoscopy and colonoscopy?

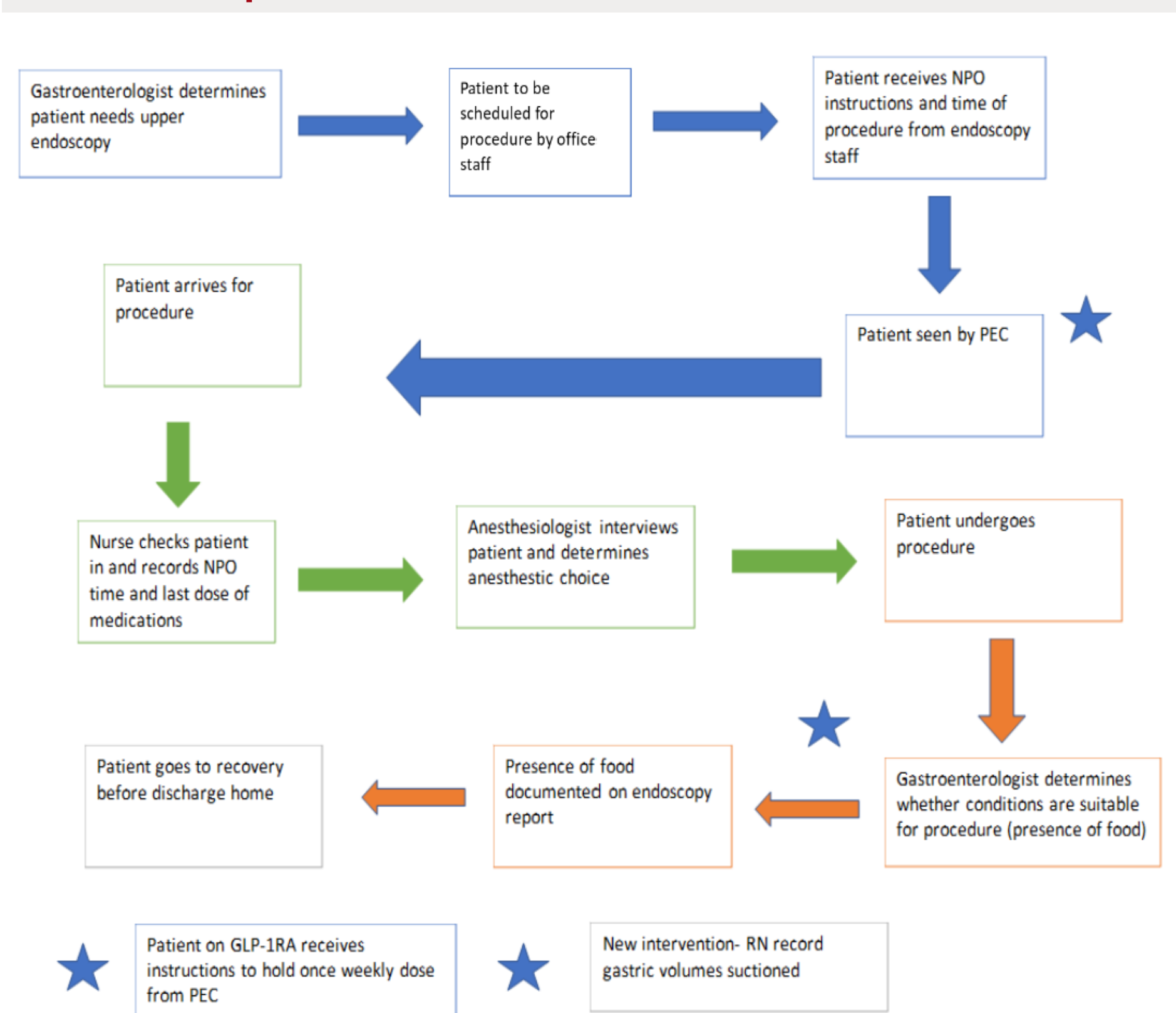
Design/Methods:

Methods: We retrospectively identified all patients undergoing upper endoscopy or upper endoscopy and colonoscopy over a 5-year period who were prescribed semaglutide, a long-acting GLP-1RA, for > 4 weeks.

We separately identified patients undergoing endoscopy over the same period not on medication, conducting multivariate logistic regression and multivariable propensity-matched association analysis to compare outcomes of interest including retained solid gastric contents, endoscopic complications, and endoscopic outcomes.

INCLUSION CRITERIA	EXCLUSION CRITERIA
Patients taking a GLP-1RA Patients undergoing endoscopy no colonoscopy Patients not taking GLP-1RA	Gastroparesis Chronic opioid use History of bariatric surgery

Process Map:



Results:

Results: In total, 1212 patients comprised the study population (610 on semaglutide, 602 not on semaglutide). On multi-variant logistic regression accounting for other causes of delayed gastric emptying, semaglutide was an independent risk factor for retained solid gastric contents (OR 4.74, 95% CI 2.40-9.35, p <0.0001).

On multivariable propensity-matched association analysis based on age, identified gender, and diabetes status, semaglutide use was associated with an absolute increase of 7% of retained solid gastric contents (coefficient 0.0689, 95% CI 0.039-0.098, p<0.0001). No peri-procedural aspiration events occurred.

A colonoscopy the same day of the procedure was protective against these findings, indicating a full liquid fast the day before the procedure may reduce the incidence of retained gastric contents.

In addition, the preparation grade of the colonoscopy was affected, with more patients on semaglutide receiving a poor or fair preparation designation in comparison to those not on drug.

Conclusions/Lessons Learned:

Retrospective review of the data suggests that the GLP-1RA increase the risk of residual gastric content despite following standard fasting protocols.

Next Steps:

Perform a prospective study to assess whether prolonged liquid fasting reduces the risk of residual solid content found on endoscopy.

Assessing Emergency Department Quality Experience in Chinese Patients

Weill Cornell Medicine Quality Improvement and Poster Symposium

Pon-Hsiu Yeh, MD, Mingze Sun | May 2024

Problem Statement

Asian Americans are the fastest growing of all major racial/ethnic groups in the United States. Within this large minority racial group, Chinese Americans are the largest ethnic subgroup. While health disparities in Asian Americans has been shown in studies, research specifically targeting Chinese American health and health care disparities is scarce. Thus, we have very little insight into the complicated mechanisms that drive disparities for this specific population.

Poor quality of care can lead to disparities in diagnosis and treatment rate and culminate in poor patient outcomes. Currently, ED experience and quality of care is evaluated through email and mail surveys sent to patients after discharge. Based on current New York Presbyterian Lower Manhattan Hospital (LMH) ED post discharge data, the survey response rate for Chinese patients is notably low (<1%) compared to other patients (5%). This project intends to fill this gap in ED quality of care data collection and evaluation by administering quality of care surveys verbally in person in the ED.

Objective/Aim Statement

The objective of this study is to elicit quality of care feedback data in the adult Chinese ED patient population at LMH. In order to fulfill this objective, we:

- Developed a structured ED survey based on existing ED quality of care feedback surveys and expert consultation
- Administered surveys verbally in patient's indicated preferred language

Design/Methods

This study design is a qualitative cross-sectional analysis of patient experience. A quality-of-care survey was designed based on literature review and input from stakeholders including clinical staff, patient services, and patient experience. Research associates were trained to collect patient background information and administer the survey. Patient survey responses were deidentified, recorded and stored in a shared drive. Numerical responses were analyzed with simple averages. Qualitative responses were analyzed through a collaborative inductive thematic generation process by two separate researchers. Codes were generated independently by each researcher and then discussed and compared to create prevalent themes.

Table 1: Quality of care ratings (average)

General quality of care	8.65
Trusted your providers	9.7
Treated with courtesy and respect	9.65
Provider understood health issues	9.6
Communication	9.55
Informed about treatment plan	9.2
Comfort	8.93

Table 2: Good aspects of care

Theme	Frequency
Caring and attentive staff	16
Professional abilities	9
Medical facilities	7
Interpretation services	5

Table 3: Poor aspects of care

Theme	Frequency
Speed	13
Poor communication	3
Lack of care and attentiveness	2
Lack of professional ability	2
Uncomfortable physical environment	2

Results

43 surveys were conducted from October 2023 through May 2024 out of 65 screened patients. The average ED quality of care rating from Chinese patients was 8.65 (1 being worst, 10 being best). Patients rated subcategories of quality of care highly such as "Provider understood your health issues", "You were informed about treatment plan", "You were treated with courtesy and respect", "You trusted your providers", and "Communication between your providers and you" (Table 1). Subcategories of quality that patients rated lowest were "Informed about treatment plan" and "Your level of comfort" (Table 1). When asked what aspects of care were good, themes that patients mentioned frequently were "caring and attentive staff," professional abilities, medical facilities, interpretation services, and speed (Table 2). Patients viewed staff as caring and attentive when staff were available, accessible, responsive, took time with patients with exams and explanations and showed courtesy and respect.

In contrast, when asked what aspects of care were not good, themes patients mentioned frequently were slow speed, poor communication, lack of care & attentiveness, lack of professional abilities, and uncomfortable health environment (Table 3). Many responses centered on physical discomfort such as not being able to drink water, dirty bathrooms, lack of blankets, inability to have visitors, excessive noise, and hallway beds.

Notably family members or other patient advocates answered either solely or with the patient in 64.7% of the surveys.

Conclusions/Lessons Learned

In this study, ED quality of care feedback from Chinese patients appears largely positive. Notable areas for clinical improvement include communication, physical comfort, access to personnel for physical assistance and answering queries and inclusion of family members either by phone or in person. Several patients mentioned a mistrust of the hospital system based on previous poor health care experiences.

The ED is intimidating for many patients. This discomfort is amplified by language and cultural barriers. Individual providers can anticipate and address communication difficulties by introducing themselves and letting patients know how to contact staff, including family members in the conversation, and taking extra time for history and exams. Providers can also explicitly set time expectations for evaluation, testing, and disposition and offer environmental comforts if appropriate.

Quality of care is complex and multidimensional. Good quality of care requires understanding of patient expectations and needs and working with the patient towards achieving common health care goals. Additional research should be pursued on methods of increasing trust, communication, and comfort in this vulnerable patient population.

Implementing a Bleeding Severity Scoring Algorithm for Pediatric Patients after Cardiac Surgery in the PICU

Kelly Haque MD, Megan Toal MD, Shannon Salem PA, Marianne Nellis MD, Nena Osorio MD
May 2024

Problem Statement:

- Following cardiopulmonary bypass, pediatric cardiac surgical patients are at risk for post-operative bleeding for several reasons
- These include the specific cardiac operation, hemodilution and platelet dysfunction from cardiopulmonary bypass and ongoing surgical site bleeding
- Achieving adequate hemostasis in the PICU after a patient is admitted from the operating room is essential to their overall hemodynamic stability and can impact their entire post-operative course including mechanical ventilation days and length of hospital stay
- Currently, there is no standardized approach for blood product transfusions in this population in our Pediatric Intensive Care Unit

SMART Aim Statement:

- To apply a bleeding severity score to 80% of post operative cardiac surgery patients following surgery with cardiopulmonary bypass in the pediatric intensive care unit by June 2024

Design/Methods:

- Observational time series with sequential planned instrumentation
- Run and statistical control charts were used to detect signals of change
- A Bleeding Scoring Algorithm was developed using the bleeding assessment scale BASIC (Bleeding Assessment in Critically Ill Children)¹
- For patient meeting criteria for SEVERE bleeding, ROTEM (Rotational Thromboelastometry) is sent and applied for appropriate blood product transfusion
- Inclusion criteria:** Any patient admitted to PICU following cardiopulmonary bypass surgery with at least one chest tube

Process Measures:

- Compliance with transfusion algorithm
- Timely ROTEM analysis

Outcome Measures:

- Volume of blood in chest tube
- Bleeding severity score (severe vs not severe)
- Accuracy of score
- ROTEM sent for severe bleeding score

Balancing Measures:

- Time for blood product administration

Figure 1. Key Driver Diagram

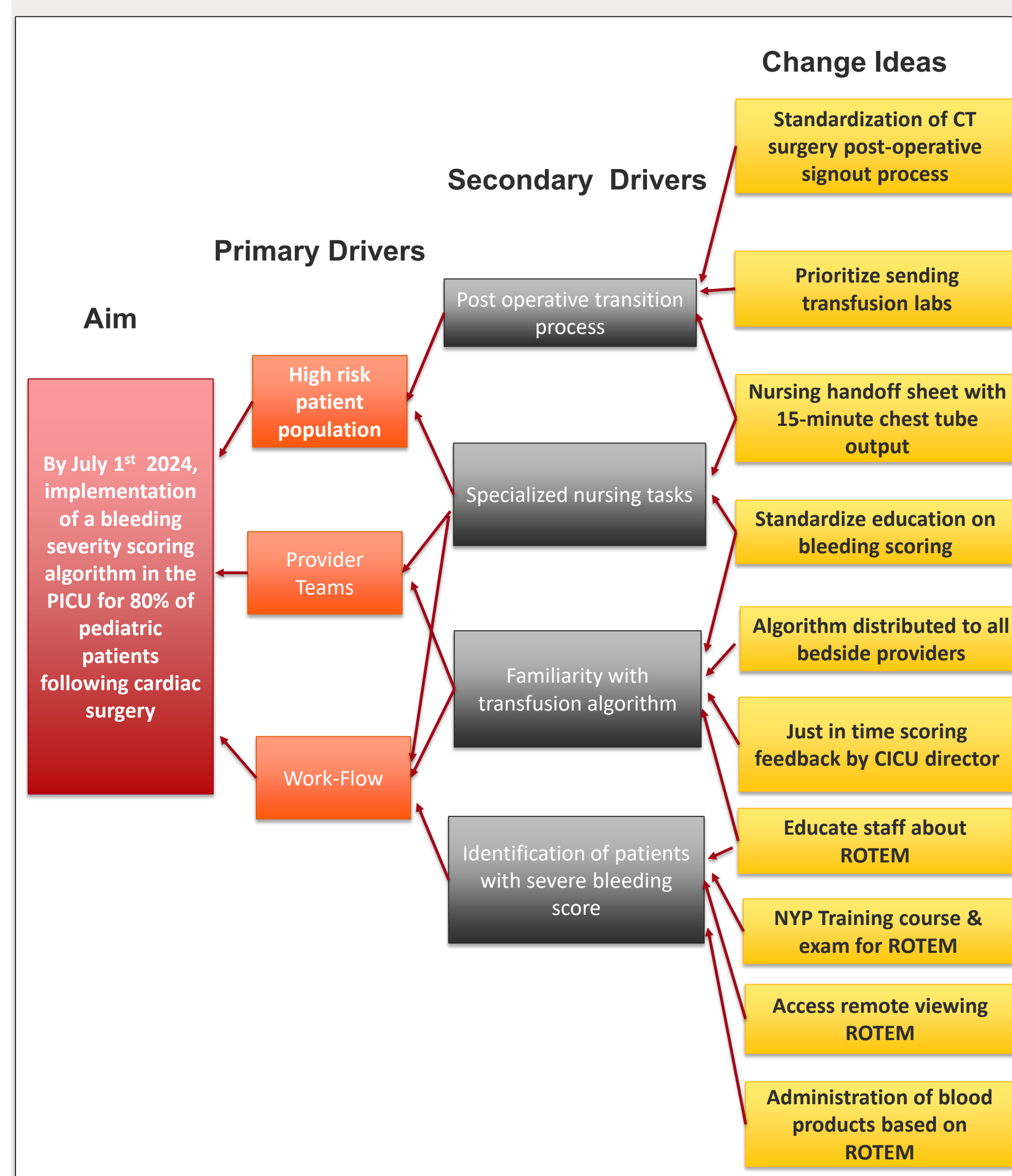


Figure 2. Process Map

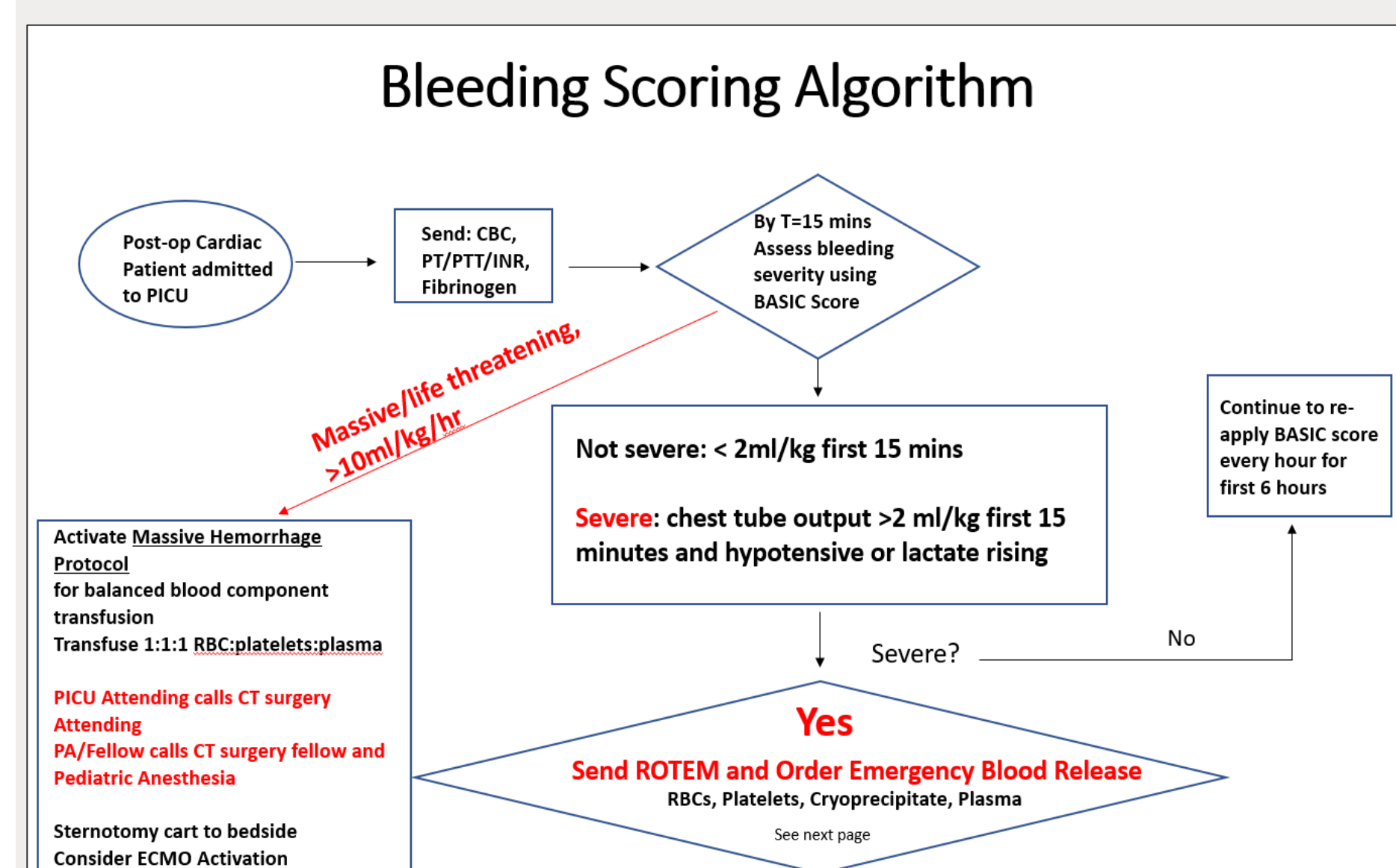
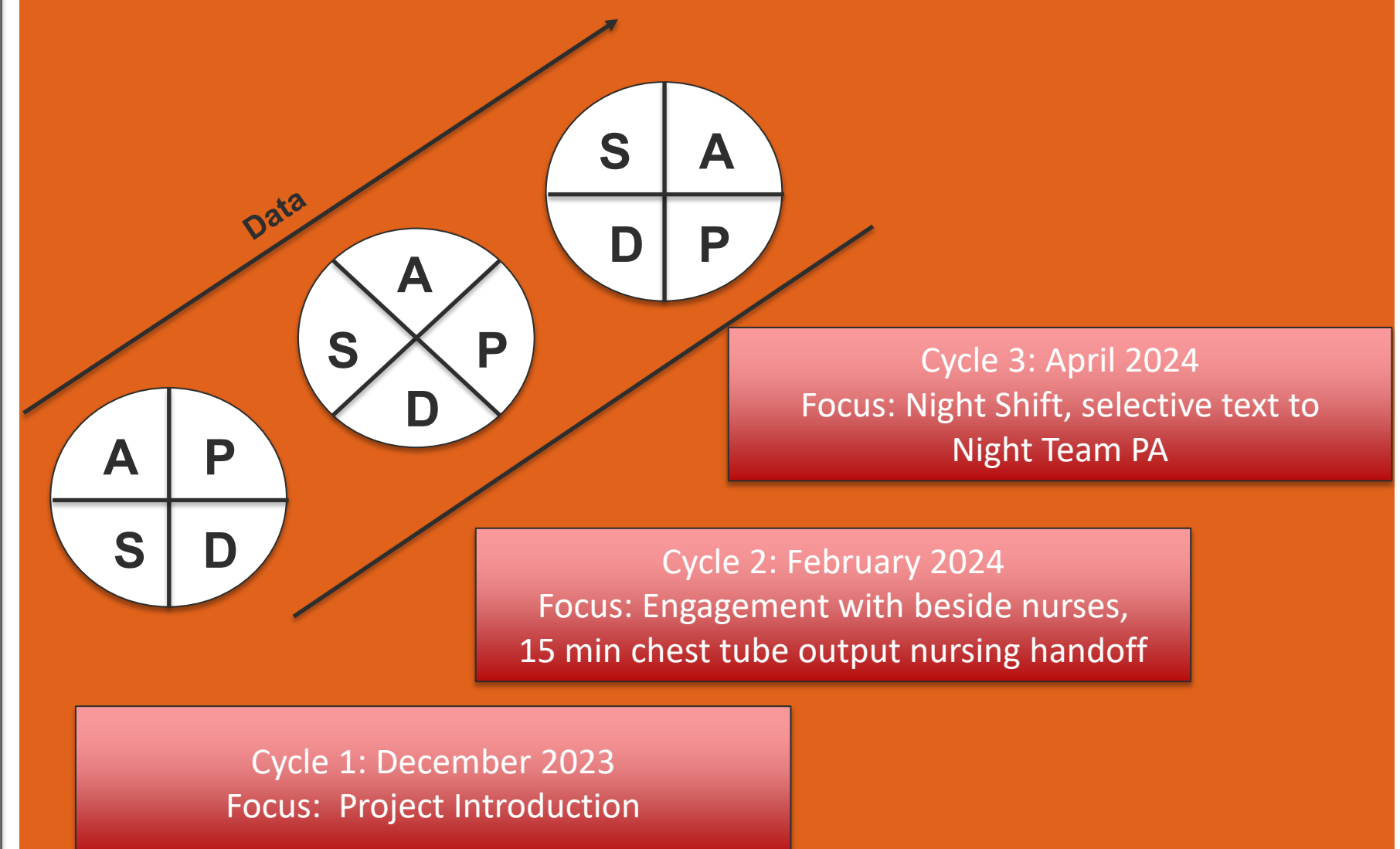


Figure 3. Demographics

Patient ID	Age (years)	Type of Surgery
1	0.16	Tetralogy of Fallot
2	0.01	Coarctation of Aorta
3	9	Anomalous origin coronary artery
4	0.25	Tetralogy of Fallot
5	9	Fontan
6	1.25	Hypertrophic Cardiomyopathy
7	0.33	Tetralogy of Fallot
8	0.33	Tetralogy of Fallot
9	0.6	Glenn
10	16	Anomalous origin coronary artery
11	0.5	Glenn
12	0.16	Ventricular septal defect
13	0.16	Pulmonary artery band
14	3	Aortic Membrane resection
15	0.5	Tetralogy of Fallot
16	4	Ebstein Anomaly
17	0.16	Left pulmonary artery sling
18	1.5	Ventricular septal defect
19	17	Aortic valve endocarditis
20	10	Pulmonary artery stenosis
21	0.13	Atrioventricular canal defect
22	13	Anomalous origin coronary artery
23	11	Ventricular septal defect
24	10	Ventricular septal defect
25	0.67	Tetralogy of Fallot
26	1.33	Left pulmonary artery sling
27	3	Partial anomalous pulmonary venous return
28	10	Cardiac tumor

Plan-Do-Study-Act Cycles



Results

Figure 4. Run Chart

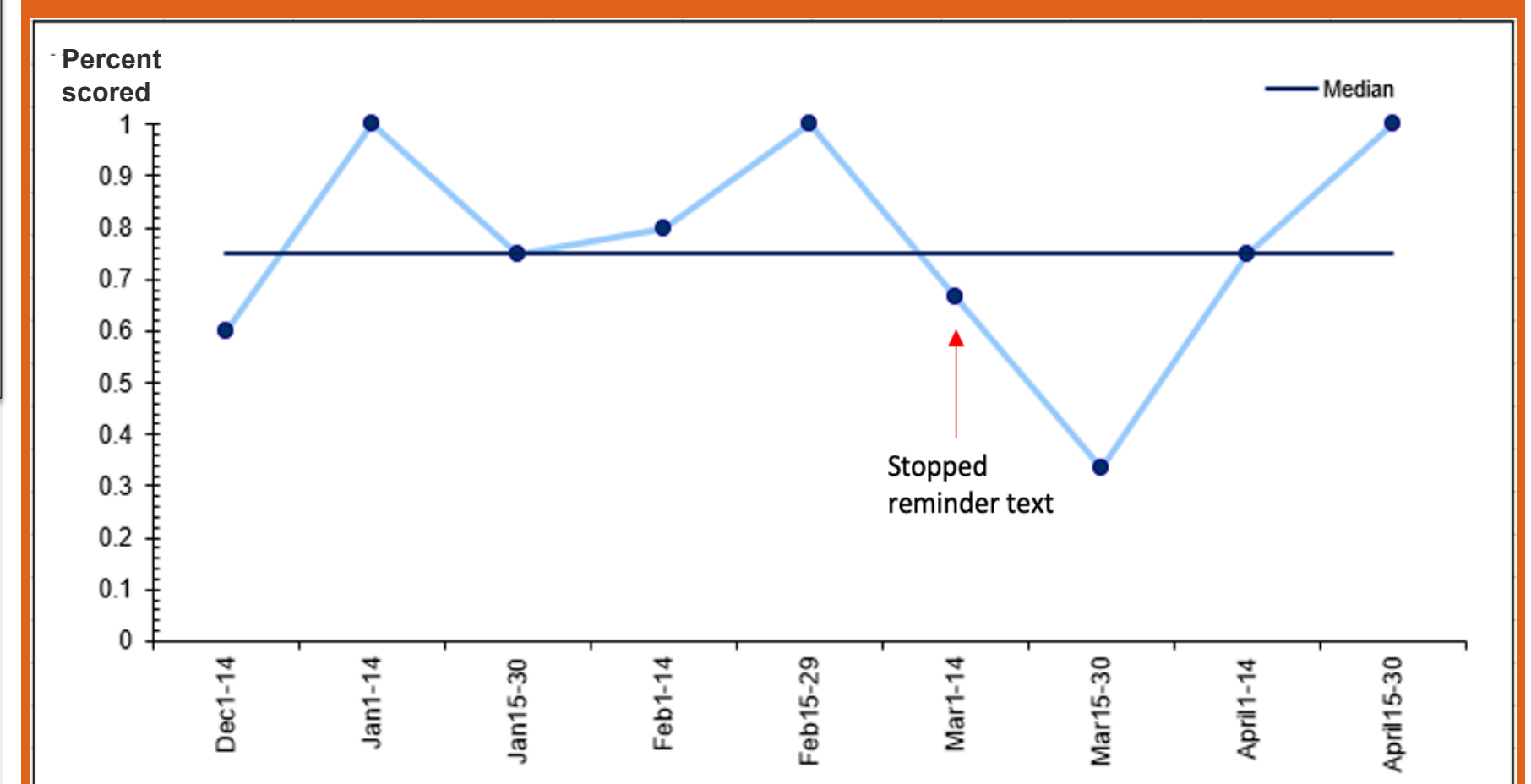
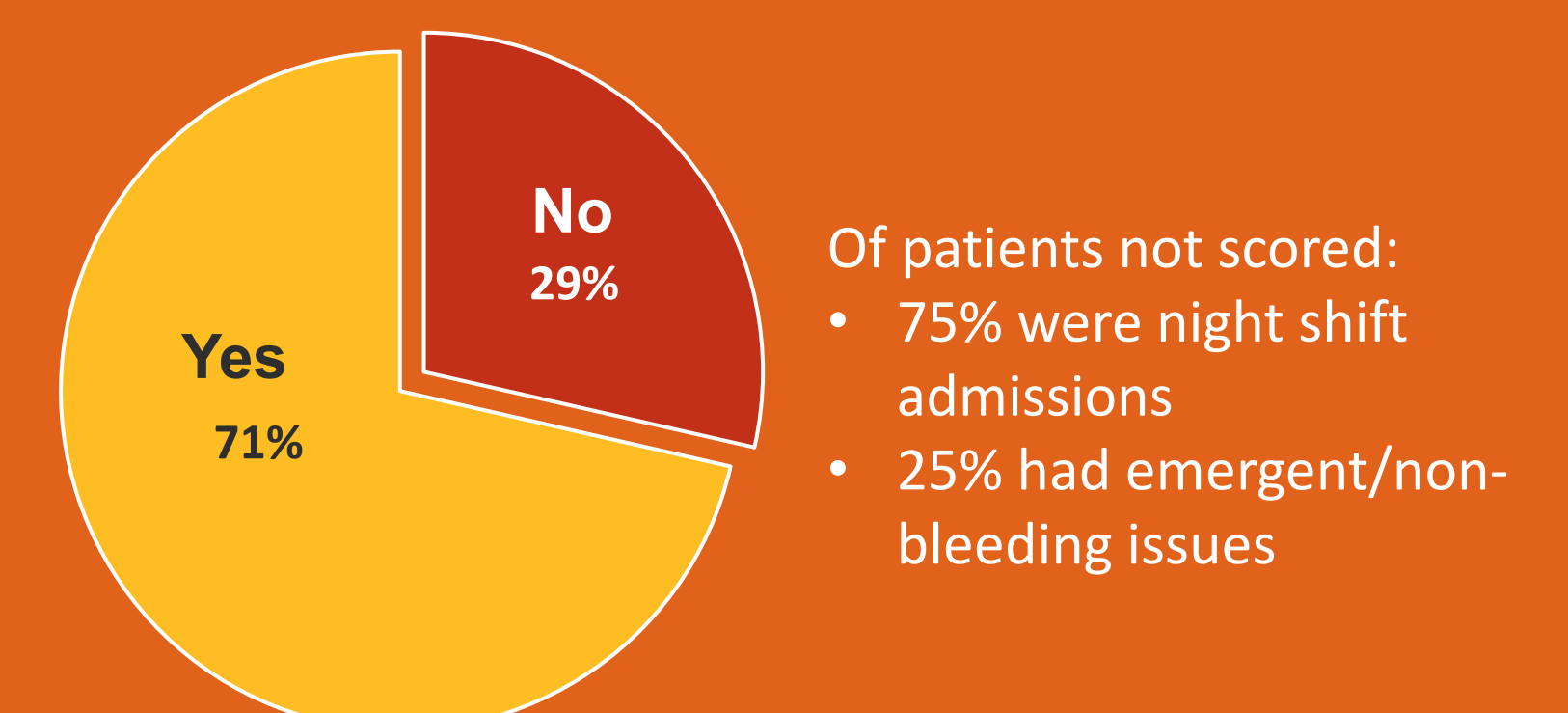


Figure 5. Bleeding Severity Score Applied



Conclusions/Future directions:

- Median score of 78% by April 30th
- 1 patient with severe bleeding, ROTEM sent appropriately
- Continued implementation of project with PDSA cycles focusing on night shift education
- Analyze impact of scoring on chest tube output, length of time with chest tube and mechanical ventilation days

Acknowledgements:

Quality Improvement Academy instructors – Dr. Nena Osorio, Dr. Jennifer Lee, Dr. Robert Kim, Ericka Fong, and QIA class 2024
QI PICU Mentor Dr. Megan Toal for assistance with project design
Dr. Melissa Cushing and Dr. Robert DeSimone with transfusion medicine for assistance with algorithm development
PICU Physician Assistants and Pediatric ICU nurses for project engagement

References:

1. Nellis ME et al. Bleeding Assessment Scale in Critically Ill Children (BASIC): Physician-Driven Diagnostic Criteria for Bleeding Severity. *Critical Care Medicine* 2019.

Implementation of Early Onset Peanut Introduction Guidelines in a Public Payer Clinic

Quality Improvement Project

Samstein M., Nino I., Sholle E., Thomas C., Gerber L., Calo J., Osorio N.

Problem Statement

- IgE mediated peanut allergy affects 1-2% of children in the United States (Sicherer 2017).
- The natural history of peanut allergy is to persist after age 4 (Peters et al 2015).
- Peanut is a leading cause of food-related anaphylaxis in the U.S.
- Early introduction of peanut protein by 4-10 months of age was highly successful in reducing the incidence of peanut allergy at five years of age in high risk infants (Du Toit et al 2015).
- In 2017 the NIAID released addendum guidelines recommending high risk infants be referred to an allergist promptly for evaluation and early introduction of peanut (Togias et al 2017).

Objective/Aim Statement

- Increase adherence with NIAID Addendum Guidelines for the Prevention of Peanut Allergy to 90% by July 2024.
- We define adherence as:
 - low risk infants receiving counselling on safety of peanut introduction
 - high risk infants to allergy for skin prick testing

Design/Methods

Observational study using sequential planned experimentation

Process Measures:

- Percent of high risk infants with allergy referral
- Time from referral to appointment to be less than 60 days
- Percent of low risk infants that received counseling

Outcome Measure:

- Percent of high risk patients having completed allergy evaluation

Balancing Measure:

- Increased time for pediatric providers

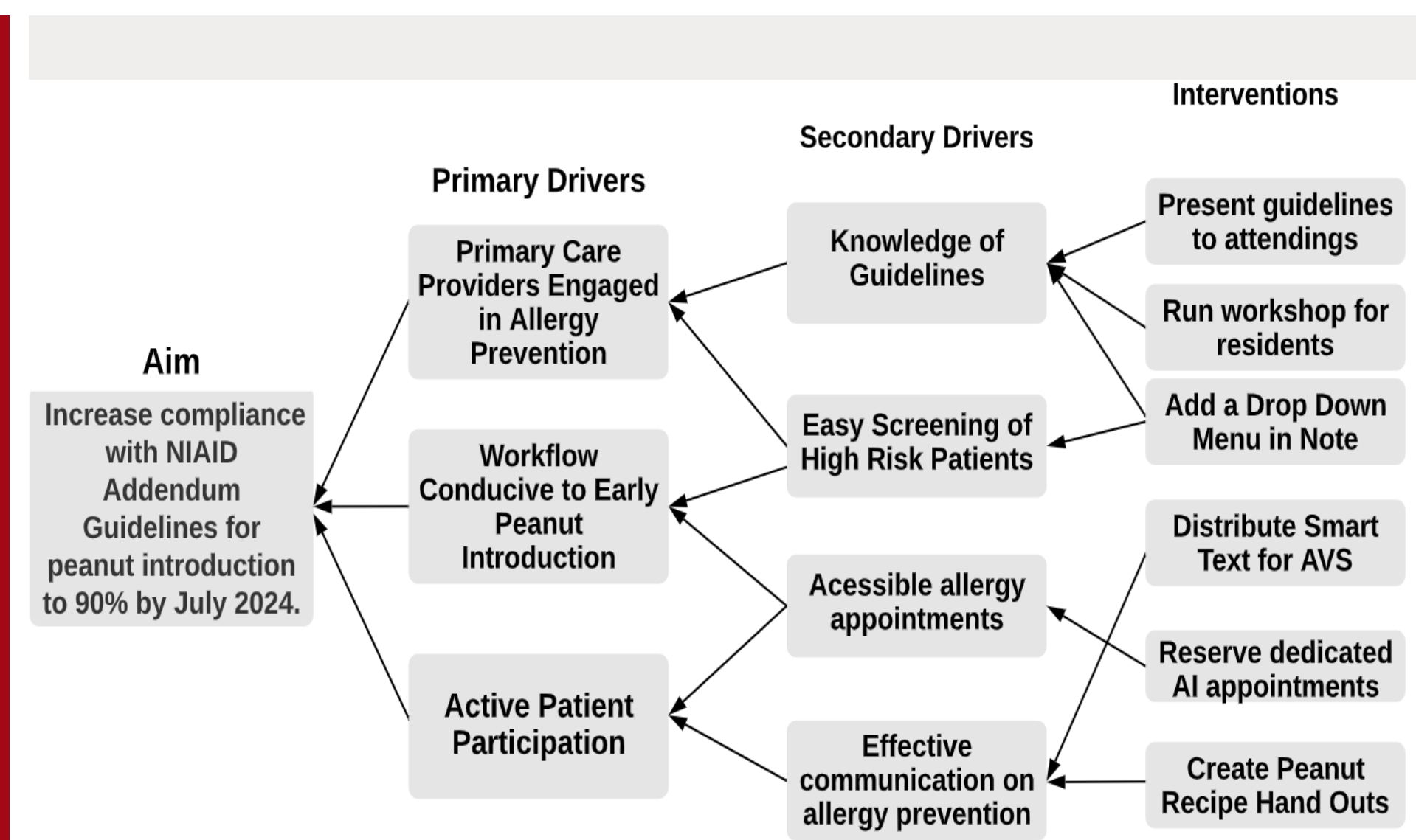


Figure 1: Key Driver Diagram

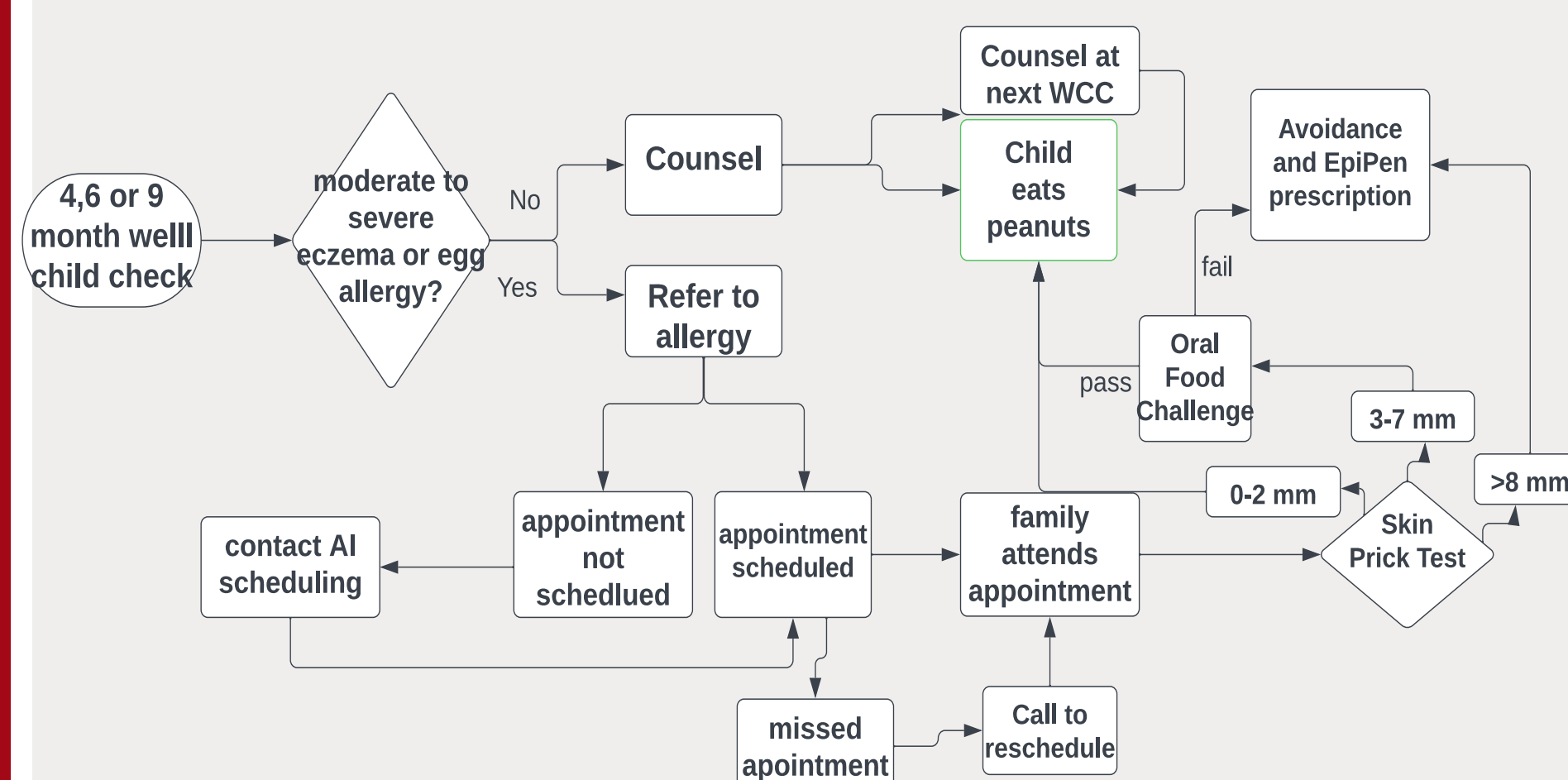


Figure 2: Process Map

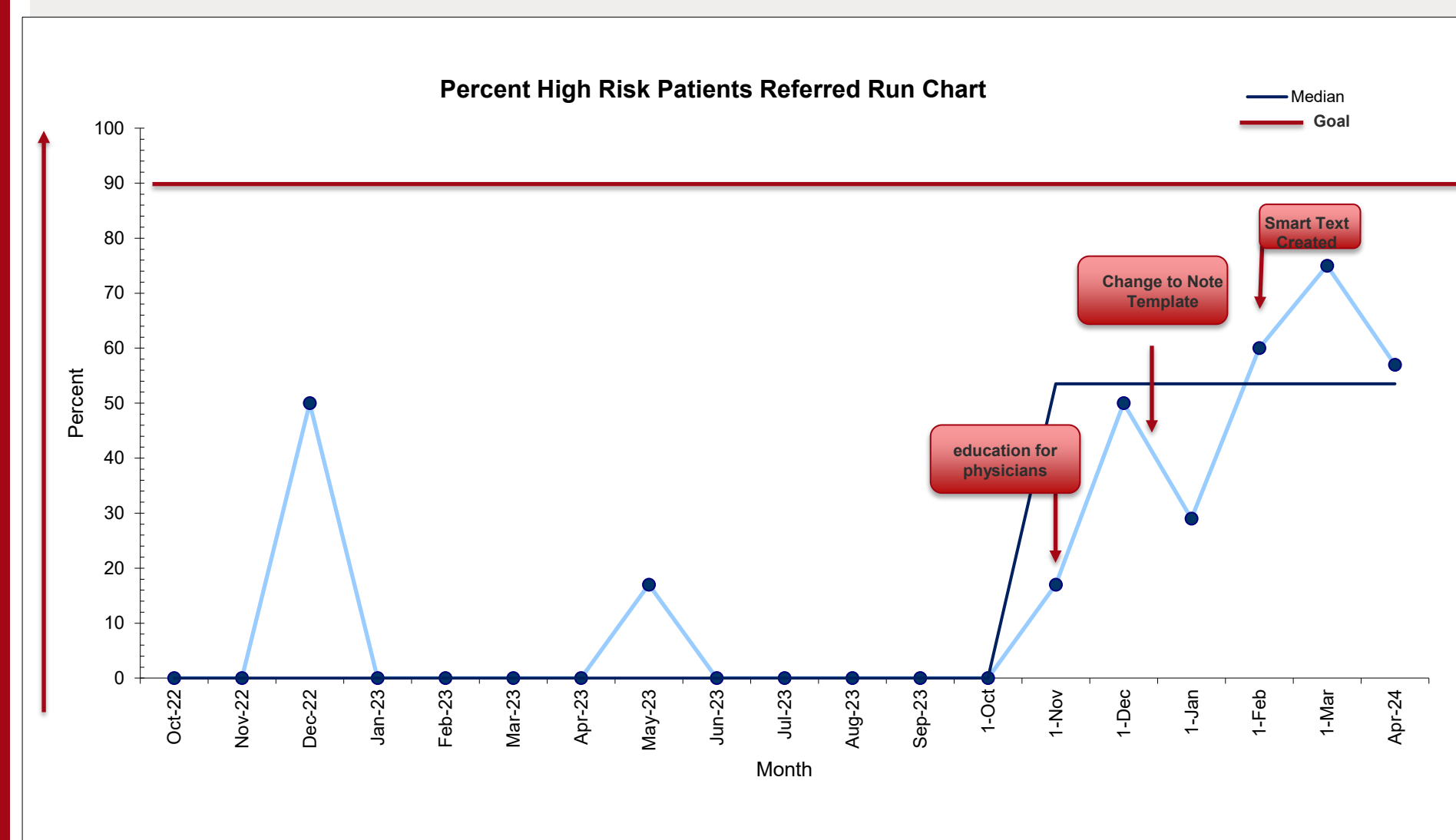


Figure 3: High Risk Patients: Referral rate improved from 0 to 53.5%

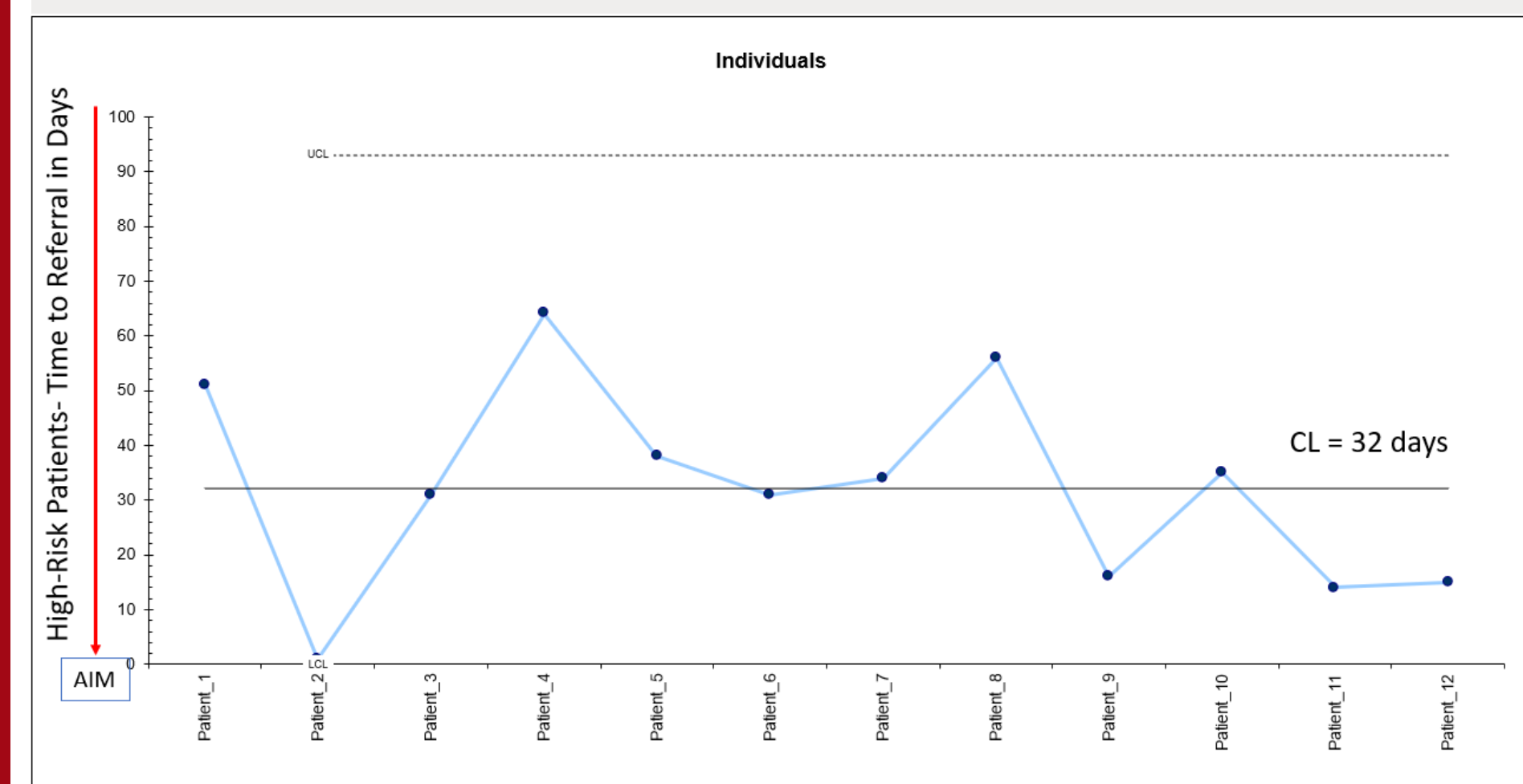


Figure 4: Time to Appointment – average time to appointment was 32 days, surpassing our goal of 60 days

Discussion

- 61 high risk infants ages 4-11 months identified
- At baseline an average of 0% were referred, this was increased to 53.5% after intervention
- Of the patients referred only one could not be accommodated within 60 days, with the average being 32.2 days
- 90% of high risk infants had moderate or severe eczema

Conclusions/Lessons Learned

- We Increased referral rate of high risk patients to 53.5%
- We maintained our goal of time to appointment being less than 60 days
- Our most impactful intervention was provider education
- The number of high risk patients was less than anticipated

Next Steps

- Standardize template across providers
- Improve counselling for low risk patient
- Develop standardized exit care for well child checks that includes peanut introduction

Acknowledgements

HT5 attendings and residents, Dr. Hetzler, Dr. Gorman, Dr. Bostwick, HT3 scheduling team, HT3 attendings and nurses, QIA academy

References:

Sicherer SH, Sampson HA. "Food Allergy: A Review and Update on Epidemiology, Pathogenesis, Diagnosis, prevention, and management". *J Allergy and Clinical Immunology*. Jan 2018, 141 (1) 41-58

Peters RL, et al. "Natural History of Peanut Allergy And Predictors of Resolution in the First 4 Years of Life: A Population-Based Assessment". *J Allergy and Clinical Immunology*. May 2015, 135 (5) 1257-66.

Du Toit G, et al. "Randomized Trial of Peanut Consumption in Infants at Risk for Peanut Allergy". *New England Journal Of Medicine*. Feb 2015, 372 (9) 803-13.

Togias et al. "Addendum Guidelines for the Prevention of Peanut Allergy in the United States." *J Acad Nutr Diet*. May 2017, 117 (5) 788-793.

Tapke D, Prince B, Scherzer R, Stukus D, Mikhail I. "A Retrospective Study of Pediatrician Implementation of the 2017 United States Early Peanut Introduction Guidelines." *Ann Allergy Asthma and Immunology*. Feb 2021, 126 (2) 200-202.

Background

- Somatic Symptom and Related Disorder (SSRD) patients report lower satisfaction with their treatment than patients with other complex medical conditions (O'Keefe et al, 2021).
- Providers caring for SSRD patients report higher levels of uncertainty, frustration, and demoralization (Malas et al, 2018).
- There is a lack of training amongst pediatricians and psychiatrists in the diagnosis and treatment of SSRDs and inconsistency in SSRD management in the inpatient setting.
- To address clinical variation and inconsistencies the American Academy of Child and Adolescent Psychiatry created an SSRD workgroup which published a clinical pathway model for inpatient SSRD management (Ibeziako et al, 2019).

SMART AIM

- Reach 50% compliance for all 6 key steps of the SSRD clinical pathway (CP) for patients with suspected SSRD admitted to 6N and 6C, as measured by the SSRD CP checklist, by January 30, 2025.
- Secondary aims: Gather data on prevalence and demographics of SSRD admissions on inpatient pediatrics hospitalist service.

Methods

Intervention: Implement and disseminate a standardized inpatient SSRD clinical pathway

Study Design: Quality improvement intervention feasibility study

Patient population: Patients with suspected SSRD admitted to a pediatrics hospitalist team (excluded for co-occurring non-SSRD primary diagnosis)

Outcome Measure: % of eligible patients for whom all 6 key steps of the SSRD clinical pathway are followed, as measured by the checklist

Process Measures: % completing each individual step

Balancing Measure: Increased time commitment and effort by child psychiatry consult team, pediatrics team, and staff, measured by feedback partway through project

Analysis: Descriptive statistics and run charts (when sufficient data is collected)

SSRD Clinical Pathway Checklist of 6 Key Steps

MRN: _____
Date of admission: _____ Date of discharge: _____

1. Core consults (PT/OT, Child Life, Psychiatry) placed within 24 hours of admission (review order history)?
Yes ___ No ___
-> If no, was patient on expedited d/c arm of pathway? Yes ___ No ___

2. Specialist consults placed within 48 hours of admission (review order history)?
Yes ___ No ___ N/A (subspecialist consults not placed) ___ N/A (expedited d/c) ___

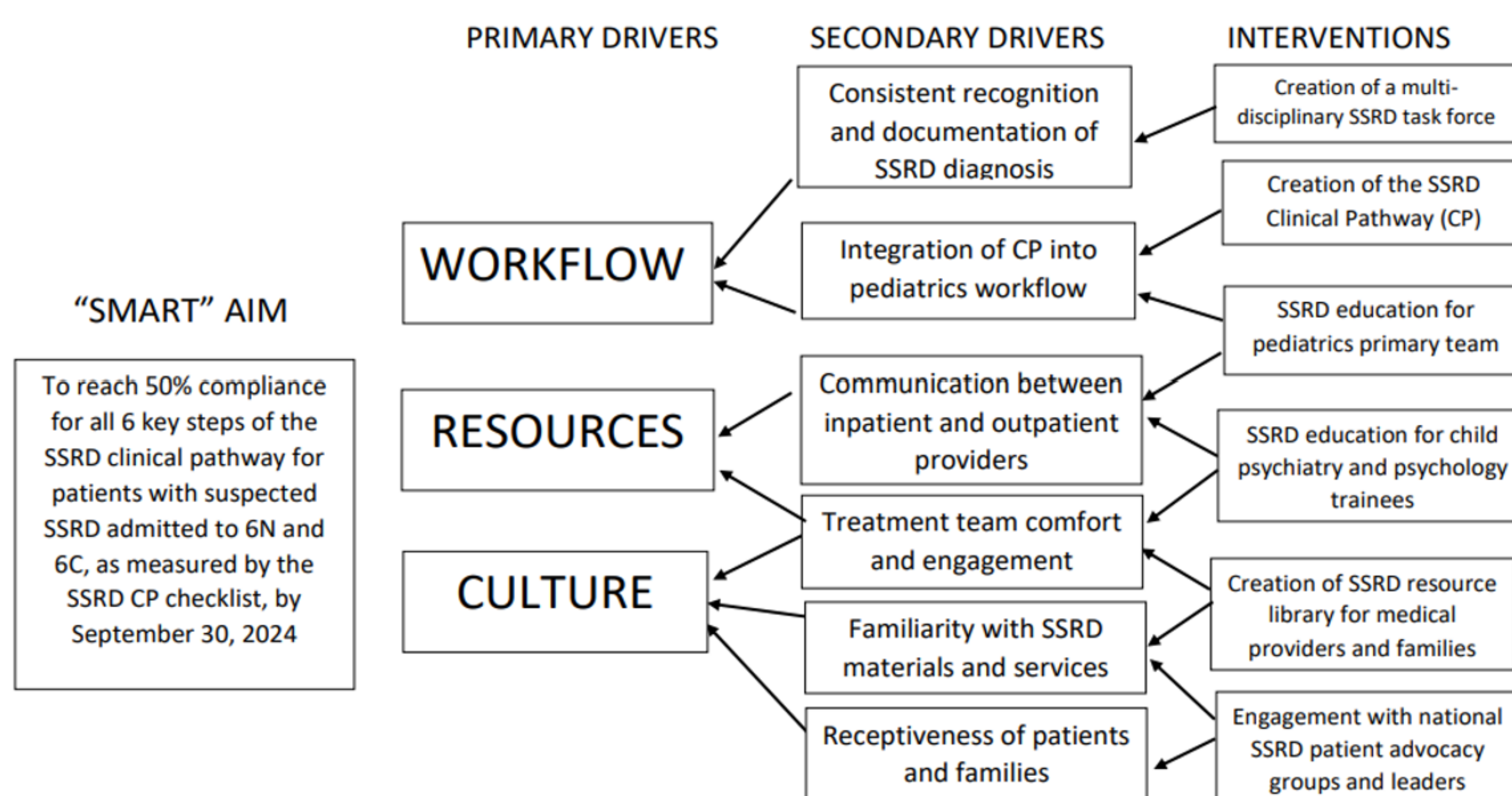
3. Family meeting held to review diagnosis and treatment goals (documented in social work or peds note)?
Yes ___ No ___ Unknown ___ N/A (expedited d/c) ___

4. SSRD education handouts and resources provided (documented in progress notes)?
Yes ___ No ___ Unknown ___

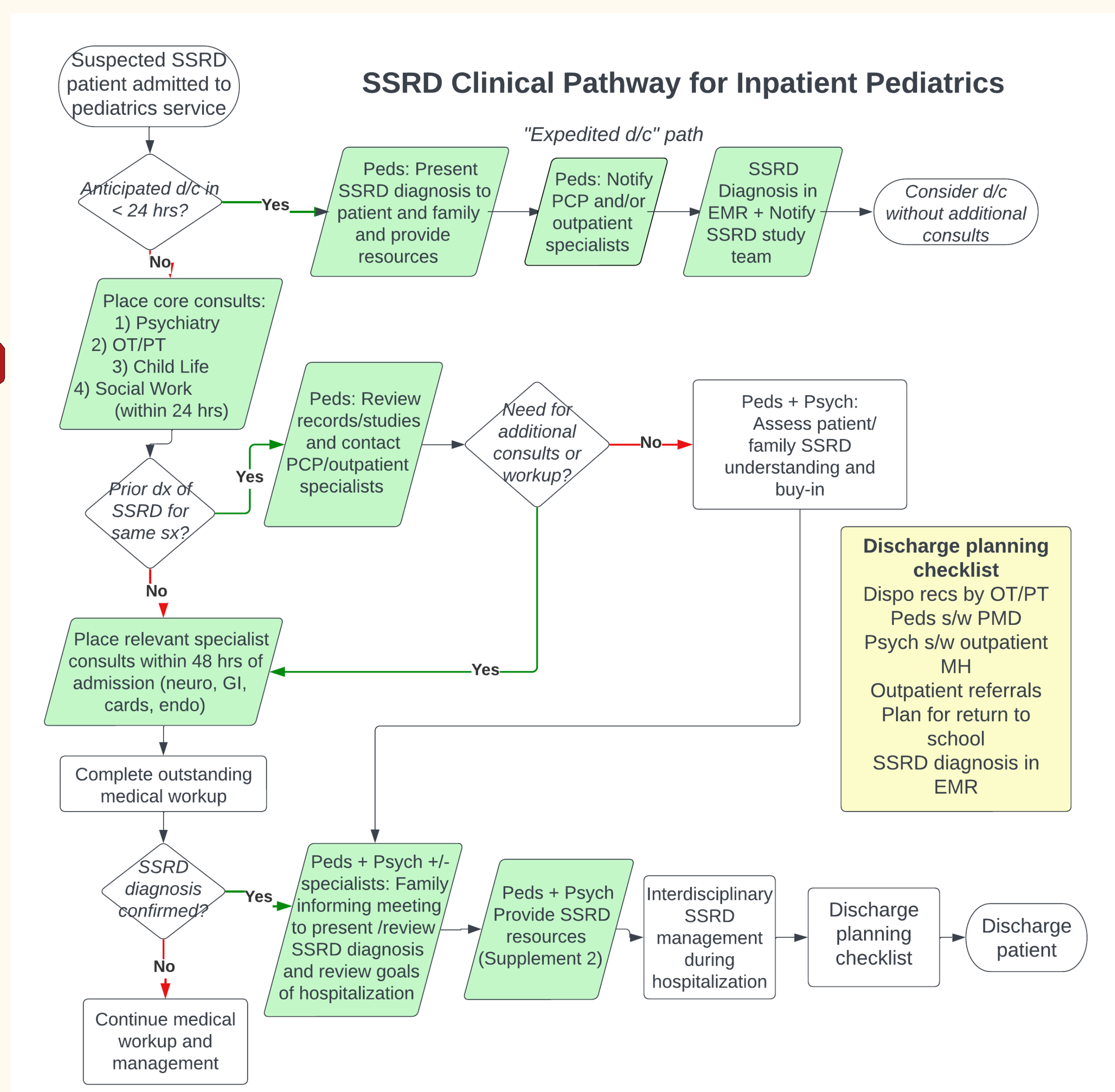
5. Did inpatient team reach out to outpatient team? (attempted outreach to PMD, specialist, and/or mental health provider, documented in progress notes or dc summary)
Yes ___ No ___ Unknown ___

6. Was the SSRD diagnosis documented in EMR?
Yes ___ No ___ N/A (SSRD diagnosis not confirmed/alternative diagnosis found) ___

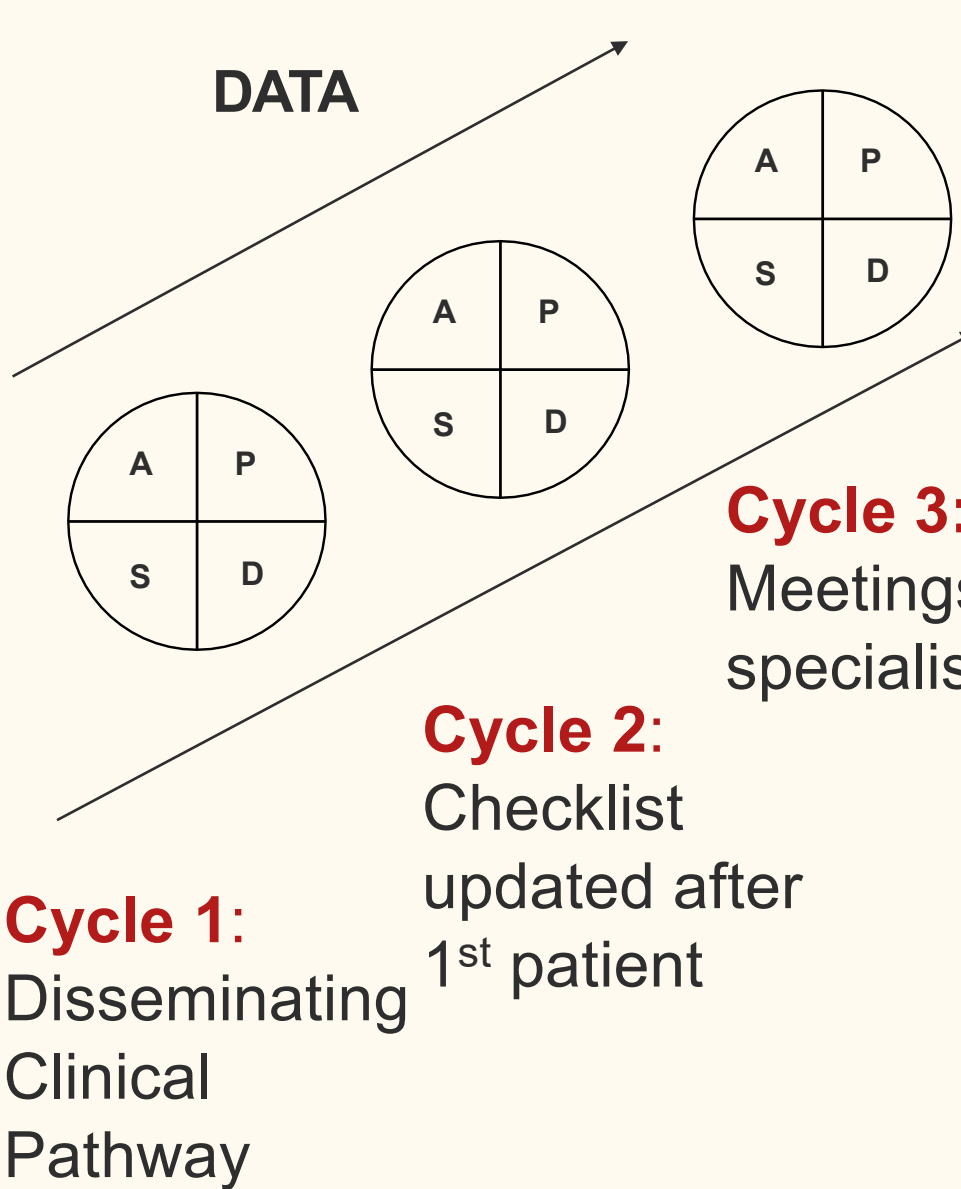
Key Driver Diagram



Clinical Pathway



Plan Do Study Act Cycles



Results

N =4 SSRD peds patients from 2/1-5/10/24

Ave age: 13.5 yrs

Ave LOS: 2.1 days

50% female, 50% male

Process Measures

Key Step	% Completed
1. Core consults	75%
2. Specialist consults	100%
3. Family meeting	50%
4. Resource handouts offered	75%
5. Outpatient coordination	75%
6. SSRD Diagnosis in EMR	75%

Outcome measure: All 6 key steps = 0%

Lessons Learned and Future Directions

- Project is ongoing and we continue to identify patients and gather data.
- Providers anecdotally reported greater clarity on clinical steps and resources.
- Additional PDSA cycles will focus on promoting family meetings and dissemination of resources.
- Future plans include implementing a pediatric functional plan order set within Epic and collaborating on clinical pathways and interventions with colleagues at Columbia/Morgan Stanley Children's Hospital.

Thank you to Drs. Jennifer I. Lee, Nicole Gerber, Kiran Gadani-Patel, Rebecca Rendleman, Nicole Kelly, Corinne Catarozoli, Susan Samuels, and Anjana Jagpal, and Blakely Rice, Nicole Simon, and Ericka Fong!

Multidisciplinary Verbal De-Escalation Refresher Training Sessions for Psychiatric Residents

2024 Annual WCM Quality Improvement and Patient Safety Poster Symposium

Maria De Pena-Nowak, MD

Department of Psychiatry, NewYork Presbyterian Hospital/Weill Cornell Medicine

BACKGROUND

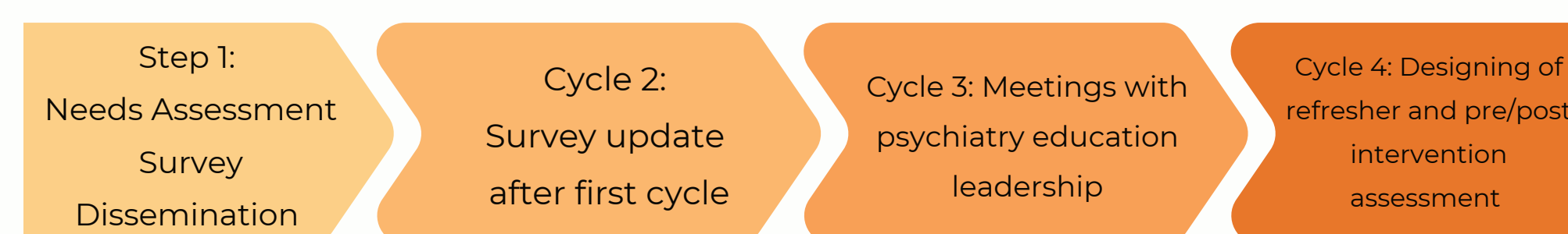
- Restraints and seclusions are the most restrictive interventions used to manage episodes of severe behavioral dysregulation.
- Contributors to behavioral dysregulation that do not respond to verbal de-escalation and/or medications include, but are not limited to, low frustration tolerance, poor coping skills, altered mental status (related to substance use disorder, delirium, etc.) and psychosis.
- Psychiatry Department has created a Behavioral Emergency Rapid Response (BERT) that mobilizes psychiatric residents to areas where patients are displaying severe behavioral dysregulation to offer their expertise to primary care providers.
- Verbal de-escalation is, in general, the first step in the management of behavioral dysregulation episodes.

A Survey >50% all psychiatric residents on Verbal De-Escalation Skills by December 2023 to assess need for verbal de-escalation refresher session and, if supported by survey feedback, offer multidisciplinary verbal de-escalation **refresher training session** to >80% of first responders psychiatric residents by June 2024

METHODS

OBJECTIVE	Improve psychiatric residents' verbal de-escalation skills and competency in managing agitation
INVESTIGATION	1. Is a multidisciplinary training approach to verbal de-escalation helpful? 2. Are refresher training sessions needed to increase confidence and attitudes in verbal de-escalation skills?
STUDY TIMELINE	<ul style="list-style-type: none"> • Needs assessment in December 2023 (academic year mid point) • Refresher prior to following academic year in June 2024 with baseline and post intervention survey
CROSS-SECTIONAL NEEDS ASSESSMENT	Designed to elicit responses from all residents enrolled in the 2023-2024 academic year at Weill Cornell General Psychiatry Residency Program
RESIDENT SURVEY	Each class (PGY I - PGY IV) was approached during didactics for "survey week" in Dec '23. Residents present were requested to complete a paper survey, with different colored paper used to distinguish each class

PDSA



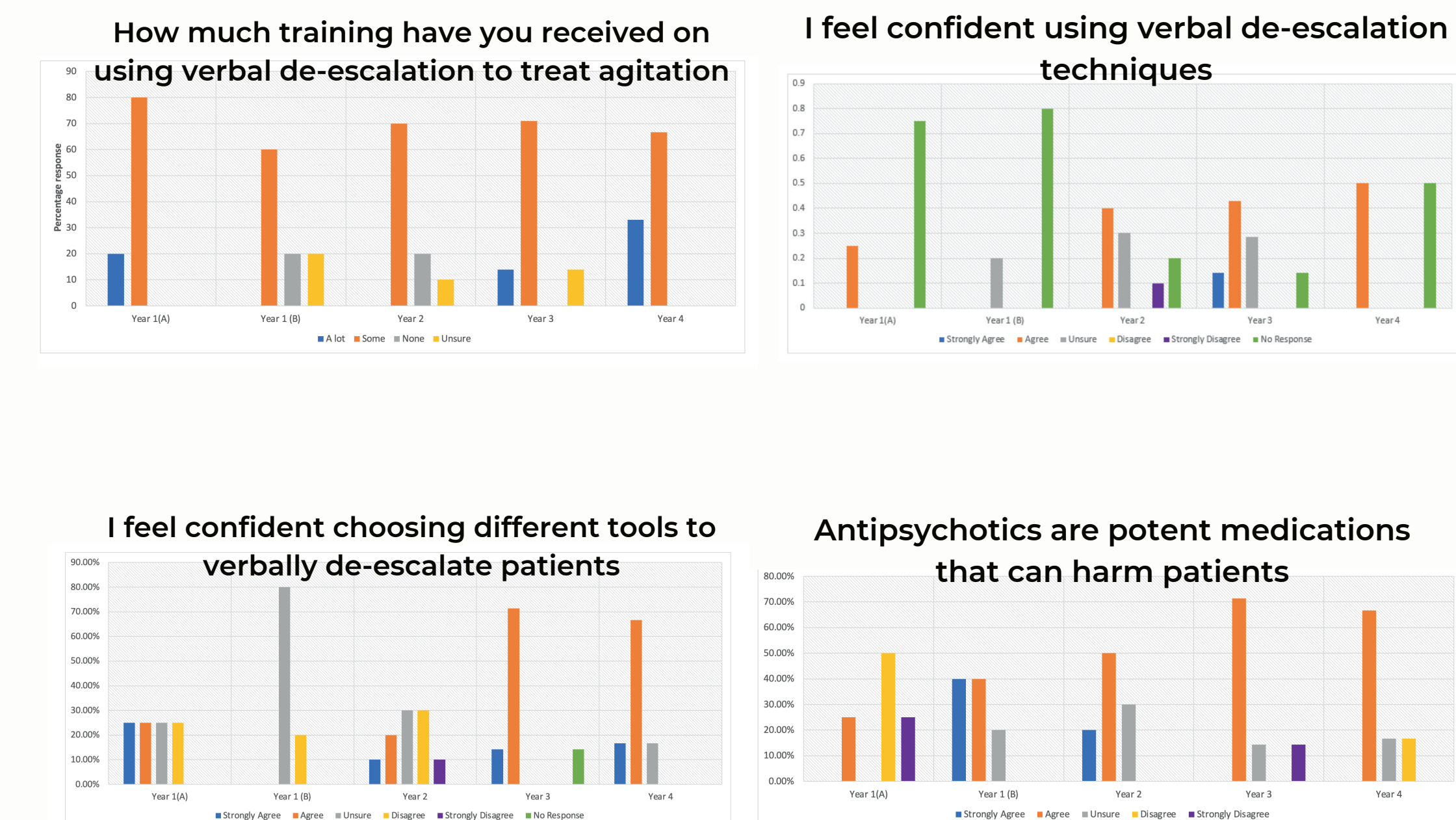
RESULTS

YEAR OF RESIDENCY	TOTAL # OF RESIDENTS	TOTAL # OF RESPONSES	COMMENTS
PGY I (a)	5	4	First 6 months in Psych (July-Dec)
PGY I (b)	5	5	First 6 months in Medicine (July-Dec)
PGY II	12	10	
PGY III	12	7	
PGY IV	10	6	
PGY IV	44 (100%)	32 (72%)	

1. >50% all psychiatric residents on Verbal De-Escalation Skills Training completed need assessment survey by December 2023
2. Strong support for multidisciplinary approach to management of behavioral dysregulation
3. Request to offer more training (refresher sessions) also using a multidisciplinary approach
4. Use of medications in the management of behavioral dysregulation was controversial

Comments received from trainees:

- Initial SIM training with security during intern year was very helpful
- Could always benefit from more training
- Benefit a lot from hearing different approaches/perspectives
- Calls at Westchester were helpful
- Had few de-escalations but with support from nursing and other MDs, security is been OK
- Introduce training with all interns at the beginning of PGY I year
- Learn how much to escalate to medications if necessary
- More training to increase confidence, competence
- Not much formal didactic training
- Decent amount of learning by observing others, doing it over and



DISCUSSION

- Strong support for ongoing Multidisciplinary training approach
- More training: designing refresher training. First group June 2024
- Pre and Post Refresher Training Survey: meetings with stakeholders to elicit input on areas that need reinforcement
- Meeting with Psychiatric Residency Program and new chiefs to present data obtained from current resident class and schedule future training sessions

NEXT STEPS

- Designing refresher training. First group scheduled in June 2024
- Pre and Post Refresher Training Survey Data
- Ongoing meetings with Psychiatric Residency Program and new chiefs to continue discussions about Verbal De-escalation refresher sessions
- Coordination with security and nursing staff to actively include these disciplines in the multidisciplinary refresher training sessions
- Future plans include approaching other residency programs within the organization to replicate training modules sessions (i.e. Psychiatry, Emergency Medicine)

ACKNOWLEDGEMENTS

The author would like to thank Drs. Brock Daniels, Lisa Sombrotto, Sam Boas, Daniel Knoeflmacher, Nia Harris, Chara Louka, Abdallah Tom, Sgt. Rakhmat Akbarov, Christine DeCarlo, RN and Ericka Fong for their support.

Reducing Pressure Injuries in the Pediatric Inpatient Population

Quality Improvement Academy

Ariel Rudd MBA MSN RN, Caitlin Ehret MSN CPNP-PC, Wenna Xi PhD, Christina McGovern Grech MSN RN, Jacqueline Foley BSN RN, Katrina Najac BSN CCRN, Lisa Torrieri MSN RN FNP CWON, Mary Anne Gallagher DNP RN Ped-BC, Snezana Nena Osorio MD MS | May 2024

Background

- Patients with Pressure Injuries (PI) have high morbidity and mortality rates resulting in:
 - Poor health outcomes
 - Prolonged length of ICU/hospital stay
 - Increased healthcare costs
- PI is also associated with decreased (negative) patient experience of care
- PI is one of the important quality metrics reported to the National Healthcare Safety Network, US News and World Report, and Solutions for Patient Safety (SPS)

Root Cause

- No systematic way to screen for PI in Pediatrics
- 50% of PIs in Pediatrics are due to devices, while the other half are related to immobility
- Lacking engagement from staff and patient families

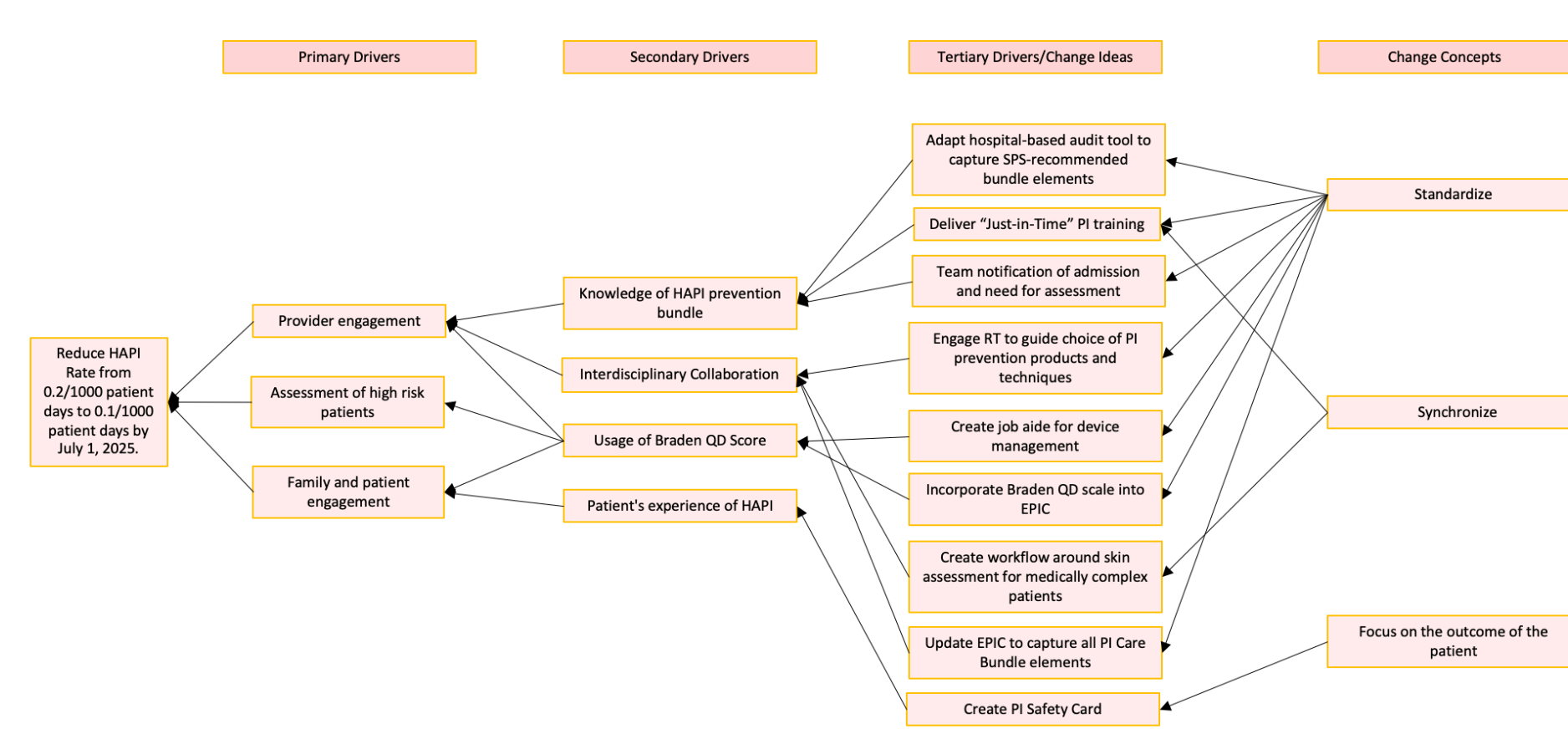
Aim Statement

- SMART Aim: To decrease the baseline PI (stages II and above) rate from 0.2 to 0.1/1000 patient days by July 1, 2025.

