



**Weill Cornell  
Medicine**

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**Annual WCM Quality  
Improvement & Patient Safety  
Poster Symposium**

**Abstracts and Posters**

**21 September 2021  
Weill Cornell Medicine**

**Sponsored by:**

**Quality Improvement Academy  
and**

**Physician Organization | Division of Quality and Patient Safety  
and**

**NewYork-Presbyterian Department of Nursing**



# Weill Cornell Medicine

September 21, 2021

Dear Colleagues,

Thank you for another remarkable celebration of quality and safety. The **Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium** was livestreamed on September 21, 2021 with participation of over seventy attendees across all disciplines and departments from Weill Cornell uptown, Lower Manhattan, Queens and Brooklyn-Methodist. It remains the only institution-wide event to showcase projects dedicated to quality and patient safety.

Despite this year's ongoing challenges, we were excited to showcase 42 projects across 10 departments, nine of which were from the graduating QIA class of 2021. Twelve were featured as oral presentations in the categories of *Advancing Patient Safety*, *Promoting Health Care Quality*, *Optimizing Care Delivery*, and *Improving Health Equity*. All projects exemplify interdisciplinary teamwork, with many projects led by residents, fellows, students, nurses, PAs, and other clinical staff.

We are proud to present all of the projects featured at this year's event within this e-catalog. Congratulations and thank you to our students, residents, fellows, nurses and faculty for their achievements and ongoing commitment to patient care. And thank you to Dr. Augustine Choi, Stephen and Suzanne Weiss Dean and Provost for Medical Affairs, and Dr. Anthony Hollenberg, Sanford I. Weill Chair, Weill Department of Medicine, for their ongoing support of academic quality improvement initiatives and scholarship across Weill Cornell Medicine.

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# THANK YOU!

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## Problem

Emergency Departments are expected to rapidly screen and evaluate patients presenting with signs and symptoms of an acute myocardial infarction (AMI) such as chest pain, shortness of breath, dizziness, epigastric pain, upper back pain, etc. As part of this process, patients with suspected AMI undergo an electrocardiogram that is performed and immediately interpreted by an Emergency Medicine physician to screen for a ST elevation myocardial infarction (STEMI). In order to confirm interpretation of the EKG, physicians sign and timestamp the EKG, however, there is no documentation in the medical record confirming this rapid evaluation.

## Objective

We undertook a QI project to effectively and efficiently include signed EKGs in the medical record to reflect the evaluation of patients for AMI by ED physicians within 10 minutes of arrival to the ED.

## Project Design and Methods

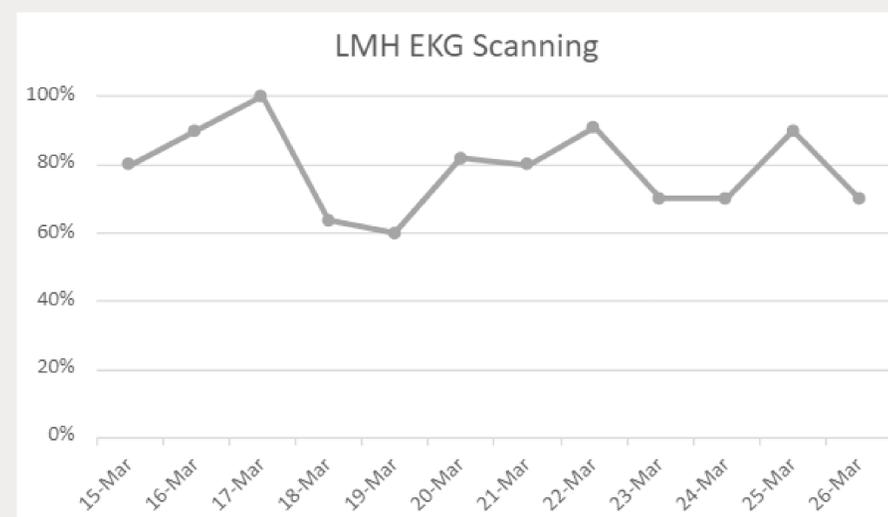
The project was undertaken at the Lower Manhattan Hospital and utilized multiple rounds of PDSA to improve EKG uploading into patient's medical records. All patients who had an EKG ordered during their emergency department evaluation were included. The initial phase involved creating a process for uploading EKGs into the medical record. The physician and nursing leadership team then undertook an education effort to implement the new EKG signing and uploading process. Progress was tracked by the leadership team and subsequent improvements were made to improve scanning rates.

## LMH EKG Scanning Project

Annual Weill Cornell Medicine Quality Improvement Poster Session  
Gururaj Shan, Claudia Duzla, Robert Tanouye, Antonio Dajer, Andrew Jacobowitz, Karen Antequera, Natasha Kendrioski, Matthew McCarty, Peter Steel, Rahul Sharma, Brenna Farmer | September 21, 2021

## Results

A process was developed to have EKGs performed, presented to an attending EM physician for review, and subsequently placed in a box to be scanned by the clerks into the medical record. The providers, nurses, PCAs, and clerks were educated on the process during daily morning and evening huddles. After initial education, the process was monitored for compliance. During the week after implementation, the rate of signed EKGs being scanned into patient's charts increased from 66% to an average of 80%. The process was then monitored for further improvement by monitoring for time periods when scanning was not occurring. We identified that while during our AM (7AM to 3 PM) and PM (3 PM to 11PM) shifts we had an average scanning rate of 83% and 89% respectively, this dropped down to 62% during the Overnight (11PM to 7 AM) shift. We subsequently targeted messaging to overnight providers, rotating clerks, and staff to encourage increased scanning. This helped improve overnight scanning rates to match the rates during other shifts.



## Conclusions

The QI project helped improve the clinical pathway at the Lower Manhattan Hospital emergency department for performance of EKGs. The new process ensures that patients who undergo an EKG during their visit have it evaluated by a physician for an AMI and recorded in their medical record. Further monitoring will be needed to ensure the process is adhered to.

## **Project Name: LMH EKG Scanning Project**

**Authors:** Gururaj Shan, Claudia Duzla, Robert Tanouye, Antonio Dajer, Andrew Jacobowitz, Karen Antequera, Natasha Kendrioski, Matthew McCarty, Peter Steel, Rahul Sharma, Brenna Farmer

**Statement of the Problem:** Emergency Departments are expected to rapidly screen and evaluate patients presenting with signs and symptoms of an acute myocardial infarction (AMI) such as chest pain, shortness of breath, dizziness, epigastric pain, upper back pain, etc. As part of this process, patients with suspected AMI undergo an electrocardiogram that is performed and immediately interpreted by an Emergency Medicine physician to screen for a ST elevation myocardial infarction (STEMI). In order to confirm interpretation of the EKG, physicians sign and timestamp the EKG, however, there is no documentation in the medical record confirming this rapid evaluation.

**Objective/Aim of the Study:** We undertook a QI project to effectively and efficiently include signed EKGs in the medical record to reflect the evaluation of patients for AMI by ED physicians within 10 minutes of arrival to the ED.

**Project Design/Methods:** The project was undertaken at the Lower Manhattan Hospital and utilized multiple rounds of PDSA to improve EKG uploading into patient's medical records. All patients who had an EKG ordered during their