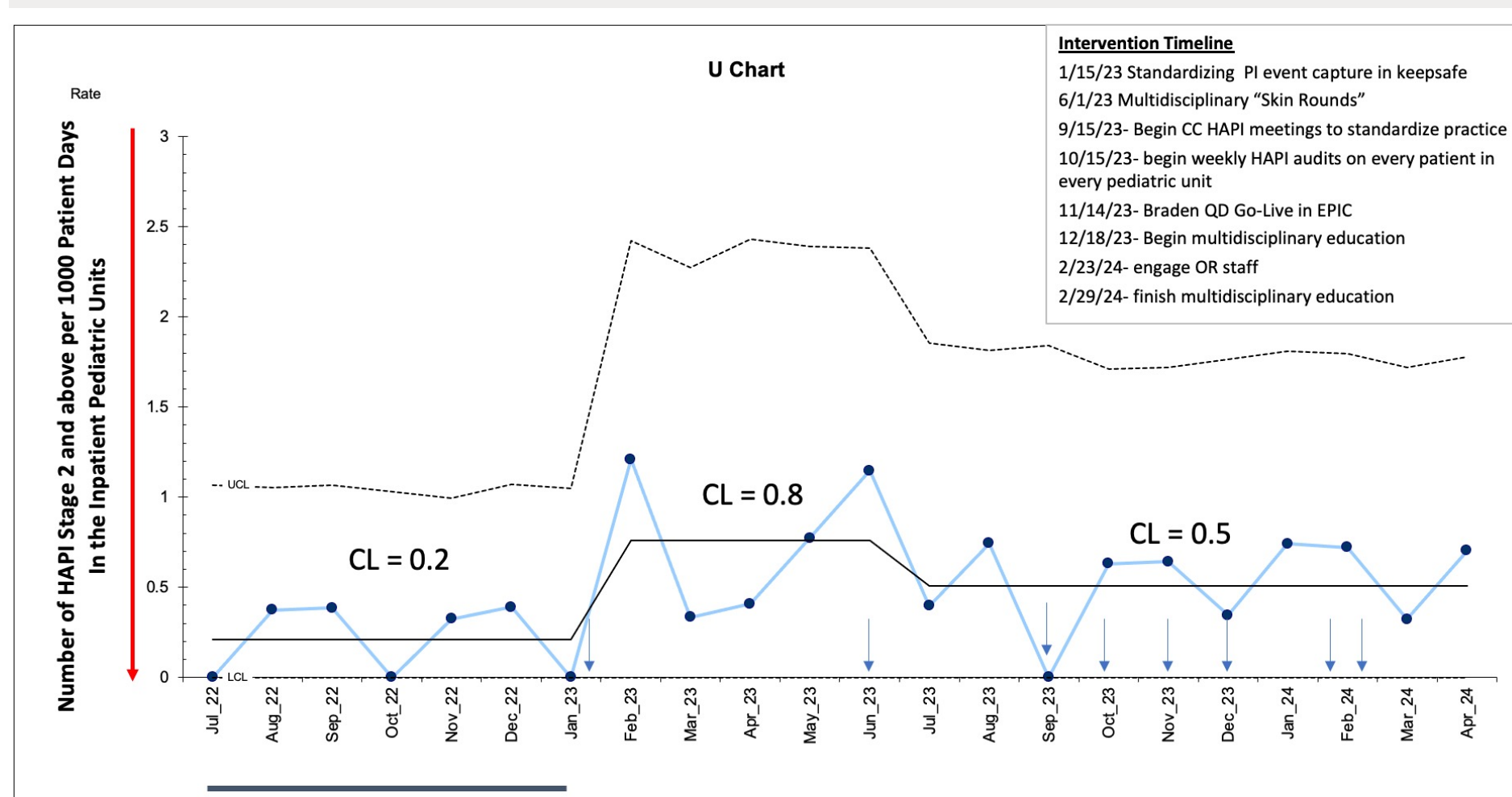
Design/Methods

- Observational time series with sequential planned instrumentation
- Baseline data collected from July-December 2022
- Statistical process control charts used to display and analyze data
- Associates for Process Improvement (API) rules applied to detect special cause variation
- Methods— model for improvement, survey methodology
- Population— inpatient pediatrics patients (NICU, PICU, Step-Down and Medical Surgical Units), less than 18 years of age; exclude: nursery and burn unit patients

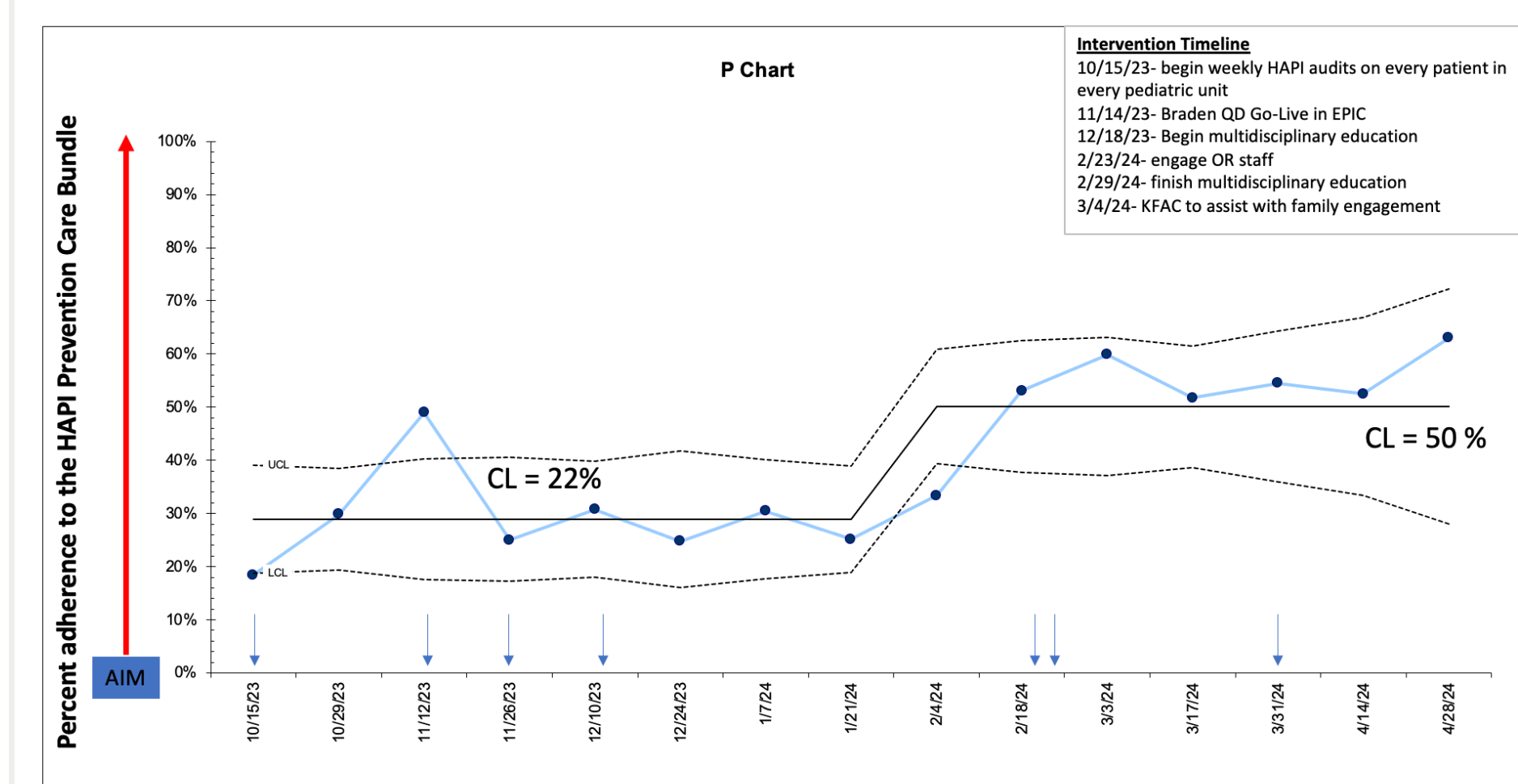
Key Driver Diagram



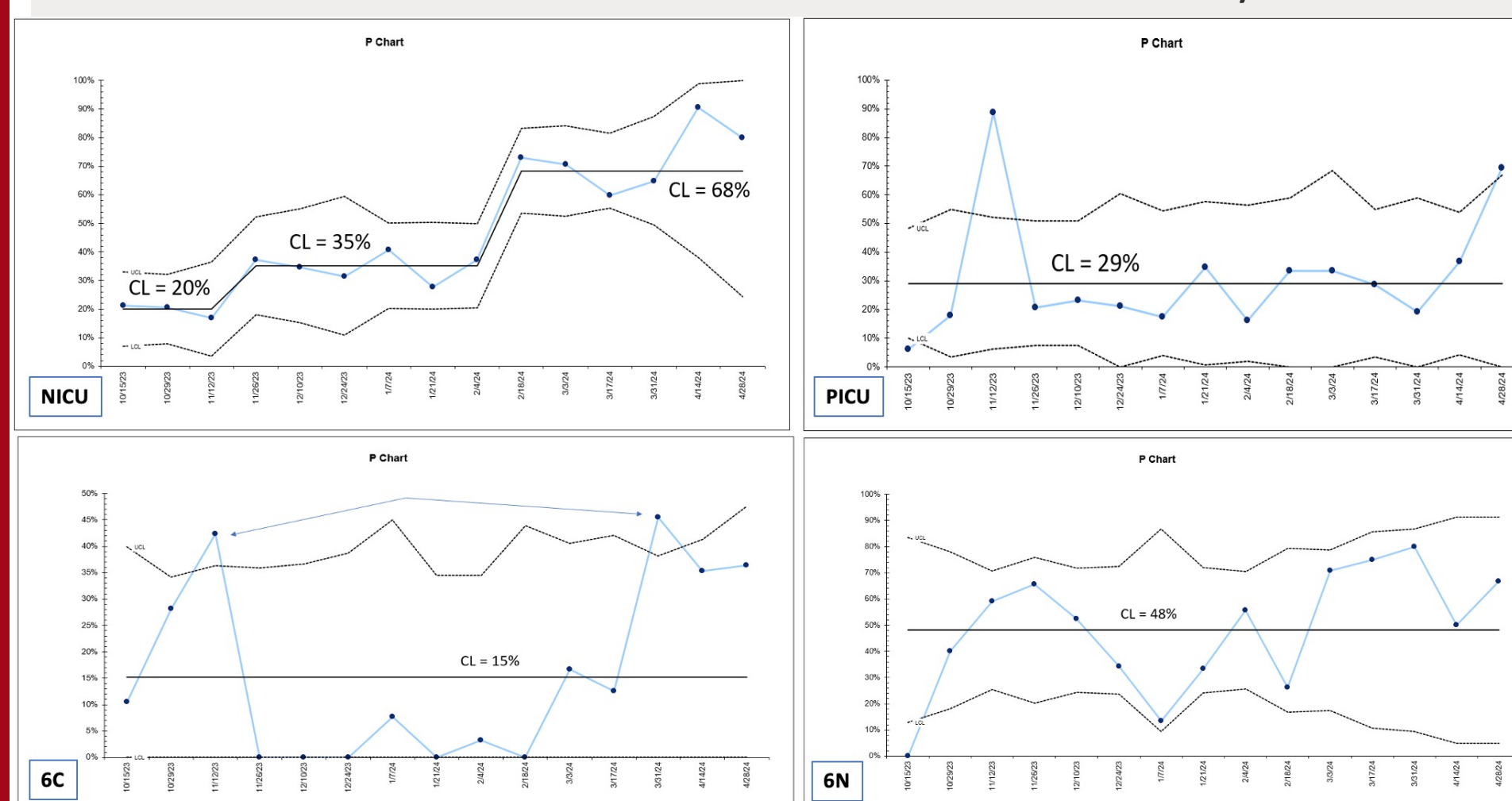
Pressure Injury Rate Jul 2022-Apr 2024



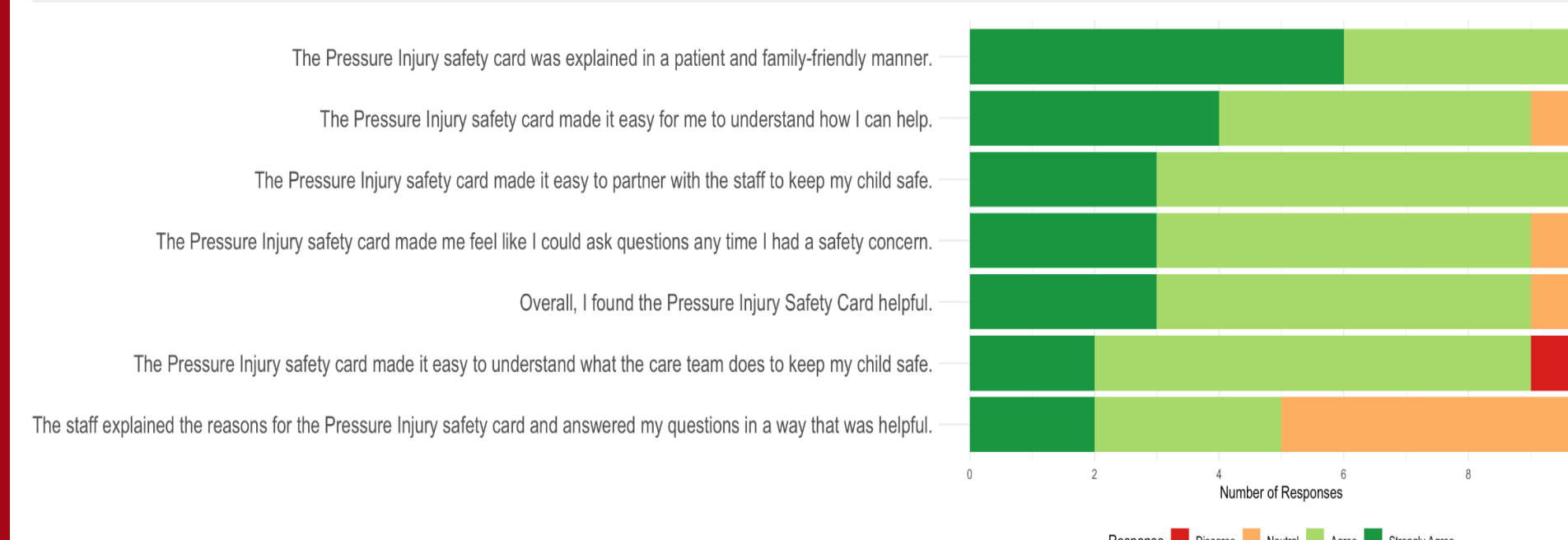
Overall Adherence to Pressure Injury Care Bundle



Percent Adherence to the HAPI Prevention Care Bundle by Location



HAPI Safety Card Parent Survey Results



References:
Cunha, K. A., Watters, R., & Leming, L. (2018). Reducing Pressure Injuries in the Pediatric Intensive Care Unit. *The Nursing Clinics of North America*, 54(1), 127-140. <https://doi.org/10.1016/j.cnur.2018.10.005>
Curry, M. A. Q., Hasbani, N. R., Quigley, S. M., Steffler, J. J., Paek, T. A., Shelley, S. S., Kulk, L. A., Chambliss, T. B., Dillaway, M. A., Callorette, C. N., McCabe, M. A., & Wypis, D. (2018). Predicting Pressure Injury Risk in Pediatric Patients: The Braden QD Scale. *The Journal of pediatrics*, 232, 189-195.e2. <https://doi.org/10.1016/j.jpeds.2017.09.045>
Solutions for Patient Safety. (2023). *Solutions for Patient Safety*. <https://www.solutionsforpatientsafety.org/>

Results

- PI Rate Centerline shifted up from 0.2 to 0.8/1000 patient days and then back down to 0.5/1000 patient days
- Overall adherence to PI bundle shifted to 50% from 22%
- Special causes noted in the NICU where adherence to PI bundle compliance improved from 20% to 68%

Conclusions

- PI rates increased, reflecting improved detection methods, thus capturing more PIs than before
- Bundle adherence improved overall
- Parent/family engagement was overall positive on survey results
- Collaborated with teams across all NYP hospitals
- Many interventions were implemented hospital and enterprise-wide
 - Braden QD
 - Standardized preventative skincare

Next Steps

- Design interventions to support workflow on units with lower PI bundle adherence
- Expand parent/family surveys for HAPI Safety Cards to all units
- Roll out new pediatric and neonatal PIV kits with prophylactic skin protection foam (enterprise-wide)
- Assess the impact of system level interventions such as OR/procedural engagement and change in policies
- Spread to other NYP sites

Acknowledgements

A special thank you to WCM Quality Improvement Academy, Pediatric Nursing Staff and Quality and Patient Safety Specialists

Karolina Walichnowska, DNP, APRN, ACCNS-AG, CCRN, Alex Freitas PMHNP-BC, BSN, RN, CCRN, CSC, Christina R. Shayevitz, M.D., Brock Daniels MD, MPH, MAS, Wenna Xi PhD | May 2024

Background

- Delirium is an acute, fluctuating confusional state that is treatable and potentially preventable when recognized early.
- Delirium occurs in 10–25% of medicine patients and up to 50% of geriatric postoperative patients, with incidences as high as 82% among the critically ill (Gibb et al., 2020).
- Complications associated with delirium carry a high economic burden on health care systems including longer hospital stays and long-term care following discharge (Guthrie et al., 2018).
- Despite the human and health costs of delirium, it remains largely ignored with up to 60% of delirium cases going undetected (Oh et al., 2017).
- Lack of delirium assessment tools on medical-surgical units and differing nursing approaches result in significant variations in the recognition and documentation of delirium.
- The Confusion Assessment Method (CAM) is a standardized evidence-based tool that enables non-psychiatrically trained clinicians to identify and recognize delirium quickly and accurately in non-critical care settings.

Aim Statement

AIM 1:
Increase medical-surgical nurse's comfort & knowledge of delirium identification by 50% after intervention compared to before intervention as measured by pre and post questionnaire.

AIM 2:
Increase delirium screening using the CAM tool from 0% to 80% on all Med-Surg patients by March 2024.

Design/Methods

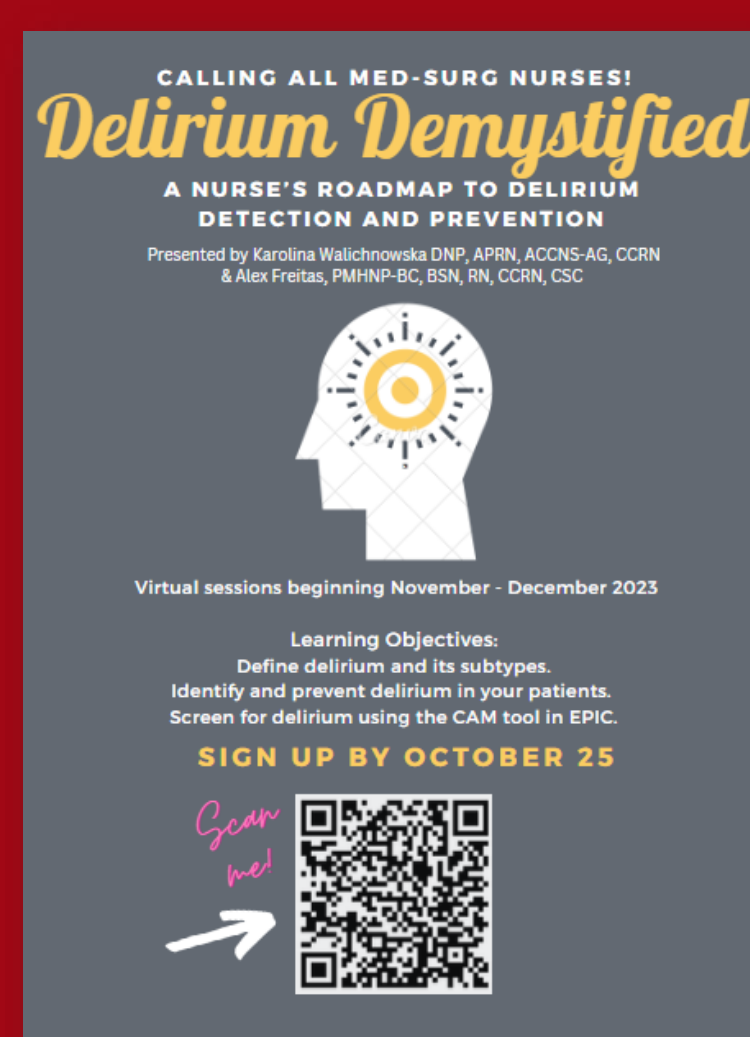
Design: Pre-test/post-test study design

Setting: 3 medical-surgical units (100 inpatient beds)

Sample: Nursing staff, voluntary/convenience sample (n=65)

Intervention: 45 min virtual educational lecture & unit-based in-services.

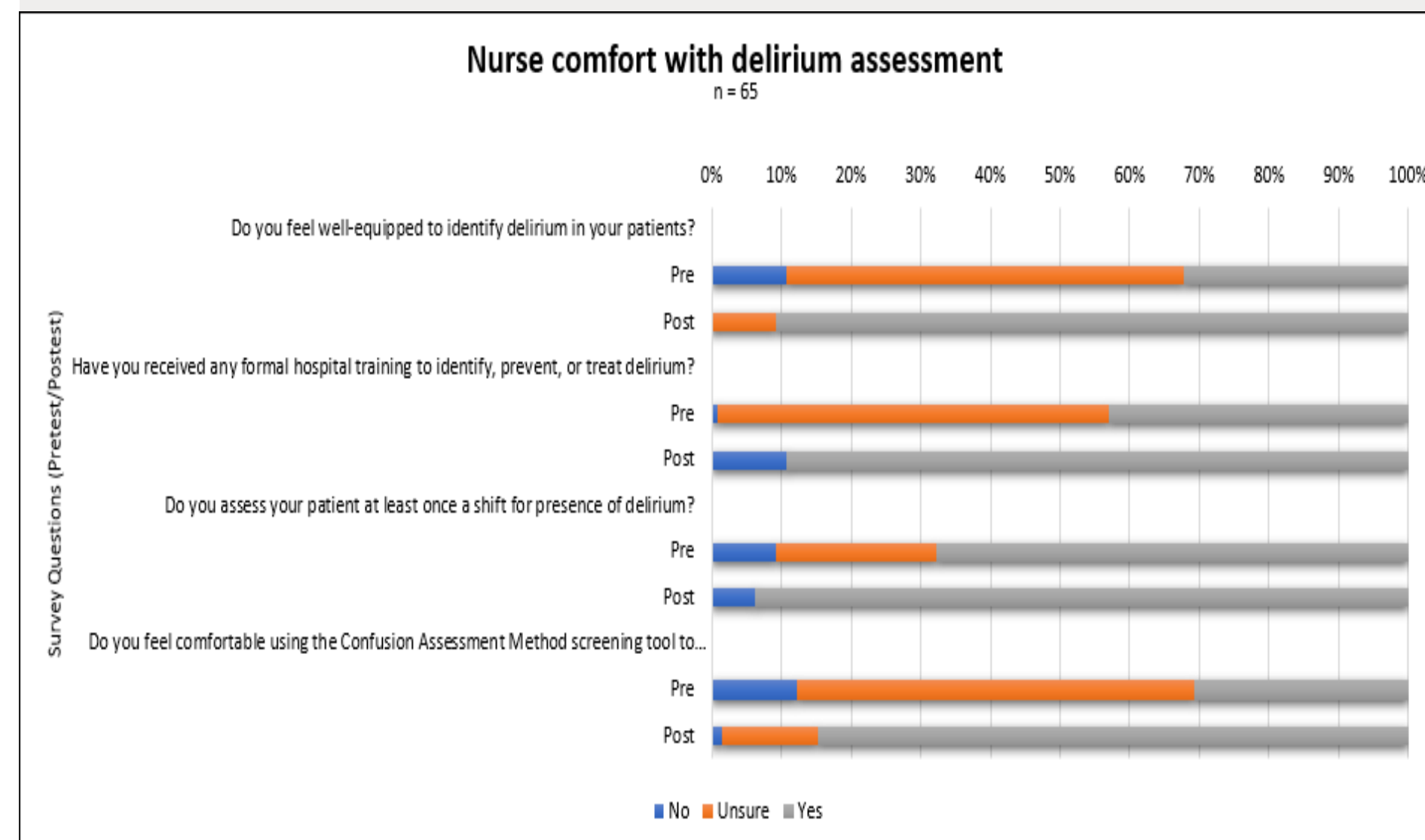
Measurement: 9-item Likert-scale questionnaire, compliance rates.



Results

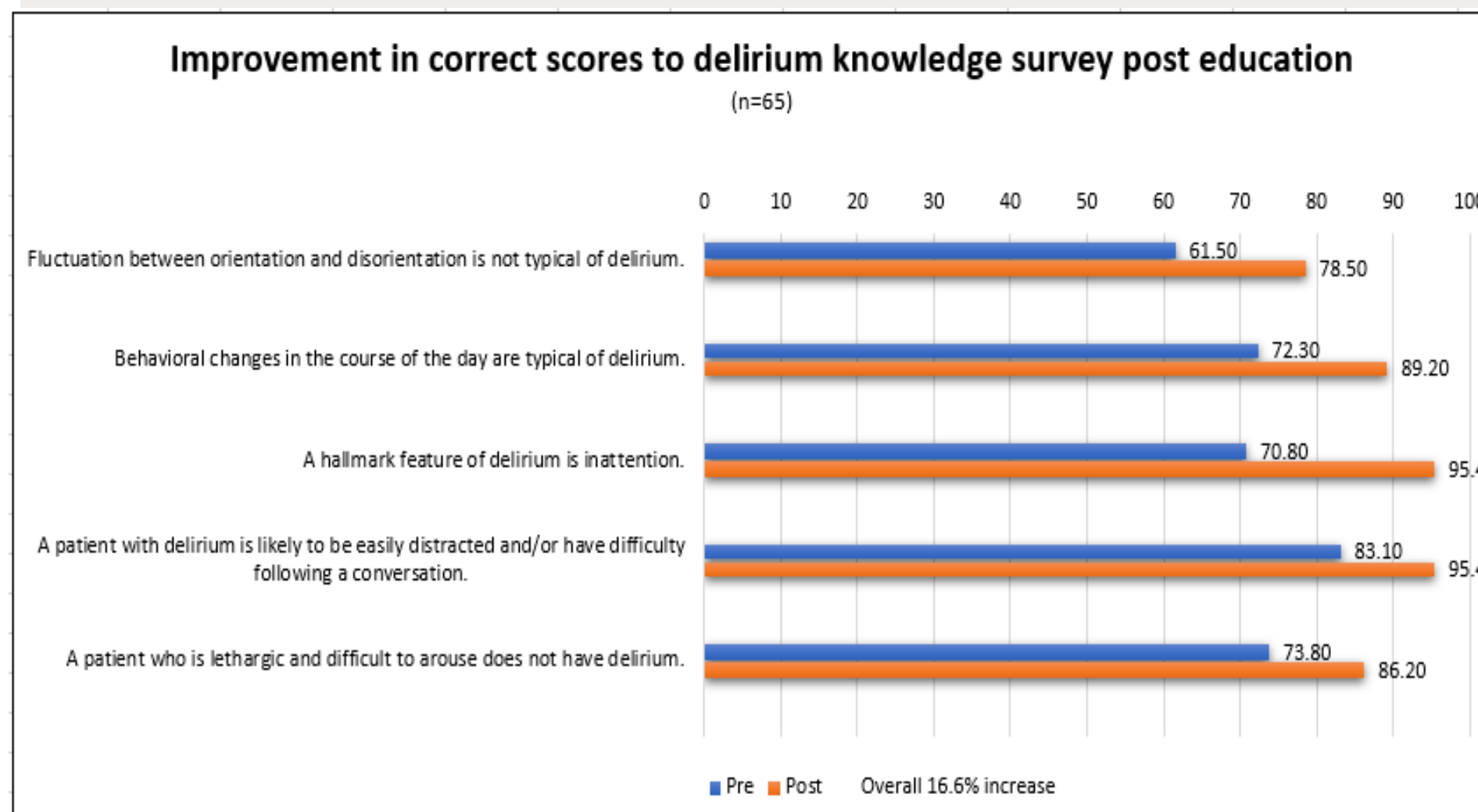
AIM 1

Figure 1 – Nurse comfort with delirium assessment



- Mean comfort scores improved **53.1%** post education.
- Chi-square testing indicates pre-post test results were **statistically significant** (p<0.001).

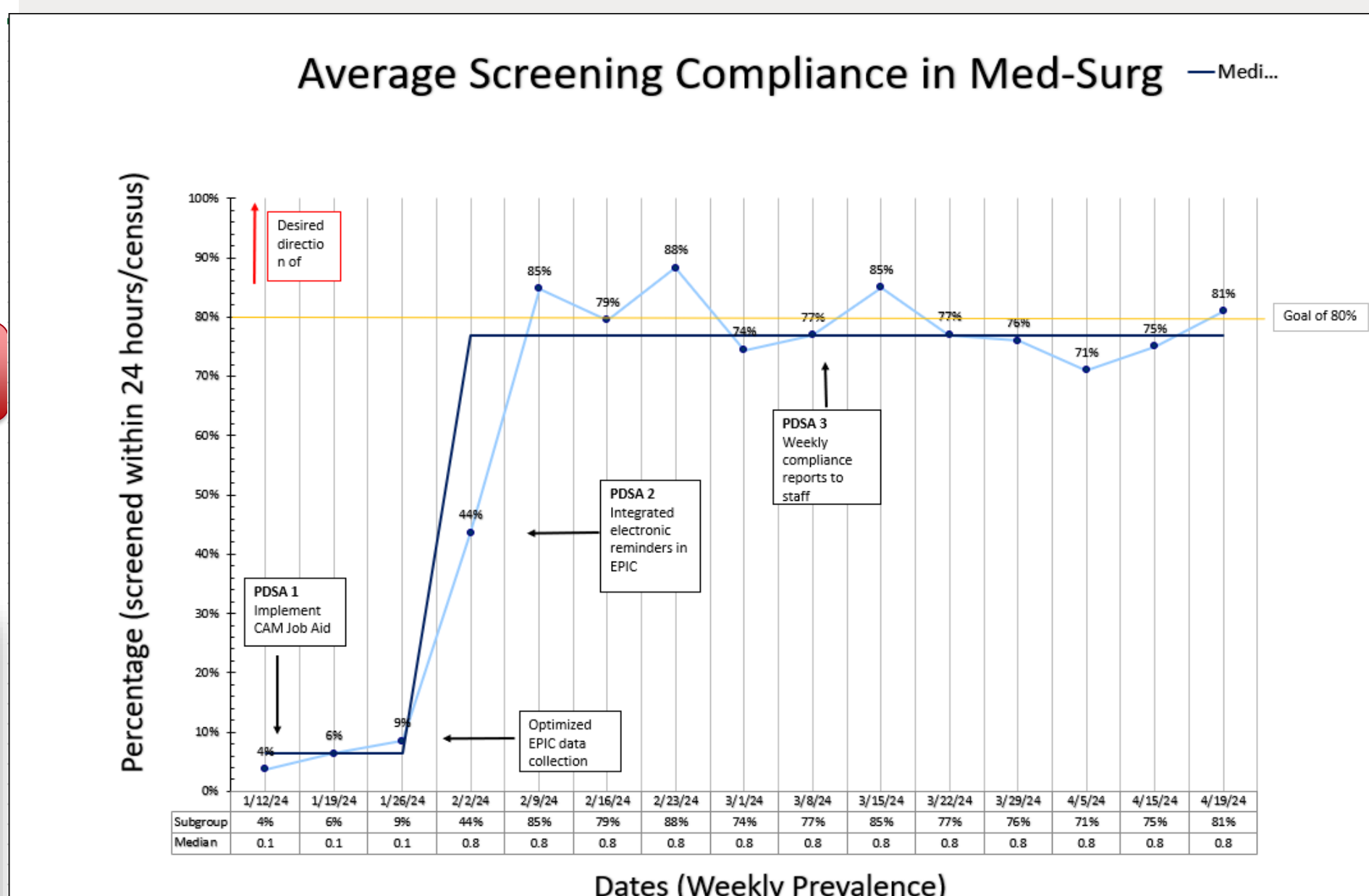
Figure 2 – Nurse knowledge of delirium



- Mean knowledge scores improved **16.6%** post education.
- Chi-square testing indicated **no statistical significance** in pre-post results except for "A hallmark feature of delirium is inattention" (p<0.001).

AIM 2

Figure 3 – Average CAM Screening Compliance



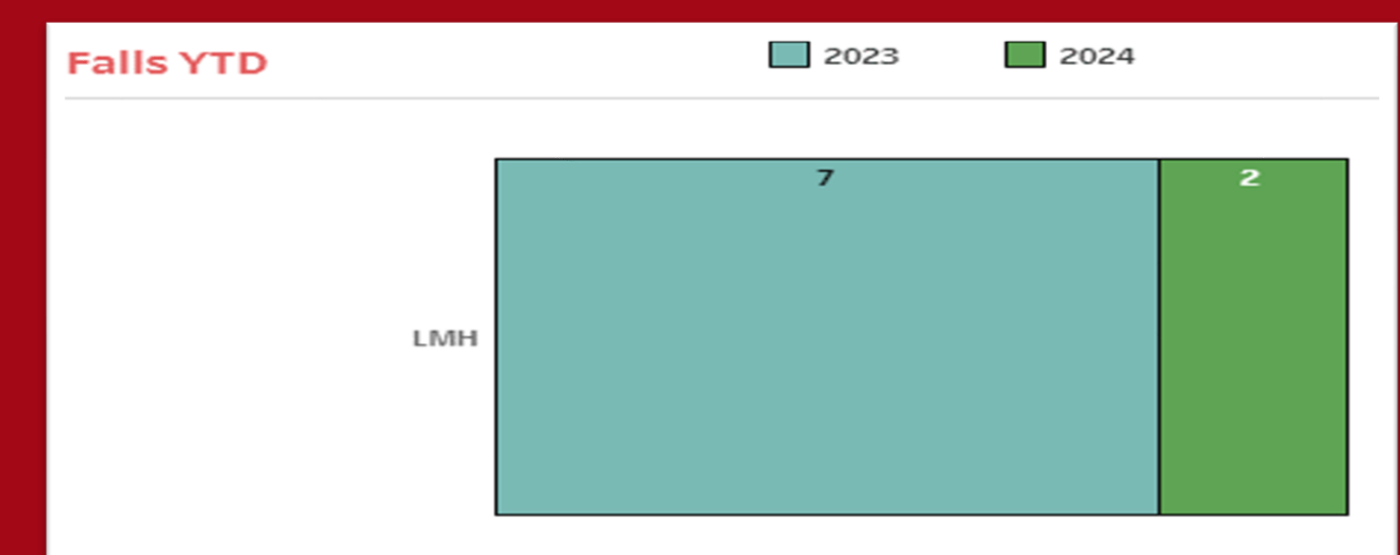
Conclusion

- Questionnaire scores reveal that nurses have a baseline knowledge of delirium; they lack the requisite training and resources needed to feel confident in recognizing and assessing delirium.
- Initially, screening compliance rates were well below goal (80%) but after setting automated reminders imbedded into the EPIC system, compliance rates improved averaging between 71-88%.
- Implementing the CAM delirium screening tool is feasible in medical-surgical units.

Secondary Outcomes

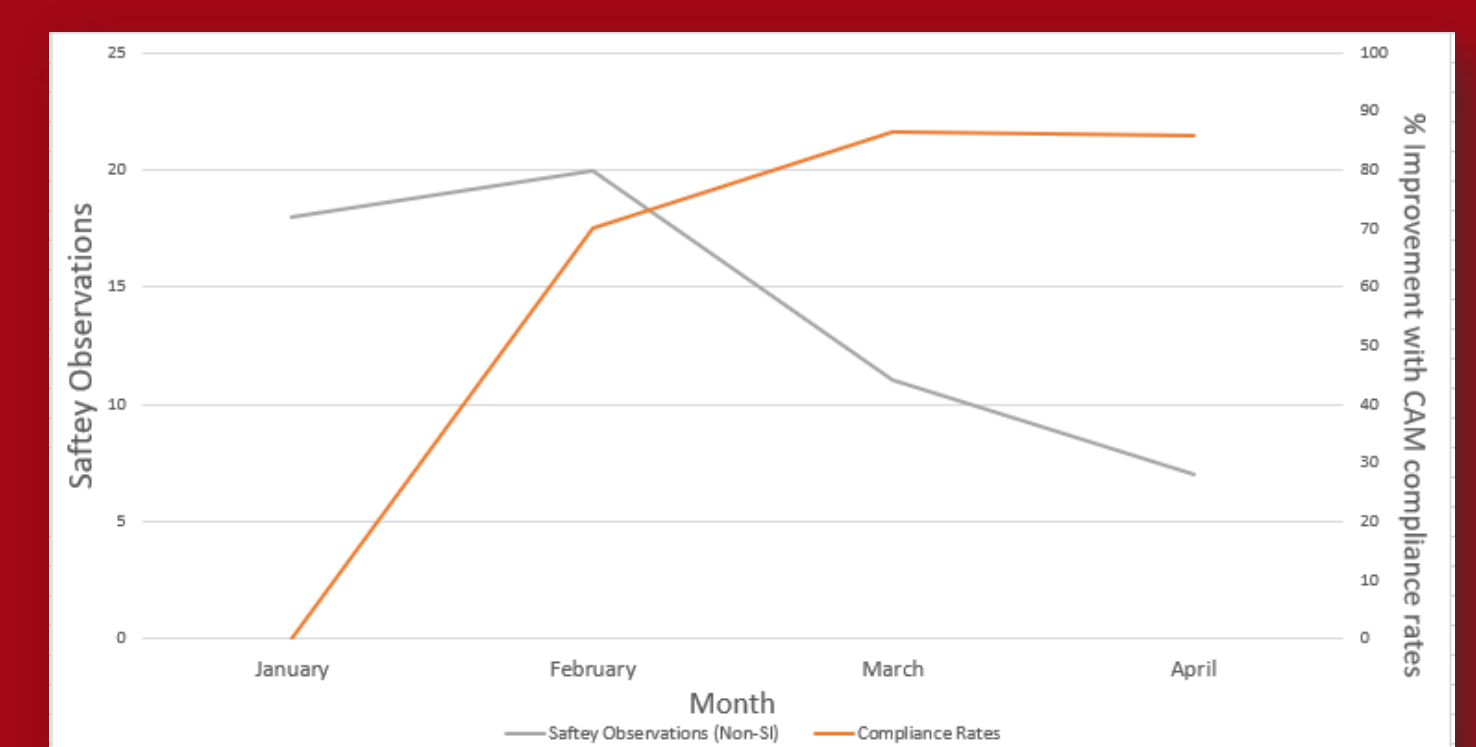
- One med-surg unit with consistently high average compliance rates (>80%) showed a 71% reduction in falls compared to the same period last year (Figure 4).

Figure 4 – 4A falls Q1 2023 vs 2024



- Additionally, increased CAM screening rates revealed a reduction in safety observation use on the unit (Figure 5).

Figure 5 – 4A Safety Observations vs CAM Compliance



- These findings suggest that screening and early prevention/intervention strategies for delirium could have potential benefits for patient safety outcomes and more cost-effective allocation of hospital resources.

Next Steps

- Ongoing data collection to assess sustainability (training for new staff members, capturing all nursing staff).
- Adoption of tool into nursing practice across NYP enterprise (easy to implement, technical capabilities are already in place).
- Ongoing work with EPIC to identify high risk patients, update dashboard capture of CAM screens.

Infographic Postoperative Instructions in a Low English Proficiency (LEP) Urogynecology Population vs. EPIC After Visit Summary (AVS)

Annual Weill Cornell Medicine Quality Improvement & Patient Safety Poster Symposium; Quality in Care Symposium | May 2024

Laura S. Kim MD, Wenna Xi PhD, Gyujeong Kim MD, Linda M. Gerber PhD, Elijah Douglass MD, Jennifer I. Lee MD

BACKGROUND

Over half of the population in Queens borough was born outside of the United States and speak a non-English language at home, with many having Low English Proficiency (LEP) and the largest concentration of immigrants utilizing character-based languages in NYC (1). Patients with LEP have adverse events likely due to communication errors (2). Communication barriers include difficulty translating, and mismatched discharge and translation time frames (3). Low health literacy is reported in 44.9% of people with LEP (4), while taking prescription medication is considered an intermediate level, health literacy task.

Over 50% of patients undergoing surgical procedures do not speak English as their first language. LEP patients do not receive a fully translated discharge EPIC After Visit Summary (AVS) form. EPIC's AVS does not support character-based languages, does not translate free text, and since July 2023, no longer has Korean as a language option at New York Presbyterian Queens (NYPQ) Hospital. Barriers to AVS optimization include local customization, time between the need and translated result, and is labor intensive(5).

AIM

From Sept 2023 – July 2024, we aim to create infographics discharge forms, for NYPQ's urogynecology perioperative patients, in order to achieve greater than 80% of the patients demonstrating sufficient postoperative discharge knowledge (PDK).

METHODS

Study Design: Quasi-experimental, pre-post design. The Epic AVS form is the control and the infographic form is the intervention.

	Inclusion	Exclusion
NYPQ Urogynecology patients	Speaking & Reading English (E), Chinese-simplified (C), Spanish (S), Korean (K)	Other languages Illiterate

Eligible perioperative urogynecology patients were given a mock EPIC AVS discharge form, in their primary language for review, and then asked to complete a knowledge assessment survey. This survey comprised of 3 questions (what medication to use for 8/10 pain, when to call the doctor for urgent issues, and location where an ice pack should be placed for pain control). Next, they were given a novel, infographic version of the discharge instructions, in their primary language (English, Chinese, Spanish, Korean) for review, and then asked to complete the same knowledge assessment survey.

Primary Outcome	Secondary Outcome
% of patients with postoperative discharge knowledge (PDK)	% of patients preferring Infographic Discharge form.

PDK is defined as answering 2 out of the 3 survey questions correctly (binary: has knowledge, does not have knowledge). Questions that were answered using their "own knowledge" without referring to the forms were considered incorrect.

Monthly percent of patients with PDK were calculated for both the EPIC AVS and infographic forms. Subgroup analysis for English vs. LEP (Spanish, Chinese, and Korean) was also conducted.

Patient satisfaction was assessed by asking patients which version of the discharge form they preferred (EPIC AVS vs. Infographic) at the end of the infographic knowledge survey.

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2. Divi C, Koss RG, Schmaltz SP, Loeb JM. Language proficiency and adverse events in US hospitals: a pilot study. *Int J Qual Health Care.* 2007;19(2):60-67. doi:10.1093/intqhc/mzl069
3. Davis SH, Rosenberg J, Nguyen J, et al. Translating Discharge Instructions for Limited English-Proficient Families: Strategies and Barriers. *Hosp Pediatr.* 2019;9(10):779-787. doi:10.1542/hpeds.2019-0055
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Acknowledgements
QIA Faculty, Ericka Fong, Crystal Huertas, and QIA Class of 2024
Infographics Chinese form: Yi-Ju Chen MD, Yin Pak (Cypress) Cheng

Table 1: Demographics

	Chinese (N=9)	English (N=28)	Korean (N=12)	Spanish (N=15)	Overall (N=64)	p-value
as.numeric(age)						0.0644
Mean (SD)	57.11 (19.17)	59.25 (12.52)	70.00 (9.13)	63.13 (10.14)	61.88 (13.06)	
Median (Min, Max)	59.00 (31.00, 89.00)	57.00 (34.00, 83.00)	69.50 (52.00, 80.00)	63.00 (36.00, 76.00)	62.50 (31.00, 89.00)	

Figure 1. PROCESS MAP: Preoperative office visit to the Operating Room (OR) to the Post Anesthesia Care Unit (PACU)

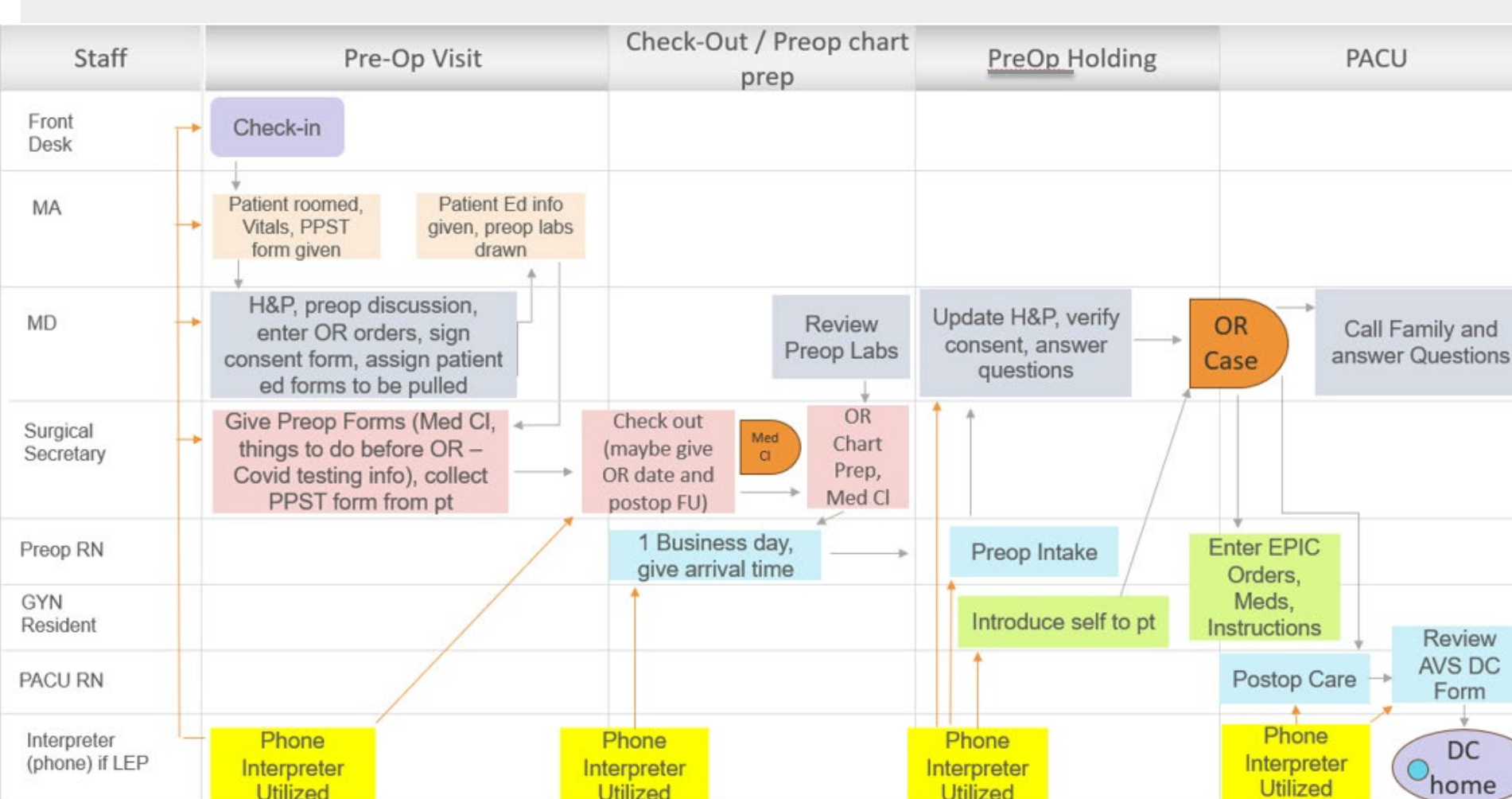


Figure 2. DRIVER DIAGRAM

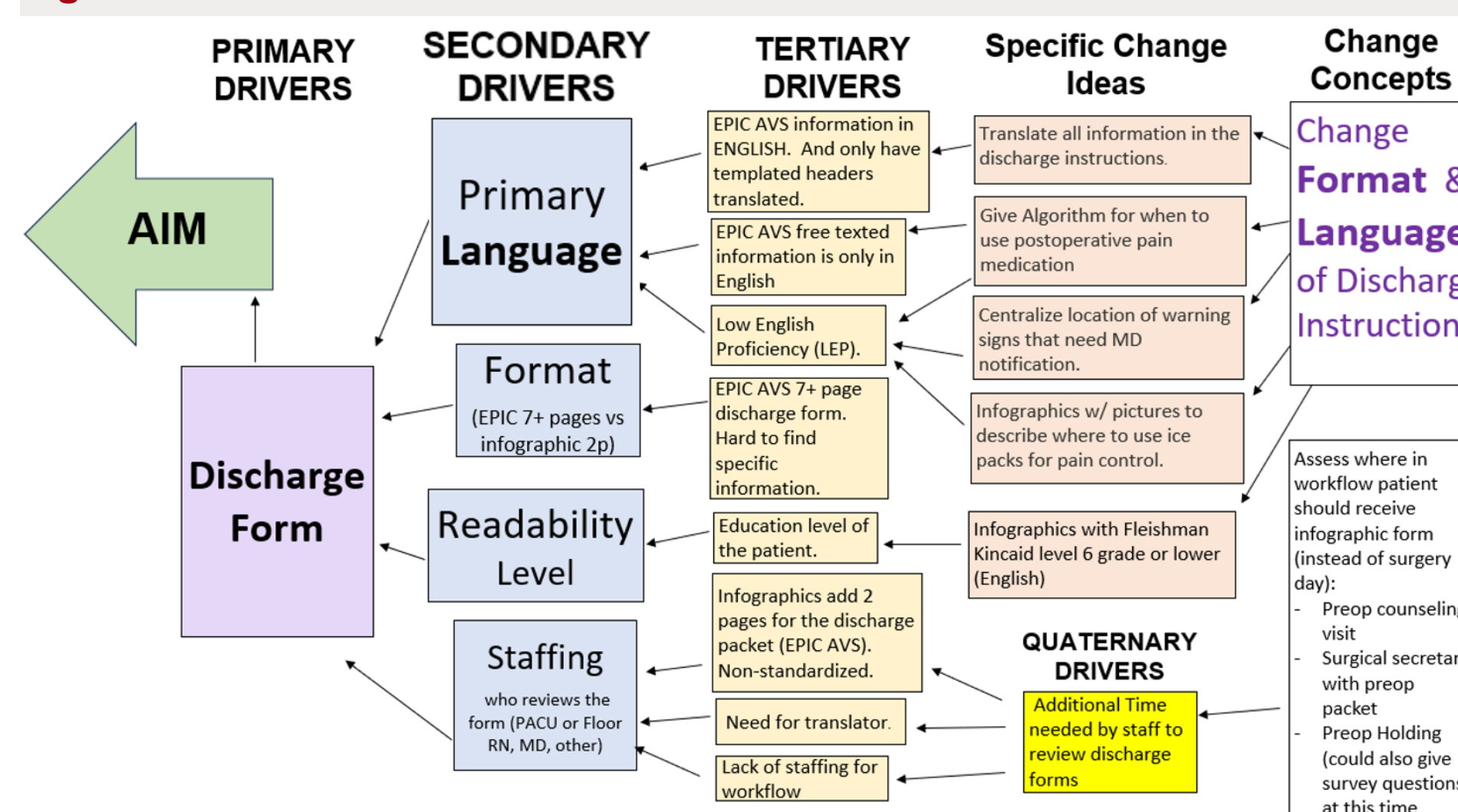


Figure 3. Combined P Control chart: INFOGRAPHICS vs EPIC AVS Monthly % of patients with Postoperative Discharge Knowledge (PDK)

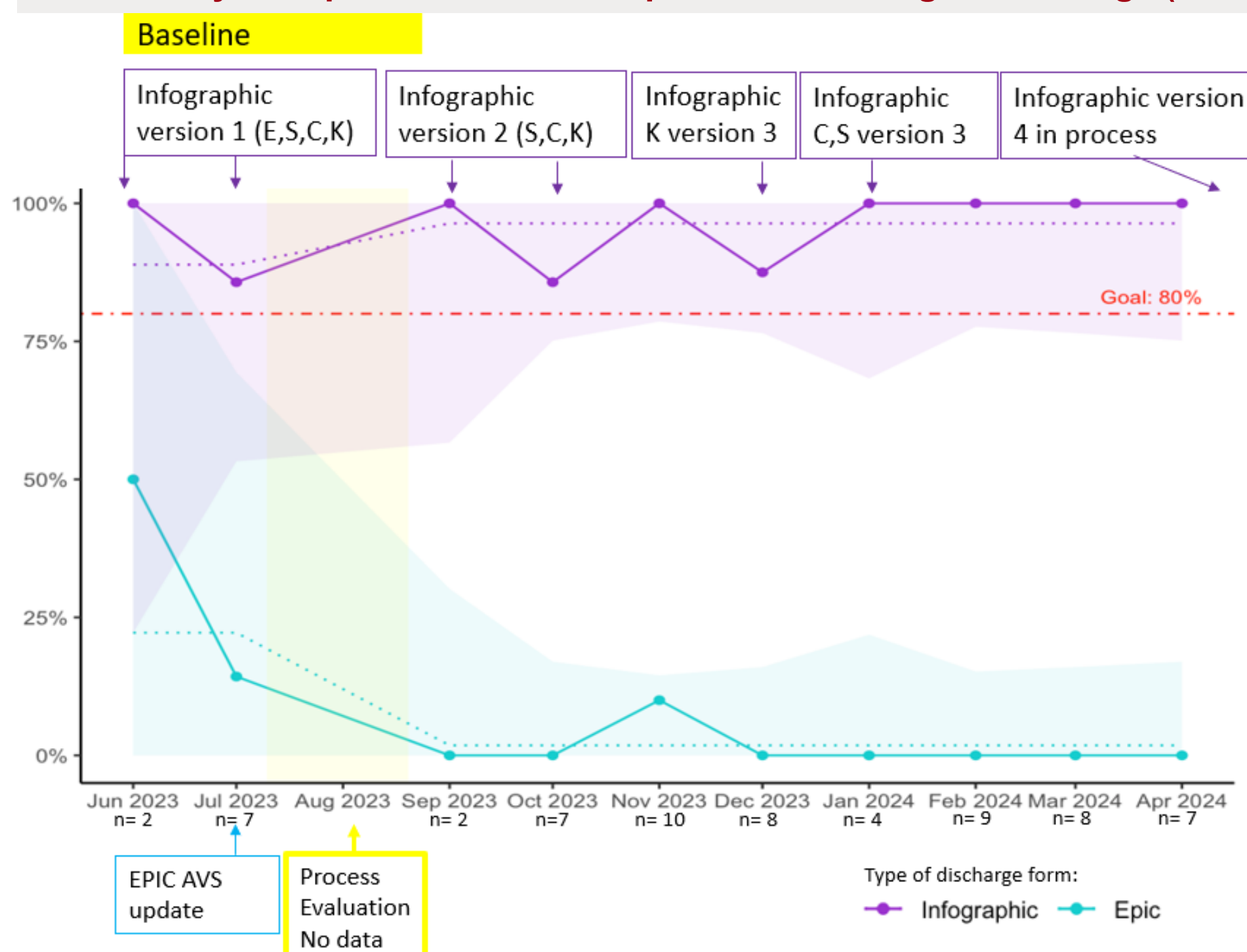


Figure 4. Infographics Postoperative Discharge Form (English)

Pain Level	Medicine to Use:	ICE Pack
0 = No pain	Acetaminophen, Ibuprofen, tramadol	20 minutes
2 = Mild pain	Take Acetaminophen OR Ibuprofen	Every 2 hours
4 = Moderate pain	Take Acetaminophen AND Ibuprofen	As needed
6 = Moderate to severe pain	Take Acetaminophen AND Ibuprofen AND Tramadol 1 tablet	See second page
8 = Severe Pain	Take Acetaminophen AND Ibuprofen AND Tramadol 2 tablets	
10 = Most severe pain	Take Acetaminophen AND Ibuprofen AND Tramadol 2 tablets	

INSTRUCTIONS FOR AFTER SURGERY:

PAIN CONTROL: Use Pain medication as directed on Page 1, based on the level of pain. Also use ice packs.

Place ICE pack (ice in a ziplock bag, covered with a shirt) on surgery site marked oval, 20min every 2 hours as needed for pain and swelling.

PRECAUTIONS TO TAKE AFTER SURGERY

- It is normal to have vaginal spotting for 1 to 2 weeks after surgery.
- Shower, but no bathing or swimming pools.
- No lifting greater than 10 lbs or 5 kg for 2 months after prolapse surgery.
- Nothing in vagina for 2 months.

How to use medication for PAIN control

ACETAMINOPHEN (325mg tablet): 3 tablets every 8 hours as needed.

IBUPROFEN (200mg tablet): 3 tablets every 6 hours as needed.

TRAMADOL (50mg tablet): Every 4 hours as needed for SEVERE PAIN

CALL THE DOCTOR if:

- You have PAIN level 8 or more
- Fever – Temperature 100.4 F or 38 C
- Vaginal odor or abnormal discharge
- Unable to urinate for more than 5 hours
- No bowel movement after 5 days from surgery

Follow-up Appointment with Dr. Laura Kim

Office number: 718-670-2309

Date: _____

Time: _____

Location:

- 112-05 Queens Blvd, Forest Hills, NY 11375
- 189-04 Hillside Ave, Hollis, NY 11423
- 136-56 39th Ave, 2nd floor, Flushing, NY 11354

RESULTS

% of patients demonstrating Postoperative Discharge Knowledge

	Infographics	EPIC AVS
Baseline monthly average	88%	22%
Sept '23-April '24 monthly average	96%	2%

INFOGRAPHICS:

Over 80% of the patients demonstrated postoperative discharge knowledge (PDK). This was for both English and LEP groups. Each infographic language version has undergone 3 PDSA cycles to improve verbiage, resulting in 96% of patients demonstrating PDK.

EPIC AVS:

At baseline, an average of 22% of patients per month demonstrated PDK. After the EPIC AVS update (7/2023), an average of 2% of patients per month demonstrated PDK.

Preferred Discharge Form

Language	Infographics	EPIC AVS	No preference
English n=28	89% n=25	0%	11% n=3
Low English Proficiency (LEP) Chinese, Korean, Spanish n=36	94% n=34	2% n=1	2% n=1

DISCUSSION

Through the use of a simple, illustrated, and fully translated discharge form, the aim of >80% of patients demonstrating postoperative discharge knowledge (PDK), in the urogynecology practice was met. They aided in understanding which pain medications to use for severe pain, identify when to call the MD for urgent issues, and illustrates where to put ice packs to help with postoperative pain. This was helpful for even English-speaking patients.

Infographic forms may have improved communication by being short (2 pages, readability level below the 6th grade for English speakers, and large font). Translated forms in Spanish, Chinese – simplified, and Korean helped communicate with patients in the LEP group.

The standard EPIC AVS did not effectively communicate information to patients regardless of language, including English. During the 7/2023 AVS update, the Korean language EPIC AVS was no longer available, which could account for the lower average compared to its baseline. Many couldn't find information to answer the survey and therefore used their "own knowledge".

Patients also prefer the use of the INFOGRAPHICS form over the AVS, regardless of language. Interestingly, patients who felt the forms were equivalent or preferred the EPIC AVS, demonstrated PDK only for the INFOGRAPHICS form.

Limitation:

Patients were queried if they used their own knowledge ("common sense") when answering the EPIC AVS survey, due to observation of the patients not referring to the form. This was not asked for patients when using the infographics version.

Barriers:

Validating the current translations.
Time collecting the data in the perioperative workflow.

STEPS FORWARD

- Infographics version 4 in progress to further simplify the medication table and native speaker reviews.
- Continue gathering data to have 11 months
- Ask patients if they are using their own knowledge for the infographic form.

Development, Implementation, and Institutional Engagement in Quality Improvement Initiatives: The Quality Improvement Academy

Ericka Fong, MBA; Linda M. Gerber, PhD; Snezana Nena Osorio, MD, MS; Mary Gallagher, DNP, RN; Robert J. Kim, MD; Jennifer I. Lee, MD

Program Description

The Quality Improvement Academy (QIA) was established to engage faculty in achieving academic scholarship through the application of rigorous QI methodology towards the design, testing and implementation of grassroots initiatives focused on improving patient care.

Objectives

- To master the knowledge and skills needed to apply improvement science to the design, implementation and study of QI initiatives in clinical settings
- To apply improvement theory and methods to grassroots projects that align with institutional goals and champion innovations and scholarship in research, clinical care and operations
- To integrate the knowledge and skills acquired into longitudinal mentorship of students, trainees and faculty across the institution.

Program Design

12-month program designed for junior faculty and nurses to:

- Design and integrate a higher standard of QI and patient safety into clinical practice
- Master skills to become effective leaders and mentors in clinical excellence through the teach-the-teacher model
- Apply tools to maintain wellness and overcome barriers to success
- Achieve academic scholarship through QI research (Table). Time and funding are provided through the participating faculty's department.

Projects must fall into the categories of Improving Health Equity, Patient Safety, Health Care Quality, and Care Transitions.

Mandatory course work includes:

- Minimum monthly one-on-one meetings with an improvement advisor with expertise in QI and research methodology and manuscript preparation
- Six mandatory half-day interactive workshops that focus on the core principles of QI and research science (Figure 1).

Figure 1: Program Timeline

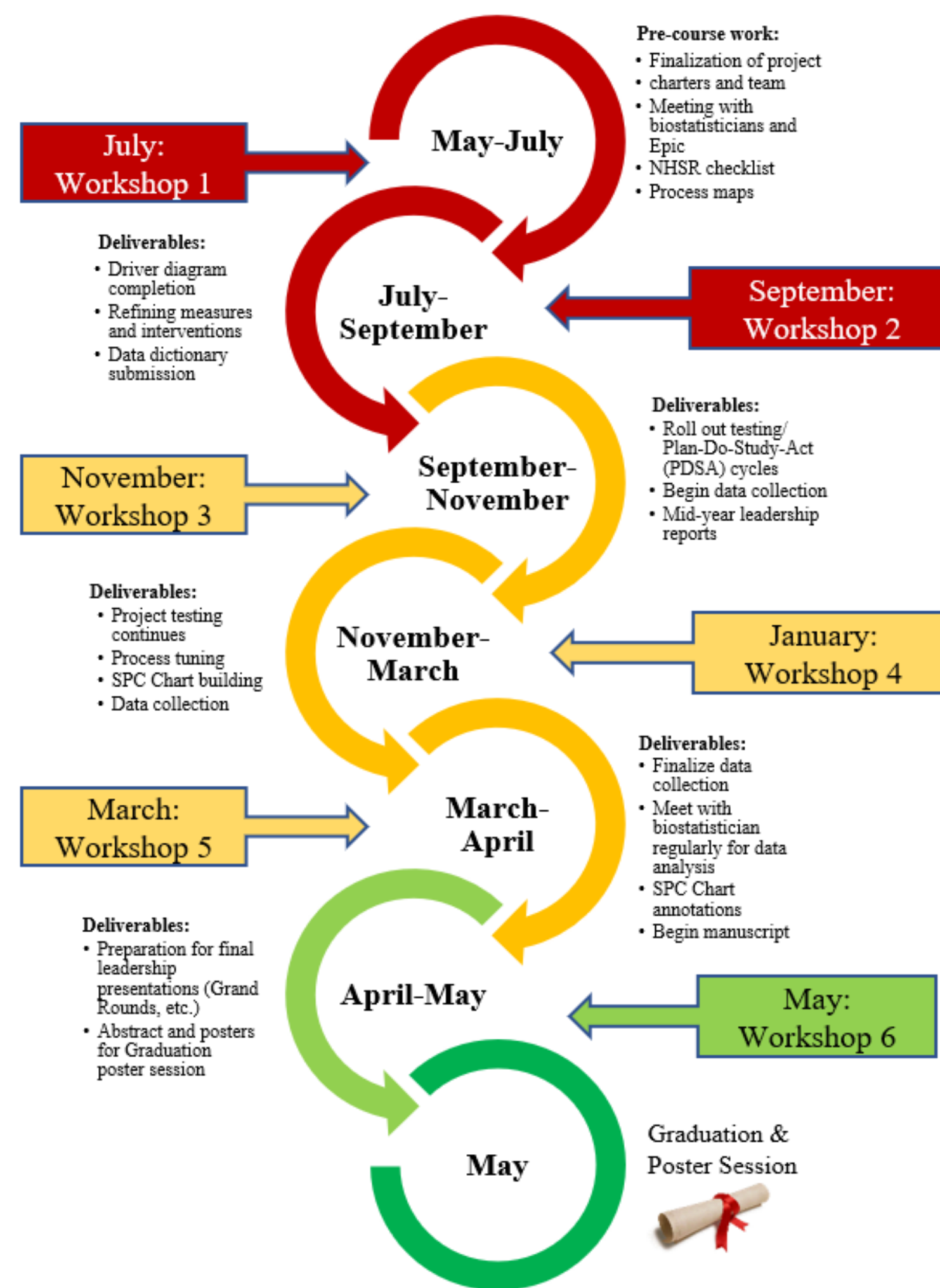


Table: Program Outcomes

Summary of Outcomes Classes of 2017 through 2024					
Graduates	Institutional Scope	Academic Scholarship	Mentorship	UME/GME	Magnet
<ul style="list-style-type: none"> 69 MD/DO 15 RN/NP 2 Staff 1 GME Fellow Total of 87 graduates 	12 Departments <ul style="list-style-type: none"> Medicine Pediatrics Anesthesiology Emergency Medicine Neurology Nursing ObGyn Ophthalmology Pharmacy Primary Care Psychiatry Surgery 	40 (52%) projects have been implemented across four Weill Cornell Medicine-affiliated campuses. <ul style="list-style-type: none"> 19 (25%) projects resulted in publications 8 (10%) are currently in draft 2 (3%) received grant funding; PCORI and FAER grant 	Expansion of QPS mentorship across nine departments <ul style="list-style-type: none"> Department of Medicine growth from three in 2016 to 39 (45%) faculty in 2024 	Faculty led projects with resident and medical student participation with poster presentations at national conferences. Core Project Team Members: <ul style="list-style-type: none"> 30 Internal Medicine Residents 9 Internal Medicine Fellows 15 Medical Students 	<ul style="list-style-type: none"> Nurse – MD research/manuscript collaboration Clinical autonomy

Across Five Campuses: Weill Cornell Medicine, Lower Manhattan, NewYork-Presbyterian Queens, NewYork-Presbyterian Brooklyn Methodist, and Hospital for Special Surgery (HSS)

Figure 2: Pre | Post QI Knowledge Self-Assessment

Knowledge Self-Assessment (Class of 2018 - 2024)



Program Design (cont.)

- Access to core QIA network and expertise in
 - Determination of non-human subjects research
 - Research design (Department of Population Health Sciences)
 - Biostatistics
 - Informatics (Weill Cornell Architecture for Research Computing in Health)
 - Research assistants (Quality Improvement Scholarship elective, Area of Concentration, Summer Internship Program)

Results

Class of 2017 to 2024

- 87 graduates (69 MD/DO, 15 RN/NP, 2 Staff, and 1 GME Fellow)
- 12 departments
- Five campuses
- 77 projects
 - 40 (52%) sustained as new practice standards
 - 19 (25%) publications in peer-reviewed journals

Statistically significant improvement in QI knowledge self-assessment in 30 of 33 domains (Class of 2018 – 2024, Figure 2)

Increase in QI mentorship of trainees and faculty > 90% in the DOM

Conclusions

QIA's unique structure successfully translates faculty engagement and training of core QI methodology into rigorous scholarship and improvement.

Since the inaugural Class of 2017, QIA continues to successfully expand across the Weill Cornell campuses, inclusive of all disciplines throughout the healthcare continuum.

The Quality Improvement Academy remains a hallmark program that aligns grassroots initiatives in support of institutional and regulatory goals with the academic mission of scholarship, providing an alternate pathway to faculty promotion. Its growth and success also directly enhances our institution's efforts to maintain a productive learning environment for graduate medical education.

Implementation of a Formalized Handoff Between the Acute Pain and Intraoperative Anesthesiology Team for Perioperative Procedures

Authors: Sarah Grond, MD, Lee Brake, MD, Nassim Lashkari, MD, PharmD, MS, Jennifer Min, MD, MPH, Nico Salvatierra, MD, Nikki Thomasian, MD, MPP, Justin Chung, MD, Tiffany Tedore, MD

Department of Anesthesiology, Weill Cornell Medicine, New York-Presbyterian Hospital, New York, NY

Statement of the problem: Currently there exists no formal handoff system between the acute pain/regional anesthesiology team and the intraoperative anesthesiology team after patients receive preoperative regional anesthesia procedures. This absence can lead to breakdowns in communication, suboptimal care, and negative patient outcomes. Transitions in patient care have shown to contribute to a higher risk for adverse events.

Objective/Aim: Increase the percentage of handoffs completed between the acute pain/regional anesthesiology and intraoperative anesthesiology teams for perioperative regional or neuraxial procedures performed prior to entry to the operating room by 75% over a 6-month period.

Project Design/Methods: Prior to intervention, a survey was sent to anesthesiologists (attendings, fellows, residents, CRNAs) to assess satisfaction with the current system and what information was considered important in handoffs. A handoff macro was then developed and implemented in the hospital's electronic medical record (Epic). The regional anesthesiology team was educated in the utilization of this Epic macro to communicate in a standardized fashion to the operating room team information about the regional or neuraxial procedure. Data indicating the number of completed handoffs was obtained from Epic and analyzed.

Results: 46 anesthesiology providers completed the baseline survey. Only 35% (N=16) indicated they were somewhat satisfied or extremely satisfied with the preexisting informal handoff system. The most commonly cited barrier to effective handoff was a lack of communication between the OR and regional anesthesiology team (66%). Expected duration of block (80%), medications administered (80%), block type and indication (65%), patient disposition/adverse events (65%), and catheter plan (59%) were the most commonly chosen pieces of information that respondents desired to be included in a handoff. After the implementation of the new Epic handoff system (see Figure 1), between 1/25/24 and 3/4/24, 92% (total N=107) of regional or neuraxial procedures performed outside of the operating room included a completed handoff.

Conclusions: Our team leveraged staff survey data and user interface principles to develop a novel macro in Epic to standardize handoffs during patient transfers from the acute pain service to the operating room anesthesiologist that resulted in excellent uptake. Post-implementation data on user satisfaction and patient safety are forthcoming.

Implementation of a Formalized Handoff Between the Acute Pain and Intraoperative Anesthesiology Team for Perioperative Procedures

STAY AMAZING

NewYork-Presbyterian

Weill Cornell Medicine

Sarah Grond, MD, Lee Brake, MD, Nassim Lashkari, MD, PharmD, MS, Jennifer Min, MD, MPH, Nico Salvatierra, MD, Nikki Thomasian, MD, MPP, Justin Chung, MD, Tiffany Tedore, MD
Department of Anesthesiology, Weill Cornell Medicine, NewYork-Presbyterian Hospital, New York, NY

Problem Statement:

Currently there exists no formal handoff system between the acute pain/regional anesthesiology team and the intraoperative anesthesiology team after patients receive preoperative regional and neuraxial anesthesia procedures. This absence can lead to breakdowns in communication, suboptimal care, and negative patient outcomes. Transitions in patient care have shown to contribute to a higher risk for adverse events^{1,2}.

Objective/Aim Statement:

- Identify the most essential pieces of information to be included in the handoff
- Develop a standardized Epic handoff macro including this information
- Primary Outcome: Achieve completion of handoff between regional anesthesia team and the intraoperative anesthesia teams 75% of the time after implementation

Design/Methods:

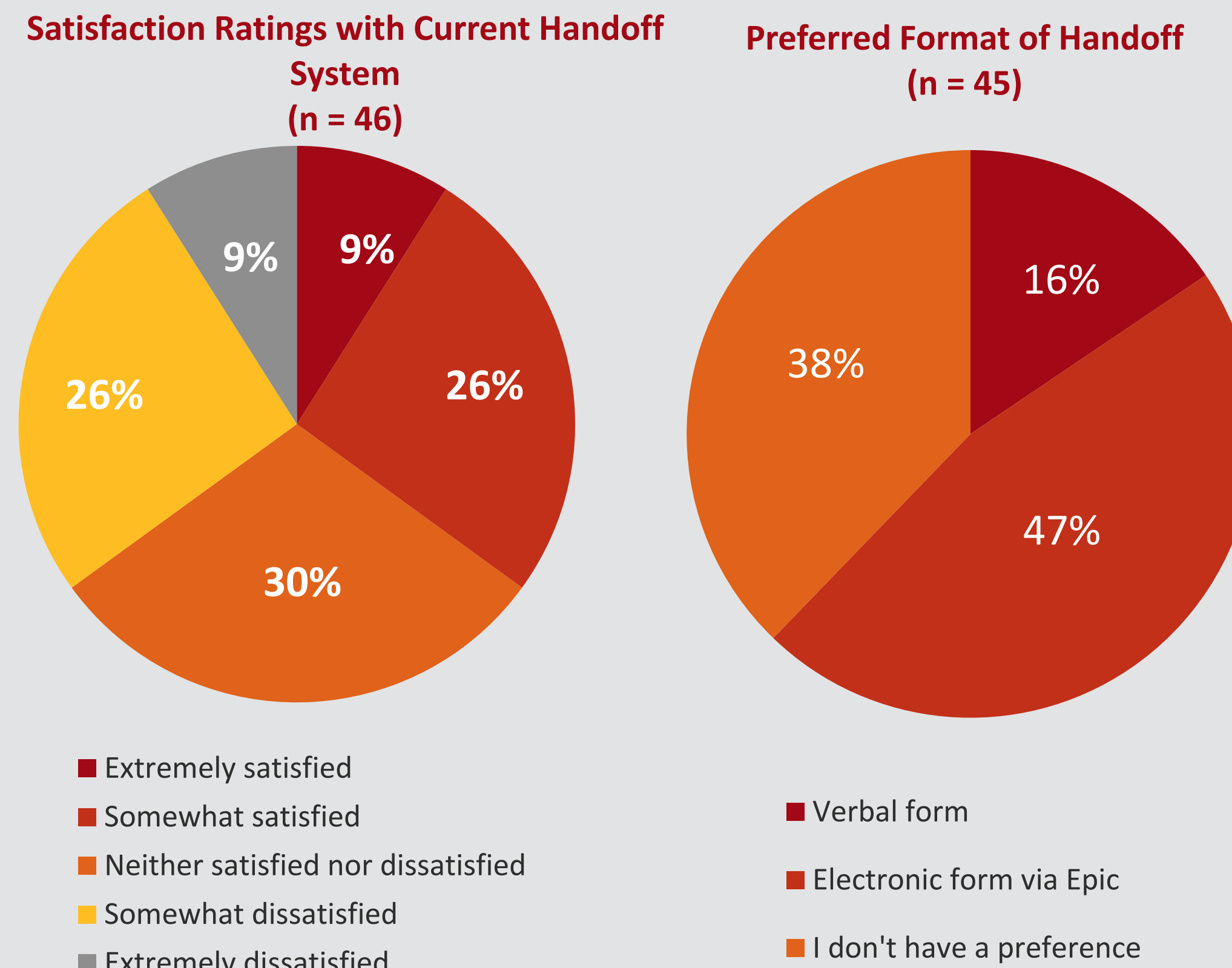
Baseline Pre-Implementation Survey

- Sent to all anesthesiology attendings, residents, CRNAs, and regional anesthesiology fellows
- Assessed respondents' preferred format of handoff
- Identified key information to be included in the handoff

Create Epic Handoff Documentation

- Automatically included as required "Event" when regional procedure is performed outside of the OR
- Regional anesthesiology team educated on macro use
- Handoff information also sent as Haiku message

Figure 1: Pre-Implementation Survey Results



In an ideal world, what information would you like to be included in the handoff (select all that apply): (n = 46)

Item	Percentage	Count
Baseline Vitals	41%	19
Baseline Mental Status	50%	23
Fluids Administered	30%	14
Indication: Surgical Anesthesia or Postoperative Analgesia	65%	30
Expected duration of the block, additives in the block, dosage of meds administered	80%	37
Plan for in-situ catheters	59%	27
Type of procedure	43%	20
Medications administered	80%	37
Adverse events	65%	30
Initial assessment of procedure	22%	10
DVT prophylaxis	11%	5
Test dose	35%	16
Additional history	13%	6
Other	11%	5

Figure 2: Epic Handoff Macro

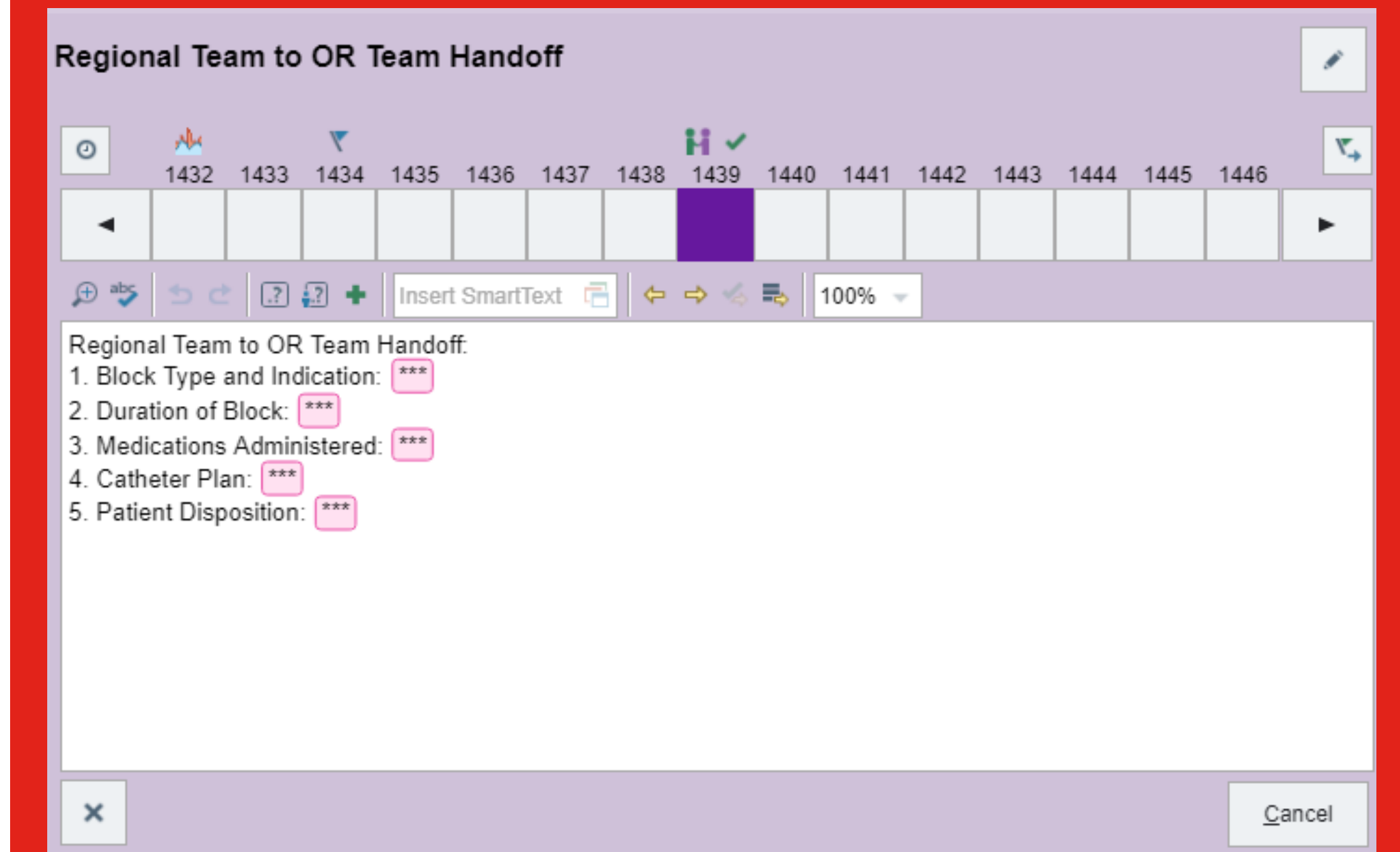
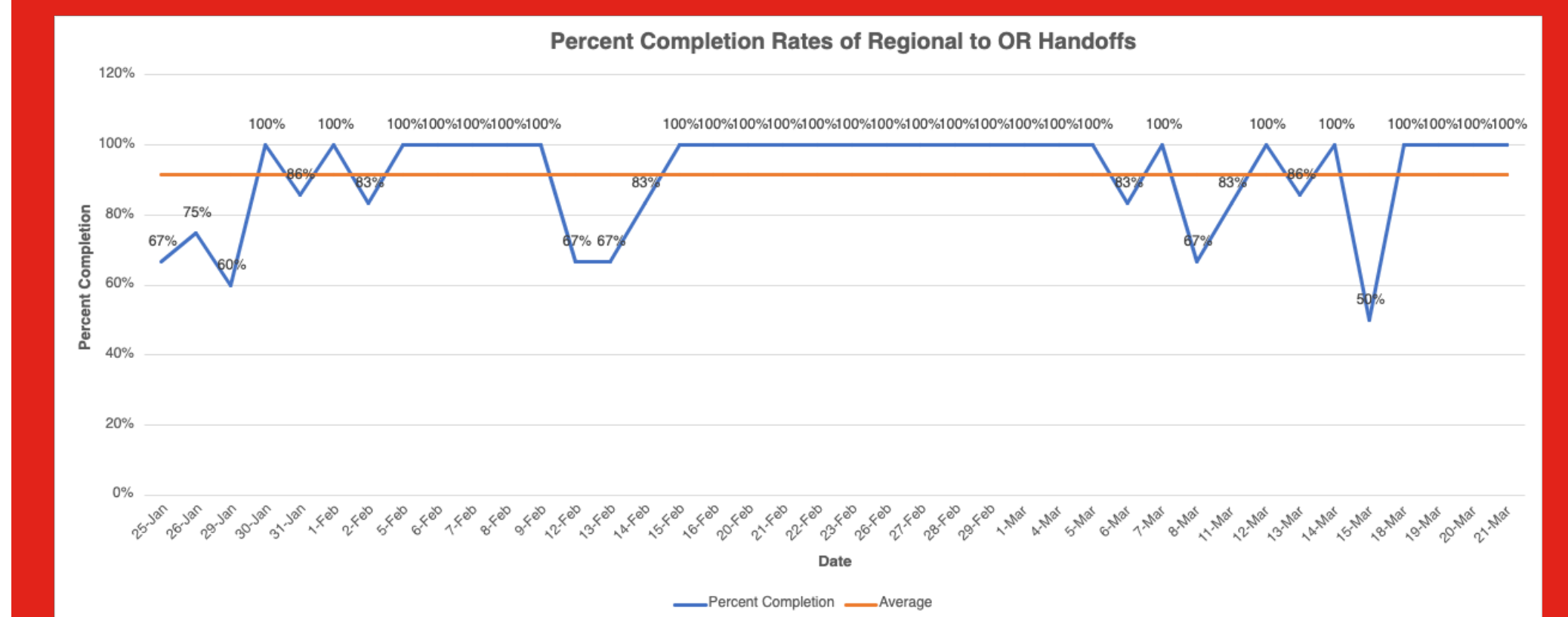


Figure 3: Completion Rate of Handoff Events



Next Steps:

- Continue data collection for six-month period
- Post-implementation survey:
- Satisfaction with new handoff system
- Perceived impact of handoff on patient care
- Identify areas for improvement
- Update handoff system based on post-implementation survey data

References:

1. Intraoperative transitions of anesthesia care and postoperative adverse outcomes. *Anesthesiology*. 2014;121(4):695-706. doi: 10.1097/ALN.0000000000000401
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Implementation of a VLBW Feeding Guideline on Enteral Feeding Practices and Central Line Placements in a Level IV NICU: A Quality Improvement Initiative

Authors: Megan Mataga, RD, Kaitlyn Chang, RD, Rissa Landman, RD, Alyssa Laterza, RN, Yafa Davydova, MD, and Priyanka Tiwari, MD.

Department: Clinical Nutrition/Neonatology

Statement of the Problem: Standardized feeding guidelines (FGs) have been shown to reduce the incidence of necrotizing enterocolitis (NEC), decrease days on total parenteral nutrition (TPN), and improve growth in very low birth weight (VLBW) infants. Prior to our feeding guideline, baseline data collection from our unit revealed delayed time to enteral feeding (EN) initiation, prolonged time to full EN and prolonged days on TPN. Our unit's NEC rates have historically been low (<5%) making changes to feeding practices more challenging.

Objective/Aim of the study: We implemented a FG in VLBW infants to optimize EN practices and decrease PICC placements for nutritional needs, without increasing NEC rate or negatively impacting growth. Our SMART AIMS were to reduce the time to initiating EN by 30%, reduce the time to achieving full EN and the number of central line days in VLBW infants by 20%, and reduce the number of PICC placements in 1000 - 1500g infants by 30% in a level IV NICU.

Project Design/Methods: We conducted an observational, time-series study over 36 months (January 2021 to December 2023), with a baseline period of January 2021 to October 2022. Interventions included the initiation of a donor milk program, creation and dissemination of FG, a divisional presentation, and education of nurse practitioners and bedside nursing staff. Outcome and process measures included the day of life feeds initiated, the day of life on full EN, and the number of central line days for nutritional needs in VLBW infants, as well as the number of PICC placements in infants with a birth weight of 1000-1500g. Balancing measures included NEC and growth parameters. Statistical process control charts (p and X-bar/S charts) were used to display and analyze our data. Associated for Process Improvement (API) rules for special cause were applied.

Results: Our results demonstrate a 56% reduction in time to initiating EN, a 35% reduction in time to achieving full EN and a 41% reduction in central line days. Additionally, in infants 1000-1500g there was a 54% overall reduction in PICC placements. We saw no increase in NEC rate and no clinically significant change in infant growth velocity. Additionally, in a post-hoc analysis, we were able to show a significant impact of the feeding guideline on all outcome measures in addition to the donor milk program.

Conclusions: The use of a standardized FG resulted in decreased time to feeding initiation, decreased time to full enteral feeds, decreased central line days, and fewer PICC placements with no increase in NEC or change in growth velocity. Future directions include targeted interventions to improve adherence to the guideline and to achieve improvement in measures in the ELBW population.



Implementation of a VLBW feeding guideline on enteral feeding practices and central line placements in a level IV NICU: A Quality Improvement Initiative

Megan Mataga, MS, RD, CNSC, CLC

Problem Statement: Standardized feeding guidelines (FGs) have been shown to reduce the incidence of necrotizing enterocolitis (NEC), decrease time on total parenteral nutrition (TPN), and improve growth in very low birth weight (VLBW) infants. Prior to our feeding guideline, baseline data collection from our unit revealed delayed time to enteral feeding (EN) initiation, prolonged time to full EN and prolonged TPN days. Our unit's NEC rates have historically been low (<5%) making changes to EN practices more challenging.

Objective/Aim Statement: We implemented a FG in VLBW infants to optimize EN practices and decrease PICC line placements without increasing NEC rate or negatively impacting growth.

Design/Methods: Observational, time-series study over 36 months (January 2021 to December 2023), with a baseline period of January 2021 to October 2022.

-Notable interventions include:

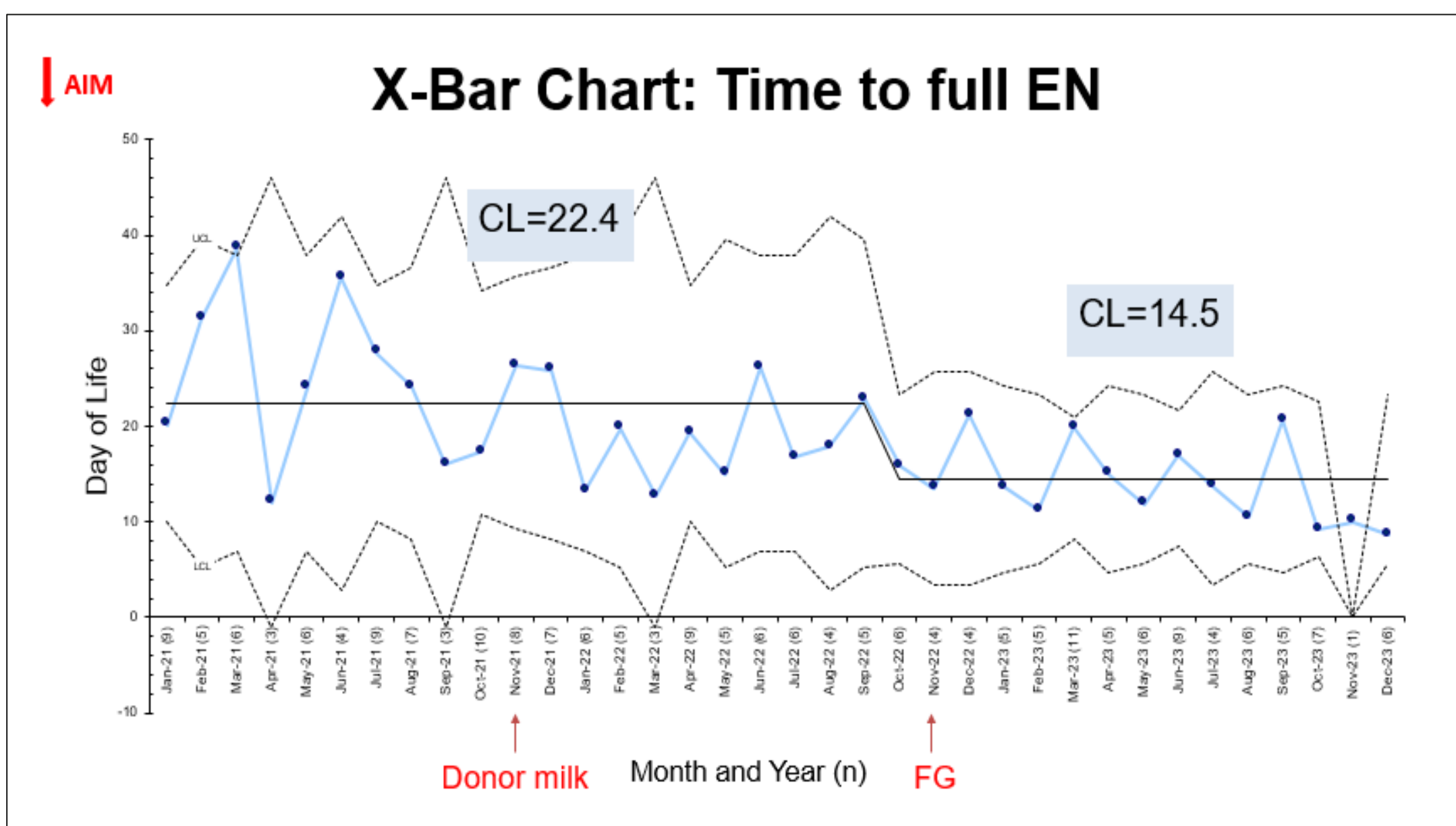
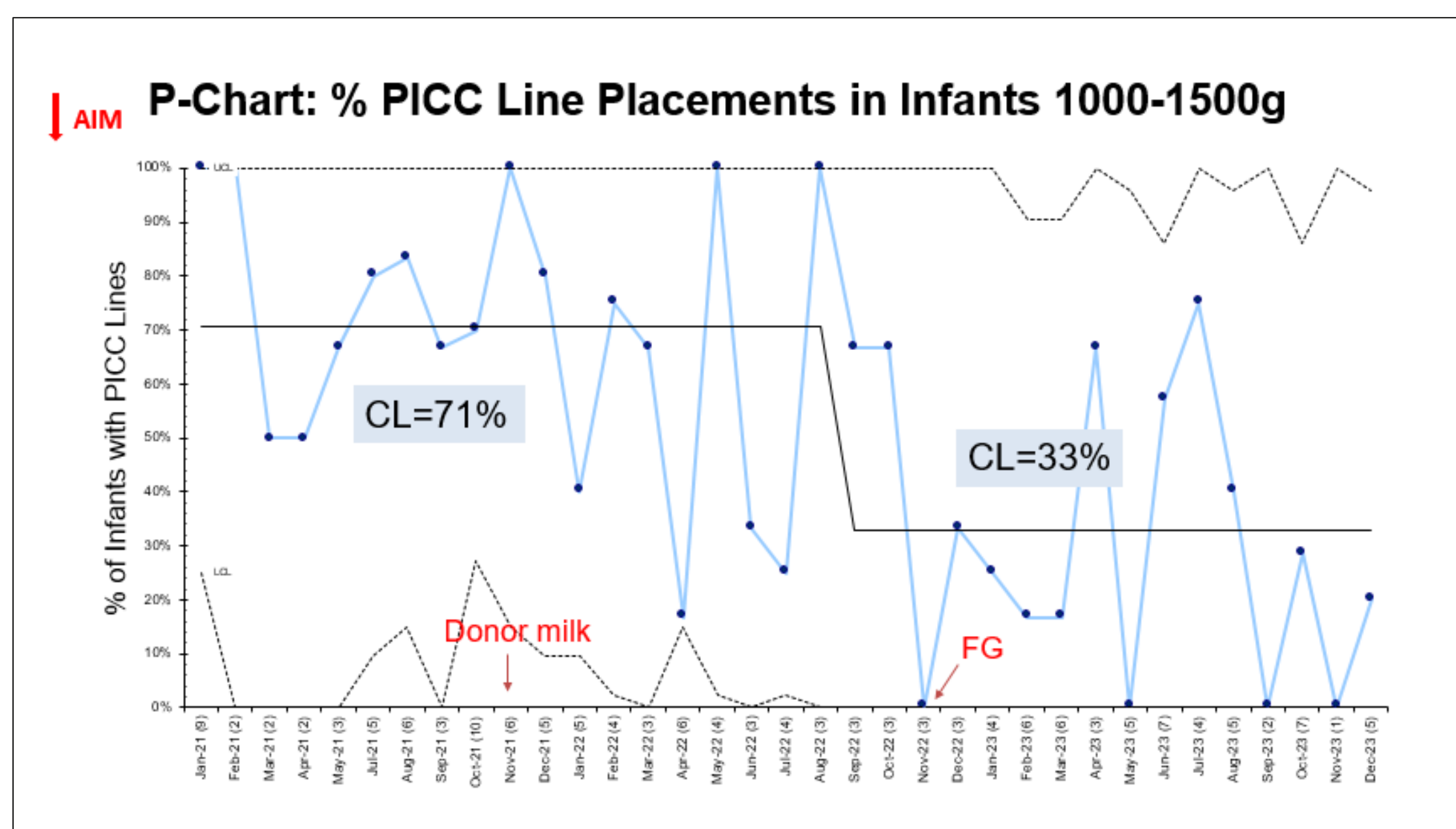
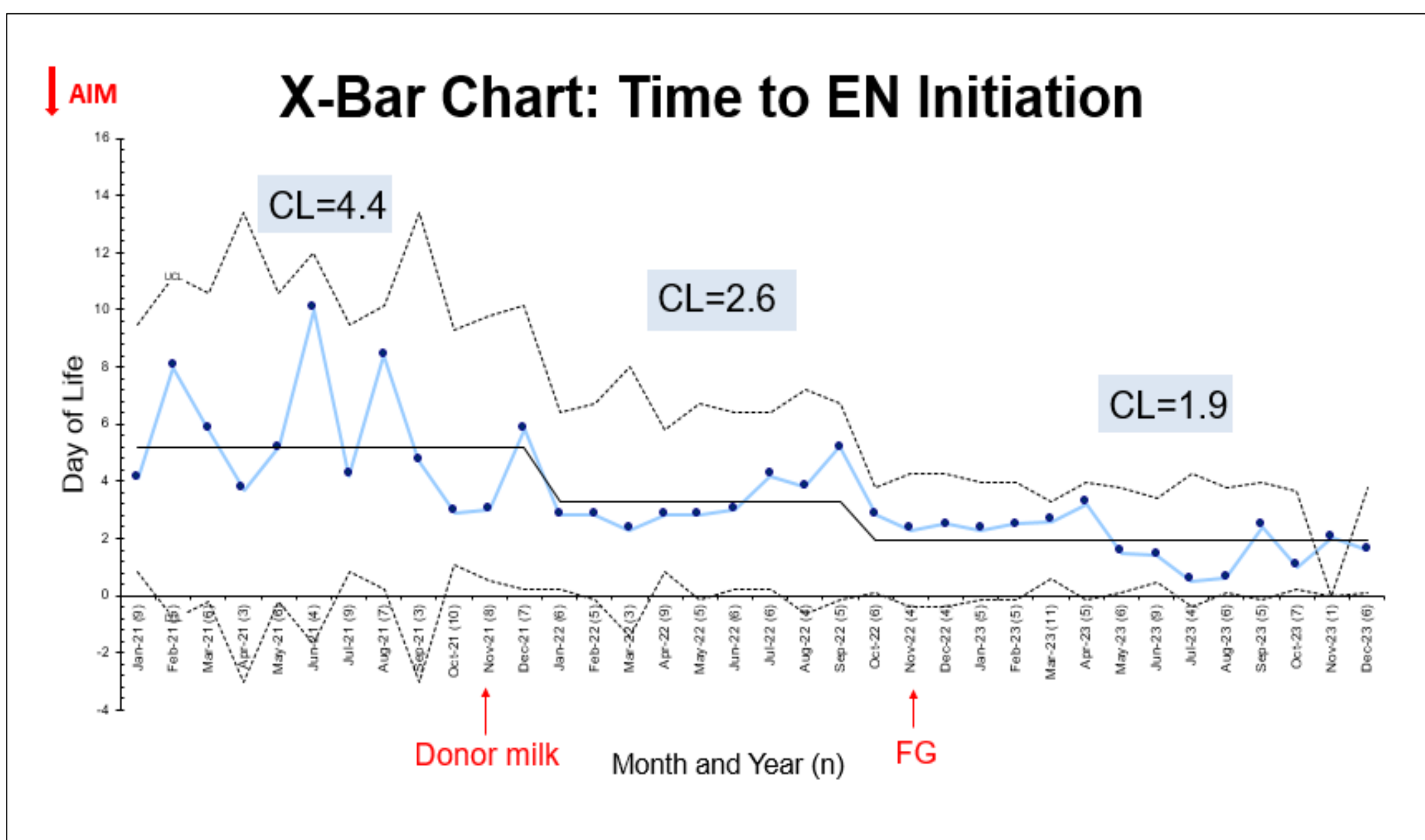
1. Initiation of a donor milk program (November 2021)
2. Implementation of our FG (November 2022)

Measures:

Outcome: Time to EN initiation, time to full EN

Process: TPN days, central line days for nutritional needs, PICC placements in infants 1000-1500g

Balancing: NEC and growth parameters



	Before Donor Milk (n = 66)	+Donor Milk (n = 67)	+FG (n = 78)	Donor Milk vs. FG
Time to EN initiation (d) Median (IQR)	4 (26)	3 (2.3)	1 (1)	$P = 1e-5$
Time to Full EN (d) Median (IQR)	20 (23.5)	16 (9.8)	11 (9.8)	$P = 6e-5$
CL Days Median (IQR)	23 (26)	15.5 (15)	7 (15)	$P = 0.002$
PICC line placements (%)	79	65	32	$P = 0.008$
Any NEC (%)	4.1	5.8	3.4	$P = 0.54$

Results: Our results demonstrate a 56% reduction in time to initiating EN, a 35% reduction in time to achieving full EN and a 41% reduction in central line days (not shown). Additionally, in infants 1000-1500g there was a 54% overall reduction in PICC placements. We saw no increase in NEC rate and no clinically significant change in infant growth velocity.

Conclusions: The use of a standardized FG resulted in decreased time to full enteral feeds, decreased central line days, and fewer PICC placements with no increase in NEC or clinically significant change in growth velocity. Additionally, in a post-hoc analysis, we were able to show a significant impact of the FG on all outcome measures in addition to the donor milk program.

Next Steps: Future directions includes targeted interventions to achieve improved compliance to the guideline, achieve improvement in measures in the ELBW population, and improve parental breast milk provision in VLBW infants.

Standardization of Discharge Instructions for Mild Traumatic Brain Injury/Concussion in Children Presenting to ED: A Quality Improvement Project

Authors: Niralee Rana BS, Nicole Gerber MD, Michael Alfonzo MD, Snezana Nena Osorio MD, Deborah Levine MD

Statement of the Problem: Mild traumatic brain injuries (mTBI) or concussions account for high rates of emergency department (ED) visits. Concussion diagnoses are used less often in young children leading to a variability in parental education and discharge instructions. Lack of discharge guidance may increase parental anxiety, impact recovery, and increase ED visits.

Objective: To increase the proportion of ED patients discharged with age-appropriate instructions for mTBI to 50% by June 1, 2024.

Methods: This observational time series with planned sequential experimentation is in progress at a Pediatric ED affiliated with an urban academic medical center from October 2022- June 2024. All pediatric ED patients aged 0-18 years with mTBI or concussion associated ICD-10 codes were included. An interdisciplinary team including ED faculty, pediatric neurology, nursing, clinical informatics, and QI specialist developed the key driver diagram (Fig 1). Interventions derived from tertiary drivers included ED staff education and creation of an electronic medical record (EMR) smart phrase of standardized discharge instructions for mTBI or concussion for children ages 0-5 years and ≥ 6 years based on CDC guidelines and expert consensus. Data were collected via EMR review. Our process measures included percentage of patients who received discharge instructions with 1) head injury specific precautions, 2) cognitive and 3) physical limitations, age-appropriate instructions related to 4) cognitive and 5) physical limitations and 6) clinical diagnosis of concussion. Our balancing measures include head CT utilization. Data were displayed and analyzed using statistical process control “P” charts and API rules were applied to detect special cause variation.

Results: In this study of 256 patients, 71% of patients received head injury specific precautions discharge instructions (Fig 2), 48% received information about cognitive and physical limitations and 30% had a diagnosis of concussion. We observed an improvement in the percentage of patients who received age-appropriate instructions for both cognitive and physical limitations from 38% to 98% over the start of our first PDSA cycle (Fig 3). There was no increase in head CT utilization.

Conclusion: Creating age-appropriate standardized EMR discharge smart phrases for physical and cognitive recovery led to increased incorporation of these discharge instructions from the Pediatric ED. Next steps include analyzing our data by race, ethnicity and language as well as assessing the impact of our interventions on parental anxiety.

Standardization of Discharge Instructions for Mild Traumatic Brain Injury/Concussion in Children Presenting to ED: A QI Project

Niralee Rana, BS, Nicole Gerber, MD, Michael Alfonzo, MD, Snezana Nena Osorio, MD, Deborah Levine, MD | May 2024

Quality in Care Symposium

Problem Statement:

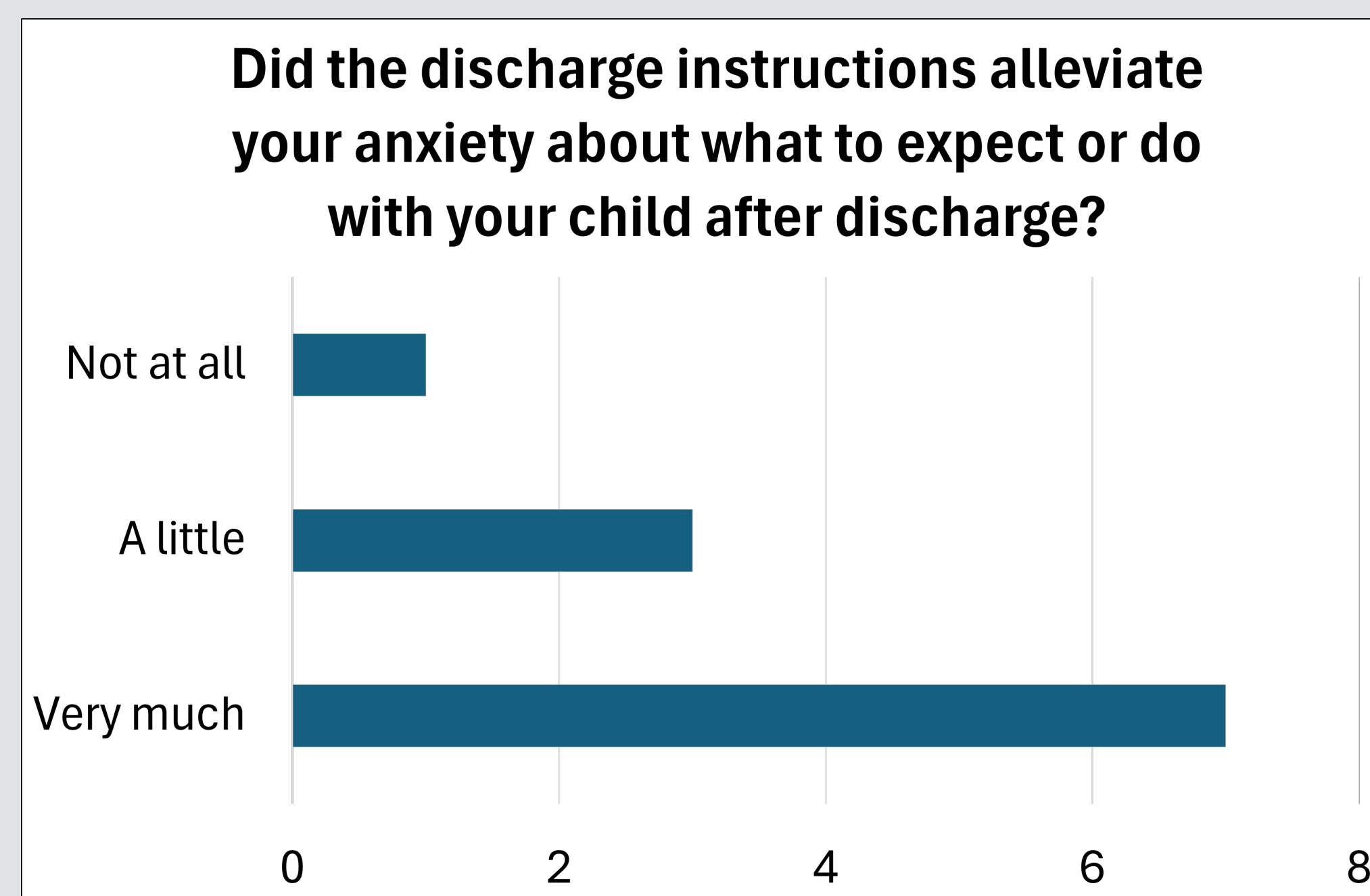
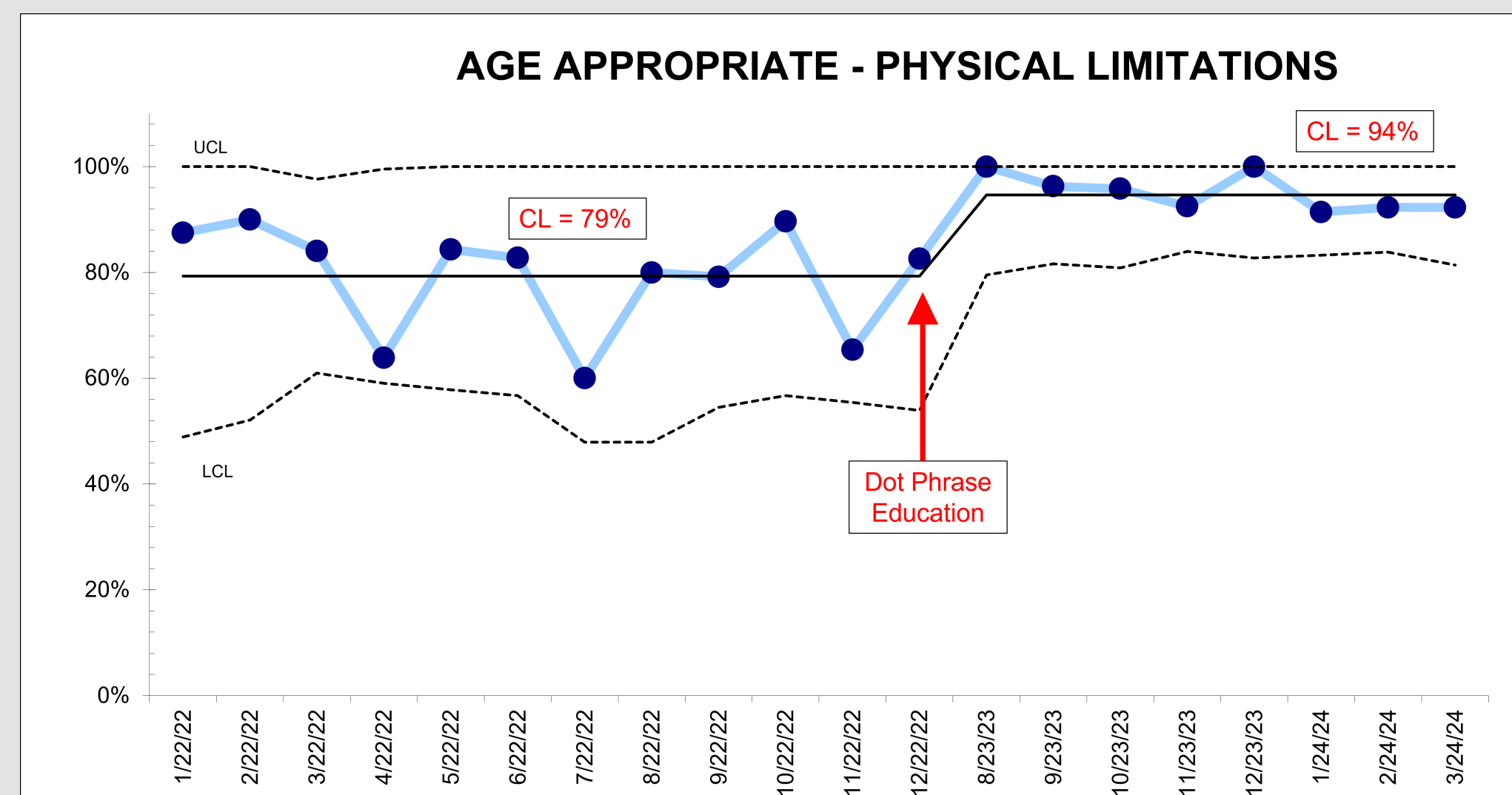
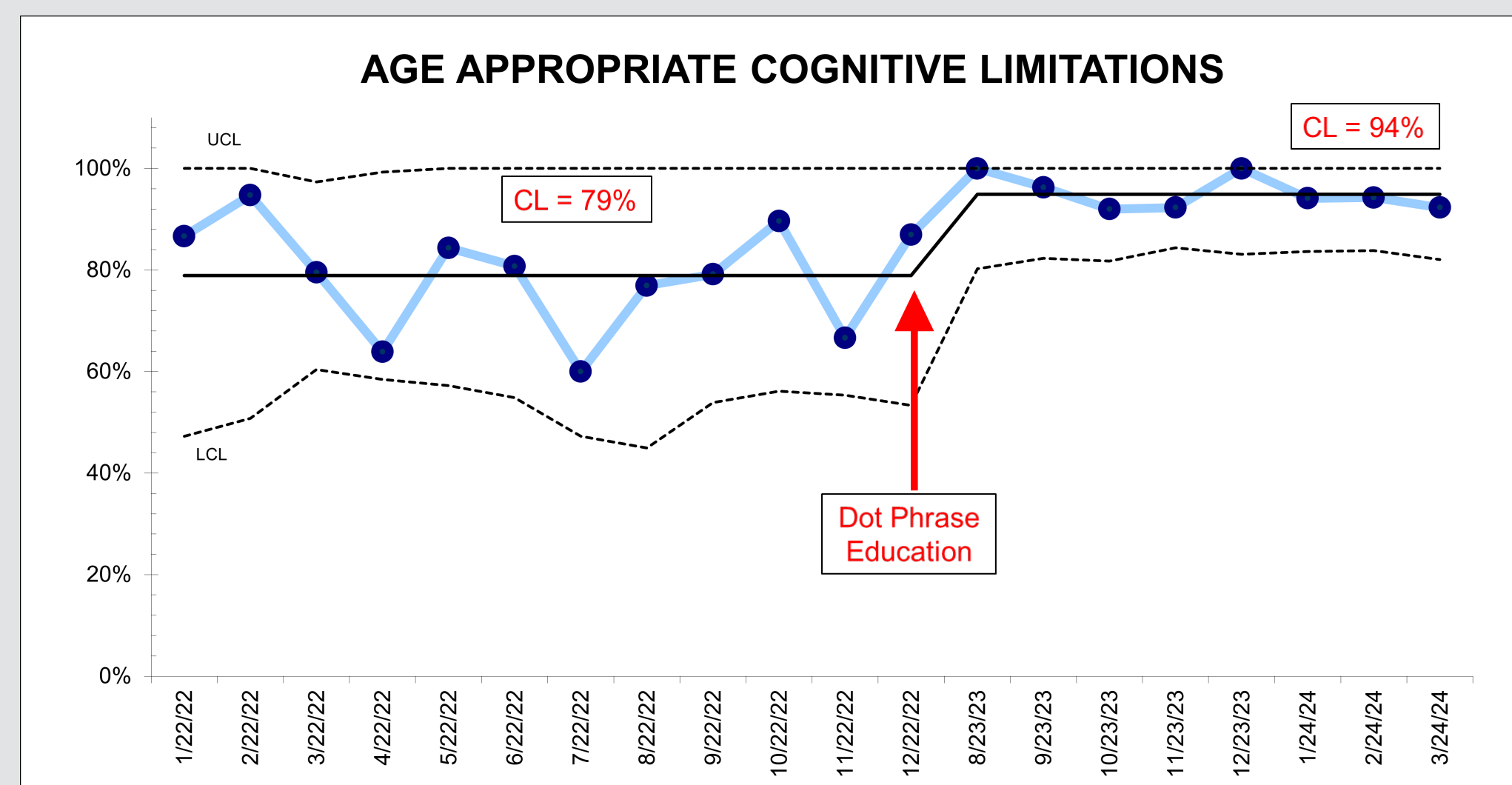
- Mild traumatic brain injuries (mTBI) or concussions comprise high rates of emergency department (ED) visits.
- Concussion diagnoses are also used less in young children with variability in parental education and discharge instructions.
- A lack of age-appropriate discharge guidance may increase parental anxiety, negatively impact recovery, and increase ED visits.

Objective/Aim Statement:

- To increase the proportion of ED patients discharged with age-appropriate instructions for mTBI by 50% by June 1, 2024.
- To determine the impact age-appropriate instructions have on decreasing parental anxiety.

Design/Methods:

- Key interventions: Development of EMR smart phrases with standardized discharge instructions (based on CDC guidelines) for: children 0-5yrs and ≥ 6yrs.
- Preliminary data collected via EMR: Oct - Sept 2023, followed by smart phrase education: Aug 2023 - Mar 2024.
- Process measures: % patients receiving discharge instructions with head injury specific precautions, age-appropriate physical/cognitive limitations, and clinical diagnosis of concussion.
- Balancing measures: Head CT utilization
- Data analyzed using statistical process control “P” charts (API rules for special cause variation).



Results:

- In 976 patients, the percentage of patients who received age-appropriate instructions for both cognitive and physical limitations improved from a mean of 79% to 94%.
- Parental surveys showed 63% of parents found discharge instructions very helpful in alleviating stress and 80% found it very helpful while watching over their child in recovery.
- No increases in head CT utilizations

Conclusions/Lessons Learned:

- Creating age-appropriate standardized EMR discharge smart phrases for physical and cognitive recovery led to increased incorporation of discharge instructions from the Pediatric ED.
- Parental surveys provided feedback and illustrated the impact of age-appropriate discharge instructions on parents/guardians caring for children during recovery from mTBI or concussions.

Next Steps:

- Disparities in use of smart phrase across racial/ethnic populations will be further investigated and incorporated into educational curriculum.
- Increasing the use of translated instructions according to patients' preferred language can aid in elimination barriers and tackling parental anxiety.

Improving Antibiotic Therapy for Outpatient Community Acquired Pneumonia

Authors: Harris Nadelman BS, Nicole Gerber MD, Michael Alfonzo MD, Vivian Kum PharmD, Karen Acker MD, Jin Young Han MD

Background: Recent literature supports duration of antibiotic therapy for pediatric community acquired pneumonia ranging from 3-7 days. There is also an NYP enterprise guideline in accordance with this recommendation, specifically suggesting high dose amoxicillin as first line therapy. Antibiotic stewardship is important to protect patients from harms against unnecessary antibiotics and combat antibiotic resistance. However, currently in our Pediatric Emergency Department, many patients are being treated with antibiotics for a 10-day course.

Objective: We aim to reduce the average duration of antibiotic therapy from 8.3 days to 7 days for children diagnosed with community acquired pneumonia who are well enough to be treated as outpatients between November 2023 and June 2024

Methods: This ongoing QI project is an observational study with planned sequential experimentation being conducted in the pediatric emergency department (ED) at an urban tertiary care medical center. Key members from pediatric emergency medicine, pediatric infectious disease and ED pharmacy collaborated to create a key driver diagram (. Patients were excluded from the antibiotic recommendations if they were <6 months old, had a complex past medical history (including immunodeficiency/unvaccinated), required admission to the hospital, were treated with antibiotics within the last 14 days, or had complicated/severe pneumonia (multifocal, aspiration, effusion). Education was provided to Pediatric Emergency Medicine (PEM) Attendings and ED pharmacists and is planned for pediatric residents. ED pharmacists monitor antibiotic prescriptions from 9a-9p M-F and were encouraged to reach out to the medical team for any prescriptions with a length greater than 7 days. Our primary outcome measure is the duration of antibiotic therapy prescribed, with the type of antibiotic as a secondary outcome measure. The process measure is the number of pharmacy interventions to providers who prescribed a longer duration. Balancing measures include markers of treatment failure. The equity component is variation in antibiotic length based on race/ethnicity. Measures are gathered via record review. Run charts are utilized to display and analyze the data. Run chart rules are applied to detect signal of change.

Results: In the 5 months since implementation 107 patients with pneumonia were seen in the PED. Of the 72 eligible patients, the median duration of antibiotic therapy decreased from 8.3 days to 7.4 days. 64 (89%) patients were treated with the appropriate first line antibiotic. Pharmacists reached out to the provider team 1 time to intervene on a regimen prescribed for 10 days. Review of discharge antibiotic scripts reports also revealed 2 missed opportunities for intervention during hours where pharmacists were monitoring prescriptions. There were 4 (6%) patients who had a return visit, 2 of whom were admitted, none were due to insufficient antibiotic duration. There were no variations in average antibiotic duration based on race or ethnicity pre or post intervention.

Conclusion: An educational intervention with real time feedback from clinical pharmacists has been effective in promoting antibiotic stewardship for outpatient community acquired pneumonia. There are opportunities to leverage electronic health record tools to improve adherence to best practices.



Problem

Despite published evidence and local hospital guidelines supporting shorter antibiotic durations for pediatric community-acquired pneumonia (CAP), many children are prescribed a 10-day course for CAP in our Pediatric Emergency Department (PED).

Objective

To reduce the **median** duration of antibiotic therapy from 8.3 days to 7 days for children diagnosed with community acquired pneumonia being discharged from the PED at Weill Cornell between November 2023 and June 2024.

Methods

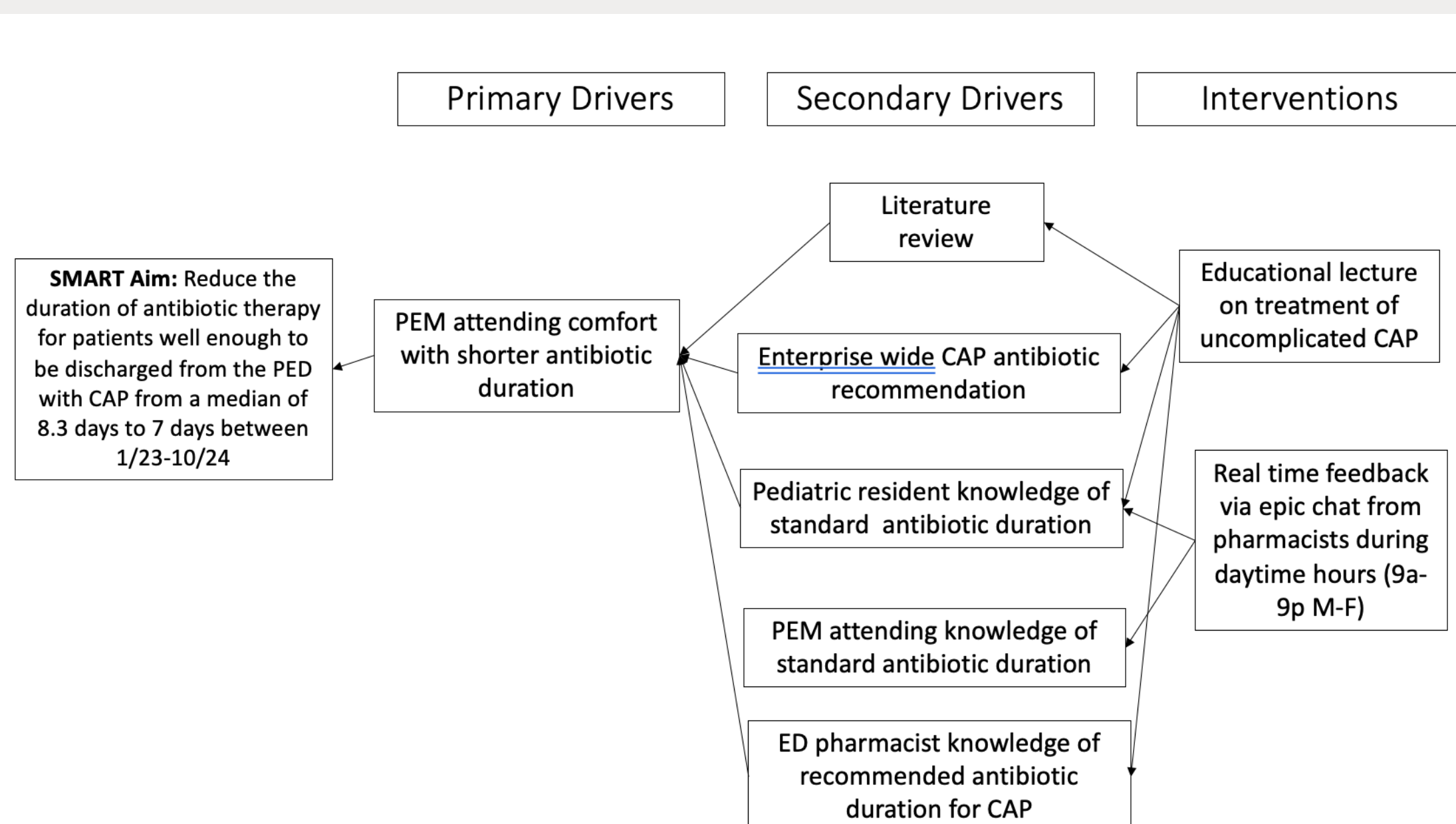
- Design:
 - Observational study with planned sequential experimentation conducted in the PED.
 - Key members from Pediatric Emergency Medicine (PEM), Pediatric Infectious Disease and ED Pharmacy collaborated to create a key driver diagram.
- Interventions:
 - Education to PEM attendings, ED pharmacists and pediatric residents about pediatric CAP evidence and current NYP guideline recommendations
 - PEM providers given monthly feedback based on review of prescribing trends
 - ED pharmacist active monitoring and live feedback on discharge antibiotic prescriptions from 9a-9p M-F
- Exclusion Criteria:
 - <6 months old, complex past medical history (including immunodeficiency/unvaccinated), admission to the hospital, previous antibiotic use within past 14 days, complicated/severe pneumonia (multifocal, aspiration, effusion on chest x-ray).

Measures*

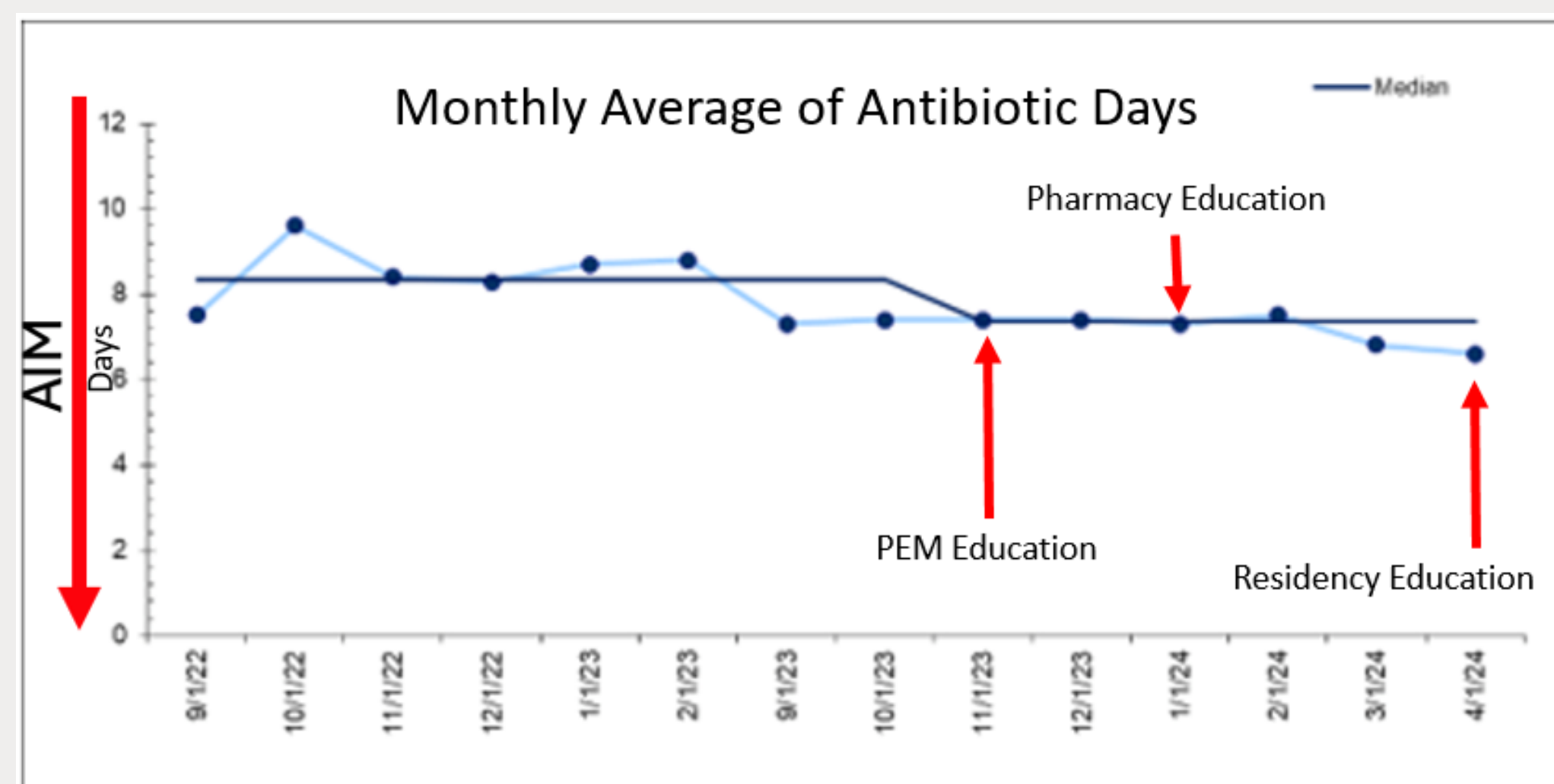
- **Primary outcome:** Duration of antibiotic therapy prescribed
- **Secondary outcome:** Type of antibiotic
- **Process:** Number of pharmacy interventions to providers who prescribed a longer duration
- **Balancing:** Markers of treatment failure
- **Equity:** Variation in antibiotic duration based on race and ethnicity

*Measures were gathered via chart review. Run charts were utilized to display and analyze the data. Run chart rules were also applied to detect signal of change.

Key Driver Diagram



Primary Outcome Measure



Results:

- 107 patients with CAP were seen in the PED and treated as outpatients.
- **Primary Outcome:** Of 72 eligible patients, median duration of antibiotic therapy **decreased from 8.3 days to 7.4 days.**
- **Secondary Outcome:** 64 (89%) patients were treated with the appropriate first line antibiotic (high dose amoxicillin).
- **Process:** Pharmacists reached out to the provider team 1 time to intervene on a regimen prescribed for 10 days.
 - Review of discharge antibiotic prescriptions revealed 2 missed opportunities for intervention.
- **Balancing:** 4 (6%) patients had an ED return visit within 72 hours.
 - 2 (3%) patients required hospital admission, none due to insufficient antibiotic duration.
- **Equity:** There was no significant variation in mean antibiotic duration associated with race:
 - Pre intervention mean: 8.4 (SD 0.2) vs. post intervention mean: 7.3 (SD 0.4).
 - There was also no significant variation in mean antibiotic duration associated with ethnicity (Hispanic, non-Hispanic, declined/other):
 - Pre intervention mean: 8.9 (SD 0.7) vs. post intervention mean: 7.4 (SD 0.2)

Conclusions/Lessons Learned:

- An educational intervention with real time feedback from clinical pharmacists has been effective in promoting antibiotic stewardship for the outpatient treatment of community acquired pneumonia
- There are opportunities to leverage electronic health record tools to improve adherence to best practices

Next Steps:

- Create standardized discharge instructions
- Create discharge smartset orderpanel for ease of ordering antibiotic prescriptions at the time of discharge with preselected duration of therapy
- Further evaluate antibiotic stewardship for patients with amoxicillin allergy
- Expand study cohort to include complicated pneumonia treated as an outpatient

Safety of a Community Tele-Paramedicine Program: Results of a Quality Assurance Review

Authors: Emilee Nawa PA-C, Alexander Fortenko MD MPH, Jiancheng Ye PhD, Matthew McCarty MD, Peter Greenwald MD MS, Rahul Sharma MD MBA, Brock Daniels MD MPH

Department: Emergency Medicine

Statement of the Problem: The Community Tele-Paramedicine (CTP) Program was first piloted in the Emergency Department (ED) at New York Presbyterian Weill Cornell Medicine in 2017. This service cares for patients by bringing ED care into their home, often after recent ED visits and hospitalizations. A formal quality assurance program (QA) was created initially to evaluate care provided to these patients, and further developed to assess patient outcomes and program efficacy in medically complex patients.

Objective/Aim of the Study: CTP combines paramedic home visits with emergency physician (EP) telehealth visits to bring ED care to the home to manage patients living with multiple chronic illnesses, including heart failure. We describe the results of a QA program implemented to monitor CTP interventions and outcomes such as ED return visits or readmissions.

Project Design/Methods: CTP operates within a large, urban, integrated health system serving six academic and community hospitals. Patients are referred after an acute care episode such as an ED visit or hospital admission. Weekly chart reviews were performed to abstract clinical data including patient and visit information, EP name, medications administered, ED transports during encounter, return ED visit and/or hospital admission within 30 days of CTP visit, and 30-day readmissions. All return visits were reviewed during CTP and departmental QA committee meetings comprised of CTP EPs, CTP medical director, and departmental quality leaders to assess adverse events (medication errors/reactions, unexpected changes in clinical condition, unplanned healthcare visits or death) related to CTP encounters and determine if return visits were preventable.

Results: A total of 2,063 visits were reviewed between 08/2022-02/2024, including 986 unique patients. On average, 16.2 new patients were enrolled monthly, for a total of about 54.8 patients per month, accounting for about 102.6 CTP monthly visits. Medications were administered in 368 visits (19.9%), most commonly intravenous furosemide (93.2%) with a mean dose of 103.5mg (range: 20-200mg). Only 63 (3.4%) CTP visits resulted in immediate ED transport. There were 233 (12.6%) ED visits within 30 days of a CTP visit resulting in 151 (8.2%) admissions. Among patients enrolled, the mean number of 30-day return ED visits and readmissions was 2.7 and 2.3 events per month, respectively. During the study period, 12 CTP patients expired (1.2%). Monthly QA reviews did not identify adverse events or preventable return ED visits or admissions.

Conclusions: Quality review of CTP operational data identified few immediate ED transports, at only a rate of 3.4%. This suggests the majority of patients can be managed by such a program without need for escalation to the ED. The relatively low mortality rate at 1.2% and only 2.7 and 2.3 events monthly of 30-day return visits and 30-day readmissions in medically complex patients highlights the programs efficacy. The absence of serious adverse events related to CTP participation suggests that CTP can safely manage patients at home following acute care encounters and optimize care delivery.

Safety of a Community Tele-Paramedicine Program: Results of a Quality Assurance Review

Emilee Nawa, PA-C Alexander Fortenko, MD MPH Jiancheng Ye, PhD Matthew McCarty, MD
Peter Greenwald, MD MS Rahul Sharma, MD MBA Brock Daniels, MD MPH

Problem Statement

The Community Tele-Paramedicine (CTP) Program, operated through the Emergency Department (ED) at New York Presbyterian Weill Cornell Medicine, has conducted over 5000 home visits since 2019. This service cares for patients by bringing ED care into their home, often after recent ED visits and hospitalizations, by combining in-person community paramedic visits with facilitated telehealth encounters with emergency physicians (EPs). A formal quality assurance program (QA) was created initially to evaluate care provided to these patients, and further developed to assess patient outcomes and program efficacy in medically-underserved patients living with multiple chronic illnesses, including those with advanced heart failure.

Objective / Aim Statement

We describe the results of a QA program implemented to monitor interventions and outcomes such as ED return visits or readmissions associated with CTP.

Design/Methods

CTP operates within a large, urban, integrated health system serving six academic and community hospitals. Patients are referred after an acute care episode such as an ED visit or hospital admission. Weekly chart reviews were performed to abstract clinical data including patient and visit information, EP name, medications administered, ED transports during encounter, return ED visit and/or hospital admission within 30 days of CTP visit, and 30-day readmissions. All return visits were reviewed during CTP and departmental QA committee meetings comprised of CTP EPs, CTP medical director, and departmental quality leaders to assess adverse events (medication errors/reactions, unexpected changes in clinical condition, unplanned healthcare visits or death) related to CTP encounters and determine if return visits were preventable.



Results

- **2,063 visits** were reviewed between 08/2022-02/2024, including 986 unique patients.
- **102.6 visits per month** including **16.2 new patients** enrolled monthly (54.8 patients/month)
- Medications were administered in 368 visits (19.9%), most commonly intravenous furosemide (93.2%) with a mean dose of 103.5mg (range: 20-200mg)
- Only 63 (**3.4%**) **CTP visits resulted in immediate ED transport** during a CTP visit
- **233 (12.6%) ED visits within 30 days** of a CTP visit resulting in 151 (8.2%) admissions.
- 30-day return ED visits and readmissions was **2.7 and 2.3 events per month**, respectively.
- 12 CTP patients expired (1.2%).
- Monthly QA reviews did not identify adverse events or preventable return ED visits or admissions

Conclusion / Lessons Learned

Despite providing remote management for a medically-complex cohort of nearly 1000 patients with frequent ED visits and hospital admissions prior to CTP enrollment, **few CTP encounters required immediate ED transport and rates of 30-day ED visits and re-admissions remained low.**

Given the observed low mortality and 30-day return rates and absence of serious adverse events related to CTP participation after systematic QA review suggests **CTP can effectively manage patients at home without negatively impacting patient safety.**

Initiating a Centers for Medicare and Medicaid Services Pilot Program: Emergency Triage, Treat, and Transport (ET3)

Authors: Emilee Nawa PA-C, Matthew Laghezza PA-C MBA, Keith Herrera EMT-P, Michael Stone MD, Peter Greenwald MD MS, Alexander Fortenko MD MPH, Brock Daniels MD MPH, Rahul Sharma MD MBA

Department: Emergency Medicine

Statement of the Problem: When a person experiencing a medical issue calls 911, the responding ambulance team takes the person straight to the emergency department, even if they did not need emergency medical treatment at a hospital. Patients might incur higher out-of-pocket costs, and they may have also taken up limited hospital bed space, resulting in longer wait times for other patients in need of critical care.

Objective/Aim of the Study: The Emergency Triage, Treat, and Transport (ET3) Model enabled ambulance teams to offer other options to a person needing less serious medical attention. The initiation of this program allowed for Emergency Medical Services (EMS) to offer medical services to deliver on-scene telehealth consultation with an advanced practice provider (APP) to allow for treat-in-place of the patient rather than transport to the emergency department (ED) and reimbursement without transporting the patient. New York Presbyterian (NYP) Weill Cornell Medical Center (WCMC) implemented this ET3 model with a total of five ambulance teams by May 2023.

Project Design/Methods: All telehealth providers and EMS crews were trained on ET3 protocol on an individualized one-on-one basis with an overview of the program, inclusion and exclusion criteria, treat-in-place procedure and technology, and documentation in the electronic medical record (EMR). The telehealth provider on call for ET3 was available from 10:00am-8:00pm Eastern Standard Time (EST) on Mondays-Fridays each week excluding national holidays.

Results: For all 5 total ambulances (2 from WCMC and 3 from LMH), all patient encounters by these trained teams during the ET3 provider times (Monday-Friday 10am-8pm) were reviewed each for approximately 2 months after initiating the ET3 program. A total of 998 patient encounters (441 encounters with EMS from WCMC and 557 encounters with EMS from LMH) were reviewed after the initiation of the ET3 program. Of the total 998 patient encounters reviewed over an approximate 4-month period across 5 ET3 trained EMS ambulance crews, only 2 patients (or 0.20%) had successful ET3 patient encounters completed.

Conclusions: Despite the low number of encounters meeting inclusion criteria, successful completion of calls was achieved, suggesting effectiveness in handling qualifying cases, however, the proportion of patient encounters meeting criteria was overall very low. The program was run until December 31, 2023, when CMS ended the program two years prior to the original intended end date due to overall participation and interventions being lower than projected.

Initiating a Centers for Medicare and Medicaid Services Pilot Program: Emergency Triage, Treat, and Transport (ET3)

Emilee Nawa, PA-C Matthew Laghezza, PA-C MBA Keith Herrera, EMT-P Michael Stone, MD
Peter Greenwald, MD MS Alex Fortenko, MD MPH Brock Daniels, MD MPH Rahul Sharma, MD MBA

Problem Statement

When a person experiencing a medical issue calls 911, the responding ambulance team takes the person straight to the emergency department, even if they do not need emergency medical treatment at a hospital.

Objective / Aim Statement

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Design/Methods



All telehealth providers and EMS crews were trained on ET3 protocol on an individualized one-on-one basis with an overview of the program, inclusion and exclusion criteria, treat-in-place procedure and technology, and documentation in the electronic medical record (EMR).

The telehealth provider on call for ET3 was available from 10:00am-8:00pm Eastern Standard Time (EST) on Mondays-Fridays each week excluding national holidays. Telehealth providers included Physician Assistants (PAs) and Nurse Practitioners (NPs). Emergency Medical Technicians (EMTs) who were trained in this pilot program included those working morning, evening or night shifts.

Results

For all 5 total ambulances (2 from WCMC and 3 from LMH), all patient encounters by these trained teams during the ET3 provider times (Monday-Friday 10am-8pm) were reviewed each for approximately 2 months after initiating the ET3 program. A total of 998 patient encounters (441 encounters with EMS from WCMC and 557 encounters with EMS from LMH) were reviewed after initiation of ET3 program. Of the total 998 patient encounters reviewed over an approximate 4-month period across 5 ET3 trained EMS ambulance crews, only 2 patients (or 0.20%) had successful ET3 patient encounters completed.

Conclusion / Lessons Learned

Despite the low number of encounters meeting inclusion criteria, successful completion of calls was achieved, suggesting effectiveness in handling qualifying cases, however the proportion of patient encounters meeting criteria was overall very low. The program was run until December 31, 2023, when CMS ended the program two years prior to the original intended end date due to overall participation and interventions being lower than projected.

Next Steps

Despite this iteration of treatment at home being discontinued in NYC, there is evidence from other parts of the country that it does work. With public service announcements and greater comfort with telemedicine, patients may be more willing to use this type of service.

A Window of Opportunity – Integration of Genetic Cancer Risk Assessment Into Obstetrical Care With a Smartphone-Based Tool.

Authors: Benjamin J. Grant, BS; Moeun Son, MD, MSCI; Christina Pardo, MD, MPH; Jesse T. Brewer, BA; Isabelle Chandler, BA; Shayan Dioun, MD; Mayuri Patel, MD; Auja McDougale, MD; Jessica Scholl, MD; Eloise Chapman-Davis, MD, MPH; Ravi N. Sharaf MD, MS; Melissa K. Frey, MD

Department: Weill Cornell Department of Obstetrics and Gynecology, Division of Gynecologic Oncology

Statement of the Problem: Approximately 25% of the general population meet high-risk clinical criteria making them eligible to receive genetic testing for hereditary cancer syndromes. However, most are unaware and under-recognition is more pronounced in racial, ethnic, and linguistic minorities. Pregnancy offers a unique period of regular contact with the medical system, particularly for those from underserved backgrounds. Digital risk stratification tools hold promise for improving access and reducing barriers to genetics services.

Objective: To implement and optimize a digital smartphone-based genetic cancer risk assessment tool offered to obstetrical patients presenting for routine care at a diverse, predominantly Medicaid-insured urban clinic.

Methods: Using the *model for improvement* framework involving Plan-Do-Study-Act cycles, we implemented universal genetic cancer risk assessment via a digital risk assessment tool for patients presenting for obstetrical care. The tool collects personal and family history and performs genetic cancer risk stratification based on the National Comprehensive Cancer Network criteria and generates a lifetime breast cancer risk utilizing the Tyrer-Cuzick model. The primary outcome was patient acceptability of the tool. Secondary outcomes were completion of the tool, accuracy of the tool when compared to review of the electronic medical record, and patient characteristics associated with acceptability and completion. Comparisons were made using Pearson's Chi squared test, Fisher's exact test, and Welch Two Sample t-tests.

Results: One hundred obstetrical patients were approached; 66/100 (66%) accepted and initiated the digital genetic cancer risk assessment; 50/66 (76%) successfully completed the assessment. Median age was 30 years (IQR 26-34). Twenty-seven (27%) identified as Black, 27 (27%) as White, 3 (3%) as Asian, 1 (1%) as Native American, 27 (27%) as Other, and 15 (15%) unknown races. Thirty-nine (39%) patients were Hispanic, 51 (51%) non-Hispanic, and 10 (10%) unknown ethnicities. Twelve (12%) patients were postpartum, 42 (42%) patients were in the 3rd trimester of pregnancy, 36 (36%) in the 2nd trimester, and 10 (10%) in the 1st trimester. Ninety-three (93%) patients completed the assessment in English and 7 (7%) in Spanish. The tool identified 5/50 (10%) patients to be at elevated cancer risk. An additional 3/50 (6%) of patients had an elevated cancer risk not identified by the tool due to missing patient input information. Acceptability of the assessment was similar across all demographic groups (race p-value = 0.8; ethnicity p-value = 0.9; language p-value = 0.7; trimester p-value = 0.5; age p-value = 0.9).

Conclusions: Pregnancy offers a unique window of engagement with the healthcare system and should be considered an opportunity to offer potentially lifesaving genetic cancer risk assessment. Our QI study demonstrates that genetic cancer risk assessment offered at a racially and ethnically diverse obstetrical clinic was acceptable to 66% of patients. Offering genetic cancer risk assessment at the beginning of a clinical encounter during check-in could increase acceptability. Further efforts are needed to improve completion and accuracy of digital genetic cancer risk assessment tools and to expand the tool to linguistically diverse populations.



A Window of Opportunity – Integration of Genetic Cancer Risk Assessment Into Obstetrical Care with a Smartphone-Based Tool

Weill Cornell Medicine Quality Improvement and Patient Safety Symposium
Benjamin J. Grant, BS | May 22, 2024

Problem Statement:

- Approximately 25% of the general population meet high-risk clinical criteria making them eligible for genetic testing for hereditary cancer syndromes.
- However, most are unaware and under-recognition is more pronounced in racial, ethnic and linguistic minorities.
- Pregnancy offers a unique window of regular interface with the healthcare system; particularly for those from underserved backgrounds.
- Artificial intelligence and digital based risk stratification tools have promise of reducing barriers and improving access to genetic services.

Objective/Aim Statement:

- To implement and optimize a digital genetic cancer risk assessment tool offered to obstetrical patients presenting for routine care at a diverse, predominantly Medicaid-insured urban clinic.

Design/Methods:

- Using the model for improvement QI framework, we implemented universal genetic cancer risk assessment via a digital risk assessment tool for patients presenting for routine obstetrical care.
- The primary outcome was patient acceptability of the tool.
- Secondary outcomes were completion of the tool, accuracy of the tool, and patient characteristics associated with acceptability and completion.

Table 1: Patient characteristics and acceptance of digital genetic cancer risk assessment.

Characteristic	Overall (N=100)	No (N=34)	Yes (N=66)	P-Value
Race				0.8
Black	27 (27%)	9 (29%)	18 (33%)	
White	31 (31%)	11 (35.5%)	20 (37%)	
Other	27 (27%)	11 (35.5%)	16 (30%)	
Unknown	15 (15%)	3	12	
Ethnicity				0.9
Hispanic	39 (39%)	14 (44%)	25 (43%)	
Non-Hispanic	51 (51%)	18 (56%)	33 (57%)	
Unknown	10 (10%)	2	8	
Language				0.7
English	93 (93%)	31 (91%)	62 (94%)	
Spanish	7 (7%)	3 (9%)	4 (6%)	
Trimester				0.5
1 st	10 (10%)	3 (8.82%)	7 (11%)	
2 nd	36 (36%)	10 (29%)	26 (39%)	
3 rd	42 (42%)	18 (53%)	24 (36%)	
Postpartum	12 (12%)	3 (8.82%)	9 (14%)	
Age				0.9
Median (IQR)	29.5 (26.15, 33.9)	30.0 (26.3, 34.0)	29.0 (26.0, 33.8)	
Mean (SD)	30.1 (6.0)	30.0 (6.0)	30.2 (6.0)	

Figure 1: Digital genetic cancer risk assessment uptake in January and February following one Plan-Do-Study-Act cycle to optimize acceptability.

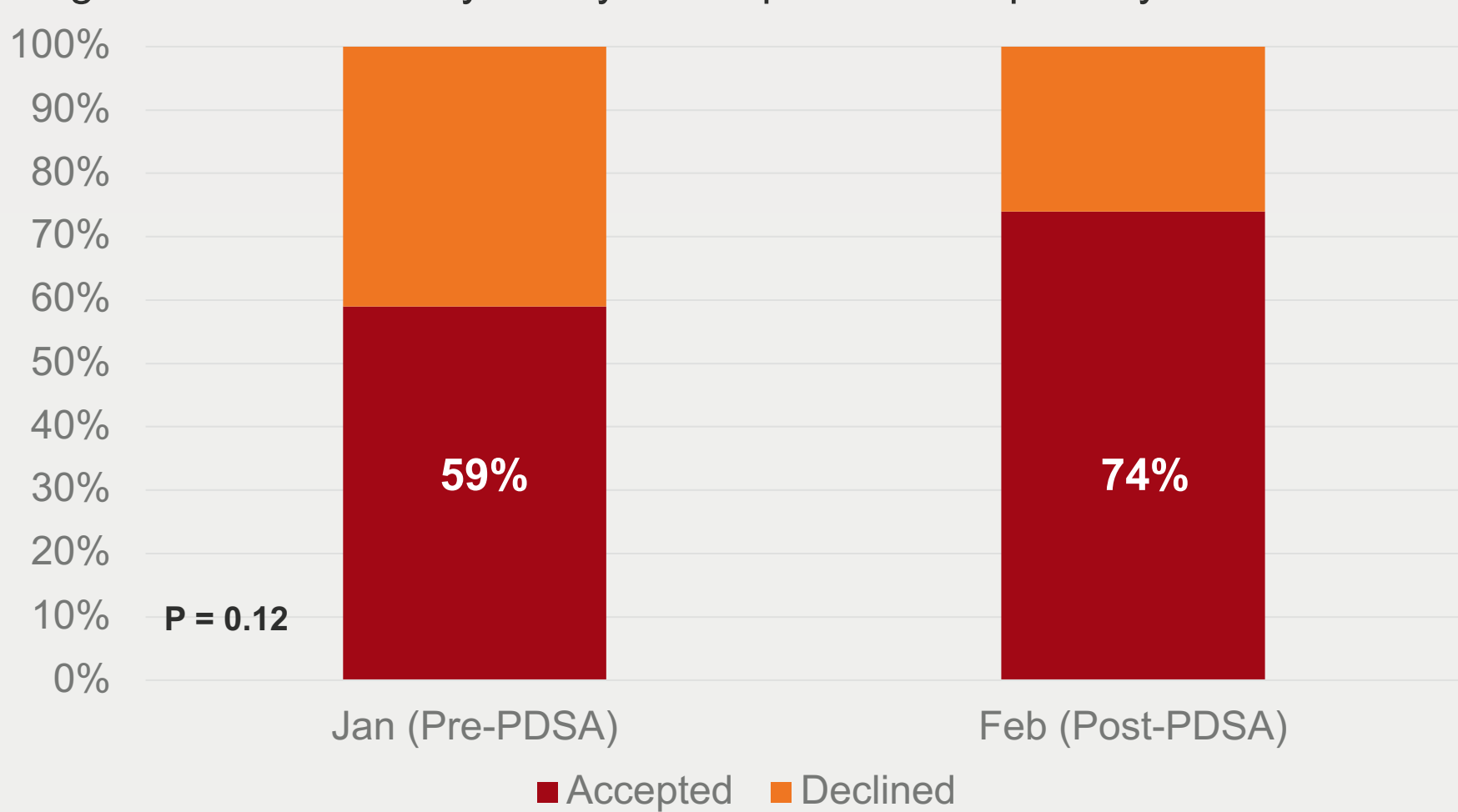
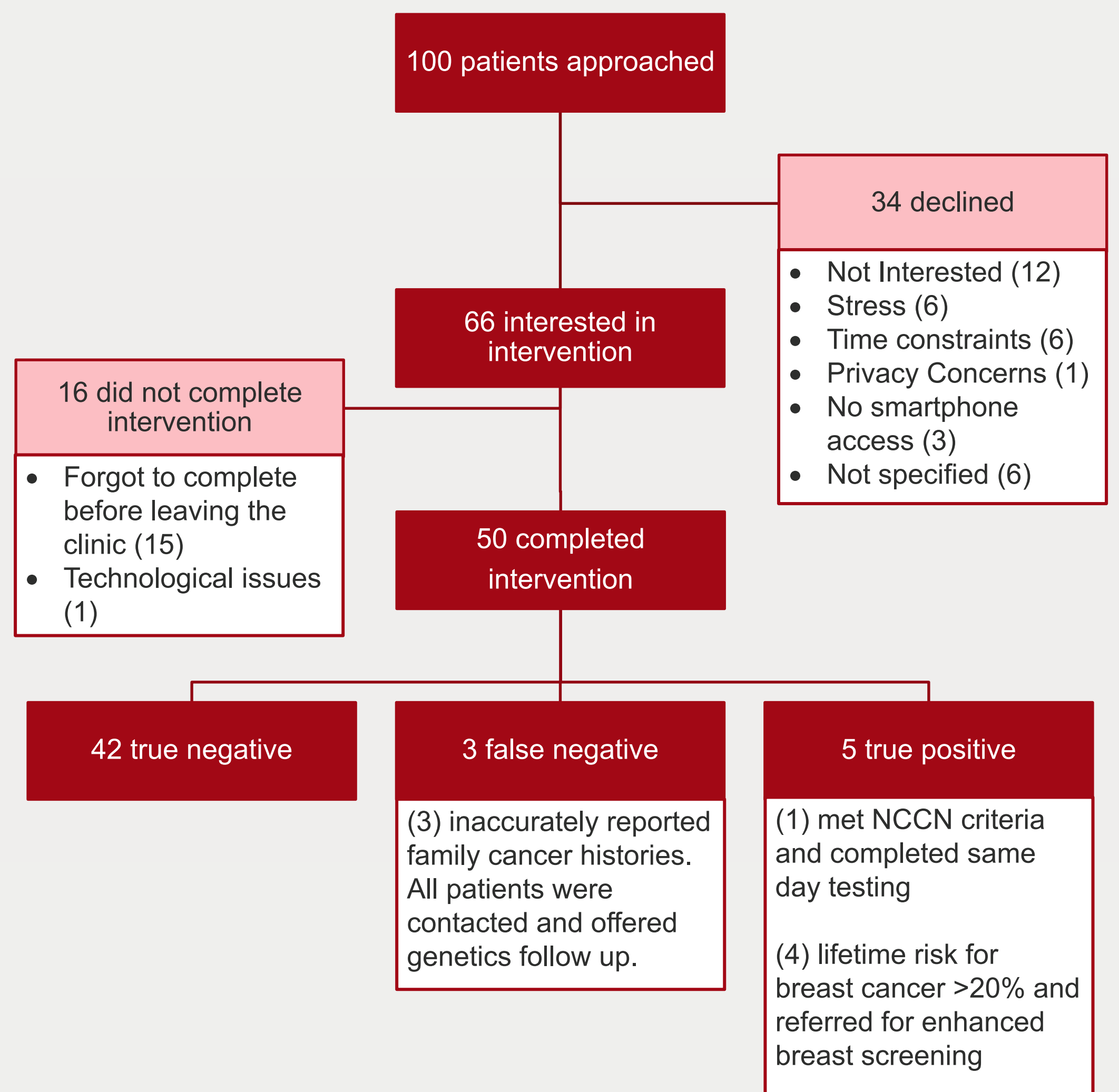


Figure 2: Study flow chart of intervention uptake and digital genetic cancer risk assessment results..



Results

- 66% (66/100) of patients found the tool acceptable.
- 76% (50/66) of patients completed the tool.
- 10% (5/50) of patients were identified as having elevated cancer risk.
- 6% (3/50) of patients had an elevated cancer risk not identified by the tool due to missing patient input information.
- Acceptability of the tool was not associated with any demographic group.

Conclusions/Lessons Learned

- Pregnancy should be considered an opportunity to offer potentially lifesaving genetic cancer risk assessment.
- Genetic cancer risk assessment offered at a racially and ethnically diverse obstetrical clinic was acceptable to 66% of patients.
- Offering genetic cancer risk assessment at the beginning of a clinical encounter during check-in could increase acceptability.

Next Steps

- Further efforts are needed to improve completion and accuracy of digital genetic cancer risk assessment tools.
- Such tools need to be expanded to linguistically diverse populations.

Enhancing Diagnosis and Management of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) through a Targeted Education Intervention in an Outpatient Endocrinology Clinic: A Real-World Quality Improvement Project

Authors: Joyce Lee BA, Carolyn Newberry MD, Sonal Kumar MD, MPH, Michele Yeung MD
Division of Gastroenterology and Hepatology

Statement of the Problem:

Metabolic dysfunction-associated steatotic liver disease (MASLD) is often an asymptomatic condition found in high prevalence in diabetic patients with type 2 diabetes. The fibrosis 4 (FIB-4) score, although underutilized, can aid with early recognition and diagnosis of MASLD in an outpatient setting for patients at high-risk of developing advanced fibrosis.

Objective/Aim of the study:

The aim of our study was to assess current rates of recognition and appropriate management of MASLD in diabetic patients in an outpatient endocrinology clinic, and to enhance these rates via an education-based multi-faceted implementation strategy to improve FIB-4 documentation and appropriate referral of high-risk patients to specialized care.

Project Design/Methods:

Baseline FIB-4 use and referral patterns at the Weill Cornell Medicine Endocrinology Clinic was found via chart review. Rates of FIB-4 documentation and appropriate escalation of care in high-risk patients was then trended from February 2023 to January 2024, during four PDSA cycles targeting provider awareness and EMR charting tools (i.e. SmartPhrase) for automated FIB-4 calculation and risk stratification. Interventions included provider education, reminder e-mails, and individual provider “report cards” of post-intervention performance. The primary outcome of interest was percentage of patients meeting criteria with documented FIB-4 in the EMR (process metric) and referral to Hepatology when appropriate (i.e. for $FIB-4 \geq 1.3$) (outcome metric).

Results:

Overall post-intervention FIB-4 utilization was 47.3% (106/224) compared to 0% pre-intervention. A run chart (Figure 1) of FIB-4 documentation rates showed overall improvement in compared to baseline immediately after each PDSA cycle (i.e. weeks 5, 14, 19, and 33), but sustainability in usage varied. Special-cause variation due to very low in-person patient visits during week 37 is noted. 15% (7/45) of patients with elevated FIB-4 score were appropriately referred to hepatology, an improvement from the baseline of 0.

Conclusions:

Our study showed targeted education and reminder interventions were successful in enhancing FIB-4 use in an outpatient endocrinology clinic at a large academic medical center. Such educational interventions, however, may lose effectiveness over time, emphasizing a need for automated interventions that minimize human error and identify high-risk patients requiring additional Hepatology evaluation.

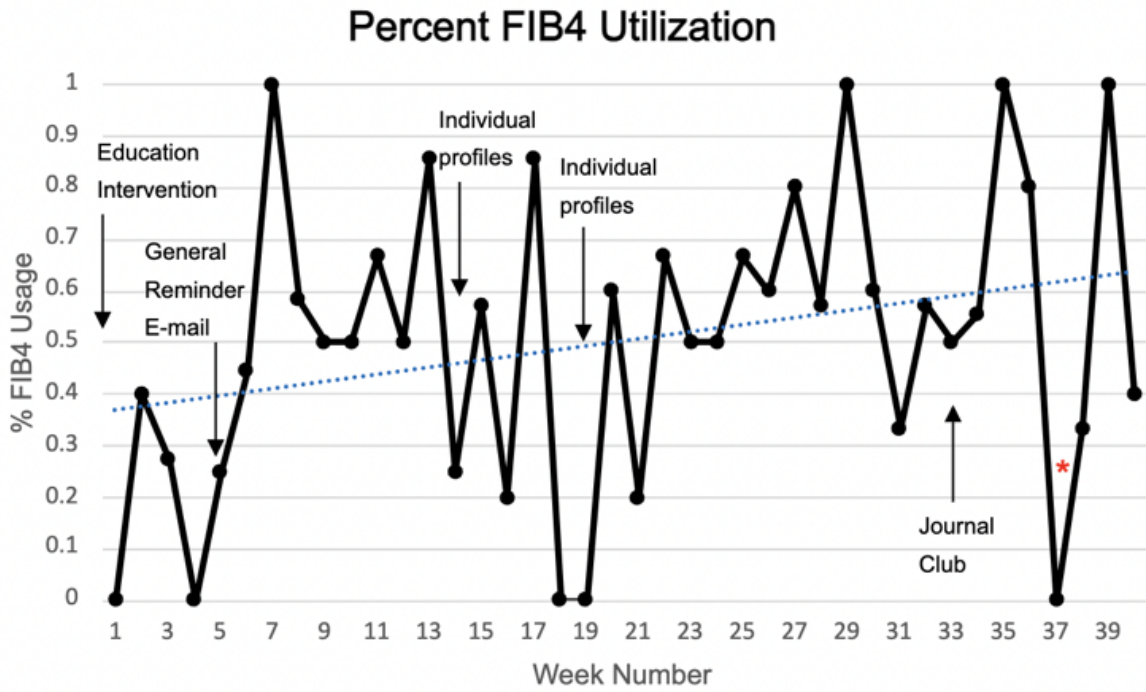


Figure 1. Run chart of Weekly FIB-4 Utilization from February 2023 to January 2024. Percentage of FIB-4 utilization in high-risk patients are shown, with the best-fit line indicated by the dotted blue line. Red asterisk (*) over week 37 represents the special-cause variation due to insufficient patient visits (n=2) that week.



Enhancing Diagnosis and Management of Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) through a Targeted Education Intervention in an Outpatient Endocrinology Clinic: A Real-World Quality Improvement Project

Joyce Lee | May 22, 2024

Problem Statement:

Metabolic dysfunction-associated steatotic liver disease (MASLD) is often an asymptomatic condition found in high prevalence in diabetic patients with type 2 diabetes. The fibrosis 4 (FIB-4) score, although underutilized, can aid with early recognition and diagnosis of MASLD in an outpatient setting for patients at high-risk of developing advanced fibrosis.

Objective/Aim Statement:

The aim of our study was to assess current rates of recognition and appropriate management of MASLD in diabetic patients in an outpatient endocrinology clinic, and to enhance these rates via an education-based multi-faceted implementation strategy to improve FIB-4 documentation and appropriate referral of high-risk patients to specialized care.

Design/Methods:

Pre- and post-intervention FIB-4 use and referral patterns at the Weill Cornell Medicine Endocrinology Clinic were documented during a 1 year study period, with four PDSA cycles (Figure 1) targeting provider awareness and EMR charting tools.

P Chart - Percentage of High-Risk Patients with FIB-4 Utilization

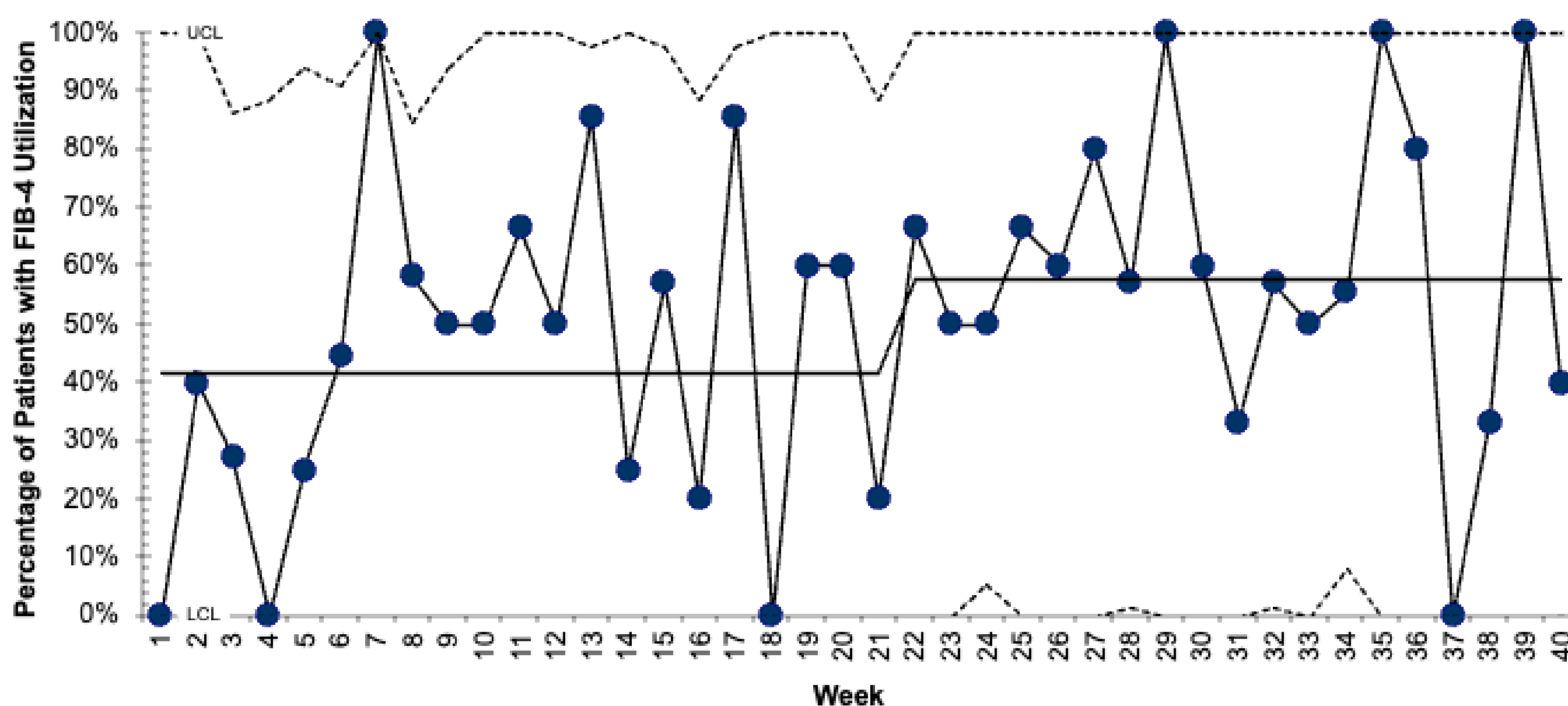


Figure 1. P chart of Weekly FIB-4 Utilization from February 2023 to January 2024.

Percentage of FIB-4 utilization in high-risk patients are shown. Week 37 represents the special-cause variation due to insufficient patient visits (n=2) that week.

Results

Overall post-intervention FIB-4 utilization was 47.3% (106/224) compared to 0% pre-intervention. A run chart (Figure 1) of FIB-4 documentation rates showed overall improvement in compared to baseline immediately after each PDSA cycle (i.e. weeks 5, 14, 19, and 33), but sustainability in usage varied. 15% (7/45) of patients with elevated FIB-4 score were appropriately referred to hepatology, an improvement from the baseline of 0.

Conclusions/Lessons Learned

Our study showed targeted education and reminder interventions were successful in enhancing FIB-4 use in an outpatient endocrinology clinic at a large academic medical center. Such educational interventions, however, may lose effectiveness over time, emphasizing a need for automated interventions that minimize human error and identify high-risk patients requiring additional Hepatology evaluation.

Next Steps

To develop automated and sustainable interventions for increasing FIB-4 utilization, and to follow up on Fibroscan results of high-risk patients referred to specialized care.

Barriers to Removal and Extraction of Cardiac Implantable Electronic Devices Associated with Device and Systemic Infections: A Single-Center Experience

Authors: Jacob Groenendyk MD, Robert Beale MD, Godwin Boiful MD, Erden Goljo MD, Matthew S. Simon MD, Edward V. Kogan MD, Christopher T. Sciria MD, Steven M. Markowitz MD, Christopher F. Liu MD, James E. Ip MD, Bruce B. Lerman MD, George Thomas MD, Jim W. Cheung MD

Background: Cardiac implantable electronic device (CIED)-associated infections are associated with substantial morbidity, mortality, and cost. Although transvenous lead removal/extraction (TLE) is the mainstay of therapy for the treatment of CIED-associated device and systemic infections, nationwide data suggest that fewer than 1 in 8 patients with CIED-associated endocarditis undergoes TLE.

Objective: We sought to explore factors associated with the lack of TLE for the treatment of CIED-associated high risk infections at a single large academic medical center.

Methods: Medical diagnosis codes and natural language search of electronic medical records were used to identify admissions for patients with CIED-associated device/pocket infection or high risk infections defined as endocarditis, staphylococcus aureus infection, and bacteremia. Hospital course and infectious disease (ID), cardiology (CV), and electrophysiology (EP) consult recommendations were recorded.

Results: Forty-six admissions for patients with CIED-associated infections were included in the study. Of these, 23 (50%) were managed with TLE. Overall, 40 (87%), 37 (80%), and 27 (59%) were evaluated by ID, CV and EP consult services, respectively. TLE was performed in 21 (57%) of patients who had CV/EP consultation compared to 0 (0%) of patients who did not ($P = 0.147$). Low BMI was associated with decreased TLE utilization. Among the 17 patients who did not undergo TLE and were not discharged to hospice, reasons for lack of TLE included failure to recognize indication for removal (24%), device deemed not infected (24%), and prohibitive surgical risk (24%).

Conclusion: In this study, the rate of TLE for CIED-associated high risk infections was 50%. EP consultation was obtained in < 60% cases. Failure to recognize an indication for CIED removal was not uncommon.

46 patients with CIED-associated infection

**23 (50%) patients
underwent TLE**

**23 (50%) patients
did not undergo TLE**

6 patient
discharged
to hospice

- 4 TLE indication not recognized
- 4 CIED deemed not involved in infection
- 4 Surgical risk deemed prohibitive
- 5 Other



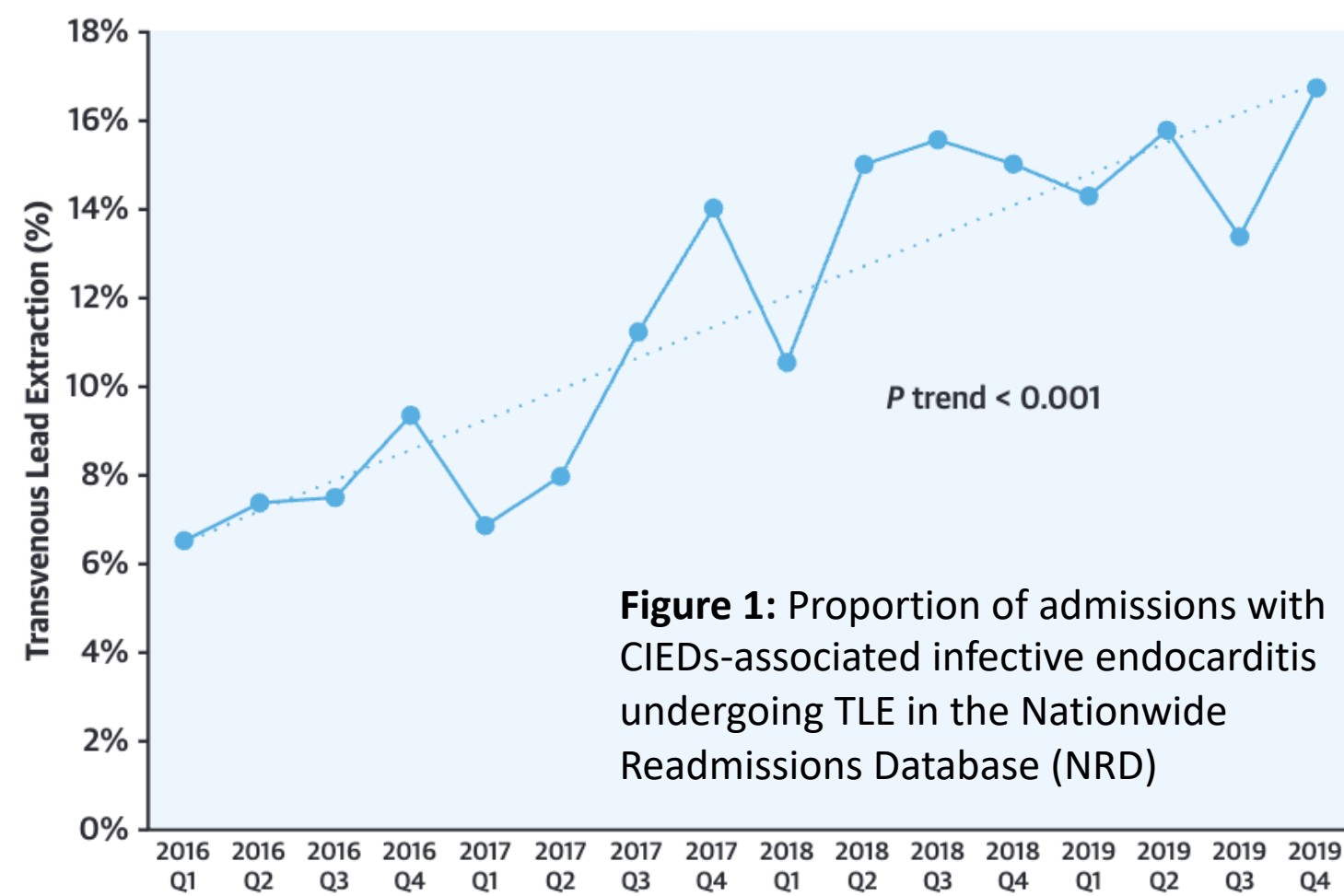
BARRIERS TO REMOVAL AND EXTRACTION OF CARDIAC IMPLANTABLE ELECTRONIC DEVICES ASSOCIATED WITH DEVICE AND SYSTEMIC INFECTIONS: A SINGLE-CENTER EXPERIENCE

Jacob Groenendyk MD, Erden Goljo MD, Matthew S. Simon MD, Edward V. Kogan MD, Christopher T. Sciria MD, Steven M. Markowitz MD FHRs, Christopher F. Liu MD FHRs, James E. Ip MD FHRs, Bruce B. Lerman MD FHRs, George Thomas MD FHRs, Jim W. Cheung MD FHRs

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INTRODUCTION

- Rates of cardiac implantable electronic device (CIED) infection has increased in the United States due to the increasing complexity of devices and prevalence of comorbidities in an ageing population
- Transvenous lead extraction/removal (TLE) is recommended in many cases of infection associated with CIED, but rates of extraction are relatively low nation-wide although it has trended upwards in recent years



METHODS

- Data was extracted from the electronic medical record for diagnosis codes for admission from 6/1/20 to 9/15/23 at Weill Cornell Medicine
- Additionally, natural language search was performed for terms associated with CIEDs and positive blood cultures
- High-risk infections (bacteremia, *Staph. aureus*, endocarditis) were selected for review
- Hospital course reviewed including notes from primary, general cardiology, infectious disease, electrophysiology, and cardiac surgery teams

RESULTS

TABLE 1: Demographic Factors by Stratified by TLE Status

Characteristics	Explanted (N= 23)	Not Explanted (N = 23)	P-value
Age (years)	67 (58-76)	77 (64-81)	0.067
Sex (number male)	15	13	0.546
Body Mass Index, (kg/m ²)	28.3 (25.0-32.4)	25.0 (21.3-28.9)	0.036
Coronary Artery Disease	10	10	1.000
Diabetes Mellitus	9	7	0.536
Congestive Heart Failure	15	14	0.76
Ventricular Tachycardia	5	8	0.326
Chronic Kidney Disease	6	8	0.522
Hemodialysis	2	3	1.00
Myocardial Infarction	1	3	0.608
Prior Bypass Surgery	6	3	0.459

FIGURE 2: Reasons for Failure to Undergo TLE

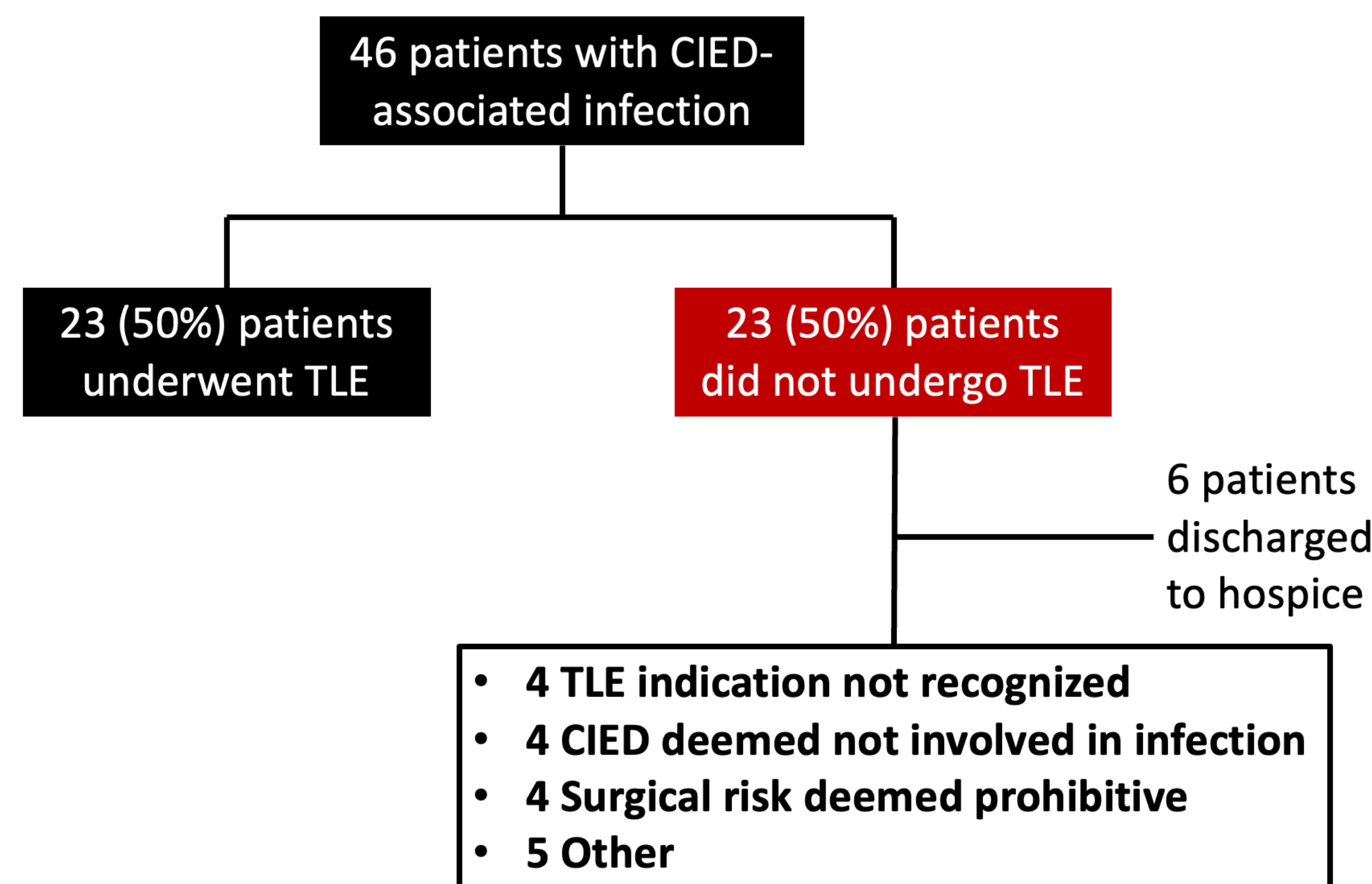
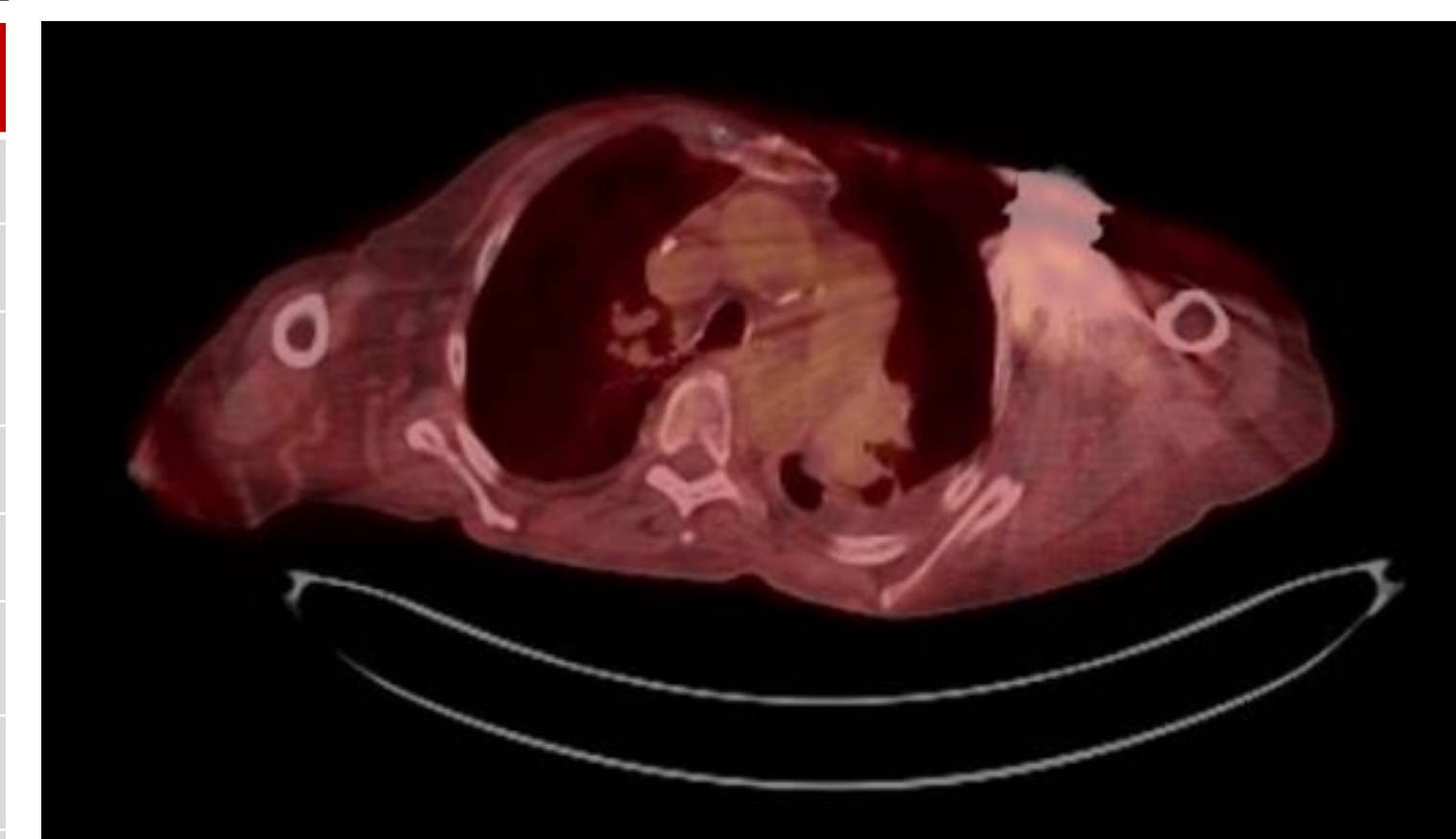


FIGURE 3: PET of CIED



- Patients with higher BMI (obesity in NRD) were more likely to undergo TLE; other clinically variables did not significantly interact with TLE status
- 50% of identified patients with CIED-associated infection underwent TLE. Of those that did not, 26% were discharged to hospice or moved to comfort measures only during index admission.
- Common reasons for failure to extract include indication not recognized, surgical risk deemed prohibitive, and CIED deemed not involved. Other reasons included low risk organism and patient preference against recommended removal.
- 4/4 of those deemed not infected had PET-CT without device uptake; 2/4 had TEE without lead vegetation. 50% of those with PET deemed to have not CIED involvement deceased within 3 months of discharge with infectious causes described in medical record as possible contributor

CONCLUSIONS

- Patients who underwent TLE for device-related infection did not differ significantly from those who did not undergo TLE, with the exception of BMI. This may represent chronic illness and unmeasured confounders.
- The rate of TLE for suspected CIED infection was numerically higher than that reported in a recent nationwide sample
- Multiple factors may contribute to low rates of device extraction, including failure to recognize indication as well as appropriate rationale for keeping device in place such as low risk infection or procedure inconsistent with patient goals
- Mortality rates among those with CIED-related infections not undergoing TLE were high in this single-center series

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AUTHOR DISCLOSURES
 Jim W Cheung MD FHRs: Consulting: Abbott, Biosense Webster, Biotronik, Boston Scientific and Medtronic; Research support: Boston Scientific.

Six Minutes to Success

Authors: Mailman, Joseph A., MD¹; Taveras, Mariely, MBA¹; DeNicola, Jenna²; and Zappetti, Dana, MD¹

- 1) Weill Cornell Medical College, Division of Pulmonary and Critical Care
- 2) NewYork-Presbyterian Hospital

Problem Statement: Implementation of a computerized six-minute walk test (6MWT) workflow both designed and constructed by a physician, facilitates enhanced data capture, provides instantaneous access to results for patients and physicians all while helping ancillary staff to work at the highest level of their scope of practice. A superior end-user experience can be achieved when a workflow is well designed and constructed by a Physician Builder, as such an individual is able to bridge the gap between clinical practice and computer programming.

Methods: Our Pulmonology practice performs approximately thirty 6MWT monthly. Prior to 2023 the results were collected on a paper-based form which was later scanned into our medical record. This process was inefficient and created delays for patient care and billing. Historical data was difficult to find, and it was nearly impossible to trend results or make them easily available to patients. To facilitate this process, an Epic Physician Builder along with an Epic analyst, collaborated to translate our paper form into a computerized process which allows for collection of real time data that can be trended, while simultaneously minimizing burden on the physicians when completing the encounter. We created a SmartText that mirrored our paper form and designed flowsheet rows to collect and file the data which is displayed in the SmartText. The patient is scheduled for a procedure and the data is entered into flowsheet rows in real-time by our medical assistants who also pend the charge. Once the test is completed the medical assistants generate a procedure note using the 6MWT SmartText to automatically display the flowsheet data into an easy-to-read form, and the encounter is forwarded to the interpreting physician for completion. The data is easily viewed in multiple ways including in a synopsis view which allows for trending of previous test results. Additionally, since the data exists natively in EPIC, it is immediately accessible to patients via My Chart.

Results: After implantation of computerized 6MWT workflow, compliance with closing and billing encounters increased by 100% from 15 to 30 monthly and scanning and interpretation delays were eliminated. Other qualitative measures such as ease of completion by staff, time taken to complete the process, and satisfaction amongst patients and staff have also improved.

Conclusions: Our computerized 6MWT workflow has transformed our practice's ability to collect real time data and has facilitated timely closure of encounters. This has enhanced our practice's ability to maintain accurate and complete charts and facilitates patients' ability to have greater understanding and control of their medical information. Our workflow pushes ancillary staff members to work at the highest levels of their scope of practice which has enhanced job satisfaction. Given our success we are replicating the workflow for additional office-based testing procedures.

Clinical Implications: Our computerized 6MWT workflow was designed, constructed, and implemented by a physician builder. Such an individual understands both clinical practice and computer programming. This unique bridge allows for thoughtful construction of a user interface that is easy to use for physicians and patients.

Six Minutes to Success!

Joseph A. Mailman, MD; Mariely Taveras, MBA; Jenna DiNicola, J. Travis Gossey, MD; and Dana Zappetti, MD

Quality in Care Symposium

Problem Statement:

- Paper-based reporting for 6-minute walk testing did not integrate with the EMR, making it difficult to trend and interpret tests over time, which is a main goal of the 6-minute walk test.
- Healthcare systems have only started to understand the importance of and invest in medical informaticists and physician builders who can serve as unique bridges and serve as translators between information technology services and clinical staff.

Objective/Aim Statement:

- Implementation of a computerized six-minute walk test (6MWT) workflow both designed and constructed by a physician:
 - Facilitates enhanced data capture
 - Provides instantaneous access to results for patients and physicians
 - Allows ancillary staff to work at the highest level of their scope of practice
- A superior end-user experience can be achieved when a workflow is well designed and constructed by a Physician Builder.
 - Such an individual can bridge the gap between clinical practice and computer programming.

Design/Methods:

- Our Pulmonology practice performs approximately thirty 6MWT monthly.
- Prior to 2023 the results were collected on a paper-based form which was later scanned into our medical record.
- This process was inefficient and created delays for patient care and billing.
- Historical data was difficult to find, and it was nearly impossible to trend results or make them easily available to patients.
- To facilitate this process, an Epic Physician Builder along with an Epic analyst, collaborated to translate our paper form into a computerized process:
 - This allows for collection of real time data that can be trended
 - This also minimizes the documentation burden on the physicians when completing the encounter
- The patient is scheduled for a procedure
- The data is entered into flowsheet rows in real-time by our medical assistants who also pend the charge
- Once the test is completed the medical assistants generate a procedure note using the 6MWT SmartText to automatically display the flowsheet data into an easy-to-read form
- The encounter is forwarded to the interpreting physician for completion
- The data is easily viewed in multiple ways including a synopsis view which allows for trending of previous test results
- Since the data exists natively in EPIC, it is immediately accessible to patients via My Chart.

Well Cornell Medicine
Pulmonary & Critical Care Medicine

PATIENT LABEL
HERE
W/DATE

6 Minute Walk Distance Test

6 Minute Walk Test/Oxygen Titration

Patient Name: *Justica Test* Gender: *Female*
MRN: 1200958033 Date of Birth (9/24/1990)
Date of Service: 2/7/2023

6 Minute Walk Test	SpO2 (%)	HR (bpm)	BP (mm Hg)	Supplemental SpO2 (l/m)	RPE/Dyspnea Borg Dyspnea
Before (Pre)	%				
At 6 Min (Post)	%				

Pre Test Vitals

SpO2 (%) BEFORE (Pre)	
HR (bpm) BEFORE (Pre)	
BP (mm HG) BEFORE (Pre)	
Supplemental O2 (l/m) BEFORE (Pre)	
Borg Dyspnea BEFORE (Pre)	

Test Vitals (Per Lap)

Lap Number	
SpO2 (%) per Lap	
HR (bpm) per Lap	
Supplemental O2 (l/m) per Lap	

Post Test Vitals

SpO2 (%) (Post)	
HR (bpm) (Post)	
BP (mm Hg) (Post)	
Supplemental O2 (l/m) (Post)	
Lowest SpO2 (%)	
Borg Dyspnea (Post)	
# of stops	
Reason for stopping	
Additional Comments	
Distance walked (ft)	
Distance walked (m)	
Distance Diff (Ft) Since Last 6MWT	

6 Minute Walk Test

6 Minute Walk Test	SpO2 (%)	HR (bpm)	BP (mm Hg)	Supplemental SpO2 (l/m)	RPE/Dyspnea Borg Dyspnea
Before (Pre)	96%	95 bpm	115/80	0	0
At 6 Min (Post)	97%	104 bpm	116/78	0	1

Pulmonary 6MWT Lap Vitals

Date/Time	Lap Number	SpO2 (%) per Lap	HR (bpm) per Lap	Supplemental O2 (l/m) per Lap
05/13/24 1501	1	96	91 bpm	0
05/13/24 1502	2	96	92 bpm	0
05/13/24 1503	3	97	95 bpm	0
05/13/24 1504	4	96	97 bpm	0
05/13/24 1505	5	94	101 bpm	0
05/13/24 1506	6	95	100 bpm	0
05/13/24 1507	7	95	102 bpm	0
05/13/24 1508	8	97	100 bpm	0
05/13/24 1509	9	97	102 bpm	0
05/13/24 1510	10	97	102 bpm	0
05/13/24 1511	11	96	99 bpm	0
05/13/24 1512	12	97	104 bpm	0

Flowsheets

6 Minute Walk Test

Distance Walked:	
In Feet:	Distance walked (ft): 1200 feet
In Meters:	Distance walked (m): 365.76 m

Performed by *Vanessa Urbina, MA*

Provider Attestation and Interpretation: TO BE COMPLETED BY PROVIDER ONLY

Attestation: I was present throughout the procedure. Compared to Prior Tests: ft

Interpretation:

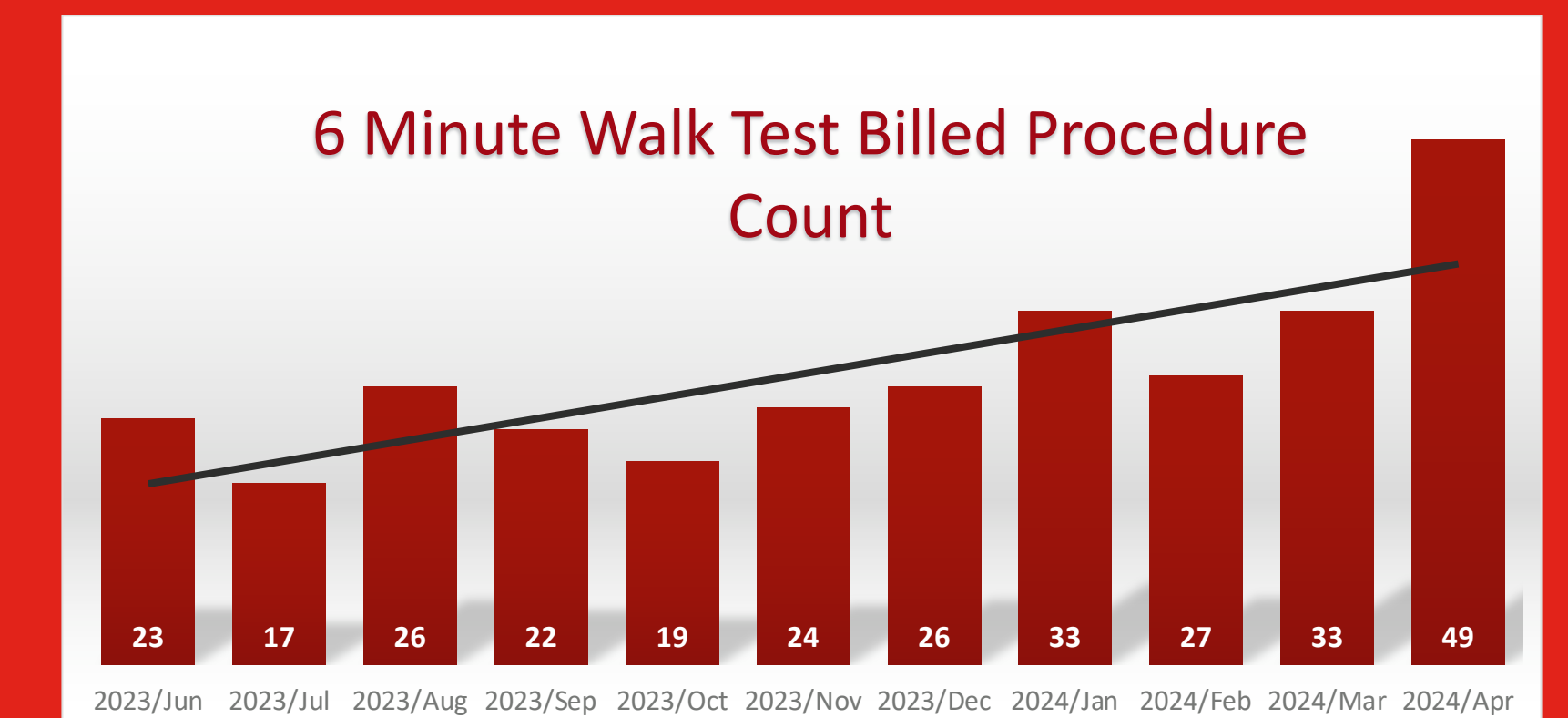
- Distance walked (ft): 1200 feet
- # of stops: 0 stops
- Reason for Stopping:

Interventions:

0 L of Oxygen via Nasal Cannula post test.

Results:

- After implantation of computerized 6MWT workflow:
 - Compliance with closing and billing encounters increased by 100%
 - The division has experienced 35.3% growth in 6MWT for the fiscal year to date
 - Scanning and interpretation delays were eliminated
- Subjectively other qualitative measures have also improved:
 - Ease of completion by staff
 - Time taken to complete the process
 - Satisfaction amongst patients and staff



Conclusions/Lessons Learned:

- Our computerized 6MWT workflow has transformed our practice's ability:
 - To collect real time data
 - Facilitated timely closure of encounters
 - Maintain accurate and complete charts
 - Facilitates patients' ability to have greater understanding and control of their medical information.
 - Our workflow pushes ancillary staff members to work at the highest levels of their scope of practice which has enhanced job satisfaction.
- Clinical Implications:
- Our computerized 6MWT workflow was designed, constructed, and implemented by a physician builder
 - Such an individual understands both clinical practice and computer programming.
 - This unique bridge allows for thoughtful construction of a user interface that is easy to use for physicians and patients.

Next Steps:

- Given our success we are replicating the workflow for additional office-based testing procedures such as Shape II Testing

Comprehensive Supportive Care: Enhancing Outpatient Neurology Services

Authors: Melissa Lopez, Natalie Hellmers, Kara Farnes, Abigail Weiss, Harini Sarva, Hwai Ooi

Department: Movement Disorders; Weill Cornell Medicine

Statement of the Problem: Patients with neurodegenerative disease struggle with a wide range of motor and non-motor symptoms. Evaluations of these complex symptoms are limited by time constraints. Based off of findings from a comprehensive literature review of palliative care, and an updated proposed framework for wellness, our center has established the Lifestyle, Improvement, Fitness and Togetherness (LIFT) Supportive Care and Wellness Program. This program capitalizes on available resources to better address the comprehensive needs of our patients and their caregivers (CG). These visits allow for more time to discuss all of their concerns, addressing various (spiritual, psychological, social) needs of the patient and CG. Provider and patient review the list of potential needs and address them together to alleviate potential stressors.

Objective: This program is offered to advanced neurodegenerative disease patients including those with Parkinson's disease, Alzheimer's dementia, Frontotemporal lobar degeneration, Vascular dementia, Lewy body dementia, Vascular parkinsonism, among others. Referred patients will have their physical, psychological, and spiritual health addressed in a systematic fashion by nurse practitioner, social worker and others.

Methods: Patients along with their CG will be referred to the supportive care clinic by primary movement or memory neurologist or NP. Each patient along with their CG will have an hour-long visit with the NP and social worker. After their visit, each person will leave with an individualized care-plan for themselves and their CG. These visits will be separate from their standard of care clinician follow ups. Session's will address the following ten areas: 1) exercise, diet, 2) reviewing roles of care of generalized medicine (do they need a primary care provider?), 3) mind/body (mindfulness, yoga, tai chi), 4) cognitive specialized therapy (do they need a referral to our memory practice), 5) neurocognitive testing, 6) social support (support groups, Weill Cornell educational programs), 7) psychological (do they need a counselor, or other mental health provider), 8) address faith based/community needs, 9) sleep assessment and referral & 10) financial, legal, and life planning.

Results: Currently 25 patients have been enrolled and 18 have been seen in a primary visit. Age range of patient participants ranged from 59 to 91 (Mean 78, SD \pm 9.8). Over 70% arrived with CG (spouse, friend). Life satisfaction scores of patients were below the general health population (Mean 35.07, SD \pm 12.62, range 13-56). Fall prevention and future planning were the most frequently requested topics. Zarit Burden Scale scores of CG's indicated a moderate to severe range (Mean 33.25, SD \pm 10.31, range 24 to 48). Many patients and CG's indicated that having the time to spend on these topics that were important to them was most satisfying.

Conclusions: This LIFT supportive care and wellness clinic may improve neurodegenerative patients' quality of life and decrease CG burden by offering problem focused visits with appropriate allocation of resources that will be helpful to the patient and thus alleviate some CG burden. We will continually refine the supportive care clinic program to meet the evolving needs of our patients. This program may lead to further reduction of CG burnout and stress, and improved QOL of our patient population.



Problem Statement: Patients with neurodegenerative disease struggle with a wide range of motor and non-motor symptoms. Evaluations of these complex symptoms are limited by time constraints and available resources. Based on findings from a comprehensive literature review of palliative care and an updated proposed framework for wellness, our center has established the Lifestyle, Improvement, Fitness and Togetherness (LIFT) Supportive Care and Wellness Program. This program capitalizes on available resources to better address the comprehensive needs of our patients and their caregivers (CG). These visits allow for more time to discuss all concerns and to address various needs together with the patient, CG and provider (Figure 1).

Objective/Aim Statement: This program is offered to advanced neurodegenerative disease patients including those with Parkinson's disease, Alzheimer's Disease, Frontotemporal Lobar Degeneration, Lewy Body Dementia, vascular dementia, vascular parkinsonism, among others. Those referred will have their needs addressed in a systematic fashion by nurse practitioner, social worker and others.

Design/Methods: Patients along with their CG will be referred to the supportive care clinic by primary movement or memory neurologist or NP. Each patient along with their CG will have an hour-long visit with the NP and social worker. After their visit, each patient and CG will leave with an individualized care-plan (Figure 1). These visits will be separate from their standard of care clinician follow ups. Sessions will address the following ten areas based on the Key Components of Wellness (Figure 2).

Figure 1. Supportive Care Clinic Work Flow

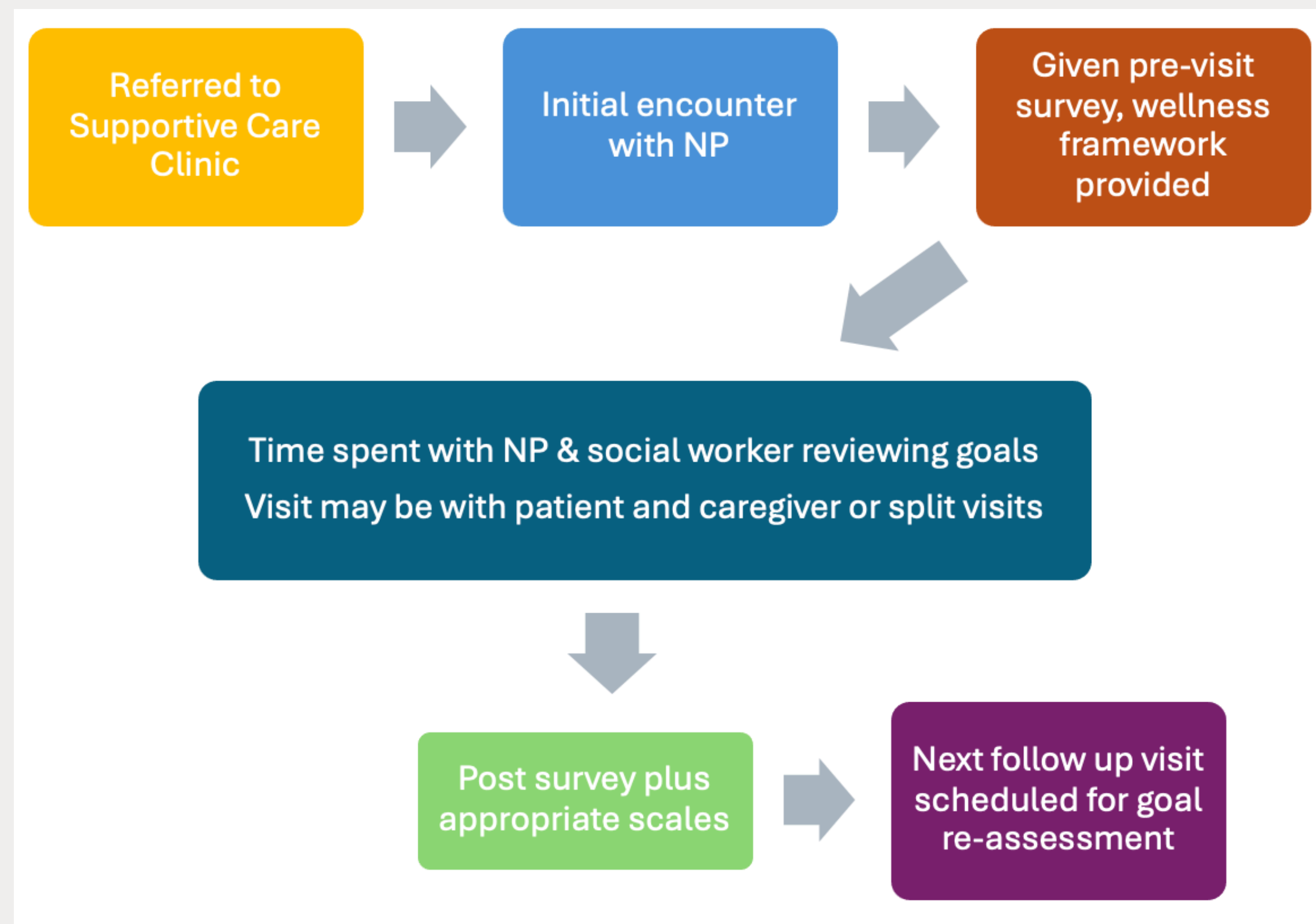


Figure 2. Key Components of Wellness (Subramanian, 2023)

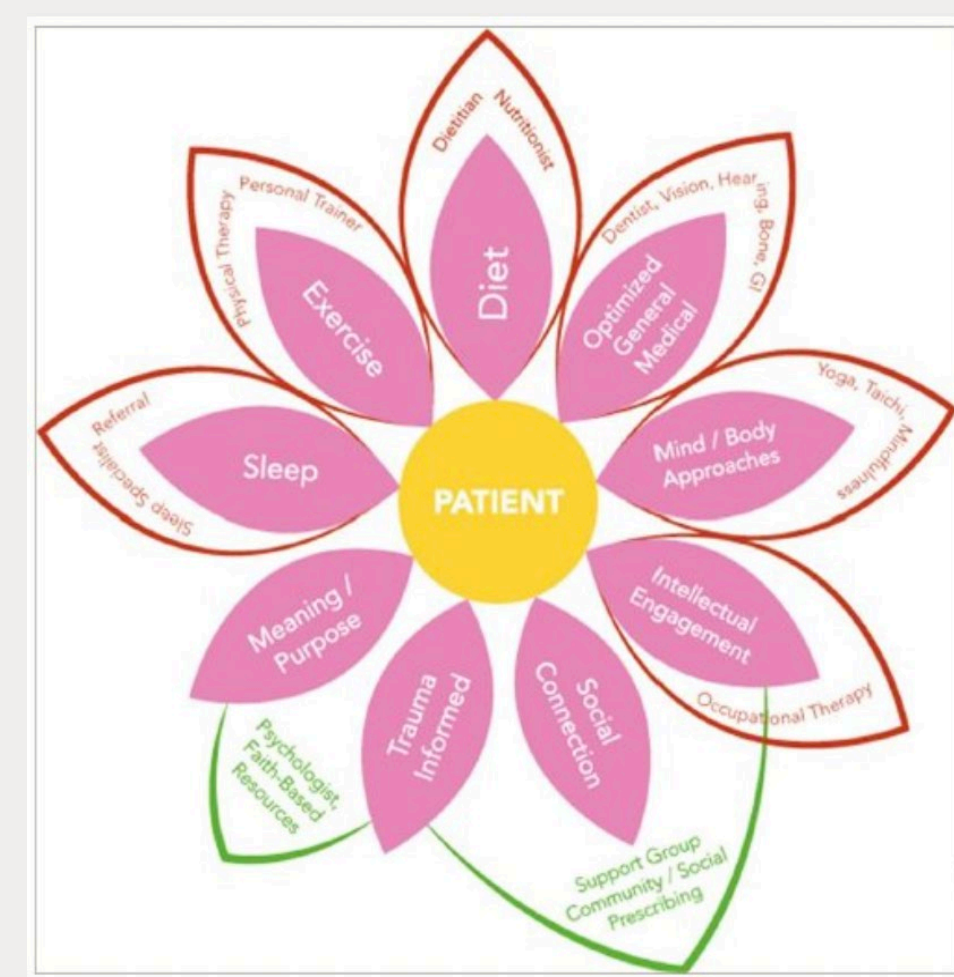
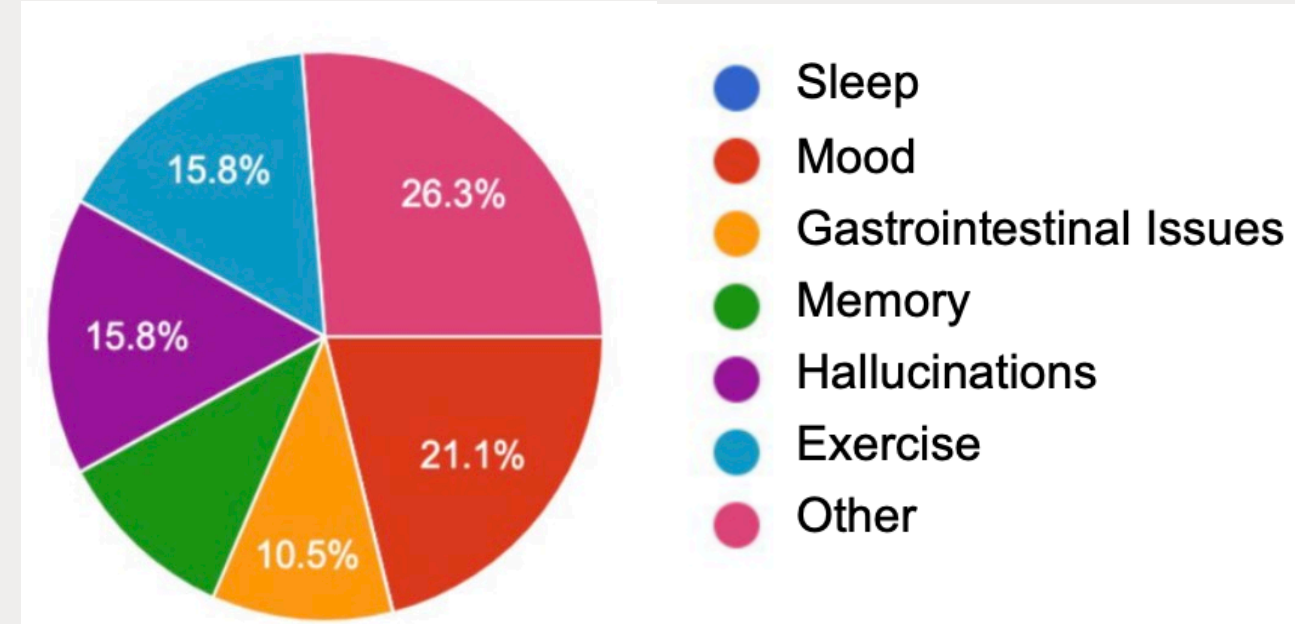


Figure 3. Highest priority concerns selected by patients



Results: Currently 39 patients have been enrolled and 30 have been seen in a primary visit. Age range of patient participants ranged from mean 76.42, SD= \pm 9.89, range (59-91). Of the survey scores currently available, 50% identified as female. Over 70% arrived with a caregiver (e.g. spouse, friend). Figure 3 shows the biggest areas of concerns amongst patients. Examples of patients perceived barriers to care: "Resistance to accepting my disease;" "Sometimes can't communicate needs;" "I am working and kids are in school and working." Life satisfaction scores on the PROMIS 10 survey scale for patients were below the general health population (Mean 35.95, SD= \pm 11.46, range 13-56). Fall prevention and future planning were the most frequently requested discussion topics. Zarit Burden Scale scores of CG's were in the moderate to severe range (Mean 34.86, SD= \pm 11.81, range 23 -54). Many patients and CG's found the time to spend on topics that were important to them to be most satisfying.

Conclusions/Lessons Learned: This LIFT supportive care and wellness clinic may improve neurodegenerative patients' quality of life and decrease CG burden by offering solution-focused visits with appropriate allocation of resources that will be helpful to the patient and CG.

Next Steps: A primary aim for the supportive care clinic is to continually refine our program to meet the evolving needs of our patients by incorporating new measures of need and response to better target care gaps. This program may lead to further reduction of CG burnout and stress, and improved QOL of our patient population as we follow them longitudinally.

Increasing the Life of a Midline Catheter

Quality in Care Symposium, Thursday May 23rd 2024

Quality in Care Symposium

Aneta Bannout, BSN, RN, OCN, Dana D'Amelio, MSN, RN, OCN Justin Kaner, MD Natan Santacruz, MSN, RN Amanda Stone, BSN, RN, OCN Jennifer Georges, BSN, RN, MS-BC and Michele Dziedzic, DNP, RN, NE-BC

Background:

- 10 South: 20 bed inpatient (IP) adult heme/onc unit
- Patients require stable, reliable, consistent venous access for:
 - IV antibiotics, IV chemotherapy, transfusion support, etc.
 - Added convenience of being able to do lab draws to replace peripheral venipuncture
- Central lines (CL) was venous access of choice over Midline (ML) catheters (see table 1)
- 2023: 300% increase in CL Associated Blood Stream Infection (CLABSI) incidence from 2022 (1 in 2022 to 4 in 2023)
 - Data review between nursing and Unit Medical Director indicated many CL potentially not needed for non-vesicant chemotherapy
 - ML could be a good option, but reputation for losing blood return very quickly

Problem:

- Increased incidence of CLABSI
- Too many CL Days
- ML could work but perception that they don't work
- How can we increase meaningful life of ML catheters?

Objective:

To increase the functional life of ML catheters as measured by positive blood return (enough to be able to draw labs) on an IP adult heme/onc unit by implementing a standardized ML maintenance bundle.

Design/Methods:

- Performance Improvement (PI) project using Plan-Do-Study-Act (PDSA)

Process measures:

- EPIC charting documentation of ML maintenance parameters (table 2)
- Peer-to-peer observations

Outcome measures:

- CL days & ML catheter days (table 1)
- Functional ML life (table 3)
 - Days of +blood return
 - % of ML catheters with +blood return of life of catheter
- CLABSI Incidence (table 4)

Table 1

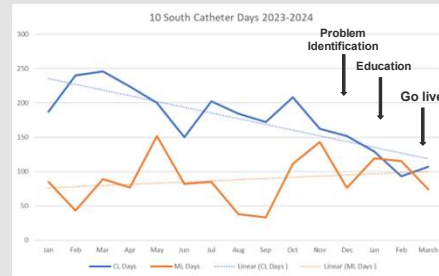


Table 2

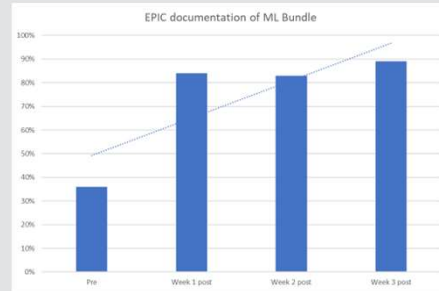


Table 3

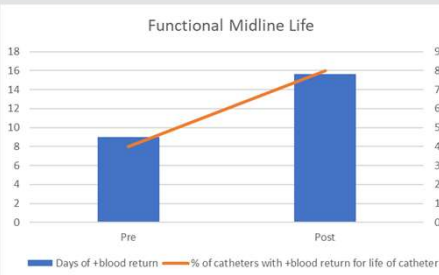


Table 4



Results:

- Intervention go live: March 4th 2024
- ML Catheter days (Table 1)
 - Pre (Jan. 2023 – Feb. 2024): 84.5 ML days/month
 - Post (Jan. 2023 – Feb. 2024): 74 ML days/month
- CL Days (Table 1)
 - Pre (Jan. 2023 – Feb. 2024): 194 CL days/month
 - Post (Jan. 2023 – Feb. 2024): 107 CL days/month
- EPIC Charting documentation (Table 2)
 - Pre (Feb. 2024): 36% documentation of ML maintenance parameters
 - Post (March 2024): 85.3% documentation of ML maintenance parameters
- Functional ML life (Table 3)
 - Days of +blood return
 - Pre (Feb. 2024): Mean 9 days
 - Post (March 2024): Mean 15.6
 - % ML catheters with +blood return for life of catheter
 - Pre (Feb. 2024): 40%
 - Post (March 2024): 80%
- CLABSI incidence (Table 4)
 - Pre (Jan. 2023-Feb. 2024): 5 CLABSI
 - Post (March. 2024 – current): 0 CLABSI

Conclusion:

- Implementation of standardized ML maintenance bundle can:
 - Improve meaningful life of ML catheters
 - Decrease CL days
 - Decrease CLABSI incidence

Limitations:

- EPIC documentation barriers—only site assessment required rather than patency and other important assessment parameters
- Only single lumen (SL) midline catheter available at NYP—many onc patients needs more than one stable access point

Next Steps:

- EPIC optimization request to address documentation barrier
- Expansion of PI project to rest of 10th floor IP Oncology service line + Medical Intensive Care Unit
- Double lumen Midline pilot to explore feasibility of having multiple stable non CL access points



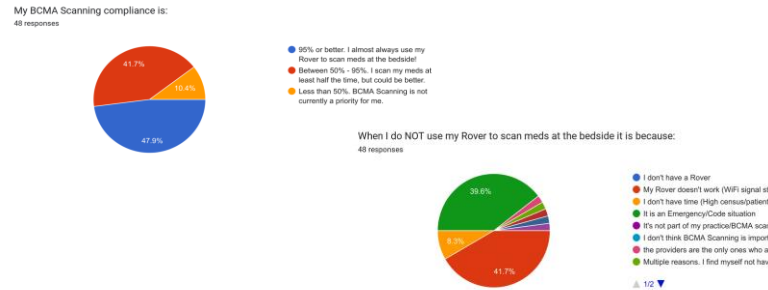
Background

- Goal to increase Barcode-assisted medication administration (BCMA) Scanning Compliance in the Weill Cornell Adult Emergency Department from < 65% to ≥ 95%.
- Implementing BCMA in inpatient settings is associated with significant reductions in medication administration errors with resulting increases in patient safety outcomes.
 - P – Nurses in the Weill Cornell Adult Emergency Department
 - I – Peer-to-Peer Education on the importance of scanning and identifying common barriers to BCMA Scanning Compliance
 - C – BCMA Scanning Compliance percentage
 - O – Approximately 20% increase in BCMA Scanning Compliance by the end of the intervention period, with continuing improvement post intervention. In February 2024, the WC Adult ED reached the Enterprise-wide goal of 95% scanning compliance.
 - T - 5 months (May - September 2023)

Methods

- Group presentations to educate nurses on existing BCMA scanning adherence, the importance of medication scanning to avoid negative patient outcomes, and to identify ways to resolve the most commonly listed reasons for failing to scan medication. Presentations were given in May, June, July, and September 2023 at ED Staff Meetings, Charge Nurse Meetings, and peer-led Unit Practice Council Meetings.
- One-on-one peer education. Authors focused on educating peers who self-identified as not believing that BCMA Scanning was a priority and leveraged our reputation as experienced ED nurses to encourage a change in perspective and practice.
- Partnering with ED Leadership to resolve commonly cited technical barriers.
- Identifying and publicizing “Tech Stop” hours and encouraging nurses to have NYP update faulty or old phones.
- Following peer education on the importance of BCMA Scanning compliance, ED Leadership separately liaised with nurses who were below target to stress the importance of BCMA scanning.

Pre-Intervention Compliance Survey Results

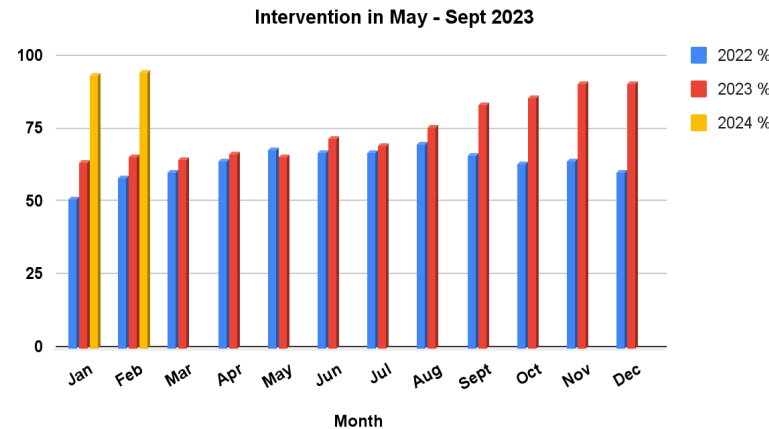


Intervention and Post-Intervention Results

ED Scanning Compliance Data for Jan - Dec 2023

Group	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Adult	64	66	65	67	66	72	70	76	84	86	91	91
EDIN	82	84	84	82	81	83	87	86	92	92	93	95
Psych	95	95	96	96	95	96	92	95	97	97	98	99
Peds	66	68	76	78	76	88	89	90	94	95	93	95

Adult ED BCMA Scanning Compliance Percentage Change



Discussion

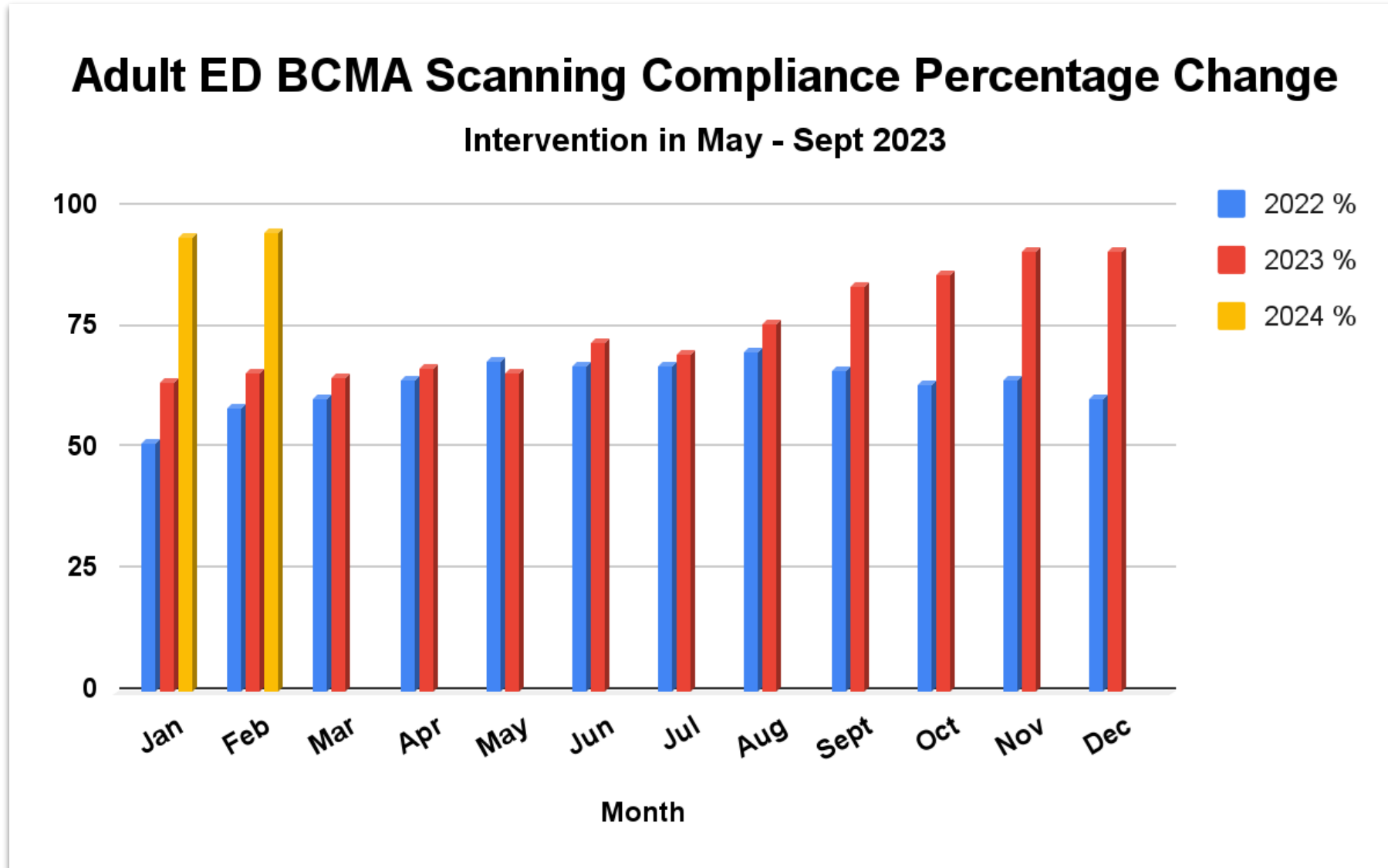
- Pre-intervention data showed that antipathy to BCMA scanning was not a driving factor in the low compliance rate. Only 10% of nurses stated that BCMA scanning was not a priority for them.
- Technical barriers were overwhelmingly listed as a reason for poor scanning compliance.
- Data throughout the intervention period of May 2023 - September 2023 showed steady and consistent improvement in BCMA Scanning Compliance.
- In June 2023, Scanning compliance rose above 70% for the first time since data was initially collected in January 2022. By September 2023, Compliance had jumped to 84%; an increase in almost 20% in only 4 months.
- Feedback from nurses educated by both group presentations and one-on-one peer education uniformly showed a positive response to teaching.

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Adult ED BCMA Scanning Compliance Intervention



Quality in Care Symposium

Problem Statement:

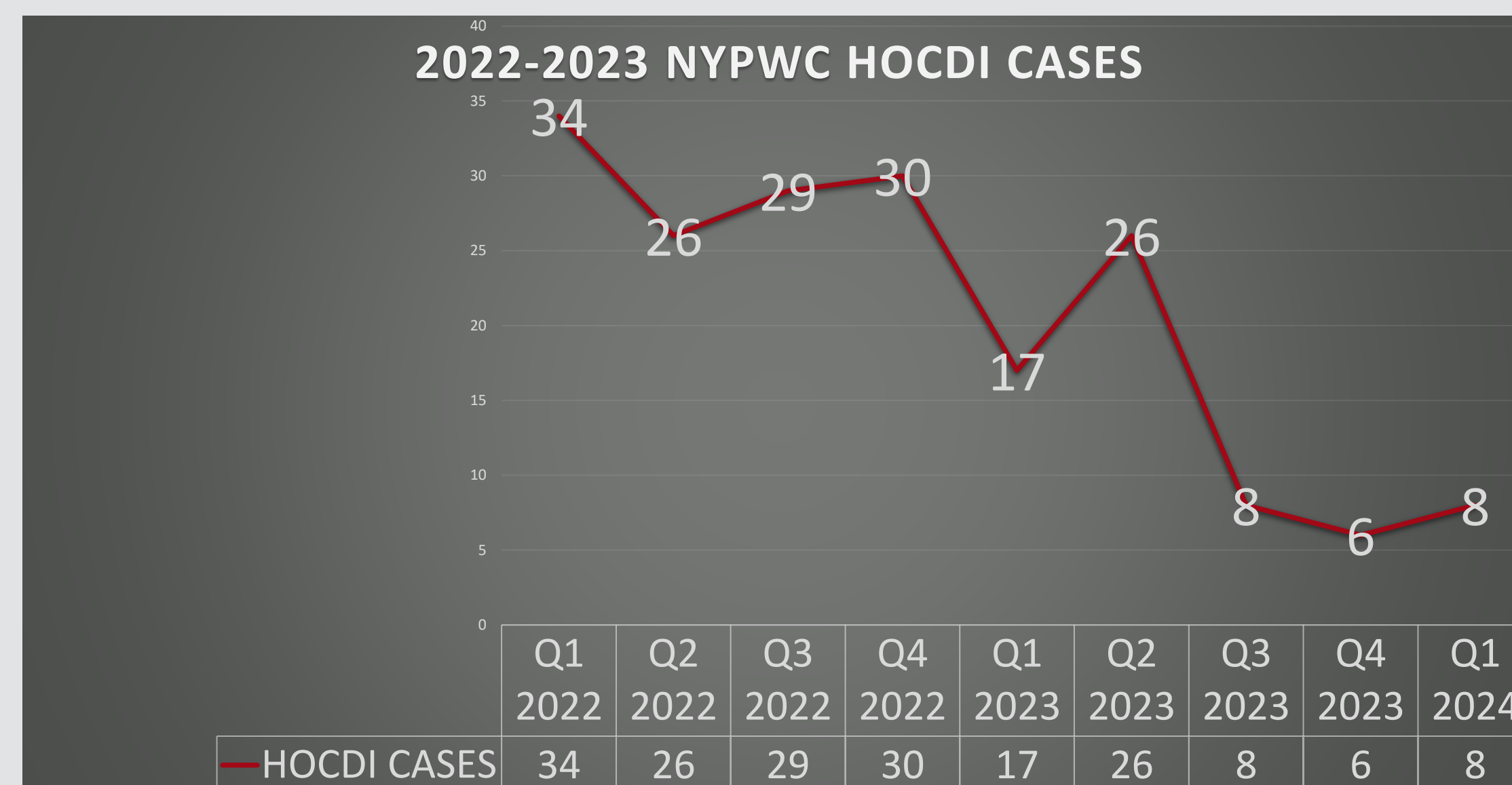
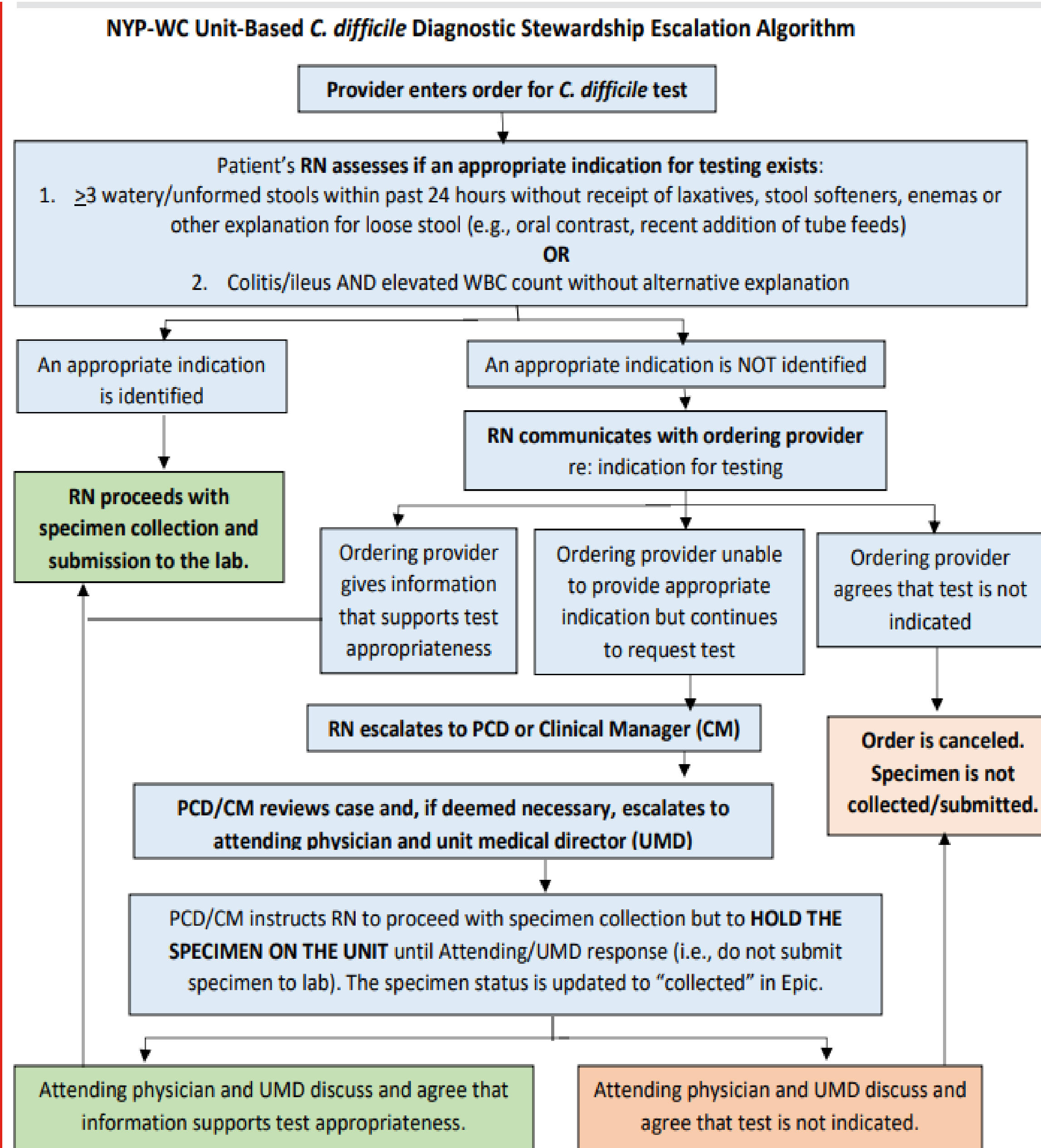
- Clostridioides difficile (C. Diff) infection is a significant healthcare burden, with the Centers for Disease Control and Prevention (CDC) estimating 453,000 cases annually in the United States.
- Inappropriate C. Diff testing can lead to unnecessary treatment, antibiotic resistance, and increased costs.
- NYPWC in 2022 had a total of 119 hospital onset C. Diff infection (HOCDI) cases, the Surgical Stepdown unit in that year had 10 of these cases.

Objective/Aim Statement:

- This quality improvement (QI) project implemented the use of a nurse-driven C.Diff diagnostic stewardship algorithm to promote rational testing and reduce false positives.

Design/Methods:

- **Design:** QI project
- **Team:** Multidisciplinary (CMO, UMD, IPC, QPS, Nursing Leadership) developed a C.Diff diagnostic testing criteria & escalation pathway algorithm for nurses to use.
- **Setting:** (32-bed Surgical Stepdown Unit)
- **Time frame:** February 6th, 2023 - March 3rd, 2023
- **Inclusion Criteria:** Surgical Stepdown patients with provider-requested C.Diff test
- **Pre-implementation:** Provider education, staff meetings & huddles
- **Implementation:** Nurses used the algorithm during daily patient care.
- **Data Collection:** Direct data communication to Nursing Leadership.



Results:

During the 4-week pilot, 10 C.Diff diagnostic tests requested

- 3 were discontinued with bedside RN and PCD decision support
- 2 were discontinued with bedside RN added decision support
- 1 was escalated to PCD and did not fit algorithm but was sent because it was inpatient hospital day 2 (not considered hospital onset)
- 3 were sent by staff on the weekend (aligned with algorithm)
- 1 was sent with bedside RN, PCD, and UMD decision support

- The pilot launched in February 2023, demonstrably achieved its goals and was subsequently expanded to the entire hospital in May 2023.

	HOCDI CASES	
	Surgical SDU	NYPWC
2020	8	115
2021	11	126
2022	10	120
2023	1 (90% reduction)	56 (52% reduction)
2024	0	8

Conclusions/Lessons Learned:

- **Improved C.Diff stewardship:** Nurses empowered to make informed testing decisions with real-time provider support.
- **Reduced HOCDI:** Significant decrease in hospital-onset C.Diff infections.
- **Improved diagnosis:** Increased accuracy of C.Diff diagnoses.
- **Reduced antibiotic use:** Less unnecessary antibiotic use due to better testing.
- **Nurse-driven value:** Project highlights the effectiveness of nurse-driven strategies in fighting C.Diff.

Next Steps:

- Implementing a multi-pronged approach that includes antibiotic stewardship, strong IPC measures, and exploring risk-stratification algorithms to further reduce inappropriate HOCDI diagnoses.

BACKGROUND

Bedside shift handoff is an important tool to utilize in acute care settings as it is an opportunity to safely transfer the care of a patient while encouraging patient and family participation. Traditionally, a report is given between nurses at the nurses station which allows for mistakes in handoff and not giving the patient or family an opportunity to participate in the transition of care. In this respect, a traditional report takes away an opportunity for the patient to provide clarity or ask questions. In order to protect patient autonomy, ensure patient safety and encourage patient engagement, it is crucial to utilize bedside shift handoff as a tool in acute care settings.

PICO

- P** – Patient Population: ACH 16 Patients
- I** – Intervention or Issue of Interest: Implementing a Bedside Shift Report Handoff Sheet
- C** – Comparison of Issue of Interest: No Bedside Handoff Sheet
- O** – (Desired) Outcome of Interest: Improve Bedside Shift Report Frequency and Patient Satisfaction Scores

METHODS / DESIGN

A bedside shift report handoff sheet was created based on feedback from staff nurses gathered at the Unit Practice Council meetings. In June 2023, the first version of the bedside shift report handoff sheet was introduced. The intent was to start filling out these forms on admission to ACH 16 and update as the status of the patient changed. These sheets were attached to clipboards and handed off from RN to RN each shift including updates. The clipboards allowed nurses to take notes while receiving report in the patient's rooms. After a month of using the new report sheet, it was adjusted based on feedback from the nurses and a new version was rolled out in July (Figure 1). Data was collected from Q2 2023 to Q1 2024 to see if patients would report that nurses were completing bedside shift report and see how that affected our HCAP scores.

RESULTS

Figure 1. Bedside Shift Report Handoff Sheet

Table 1. Cohen 16 Bedside Shift Report Frequency

	N-Size	Always	Usually	Sometimes	Never
Q2 - 2023	0	0	0	0	0
Q3 - 2023	15	27%	33%	27%	13%
Q4 - 2023	28	64%	14%	11%	11%
Q1 - 2024	6	67%	17%	17%	0%

Figure 2. ACH 16 HCAPS Survey, Jan - Dec 2023

NARRATIVE RESULTS

- ACH16's bedside shift report numbers went from 0 in Q2 to ALWAYS giving bedside shift report 27% of the time in Q3 to ALWAYS giving bedside shift report 64% of the time by Q4. (Table 1)
- In 6 months ACH 16 went from 0% to 89% of patients reporting that bedside shift report was performed (ALWAYS, USUALLY, SOMETIMES).
- ACH16 received the Certificate of Achievement for "The Key to Patient Experience" award, recognizing our "dedication, passion and hard work".
- HCAHPS score increased in Q3 and Q4 making ACH 16 a five star unit by the end of 2023

DISCUSSION

This initiative was challenging in the sense that there was a push for a change in culture on the unit. There was resistance to keep the traditional method of handoff. However, we educated our nurses on how bedside shift report increased patient autonomy, improves patient satisfaction and allows for a safer transition of care. Initially, the ALWAYS Q3 scores were not as high as expected, so a new approach was taken to ensure that patients understood when bedside shift report was happening. Nurses started using language, such as, "Is it okay to perform bedside shift report in the room? We will talk a little bit about why you are here and our plan for the day." At the end of the report to encourage patient participation nurses would ask the patients, "Do you have any questions or have anything you would like to add?" In Q3 our ALWAYS scores seemed to improve significantly and could be attributed to the new language used with patients or the shift in unit culture.

CONCLUSION

Implementing a bedside shift report handoff sheet and allowing for feedback from the nurses on ACH16 helped improve bedside shift report rates. Encouraging nurses to share their feedback allowed for a smoother transition from the traditional handoff method. By including the nurses in the effort to update practices, we have fostered a change in unit culture. Bedside shift report helps patients become more engaged in their care and in turn improves patient satisfaction scores.

Reducing Time Toxicity & Improving Access to Care: A Pilot Project to Decrease Wait Times for Blood Transfusions for Patients with Cancer Using a Haemobank

Authors: Justine Enriquez, BSN, RN, OCN; Catherine Seow, BSN, RN, OCN; Celsus Auguste MSN, RN; Camilita Rahat MSN, RN; Lara Scrimenti MSSSL, BSN, NE-BC; Priscilla Parra MBA, MT; Winnie Kuo, BSN, RN, OCN; Mahfuja Rahman, BSN, RN; Ming Xiao BSN, RN, OCN; Sidney Ong MLS (ASCP); Sophia Vasilver BS, MT; Dennis Chen BS, MLS (ASCP); Denden Benabdessadek MS, MT(ASCP) SBB; Robert DeSimone, MD; Melissa Cushing, MD; Sebastian Mayer, MD; Christine A Garcia, MD, MPH

Statement of the Problem: Oncology and hematology patients require a high volume of red blood cell (RBC) transfusions. In 2021, 3960 units of RBCs were transfused in the Starr 3 Infusion Center. Trended data from 2021 patient Q-Reviews indicated patient dissatisfaction in wait time from check in to the start of the RBCs. A remote refrigerator may reduce time spent by staff waiting for blood to be released and transporting units. The Starr 3 Infusion Center purchased a Haemobank 80 (HB80) blood refrigerator in 2017, however data from July 2021 – January 2022 indicated that only 8% of RBC administered in the Infusion Center came from the HB80. By March 2022, the Starr 3 Infusion average minutes to receiving a red blood cell (RBC) transfusion treatment (time of check-in to time of start of blood transfusion) was 215 minutes. Prolonged wait times for RBC transfusion impact patient treatment flow, treatment chair turnover, overall infusion center operations, and leads to negative patient experience.

Objective: From November 2022-January 2023, this project aims to reduce the wait time (time of check-in to time of start of blood transfusion) for patients with cancer requiring RBC transfusion utilizing a Haemobank.

Methods: Developed and launched a committee in February 2021 to improve communication between Blood Bank (BB) and Infusion Center. Infusion, Blood Bank and Haemonetics IT/Sales team conducted a walk through to evaluate the workflow process end-to-end. Plan-Do-Study-Act methodology was utilized. Pre-PDSA 1: Evaluate process Process maps were developed to evaluate workflow in Starr Clinic for patients who may need blood transfusion. PDSA 1: Initial small tests of change Two cycles of small test of change were performed where charge nurse releases the blood transfusion orders the night before, then BB cross-matches and loads HB80 in anticipation of scheduled transfusion. PDSA 2: Pilot study in Starr Infusion Center. The Hemobank was initiated in November 2022 in a pilot cycle until January 2023. PDSA 3: Starr Infusion Sustainability After the initial pilot, the Hemobank was continued and tracked for usage.

Results: PDSA 1: Initial small tests of change Two cycles of small test of change were performed where charge nurse releases the blood transfusion orders the night before, then BB cross-matches and loads HB80 in anticipation of scheduled transfusion. For the small test of change patient group, the average wait times decreased from 75.4 minutes pre-intervention to 36.8 minutes post intervention. This demonstrated reduction in wait times for patients prescreened and crossmatched the night before visit of 51%. PDSA 2: Pilot The Hemobank was initiated in November 2022. As a result of the Haemobank 80 technology, the average minutes to receiving a blood transfusion treatment (time of check-in to time of start of blood transfusion) decreased from 215.0 minutes in March 2022, to 120.3 minutes in January 2023. The new process flow using Haemobank 80 technology significantly reduced time spent by patients with cancer awaiting blood transfusion by 44%. PDSA 3: Starr Infusion Sustainability Continued use with Hemobank over time, showed that reduction of time was sustainable with December 2023 average time to transfusion of 126 minutes.

Conclusions: Using a Hemobank in a busy infusion area, significantly reduced time spent waiting in the clinic and freed up infusion space by expediting transfusions. There are challenges to collecting timely data as our time study currently requires manual extraction. Though we have a clear process map, it is difficult to tease out individual time components for each segment of the visit in real time as provider visit delays and premedication/pharmacy delays can affect wait time.

Next steps: We plan to continue to collaborate with transfusion medicine in improving the usage of the Haemobank and monitor outcomes. We are exploring automated ways to gather time information and Haemobank usage. There are plans to consider expansion to other high volume transfusion sites including the inpatient malignant hematology units (10th floor).

Reducing Time Toxicity & Improving Access to Care: A Pilot Project to Decrease Wait Times for Blood Transfusions for Patients with Cancer Using a Haemobank

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Problem Statement

By March 2022, the Starr 3 Infusion average minutes to receiving a red blood cell (RBC) transfusion (time of check-in to time of start of blood transfusion) was **215 minutes**. Prolonged wait times for RBC transfusion impact patient treatment flow, treatment chair turnover, overall infusion center operations, and leads to negative patient experience.

Background

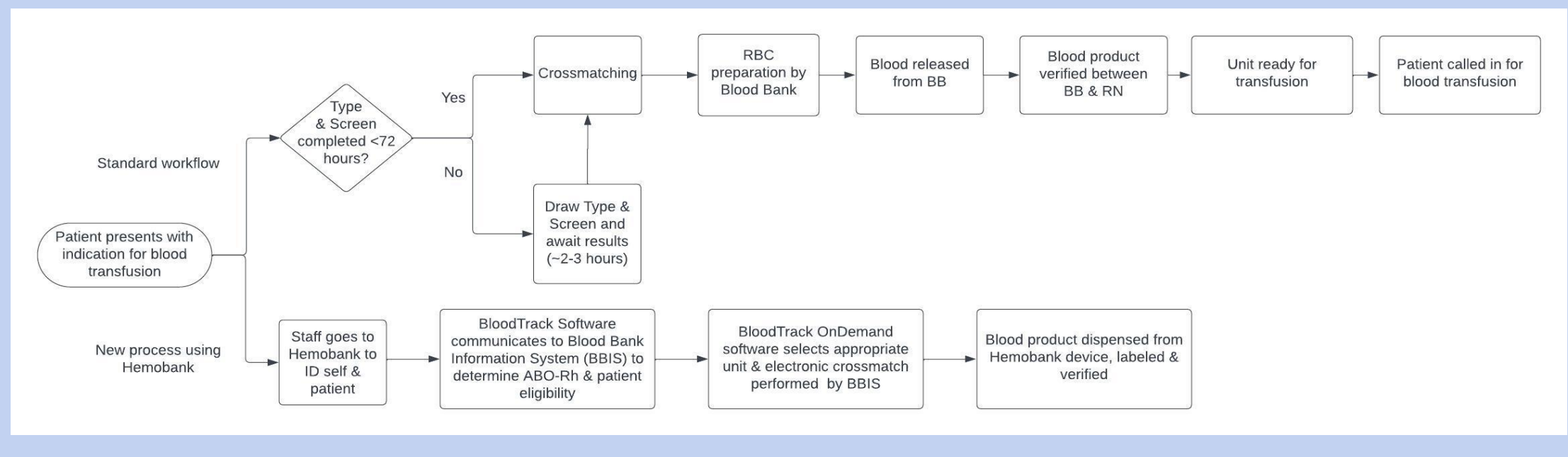
- Oncology and hematology patients require a high volume of red blood cell (RBC) transfusions. In 2021, 3960 units of RBCs were transfused in the Starr 3 Infusion Center.
- Trended data from 2021 patient Q-Reviews indicated patient dissatisfaction in wait time from check in to the start of the RBCs.
- A remote refrigerator reduces time spent by staff waiting for blood to be released and transporting units.¹
- The Starr 3 Infusion Center purchased a Haemobank 80 (HB80) blood refrigerator in 2017, however data from July 2021 – January 2022 indicated that **only 8%** of RBC administered in the Infusion Center came from the HB80.

Project Aims

From November 2022-January 2023, this project aims to reduce the wait time (time of check-in to time of start of blood transfusion) for patients with cancer requiring RBC transfusion utilizing a Haemobank.

Methods

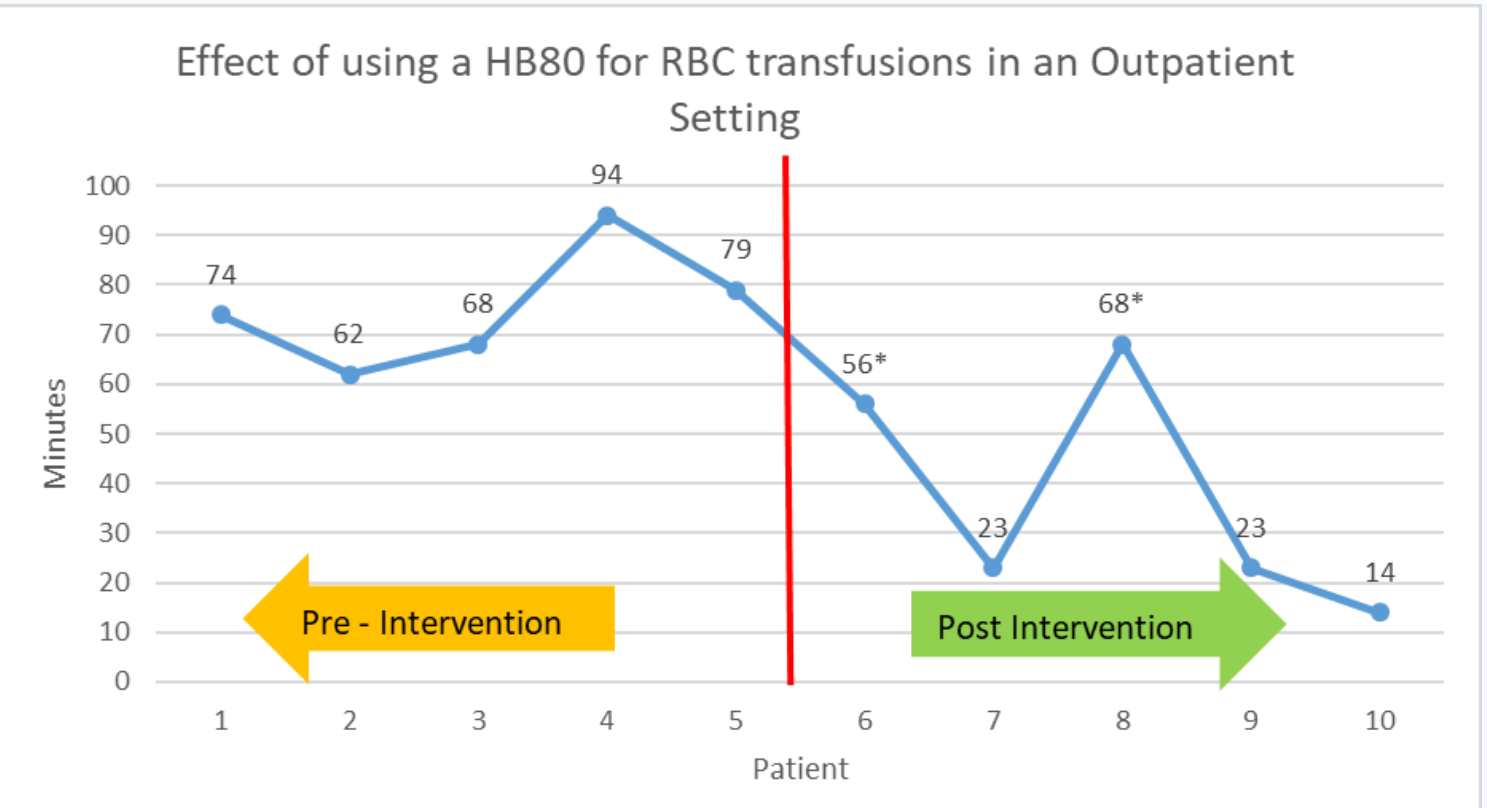
- Developed and launched in February 2021 to improve communication between Blood Bank (BB) and Infusion Center.
- Infusion, Blood Bank and Haemonetics IT/Sales team conducted a walk through to evaluate the workflow process end-to-end.



Results

PDSA 1: Initial small tests of change

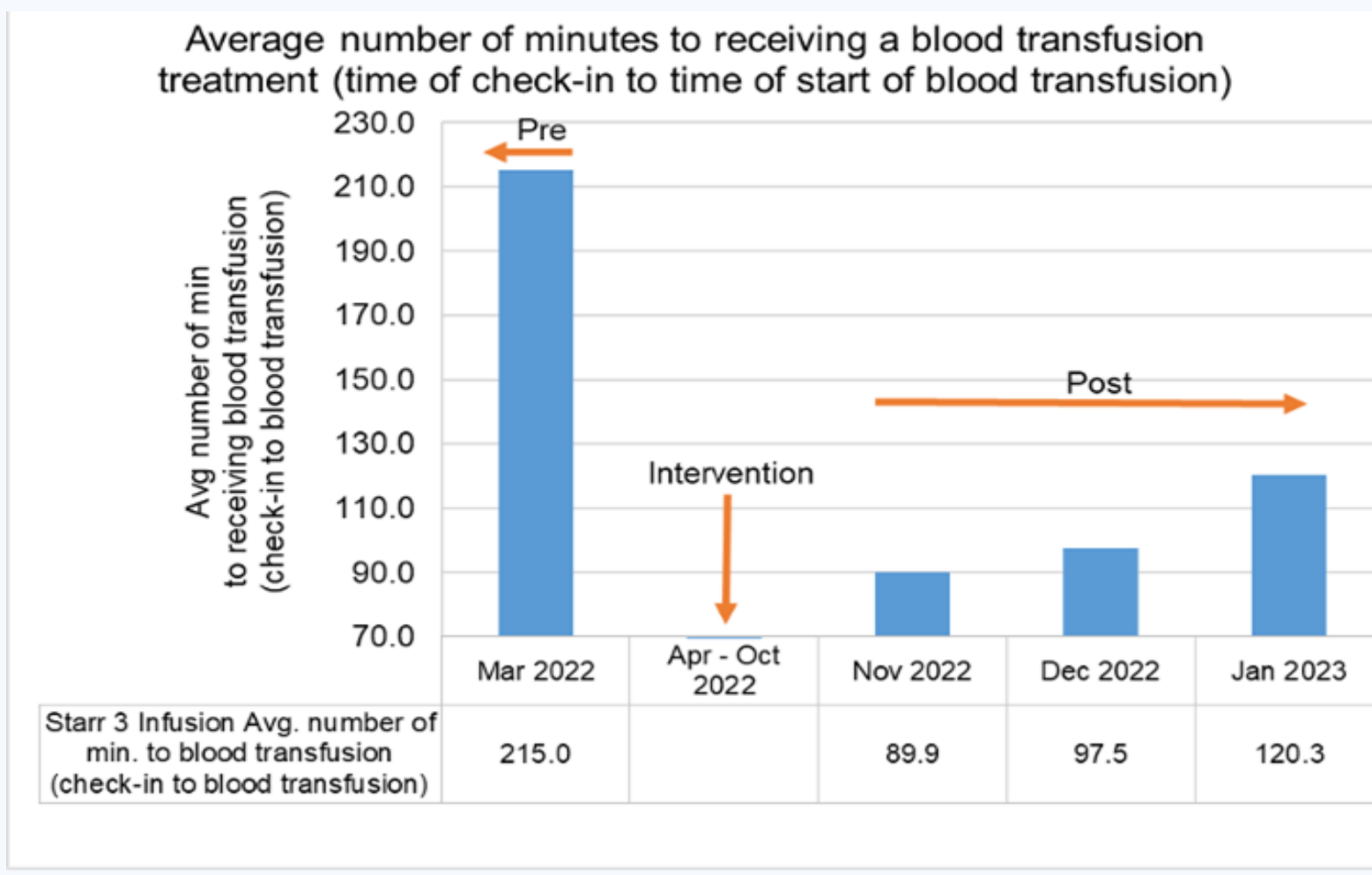
- Two cycles of small test of change were performed where charge nurse releases the blood transfusion orders the night before, then BB cross-matches and loads HB80 in anticipation of scheduled transfusion.
- For the small test of change patient group, the average wait times decreased from **75.4 minutes** pre-intervention to **36.8 minutes** post intervention.



* Outlier attributed to lab delay, provider visit delay, and premedication/pharmacy delay

PDSA 2: Pilot

- As a result of the Haemobank 80 technology, the average minutes to receiving a blood transfusion treatment (time of check-in to time of start of blood transfusion) decreased from **215.0 minutes** in March 2022, to **120.3 minutes** in January 2023.



Conclusions

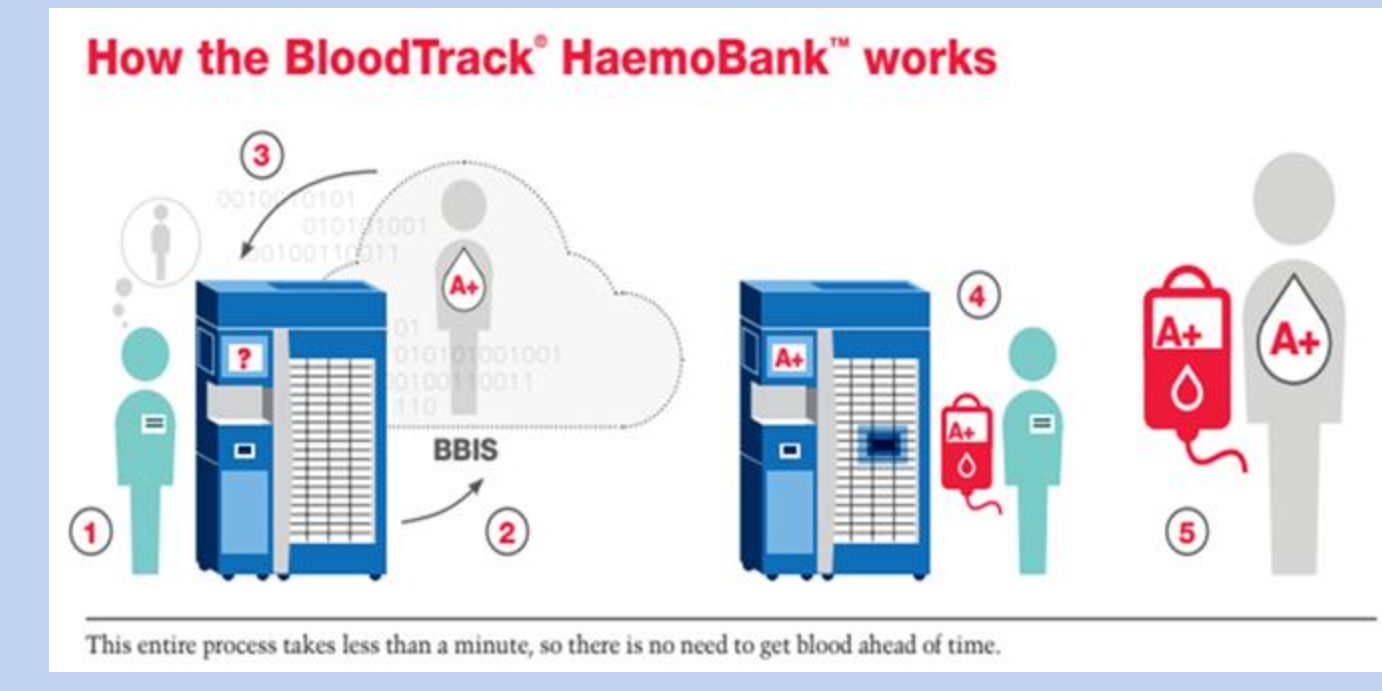
- Initial small tests of change demonstrated reduction in wait times for patients prescreened and crossmatched the night before visit of **51%** (PDSA Cycle 1).
- The new process flow using Haemobank 80 technology significantly reduced time spent by patients with cancer awaiting blood transfusion by **44%** (PDSA Cycle 2).
- HB80 reduced time spent waiting in the clinic and freed up infusion space by expediting transfusions.
- Over time, HB80 has showed the reduction in time is sustainable with **December 2023 average time to transfusion of 126 minutes**.
- Patient satisfaction surveys had fewer complaints related to blood transfusion wait times

Challenges

- Timely data collection has been challenging as time study is currently manual extraction
- Difficult to tease out individual time components for each segment of the visit, provider visit delays and premedication/pharmacy delays can affect wait time

Next Steps for PDSA cycle 3

- Continue to collaborate with transfusion medicine in improving the usage of the Haemobank and monitor outcomes.
- Explore automated ways to gather time information and Haemobank usage
- Consider expansion to other high volume transfusion sites in New York Presbyterian System



Introduction



BACKGROUND

- Death rates in the Intensive Care Unit (ICU) remain high – ranging from 20-35% due to serious illness and complex medical needs.
- Palliative care focuses on issues like symptom management, the capacity to make decisions and providing the patient and family with emotional and spiritual support.
- Integrating palliative care in the ICU can help mitigate the physical and psychological burden for patients and families as well as alleviate nurses' moral distress.
- Evidence suggests that early palliative care consultations are associated with decreased ICU length of stay (LOS) and hospital costs as well as improved identification of discharge needs, completion of advance directives, and family satisfaction.

GOALS

- Early and timely identification of patients who can benefit from palliative care services.
- Increase number of palliative care consults in ICU.
- Empower ICU nurses to exercise their professional autonomy.

Implementation

Nurse Driven Palliative Care Referral

Palliative Care is a specialty service with an expertise in the following:

- Complex symptom management (e.g., pain, nausea)
- Family support (e.g., family overwhelmed with decision making)
- Complex decision making (e.g., prognostic uncertainty)
- Conflicts over care goals (e.g., use of life-sustaining treatments or CPR)
- Complex disposition planning (e.g., limited social support)

The following criteria has been designed to assist in decision making and identification of patients with unmet palliative care needs. Please screen each patient upon admission, upon re-admission to ICU during the same hospital stay or change in clinical presentation assessment (see below criteria).

Check all that apply:

A. Multi-organ (≥2) failure (1 point)

B. Major acute neurologic insult, e.g., Malignant stroke, CNS trauma, post-CPR encephalopathy, ICU length of stay ≥ 14 days (1 point)

C. ≥ 2 ICU admissions during the same hospital stay (1 point)

D. Consideration to start or initiation of renal replacement therapy during ICU stay (1 point)

E. Conflicts (not a need for) re: goals, DNR, treatment decisions (2 points)

F. Difficult to control symptoms (2 points)

G. Patient and/or family request palliative care consult (2 points)

Total Score: _____

Total score ≥ 2 indicates need to consider Palliative Care referral.

Contact Palliative Care Team on Epic Chat (LMH Palliative Care Consult (On Call)) if you have any further questions.

- Met with ICU Providers and Nursing Leadership to seek their approval of the project
- Created guidelines and Job Aid algorithm for the ICU RNs for palliative care referral process
- Attended nursing huddles to educate all ICU nurses about the upcoming changes
- Designated Palliative Care RN Champion to assist floor nurses with implementation of new protocol

Nurse-Driven Palliative Care Consults

In patient's chart, select Order tab. In search field type in "Inpatient Consult to Palliative Care".

In pop up window - Reasons for consult? choose "Other". Provide criteria met for Palliative Consult using correlating letters (A-G) found on Palliative Referral Form.

Accept & Sign Order. A pop up will prompt for Order mode - select "Per protocol: no cosign required". Then select the primary care provider for patient.

Check all that apply:

A. Multi-organ (≥2) failure (1 point)

B. Major acute neurologic insult, e.g., Malignant stroke, CNS trauma, post-CPR encephalopathy, ICU length of stay ≥ 14 days (1 point)

C. ≥ 2 ICU admissions during the same hospital stay (1 point)

D. Consideration to start or initiation of renal replacement therapy during ICU stay (1 point)

E. Conflicts (not a need for) re: goals, DNR, treatment decisions (2 points)

F. Difficult to control symptoms (2 points)

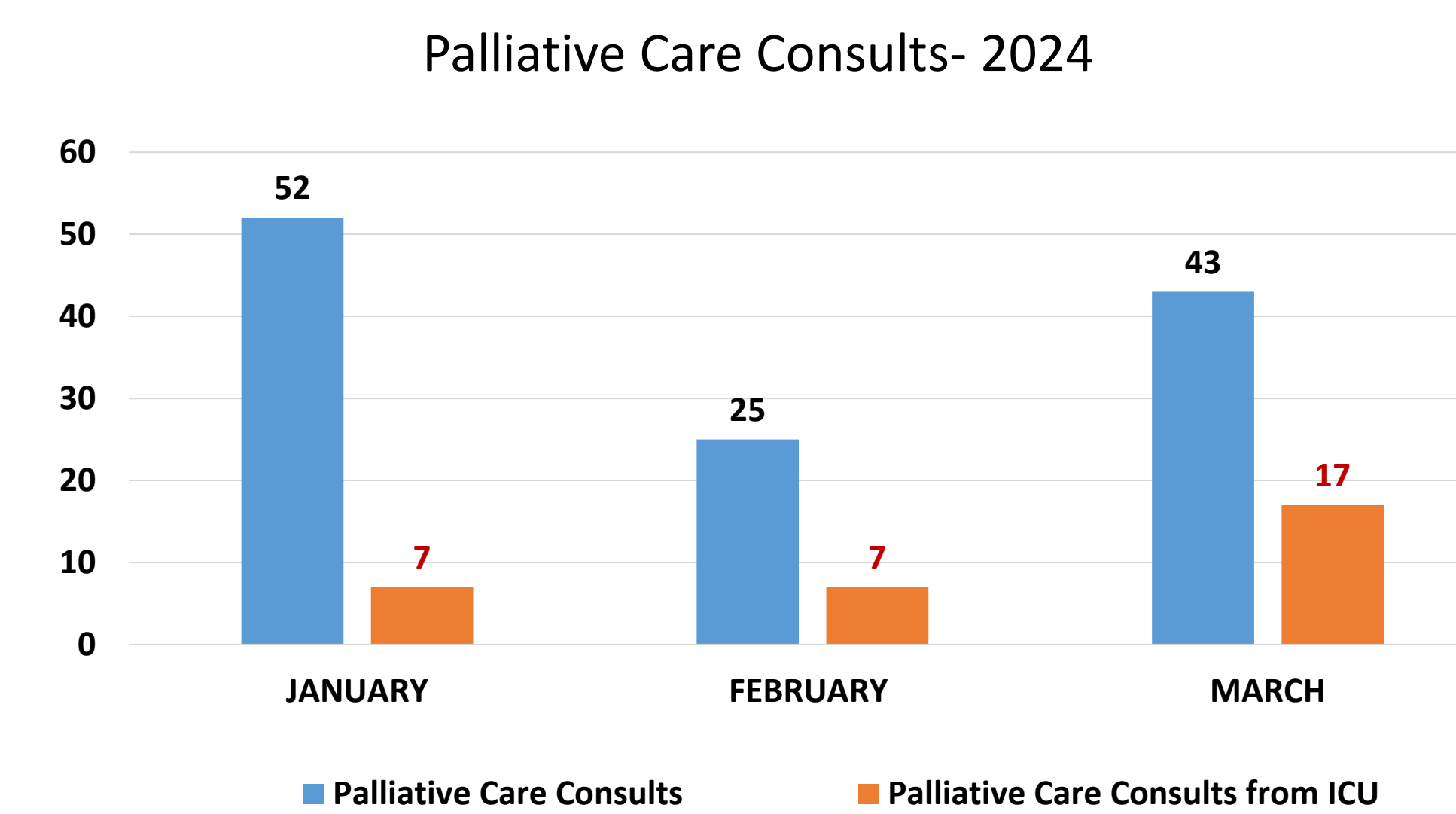
G. Patient and/or family request palliative care consult (2 points)

Total score ≥ 2 indicates need to consider Palliative Care referral.

*Please notify provider when consult placed.

Outcomes

- The ICU RN-Driven Palliative Care Consult Referral project was implemented in February 2024
- From February to March 2024, ICU RNs placed 7 Palliative Care consults
- 86% of consults were placed to assist with Goals of Care discussions
- 14 % of consults were placed to assist with symptoms management
- Disposition Outcomes:
 - 2 patients were transitioned to Comfort Care
 - 1 patient was discharged to hospice
 - 2 patients were discharged home
 - 2 patients passed away in ICU
- Since the implementation of the project, the number of consults placed by ICU staff (providers and RNs) increased from 13% to 40%



Implications

- Structured guidelines for RN driven palliative care consults increased the number of referrals for Palliative Care consults in the ICU.
- Implementing structured guidelines encourages ICU nurses to exercise their nursing autonomy.
- Early palliative consults help to identify, assess, and treat physical and psychological symptoms, as well as emotional and spiritual distress

Recommendations

- Continue RN-Driven Palliative Care consults in ICU and expand to other inpatient units.

Impact

"The Nurse Driven Palliative Care Consult provides for further autonomy in our nursing practice. NYP's professional practice model highlights autonomy as one of the 5 key pieces that make up the building blocks of patient and family centered care at this institution" - RN

"I love it! The nurses are at the bedside, they know the patient, they know the family better than everyone else, they have the insight to start these conversations at the appropriate time" - PA-C

"Any increase in Palliative Care engagement in the ICU will improve patient outcomes" - MD

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Avoidable Adverse Events

- There is a national maternal health crisis of rising maternal morbidity and mortality rates
- Despite extensive efforts to educate the workforce and establish processes, poor outcomes persist
- Hypoxic Ischemic Encephalopathy is one of the leading causes of neonatal death and long-term disability. Delayed recognition and interpretation of abnormal fetal heart tracing patterns are surrogates for the development of HIE



55%
fetal brain injury
AVOIDABLE

Hypoxic Ischemic Encephalopathy
Most frequently identified theme is the use and interpretation of EFM in labor.
(Saffler et al., 2016)



60%
cerebral palsy
AVOIDABLE

Most common problem is related to the use of EFM.
(Berglund et al., 2006)



63%
maternal mortality
AVOIDABLE

Majority due to systems of care or clinical factors.
(COC, 2018)

MAIN PROBLEMS

delayed recognition and intervention based on clinical warning signs

Why Do We Need PeriGen?

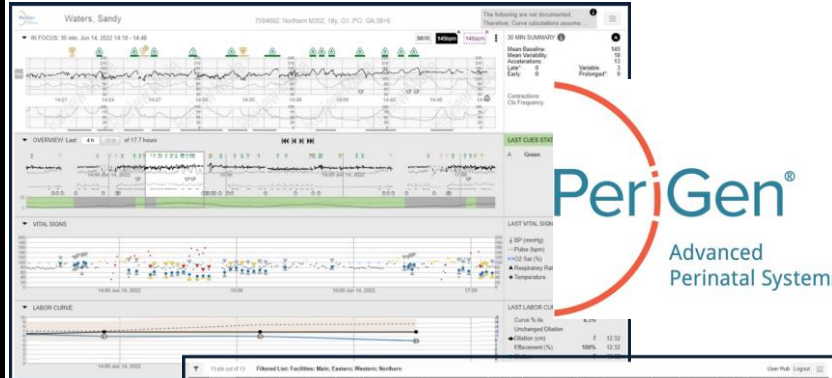
- We aim to increase the timeliness of interventions and improve patient outcomes
- PeriGen will aid in recognition of the clinical warning signs and vital sign changes so we can increase our responsiveness and in turn improve our patient outcomes

PeriGen at NYP-LMH

- Handoff
- Interdisciplinary Round
- Q3 Category II Briefs
- Tracing Rounds
- AD HOC huddles to review concerning tracings

What is PeriGen?

PeriGen is an artificial intelligence-based early warning system and clinical decision support tool. It enhances clinical efficiency, timely intervention and standardization of care



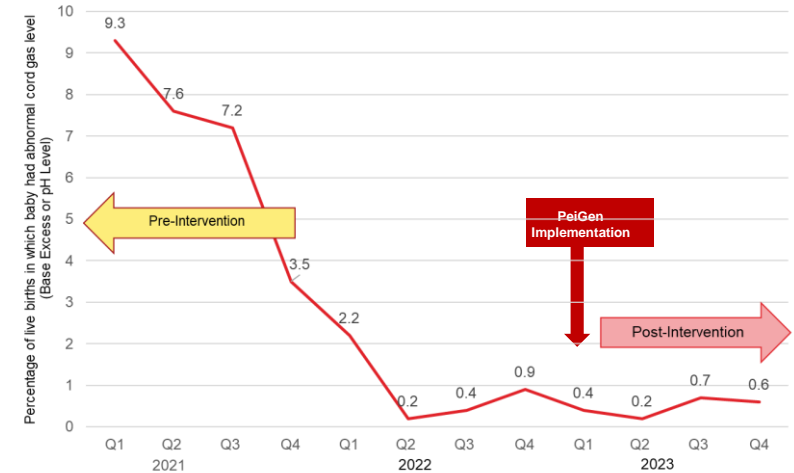
Facility	MMR	Patient	Age	GA	G/P	# of Fetal	TRTL	Delivery Time	DR	EP	Station	ROM	Unchanged/Disrupt	Curve %	BP	SpO2	Temp	State	Clt (per 20 hrs)	Placenta	Other	Local Notes/Pathology	Comment
NYP	5848	Demetri	25	41+1	1.2	1	100%	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00
NYP	5851	Demetri	25	41+1	1.2	1	100%	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00	10:00

Improving Patient Outcomes

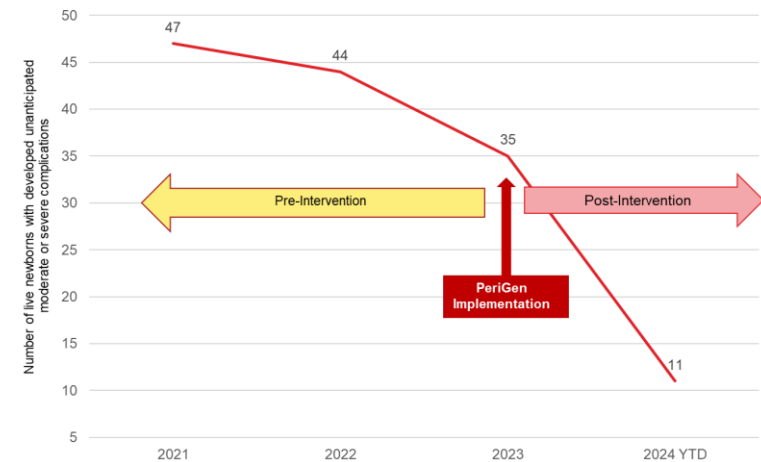
- Automating maternal and fetal early warning signs in real-time
- Identifying the acuity of the maternal and fetal status over time
- Prioritizing clinically relevant patient information
- Highlighting at-risk patients by providing cues to alert the team
- Creating a shared mental model and unified situational awareness with real-time surveillance

Impact of PeriGen

Abnormal Cord Gas Rate (%)



PC-06.0 Overall Newborn Complications

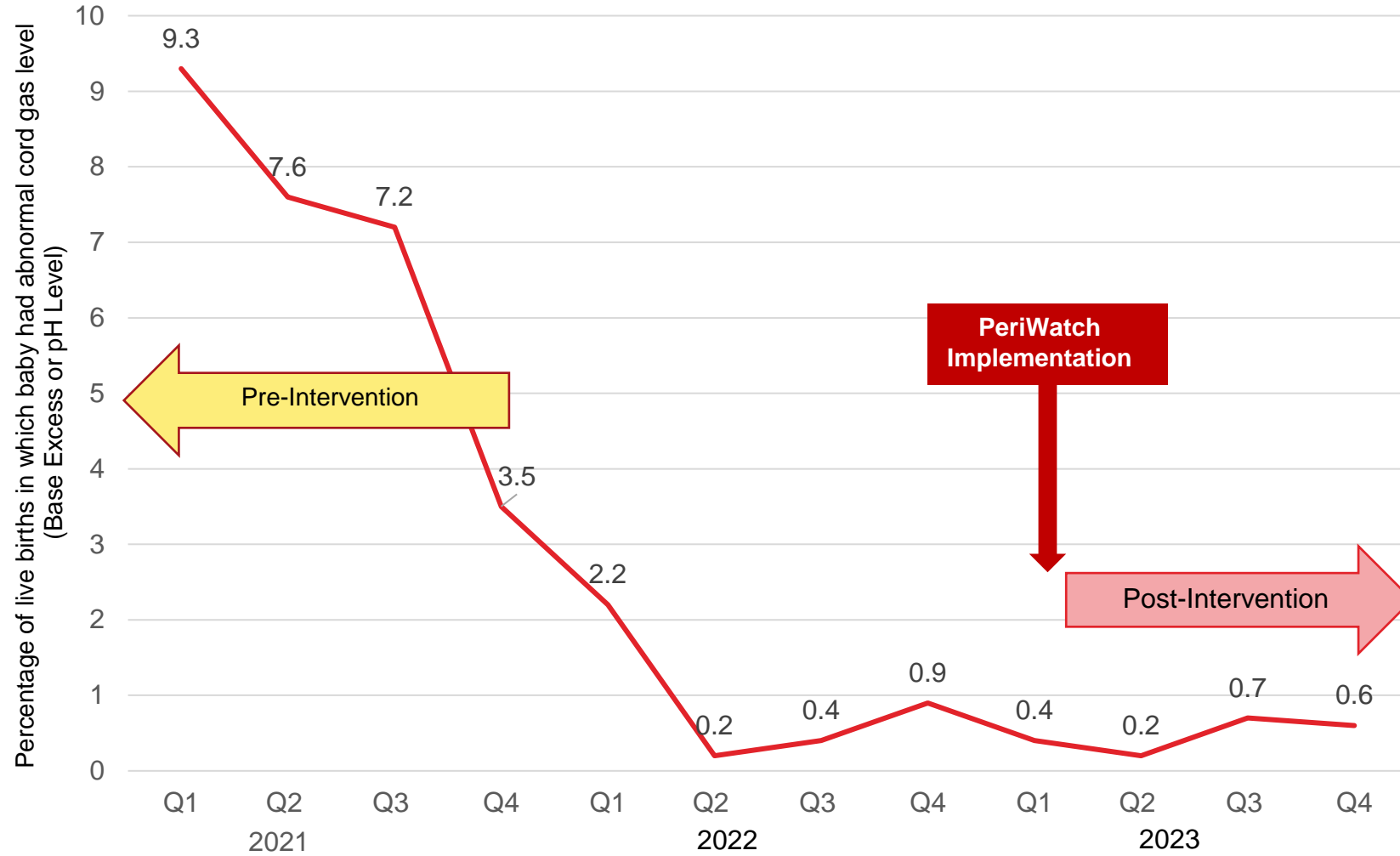


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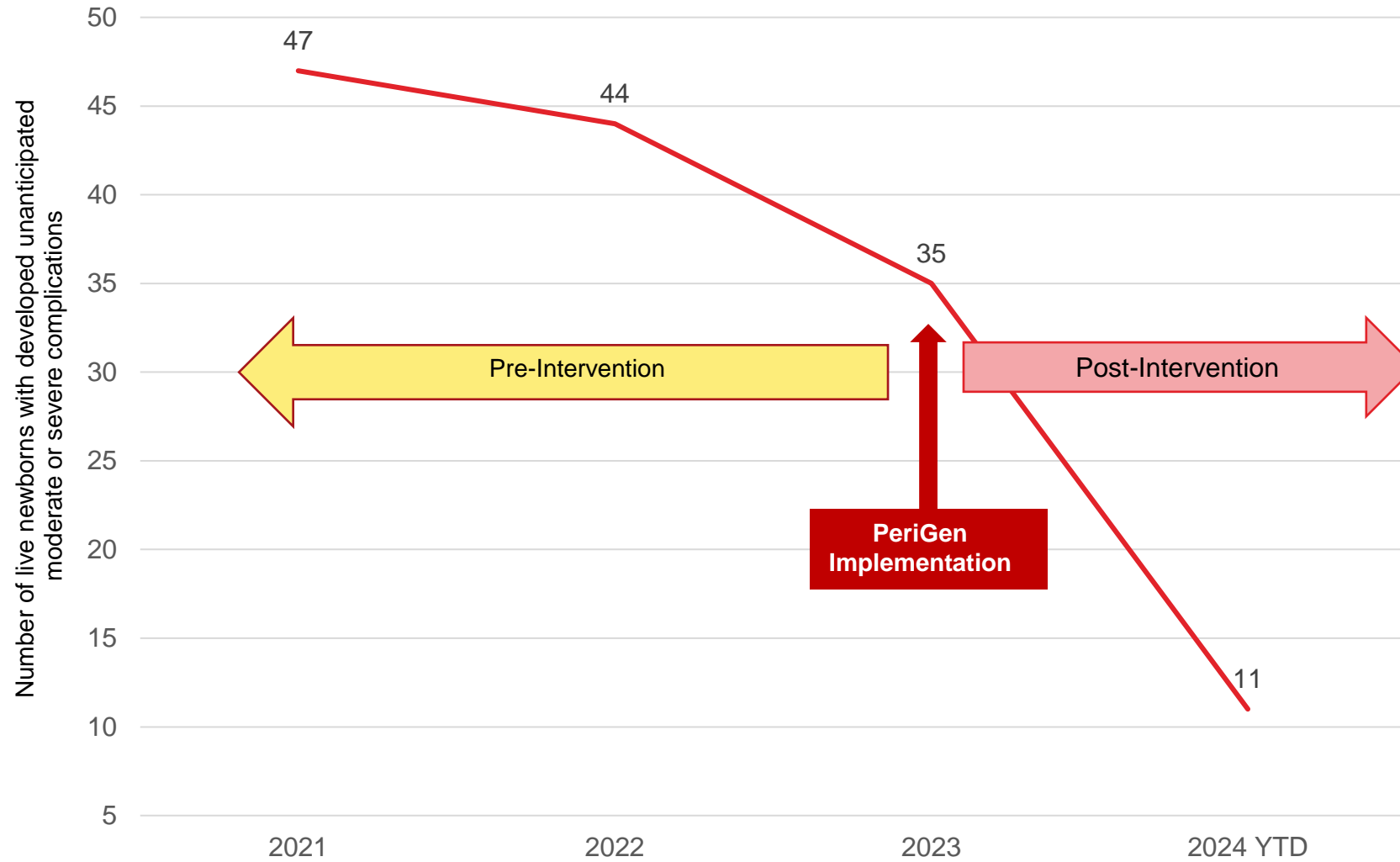
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Abnormal Cord Gas Rate (%)



PC-06.0 Overall Newborn Complications



Improving Obstetric Nurse Knowledge on Discharge Before Noon (DBN) by Implementing a Discharge Checklist on Admission

Amy Park, MS, BSN, RNC-IAP, C-EFM

Alexandra Cohen Hospital (ACH) for Women and Newborns, New York, NY



BACKGROUND

- Discharge is a complex process that requires effective communication and collaboration between multidisciplinary teams and patients (Destino et al., 2019).
- Delays in discharging patients have been shown to adversely affect patient flow throughout the hospital (Patel et al., 2019).
- In addition to a prolonged length of stay (LOS), delayed discharges are associated with lower patient satisfaction and staff burnout, affecting quality of care and higher costs to the healthcare system (Patel et al., 2019).
- ACH 16, the high-risk perinatal unit, does not have a standardized list of items for discharge, creating barriers to early discharge (Tamaki et al., 2019).
- It is unclear whether there is a gap in nurses' knowledge about the impact of delayed discharge and whether nurses are educating patients about the discharge process on admission.
- Late discharges bottleneck patient transfers from labor and delivery to ACH 16 (and the other postpartum units), impacting the entire OB service.

PICO

Population: Postpartum patients on ACH 16

Intervention: Increased nursing education and implementation of a discharge checklist

Comparison: No nursing education and no discharge checklist

Outcome: Increase the percent of patients who are discharged before noon (DBN) above 15%

METHODS / DESIGN

- In order to assess ACH 16 nurses' knowledge on the impact of delayed discharge, a five-question pre and post-test was administered to the 32 staff nurses and OB float nurses through an online survey. The post-test was administered after an in-service, which occurred over a two-week period at the end of June 2023.
- A discharge checklist was added to the bedside shift report handout (Figure 2), with nursing input, with specific needs of the patient taken into account. The tool is to be filled out by the admitting nurse and passed from RN to RN at each shift change. It will be utilized to identify next day discharges and address potential barriers earlier in the patient's stay.
- Patients are identified as DBN if the discharge time was before 12pm. Once the patient (and newborn) are discharged and physically leave the unit, the unit clerk records the date and time in the EMR.
- The initiative was measured from June 2023 to December 2023.

RESULTS

Figure 1. Percent of discharges completed by noon, for ACH 16, 2021-2022

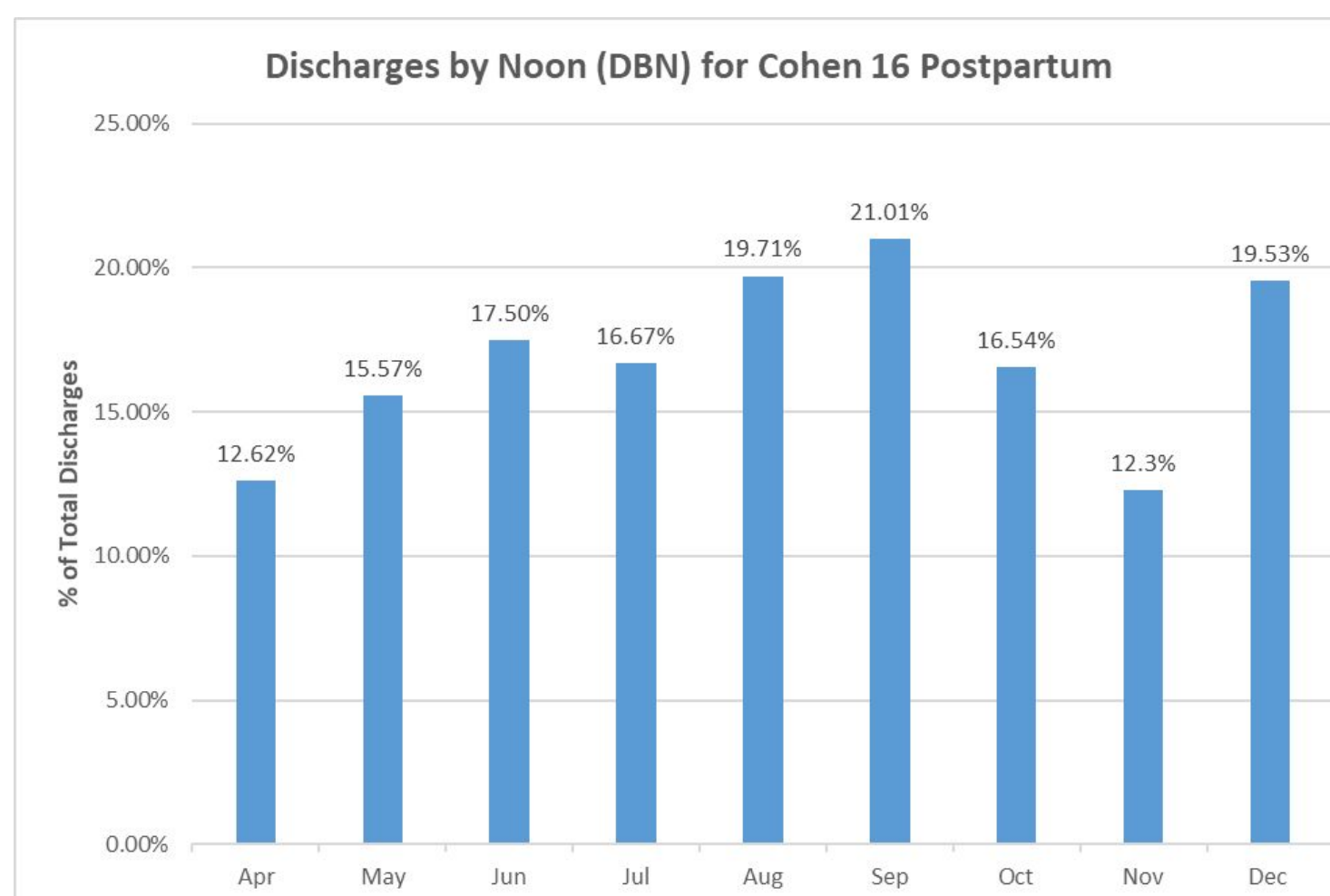


Figure 2. Discharge Checklist

<input type="checkbox"/> Admission Packet Reviewed	Other d/c considerations
<input type="checkbox"/> Birth Certificate	<input type="checkbox"/> Breast Pump
<input type="checkbox"/> Shaken Baby Video	<input type="checkbox"/> Social Work
<input type="checkbox"/> Zoom Discharge Class @4pm	<input type="checkbox"/> WIC
<input type="checkbox"/> First Latch Club @3pm	<input type="checkbox"/> Paternity Form
<input type="checkbox"/> Patient Reported Experience Measure (PREM) Survey	<input type="checkbox"/> Vaccines

Table 1. Pre/post survey responses of ACH 16 nurses

	Pre-test N=30 (%)	Post-test N=27 (%)
Patients with delayed discharges contribute to which of the following		
Prolonged length of stay (LOS)	5 (17.2)	2 (7.4)
Lower patient satisfaction	1 (3.5)	1 (3.7)
Staff burnout	0 (0)	0 (0)
All of the above	23 (79.3)	24 (88.9)
Poor communication between care team members and between patients and providers can delay patient readiness for discharge and subsequent discharge completion		
True	30 (100)	27 (100)
False	0 (0)	0 (0)
A patient is considered 'discharged before noon' when the patient physically leaves the unit and is recorded in Epic before 12pm by the unit clerk		
True	29 (96.7)	27 (100)
False	1 (3.3)	0 (0)
For Q1 2023, the percentage of postpartum patients on ACH 16 who have been discharged before noon is		
4%	9 (31)	2 (7.4)
7%	10 (34.5)	15 (55.6)
13%	6 (20.7)	7 (25.9)
19%	4 (13.8)	3 (11.1)
The target (percentage) of the initiative by NYP to increase the number of patients discharged before noon is		
30%	3 (10.3)	1 (3.7)
35%	0 (0)	1 (3.7)
40%	10 (34.5)	20 (74.1)
45%	16 (55.2)	5 (18.5)



NARRATIVE RESULTS

- The response rate for discharge before noon (DBN) survey for the pre-test was 30/32 (93.8%) and post-test was 27/32 (84.4%) after a presentation at the unit practice council in June 2023 (Table 1).
- There was an increase in nursing understanding of the DBN objectives in the post-survey compared to the pre-survey.
- The discharge checklist was implemented mid-June 2023. The DBN rate after the implementation of the discharge checklist increased from 7% (Q1 2023) to an average of 18.6%, from June to December 2023 (Figure 3).

DISCUSSION

ACH 16 has high acuity patients with postpartum complications such as pre-eclampsia, postpartum hemorrhage, etc., which can create medical barriers to discharge. Some other barriers to discharge can be social work clearance, extra lab work or tests for mom or baby, lactation concerns, and transportation.

The implementation of the discharge checklist was to facilitate the conversation regarding the discharge process on admission, in hopes of identifying barriers and addressing these barriers earlier during the patient's stay. The increased DBN rate of 19.71% and 21.01% seen in August and September 2023 (Figure 3) can be partially attributed to a dedicated 'discharge nurse' who was on light duty. Recommendation for a nurse specifically assigned to be the 'discharge nurse' may help facilitate higher rates of DBN.

Additional efforts for the DBN initiative included:

- Identifying one to two couplets the day before discharge
- The creation of a multi-disciplinary DBN chat in Epic
- Multi-disciplinary afternoon bedside rounds (OB PA, pediatric PA and the charge or primary nurse)

CONCLUSION

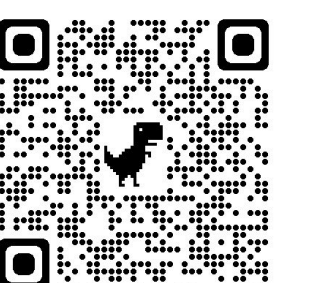
The ACH had over 7700 deliveries in 2022 and 2023.⁵ With the high census, bed turnover and bottlenecking of patient transfers between units are some of the issues when there is a high patient census.

There was an increase in the percent of DBN rate after the introduction of the checklist, surpassing the goal of 15% for this study, although the rate is below the NYP organizational goal of 40%.

The creation of a standardized checklist can not only help identify and address barriers earlier in the patient's stay, but can also enhance discharge efficiency for the team and in return improve quality of care and costs to the healthcare system. Future areas of study will evaluate the impact of the standardized process on patient and staff satisfaction.

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Scan for references and acknowledgments



Utilization of Midline Catheters for Vasopressor Administration in the MICU

Allison Sladek, MSN, RN, Geraldine Epping, BSN, RN, Lindsay Lief, MD, Christine Mitchell, MSN, RN

Quality in Care Symposium

Problem:

- Central line placement puts patients at risk for complications such as infection, pneumothorax, and arterial puncture.
- Norepinephrine and phenylephrine can be given peripherally at low doses and concentrations; however, midlines have not been approved at NYP for infusing peripheral vasopressors due to concerns surrounding infiltration monitoring.
- Peripheral vasopressor administration requires two separate IV accesses, which can be difficult to obtain in patients with challenging vasculature.

Objective:

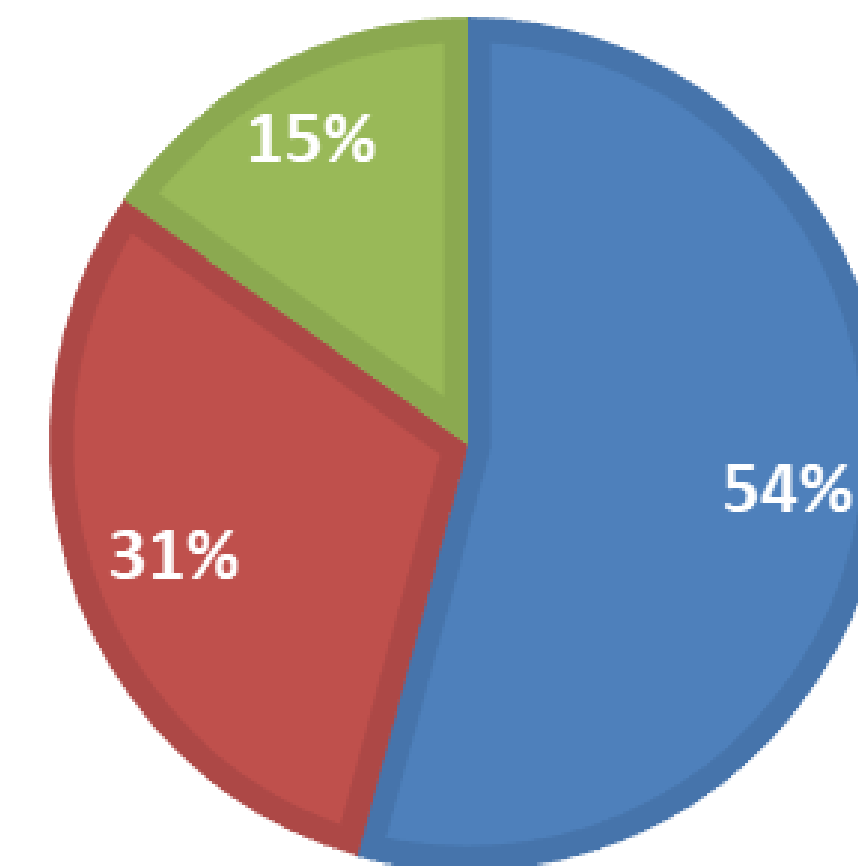
- To evaluate the safety and efficacy of utilizing midlines to administer vasopressors in a 20-bed medical intensive care unit (ICU).

Design/Methods:

- Quality improvement pilot with data tracked to monitor for safety.
- All patients in the MICU (20 bed unit) who had a midline placed for difficult venous access who received midline vasopressors were tracked.
- Medications administered:
 - Norepinephrine 4mg/250mL up to 15 mcg/min.
 - Phenylephrine 20mg/250mL, no dose restrictions
- Monitoring included checks for blood return by bedside nursing staff. If blood return was lost, placement confirmed using bedside ultrasound by critical care fellows.

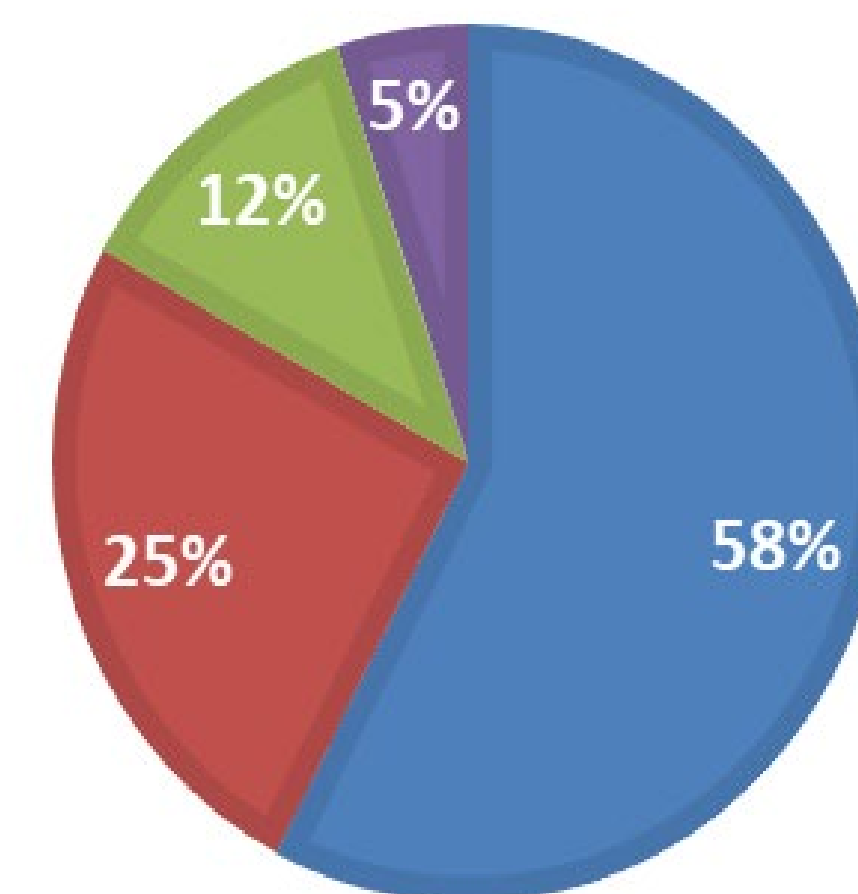
VASOPRESSOR

■ Norepinephrine ■ Phenylephrine ■ Norepinephrine & Phenylephrine



INFUSION DURATION

■ 1-2 Days ■ 3-5 Days ■ 6-8 Days ■ 9+ Days



Results:

- As of April 20th, 2024, 59 patients received midline vasopressors in the MICU.
- At least 191 total central line days were saved utilizing midlines.
- There were no safety events including infiltrations or extravasations.
- The duration of midline vasopressor administration ranged from 1 – 14 days, and the average duration of infusion was 3 days.
- Only 3 midlines lost blood return and required ultrasound placement confirmation by the provider team. All midlines ultrasounded were still in place.

Conclusions:

- Midlines are a safe and effective access for administering vasopressors at peripheral doses and concentrations.
- Midlines can be utilized as a backup peripheral access for patients receiving vasopressors through a standard peripheral IV.
- Limitations include single ICU setting and small sample size.

Next Steps:

- Recommend expansion to other ICUs at NYP with continued data monitoring and consideration for enterprise policy change.

Work Experience, Birth Attitudes, Education, and their Relation to Nurse Cesarean Rates

Katie Roberts, MS, MPA, RNC-OB, C-EFM & Barbara Alba, PhD, RN, NEA-BC

Quality in Care Symposium

Background

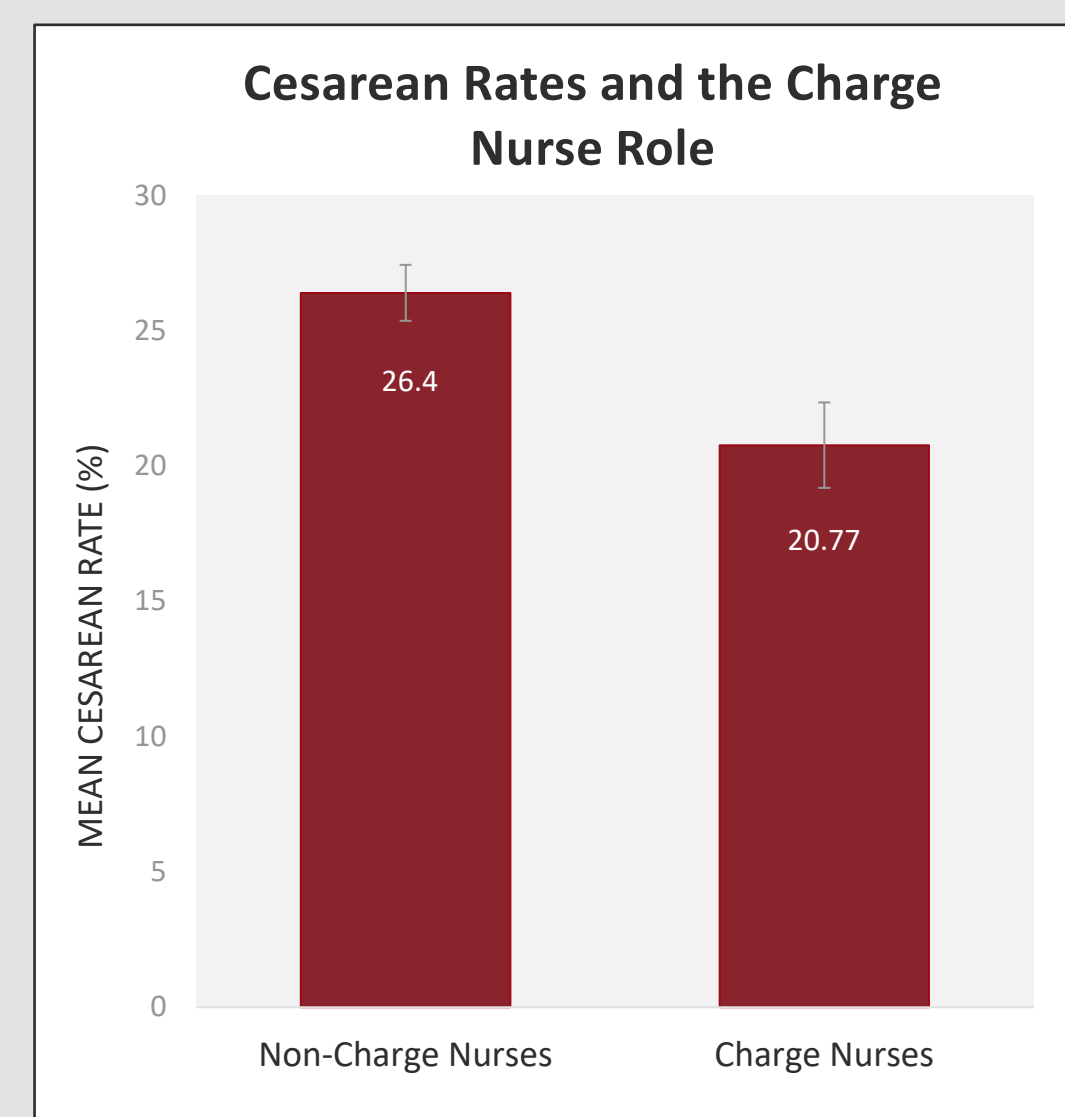
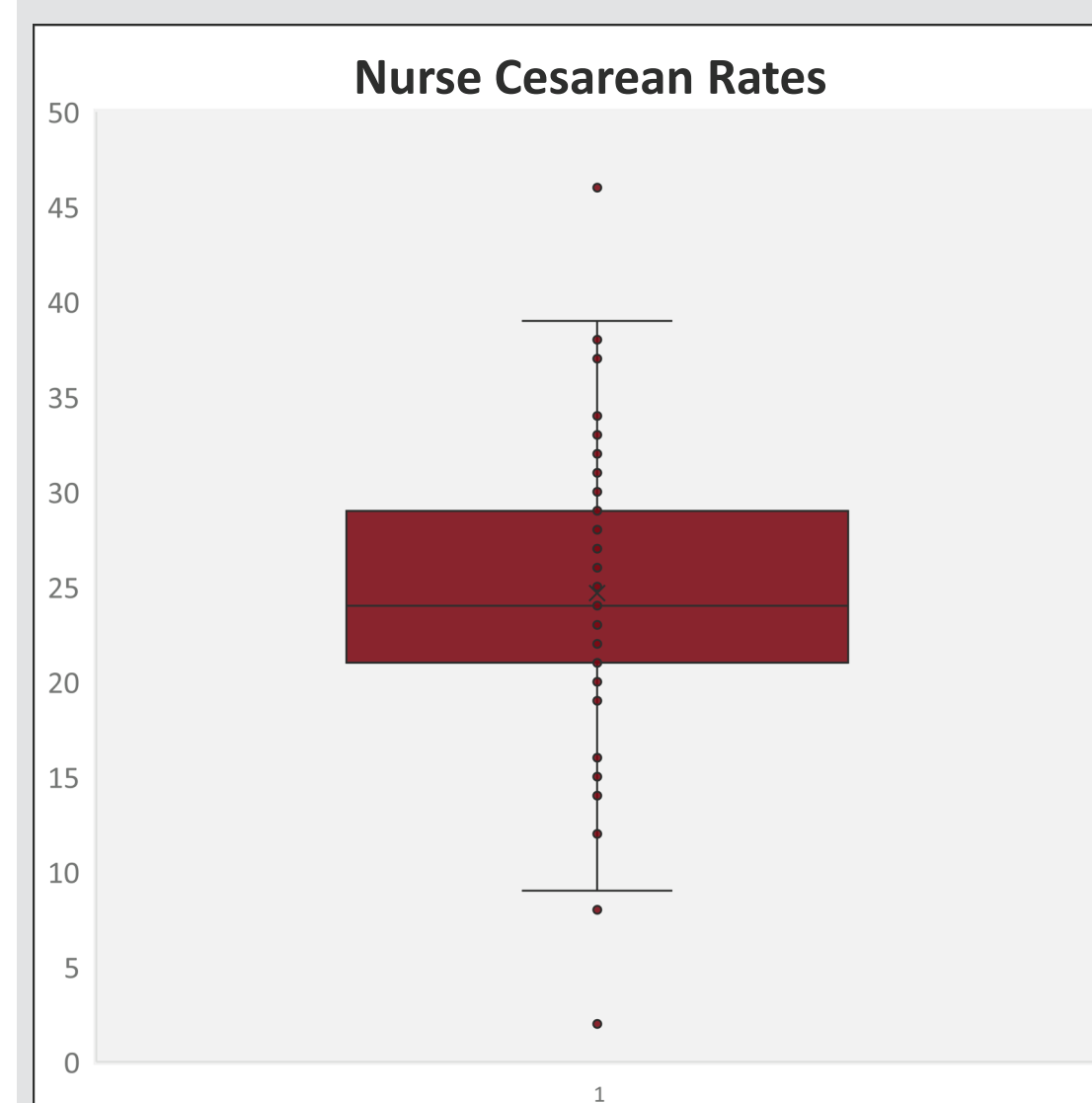
- Cesarean rates in the United States are a focus for improving maternal health outcomes^{1, 4, 6}
- Labor and Delivery (L&D) nurses' impact on delivery outcomes is significant due to their direct patient care involvement
- Previous studies have shown wide variation in individual nurse cesarean rates^{3, 7}
- Variation in nurse cesarean rates not yet understood
- Potential contributing factors to nurse cesarean rate variation include work experience, education level, and attitudes towards birth

Objective:

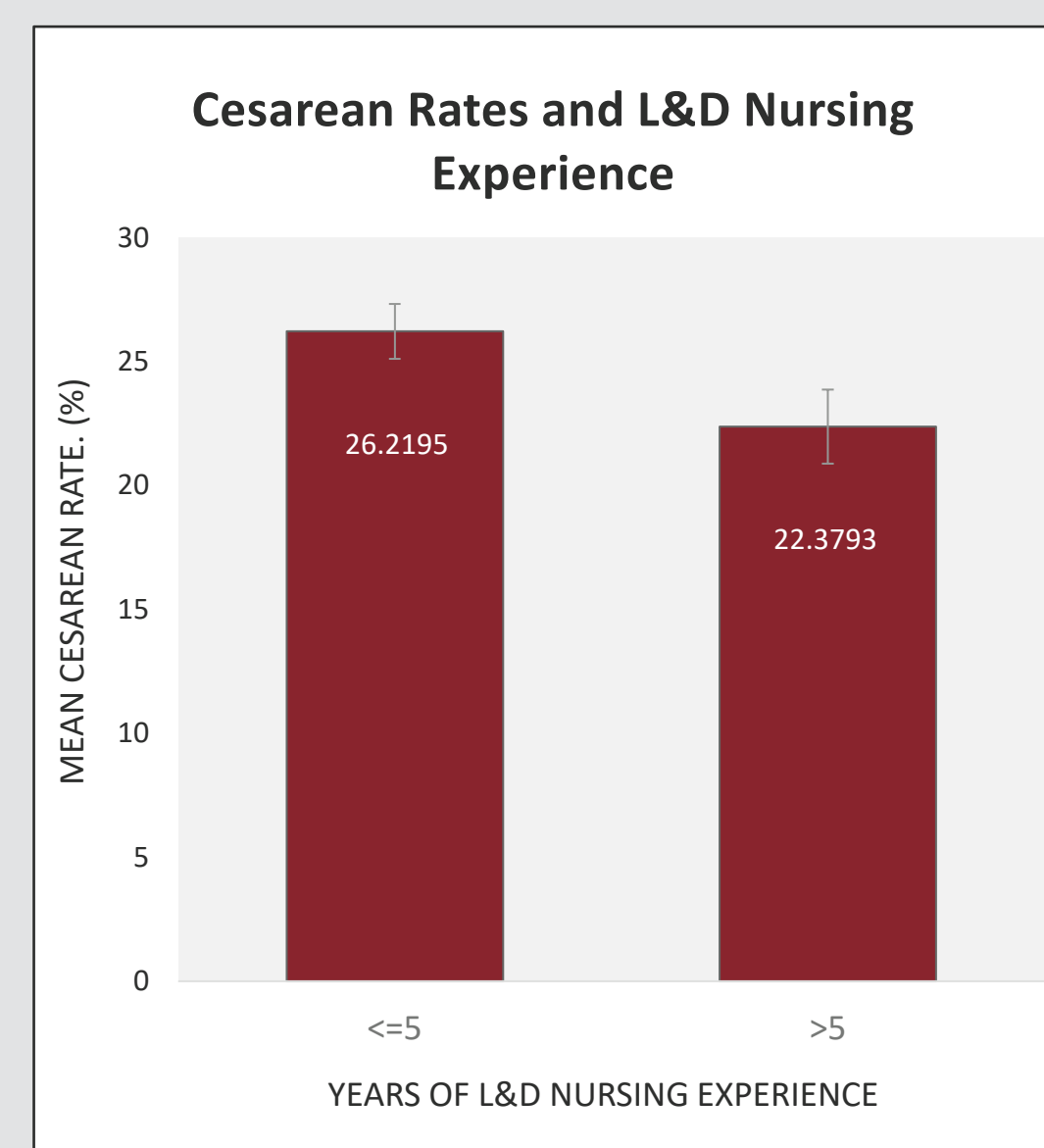
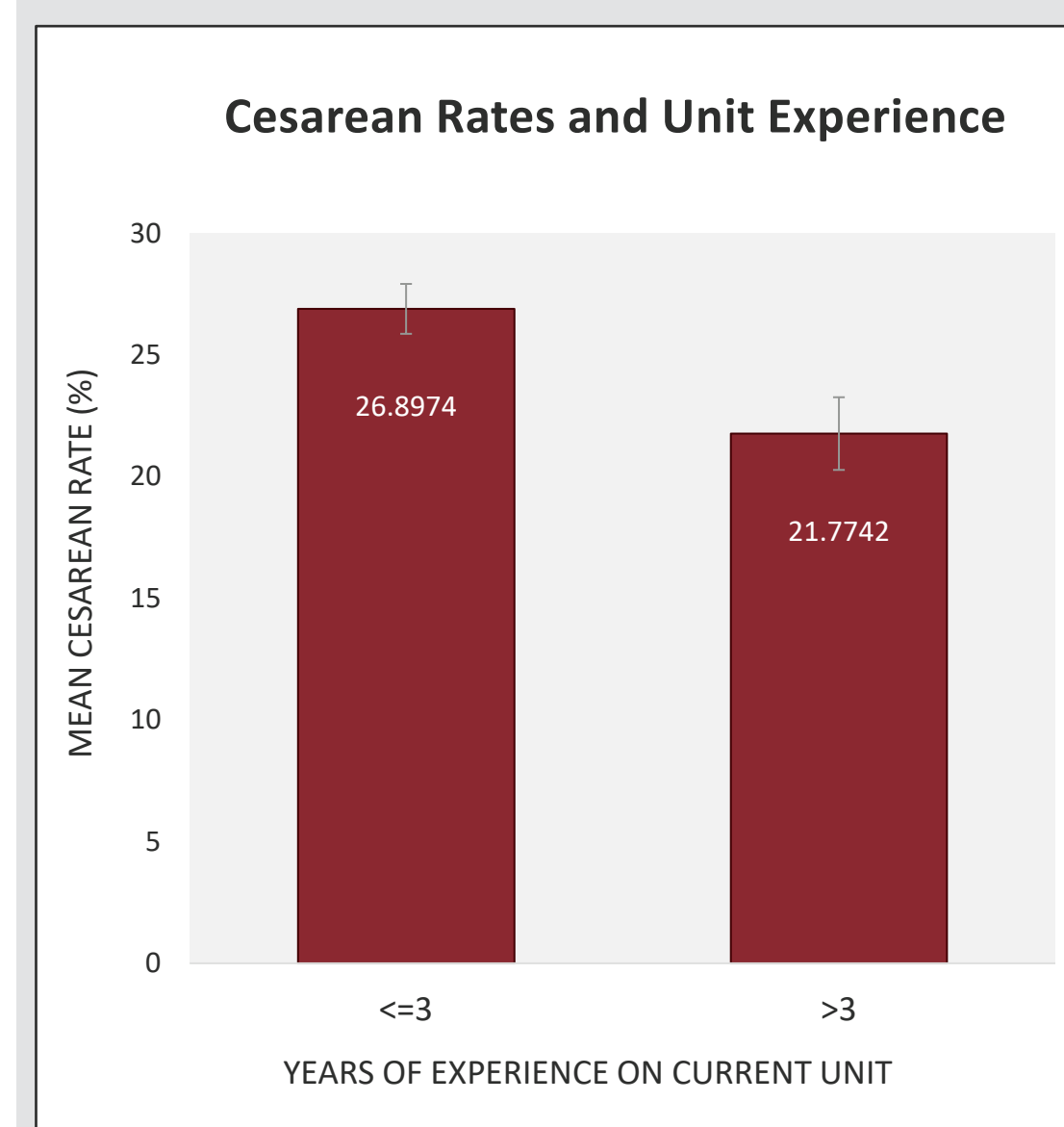
- To examine the relationship of labor and delivery nurses' birth attitudes, educational preparedness, and work experience to their individual cesarean rates.

Methods

- **Design:** Non-experimental correlational study
- **Sample:** 70 labor and delivery nurses recruited via convenience sampling
- **Setting:** Two campuses of an academic medical center in the northeastern United States
- **Data collection:** via online surveys and retrospective chart reviews of nulliparous, term, singleton, vertex (NTSV) deliveries
 - Surveys included a demographic questionnaire and the Nurses Attitudes and Beliefs Questionnaire-Revised (NABQ-R)⁴
- **Statistical analysis:** Pooled t-tests, linear regression tests, and Spearman Rank correlations



Higher levels of labor and delivery experience and functioning in the charge nurse role may contribute to lower nurse cesarean rates.



Results

- Nurse cesarean rates ranged from 2% to 46%
- No significant correlation between education or birth attitudes and nurse cesarean rates
- Mean cesarean rate for nurses with over five years of L&D nursing experience was 3.84% lower than those with five years or less ($p=.04$)
- Mean cesarean rate for nurses with over three years of experience on their current unit was 5.12% lower than those with three years or less ($p=.0048$)
- Mean cesarean rate for charge nurses was 5.62% lower than non-charge nurses ($p=.0038$)

Discussion

- Need for further research to understand the variation in nurse cesarean rates
- Results relevant in the context of high levels of burnout amongst perinatal nurses²
- Implications for nurse retention efforts and mentorship for new labor and delivery nurses
- Limitations include lack of generalizability and low reliability of nurse cesarean rates

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Improving Physician Assistants' and Nurses' Knowledge, Attitudes, and Practice of Diagnostic Stewardship and HAI Prevention at Lower Manhattan Campus

Authors: Cynthia Cain, MS, PA-C Daniella Dusevic, BSN, RN, CCRN Karolina Walichnowska, DNP, CNS Harjot K. Singh, MD

Statement of the Problem: The concept of diagnostic stewardship emphasizes the proper ordering, performing, and reporting of diagnostic tests to optimize medical therapies and enhance patient outcomes. Recognized by global healthcare agencies, such as the CDC and WHO, diagnostic stewardship aims to reduce diagnostic errors, antimicrobial resistance, and healthcare-associated infections. Effective utilization of bacterial cultures, particularly in blood cultures, hinges on clinician proficiency in estimation of pretest probability, specimen selection, timing, and technique. Studies reveal that clinician role, experience, and patient location influence blood culture practices, and educational interventions can lead to improved appropriateness and performance of culturing. Implementing diagnostic stewardship programs, especially in critical care settings, has shown promise in enhancing patient care without adverse outcomes. At NYP-Lower Manhattan Hospital's ICU, CLABSI rates are elevated compared to other units within the hospital. Collaboration between attending physicians, physician assistants, and nurses is crucial for safe patient care, but a knowledge gap exists regarding diagnostic test utilization and best practices. Implementing structured diagnostic stewardship education, raising awareness of best practices, and providing clinical decision-making support, will help to improve testing practices and diagnostic accuracy, leading to optimization of treatment and better patient outcomes in the ICU setting.

Objectives: Our aim is to increase PA and RN knowledge, attitude, and practice (KAP) scores regarding blood culture practices by 25% during the study period (10/2023-12/2023) at LMH ICU, compared to pre-intervention scores.

Methods: The project design involves implementing a diagnostic stewardship program focused on staff education and decision support in the ICU setting at NYP Lower Manhattan Hospital. The population includes ICU nurses and physician assistants (PAs). PDSA Cycle #1: Diagnostic Stewardship Knowledge/Attitude/Practice (KAP) Evaluation - Utilize Google Form survey to assess baseline KAP scores. PDSA Cycle #2: DS/HAI-P Lecture Series (ICU) - Provide evidence-based lecture to review DS principles and best practices for blood culturing as well as HAI-P strategies. PDSA Cycle #3: Diagnostic Stewardship/HAI-Prevention Haiku Support Team - Epic/Haiku chat including ID specialist, IP&C, DS/HAI-P team leads offering 24/7 support for clinical decisions regarding culturing and HAI Prevention.

Results: Results of the post-implementation surveys indicated a successful educational intervention in diagnostic stewardship. ICU nurses and physician assistants scored higher on knowledge-based questions and reported feeling more confident in their practices related to diagnostic stewardship following the implementation of the program. The primary outcome of this study is % change in combined KAP scores for blood culturing in ICU following educational intervention. Knowledge Scores: Survey responses demonstrated a 26% increase in combined knowledge scores post-education. Also, 3 of 4 pre-education knowledge questions had "I am not sure" as answer vs none post-education. Attitude Scores (Likert scale 1-5 on comfort/confidence assessment): Survey responses demonstrated a 26% increase in combined attitude scores post-education. Practice Scores: Survey responses demonstrated a 30% increase in combined practice scores post-education with iterative PDSA cycles including ICU team education and decision-making support, we exceeded our goal of 25% increase in KAP scores. The secondary outcome

of this study is the utilization of the Diagnostic Stewardship/HAI Prevention Haiku Support Team chat. Between November 2023 and March 2024, there was a 300% increase in DXS/HAI-P Chat utilization. There have been 11 chats initiated since launch. Balancing Measures: There were no reports of increased workload or negative impacts on daily clinical responsibilities among ICU staff following the implementation of the diagnostic stewardship program.

Conclusions: This project successfully piloted a diagnostic stewardship program within the NYP-Lower Manhattan Hospital ICU. The educational intervention successfully improved knowledge, attitude, and practices of diagnostic stewardship and HAI-Prevention among LMH ICU PAs and RNs. Furthermore, the establishment of a Haiku/Epic chat has been utilized to provide real-time decision support for best culturing practices and HAI-Prevention strategies. The impact of these interventions is expected to result in optimization of antimicrobials, improved patient outcomes, reduced hospital acquired infections, and decreased institutional costs. This program has been expanded to other culturing practices, including urine culturing and C.Diff. In the future, we plan to expand this program within the ICU, with additional education sessions and workshops for oncoming staff, as well as provide education and decision support to PAs and RNs on Med-Surg units within LMH. Additionally, we will work toward sustainability of knowledge through increased education sessions and integrating DS education into onboarding.

Improving Physician Assistants' and Nurses' Knowledge, Attitudes, and Practice of Diagnostic Stewardship and HAI Prevention

Cynthia Cain¹, PA-C, Daniella Dusevic², BSN, RN, CCRN, Karolina Walichnowska² DNP, APRN, ACCNS-AG, CCRN, Harjot K. Singh³, M.D., ScM., FIDSA

¹NYP/LMH Department of Medicine, ²NYP/LMH Department of Nursing, ³Division of Infectious Diseases, WCM/LMH



Background

- Prevention of HAIs is the responsibility of all healthcare providers, but PAs and RNs are at the frontline making these decisions.
- Studies reveal that clinician role, experience, and patient location influence blood culture practices, and educational interventions can lead to improved appropriateness and performance of culturing, but PAs and RNs are not taught diagnostic stewardship (DS).
- Therefore there is a paucity of data on the impact of DS Education of PAs and RNs on bacteremia stewardship.

Objective/Aim

Increase PA and RN knowledge, attitude, and practice (KAP) scores regarding blood culture practices by 25% during the study period (10/2023-12/2023) at LMH ICU, compared to pre-intervention scores.

Acknowledgements

Jesse Afriyie, Fiona Macabrey, Daniel Bauer, Adam Vella, Vlada Nisevich

Methods

Design: prospective QI project
Setting: 20-bed medical-surgical ICU
Sample: ICU RN and PA (n=22)
Intervention: iterative PDSA cycles
Primary outcome: change in KAP survey scores
Secondary outcome: Chat use

PDSA Cycle #1: 11/2023
 Diagnostic Stewardship Baseline Survey
 Knowledge/Attitude/Practice (KAP)

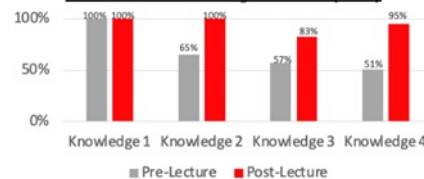
PDSA Cycle #2: 11/2023
 DXS/HAI-P Lecture on DS principles and best practices for blood culturing as well as HAI-P strategies
 Followed by REPEAT KAP survey

PDSA Cycle #3: 11/2023
 DXS/HAI-P Epic Chat creation
 Epic/Haiku chat staffed by all 4 authors, IP&C 24/7 support for clinical decisions regarding culturing and HAI Prevention

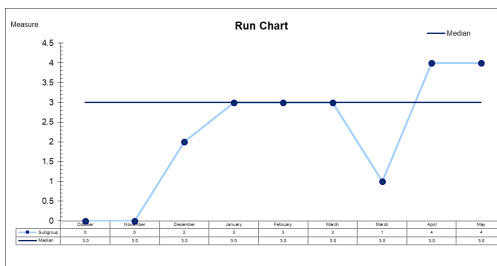
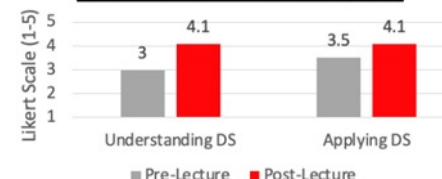
Results

A total of 22 PAs and RNs (% of total staff) participated in the project. With iterative PDSA cycles, we exceeded our goal of 25% increase in KAP scores and established a resource for real-time questions by frontline PAs and RNs.

Combined Knowledge Scores (BCx)



Combined Attitude Scores (BCx)



Model Category	LMH Rover Chat content examples
Knowledge	"Can we please discuss blood culture order for this pt?"
	"If I cannot get 2 blood culture sets for this patient, is 1, ok?"
Attitude	"UA with reflux question. He is getting foley pulled now. Should I collect now or clean catch?"
	"The central line can be placed in the same room or does patient have to be in different room?"
Practice	"Can we update isolation after result?"
	"Where do I find port dressings?"
	"Can you change a dressing with me?"
	"Question regarding PICC care? Call me"

Primary Outcome:

- % change in combined KAP scores
 - 26% increase in combined **knowledge** scores post-education
 - 26% increase in combined **attitude** scores post-education
 - 30% increase in combined **practice** scores post-education

Secondary Outcome:

- DXS/HAI-P Chat utilization (run chart)
 - 300% increase** in DXS/HAI-P Chat utilization since launched in November (n=11)

Conclusion

Education and real time expert support can improve KAP scores of frontline providers. Expansion to other tests like *C. difficile* and UTI and staff on other hospital floors could further improve HAI prevention efforts. In addition, EPIC support is needed to sustain this education efforts thru incorporation of DS clinical decision support.

Collaborative Care Model Reduces Perinatal Mood and Anxiety Symptoms

Authors: Semra Etyemez, MD, MPH, Elizabeth Bruun, LMSW, Soudabeh Givrad, MD, Lindsey Wallace Goldman, PhD, Lawanda Peterson-Banks, LCSW, Lorena Rincones Rojas, MD, Hannah Strater, DNP, PMH NP-BC, Emily Tutino, BA, Sarah J Weingarten, MD, Lauren M Osborne, MD

Department of Obstetrics & Gynecology

Statement of the Problem: Perinatal mood and anxiety disorders (PMADs) are the most common complication of childbirth and can have devastating consequences, with increased risk of maternal psychiatric and obstetric complications. Collaborative and integrated care models, which embed mental health care into physical health settings, have been shown to improve mental health outcomes in adults. Collaborative care models, which embed team-based mental health care into physical health settings, have been shown to improve mental health outcomes in adults. However, obstetricians (OBs) often report limited training in and access to referrals for mental health.

Objective of the study: We aimed to address this deficit by establishing a perinatal collaborative care (CC) program in an academic medical center and hypothesized that our proposed collaborative care (CC) intervention model in the prenatal setting would decrease depressive and anxiety symptoms.

Project Design: Across three prenatal clinics at Weill Cornell Medical Center, we screened all patients three times (twice antepartum, once postpartum) using the Edinburgh Postnatal Depression Scale (EPDS). Positive screens (≥ 9) were eligible for referral. Cases are reviewed weekly with the behavioral care manager, OB, nursing, and psychiatrist. Patients are monitored for symptoms, and treatment plans include psychotherapy, medication management, or referral to psychiatry for long-term management. In referred patients EPDS, Perinatal Anxiety Screening Scale (PASS), Generalized Anxiety Disorder Screener (GAD-7), Adverse Childhood Experiences Questionnaire (ACE), and Client Satisfaction Questionnaire (CSQ-8) were measured at the intake and/or discharge visits.

Results: From 1/23/23-11/30/23, 567 patients screened positive and 191 (33.7%) were referred to the CC. An additional 228 were referred without a positive screen (for OB or nursing concern). 89.2% were referred from clinics with private insurance and 10.8% from a publicly insured clinic. Of the 419 referred to the CC (52.7% of the total population), 267 (63.7% of referred) were enrolled within an average of 18.6 days (compared to 32.3 days for standard referral to perinatal psychiatry at our institution). 82 (21.8% of positive screens) were in care elsewhere, and 102 (27.1%) declined for other reasons. 147 patients were enrolled into the CC program and 89 patients were discharged. Most of the enrolled patients had a past mental health history (84%), and the primary diagnoses at intake were anxiety disorders, adjustment disorders, and depressive disorders. At the intake visit, 19.7% of patients were taking psychiatric medications ($N = 29$), and of these patients, 83% were taking an SSRI. At discharge from the CC intervention model, 32.6% of patients were taking psychiatric medications ($N = 29$), with 90% of these patients being prescribed an SSRI ($N = 26$). Average scores on psychological scales at intake were: EPDS 13.4 ± 5.34 , PASS 32.9 ± 15.36 , GAD-7 9.8 ± 5.03 , ACE 2.0 ± 2.09 . At

discharge, scores decreased on all scales: EPDS 8.6 ± 6.3 , PASS 14.0 ± 13.82 , and GAD-7 6.0 ± 4.88 . Mean change in score from intake to discharge was statistically significant for all scales ($p < .001$). In addition, patients were highly satisfied with their care, with an average score of 31.4 (out of 32) on the CSQ-8.

Conclusions There is high demand for this resource in our clinics. Collaborative care in the OB setting is an effective intervention to reduce perinatal anxiety and depression symptoms.



Collaborative Care Model Reduces Perinatal Mood and Anxiety Symptoms

2024 Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Semra Etyemez, Elizabeth Bruun, Soudabeh Givrad, Lindsey Wallace Goldman, Lawanda Peterson Banks, **Lorena Rincones Rojas**, Hannah Strater, **Emily Tutino**, Sarah J. Weingarten, Lauren M. Osborne

Problem Statement

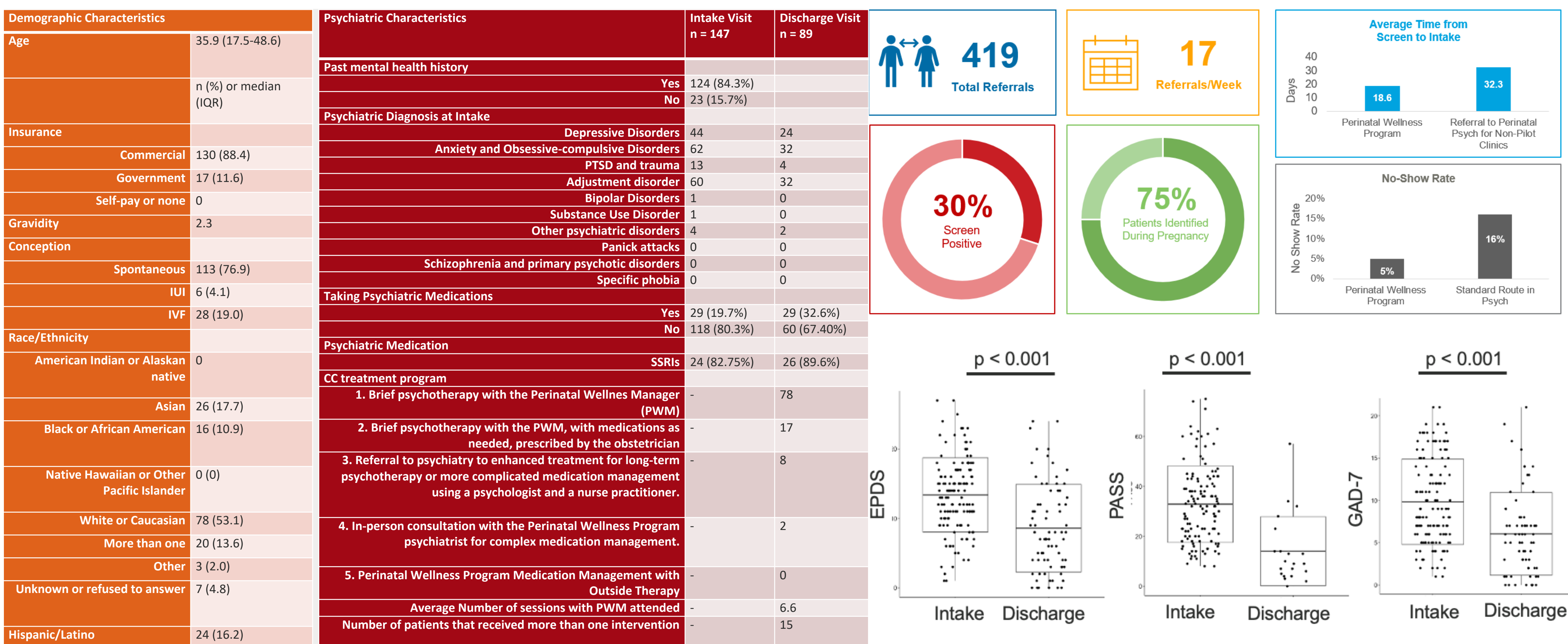
Perinatal mood and anxiety disorders (PMADs) are the most common complication of childbirth and can have devastating consequences, with increased risk of maternal psychiatric and obstetric complications. Collaborative and integrated care models, which embed mental health care into physical health settings, have been shown to improve mental health outcomes in adults. Collaborative care models, which embed team-based mental health care into physical health settings, have been shown to improve mental health outcomes in adults. However, obstetricians (OBs) often report limited training in and access to referrals for mental health.

Objective/Aim Statement

We aimed to address this deficit by establishing a perinatal collaborative care (CC) program in an academic medical center and hypothesized that our proposed collaborative care (CC) intervention model in the prenatal setting would decrease depressive and anxiety symptoms.

Design/Methods

Across three prenatal clinics at Weill Cornell Medical Center, we screened all patients three times (twice antepartum, once postpartum) using the Edinburgh Postnatal Depression Scale (EPDS). Positive screens (≥ 9) were eligible for referral. Cases are reviewed weekly with the behavioral care manager, OB, nursing, and psychiatrist. Patients are monitored for symptoms, and treatment plans include psychotherapy, medication management, or referral to psychiatry for long-term management. In referred patients EPDS, Perinatal Anxiety Screening Scale (PASS), Generalized Anxiety Disorder Screener (GAD-7), Adverse Childhood Experiences Questionnaire (ACE), and Client Satisfaction Questionnaire (CSQ-8) were measured at the intake and/or discharge visits.



Results

From 1/23/23-11/30/23, 567 patients screened positive and 191 (33.7%) were referred to the CC. An additional 228 were referred without a positive screen (for OB or nursing concern). 89.2% were referred from clinics with private insurance and 10.8% from a publicly insured clinic. Of the 419 referred to the CC (52.7% of the total population), 267 (63.7% of referred) were enrolled within an average of 18.6 days (compared to 32.3 days for standard referral to perinatal psychiatry at our institution). 82 (21.8% of positive screens) were in care elsewhere, and 102 (27.1%) declined for other reasons. OBs didn't refer 41 patients (10.9%) whose symptoms improved. 133 (35.4%) are awaiting consent and referral by their OB. At initial intake visit, the average EPDS was 13.4±5.3. 147 patients were enrolled into the CC program and 89 patients were discharged. Most of the enrolled patients had a past mental health history (84%), and the primary diagnoses at intake were anxiety disorders, adjustment disorders, and depressive disorders. At the intake visit, 19.7% of patients were taking psychiatric medications (N = 29), and of these patients, 83% were taking an SSRI. At discharge from the CC intervention model, 32.6% of patients were taking psychiatric medications (N = 29), with 90% of these patients being prescribed an SSRI (N = 26). Average scores on psychological scales at intake were: EPDS 13.4±5.34, PASS 32.9±15.36, GAD-7 9.8 ±5.03, ACE 2.0±2.09. At discharge, scores decreased on all scales: EPDS 8.6±6.3, PASS 14.0±13.82, and GAD-7 6.0 ±4.88. Mean change in score from intake to discharge was statistically significant for all scales (p < .001). In addition, patients were highly satisfied with their care, with an average score of 31.4 (out of 32) on the CSQ-8.

Conclusions

There is high demand for this resource in our clinics. Collaborative care in the OB setting is an effective intervention to reduce perinatal anxiety and depression symptoms.

Next Steps

Further research is needed to assess long-term mental health and obstetric outcomes.

Improving Peripartum Beta Lactam Use Among Pregnant Patients with *Reported* Penicillin Allergy

Authors: Ethan Wood, MD, Sarah J Weingarten, MD, Debra D'Angelo, MS, Inna Landres, MD, Corrina Horrey-Oxford, MD, Szilvia Nagy, MD, Julia Cron, MD, Harjot K Singh, MD

Statement of the Problem: Reported penicillin allergy is common among pregnant women (7-21%), and in this setting, patients are more likely to receive alternative antibiotics, such as clindamycin and vancomycin, instead of beta lactams. However, these are not the preferred antibiotics for Group B Strep colonization treatment, intrapartum fever management, and cesarean section prophylaxis. Furthermore, the use of alternative antibiotics is associated with worse outcomes for patients and their neonates, including wrong empiric choices, longer lengths of stay, and increased risk of surgical site infections and endometritis. While the standard approach to reported penicillin allergy involves allergy consultation and performance of penicillin skin testing and oral amoxicillin challenges, these services are not always available, including at NYPH, where we do not have access to inpatient or outpatient allergy services.

Objective: We conducted a quality improvement study of a new antibiotic stewardship workflow to improve beta lactam use in this patient population.

Methods: Using QI methodology at three obstetric practices (including high risk) at WCM and LMH, we conducted interactive PDSA cycles to implement a tool for allergy assessment by OB providers (using smartphrase), provide asynchronous review and recommendations (by Infectious Disease physician and pharmacist), and provider education and feedback on penicillin allergy management. The intervention was designed for the outpatient setting so at the time of delivery, a management plan for antibiotics was in place. The primary outcome was the change in beta lactam use during 2023-2024, compared to baseline of 2022-2023. Secondary measures included frequency of outreach and completion of allergy assessments.

Results: During our baseline period, of the 200 pregnant women with a self-reported beta lactam allergy who delivered at NYPH from 2021 to 2022, 71/165 (41%) got a beta lactam antibiotic when antibiotics were indicated. In our intervention period 7/2023-5/2024, we enrolled 91 women with self-reported penicillin allergies, of whom 49 had delivered at the time of this abstract. Among this group, 26/43 (60%) received beta lactam antibiotics- an absolute increase in beta lactam prescribing by almost 20%. Monthly data was used to provide feedback to providers about their effectiveness of allergy assessments. Repeat assessment and feedback, showed an increase from 18% of patients with reported penicillin allergy being referred to 35% by February 2024, a 50% increase.

Conclusions: Through iterative PDSA cycles, we were able to increase the number of women who received the preferred antimicrobial therapy. Identification and stratification of patients with penicillin allergies during routine prenatal care is feasible. Such efforts can ensure that patients can safely receive beta lactam antibiotics despite reporting prior history of allergy to penicillin and without access to an allergist.



Improving Peripartum Beta lactam Use Among Pregnant Patients with Reported Penicillin Allergy

Ethan Wood, MD¹, Sarah Weingarten, MD¹, Debra D'Angelo, MS², Inna Landres, MD¹, Corrina Horrey-Oxford, MD¹, Szilvia Nagy, MD¹, Julia Cron, MD³, Steven Yen, MS², Ally Stilwell, PharmD⁴, Harjot K Singh, MD ScM⁵

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Statement of the Problem

Reported penicillin (PCN) allergy is common among pregnant patients (7-21%), and 30-70% need peripartum antibiotics.

These patients are more likely to receive alternative antibiotics, which are associated with worse outcomes for patients and their neonates, including wrong empiric choices, longer lengths of stay, and increased risk of surgical site infections and endometritis.

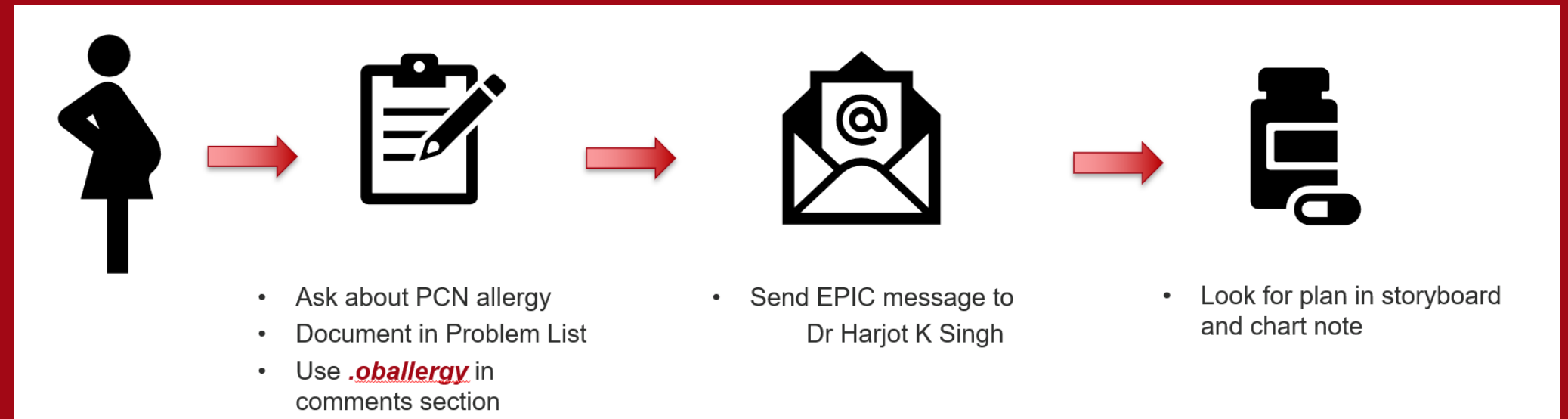
Standard of Care approach includes allergy consultations and PCN skin tests which are not readily available and are associated with improved maternal infant outcomes, but data are lacking on feasibility and outcomes in settings where allergy consultation is not available.

Smart Aim

Increase beta-lactam use among patients with reported PCN allergy at three sites providing obstetric services from 7/2023-6/2024 by 10% compared to baseline 06/2022-07/2023.

Methodology

We performed a QI project at three sites with iterative PDSA cycles
Sites: One Weill Cornell Medicine (WCM) outpatient site with patients delivering at Lower Manhattan Hospital, one WCM outpatient site with deliveries at Alexandra Cohen Hospital (ACH), and one hospital-based outpatient site with deliveries at ACH



All pcn allergy assessments were reviewed asynchronously by an Infectious Diseases physician and pharmacist
PDSA cycle 1: Outpatient education, creation of dot phrase for electronic medical record, implementation of new workflow (7/1/23-8/30/23)

PDSA cycle 2: Implementation of new workflow (7/1/23-6/30/24)
PDSA cycle 3: Review implementation effectiveness #1 (7/1-8/31/23)
PDSA cycle 4: Review of baseline data for comparison (11/2023)
PDSA cycle 5: Second cycle of education, inpatient education (12/23)
PDSA cycle 6: Review implementation effectiveness #2 (March 2024)

Primary outcome: the change in beta lactam use in the intervention period compared to baseline period

Process measures: Frequency of outreach and completion of allergy assessments
Changes in allergy categories

Balance measures: adverse events in mother and baby

Table 1. Demographics

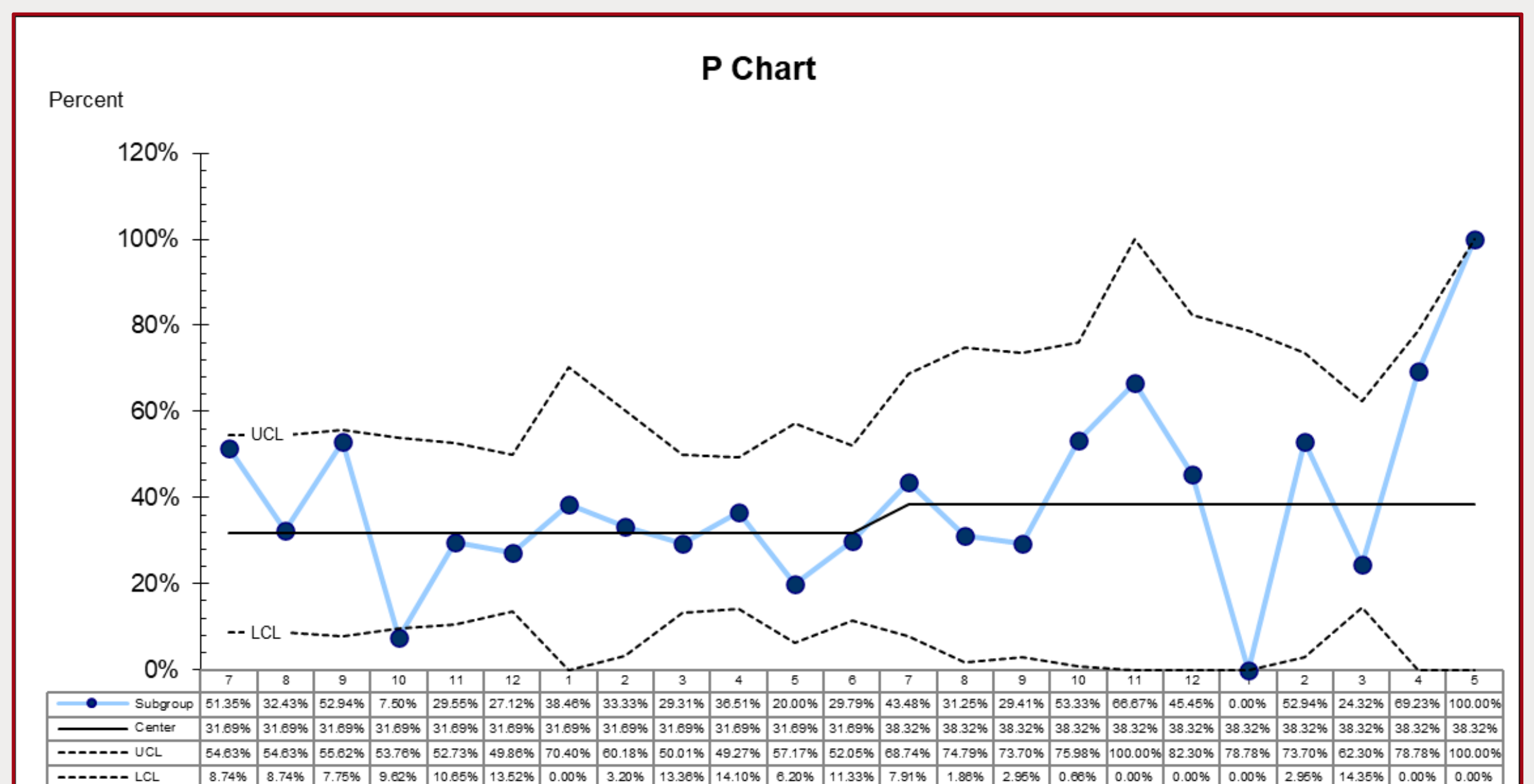
Characteristic	Timepoint		p-Value
	Baseline (N=200)	Intervention (N=91)	
Race			
American Indian / Alaska Native	0 (0%)	2 (2.2%)	0.060
Asian	21 (10.5%)	6 (6.6%)	
Black or African American	20 (10.0%)	11 (12.1%)	
White	108 (54.0%)	60 (65.9%)	
Other	34 (17.0%)	7 (7.7%)	
Declined	15 (7.5%)	5 (5.5%)	
Missing	2 (1.0%)	0 (0%)	
Ethnicity			
Hispanic or Latino or Spanish Origin	38 (19.0%)	12 (13.2%)	0.440
Not Hispanic or Latino or Spanish Origin	150 (75.0%)	72 (79.1%)	
Declined	12 (6.0%)	7 (7.7%)	
Language			
English	192 (96.0%)	90 (98.9%)	0.028
Other	8 (4.0%)	0 (0%)	
Unknown	0 (0%)	1 (1.1%)	
Insurance			
Commercial	157 (78.5%)	78 (85.7%)	0.009
Medicare/Medicaid	41 (20.5%)	10 (11.0%)	
None	2 (1.0%)	0 (0%)	
Missing	0 (0%)	3 (3.3%)	
Clinic			
HT5	39 (19.5%)	7 (7.7%)	<0.001
J130	103 (51.5%)	26 (28.6%)	
Lower Manhattan	51 (25.5%)	26 (28.6%)	
Missing	7 (3.5%)	32 (35.2%)	
Gestational Age (Weeks)†	38.4 (2.0)	38.2 (1.8)	0.323

Ethnicity and clinic were compared using the chi-squared test, while the remaining categorical variables were compared using Fisher's exact test.

Gestational age was compared using the Wilcoxon rank sum test.

† Based on N=195 babies in the baseline group and N=69 babies in the intervention group.

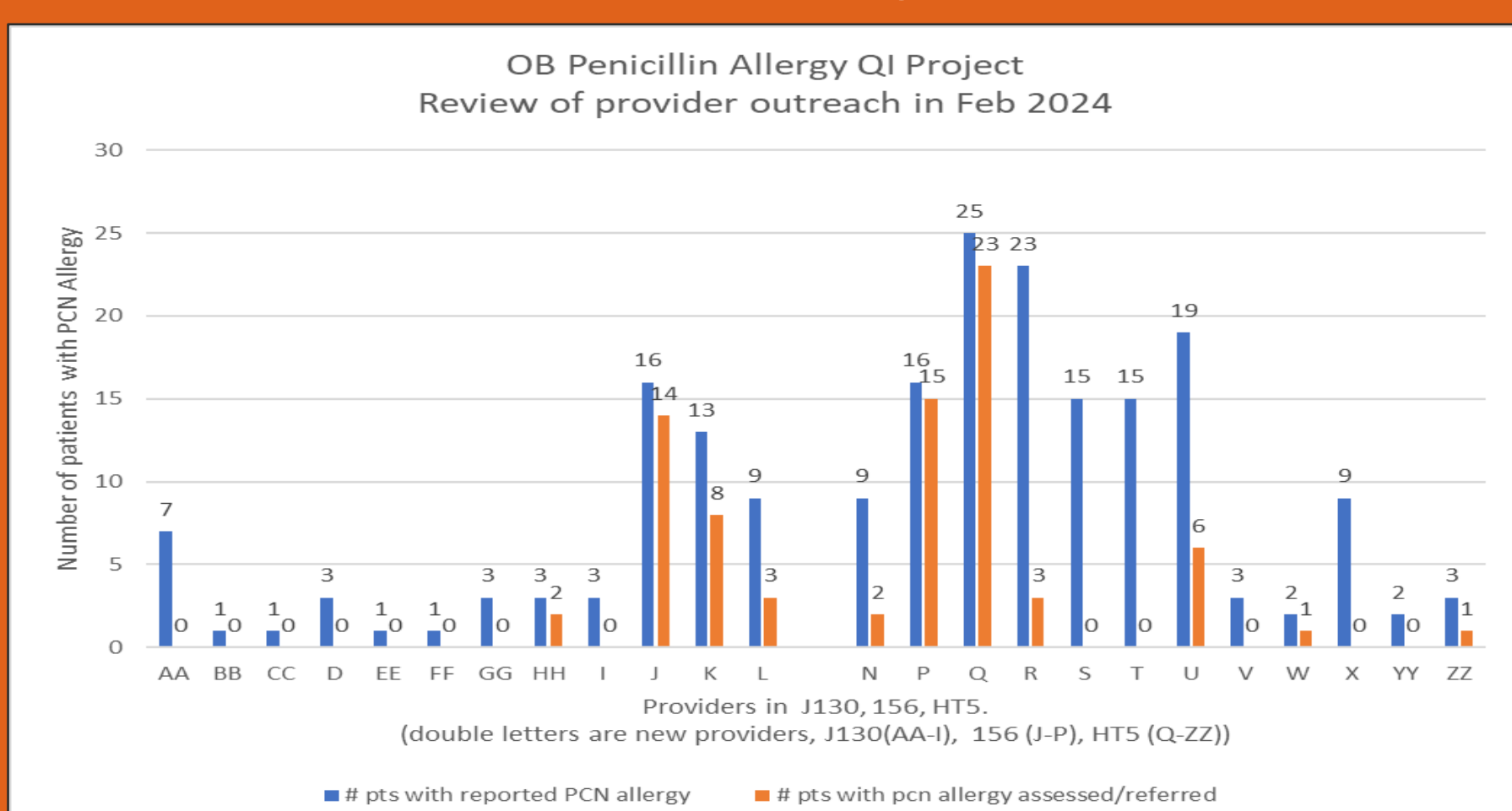
Results



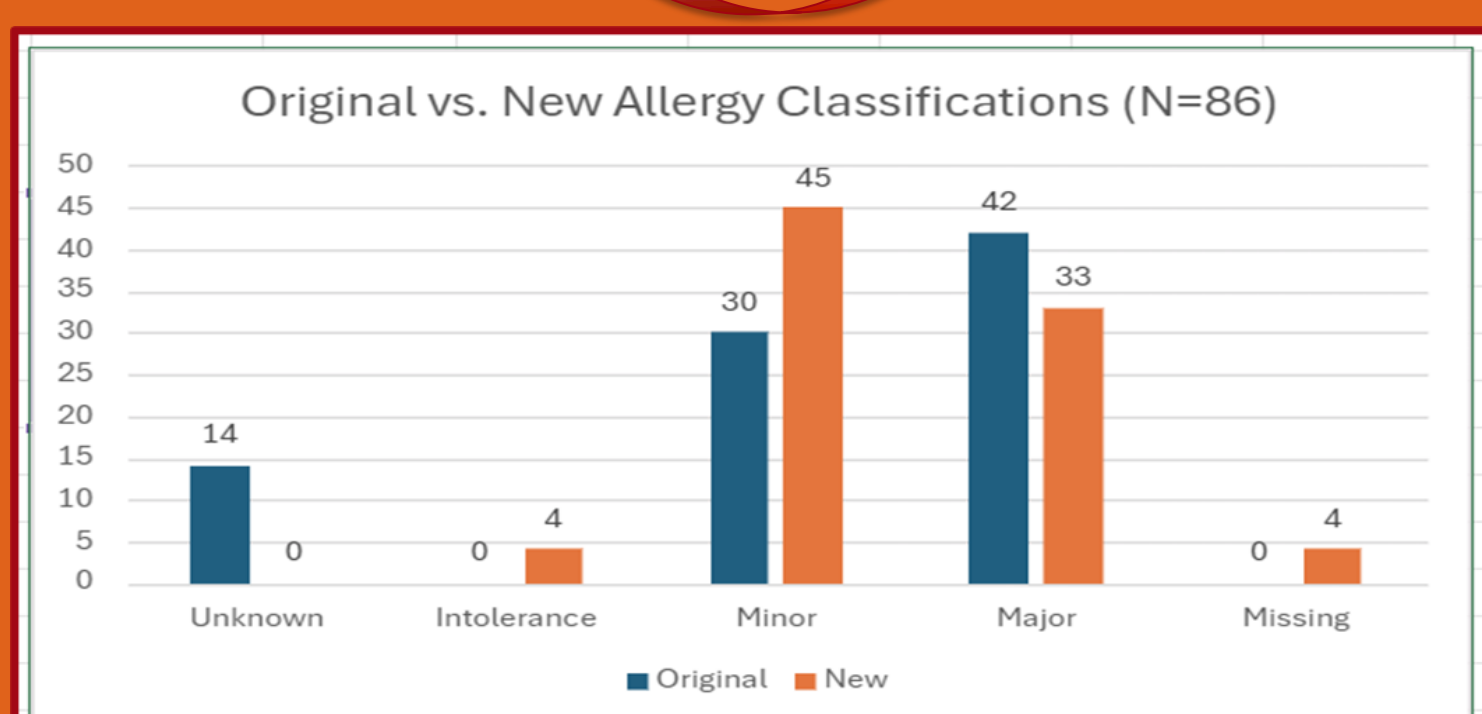
Allergy by Antibiotic Received

Allergy	N	Cefazolin	Clindamycin	Gentamicin	Vancomycin	Beta Lactam
Penicillin	288	67 (23.3%)	90 (31.3%)	68 (23.6%)	32 (11.1%)	94 (32.6%)
Other	11	1 (1.5%)	3 (3.2%)	2 (2.9%)	1 (3.0%)	1 (1.1%)

Implementation effectiveness: Asynchronous referrals



September 2023: 18% → 50% increase → February 2024: 35%



Results

- To date, 91 patient with PCN allergy were included in our intervention period, of whom 59/91 (65) % delivered. Among patients who delivered, 43 needed antibiotics, and of these 26 (60%) got beta lactams.
- In our baseline period, 200 patient with PCN allergy were included, of whom, 165 needed antibiotics and of these 71 (43 %) got beta lactams.

Conclusion

- Through iterative PDSA cycles, beta lactam use increased by 19% among our population, even in the absence of an allergist.
- In addition, PCN allergy assessment increased over time with provider feedback.
- Allergy assessment led to improved identification and stratification of allergy categorization.
- Patients can safely receive beta lactam antibiotics despite reporting prior history of allergy to PCN and without access to an allergist
- Next Steps: Complete study end of June, Consider expanding to other campuses

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Acknowledgements:

Kimberly Blumenthal, MD (Mass Gen)
Laura Riley, MD
Dena Goffman, MD
QIA: Jennifer Lee, Robert Kim Nena Osario, Ericka Fong

Management of Orbital Compartment Syndrome - Inter Departmental Workshop

Authors: Sruti Akula MD, Destinee Soubannarath Gwee MD, Sayyada Hyder MD, Gary Lelli MD

Statement of the Problem: Orbital compartment syndrome (OCS) is a time-sensitive vision-threatening condition requiring prompt decompression to prevent irreversible vision loss. The orbit is a confined space surrounded by bony walls making it susceptible to compartment syndrome when large increases in pressure occur. This increase in pressure can compromise ophthalmic artery perfusion to the orbit resulting in ischemia and irreversible vision loss if not treated immediately. OCS often occurs secondary to trauma causing hemorrhage but can also occur after peribulbar or retrobulbar hemorrhages, or iatrogenically during the operative course¹. The diagnosis is made clinically and ocular exam should be performed immediately if OCS is suspected. Findings often include, but are not limited to, proptosis, chemosis, loss of color vision, and elevated IOP. If signs of optic nerve compromise are present, an urgent bedside lateral canthotomy and cantholysis (LC/C) should be performed to reduce intra-orbital pressure. It is important that prompt LC/C is performed in an attempt to prevent irreversible vision loss and some sources have reported maximized outcomes when LC/C occurs within two hours².

Objective: The goal of the study is to understand the current knowledge and skills of emergency medicine residents in performing this vision saving procedure with the available supplies in the emergency room. The purpose of the study is to demonstrate how canthotomy, cantholysis procedure is performed, then work alongside 1:1 our emergency medicine resident physicians on pig eyes model to ensure correct technique is completed to ensure adequate IOP control.

Methods: We conducted a cross-sectional study of 10 emergency department residents with minimal prior LC/C training who underwent an in-depth LC/C workshop. Confidence levels for identifying a patient with OCS, obtaining supplies needed for a LC/C, comfort performing a LC/C at bedside, and with post-procedure care were evaluated pre and post-workshop.

Results: A total of 10 residents were included in this workshop. Levels of comfort with identifying patient with OCS, gathering supplies needed for LC/C, performing the procedure and managing post procedure care were assessed. The results are shown in the attached table. Higher levels of comfort were noted by resident post hands on workshop.

Conclusions: Prompt decompression is required to prevent permanent vision loss in OCS and incorporating emergency department colleagues in the management of OCS can help to expedite treatment and minimize further permanent vision loss.



Management of Orbital Compartment Syndrome - Interdepartmental Workshop

Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Sruti Akula, Sayyada Hyder, Destinee Soubanarrath Gwee, Gary J. Lelli Jr. | May 22, 2024

Introduction

Orbital compartment syndrome (OCS) is a time-sensitive vision-threatening condition requiring prompt decompression to prevent irreversible vision loss. The orbit is a confined space surrounded by bony walls making it susceptible to compartment syndrome when large increases in pressure occur. This increase in pressure can compromise ophthalmic artery perfusion to the orbit resulting in ischemia and irreversible vision loss if not treated immediately. OCS often occurs secondary to trauma causing hemorrhage but can also occur after peribulbar or retrobulbar hemorrhages, or iatrogenically during the operative course¹. The diagnosis is made clinically and ocular exam should be performed immediately if OCS is suspected. Findings often include, but are not limited to, proptosis, chemosis, loss of color vision, and elevated IOP. If signs of optic nerve compromise are present, an urgent bedside lateral canthotomy and cantholysis (LC/C) should be performed to reduce intra-orbital pressure. It is important that prompt LC/C is performed in an attempt to prevent irreversible vision loss and some sources have reported maximized outcomes when LC/C occurs within two hours². This project addresses a critical gap in resident education and provides the opportunity to improve patient outcomes in OCS

Design/Methods

We conducted a cross-sectional study of 10 emergency department residents with minimal prior LC/C training who underwent an in-depth LC/C workshop. Confidence levels for identifying a patient with OCS, obtaining supplies needed for a LC/C, comfort performing a LC/C at bedside, and with post-procedure care were evaluated pre and post-workshop.

Comparison of Responses Pre-workshop and Post-workshop

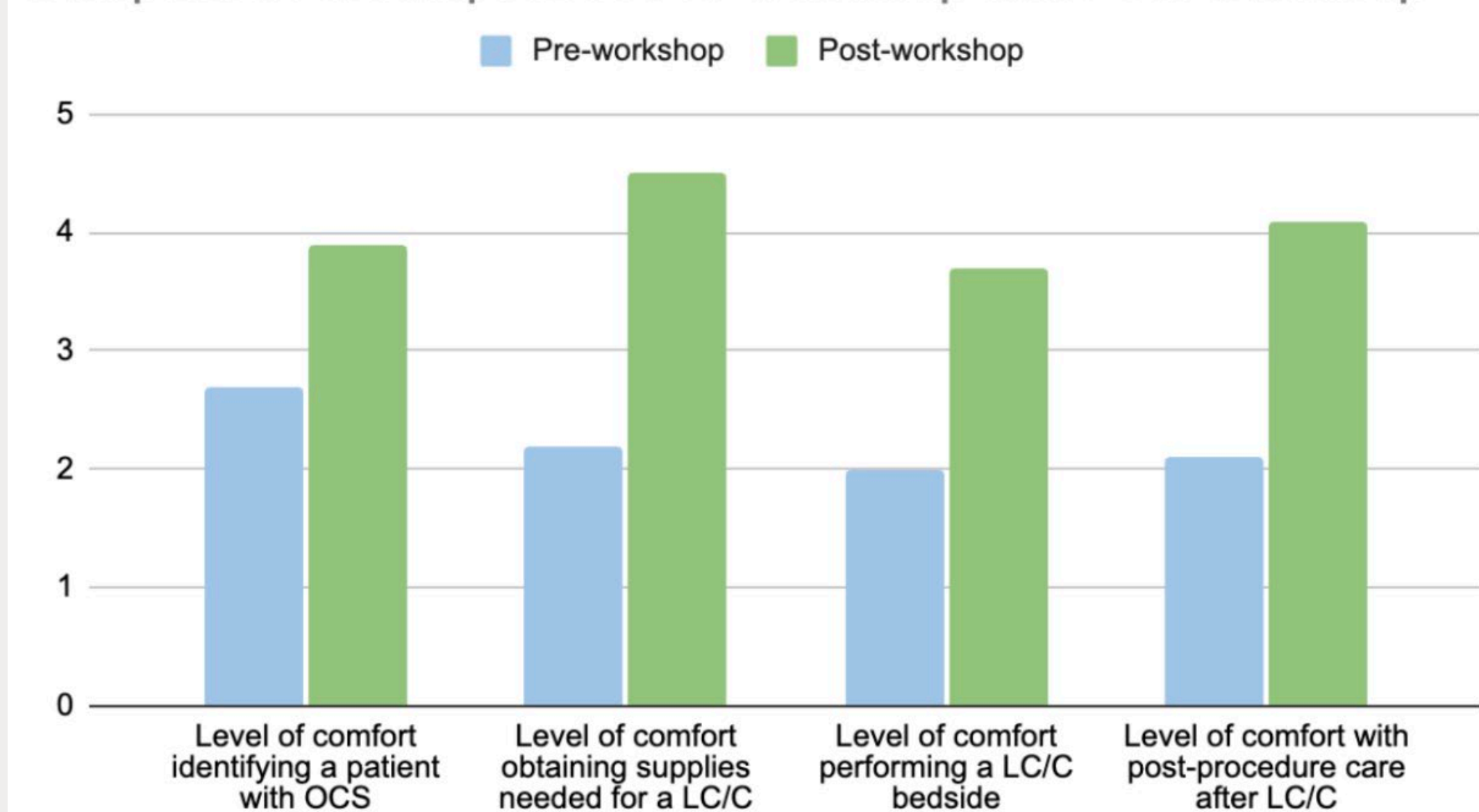


Figure 1. Comparison of participant responses before and after workshop

	Level of comfort identifying a patient with OCS	Level of comfort obtaining supplies needed for a LC/C	Level of comfort performing a LC/C bedside	Level of comfort with post-procedure care after LC/C
Pre-workshop	2.7	2.2	2	2.1
Post-workshop	3.9	4.5	3.7	4.1

Table 1. Comparison of participant responses before and after workshop

Results

Cross-sectional analysis suggested increased resident confidence in LC/C. However, the workshop was limited due to financing of supplies.

Conclusions

Prompt decompression is required to prevent permanent vision loss in OCS and incorporating emergency department colleagues in the management of OCS can help to expedite treatment and minimize further permanent vision loss.

Next Steps

We plan to organize scheduled workshops for ED residents and providers in a similar manner to the initial pilot study in addition to applying for grants to help secure funding for workshop wet lab materials.

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Cost and Inpatient Burden of Orbital Fracture Management: A 14-year Analysis

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Statement of The Problem: With the rising cost of healthcare, there has been increased emphasis placed on evidence-based value in care. A prior study found that from 2006 to 2017, the total inflation-adjusted ED charges for orbital floor fractures alone exceeded \$2 billion, with the mean charge per visit increasing 48% over that time. As orbital floor fractures represent only a subset of orbital trauma, and ED costs are comparatively small to inpatient cost of care, further work is necessary to elucidate overall cost burden of orbital fracture management.

Objective: The complexity of orbital fracture management necessitates systematic investigation of the financial burden of these fractures and the cost-effectiveness of management. Here, we analyze the cost and inpatient burden of patients presenting with orbital fractures at an academic medical center. The goal is to better understand cost of these fractures so that we can provide better value in the care of our patients.

Methods: A retrospective chart review of 1,449 patients presenting with orbital fractures between 2008 to 2022 was performed. Patient characteristics, treatment approach, length of stay (LOS), and hospital costs were collected. Linear regression and pairwise comparison tests were performed to identify factors associated with increased cost burden and LOS.

Results: Of the 2,093 total orbital fractures, the most common locations were floor (50%) and medial wall (24%). Average cost of management did not significantly change over time ($p=0.072$) while average LOS decreased (6.3 to 4 days, $p=0.050$). Compared to injuries from falls, traffic injuries were associated with higher cost (\$36,703 vs. \$12,513, $p<0.001$). The presence of ≥ 4 facial fractures was associated with higher cost (\$29,746 vs \$6,415, $p<0.001$), while surgical management was associated with longer LOS (8.3 vs. 3.5 days, $p<0.001$).

Conclusions: The cost or inpatient burden of treating patients with orbital fractures is greater in patients with traffic injuries, ≥ 4 facial fractures, and operative management.

Abstract

INTRODUCTION: The complexity of orbital fracture management necessitates systematic investigation of the financial burden of these fractures and the cost-effectiveness of management. Here, we analyze the cost and inpatient burden of patients presenting with orbital fractures at an academic medical center.

METHODS: A retrospective chart review of 1,449 patients presenting with orbital fractures between 2008 to 2022 was performed. Patient characteristics, treatment approach, length of stay (LOS), and hospital costs were collected. Linear regression and pairwise comparison tests were performed to identify factors associated with increased cost burden and LOS.

RESULTS: Of the 2,093 total orbital fractures, the most common locations were floor (50%) and medial wall (24%). Average cost of management did not significantly change over time ($p=0.072$) while average LOS decreased (6.3 to 4 days, $p=0.050$). Compared to injuries from falls, traffic injuries were associated with higher cost \$36,703 vs. \$12,513, $p<0.001$). The presence of ≥ 4 facial fractures was associated with higher cost (\$29,746 vs \$6,415, $p<0.001$), while surgical management was associated with longer LOS (8.3 vs. 3.5 days, $p<0.001$)

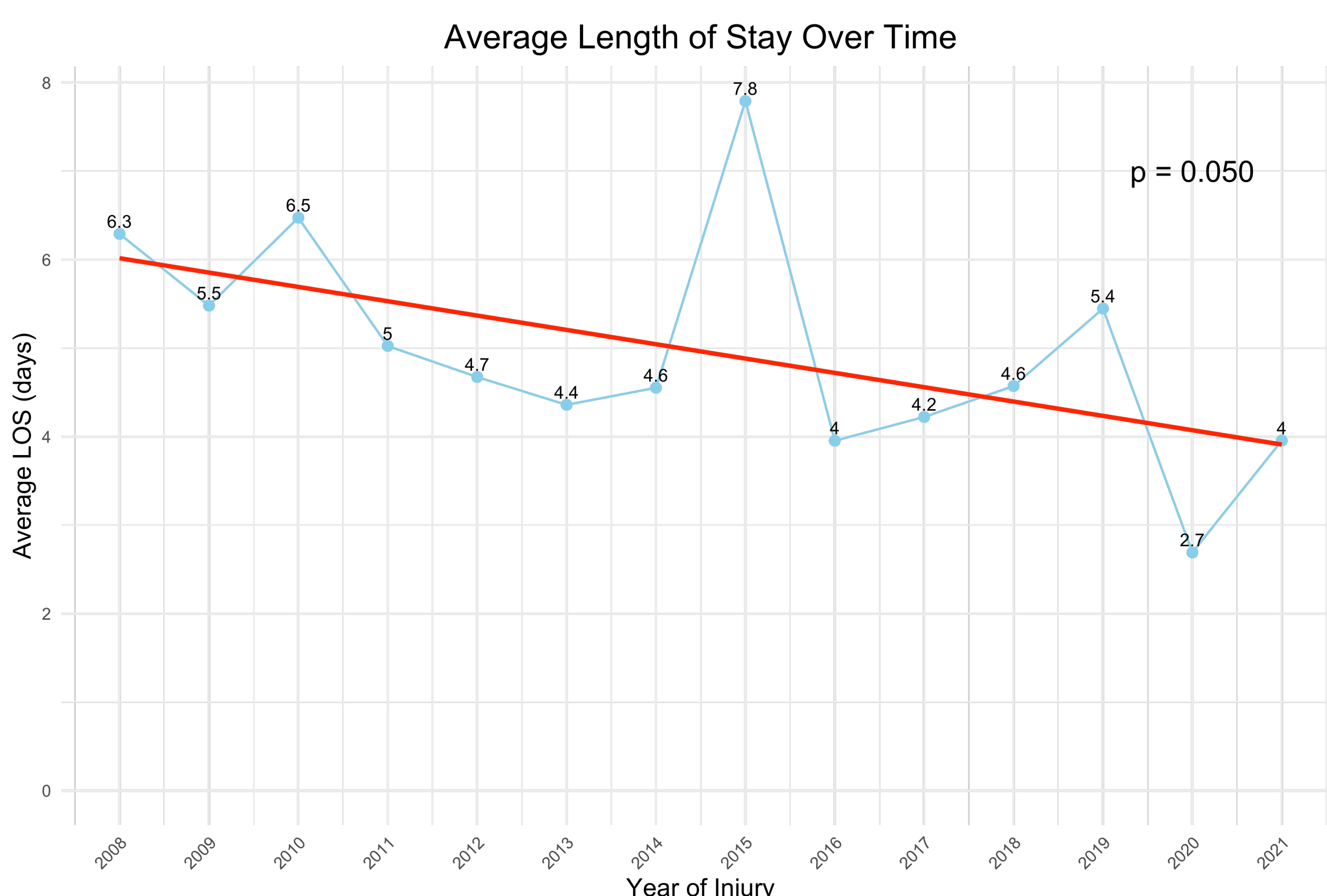
CONCLUSIONS: The cost or inpatient burden of treating patients with orbital fractures is greater in patients with traffic injuries, ≥ 4 facial fractures, and operative management.

Introduction

- Trauma to the eye accounts for 3% of all emergency department visits in the US, and requires prompt and effective management to avoid functional and aesthetic sequelae.¹⁻³
- Rising healthcare costs have spurred interest in evidence-based value in care.⁴⁻⁵ A prior study found that from 2006 to 2017, the total inflation-adjusted ED charges for orbital floor fractures alone exceeded \$2 billion.⁶
- This study aims to evaluate patient demographics, fracture characteristics, cost burden, and length of stay associated with orbital fracture care at a Level 1 trauma center. Examining the cost and inpatient burden of orbital fractures can help tailor treatment approaches and allocate resources more effectively, ultimately resulting in better patient outcomes.

Methods and Materials

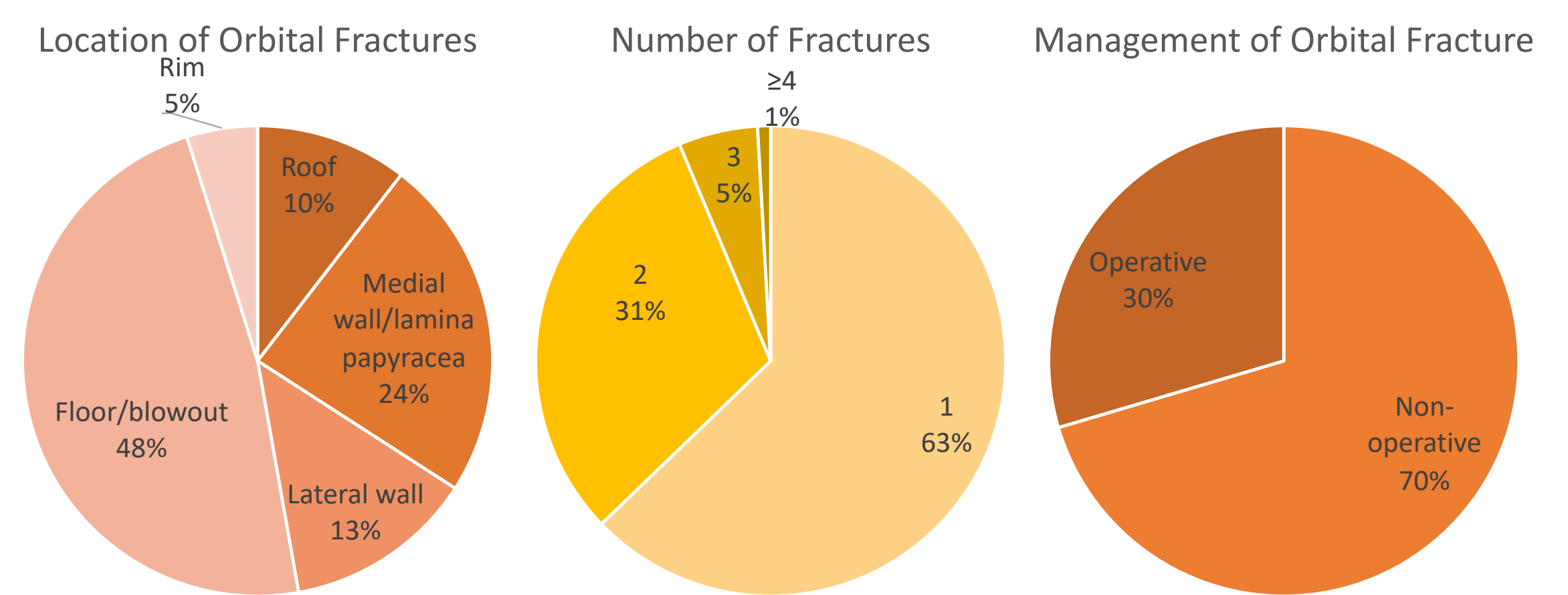
- Retrospective review was conducted on facial fracture patients at a level 1 trauma center from 2008 to 2021, utilizing ICD-9 and ICD-10 codes to identify cases
- Inpatient and outpatient records were reviewed, and financial data adjusted for inflation to January 2022 real dollars for accurate comparisons.
- Statistical analyses performed with univariable and multivariable regressions to identify factors associated with total cost and length of stay



Average length of stay for management of patients with orbital fractures by year

Results

- Of the 2,093 total orbital fractures, the most common locations were floor (50%) and medial wall (24%).
- Average cost of management did not significantly change over time ($p=0.072$) while average LOS decreased (6.3 to 4 days, $p=0.050$).
- Compared to injuries from falls, traffic injuries were associated with higher cost \$36,703 vs. \$12,513, $p<0.001$). The presence of ≥ 4 facial fractures was associated with higher cost (\$29,746 vs \$6,415, $p<0.001$), while surgical management was associated with longer LOS (8.3 vs. 3.5 days, $p<0.001$) (Table 1 and 2)



Patient and Fracture Characteristics

Characteristic	Beta (\$)	95% CI	p-value
Mechanism of injury			
Falls	—	—	—
Work	27,034	10,597, 43,470	0.001
Traffic	10,642	2,231, 19,053	0.013
Assault	-2,705	-9,941, 4,531	0.463
Sports	-224	-8,610, 8,162	0.958
Associated injury			
Facial or oral laceration	1,870	-3,269, 7,009	0.475
Cranial or intracranial injury	17,371	10,703, 24,040	<0.001
Facial nerve injury	31,121	3,440, 58,802	0.028
Nasal bone fracture	3,400	-1,873, 8,672	0.206
Total number of fractures			
1	—	—	—
2	438	-5,756, 6,632	0.89
3	1,851	-5,544, 9,246	0.623
≥ 4	10,112	2,779, 17,446	0.007

Table 1: Multivariate regression model analyzing the association between patient and fracture characteristics and cost

Characteristic	Beta (days)	95% CI	p-value
Mechanism of injury			
Falls	—	—	—
Work	4.1	-0.25, 8.5	0.064
Traffic	4.5	2.6, 6.4	<0.001
Assault	-0.68	-2.3, 0.93	0.405
Sports	-1.1	-3.0, 0.90	0.288
Associated injury			
Facial or oral laceration	—	—	—
Cranial or intracranial injury	5.7	4.1, 7.3	<0.001
Spinal injury	8	4.9, 11	<0.001
Operative Management,			
Surgery	6.2	3.4, 9.0	<0.001
Operative time,			
≥ 90 minutes	-2.8	-5.5, -0.13	0.04

Table 2: Multivariate regression model analyzing the association between patient and fracture characteristics and length of stay

Conclusions

- Mechanism of injury and associated cranial or intracranial injuries are associated with both cost and LOS.
- Facial nerve injury and ≥ 4 fractures are associated with cost, while race, spinal injury, operative management, and operative time are associated with LOS.
- Further research is warranted to validate these findings in diverse patient populations and healthcare settings and to explore strategies for enhancing the cost-effectiveness and efficiency of orbital fracture management.

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Utilization of Quality Metrics for Improving Diagnostic Outcomes: A Focus Review of Thyroid Fine Needle Aspirations

Authors: Susan Alperstein, CT (ASCP), Momin Siddiqui, MD & Robert Appleby

Statement of the Problem: Quality management programs in cytology can be effective in improving diagnostic outcomes and improving patient care. By reviewing all phases of a process key performance indicators and trends can be used for implementation of strategies for improvement. While thyroid fine needle aspiration cytology is an excellent tool for determining risk of malignancy; thyroid cytology cases are known for their limitations by possible overuse of the indeterminate category (III) of The Bethesda System for Reporting Thyroid Cytopathology (TBS). This category should be no higher than 7 to 10% of all thyroid fine needle aspiration cases; however, rates as high as 30% have been reported in the literature. Molecular testing results have improved this category's specificity, but a more definitive categorization is optimal for improved patient management.

Objective: This year-long team project focused on improving thyroid quality metrics at the preanalytical, analytical and postanalytical phases to facilitate minimizing use of the indeterminate category (TBS category III) when reporting on fine needle aspirations of thyroids.

Methods: After scrutiny of the existing workflow processes, team discussions and input regarding practice patterns were considered. Changes were implemented and evaluated for improvement; strategies were revised as needed. This team project focused on improving quality metrics at the preanalytical, analytical and postanalytical phases of the diagnostic process. The preanalytical focus was on optimizing collection techniques. Collection techniques included preparation of smears, changing alcohol containers, and review of molecular test collection. A quality review form accompanied every thyroid case and was completed at the analysis phase by both the cytologist and cytopathologist reviewing the preparations of the aspirations. This provided a conscious critical quality evaluation by all involved practitioners. Target rates on practice outcomes and diagnostic proficiency was the postanalytical phase focus. Post-analytical data was collected on metrics including cytology histology correlation, molecular correlation, and Bethesda category rates. Personal performance, benchmark literature and peer laboratory intercomparison rates were provided as feedback to the cytologists and cytopathologists in graphic and numerical formats. Rates of atypia of undetermined significance (AUS) (TBS III) were calculated and compared to one year post implementation. Non diagnostic rates (I), ratio of AUS to malignancy, correlations with molecular and surgical follow up were also reviewed for individuals and total laboratory improvement.

Results: Our laboratory was able to reduce the AUS rate by 1.35 percentage points. We continue our quality program which consists of weekly quality sessions to review cytology histology correlations, immediate and final adequacy assessment; and a daily targeted prospective review consensus sessions led by the chief of the cytology. Trends and identified errors from these programs prompt route cause analysis. Immediate feedback to the cytologist and cytopathologist for slide review is routinely implemented. Weekly continuing educational cytology sessions are

mandatory for the team. Staff meetings on quality initiatives with team input are conducted with honest dialogue. The intent of quality review and discussions is not punitive but rather to provide constructive feedback to improve practice patterns, diagnostic outcomes, and ultimately patient care.

Conclusions: Implementation of all our quality initiatives improved the visual quality of our smear preparations significantly. By thoughtful and comprehensive review of cytology quality performance indicators, practice patterns can be identified, strategies implemented, and ultimately optimized diagnostic outcomes can be achieved. Follow up and long-term studies with molecular results are needed to help framework effective cytology quality improvement.



Utilization of Quality Metrics for Improving Diagnostic Outcomes: A Focus Review of Thyroid Fine Needle Aspiration

Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Susan Alperstein, CT(ASCP), Momin Siddiqui, MD & Robert Appleby | May 22nd, 2024

Problem Statement

Quality management programs in cytology can be effective in improving diagnostic outcomes and improving patient care. By reviewing all phases of a process key performance indicators and trends can be used for implementation of strategies for improvement. While thyroid fine needle aspiration cytology is an excellent tool for determining risk of malignancy; thyroid cytology cases are known for their limitations by possible overuse of the indeterminate category (III) of The Bethesda System for Reporting Thyroid Cytopathology (TBS). This category should be no higher than 7 to 10% of all thyroid fine needle aspiration cases; however, rates as high as 30% have been reported in the literature. Molecular testing results have improved this category's specificity, but a more definitive categorization is optimal for improved patient management.

Objective/Aim Statement

This year-long team project focused on improving thyroid quality metrics at the preanalytical, analytical and postanalytical phases to facilitate minimizing use of the indeterminate category (TBS category III) when reporting on fine needle aspirations of thyroids

Design/Methods

After scrutiny of the existing workflow processes, team discussions and input regarding practice patterns were considered. Changes were implemented and evaluated for improvement; strategies were revised as needed. This team project focused on improving quality metrics at the preanalytical, analytical and postanalytical phases of the diagnostic process. The preanalytical focus was on optimizing collection techniques. Collection techniques included preparation of smears, changing alcohol containers, and review of molecular test collection. A quality review form accompanied every thyroid case and was completed at the analysis phase by both the cytologist and cytopathologist reviewing the preparations of the aspirations. This provided a conscious critical quality evaluation by all involved practitioners. Target rates on practice outcomes and diagnostic proficiency was the postanalytical phase focus. Post-analytical data was collected on metrics including cytology histology correlation, molecular correlation, and Bethesda category rates. Personal performance, benchmark literature and peer laboratory intercomparison rates were provided as feedback to the cytologists and cytopathologists in graphic and numerical formats. Rates of atypia of undetermined significance (AUS) (TBS III) were calculated and compared to one year post implementation. Non diagnostic rates (I), ratio of AUS to malignancy, correlations with molecular and surgical follow up were also reviewed for individuals and total laboratory improvement.

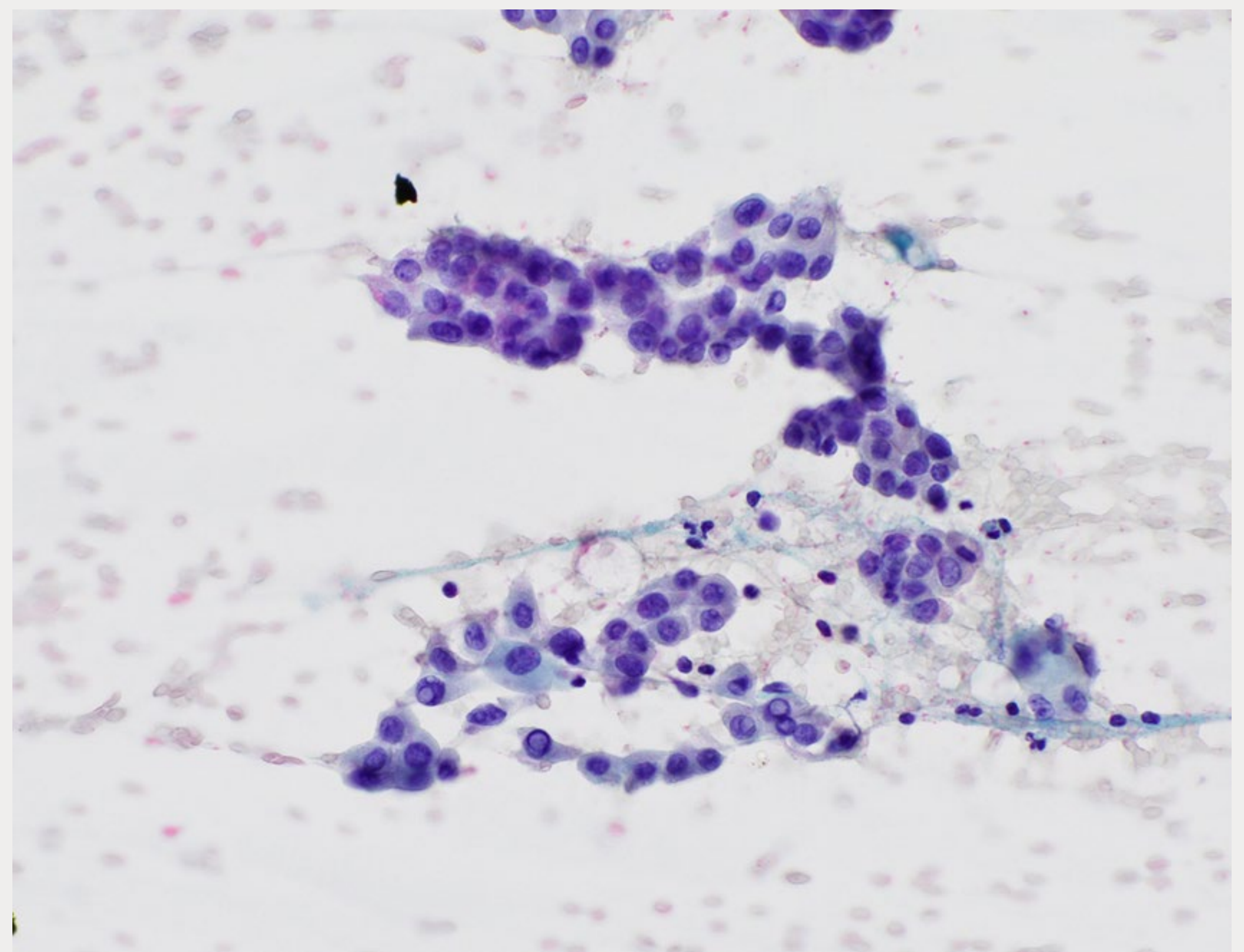
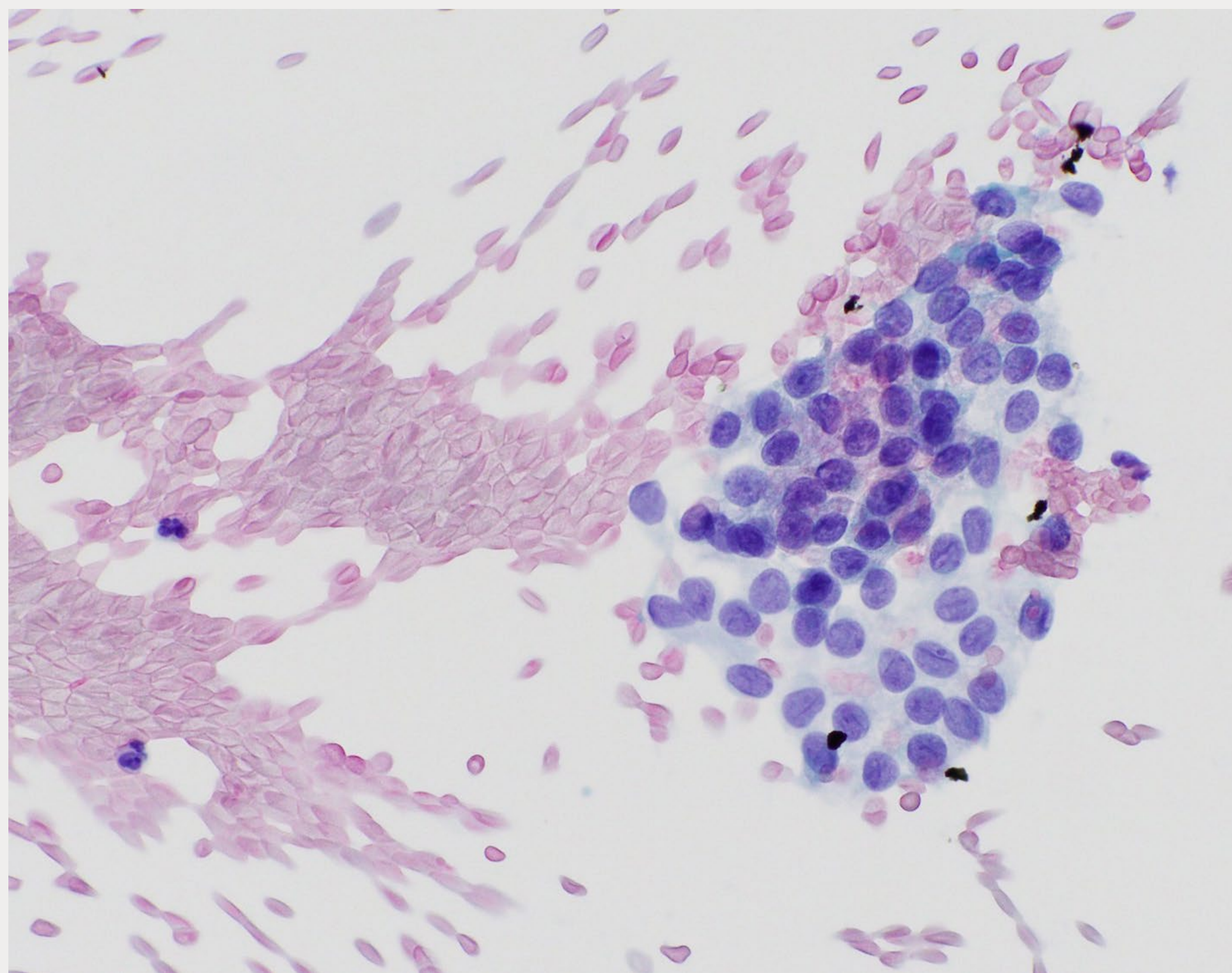


Figure 1: (Left) Evidence of air-drying on a prepared slide for a case diagnosed as AUS; (Right) A well-preserved slide on a case clearly diagnosed as PTC.

Results

Our laboratory was able to reduce the AUS rate by 1.35 percentage points. We continue our quality program which consists of weekly quality sessions to review cytology histology correlations, immediate and final adequacy assessment; and a daily targeted prospective review consensus sessions led by the chief of the cytology. Trends and identified errors from these programs prompt route cause analysis. Immediate feedback to the cytologist and cytopathologist for slide review is routinely implemented. Weekly continuing educational cytology sessions are mandatory for the team. Staff meetings on quality initiatives with team input are conducted with honest dialogue. The intent of quality review and discussions is not punitive but rather to provide constructive feedback to improve practice patterns, diagnostic outcomes, and ultimately patient care.

Conclusions/Lessons Learned

Implementation of all our quality initiatives improved the visual quality of our smear preparations significantly. By thoughtful and comprehensive review of cytology quality performance indicators, practice patterns can be identified, strategies implemented, and ultimately optimized diagnostic outcomes can be achieved

Next Steps

Follow up and long-term studies with molecular results are needed to help framework effective cytology quality improvement.

Diagnostic Statistics	2022	2023	% +/-
AUS rate	15.87%	14.52%	-1.35%
AUS:PMC rate	3.47	3.62	0.14
AUS ROM (w/in 3 mo)	25.00%	66.67%	41.67%

Table 1: This table provides some of the selected metrics calculated for comparison between 2022 and 2023 Bethesda system diagnostic trends (AUS Rate, AUS/Malignant Ratio, and AUS Follow-Up ROM)

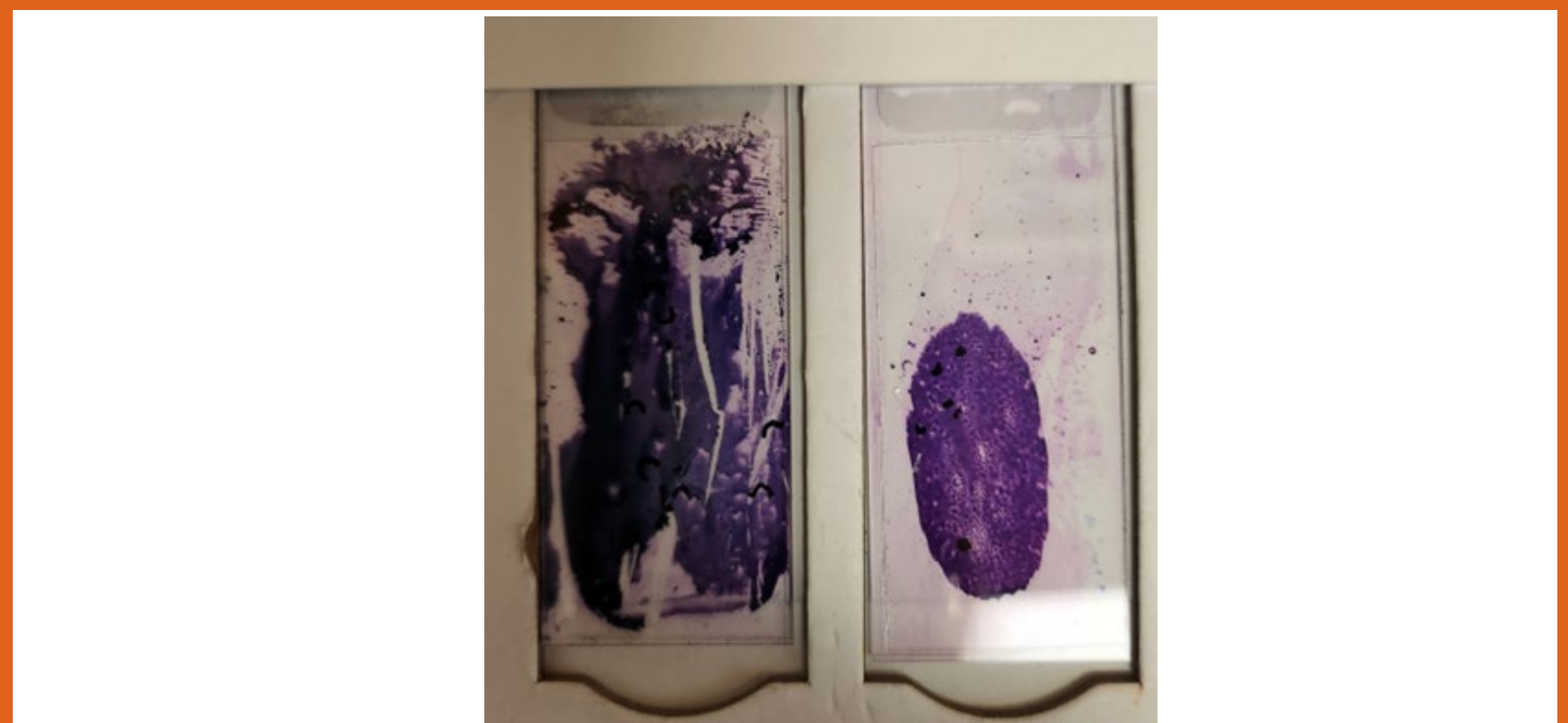


Figure 2: A side-by-side comparison of a poorly-smearred Diff-Quik slide (Left) and a well-smearred Diff-Quik slide (Right), demonstrating improvement in the slide preparation process for on-site thyroid FNAs.

Novel Implementation of Smart, Remote Blood Bank Refrigerators to Provide Efficient Transfusion Support for Labor and Delivery Patients

Authors: Tobias Cohen, MD/PhD¹, Jaclyn Spinelli, MLS(ASCP)^{CM2}, Dennis Chen, MPA/MLS(ASCP)^{CM2}, Wei Zeng, MPA³, Natali Valderrama, MSN/RN/RNC-OB⁴, Priscilla Parra, MLS(ASCP)^{CM}/MBA², Hillary Shaw, MPA⁵, Robin Kalish, MD⁶, Sharon Abramowitz, MD⁷, Corrina Oxford-Horrey, MD⁶, Christine Lennon, MD,⁷ Denden Benabdessadek, MS MT(ASCP)SBB², Alexandra Jimenez MD¹, Melissa Cushing, MD¹, Robert DeSimone, MD¹.

¹Department of Pathology and Laboratory Medicine, ²Blood Bank and Transfusion Services, ³Clinical Information Technology, ⁴Labor and Delivery Service, ⁵Hospital Administration, ⁶Department of Obstetrics and Gynecology, ⁷Department of Anesthesiology, New York-Presbyterian/Weill Cornell Medical Center

Statement of the Problem: The Alexandra Cohen Hospital for Women & Newborns (ACH) performs more than 7,000 deliveries each year. Since ACH is located nearly 0.25 miles from the main hospital blood bank (MHBB), a satellite Cohen Hospital Blood Bank (CHBB) was established at ACH; however, due to national blood bank licensed technologist staffing shortages, CHBB was unable to remain consistently open with 62% of days in Q4 2022 impacted by a closure. This presented a significant patient safety issue as travel to and from MHBB to obtain blood for ACH is approximately 27 minutes. Providers began ordering more blood products as a prophylactic measure, which increased the crossmatch-to-transfuse (C/T) ratio and put further strain on the blood bank. A solution to provide rapid access to blood products on demand was urgently needed.

Objective/Aim of the Study: The purpose of the project was to implement a novel system to allow for the safe and rapid distribution of blood products to ACH patients that would be less dependent on licensed technologist staffing. On site blood distribution should lead to a reduction in the C/T ratio.

Project Design/Methods: A Plan-Do-Study-Act cycle was conducted. In 2022, CHBB experienced increasing closure rates quarter over quarter as well as an increasing C/T ratio (10:1), much greater than the nationally recognized metric (2:1) for proper blood product management. A solution that could utilize laboratory assistants, who are unlicensed and readily available in the workforce, for blood product distribution was needed. A usage analysis of blood products issued to ACH in the preceding year was conducted to determine the daily automatic replacement level in ACH was 35 products. The BloodTrack[®] Haemobank 80TM (HB80), an FDA-cleared smart refrigerator with 80 compartments that can perform electronic crossmatches and issue the correct blood products to the correct patients in a rapid and controlled manner, would allow laboratory assistants to fulfill blood product orders from the CHBB and require less than daily restocking (in contrast to their 20 compartment model). The plan was proposed by the Transfusion Medicine service to the Obstetrics and Anesthesiology services. A multidisciplinary team of physicians, advanced practice providers, nurses, laboratory staff, and hospital administrators began meeting to develop workflows and staffing models to provide 24/7 blood product dispensing from CHBB for patients with and without special blood product needs as well as massive hemorrhage protocol support.

Results: In Q4 2022, 62% of days were affected by sudden closures and in December 2022 the C/T ratio exceeded 10.0 (average in 2021: 5.2). On 5/31/23, the CHBB reopened with an HB80 and laboratory assistants in place and a consistent schedule of weekdays from 8am-8pm (i.e. 60 hours/week). On 2/5/24, the hours increased to Monday 8am-Friday 8pm each week (i.e. 108 hours/week). To date, no unplanned closures have occurred and since the reopening of CHBB, the C/T ratio decreased from a peak 10.5 right before opening to an average of 6.5 in the 2nd half of 2023. The number of units transfused to patients that were retrieved from the HB80 has increased from 45% in June 2023 to 61% in December 2023.

Conclusions: Multidisciplinary implementation of a novel blood distribution workflow utilizing an HB80 and laboratory aides has eliminated unplanned CHBB closures. As clinical familiarity and accessibility increases over time, the utilization of the HB80 has increased and unnecessary blood product ordering has decreased, as assessed by the C/T ratio. The HB80 is a valuable resource to ease staffing demands and provides safe and effective blood product support for ACH. Expansion to 24/7 hours and an upcoming, planned software upgrade to the blood bank laboratory information system should yield further optimization in safe and effective blood product utilization at ACH.



Tobias Cohen, MD/PhD, Jaclyn Spinelli, MLS(ASCP)^{CM}, Dennis Chen, MPA/MLS(ASCP)^{CM}, Wei Zeng, MPA, Natali Valderrama, MSN/RN/RNC-OB, Priscilla Parra, MLS(ASCP)^{CM}/MBA, Hilary Shaw, MPA, Robin Kalish, MD, Sharon Abramowitz, MD, Corrina Oxford-Horrey, MD, Christine Lennon, MD, Denden Benabdessadek, MS/MT(ASCP)SBB, Alexandra Jimenez MD, Melissa Cushing, MD, Robert DeSimone, MD

Problem Statement

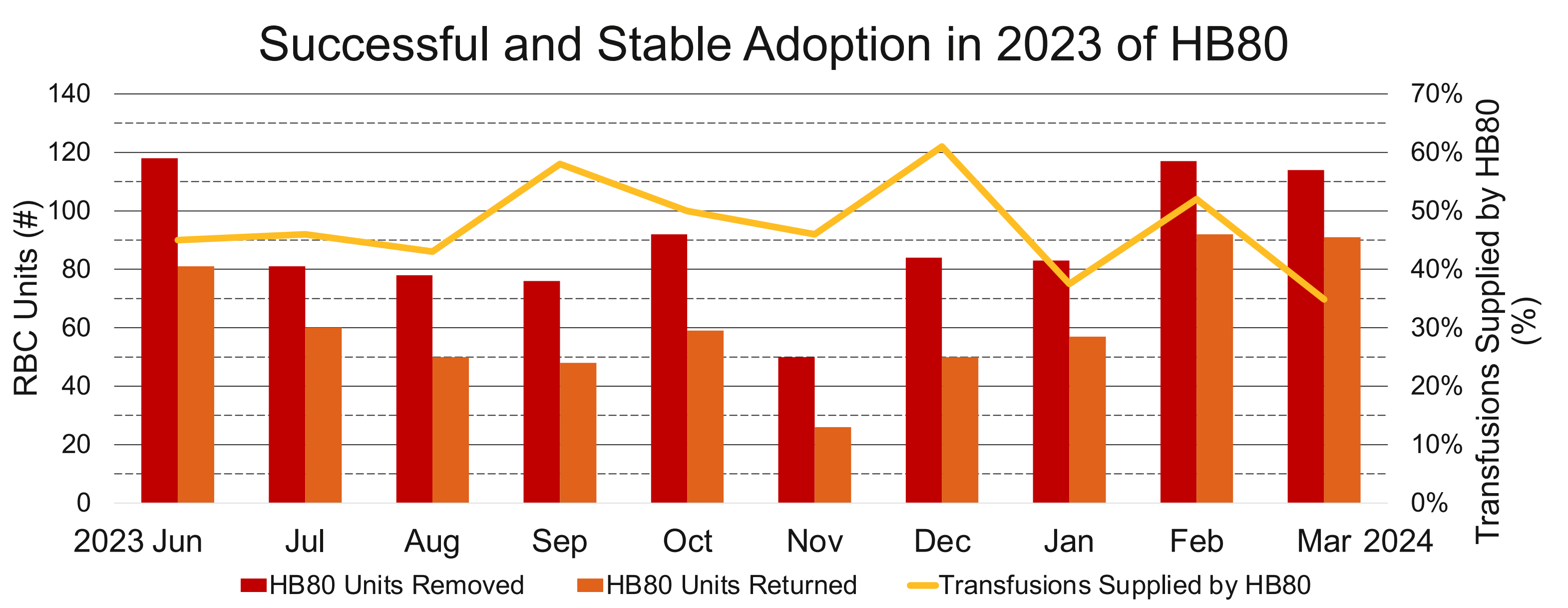
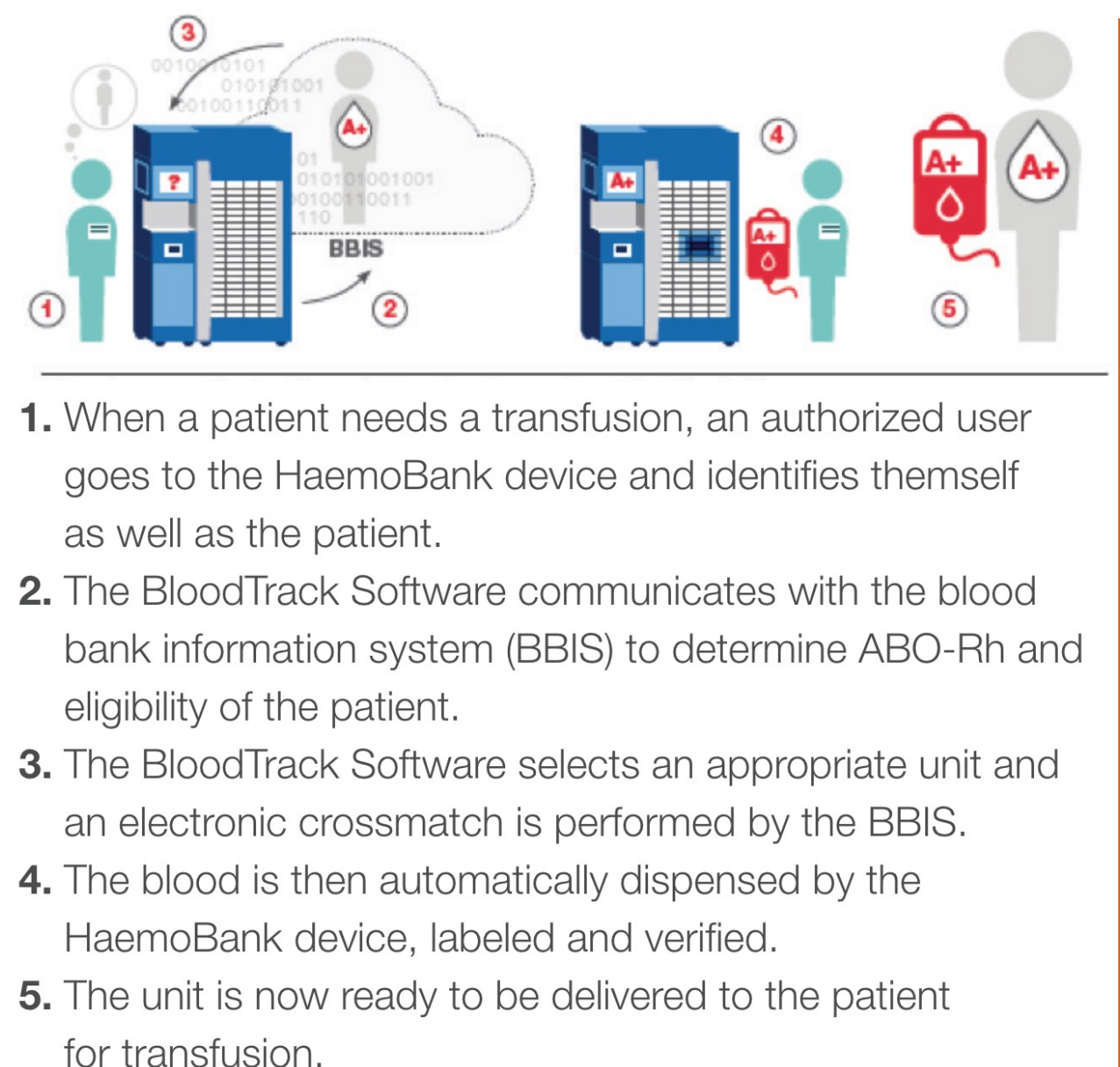
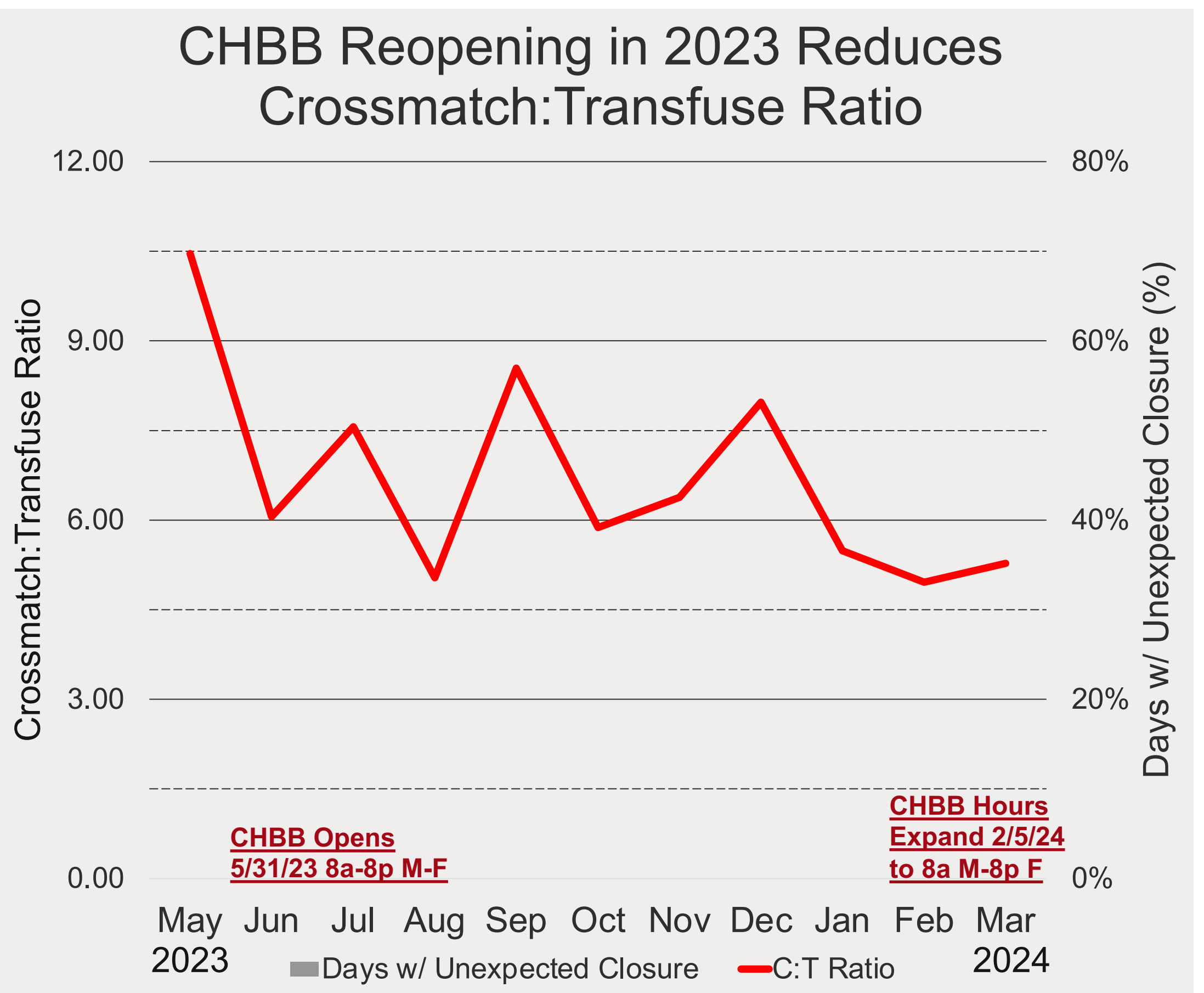
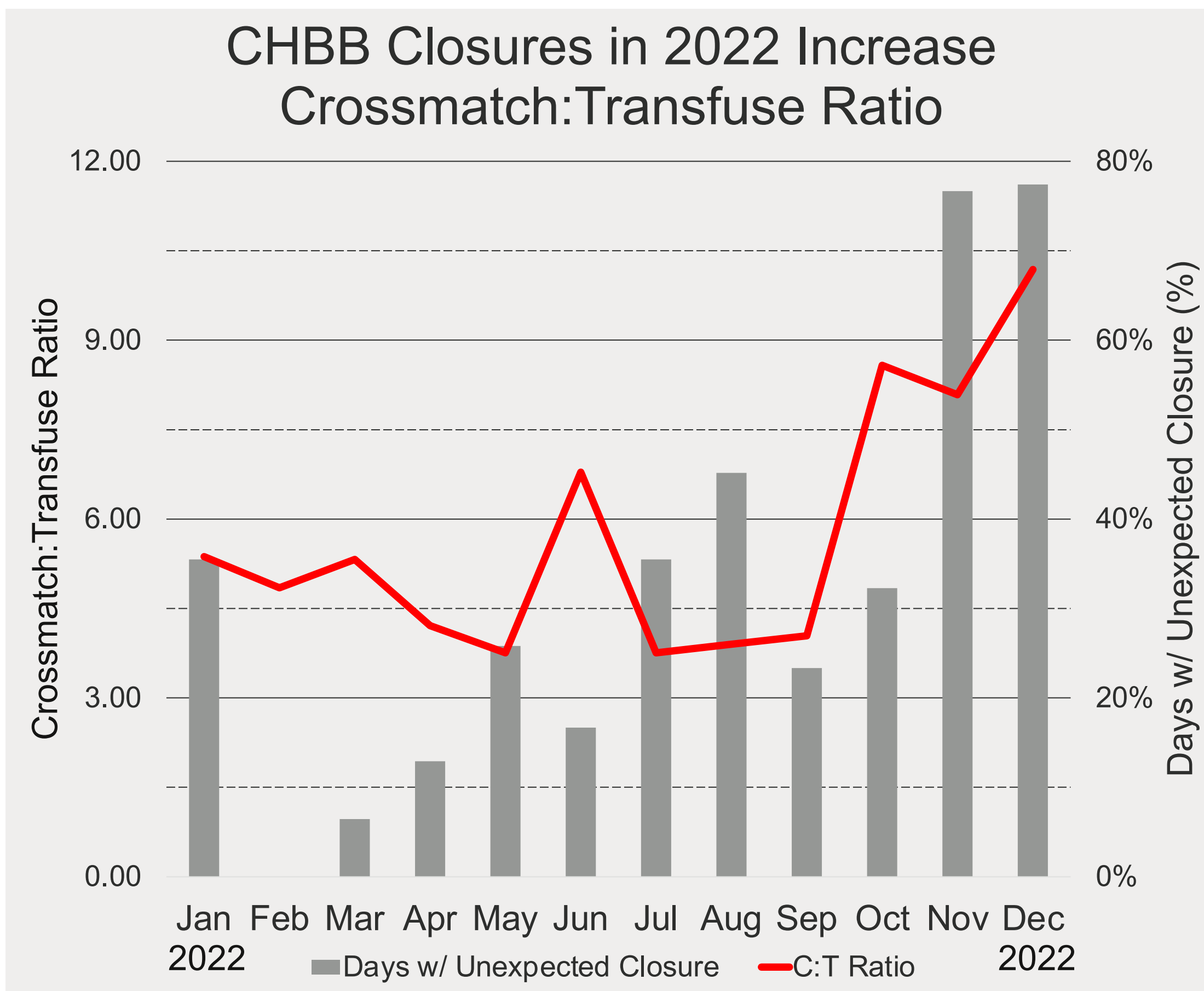
- Alexandra Cohen Hospital for Women & Newborns (ACH) is located nearly 0.25 miles from the main hospital blood bank (MHBB)
- Satellite Cohen Hospital Blood Bank (CHBB) was established at ACH
- Due to national technologist shortage, CHBB was unable to remain consistently open
- 62% of days in Q4 2022 impacted by a closure
- An increased crossmatch-to-transfuse (C:T) ratio put further strain on the blood bank

Objective/Aim Statement

- Implement a novel system for the safe and rapid distribution of blood products to ACH patients
- Be less dependent on licensed technologist staffing
- Reduce the C:T ratio

Design/Methods

- Usage analysis of blood products issued to ACH in the preceding year determined the daily automatic replacement level was 35 products
- BloodTrack® Haemobank 80™ (HB80), performs electronic crossmatches and issues the correct blood products to the correct patients in a rapid and controlled manner and requires less than daily restocking
- Laboratory assistants can now fulfill blood product orders from CHBB
- Multidisciplinary team of physicians, advanced practice providers, nurses, laboratory staff, and hospital administrators from Transfusion Medicine, Obstetrics & Gynecology, and Anesthesiology develop workflows for daily transfusion support and massive hemorrhage protocols



Conclusions/Lessons Learned

- Successful, stepwise rollout towards 24/7 hours eliminated unplanned CHBB closures
- Utilization of the HB80 has increased
- Unnecessary blood product ordering (C:T) has decreased but still remains significantly elevated

Next Steps

- Expansion to 24/7 staffing
- Expand patient eligibility for HB80 provided RBCs
- Further reduce C:T ratio to pre CHBB closure levels

A Resident Led Quality Improvement Project to Improve Screening and Integrated Provider Referral Rates for Postpartum Depression in a Pediatric Primary Care Clinic

Authors: Kelly Banks*, Emily Scharf*, Julie Davila, Matthew Tam, Joanna Lee, Alim Esemenli, Beemnet Neway, Sarah Allen Ray, Stephanie Trimboli, Richard Piszczatowski, Bing Lin, Samantha Bruno, Radha Sathanayagam, Jeffrey Maniko, Diane Lee, Rachel Wirtshafter, Erika Abramson, Cori Green, Snezana Nena Osorio, Nancy J. Lee

Department: Pediatrics

Statement of the Problem: Postpartum depression (PPD) affects 10-16% of mothers. PPD has been shown to impact infant health across multiple domains. PPD remains under-recognized and undertreated; only an estimated 50% of cases are diagnosed and 12% of PPD+ mothers received mental health services. The AAP recommends PPD screening at 1-6 month visits. At our Medicaid-based, resident pediatric primary care clinic, the screening rate with the Edinburgh Postpartum Depression Scale (EPDS) was 56% in May 2021- May 2022.

Objective/Aim of the study: (1) Increase PPD screening rate to 90% of all 2 week to 4 month well visits and (2) Increase referral rates to integrated providers (HealthySteps clinical psychologist or social worker) to 90% of all EPDS+ mothers

Project Design/Methods: Ongoing observational time-series study over 3 years. Process measures include rate of screening with Edinburgh Postpartum Depression Scale (EPDS) and rate of referral to integrated clinical psychologist or social worker for EPDS+ mothers. Our balancing measure was sleep counseling. Data were collected via EMR review using a standardized set of instructions. 1339 charts have been reviewed thus far from 2-week, 1-, 2- and 4- month well child checks (WCC) in a primary care clinic affiliated with a tertiary academic medical center with 40 charts per month from May 2021 to January 2024. Data were interpreted with statistical process control charts and subgroup analyses. Run chart rules and API rules were applied to detect signal of change and special cause variation.

Results: The percentage of patients who were screened for PPD with EPDS at 2 week through 4 month well checks increased from 56% to 90%. The percentage of patients with positive PPD screen (EPDS+) who were referred to integrated mental health provider increased from 57% to 86%. Our balancing measure of sleep counselling remains stable and unchanged at 94%. Subgroup analysis for percent of patients who were screened for PPD with EPDS broken down by age of visit showing lowest rate at 2 week visit (61%), but analyzing 2 week visits over time also shows an increase in these visits, from 41% to 82%. Our overall positivity rate remained stable and is reflective of positivity rates in previous literature (12%).

Conclusions: We successfully and safely improved PPD screening thereby fulfilling our SMART Aim 1. Subgroup analysis revealed that the 2 week visit had the lowest screening rates, possibly due to the focus of these visits on weight trends or provider confusion over when to start EPDS screening. However, we did also see improvement in screening at the 2 week visit with our interventions. We also improved referral of PPD+ mother-infant dyads to integrated providers, fulfilling our SMART Aim 2. Our most successful intervention was incorporation of a HealthySteps clinical psychologist into the clinic, and after this intervention changes have been sustained for 19 months with iterative PDSA cycles. Future directions include assessing outcome measures for changes in maternal depressive symptoms (via EPDS and PHQ-2 scores at 6 and 12 months) and child developmental scores via SWYC at 6 months

and 12 months for EPDS+ dyads who receive or do not receive HealthySteps. We also plan to assess the impact of interventions on improved screening in native language for the subgroup of non-English speaking patients.

A Resident Led Quality Improvement Project to Improve Screening and Integrated Provider Referral Rates for Postpartum Depression in a Pediatric Primary Care Clinic



Emily Scharf*, Kelly Banks*, Julie Davila, Matthew Tam, Joanna Lee, Alim Esemnli, Beemnet Neway, Sarah Allen Ray, Stephanie Trimboli, Richard Piszczatowski, Bing Lin, Samantha Bruno, Radha Sathanayagam, Jeffrey Maniko, Diane Lee, Rachel Wirtshafter, Erika Abramson, Cori Green, Snezana Nena Osorio, Nancy J. Lee



BACKGROUND

Postpartum depression (PPD) affects 10-16% of mothers^{1,2}

PPD disproportionately affects women with low socio-economic status and maternal depressive symptoms were associated with chronic stressors and poor social support in one study³

PPD has been shown to impact infant health across multiple domains including sleep, language, as well as cognitive and social-emotional development²

PPD remains under-recognized and undertreated; only an estimated 50% of cases are diagnosed and 12% of PPD+ mothers received mental health services⁴

The AAP recommends PPD screening at 1-6 month visits⁵

At our Medicaid-based, resident pediatric primary care clinic, the screening rate with the Edinburgh Postpartum Depression Scale (EPDS) was 56% in May 2021- May 2022

Previous work has shown that integrating a clinical psychologist into primary care clinics through a national program known as "HealthySteps" improves screening and referral for PPD⁶

SMART AIMS

(1) Increase PPD screening rate to 90% of all 2 week to 4 month well visits

(2) Increase referral rates to integrated providers (HealthySteps clinical psychologist or social worker) to 90% of all EPDS+ mothers

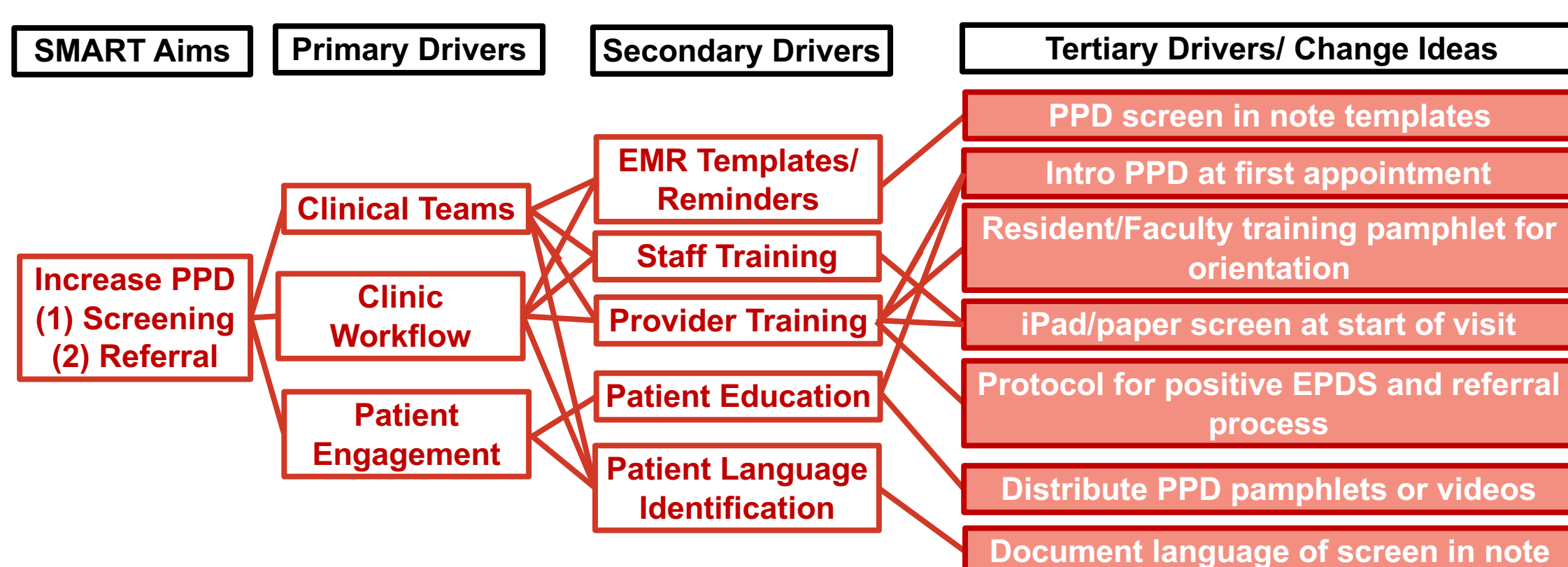
METHODS

Study Design: Ongoing observational time-series study over 3 years. Process measures include rate of screening with Edinburgh Postpartum Depression Scale (EPDS) and rate of referral to integrated clinical psychologist or social worker for EPDS+ mothers (named referral to integrated mental health provider rate in results section). Outcome measures collected include maternal depressive symptoms via 6 month EPDS and 1 year PHQ2 scores and development via SWYC scores, with analysis ongoing. Our balancing measure was sleep counseling. Language was reported as English or non-English speaking assessed with documentation of whether an interpreter was needed in visit and primary language in chart when need for interpreter not documented. Data were collected via EMR review using a standardized set of instructions.

Patient population: 1339 charts have been reviewed thus far from 2-week, 1-, 2- and 4- month well child checks (WCC) in a primary care clinic affiliated with a tertiary academic medical center with 40 charts per month from May 2021 to January 2024, with plans to continue chart review through May 2024.

Analysis: Data were interpreted with statistical process control charts and subgroup analyses. Run chart rules and API rules were applied to detect signal of change and special cause variation.

KEY DRIVER DIAGRAM

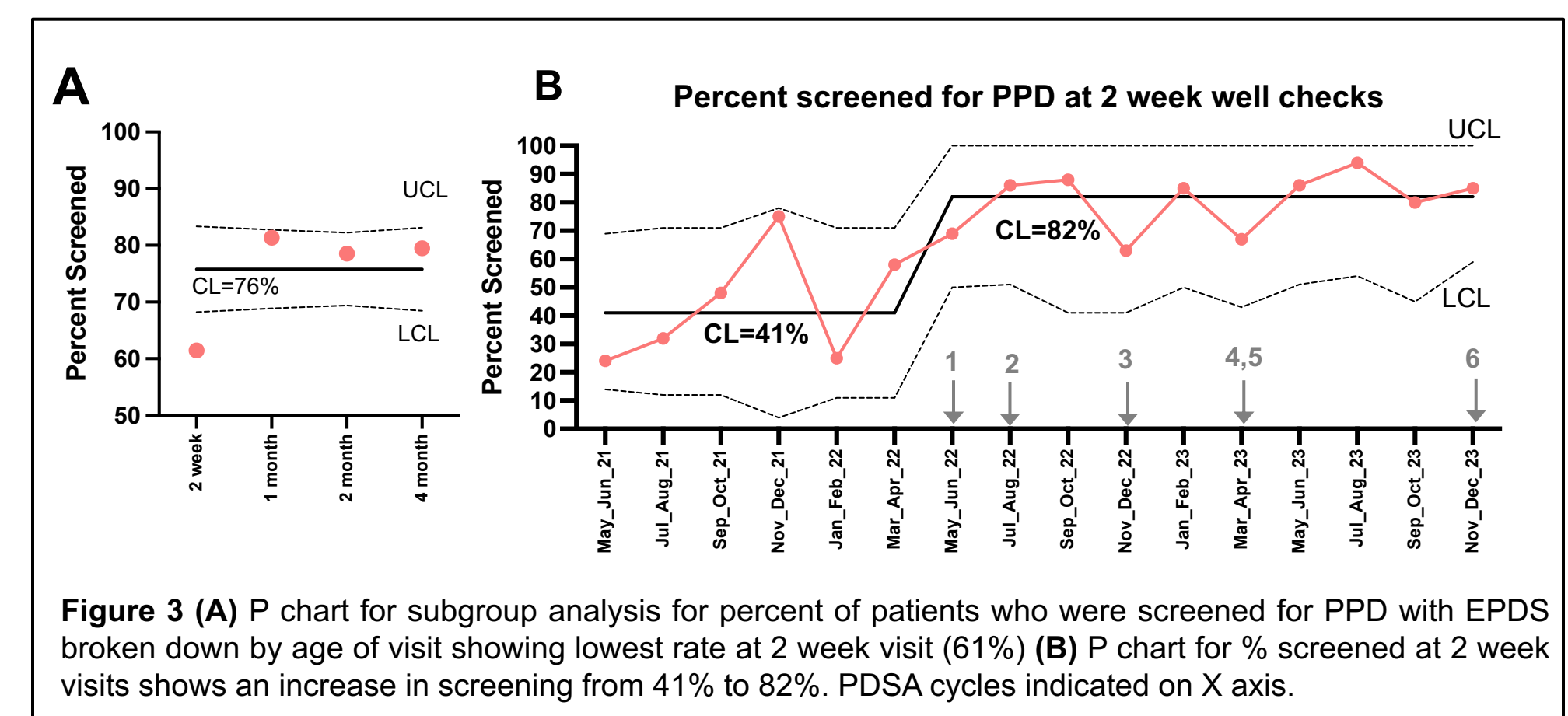
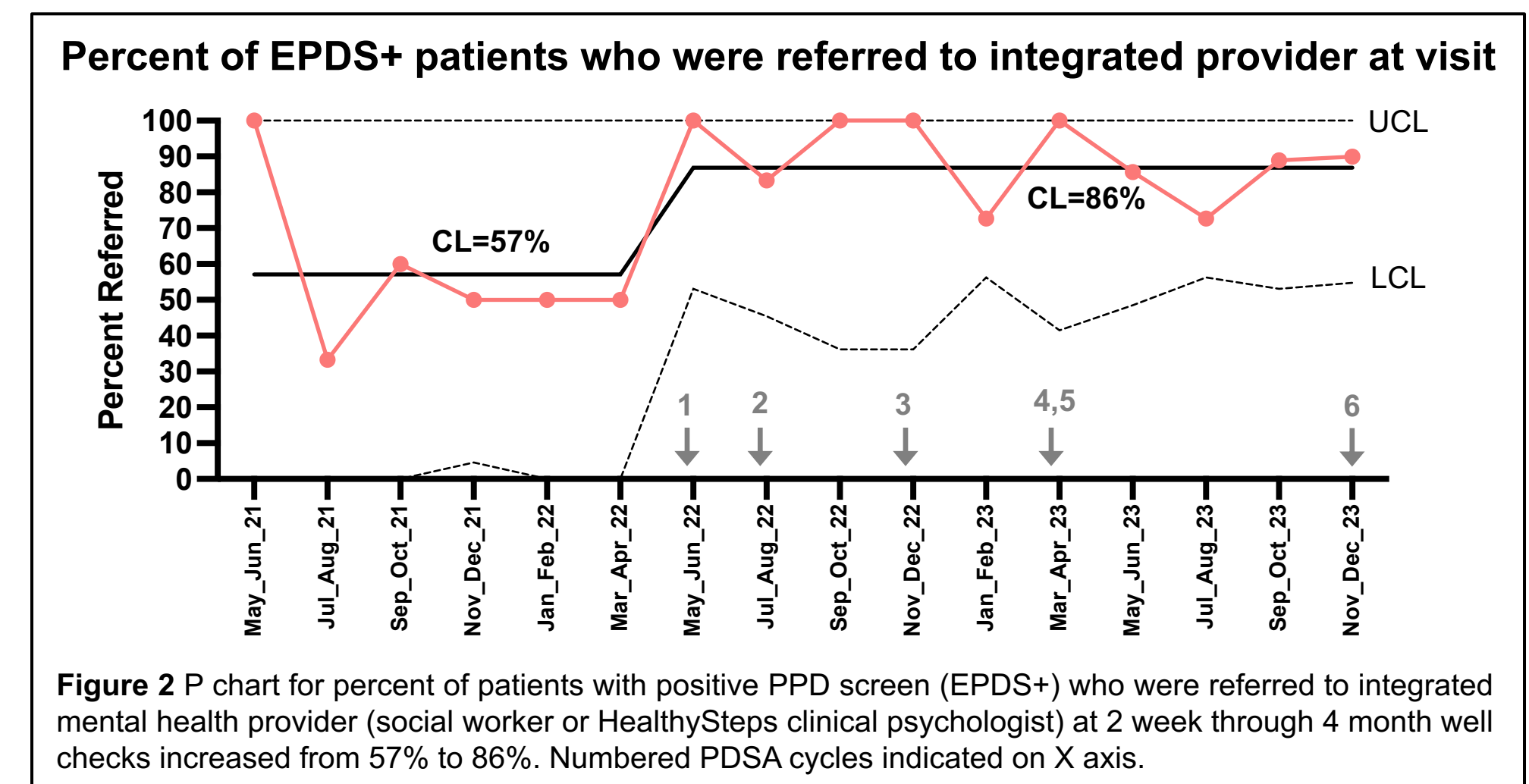
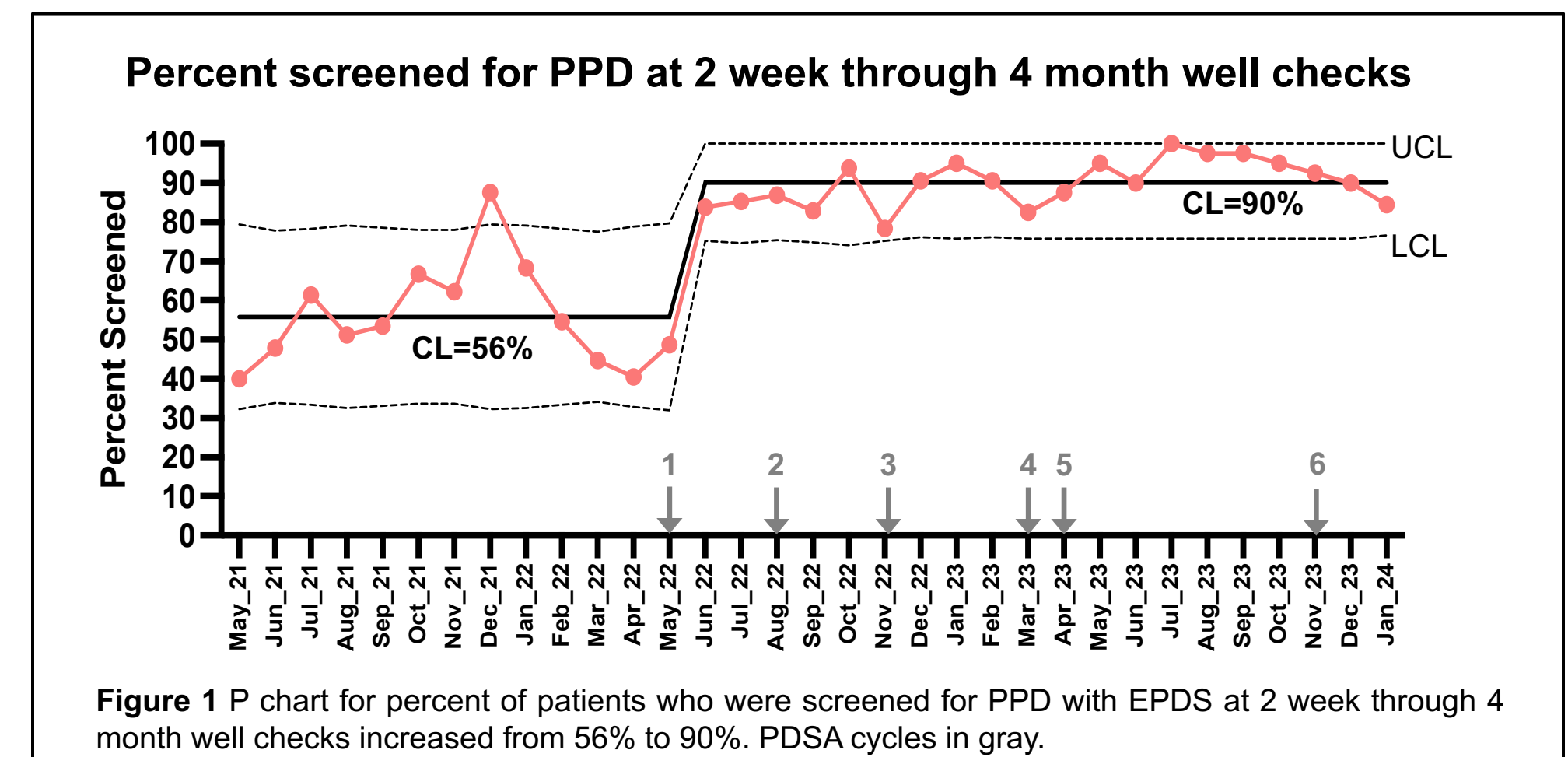


RESULTS

Table 1. Demographics		
	n	%
Total charts reviewed	1339	
2 week visit	288	22%
1 month visit	343	26%
2 month visit	401	30%
4 month visit	307	23%
English speaking	1161	87%
Non-English speaking	178	13%

Table 2. EPDS Positivity		
	n	%
Total Screened	1015	
EPDS negative	897	88%
EPDS positive	118	12%

Table 3. Plan Do Study Act Cycles		
Date	Description	
1 May 2022	HealthySteps clinical psychologist integrated into clinic	
2 Aug 2022	Folder of non-English EPDS pdf's created	
3 Nov 2022	Workflow diagram created	
4 Mar 2023	Updated note templates that include EPDS screening and language screened for WCC and follow-up, protected EPDS+ note template created	
5 Apr 2023	Started distributing AAP handout about PPD at <2 week visits	
6 Nov 2023	Dot phrase for joint session with integrated provider follow-up	
7 Apr 2024	Workflow updated, relaunched and displayed on workflow board	



CONCLUSIONS

- We successfully and safely improved PPD screening thereby fulfilling our SMART Aim 1 (Fig 1).
- Subgroup analysis revealed that the 2 week visit had the lowest screening rates (Fig 3A), possibly due to the focus of these visits on weight trends or provider confusion over when to start EPDS screening. However, we did also see improvement in screening at the 2 week visit with our interventions (Fig 3B).
- We also improved referral of PPD+ mother-infant dyads to integrated providers, fulfilling our SMART Aim 2 (Fig 2).
- Our balancing measure of sleep counselling remains stable and unchanged (data not shown).
- Our overall positivity rate remained stable (data not shown) and is reflective of positivity rates in previous literature (Table 2).
- Our most successful intervention was incorporation of a HealthySteps clinical psychologist into the clinic (cycle 1), and after this intervention changes have been sustained for 19 months with iterative PDSA cycles.

FUTURE DIRECTIONS

- Collect and assess outcome measures for changes in maternal depressive symptoms (via EPDS and PHQ-2 scores at 6 and 12 months) and child developmental scores via SWYC at 6 months and 12 months for EPDS+ dyads who receive or do not receive HealthySteps
- Impact of interventions on improved screening in native language for the subgroup of non-English speaking patients

Special thanks to all clerks, nurses, medical assistants, residents, nurse practitioners, attendings, clinical psychologists and social workers of RGP

Improving Care For Newborns with Jaundice In Concordance with The American Academy of Pediatrics (AAP) Hyperbilirubinemia Management Guidelines

Authors: Cynthia Isedeh, DO; Abie Iyare, MD; Lauren Garcia, PA-C; Nicole Zambelletti, PA-C; Allie Knowles, PA-C; Taylor Kaplan, PA-C; Narissa Williams, MD MPH MBE; Jennifer Gigliotti, PA-C; Gabriella Gagliardi, PA; Megan Schwarz, PA-C; Melanie Wilson-Taylor, MD; Snezana Nena Osorio, MD MS

Department of General Pediatrics

Statement of the Problem: Most newborns (80%) will have jaundice requiring careful monitoring and appropriate therapy because high level of bilirubin can lead to bilirubin encephalopathy. The newest AAP guidelines provide an avenue to achieve a balance in providing adequate therapy while eliminating harm to newborns with jaundice.

Objective: To increase the percent of Well-Baby Nursery newborns with jaundice age ≥ 35 weeks' gestation who receive management consistent with AAP-guidelines to 90% by May 2025. We define AAP- guideline consistent management as providing phototherapy when the newborn meets or is above recommended phototherapy threshold, obtaining rebound bilirubin for infants who received phototherapy < 48 hours of life, had a positive DAT, or had known or suspected hemolytic disease, and who received G6PD screening prior to discharge.

Methods: This is an ongoing observational study using sequential planned experimentation to improve care for newborns with jaundice. An interdisciplinary quality improvement (QI) team including physician assistants, pediatric hospitalists, pediatric resident, and a quality improvement specialist met monthly to design project aims and measures. Staff awareness, IT support, and unit culture were identified as key drivers. Using electronic medical record (EMR) review we collected the following process measures: the % of newborns receiving phototherapy at or above recommended threshold, % newborns receiving phototherapy and subsequently having rebound bilirubin checked, and % newborns having G6PD screening after phototherapy. Balancing measures were escalation of care to NICU and hospital readmission within 4 days of phototherapy discontinuation. Interventions were tested via four PDSA cycles (Figure 1). We analyzed data using Shewhart "P" chart and applied API rules to detect special cause variation.

Results: Out of 149 newborns ≥ 35 weeks' gestational age, 24% were treated with phototherapy at or above recommended phototherapy threshold (Figure 1) and 48% patients received appropriate rebound bilirubin testing. Recommended G6PD screening increased from 93% to 100% (Figure 2). We also found that 59% of newborns received phototherapy based on bilirubin rate of rise ≥ 0.2 mg/dL/hour. There was no change on readmission rate for phototherapy.

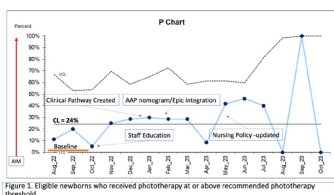


Figure 1. Eligible newborns who received phototherapy at or above recommended phototherapy threshold

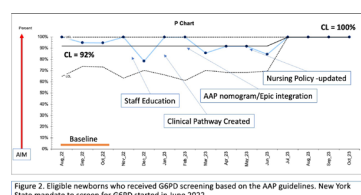


Figure 2. Eligible newborns who received G6PD screening based on the AAP guidelines. New York State mandate to screen for G6PD started in June 2022.

Conclusions: We surpassed our aim in G6PD screening largely due to state-mandated testing and our institutional efforts at providing equitable care. Adherence to current phototherapy guidelines were not achieved, highlighting the importance of identifying providers' barriers and workflow optimization to reach outcome goals.



Improving care for newborns with jaundice in concordance with the AAP hyperbilirubinemia guidelines

Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Cynthia Isedeh, DO; Abie Iyare, MD; Lauren Garcia, PA-C; Nicole Zambelletti, PA-C; Allie Knowles, PA-C; Taylor Kaplan, PA-C; Narissa Williams, MD MPH MBE; Jennifer Gigliotti, PA-C; Gabriella Gagliardi, PA; Megan Schwarz, PA-C; Melanie Wilson-Taylor, MD; Snezana Nena Osorio, MD MS | May 22, 2024

Problem Statement

- 80% of newborns will have jaundice requiring monitoring and therapy.
- Unrecognized hyperbilirubinemia can lead to bilirubin encephalopathy.
- Newest AAP guidelines aim to balance providing adequate therapy while eliminating harm to newborns with jaundice.

Objective/Aim Statement

- Increase the percent of newborns ≥ 35 weeks with jaundice in Well-Baby Nursery who receive AAP consistent management to 90% by May 2025
- AAP consistent Hyperbilirubinemia management defined as:
 - Receive rebound bilirubin testing if received phototherapy < 48 hours of life, had a positive DAT, or had known or suspected hemolytic disease
 - Receive G6PD screening prior to discharge
 - Receive phototherapy at or above recommended phototherapy threshold

Design/Methods

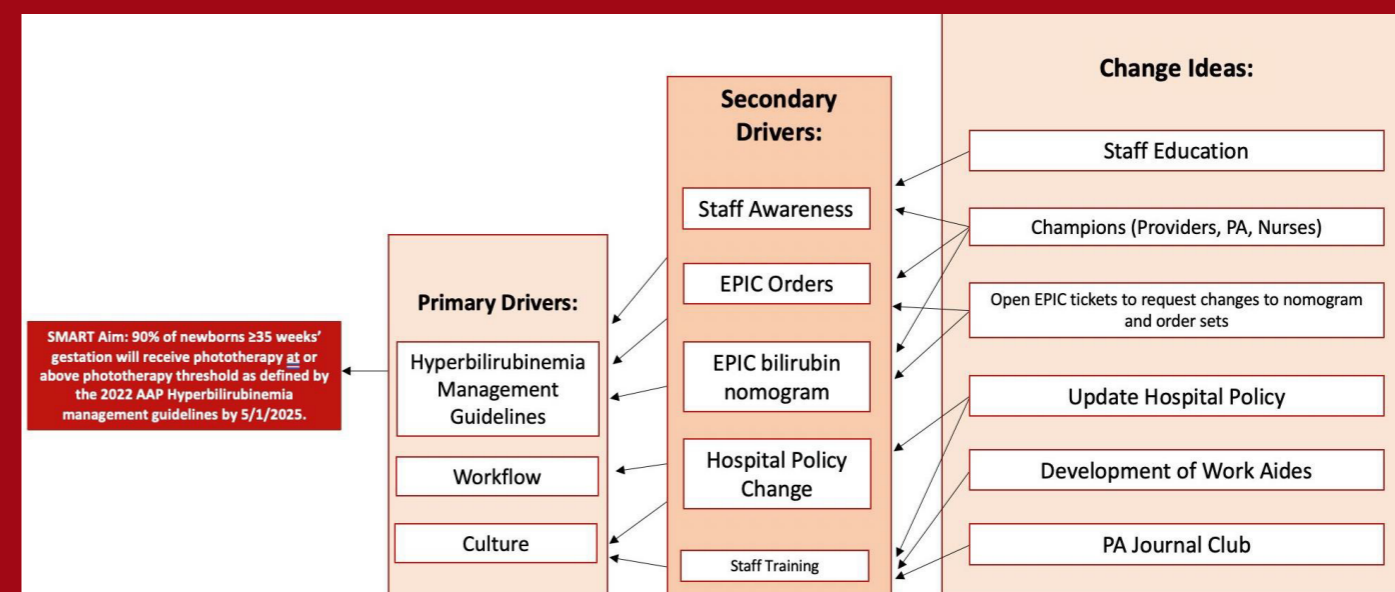
- Observational QI using sequential planned experimentation

Process Measures

- Percent of newborns receiving phototherapy at or above recommended threshold
- Percent of newborns receiving phototherapy and subsequently having rebound bilirubin checked
- Percent of newborns having G6PD screening after receiving phototherapy

Balancing Measure

Inpatient readmission rate Escalation of care to NICU



Results

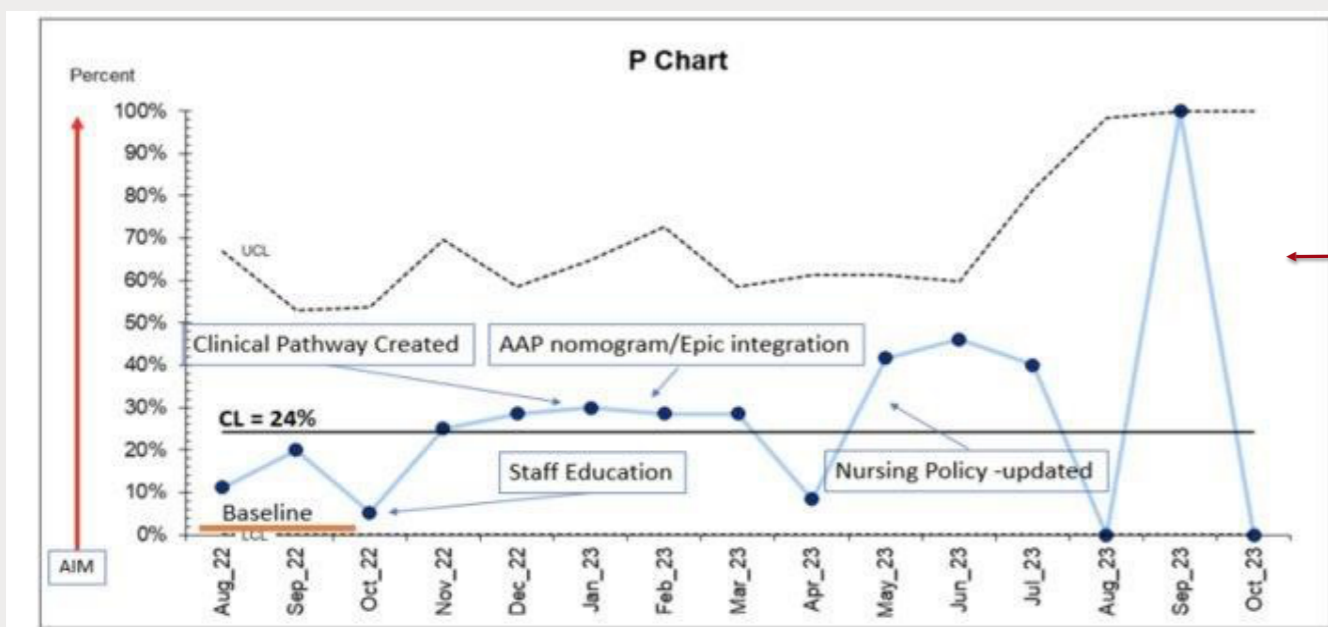
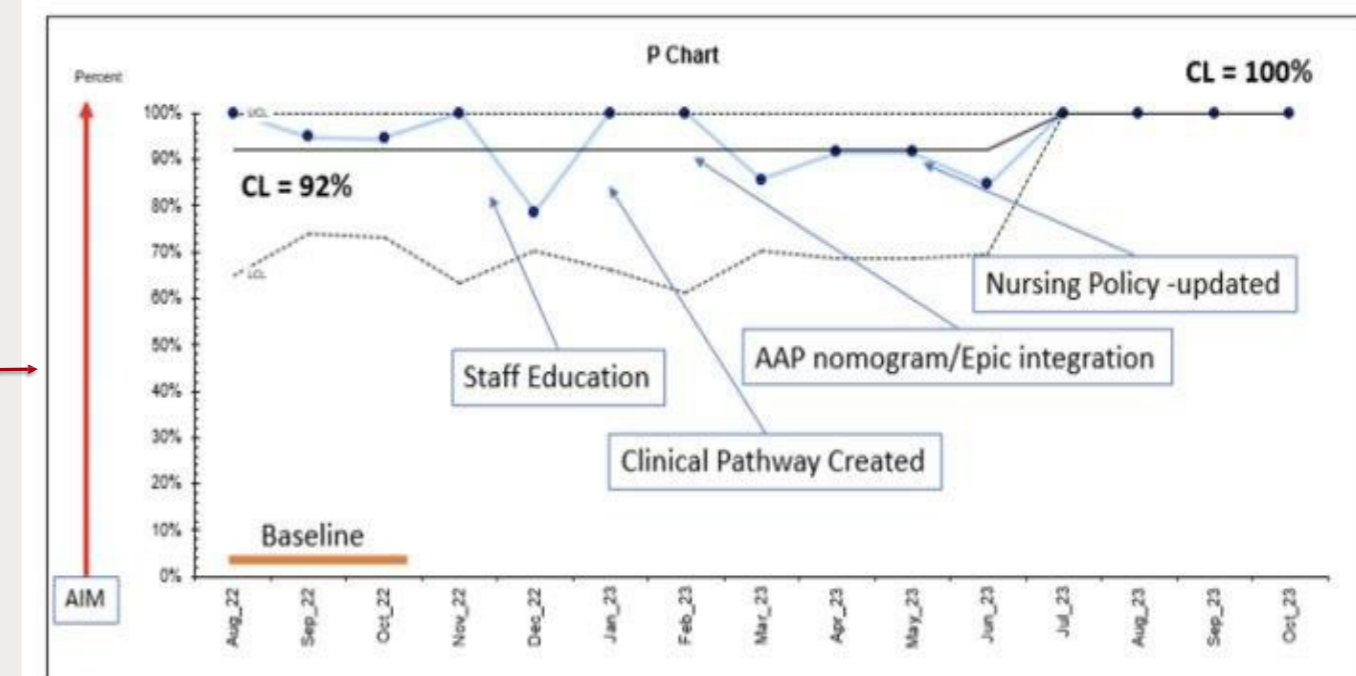


Figure 1. Eligible newborns who received phototherapy at or above recommended phototherapy threshold

Data analyzed using statistical process control charts

Figure 2. Eligible newborns who received G6PD screening based on the AAP guidelines. New York State mandate to screen for G6PD started in June 2022.



Discussion

- 149 newborns ≥ 35 weeks gestational age received phototherapy
- Only 24% treated with phototherapy at or above recommended phototherapy threshold
- Majority of newborns (59%) received phototherapy based on bilirubin rate of rise ≥ 0.2 mg/dL/hour
- 48% received appropriate rebound bilirubin testing
- G6PD screening increased from 93% to 100%

Conclusions/Lessons Learned

- Surpassed G6PD screening aim due to state-mandated testing and institutional efforts at providing equitable care
- The most impactful interventions were creation of clinical pathway, integration of the AAP new nomogram in Epic, and Nursing Policy change
- Adherence to current AAP phototherapy guidelines requires additional interventions to fully implement the AAP guidelines

Next Steps

- Survey providers to identify barriers that can inform a design of future intervention to facilitate adherence to the AAP guidelines
- Identify physician champions
- Optimize Epic workflow

Acknowledgements

- Evan Sholle, MS and ARCH team
- PA, nursing and physician teams

Reference

Kemper AR, Newman TB, Slaughter JL, et al; American Academy of Pediatrics Clinical Practice Guideline. Clinical Practice Guideline Revision: Management of Hyperbilirubinemia in the Newborn Infant 35 of More Weeks of Gestation. Pediatrics.2022. 150(3). <https://doi.org/10.1542/peds.2022-058859>

Initiating Infant Driven Feeding™ In A Level 3 Community NICU, A Quality Improvement Project

Authors: Tatyana Kopp DO, Angela Melkonian MA CCC-SLP, Thaydene Samuels PA, Natasha Cruz-Vicente MSN

Department of Pediatrics, New York Presbyterian- Queens

Background: Difficulty transitioning to oral feeding is common in premature infants and can prolong NICU length of stay (LOS) ⁽¹⁾. The Infant Driven Feeding™ (IDF™) program provides a standardized, developmentally supportive pathway for initiation and advancement of oral feeds in the NICU. Standardized cue-based feeding protocols have been associated with shortened transition time to full oral feeding ^(2,3).

Objective: To successfully implement IDF™ in the NICU by achieving >90% Readiness Score documentation, Quality Score documentation, and accurate Quality Scoring by February 2024.

Design/Methods: This is an observational time series study using the model for improvement and planned experimentation to test interventions designed to improve oral feeding methods in the NICU. Nursing education was completed with pre and post-test knowledge scores collected. IDF™ was initiated in February 2023. An interdisciplinary team consisting of Speech-Language Pathologist (SLP), nursing, and physician project champions provided unit support, education, and chart reviews. EMR smart phrases were created for documentation. Patient charts were reviewed monthly for IDF™ implementation measures including, documentation of feeding readiness and quality scores. Accuracy of Quality Scores was determined using nursing notes and feeding flowsheet data. In June, Quality Score accuracy huddles were held.

Results: Nursing pre and post-test knowledge scores showed improvement, average scores of 56% to 87% respectively. Two of our implementation measures have remained rather stable since the start of IDF™ (Fig. 1 & 2). Quality Score accuracy, which was rather low initially, has shown some improvement after our first intervention with an unexpected outlier during the last month (Fig. 3).

Conclusion: The first two PDSA cycles demonstrate stability in two key components of program implementation while highlighting accuracy of Quality Scores documented as an ongoing area of opportunity. Consistent with the literature ⁽³⁾, successful implementation requires time, ongoing interdisciplinary support, and re-education to supplement initial staff-wide training. Additional PDSA cycles with further staff education are anticipated to help improve compliance and accuracy of implementation. A future goal will be to improve LOS in the NICU through IDF™ implementation.



Initiating Infant Driven Feeding™ In A Level 3 Community NICU, A Quality Improvement Project

Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Tatyana Kopp DO, Angela Melkonian MA CCC-SLP, Thaydene Samuels PA, Natasha Cruz-Vicente MSN

Background

Difficulty transitioning to oral feeding is common in premature infants and can prolong NICU length of stay (LOS). The Infant Driven Feeding™ (IDF™) program provides a standardized, developmentally supportive pathway for initiation and advancement of oral feeds in the NICU. Standardized cue-based feeding protocols have been associated with shortened transition time to full oral feeding.

Objective/Aim Statement

To successfully implement IDF™ in the NICU by achieving >90% Readiness Score documentation, Quality Score documentation, and accurate Quality Scoring by February 2025.

Design/Methods

This is an observational time series study using the model for improvement and planned experimentation to test interventions designed to improve oral feeding methods in the NICU. Nursing education was completed with pre and post-test knowledge scores collected. IDF™ was initiated in February 2023. An interdisciplinary team consisting of Speech-Language Pathologist (SLP), nursing, and physician project champions provided unit support, education, and chart reviews. EMR smart phrases were created for documentation. Patient charts were reviewed monthly for IDF™ implementation measures including, documentation of feeding readiness and quality scores. Accuracy of Quality Scores was determined using nursing notes and feeding flowsheet data. In June 2023, Quality Score accuracy huddles were held.

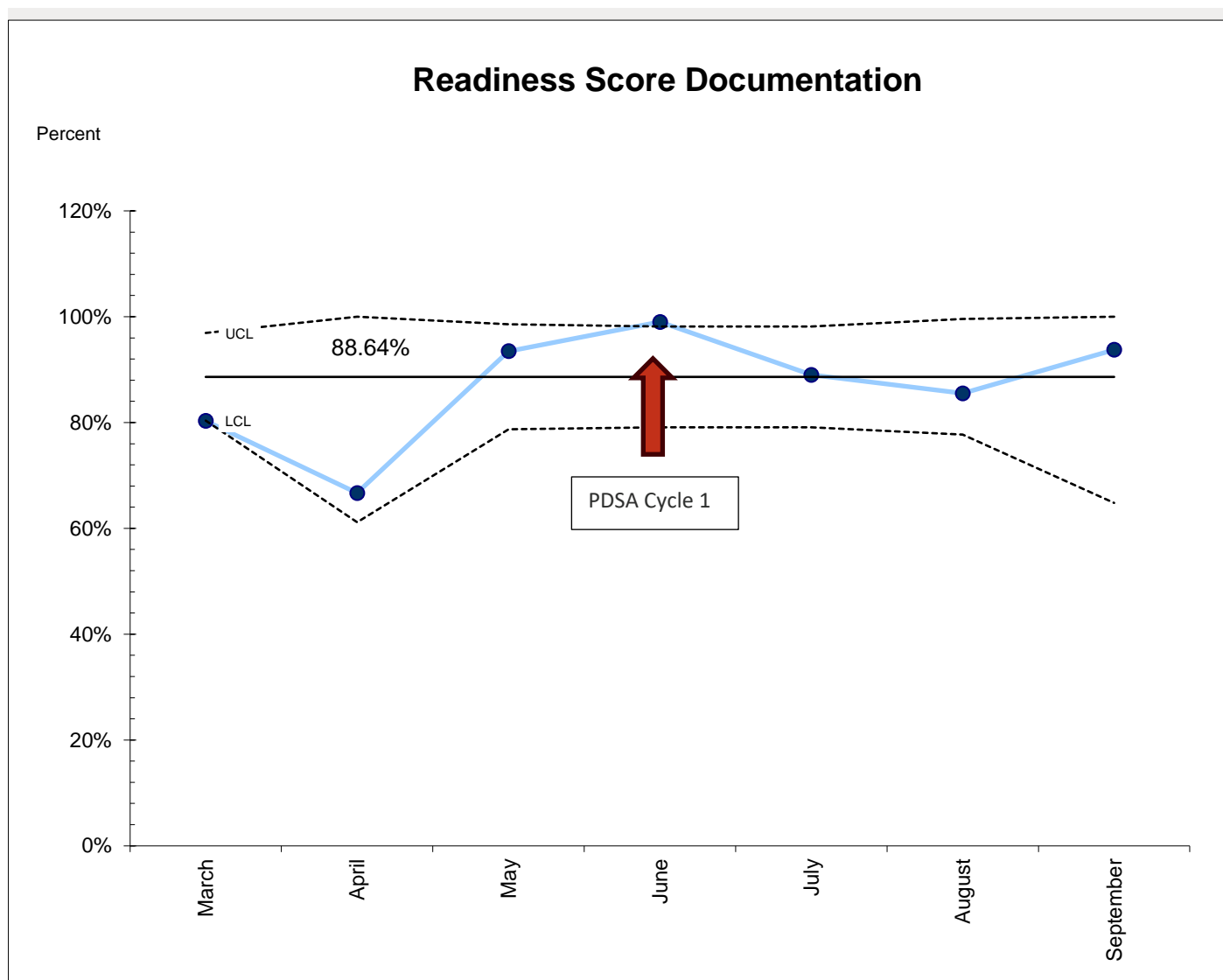


Fig. 1

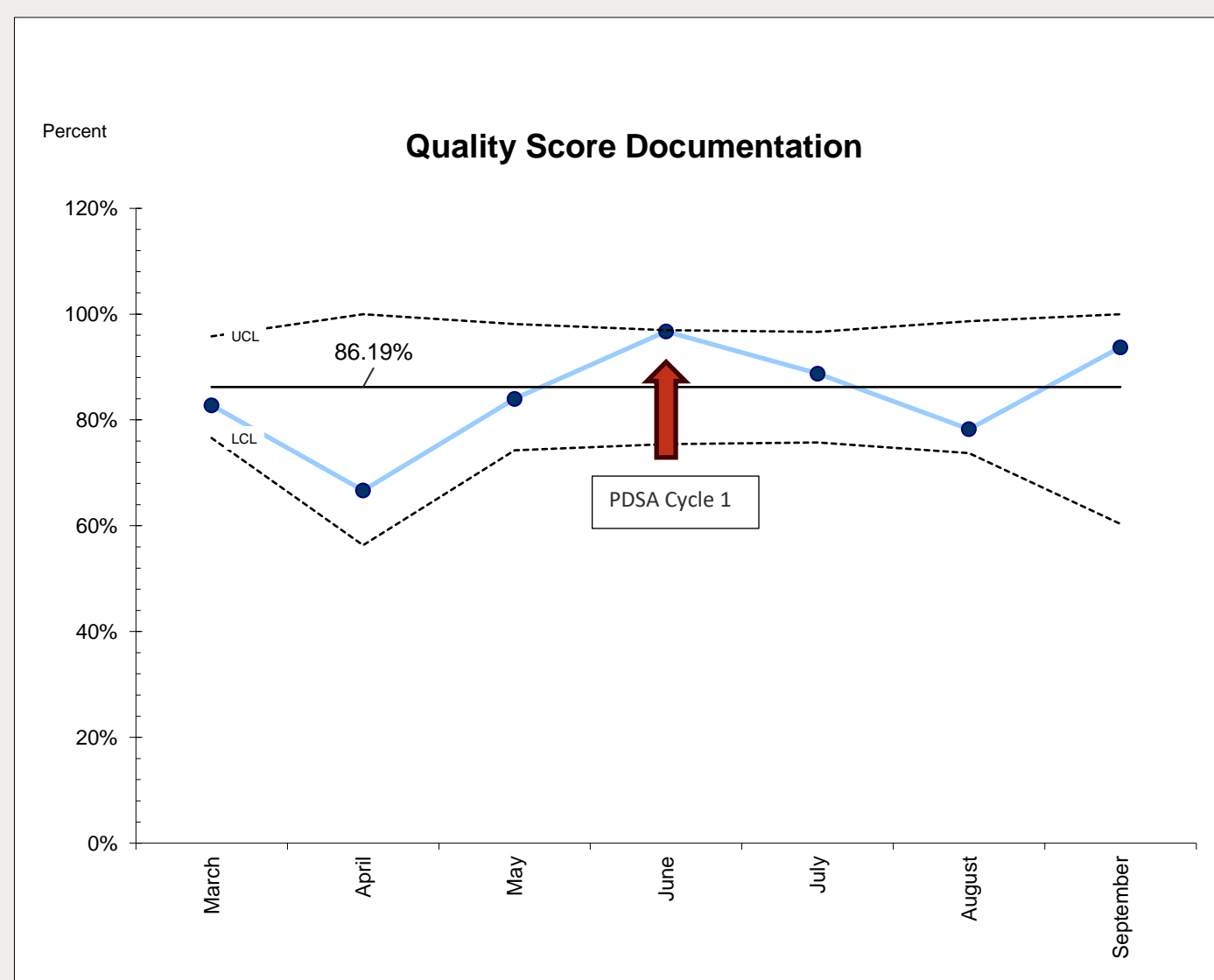


Fig. 2

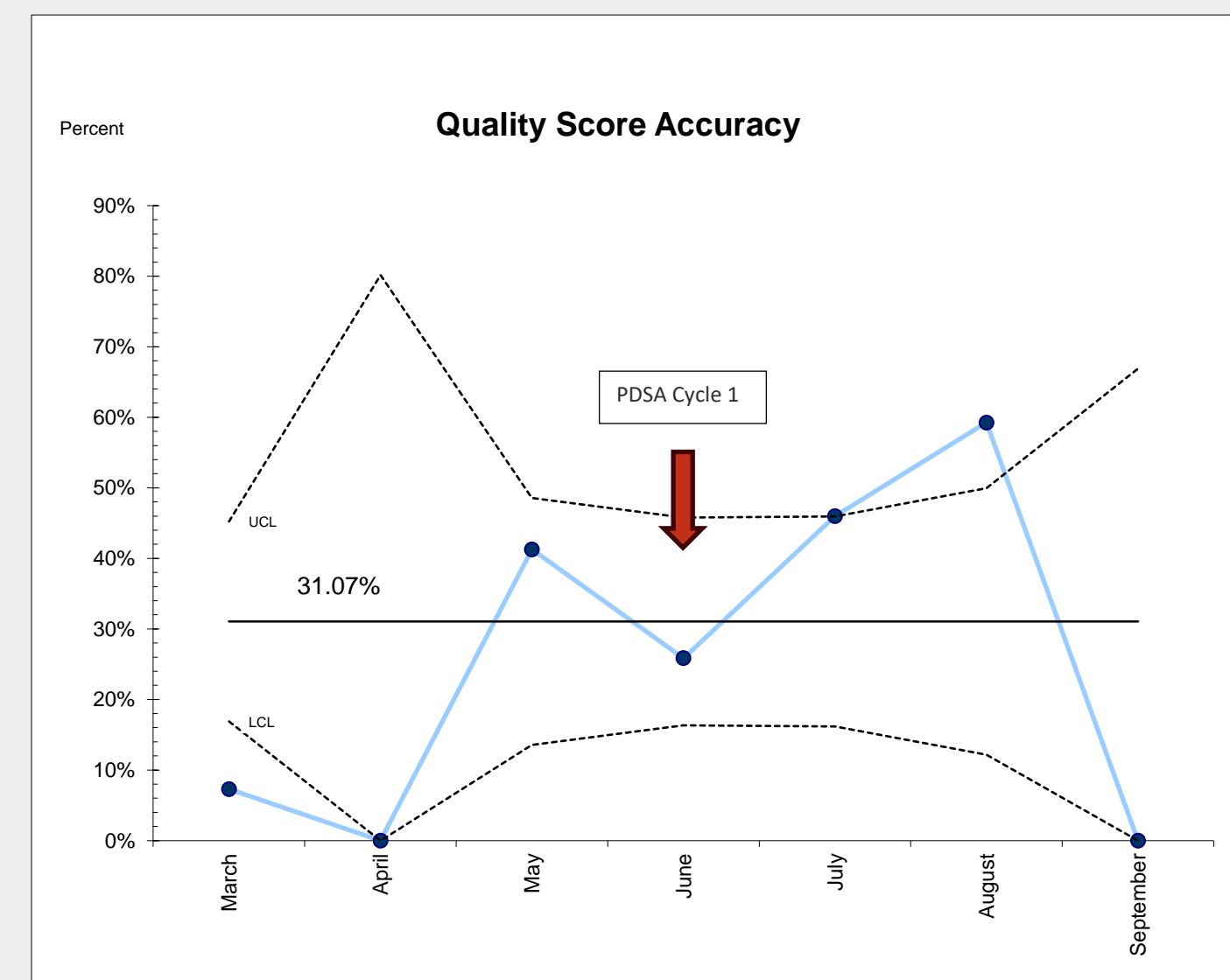


Fig. 3

Results

Nursing pre and post-test knowledge scores showed improvement, average scores of 56% to 87% respectively. Two of our implementation measures have remained rather stable since the start of IDF™ (Fig. 1 & 2). Quality Score accuracy, which was rather low initially, has shown some improvement after our first intervention with an unexpected outlier during the last month (Fig. 3).

Conclusions

The first two PDSA cycles demonstrate stability in two key components of program implementation while highlighting accuracy of Quality Scores documented as an ongoing area of opportunity. Consistent with the literature (3), successful implementation requires time, ongoing interdisciplinary support, and re-education to supplement initial staff-wide training. Additional PDSA cycles with further staff education are anticipated to help improve compliance and accuracy of implementation.

Next Steps

- Train newborn nursery RNs in IDF™ .
- Incorporate the IDF™ scoring system and documentation into EPIC.
- Review effects of IDF™ implementation on LOS in the NICU.

Improving Anxiety Screening Rates Among Pediatric and Adolescent Patients at a Community-Based Clinic: A Quality Improvement Approach

Authors: Rebecca Kow MD, Veronica Ortiz MD, Diana Mejia MD, Vicki Sun MD, Jaime Perez-Lizardi MD, Kahmun Lo MD, Emily Fine MD MPH, Ying Ge Inga Wang MD, Erika Abramson MD MHS, Snezana Nena Osorio MD MS, Robyn Rosenblum MD

Background: Anxiety is a prevalent problem among pediatric patient populations that is under-screened for and under-diagnosed. Typical age of onset for anxiety is between 6 and 12 years. From 2016 to 2020, childhood prevalence of diagnosed anxiety and anxiety-related issues increased from 7.1% to 9.2%. The U.S. Preventive Services Task Force recommends screening from ages 8 to 18 years. Until November 2023, there was no standardized anxiety screening at our clinic.

Objectives: To improve anxiety screening rates at well visits for patients 8-18 to 90%, with connections to mental health services in 90% of positive screens.

Design/Methods: This is an observational Quality Improvement study using sequential, planned experimentation at a community clinic affiliated with a tertiary academic medical center. A resident-led interdisciplinary team including front desk staff, nurses, and attendings met to identify key drivers including staff knowledge of the screening tool, patient understanding of anxiety and treatment, and provider documentation. We utilized a family of measures including referral to mental health services (outcome), % of patients screened for anxiety, % anxiety diagnosis added to the problem list, % of patients who received counseling (process), and no decrease % of patients screened for depression using Patient Health Questionnaire/module 9 which screens for depression (PHQ-9) as balancing measure. To date, we tested 2 interventions via PDSA cycle including adding an abbreviated 5 question version of the Screen for Child Related Anxiety Disorders (SCARED) questionnaire to pre-appointment screenings on EPIC, and resident education on how to provide anxiety counseling. We collected data via electronic health record review and performed data analysis using statistical “P” chart. We applied Associates for Process Improvement (API) rules to detect special cause variation.

Results: In this sample of 323 patients, we demonstrated a high anxiety screening rate of 90% (n = 290). The percent of positive anxiety screens was at 14 % (n = 41). Almost half of these patients had diagnosis of anxiety in their problem list (n = 17). We referred 39% of patients with a positive screen to a mental health care provider (n = 16), while 14% of patients were already receiving therapy services (n=6). However, only 9.8 % of encounters with positive SCARED screens documented specific discussion of mental health counseling (n = 4). There was no decrease in PHQ-9 screening (balancing measure), in fact, we improved this screening rate from 84% to 98%.

Conclusions/Future Direction: Our resident QI team demonstrated a successful process for anxiety screening in patients aged 12-18 years old seen in our clinic practice. In addition, we contributed to the total number of patients with anxiety who were connected to the mental health providers. Our next steps include expanding anxiety screen to our younger patients (8 -18 years) and improving both counseling and referral of patients with positive SCARED screen.



Improving Anxiety Screening Rates Among Pediatric and Adolescent Patients at a Community-Based Clinic: A Quality Improvement Approach

Rebecca Kow MD¹, Veronica Ortiz MD¹, Diana Mejia MD¹, Vicki Sun MD¹, Jaime Perez-Lizardi MD¹, Kahmun Lo MD¹, Emily Fine MD MPH¹, Ying Ge Inga Wang MD¹, Erika Abramson MD MHS¹, Snezana Nena Osorio MD MS¹, Robyn Rosenblum MD¹
Department of Pediatrics, NewYork-Presbyterian Hospital / Weill Cornell Medical Center, New York, NY¹

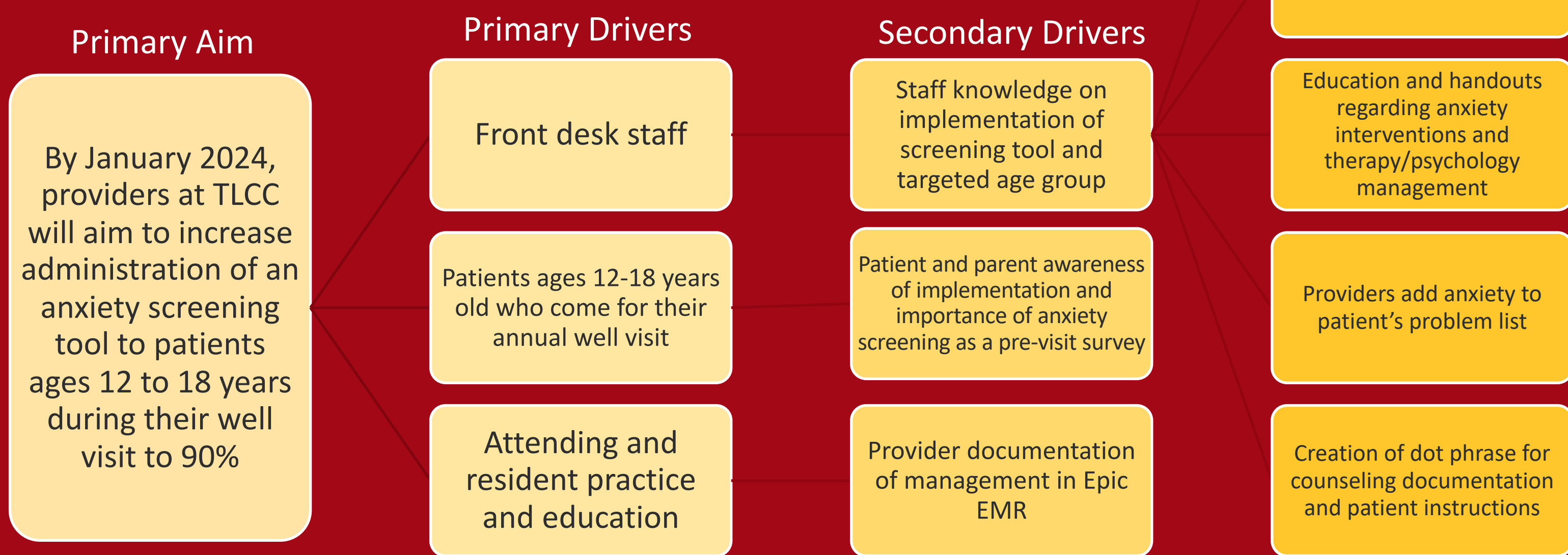
Background

- Anxiety is a prevalent problem among pediatric patient populations that is under-screened for and under-diagnosed. Typical age of onset for anxiety is between 6 and 12 years. From 2016 to 2020, childhood prevalence of diagnosed anxiety and anxiety-related issues increased from 7.1% to 9.2%.
- The U.S. Preventive Services Task Force recommends screening from ages 8 to 18 years. Until November 2023, there was no standardized anxiety screening at our clinic.

Objective

- To improve anxiety screening rates at well visits for patients 8-18 to 90%, with connections to mental health services in 90% of positive screens.

Key Driver Diagram



Methods

Study Design:

- This is an observational Quality Improvement study using sequential, planned experimentation at a community clinic affiliated with a tertiary academic medical center.

Patient population:

- All well-child visits of 12 through 18-year-olds during November 2023 through January 2024

Analysis:

- To date, we tested 2 interventions via PDSA cycle including adding an abbreviated 5 question version of the Screen for Child Related Anxiety Disorders (SCARED) questionnaire to pre-appointment screenings on EPIC, and resident education on how to provide anxiety counseling. We collected data via electronic health record review and performed data analysis using statistical "P" chart. We applied Associates for Process Improvement (API) rules to detect special cause variation.

Process Measures:

- % of patients screened for anxiety
- % anxiety diagnosis added to the problem list
- % of patients who received counseling

Outcome Measures:

- Referral to mental health services

Balance Measures:

- % of patients screened for depression using Patient Health Questionnaire/module 9 which screens for depression (PHQ-9)

	Implementation of SCARED screening at WCC for patients 12-18 through EPIC	Referrals made to behavioral health based on SCARED results and patient preference	Standardized EPIC dot phrase for anxiety counseling implemented within clinic
Nov 2023	↓	↓	
Dec 2023	↓	↓	
Jan 2024	↓	↓	
Feb 2024	↓	↓	
March 2024	↓	↓	↓
April 2024	↓	↓	↓

Results

Overall Anxiety Screening Rates

In this sample of 323 patients, we demonstrated a high anxiety screening rate of 90% (n = 290, Figure 1).

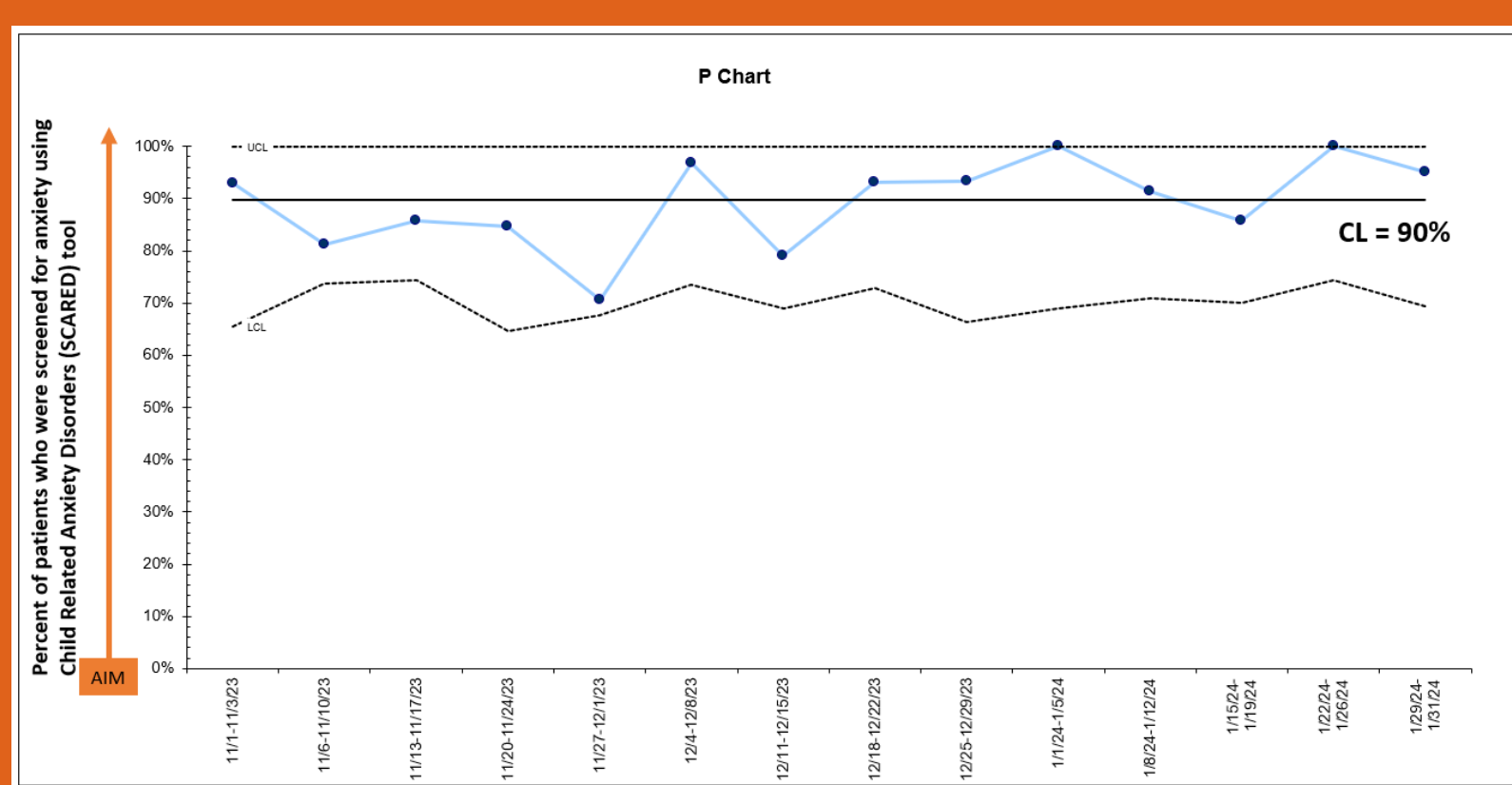


Figure 1. High anxiety screening rates using the Screen for Child Related Anxiety Disorders (SCARED)

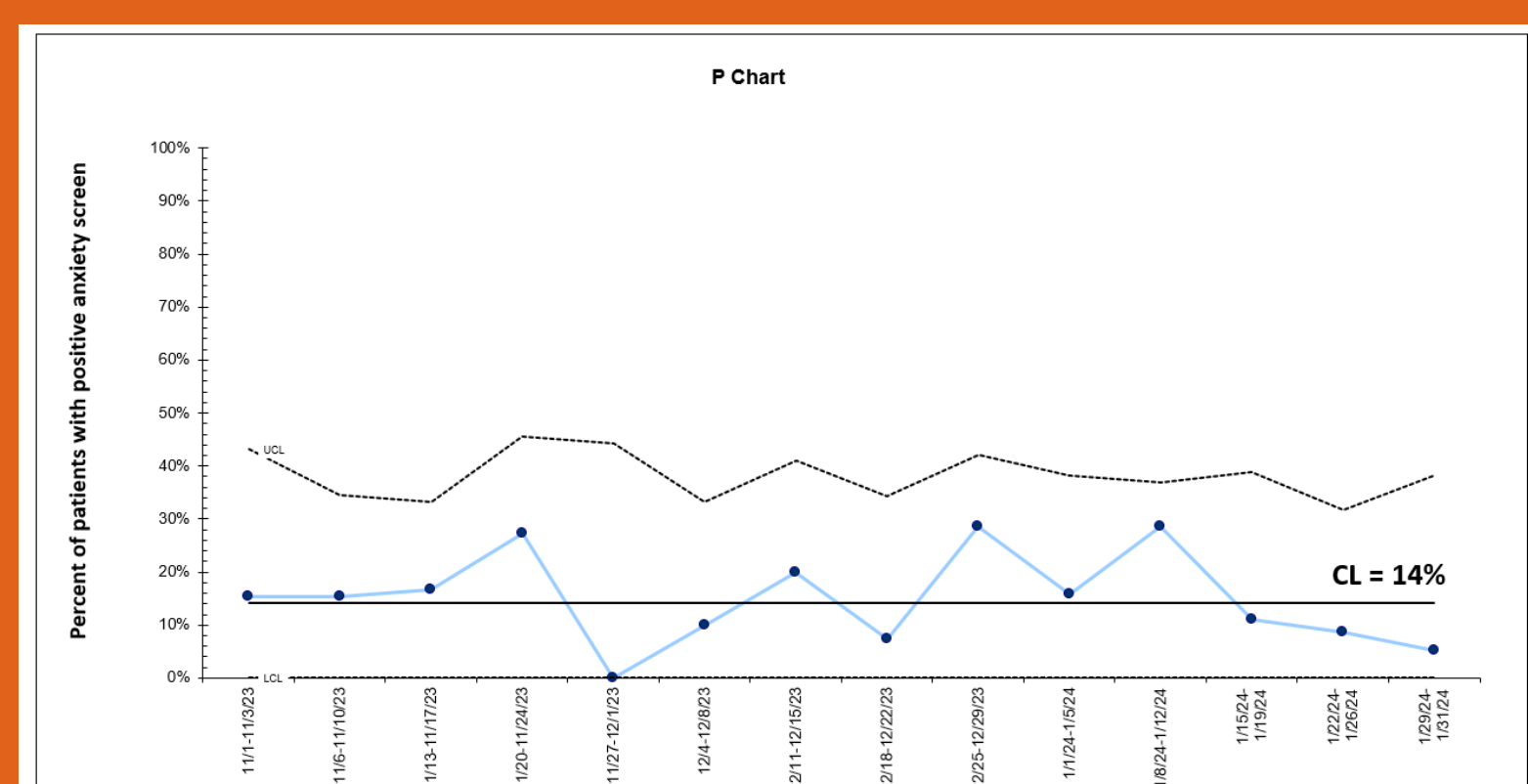


Figure 2. Positive anxiety screening rate is like the nationally reported prevalence data.

Anxiety Prevalence and Diagnosis in Our Clinic

The percentage of positive anxiety screens was at 14% (n = 41, Figure 2). Almost half of these patients had a diagnosis of anxiety in their problem list (n = 17).

- We referred 39% of patients with a positive screen to a mental health care provider (n = 16), while 14% of patients were already receiving therapy services (n=6).
- However, only 9.8% of encounters with positive SCARED screens documented specific discussion of mental health counseling (n = 4).
- There was no decrease in PHQ-9 screening (balancing measure). In fact, we improved this screening rate from 84% to 98%.

Impact and Future Directions

- Our resident QI team demonstrated a successful process for anxiety screening in patients aged 12-18 years old seen in our clinic practice. In addition, we contributed to the total number of patients with anxiety who were connected to the mental health providers.
- Our next steps include expanding anxiety screen to our younger patients (8 -18 years) and improving both counseling and referral of patients with positive SCARED screen.

Quality Improvement Initiative to Reduce Pediatric Harm Due to Nephrotoxic Medication Exposure

Authors: Diane Liu MD MSc, Hannah Kim MD MHS, Elena Mendez-Rico PharmD, Sarah Smith PharmD BCPPS, Meagan Cea MA, Evan Sholle MS, Palma Gallardo BBA, Caitlin Ehret MSN CPNP- PC, Jin-Young Han MD PhD, Nena Osorio MD MS

Department of Pediatrics

Problem: Nephrotoxic medication associated acute kidney injury (NTMx-AKI) is one of the most common causes of AKI in non-critically ill hospitalized children. About 25% of inpatients develop AKI, with 80% exposed to at least one NTMx. A portion of NTMx-AKI goes unnoticed due to lack of systematic kidney function surveillance in exposed children, as serum creatinine is measured every 4 days in only 50% of children receiving multiple NTMx. NTMx-AKI may be a modifiable adverse safety event if tools are in place to reliably identify at-risk patients.

Objective/Aim: Reduce AKI in pediatric medical surgical inpatients exposed to NTMx by 50% by June 2024

Design/Methods: This is an observational study with planned sequential experimentation from April 2021 through June 2024. Our QI team, comprised of 2 pharmacists, a nephrologist, a pediatric hospitalist, an antibiotic stewardship leader, nursing, and IT, created a key driver diagram. We created IT tools (Trigger Tools, patient reports) from April 2021 through December 2022. We used % of patients for whom the trigger tool fired correctly, % of provider notification with the initial exposure during the week (process), NTMx exposure and related AKI (outcome) and persistent bacteremia by patient (balancing) measures. We completed 3 PDSA cycles including trigger tool validation, provider education and notification by pharmacist). We used “U” Shewhart chart to display and analyze data and we applied API rules to detect special cause variations.

Results: Both process measures performed at 100 % (trigger tool and provider notification). Our NTMx rate was 5.3/1000 patient days. We reduced our AKI rate from 2.3 to 1.1/1000 patient days. There was no increase in persistent bacteremia.

Conclusions: We successfully reduced AKI in medical surgical patients. The most impactful intervention was contacting providers after initial exposure.

Next Steps: Next steps include measuring the number of NTMx exposures per hospitalization instead of whether an exposure was present during the hospitalization. We will also update NTMx exposure definitions to fully account for vancomycin and amikacin related exposures, and plan to assess compliance with creatinine measurements. As part of the next phase of this initiative, we will be expanding to the pediatric and neonatal intensive care units.



Problem Statement

Nephrotoxic medication associated acute kidney injury (NTMx-AKI) is one of the most common causes of AKI in non-critically ill hospitalized children. About 25% of inpatients develop AKI, with 80% exposed to at least one NTMx. A portion of NTMx-AKI goes unnoticed due to lack of systematic kidney function surveillance in exposed children, as serum creatinine is measured every 4 days in only 50% of children receiving multiple NTMx. NTMx-AKI may be a modifiable adverse safety event if tools are in place to reliably identify at-risk patients.

Objective/Aim Statement

Reduce AKI in pediatric medical surgical inpatients exposed to NTMx by 50% by June 2024

Design/Methods

This is an observational study with planned sequential experimentation from April 2021 through June 2024. Our QI team, comprised of 2 pharmacists, a nephrologist, a pediatric hospitalist, an antibiotic stewardship leader, nursing, and IT, created a key driver diagram (Figure 1). We created IT tools (Trigger Tools, patient reports) from April 2021 through December 2022. We used % of patients for whom the trigger tool fired correctly, % of provider notification with the initial exposure during the week (process), NTMx exposure and related AKI (outcome) and persistent bacteremia by patient (balancing) measures. We completed 3 PDSA cycles including trigger tool validation, provider education and notification by pharmacist). We used “U” Shewhart chart to display and analyze data and we applied API rules to detect special cause variations.

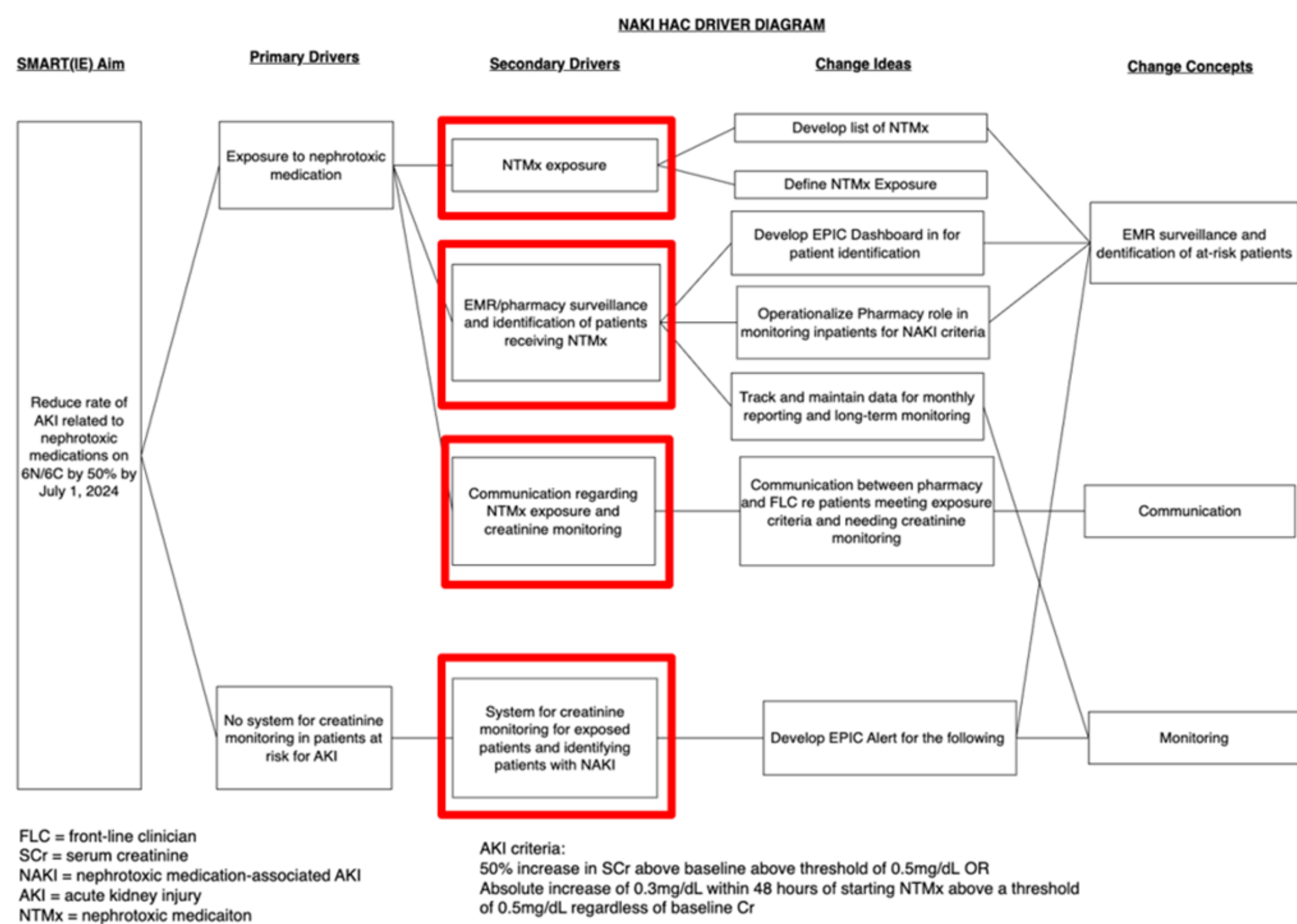


Figure 1. Key drivers are outlined with associated interventions geared toward the aim of reducing nephrotoxic medication associated acute kidney injury in pediatric medical surgical inpatients

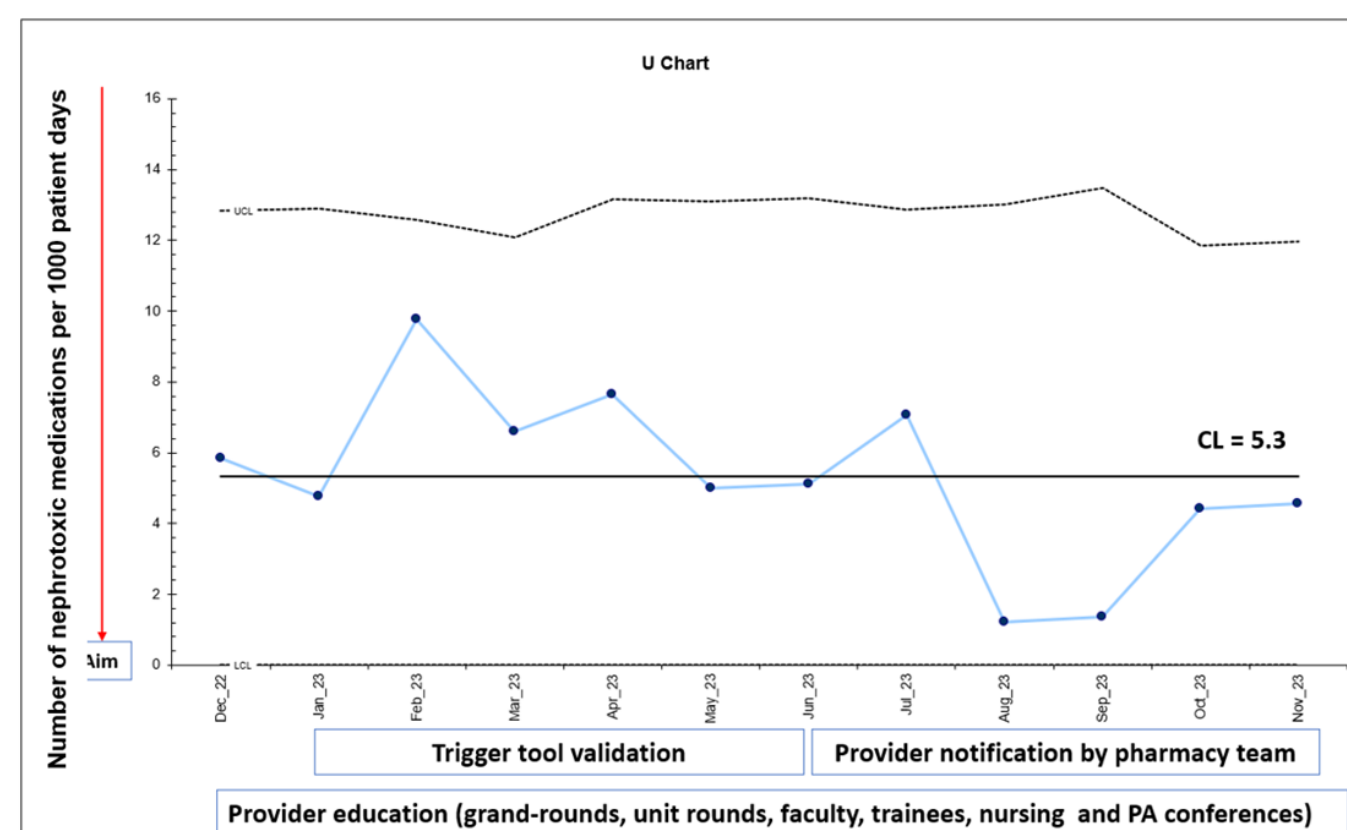


Figure 2. The rate of nephrotoxic medication exposure was 5.3/1000 patient days as the trigger tool validation and provider notification by pharmacy team were implemented.

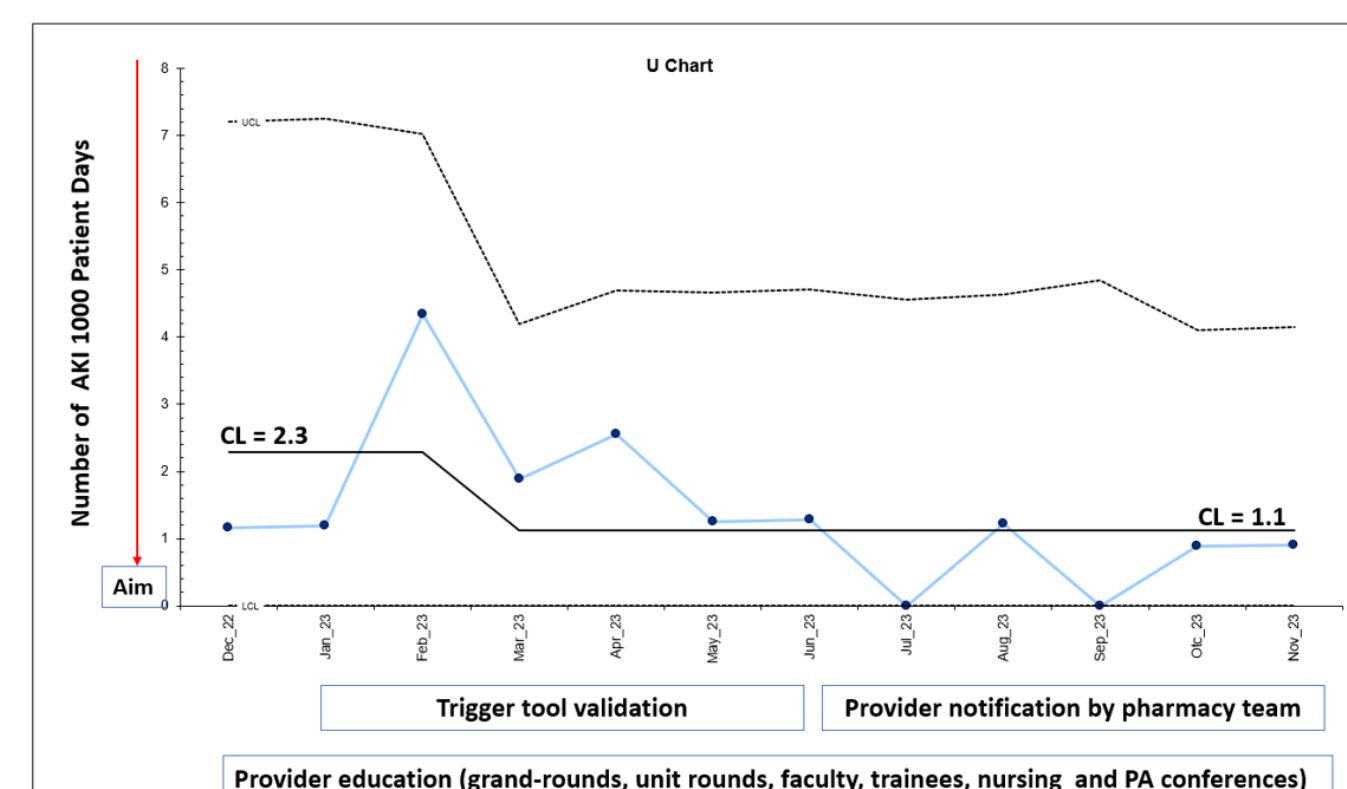


Figure 3. The rate of AKI episodes were reduced from 2.3 to 1.1/1000 patient days through November 2023 after the trigger tool validation and provider notification by the pharmacy team were implemented.

Results

Both process measures performed at 100 % (trigger tool and provider notification). Our NTMx rate was 5.3/1000 patient days (Figure 2). We reduced our AKI rate from 2.3 to 1.1/1000 patient days (Figure 3). There was no increase in persistent bacteremia.

Conclusions/Lessons Learned

We successfully reduced AKI in medical surgical patients. The most impactful intervention was contacting providers after initial exposure.

Next Steps

Next steps include measuring the number of NTMx exposures per hospitalization instead of whether an exposure was present during the hospitalization. We will also update NTMx exposure definitions to fully account for vancomycin and amikacin related exposures, and plan to assess compliance with creatinine measurements. As part of the next phase of this initiative, we will be expanding to the pediatric and neonatal intensive care units.

Reducing the Strain: A Multidisciplinary Collaboration to Standardize Care for Children with Constipation while Improving Patient Care and Healthcare Resource Utilization

Authors: Ramos, Michelle; Gordon, Elliott; Ellis, Kaela; Bergman, Arielle; Castro Ochoa, Kenny; Chien, Kimberley; Ciecieroga, Thomas; Sockolow, Robbyn; Solomon, Aliza; Alfonzo, Michael; Gerber, Nicole; Rose, Melissa

Weill Cornell Department of Pediatric Gastroenterology, Hepatology, and Nutrition

Problem: Constipation is a costly global health challenge. Variability in physician comfort and in management strategies for pediatric constipation leads to increased healthcare utilization.

Objective/Aim of the study: This ongoing QI project aims to improve knowledge, understanding, and utilization of best practice constipation management guidelines. Through the development and dissemination of standardized, evidence-based tools, including a multidisciplinary management algorithm, electronic medical record (EMR) order panel, and discharge instructions, we aim to increase the number of patients recommended to follow evidence-based guidelines for outpatient constipation management.

Project Design/Methods: This is an observational study with planned sequential experimentation in the WCM pediatric ED. Population studied are children who have received an enema in the ED. Evidence-based algorithm and standardized discharge instructions were developed which have been implemented via PDSA cycles for the management of constipation. Key collaborators included pediatric GI, pediatric emergency medicine, pharmacy, and informaticists. Outcome measures include the percentage of patients discharged home with standardized, evidence-based instructions for constipation management and percentage of patients who have radiographic studies performed in the ED. Process measures are the number of patients discharged from the ED with standardized discharge instructions, number of discharge medications ordered per evidence-based guidelines, and number of radiographic studies performed. Our balancing measures include length of stay in the ED and number of ED revisits for the same diagnosis.

Results: 12-months of baseline data was collected. Patients were identified using EMR generated reports on ED-administered enemas, followed by manual chart review. A standardized evidence-based clinical algorithm for constipation management and EMR discharge dot phrase containing standardized evidence-based instructions for constipation management was created and disseminated to ED providers. These strategies were implemented as part of the first PDSA cycle. Baseline data indicated that 11% of patients were discharged with evidence-based medications, 0% were discharged with standardized language appropriate discharge instructions, and 67% of patients had radiographic studies performed. The average length of stay was 291 minutes, and the percentage of ED revisits was 33%. Data for the first PDSA cycle thus far indicates 46% of patients were discharged with evidence-based medications, 43% were discharged with standardized discharge instructions, and 63% of patients had radiographic studies ordered. The average length of stay was 298 minutes and 5% had ED revisits.

Conclusions: Creation of a standardized, evidence-based clinical algorithm enhanced by modifications to the EMR system to support these recommendations effectively improved healthcare utilization for patients presenting with constipation. Initial data show that following implementation of the pathway there has been an increase in patients discharged with evidence-based medications and with standardized discharge instructions for constipation management. There has also been a decrease in utilization of radiographic imaging and revisits. Future PDSA cycles include implementation of an EMR order panel to facilitate in-hospital and discharge medication orders and implementation of a Spanish discharge dot phrase.



Reducing the Strain: A Multidisciplinary Collaboration to Standardize Care for Children with Constipation while Improving Patient Care and Healthcare Resource Utilization

Weill Cornell Medicine Quality Improvement and Patient Safety Poster Session | May 22 2024

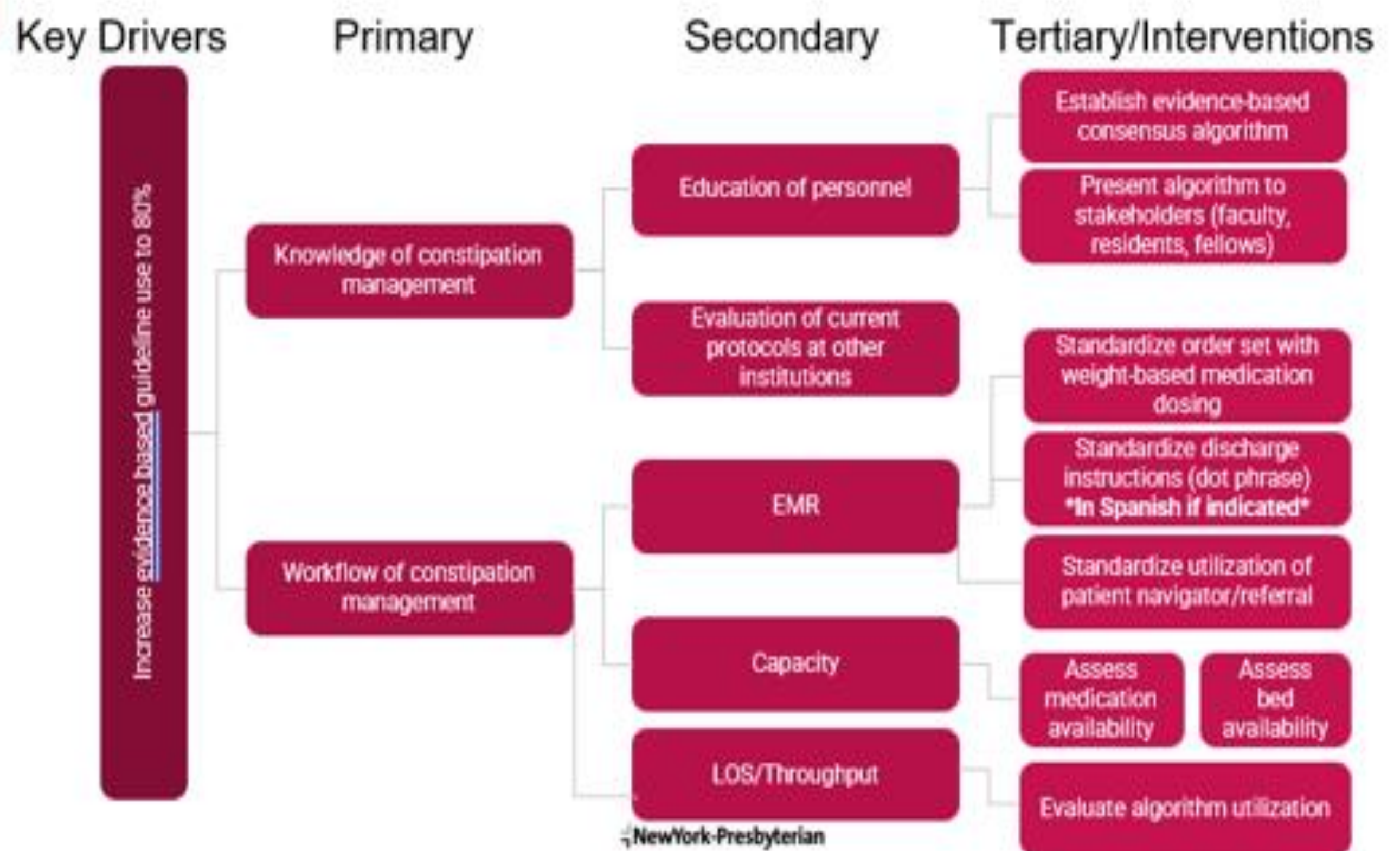
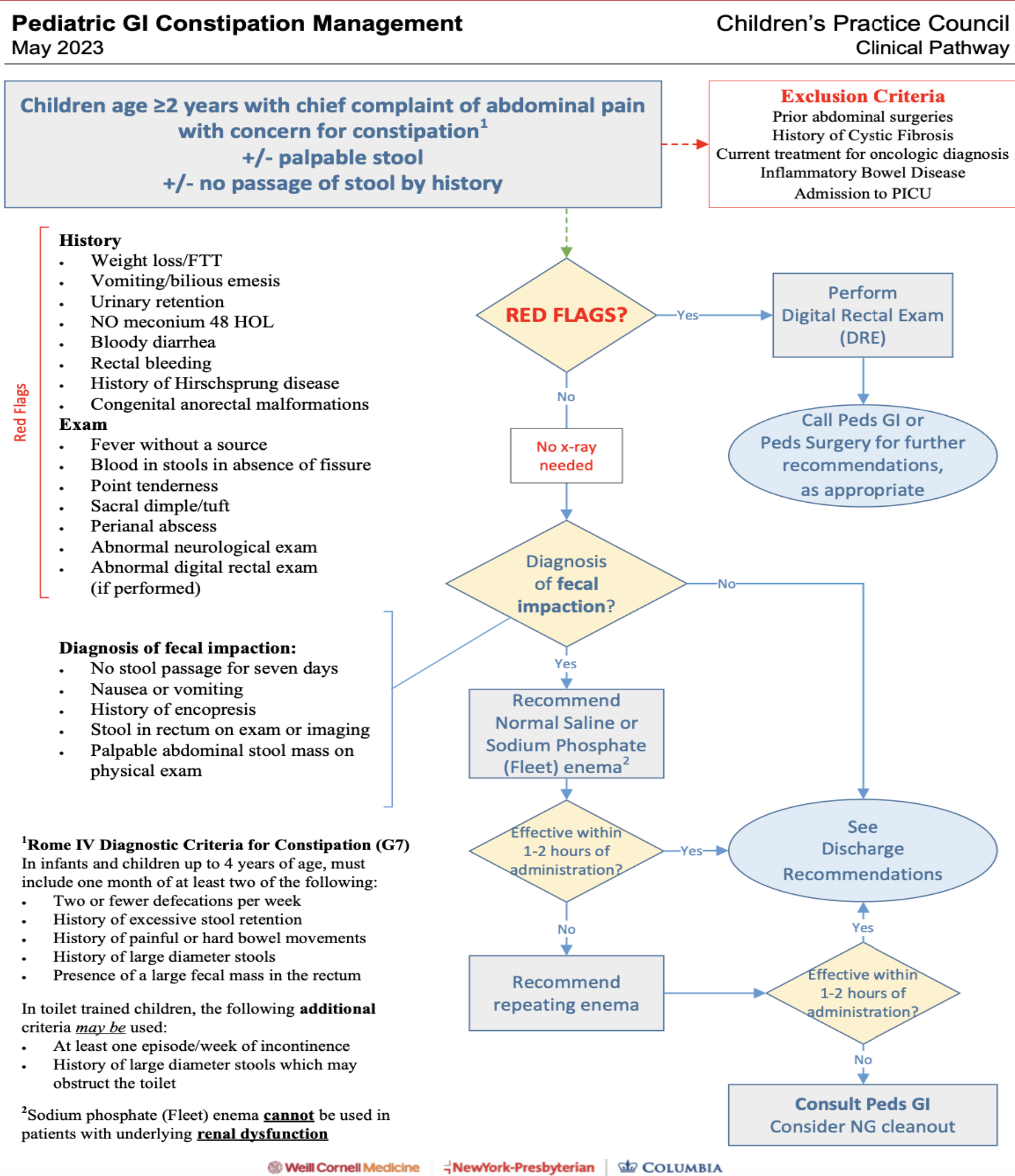
Ramos, Michelle; Gordon, Elliott; Ellis, Kaela; Bergman, Arielle; Castro Ochoa, Kenny; Chien, Kimberley; Ciecieręga, Thomas; Sockolow, Robbyn; Solomon, Aliza; Alfonzo, Michael; Gerber, Nicole; Rose, Melissa

Problem Statement: Constipation is a costly, global health challenge. Variability in physician comfort and in management strategies for pediatric constipation leads to increased healthcare utilization.

Objectives: This ongoing QI project aims to improve knowledge, understanding, and utilization of best practice constipation management guidelines. Through the development and dissemination of standardized, evidence-based tools, including a multidisciplinary management algorithm, electronic medical record (EMR) order panel, and discharge instructions, we aim to increase the number of patients recommended to follow evidence-based guidelines for outpatient constipation management.

Design/Methods: Observational study with planned sequential experimentation in the WCM pediatric ED. Population studied are children who have received an enema in the ED. Evidence-based algorithm and standardized discharge instructions were developed which have been implemented via PDSA cycles for the management of constipation.

- Key Collaborators: pediatric gastroenterology, pediatric emergency medicine, pharmacy, informaticists
- Outcome measures: percentage of patients discharged home with evidence-based, standardized, language appropriate instructions for constipation management; percentage of patients with constipation who have radiographic studies performed in the ED
- Process measures: number of patients discharged from the ED with standardized discharge instructions for constipation management; number of discharge medications ordered per evidence-based guidelines; number of radiographic studies performed.
- Balancing measures: length of stay in the ED; number of ED revisits for the same diagnosis



Results: 12-months of baseline data was collected. Patients were identified initially using EMR generated reports on ED-administered enemas, followed by manual chart review. A standardized evidence-based clinical algorithm for constipation management and EMR discharge dot phrase containing standardized evidence-based instructions for constipation management was created and disseminated to ED providers. These strategies were implemented as part of the first PDSA cycle.

Baseline data indicated that 11% of patients were discharged with evidence-based medications for constipation management based on current national guidelines for outpatient constipation management, 0% were discharged with standardized language appropriate discharge instructions for constipation management, and 67% of patients had radiographic studies performed. The average length of stay was 291 minutes, and the percentage of ED revisits was 33%.

Data for the first PDSA cycle thus far (130 charts) indicates that 46% of patients were discharged with evidence-based medications for constipation management, 43% were discharged with standardized discharge instructions, and 63% of patients had radiographic studies ordered. The average length of stay was 298 minutes and 5% had ED revisits.

Conclusions/Lessons Learned: Creation of a standardized, evidence-based clinical algorithm enhanced by modifications to the EMR system to support these recommendations effectively improved healthcare utilization for patients presenting with constipation. Initial data show that following implementation of the pathway there has been an increase in patients discharged with evidence-based medications and with standardized discharge instructions for constipation management. There has also been a decrease in utilization of radiographic imaging and revisits.

Next Steps: EMR order panel for visit medications and discharge medications, Spanish discharge dot phrase (implemented 4/23/24)

A Multidisciplinary Quality Improvement Initiative to Improve the Komansky Children's Hospital's Emergency Escalation System

Authors: Megan Toal, MD Kiran Gadani-Patel, MD, MPH Jennie Ono, MD, MS Felicia Alleyne, MSN, BScN Rae Jean Hemway, DNP, RN, MPA, RNC-NIC Snezana Nena Osorio, MD MS

Statement of the Problem: Rapid Response Team (RRT) activation occurs when a patient demonstrates early signs of deterioration. RRT is composed of a team of responders capable of supplying critical resources and performing interventions at a moment's notice at the patients' current location. Recently, in our medical surgical units we have experienced an increase in the number of hospitalizations of medically complex patients, including those who are technology supported (e.g. tracheostomy, feeding tubes). These patients are at risk of rapid deterioration requiring provider prompt activation of RRT. Our baseline Adverse Event data have shown a significant delay in RRT activation leading to an increased number of Preventable Adverse Events (PAE).

Objective: On medical surgical units we aimed to 1) reduce the number of PAEs to zero and 2) improve healthcare providers' comfort with escalating care by 20% by June 2023.

Methods: Using the Model for Improvement, a series of sequential interventions were implemented as listed in Figure 1. Our outcome measures included the number of PAEs on the medical surgical units related to escalation of care and to follow self-reported comfort level with RRT activation. We utilized the following process measures including the number of providers who participated in interdisciplinary in-situ simulations of RRT activation and the number of monthly RRT activations. The number of activations that do not lead to pediatric intensive care unit (PICU) transfer were collected as a balancing measure. Data were collected via electronic medical record (EMR) review and analyzed using statistical process control charts. We applied API rules to detect special cause variation.

Results: We improved the monthly RRT activation rate from 1.5 to 3.5 (Figure 2). In addition, provider's self-reported comfort in RRT activation improved from 63% to 93%, an increase of 30%. To date we experienced 1 PAE. We completed a total of five in-situ simulations in which there was 50% resident (n = 60) , 30% nursing (n = 100), 50% respiratory therapy (n = 4), and 100% of pharmacy staff participation (n = 2). There was no increase in activations that did not lead to PICU transfer.

Conclusion: We demonstrated a successful multifaceted approach to increasing provider's comfort level to activate RRT for medically complex patients who are showing early signs of deterioration. In situ simulation using clinical scenarios was the most impactful intervention.

Rapid Response Team (RRT) activation occurs when a patient demonstrates early signs of deterioration.

- RRT is composed of a team of responders capable of supplying critical resources and performing interventions at a moment's notice at the patients' current location.
- Recently, in our medical surgical units we have experienced an increase in the number of hospitalizations of medically complex patients, including those who are technology supported.
- These patients are at risk of rapid deterioration requiring provider prompt activation of RRT.
- Our baseline Adverse Event data have shown a significant delay in RRT activation leading to an increased number of Preventable Adverse Events (PAE) from 2020 to 2022.

Via a multidisciplinary quality improvement initiation, we used the Model for Improvement to employ a series of sequential interventions.

- Our SMART(ie) Aim: On medical surgical units we aimed to
 - 1) reduce the number of PAEs to zero related to delays in activation in RRTs.
 - 2) improve healthcare providers' comfort with escalating care by 20% by June 2023.
- Our sequential interventions implemented are listed in Figure 2.
- Family of Measures:
 - Outcome measures
 - the number of PAEs on the medical surgical units related to escalation of care
 - to follow self-reported comfort level with RRT activation.
 - Process measures included
 - the number of providers who participated in interdisciplinary in-situ simulations of activations
 - the number of monthly RRT activations.
 - Balancing measure- The number PICU transfers did not increase.
- Data were collected via electronic medical record (EMR) review and analyzed using statistical process control charts. We applied API rules to detect special cause variation.

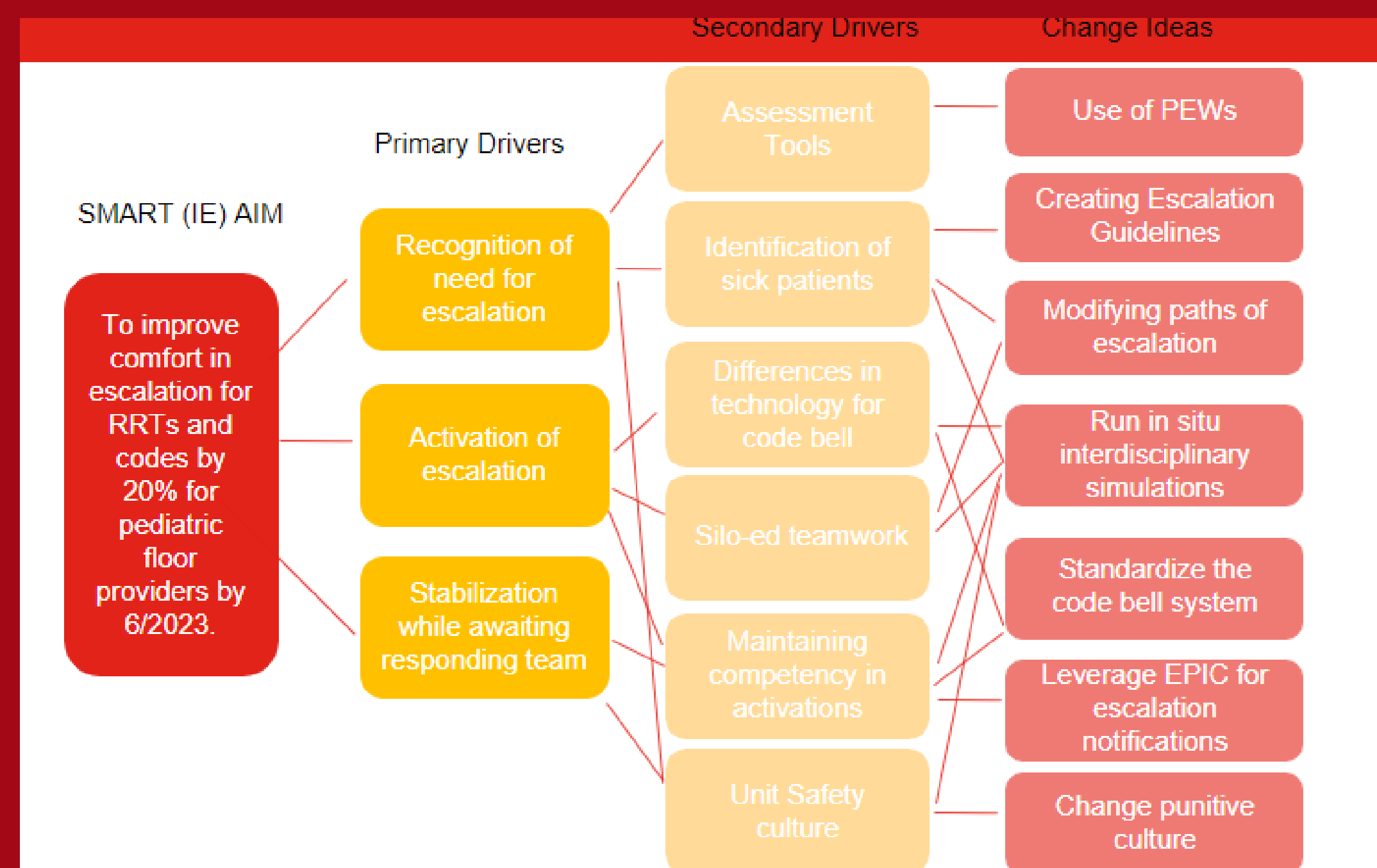


Figure 1- Driver Diagram developed by stakeholders

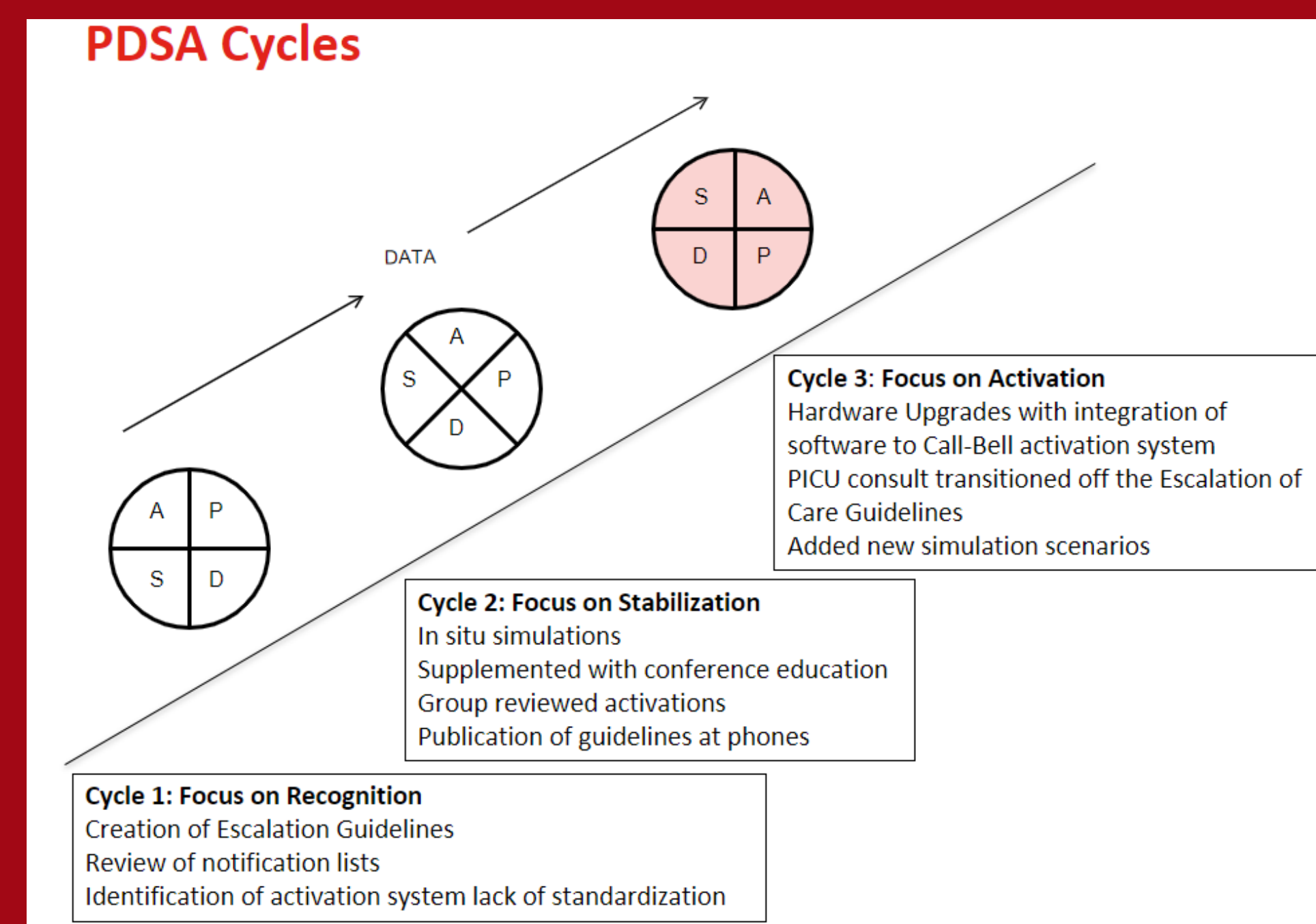


Figure 2- Plan Do Study Act Cycles focusing on recognition, stabilization, and activation

A Multidisciplinary Quality Improvement Initiative to Improve the Komansky Children's Hospital's Emergency Escalation System

Megan Toal MD¹, Kiran Gadani Patel MD MPH¹, Jennie Ono MD MS^{1,2}, Felicia Alleyne MSN BScN², Rae-Jean Hemway DNP RN MPA RNC-NIC², Nena Osorio MD MS¹

¹Weill Cornell Medicine, Department of Pediatrics ²New York-Presbyterian Hospital

Provider's self-reported comfort in RRT activation improved.

Outcome Measures:

- 16 nurses were surveyed pre and post interventions. Provider's self-reported comfort in RRT activation improved from 63% to 93%, an increase of 30% (Figure 3).
- To date we experienced 1 PAE.

Process Measures:

- Participation in In Situ simulations- 5 in-situ simulations in which there was 50% resident, 30% nursing, 50% respiratory therapy, and 100% of pharmacy staff participation.
- The number of monthly RRT activations increased from CL of 1.7 to 2.5 (Figure 4)

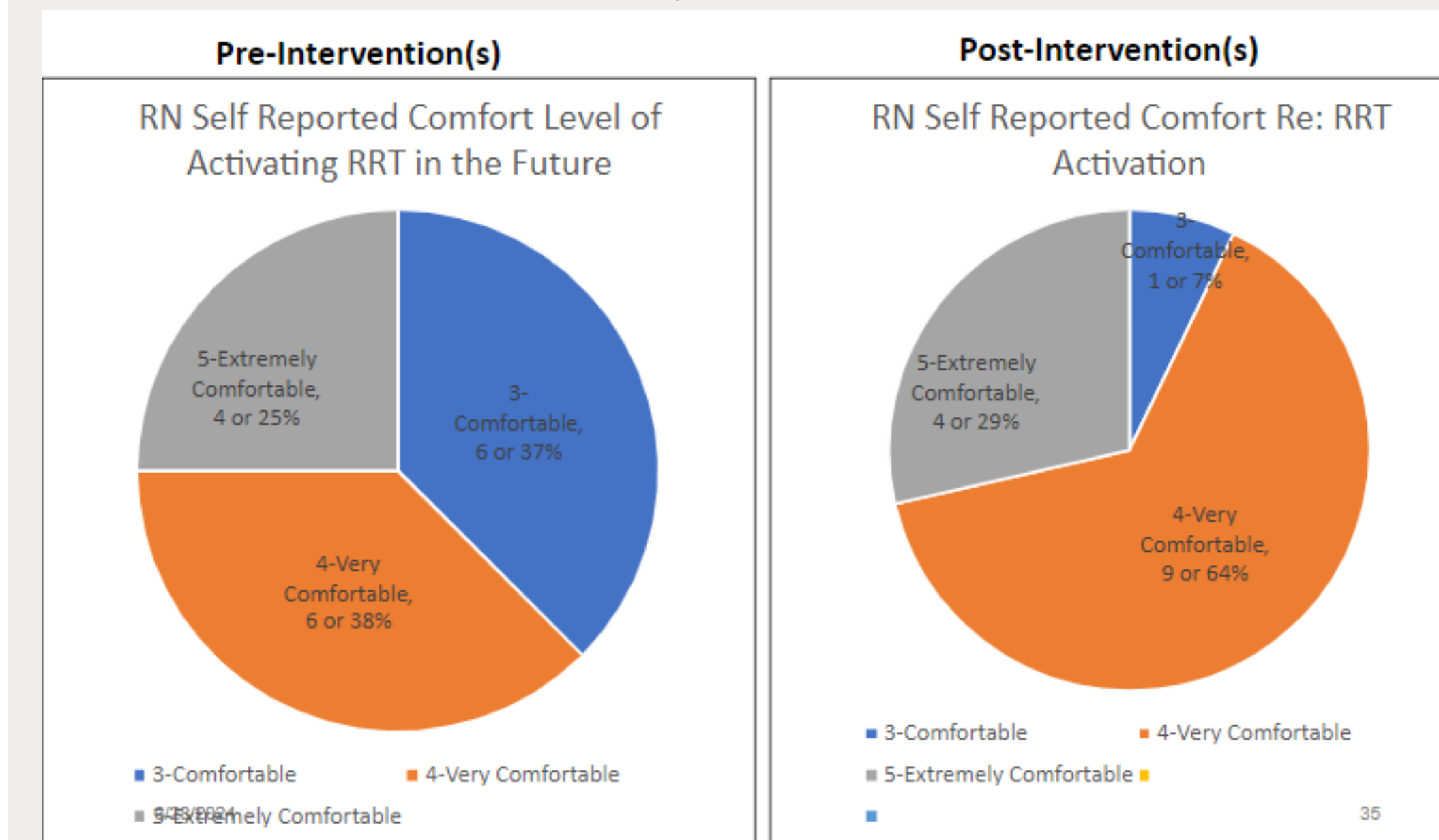


Figure 3- On self-reported surveys, providers comfort increased by 30% with activating RRTs.

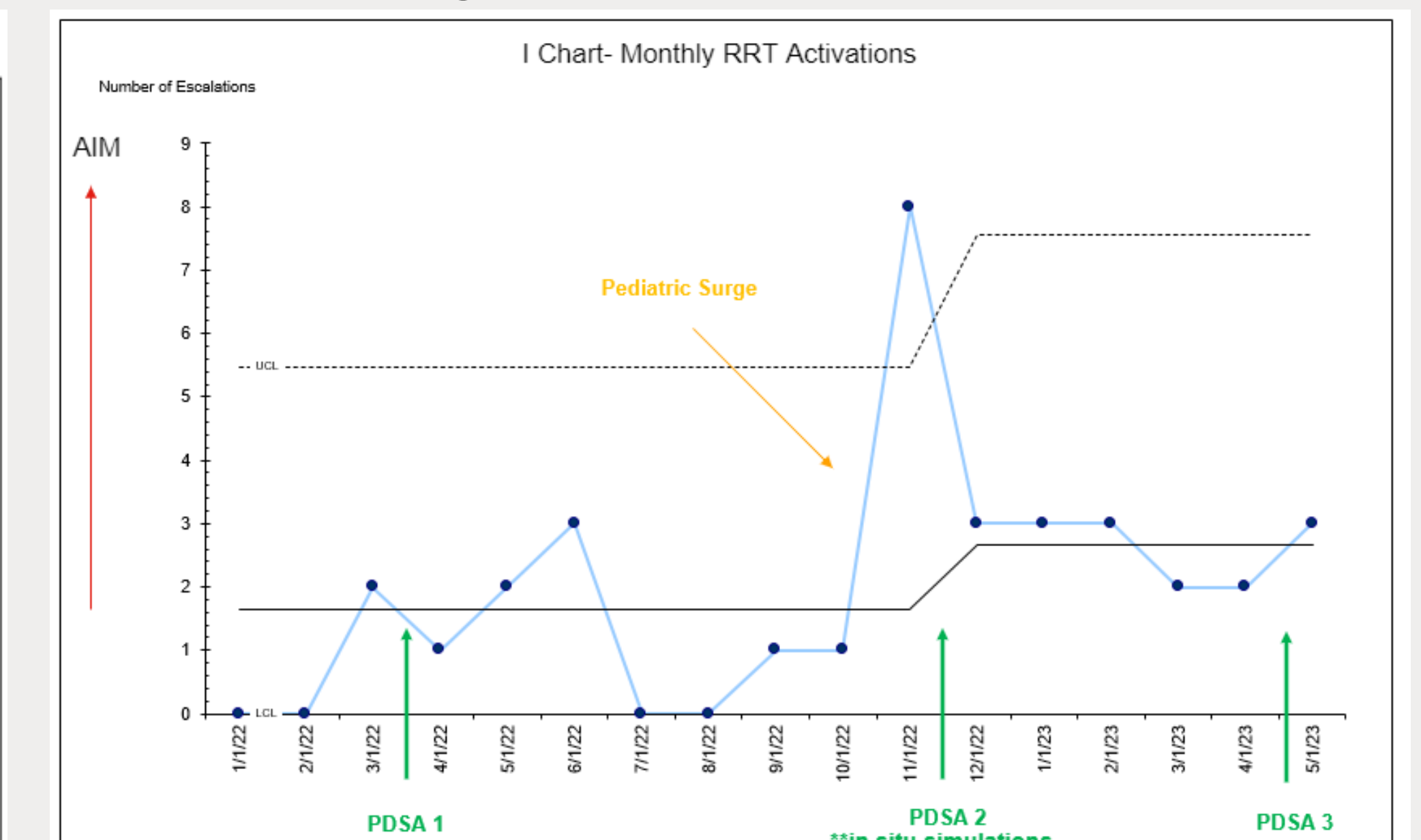


Figure 4- I-Chart of monthly RRT activations with special cause detected raising center line.

A successful multifaceted approach can be used to increase provider's comfort level to activate RRTs.

- In situ simulation using clinical scenarios was the most impactful intervention.
- Other interventions included:
 - streamlining activation systems to prevent delayed activations secondary to confusion (Figure 5),
 - leveraging technology already present in high risk areas to help reduce cognitive burden in emergencies.
- We also found that through these interventions we are to produce a culture change where nurses reported encouragement to activate an RRT by a colleague from 12 to 67% (Figure 6).

Escalation Guidelines	PEDIATRIC RAPID RESPONSE TEAM (RRT)		PEDIATRIC CARDIAC ARREST	
	Response time	Within 5 minutes	Immediately	
How to activate	Dial 5-5555 State "PEDIATRIC RRT with Unit/Room Number"	Dial 5-5555 State "PEDIATRIC CARDIAC ARREST with Unit/Room Number"		
Criteria	Acute change in vital signs Acute change in mental status or motor function Status epilepticus Clinically significant bleeding	Life threatening emergency or anyone in immediate risk of life-threatening event		
Responding Team Composition	PICU Charge RN Respiratory Therapy +/- PICU Fellow Pediatric Senior Resident	PICU Charge RN Pediatric Senior Resident Respiratory Therapy Pharmacy Anesthesia		
Who can activate	Anyone <small>An event note must be entered for each activation</small>	Anyone		

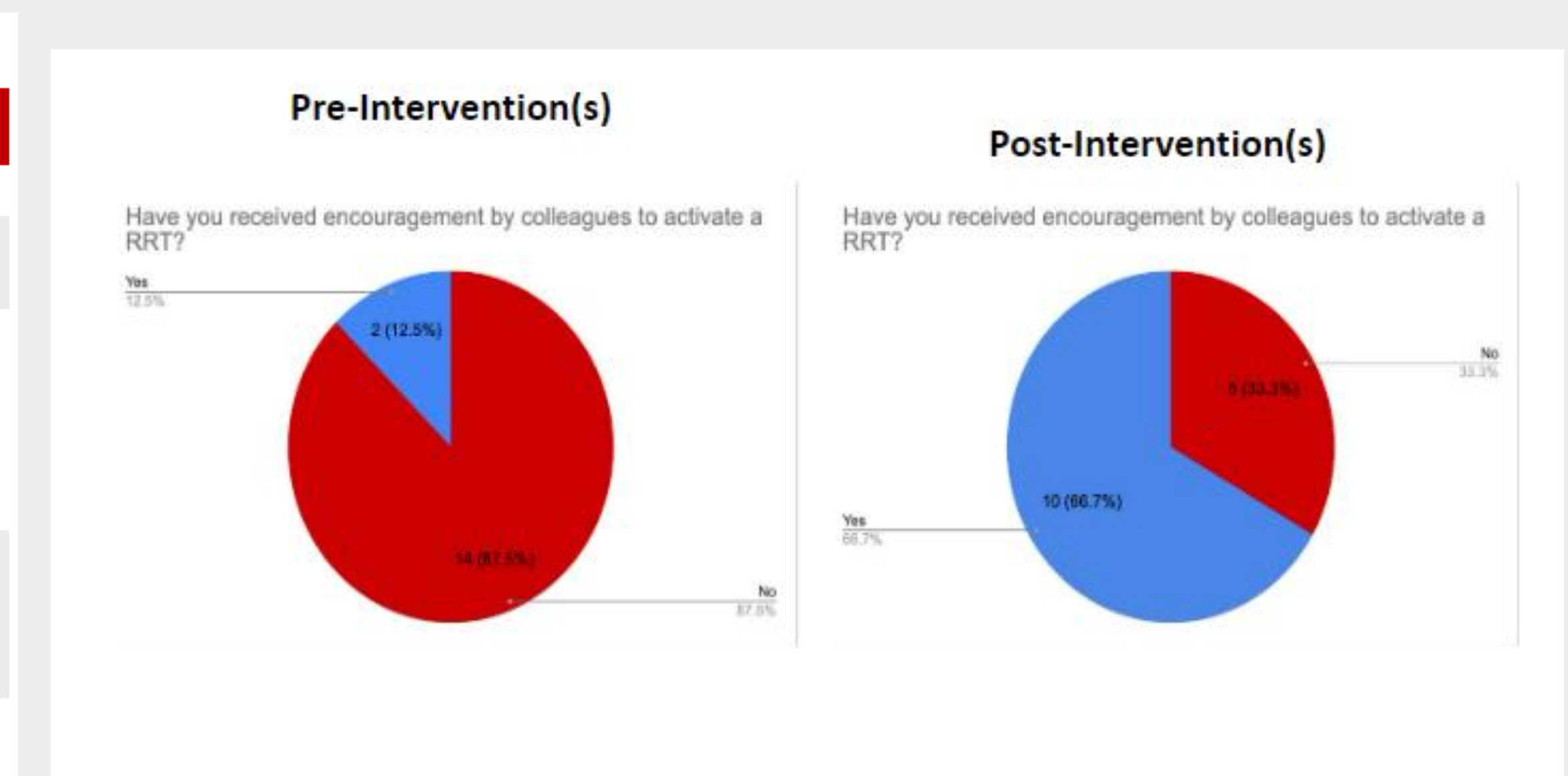


Figure 5- Streamlined reference Guideline for Escalations. Figure 6- Self-reported increase in encouragement to activate RRT.

-Future directions: We plan to continue in-situ simulations expanding off cases related to PAEs as well as standardizing documentation and creating a formal review committee for all escalations of care.

Implementing Emotional Health Assessments in a Pediatric Subspecialty Clinic for Children with Chronic Medical Conditions

Kalliope Tsirilakis, MD, Hilary Carlson, NP, Ryan Kahanowitch, MD, Christina Kappiuzhathil, MPH, Zoltan Antal, MD, Isabel Reckson, RD, Rachel Wirtshafter, MPH, Corinne Catarozoli, PhD, Cori Green, MD, Emily Coppedge, NP

Statement of the Problem: Pediatric patients with chronic medical conditions such as Diabetes and Asthma are high risk for emotional stressors and mental health complications. Frequent subspecialist appointments for these patients are a key opportunity to identify emotional health concerns of these high-risk patients. In May 2023 the WCM Pediatric subspecialty practice joined the American Board of Pediatrics Roadmap for Emotional Health Learning Collaborative to improve our assessment and management of emotional health concerns in pediatric patients with chronic conditions in our subspecialty practice.

Objective/Aim of the Study: We aim to achieve >80% screening for anxiety or depression in patients with chronic illnesses, such as diabetes or asthma seen in the HT-3 subspecialty clinics by April 1, 2024. In addition, for patients with a positive screen, we aim to have >80% referred for appropriate mental health services.

Project Design/Methods: This is an observational time series study using the model for improvement to improve mental health screening rates in children with diabetes and asthma seen in the WCM Pediatric Subspecialty practice. An interdisciplinary team of nurses, nurse practitioners, physicians, social workers, psychologists and QI specialists created a driver diagram and tested interventions targeted at the drivers of clinic workflows and EMR integration via PDSA cycles. The clinical teams underwent extensive education through the ABP Roadmap learning collaborative and didactic sessions with the Pediatric Behavioral Health Team. Screening for depression (PHQ-9) in Diabetic patients >12yo and for anxiety (GAD-7) in Asthmatic patients >13yo (process), documentation of verbal assessment of emotional health (process), and referrals to mental health services for patients with positive screens (outcomes) were used to monitor the effects of interventions. Shewhart charts and API rules were utilized to analyze data and detect special cause variation.

Results: With the introduction of GAD-7 anxiety screening to asthma patients, and the incorporation of an Epic smartphrase for result documentation, we were able to document screening in 82% of patients (Figure 1). Of asthma patients with a positive anxiety screen, 82% were referred to mental health services.

PHQ-9 screening for depression in diabetic patients seen by an expanded cohort of providers improved from 40% at baseline to 67% after provider education. In addition, documentation of verbal assessment of emotional health improved from a baseline of 10% to 71% after new provider education and introduction of an Epic smart phrase in November 2023 (Figure 2). No diabetic or asthma patients screened during this period required ED referral for mental health crisis (balancing measure).

Conclusions: Subspecialty visits for patients with chronic medical conditions such as diabetes or asthma are a key opportunity to assess for emotional health concerns and provide mental health

support and referrals. Our specialty practice initiative has demonstrated that mental health assessment is feasible within the context of a subspecialty visit and can help establish mental health support services for these high-risk patients. Incorporating screening tools into clinical workflows and creating Epic smartphrases that standardize the documentation of these assessments and management plans have been our most successful interventions to date. Our next steps are to introduce tablet-based screening tools to allow for direct patient entry, expand to other providers within endocrinology and pulmonary, as well as expand to other patients with chronic conditions such as food allergy and renal transplant. We will continue to identify and address barriers to implementation and our Behavioral Health Team will provide support to the subspecialty providers caring for these high-risk patients.

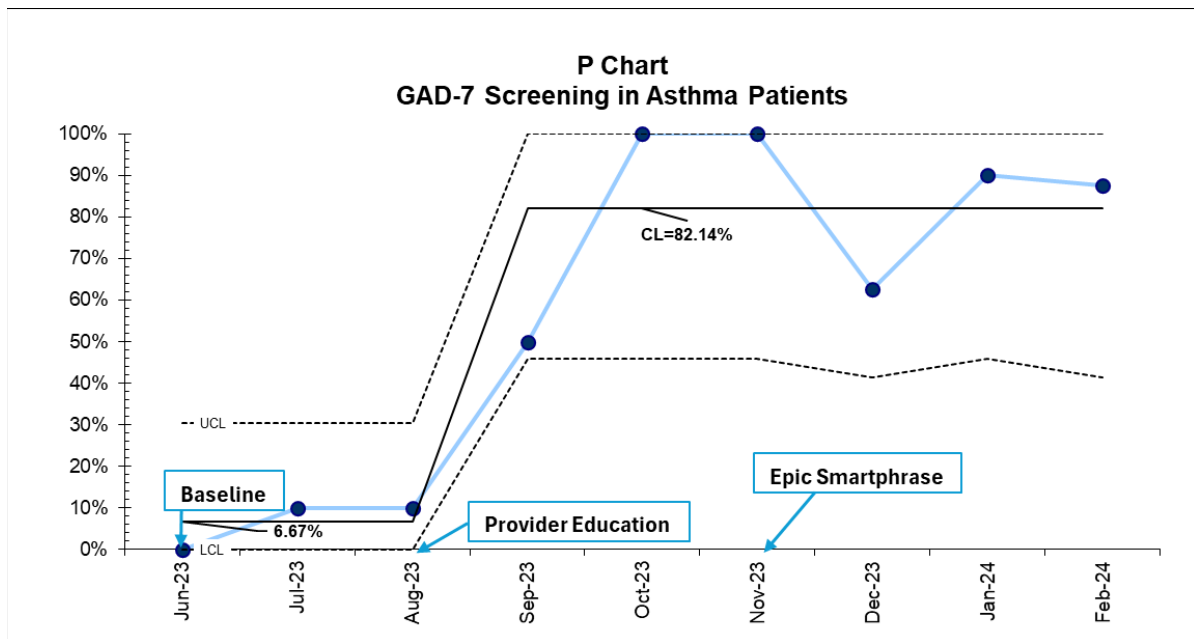


Figure 1. GAD-7 Anxiety Screening in Asthma Patients

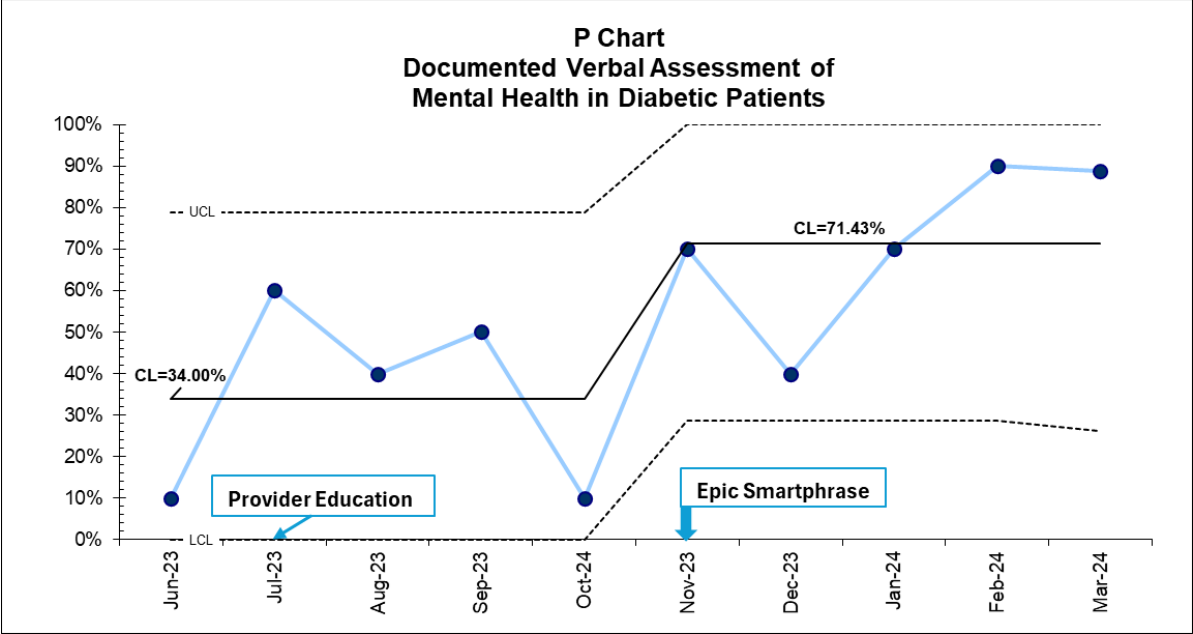


Figure 2. Documented Verbal Assessment of Mental Health in Diabetic Patients



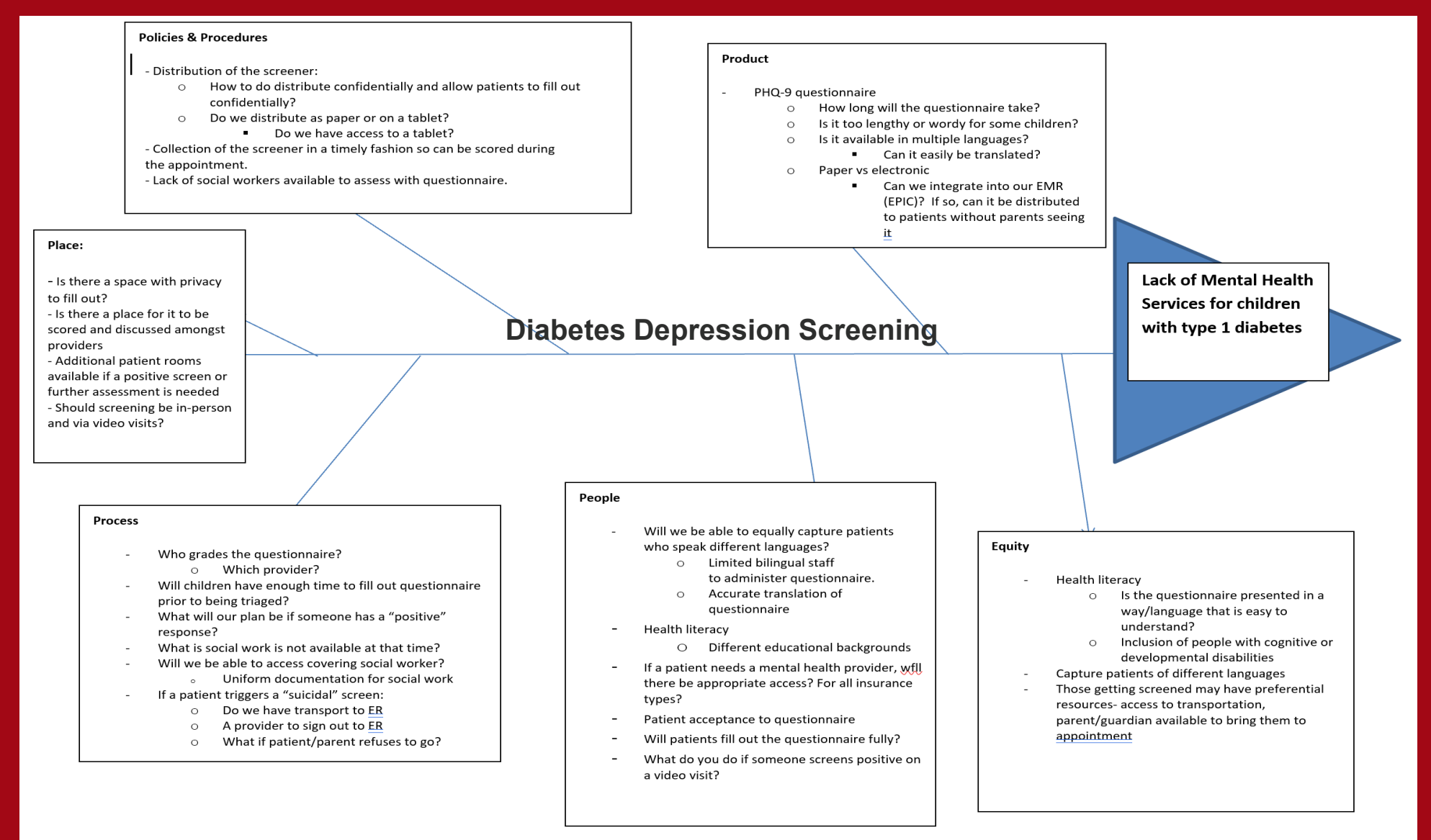
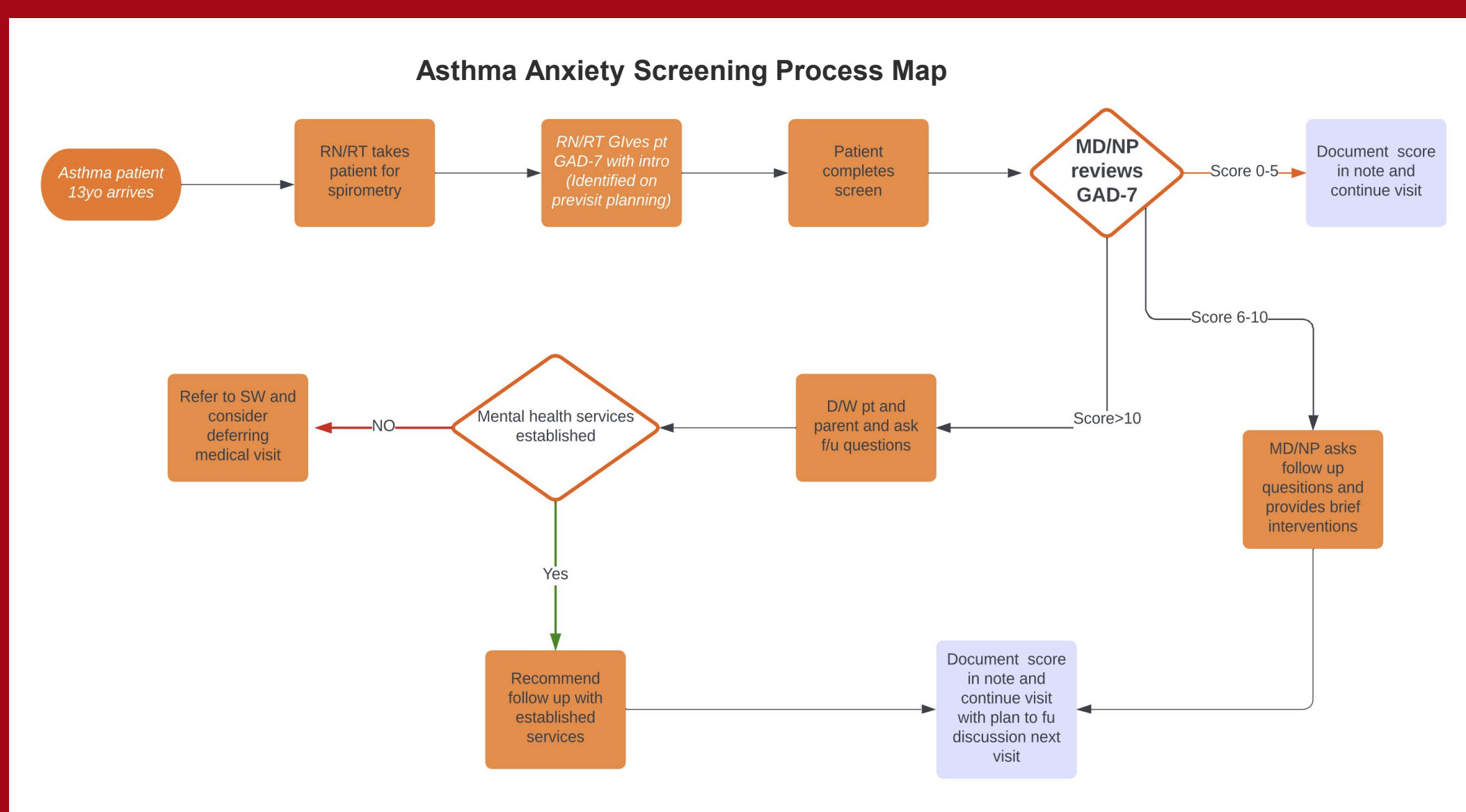
Implementing Emotional Health Assessments in a Pediatric Subspecialty Clinic for Children with Chronic Medical Conditions

Kalliope Tsirilakis, MD, Hilary Carlson, NP, Ryan Kahanowitch, MD, Christina Kappiuzhathil, MPH, Zoltan Antal, MD, Isabel Reckson, RD, Rachel Wirtshafter, MPH, Corinne Catarozoli, PhD, Cori Green, MD, Emily Coppedge, NP

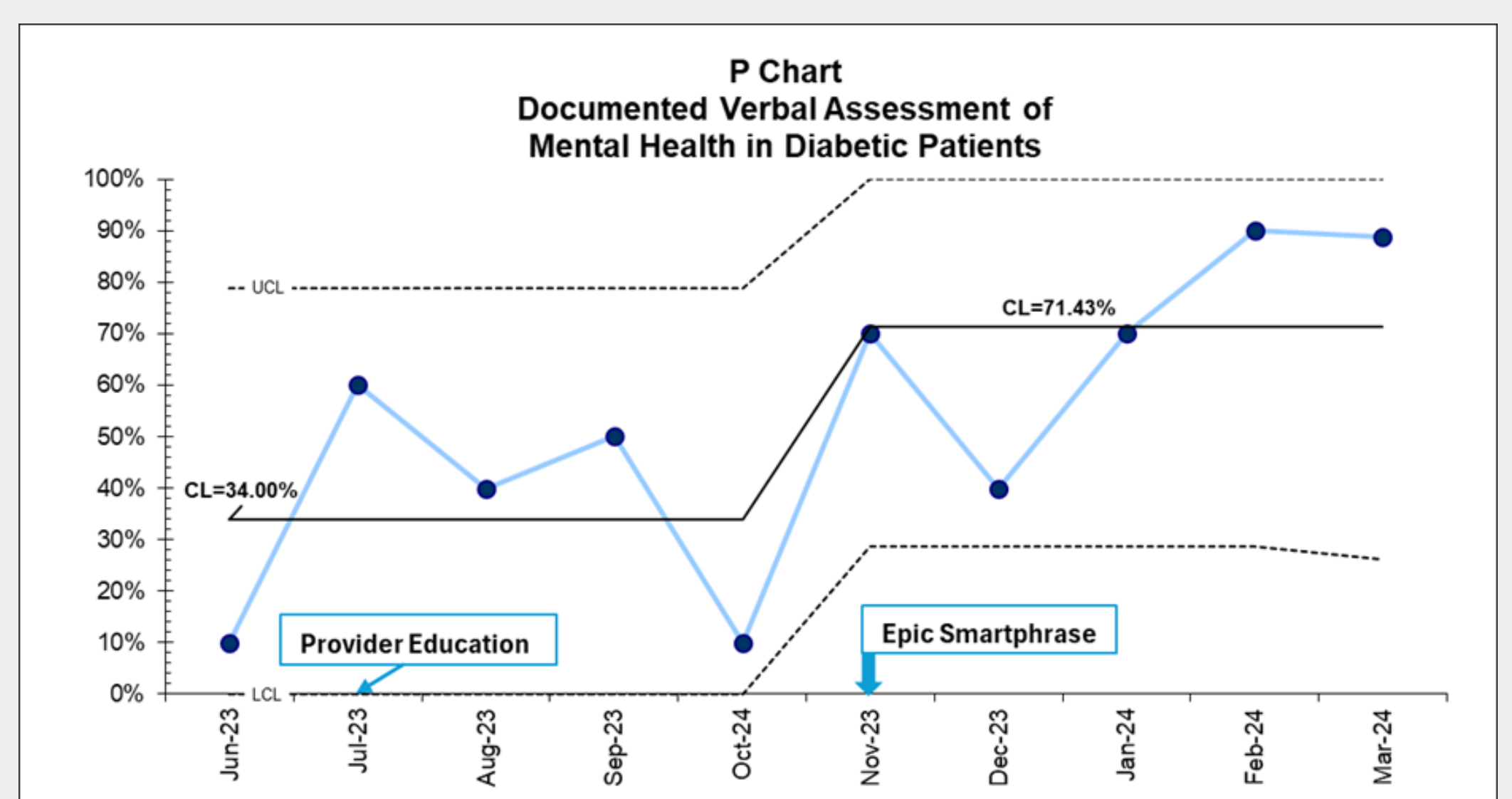
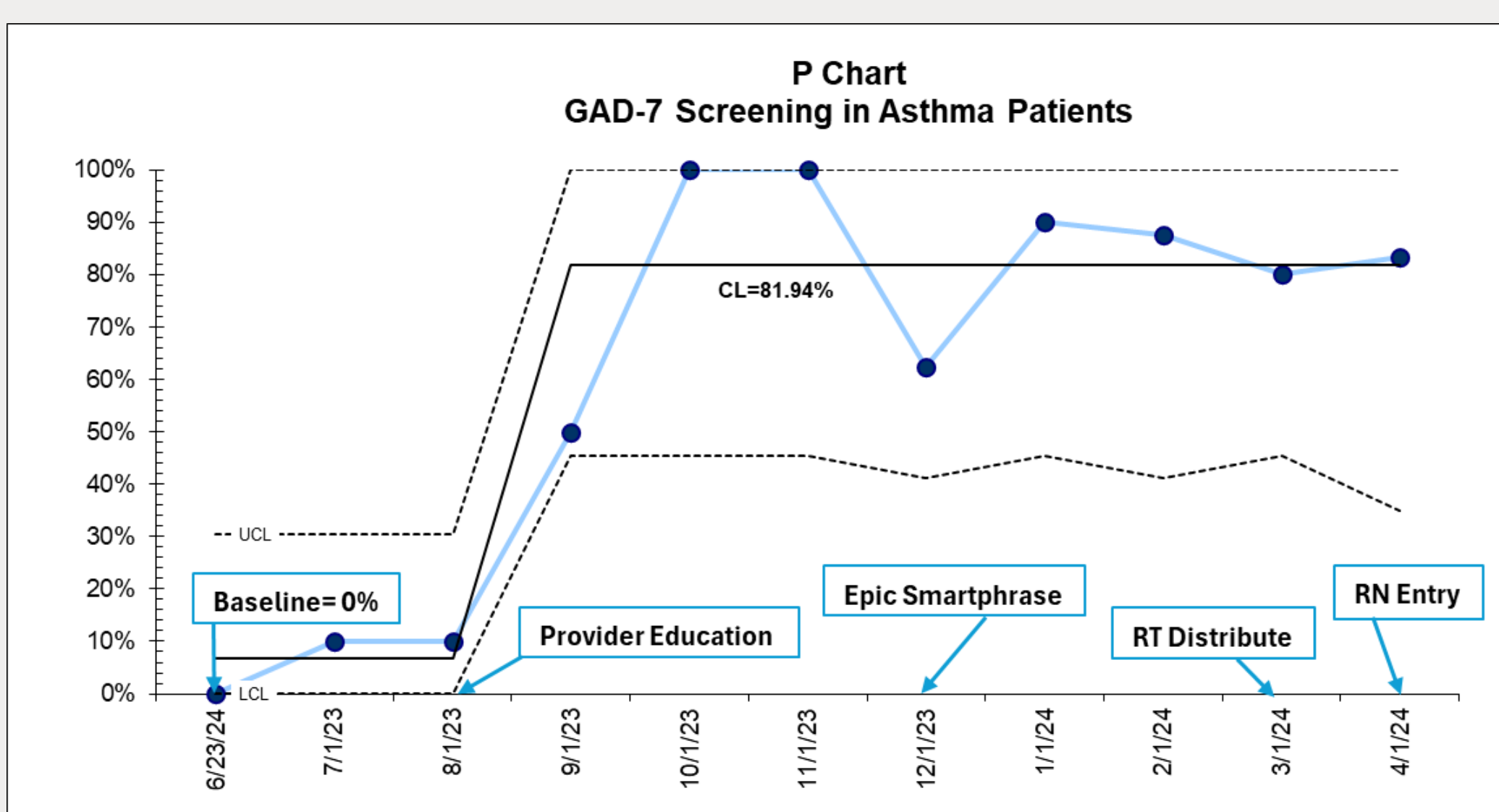
Problem Statement: Pediatric patients with chronic medical conditions such as Diabetes and Asthma are high risk for emotional stressors and mental health complications. Frequent subspecialist appointments for these patients are a key opportunity to identify emotional health concerns of these high-risk patients. In May 2023 the WCM Pediatric subspecialty practice joined the American Board of Pediatrics' Roadmap for Emotional Health Learning Collaborative to improve our assessment and management of emotional health concerns in pediatric patients with chronic conditions in our subspecialty practice.

Aim Statement: We aim to achieve >80% screening for anxiety or depression in patients with chronic illnesses, such as diabetes or asthma seen in the HT-3 subspecialty clinics by April 1, 2024. In addition, for patients with a positive screen, we aim to have >80% referred for appropriate mental health services.

Design/Methods: This is an observational time series study using the model for improvement to improve mental health screening rates in children with diabetes and asthma seen in the WCM Pediatric Subspecialty practice. An interdisciplinary team of nurses, nurse practitioners, physicians, social workers, psychologists and QI specialists created process maps and fish bone diagrams, and tested interventions targeted at the drivers of clinic workflows and EMR integration via PDSA cycles. The clinical teams underwent extensive education through the ABP Roadmap learning collaborative and didactic sessions with the Pediatric Behavioral Health Team. Screening for depression (PHQ-9) in Diabetic patients >12yo and for anxiety (GAD-7) in Asthmatic patients >13yo (process), documentation of verbal assessment of emotional health (process), and referrals to mental health services for patients with positive screens (outcomes) were used to monitor the effects. Shewhart charts and API rules were utilized to analyze data and detect special cause variation.



Results:



With the introduction of GAD-7 anxiety screening to asthma patients, and the incorporation of an Epic smartphrase for result documentation, we were able to document screening in 82% of patients (Figure 1). Of asthma patients with a positive anxiety screen, 82% were referred to mental health services.

PHQ-9 screening for depression in diabetic patients seen by an expanded cohort of providers improved from 40% at baseline to 67% after provider education. In addition, documentation of verbal assessment of emotional health improved from a baseline of 10% to 71% after new provider education and introduction of an Epic smartphrase in November 2023 (Figure 2).

No diabetic or asthma patients screened during this period required ED referral for mental health crisis (balancing measure).

Conclusions: Subspecialty visits for patients with chronic medical conditions such as diabetes or asthma are a key opportunity to assess for emotional health concerns and provide mental health support and referrals. Our specialty practice initiative has demonstrated that mental health assessment is feasible within the context of a subspecialty visit and can help establish mental health support services for these high-risk patients. Incorporating screening tools into clinical workflows and creating Epic smartphrases that standardize the documentation of these assessments and management plans have been our most successful interventions to date.

Next Steps: We plan to introduce tablet-based screening tools to allow for direct patient entry, expand to other providers within endocrinology and pulmonary, as well as expand to other patients with chronic conditions such as food allergy and renal transplant. We will continue to identify and address barriers to implementation and our Behavioral Health Team will provide support to the subspecialty providers caring for these high-risk patients.

Improving Cytomegalovirus and Hepatitis Genotype inappropriate testing with Diagnostic Stewardship

Authors: Christian Darren Baguistan, MLS, DCLS; Harjot Singh, MD; Stacia Semple, MD; Regina Wulff, MLS, DCLS; Sonal Kumar, MD

Department: Division of Laboratory Medicine, Weill Cornell Medicine; Division of Gastroenterology and Hepatology, Weill Cornell Medicine Division of Infectious Disease, Weill Cornell Medicine

Statement of the Problem: Over testing is a common problem that impacts patient safety and quality. Less frequent, yet expensive tests, such as CMV, HBV, and HCV resistance testing are frequently ordered inappropriately. Inappropriate ordering of these tests can lead to waste (unused test), false positives, unnecessary cost. Diagnostic stewardship promotes the judicious use of tests to enhance patient care and curb unnecessary expenses.

Objective/Aim of the study The aim of this quality improvement project was to reduce inappropriate CMV and Hepatitis genotype testing at WCM and LMH by 10% during the study period (10/1/23 - 04/30/24) compared to baseline (01/01/22 - 12/31/22).

Project Design/Methods: We performed a Quality improvement study (IRB exempt) from 12/2023 – 4/2024 using iterative PDSA cycles and compared data to 2022 baseline data. An interdisciplinary team conducted prospective review of all CMV, HBV, and HCV resistance tests at 2 NYC hospitals to determine appropriateness using established IDSA and AGA guidelines. All specimens were stored for up to 72 hours during review which included outreach to ordering providers when chart indication was not clear. Only providers canceled tests if they agreed on inappropriateness. Baseline data were assessed for appropriateness using only the charts.

Results: We reviewed 240 tests in the baseline period and 33 tests in the intervention period. Of the baseline period, 174/240 (73%) met inappropriateness definition. With prospective review, 18/33 (55%) tests met the definition of inappropriate order, of which 12/18 (66%) were canceled by providers, with reduction in inappropriate testing to 28% compared to baseline.

Conclusions: In this QI project with prospective audit and feedback, we were successful in reducing inappropriate resistance testing. Based on the pattern of inappropriate testing, multiple opportunities for sustained interventions were uncovered including clinical decision support to reduce duplicate testing and need for reflex testing.

Improving the Autistic Patient Experience on Inpatient Psychiatric Units via a Consult/Liaison Service

Authors: Conner J. Black, Ph.D., Michelle Gorenstein, Ph.D., Hannah Miller, BCBA, Kelly Mickler, CCC-SLP, Jamie Winter, PhD., Pankhuree Vandana, MD

Department of Psychiatry

Statement of the Problem/Objective: Autism spectrum disorder (ASD) is a highly prevalent (1:36) neurodevelopmental disorder characterized by persistent deficits in social communication and interaction and an increased frequency of restricted and repetitive behaviors. In addition, a recent meta-analysis documented that 54.8 % of autistic individuals meet the criteria for a psychiatric disorder (Hossain et al., 2020). The increased prevalence of psychiatric diagnoses contributes to increased rates of suicidality and aggression, which results in higher rates of inpatient hospitalizations (Devon et al., 2014; Segers & Rawana, 2014). Inpatient medical and psychiatric treatment settings often do not address the specific needs of children and adults with autism (Way and Banks, 1990). Given the unique challenges in inpatient units, autistic patients have a significantly higher likelihood of receiving physical and pharmacologic restraints, have increased length of stay, and have an increased likelihood of rehospitalization (Calabrese et al., 2023; Masserano et al., 2023; Maloret et al., 2018). Given the risk of injury to patients and staff, the current study examines the effectiveness of an intellectual and developmental disability consult/liaison service on inpatient psychiatric units at NYP.

Methods: The Positive Behavior Support (PBS) team is a novel multidisciplinary consultation care model. The team currently has clinicians from psychiatry, applied behavior analysis, speech pathology, and psychology. In order to test the effectiveness of the service, a survey was sent out to all units who had requested a consult within the past year. 25 participants completed a survey to assess the effectiveness of the consultation/liaison service. 38 % were attending psychiatrists, 29 % were PCD/CNMs, 14 % were nurses, and 21 % were social workers. Questions included the reason for the consultation/liaison, the helpfulness of the consult, the impact on patient care, and changes in case management. Given the sample size, descriptive statistics are utilized for this study.

Results: Results indicate that the most common consult was multifaceted, including behavioral management or psychotherapeutic intervention and diagnostic clarification. Specifically, in descending request order, behavioral management (86 %) was first, followed by psychotherapeutic intervention (71 %), diagnostic clarification (64%), confirmation of autism diagnosis (57 %), pharmacological interventions (36%), and disposition planning (29 %). 92 % of respondents endorsed that the service was helpful, with the majority endorsing behavioral management or numerous services being helpful. One key area endorsed via multiple choice and open-ended responses was related to interdisciplinary collaboration and working with the team to improve patient care.

Conclusion: Overall, this study demonstrates the effectiveness of a multidisciplinary

specialized consultative/liaison model of care such as PBS that provides staff training and support to inpatient teams working with patients with intellectual and developmental. These goals have been achieved by interventions under multiple components, including direct clinical care, staff training and education, and system-level quality initiatives. Specifically, the PBS team has forged effective relationships with numerous teams that create a collaborative, interdisciplinary treatment team to help improve patient experience and decrease the risk of staff injury or burnout. Moreover, given the effectiveness of our work with multiple teams, future directions should include system-level training across medical and psychiatric units to achieve a larger goal to reduce the health care disparities faced by this vulnerable population by increasing staff education, bolstering system-level resources, and reducing safety events. Additionally, as the PBS team grows, extending services to medical units would help to improve patient experience across the NYP hospital system.



Improving the Autistic Patient Experience on Inpatient Psychiatric Units via a Consult/Liaison Service

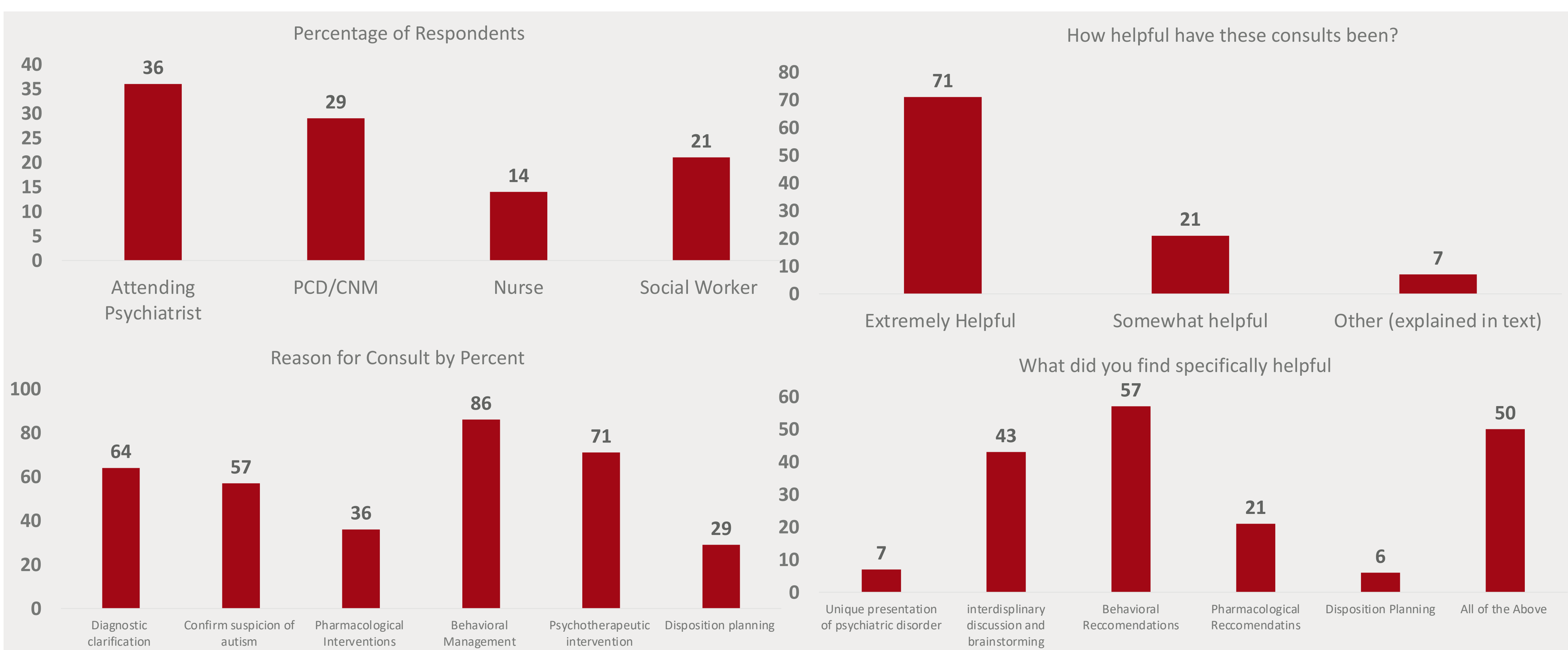
Conner J. Black, PhD, Michelle Gorenstein, PhD., Hannah Miller, BCBA, Kelly Mickler, CCC-SLP, Jamie Winter, PhD., Pankhuree Vandana, MD

Introduction

- Autism spectrum disorder is a highly prevalent (1:36) neurodevelopmental disorder characterized by persistent deficits in social communication and interaction and increased frequency of restricted and repetitive behaviors.
- 54.8 % of autistic individuals meet the criteria for a psychiatric diagnosis, contributing to high rates of inpatient hospitalizations (Hossain et al., 2020).
- Given the unique needs of autistic patients, inpatient psychiatric settings struggle to address the unique and specialized needs of patients with IDD/ASD, which results in increased use of pharmaceutical and physical restraint, staff injury, longer duration of stays, and increased readmittance to hospital settings (Devon et al., 2014; Segers & Rawana, 2014).
- To address these issues, the current study examines the effectiveness of a specialized consult/liaison (CL) service designed to work with patients with an intellectual and developmental disability in inpatient psychiatric units at NYP.

Design/Methods

- The Positive Behavior Support (PBS) team is a novel multidisciplinary consultation care model that includes psychiatry, ABA, speech pathology, and psychology.
- A survey was sent to all units that participated in the PBS CL service within the last year to assess its effectiveness. It consisted of questions related to the reason for CL, helpfulness of service, impact on patient care, and changes in case management
- 25 medical providers completed the survey to inform the reason and effectiveness of the service.



Results

- Several unique direct clinical supports were identified, including behavioral management of aggression and self-injurious behavior, expert pharmacological interventions, developmentally appropriate psychotherapy, and diagnostic assessments.
- 92 % of respondents endorsed that the service was helpful, with 71 % endorsing extremely helpful. The vast majority endorsing behavior management or the combination of services as most helpful.
- Open-ended survey responses indicated that the PBS team has helped increase the patient experience on the unit through targeted, specific interventions.

Conclusions/Lessons Learned

- This study demonstrates the effectiveness of a multidisciplinary specialized CL model of care for patients with neurodevelopmental disorders that provides staff training and support to inpatient psychiatric units
- The PBS team has forged relationships with numerous teams to create a collaborative interdisciplinary treatment team that can improve patient experience, increased staff comfort, and increase in access to evidence based specialized treatment.

Next Steps

- System-level training across medical and psychiatric units to achieve a larger goal of reducing the health care disparities faced by vulnerable populations. This can be achieved through
 - increasing staff education
 - bolstering systems level resources
 - reducing safety events

Liver Transplant Fast Track: A Multidisciplinary Approach to Reducing Length of Stay

Authors: David Salerno, PharmD, Mia Genovese, PA-C, Erica Roman, PA-C, Arun Jesudian, MD, Benjamin Samstein, MD, Danielle Brandman, MD, MAS

Department of Liver Transplant/Liver Surgery

Statement of the Problem: Enhanced recovery after surgery protocols have been implemented in a variety of solid organ transplant programs to reduce length of stay of the index hospitalization.

Objective/Aim of the Study: The purpose of our study was to evaluate the impact of a standardized protocol in liver transplant recipients (LTR) on length of stay (LOS) during the index hospitalization post-LT.

Methods: This was a quality improvement study of all adult LTR who received a transplant between 6/2021 and 5/2023. Patients were compared according to pre-(6/2021 – 5/2022) and post-(6/2022 – 5/2023) implementation groups. A Fast Track protocol was reviewed and implemented by all multidisciplinary team members in June 2022. Elements of the protocol included reduction in intraoperative methylprednisolone dose from 1000 mg to 250 mg, conversion of steroid taper to be administered once daily instead of BID, end of case intraoperative extubation when clinically appropriate, multimodal analgesia, early removal of surgical drains, implementation of dietary and physical therapy plans and education for multidisciplinary providers and patients about expected LOS. The primary outcome was post-LT LOS; secondary outcomes were rejection at 60 days, 1 year and readmission within 30 days of discharge.

Results: A total of 127 LTR were included. There were no significant differences in baseline characteristics between groups, with the exception of methylprednisolone induction dose ($P<0.001$). The median age was 56 years (IQR, 48-64), the majority of patients were male (62%), and etiology of end stage liver disease was similar between groups with the most common being alcohol associated cirrhosis (29%) and MASLD (23%). Median MELD at transplantation was 17 (12-24). The median length of stay was 13 days (IQR, 10-20) and 10 days (IQR, 8-15) in the pre- and post- implementation groups, respectively ($P=0.013$). In the pre- and post- implementation groups, there was no difference in the incidence of treated rejection at 60 days (2.9% [95% CI, 0.7 – 11.3] versus 5.2% [95% CI, 1.7 – 15.2]; $P=0.539$ [Figure 1A]) and 1 year (7.5% [95% CI, 3.2 – 17] versus 8.7% [95% CI, 3.7 – 19.7]; $P=0.756$ [Figure 1B]), respectively. Readmission at 30 days was 32.8% (95% CI, 23 – 45.5) and 29.7% (95% CI, 19.6 – 43.4) in the preimplementation and post-implementation groups, respectively ($P=0.266$) [Figure 1C].

Conclusions: Implementation of a feasible Fast Track protocol in a high acuity liver transplantation program was associated with reduced hospital length of stay without increased readmissions or negative impact on patient outcomes.

Liver Transplant Fast Track: A Multidisciplinary Approach to Reducing Length of Stay

Mia Genovese, PA-C¹, David Salerno, PharmD¹, Erica Roman, PA-C¹, Arun Jesudian, MD², Benjamin Samstein, MD², Danielle Brandman, MD, MAS²

¹NewYork-Presbyterian Hospital, Weill Cornell Medical Center, New York, NY, ²Weill Cornell Medicine, New York, NY

Quality in Care Symposium

Problem Statement:

Liver transplantation is the only curative treatment for patients with end-stage liver disease and is associated with high in-hospital costs related to long complex post-operative care, long post-operative hospital stays, and requirement for highly specialized multidisciplinary care.

Objective/Aim Statement:

Applying a value-based care model may decrease costs by identifying system-wide inefficiencies to reduce length of stay and increase patient satisfaction.

The purpose of our study was to evaluate the impact of a standardized protocol in liver transplant recipients (LTR) on length of stay (LOS) during the index hospitalization post-LT.

Design/Methods:

- This was a quality improvement study of all adult LTR who received a transplant between 6/2021 and 5/2023.
- Patients were compared according to pre-(6/2021 – 5/2022) and post-(6/2022 – 5/2023) implementation groups.
- The primary outcome was post-LT length of stay
- Secondary outcomes were
 - ICU length of stay
 - Biopsy proven rejection at 60 days and 1 year
 - Readmission rate within 30 days of discharge
 - Incidence of delirium and delirium requiring pharmacologic intervention

Table 1. Baseline Characteristics

	Pre (June 2021 – May 2022) (N=69)	Post (June 2022 – May 2023) (N=58)	P value
Age	56.1 (47.5 – 64.3)	57.7 (49.5 – 64.1)	0.460
Male Sex	43 (62.3)	36 (62.1)	1.000
Race			0.321
Asian	7 (10.3)	14 (24.1)	
Black	5 (7.4)	3 (5.2)	
Caucasian	46 (67.7)	33 (56.9)	
Hispanic	8 (11.8)	7 (12.1)	
Other	2 (2.9)	1 (1.7)	
Etiology			
MASLD	17 (24.6)	12 (20.7)	0.598
Alcohol-associated	22 (31.9)	15 (25.9)	0.577
HCC	8 (11.6)	5 (8.6)	0.770
AIH/PSC/PBC	8 (11.6)	8 (13.8)	0.791
HBV	3 (4.4)	3 (5.2)	1.000
Benign Tumor	1 (1.5)	6 (10.3)	0.047
MELD	17 (12 – 26)	15 (11 – 22)	0.150
Methylpred dose			<0.001
250	0 (0)	43 (74.1)	
500	4 (5.8)	6 (10.3)	
750	0 (0)	1 (1.7)	
1000	65 (94.2)	8 (13.8)	
Basiliximab	18 (26.1)	11 (19.6)	0.523

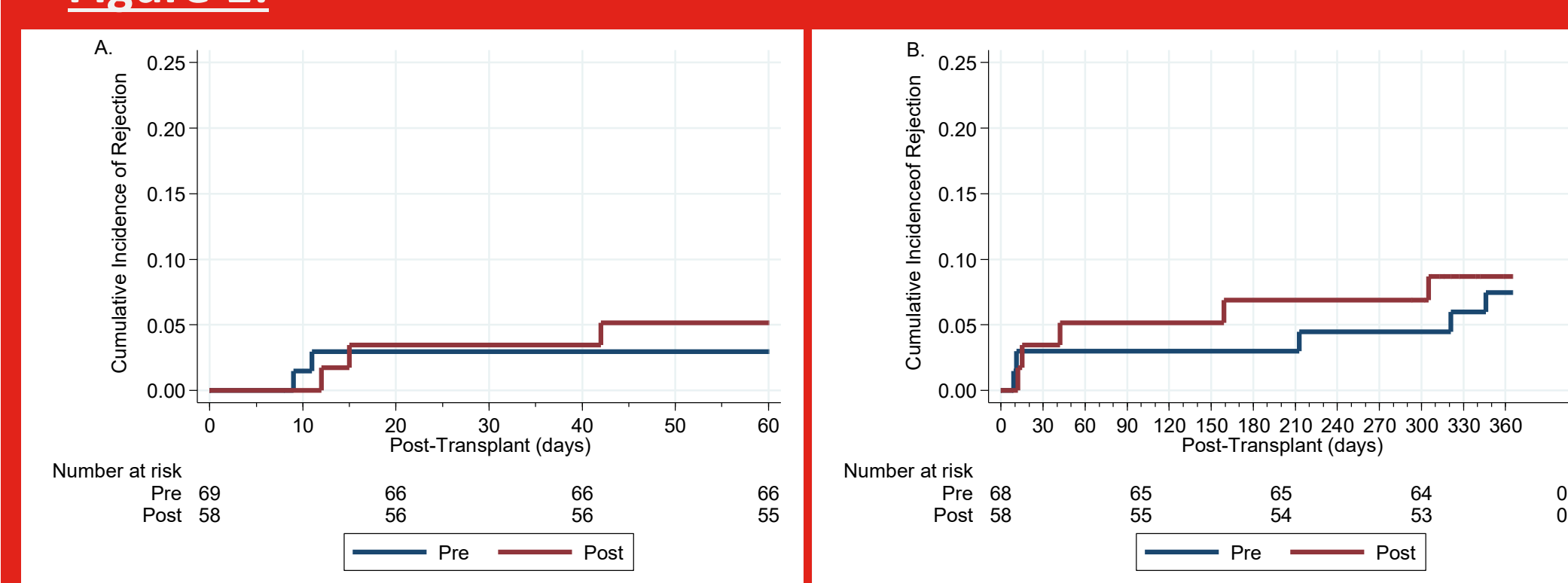
All values N(%) or median (IQR 25 – 75) unless otherwise specified
Ranksum utilized to compare continuous data and Chi-squared or Fisher's exact for categorical data, where appropriate.

Table 2. Primary and Secondary Outcomes

	Pre (June 2021 – May 2022) (N=69)	Post (June 2022 – May 2023) (N=58)	P value
Length of stay, days	13 (10 – 20)	10 (8 – 15)	0.013
Biopsy proven acute rejection at 60 days*	2.9% (95% CI, 0.7 – 11.3)	5.2% (95% CI, 1.7 – 15.2)	0.539
Biopsy proven acute rejection at 1 year*	7.5% (95% CI, 3.2 – 17)	8.7% (95% CI, 3.7 – 19.7)	0.756
Readmission within 30 days of discharge*	32.8% (95% CI, 23 – 45.5)	29.7% (95% CI, 19.6 – 43.4)	0.266
Delirium	17 (25.8)	5 (8.6)	0.013
Delirium requiring pharmacotherapy	13 (20.3)	1 (1.8)	0.001

*Time to event analysis analyzed via logrank

Figure 1:



Conclusions/Lessons Learned:

- Implementation of a Fast Track protocol in a high acuity liver transplantation program was feasible and safe
- The fast track protocol was associated with a 3-day reduction in length of stay
- There was significantly lower incidence of delirium
- Post-liver transplant outcomes were not different in fast track patients
 - No increase in readmissions within 30 days
 - No difference in rates of biopsy-proven acute rejection at 60 days or 1 year

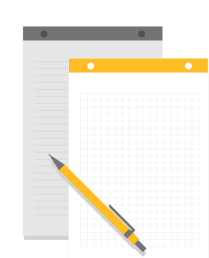
Next Steps:

- Address areas of unmet needs
 - Designing patient-specific materials to outline “the expected milestones” of liver transplant index hospitalizations
 - Implement a multidisciplinary approach to get patients extubated in the operating room or more quickly in the surgical ICU
- Optimize EPIC ordersets

References:

1. Feizpour CA, et al. Surgery. 2021; 170: 1830-37.
2. Laiz GP, et al. Liver Transplantation. 2023; 10: 100151.
3. Taber JT, et al. Am J Transplant. 2023; 23: 627-5.

Pre-Operative



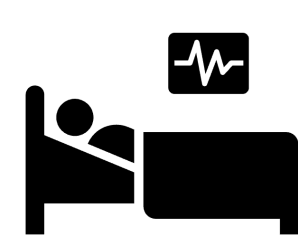
- Discussed expected length of stay with patients in the office
- Reviewed expected course with social workers, transplant nurses, and other ancillary staff

Intra-Operative



- Reduced intraoperative corticosteroids from methylprednisolone 1000 mg to 250 mg
- Early extubation pathway
- Removal of femoral arterial line in operating room

Post-Operative



- Conversion of steroid taper to once daily
- Multi-modal analgesia
- Early removal of drains
- Regular/diabetic diet as soon as swallowing
- Physical therapy consult

Quality Initiative to Improve Discharge Medication Compliance Following Peripheral Vascular Evaluation

Authors: Nakia Sarad, MD, Alyssa Greenwood Francis, MD, MPH, Angelina Kim, MD, Sora Park RN, BSN, Charles Zhang, MD, Jing Li, MD, Rajeev Dayal, MD, Andy Lee, MD, Varuna Sundaram, MD

Problem Statement: Vascular Quality Initiative (VQI) regional reports indicated that New York- Presbyterian/Queens (NYPQ) had low compliance of patients with peripheral arterial disease (PAD) undergoing peripheral vascular intervention (PVI) being discharged on antiplatelet/statin therapy. In 2022, the cumulative medication compliance was 76%.

Objectives: Antiplatelet agents and high-dose statins are the optimal medical management for patients with peripheral arterial disease (PAD) with or without peripheral vascular intervention (PVI). Our institution implemented a trainee-driven quality initiative (QI) project to achieve an increase in appropriate discharge medication compliance (DMC).

Methods: This retrospective study examines DMC rates before and after implementation of our QI project. Trainees from our institution's general surgery residency created a standardized note for inpatient vascular surgery consults to recommend antiplatelets and statins at discharge for patients who had a diagnosis of PAD. Data was collected from November 2022 through November 2023 from our institution. Pre-implementation cohort was defined as November 2022 to March 2023, with post-implementation cohort defined as April 2023 to November 2023. Inclusion criteria was all patients with PAD who received a vascular surgery evaluation. Exclusion criteria was patients with contraindication for antiplatelet therapy or death during hospitalization. Our primary endpoint was the difference in DMC rate between the two cohorts. Statistical analysis performed with chi-square test.

Results: There were 93 consult patients with PAD in the pre-implementation cohort and 150 in the post-implementation cohort. Over a third of patients in the pre cohort (n=33) were diagnosed with PAD prior to hospital admission, compared to 80.6% (n=121) of post cohort patients (P-value<0.001). Nearly half of all vascular consult patients with PAD received PVI in both the pre (50.5%, n=47) and post (46.6%, n=70) cohorts (P-value=0.56). Prior to hospital admission, 49.5% (n=46) of the pre cohort patients were on antiplatelet and high-dose statin medications compared to 61.3% (n=92) of the post cohort patients (P-value=0.07). Looking at the effect of implementing a standardized note for vascular consult patients with PAD, DMC rate was 61.3% (n=57) in the pre cohort and 81.3% (n=122) in the post cohort (P-value=0.001).

Conclusions: Institutional data shows an increased rate of DMC in the months following implementation of our QI project. This demonstrates the integral role that trainees play in routine patient care, and the efficacy of trainee-driven QI in improving inpatient communication and compliance. Additionally, we demonstrated the efficiency of using a standardized consult note template to increase DMC for PAD patients.

Trainee-Driven Standardized Documentation of Vascular Consult Note Improves Antiplatelet and Statin Medication Adherence at Discharge amongst Peripheral Arterial Disease (PAD) Patients

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Background

Vascular Quality Initiative (VQI) is a vascular surgery registry that collects patient data from vascular procedures to stratify risk, analyze outcomes, develop quality improvement, define best clinical practices, assess comparative effectiveness research, and improve resource utilization.

Peripheral arterial disease (PAD) patients, especially those who undergo **peripheral vascular intervention (PVI)**, should be on **optimal medical therapy** which includes a regimen of **both an antiplatelet and statin** to help reduce atherosclerotic disease burden and **improve limb salvage outcomes**.

Our institution had **LOW medication compliance at discharge** of antiplatelet/statin therapy amongst PAD patients undergoing PVI procedures.

76% cumulative discharge medication compliance in 2022 ⇨ **BELOW BENCHMARK** of national VQI 75th percentile at 96.9%.

Improvement Strategy

Implementation of new **Vascular Surgery Consult Note**:

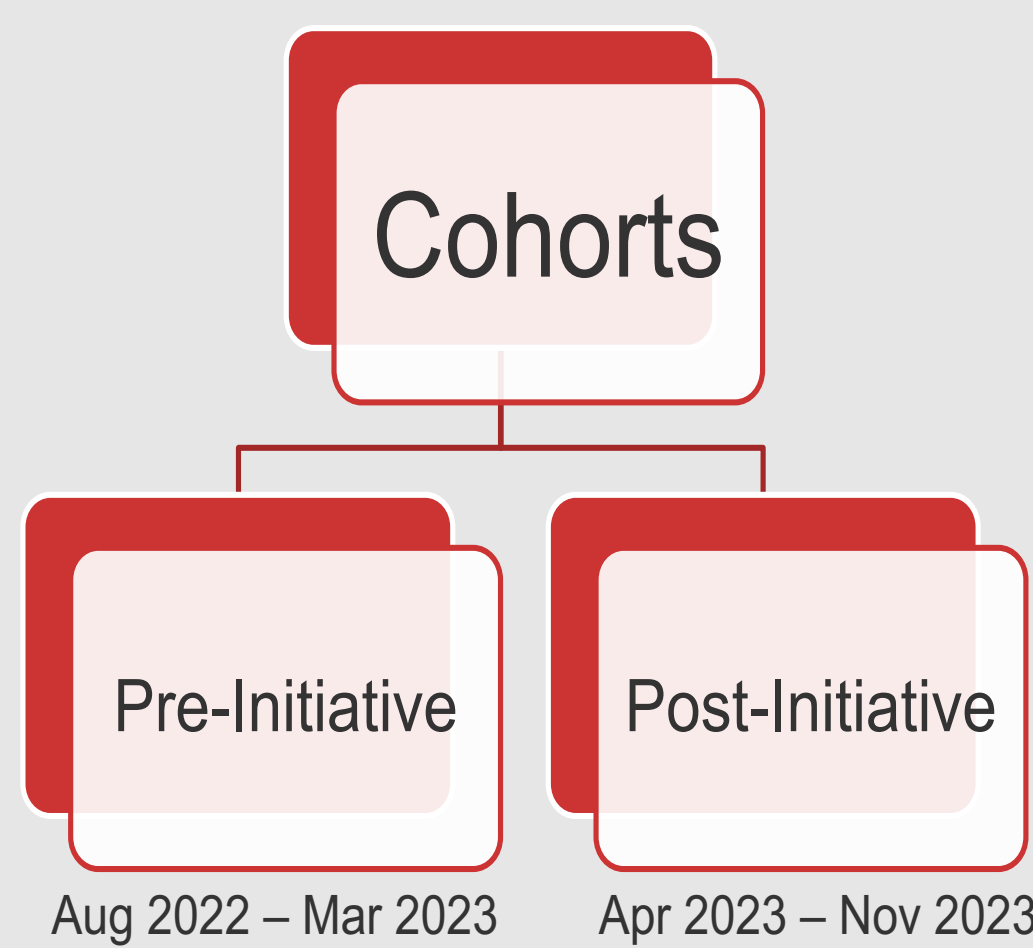
Standardized Vascular Consult Note for all Vascular Consults, included prompts for specific PAD-related questions and formal recommendations for continuing or initiating antiplatelet/statin therapy.

EPIC EMR ".vascularconsult" dotphrase

QUALITY INITIATIVE GOAL
 Achieve a discharge medication compliance rate of **85% or higher** by December 2023

Methods

QI Project Initiation Date: April 2023



Metrics Collected

- Total Number of Vascular Consults
- Standardized Consult Note Compliance
- Number of Patients with History and New Diagnosis of Peripheral Arterial Disease (PAD)
- Number of Patients undergoing Peripheral Vascular Intervention (PVI)
- Antiplatelet/Statin Therapy Status on Discharge for PVI patients

Sample Vascular Surgery Consult Note

Additions to HPI:

Anti-platelet (if any): yes/no no
 Anticoagulation (if any): yes/no no
 Statin (if any): yes, *** - compliant yes, *** - poor adherence
 History of PAD: YES/NO YES, *** - poor adherence
 If yes, managed by: PMD/Cardio/vascular
 PMH: ***
 PSH: ***
 Meds: ***
 FamH: denies history of ***
 SocH: smoking history , denies other toxic habits
 Functional Status: ADLs: independent in ADLs Ambulation Status

****Patients with contraindication for either antiplatelet/statin therapy and those deceased were excluded**

Additions to Assessment/Plan:

Plan: ***

Peripheral Arterial Disease (PAD) Recommendations:
 History of PAD

Peripheral Arterial Disease (PAD) Recommendations:
 Patient has history of peripheral arterial disease (PAD). Recommend that patient is discharged on both aspirin and statin therapy, if not currently taking. Please follow-up with both PMD and Vascular Surgeon for continued management of PAD. If patient does not have a Vascular Surgeon, may follow-up with NYPQ Vascular Surgery (718-303-6100) as outpatient in 2-4 weeks.

OR

Peripheral Arterial Disease (PAD) Recommendations:
 Patient does not have known history of peripheral arterial disease (PAD). However, recommend that patient undergoes screening for PAD by primary care provider as outpatient.

Data Analysis

- Pre-initiative/Post-initiative cohorts
- Cumulative annual data for 2022 and 2023

Results

	Pre-Initiative Cohort	Post-Initiative Cohort	p-value
Total Vascular Consults (n)	689	662	p>0.05
No. PAD patients (%),n	19.6% (n=135)	22.2% (n=147)	p>0.05
Standardized Note Compliance (%)	n/a	84.3%	n/a
History of PAD (%)	46.7%	80.2%	p<0.001
New Diagnosis PAD (%)	53.3%	19.7%	p<0.001
Medication Adherence (%)	68.7%	94.2%	p<0.001

Figure 1: Cumulative Discharge Medication Compliance 2023

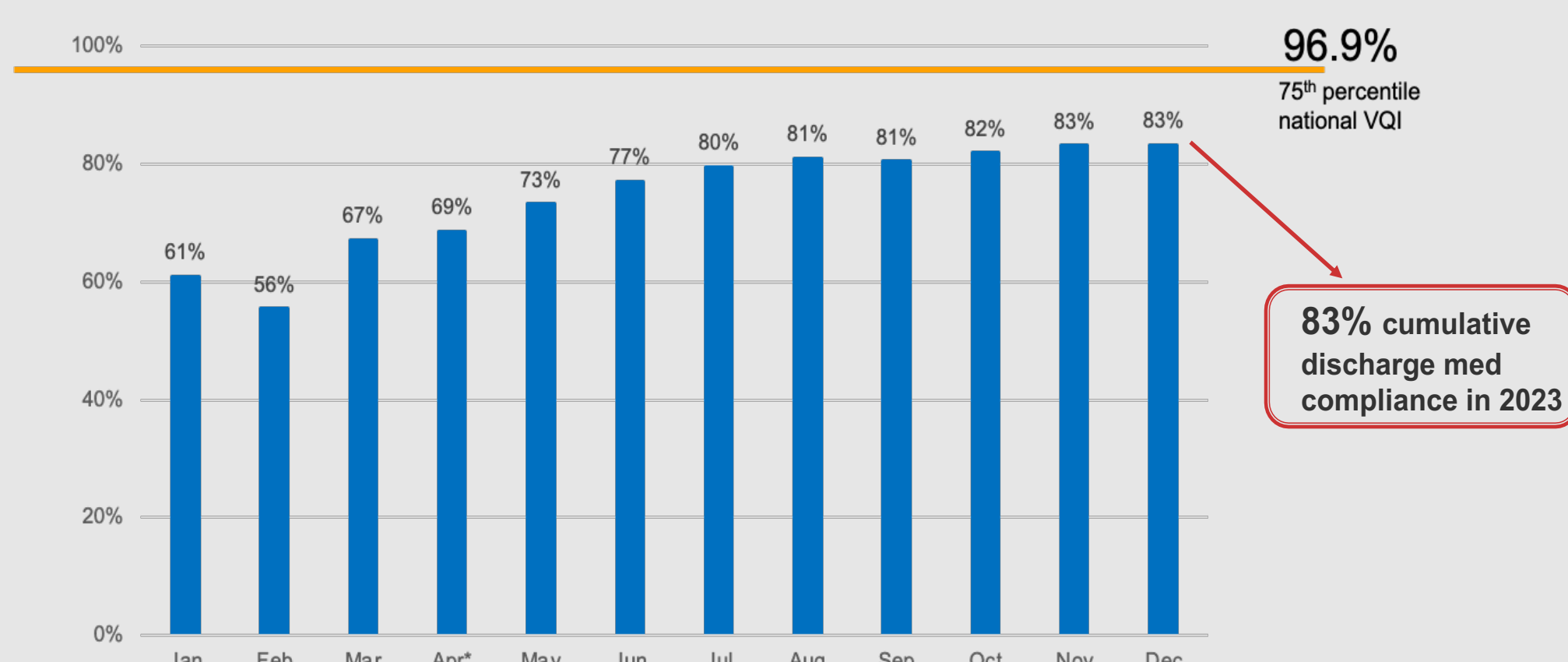
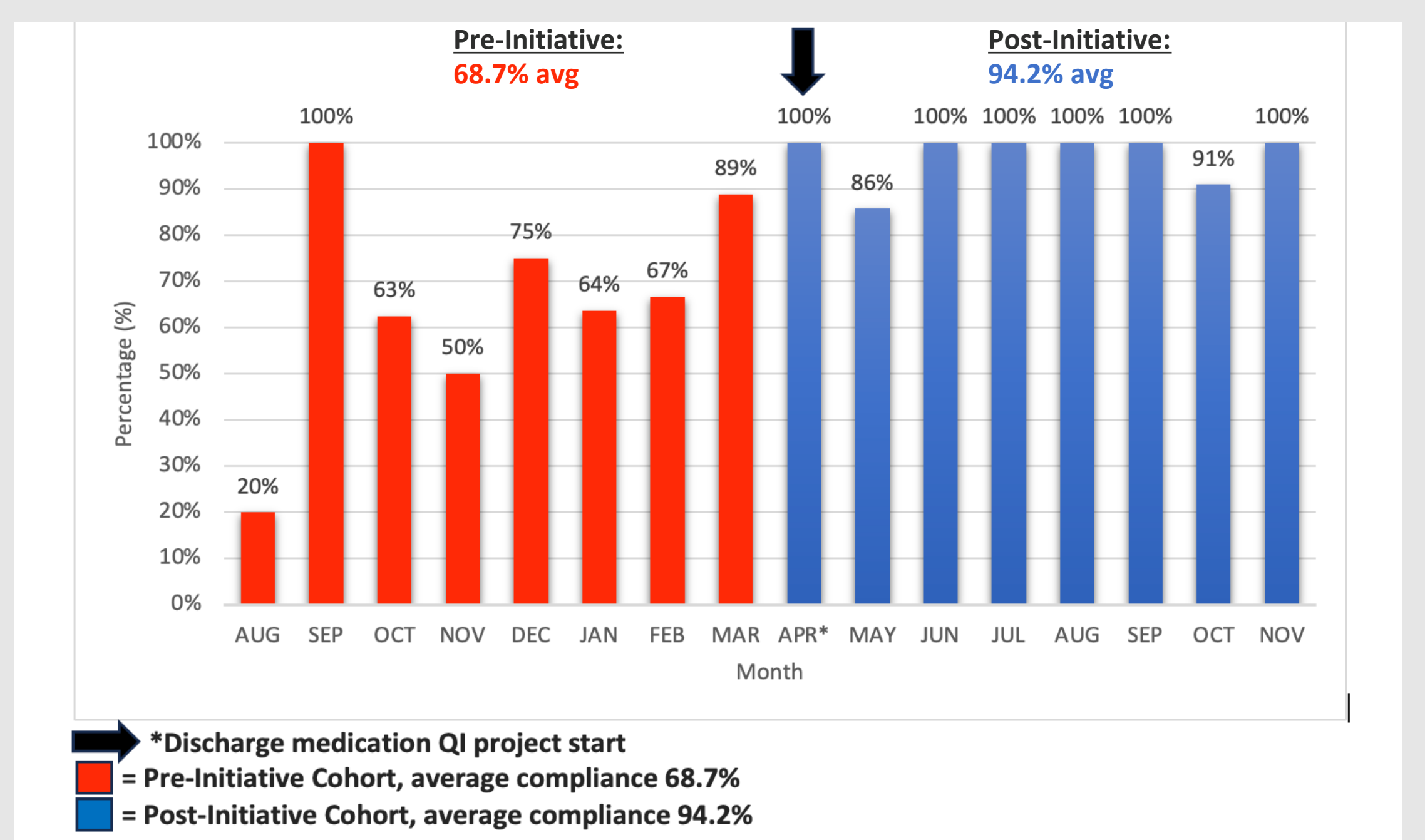


Figure 2: Monthly Medication Adherence on Discharge for PVI Patients



Conclusion

The **standardized consult note improved** identification of PAD patients and medication adherence of antiplatelet/statin therapy among vascular consult patients who underwent PVI.

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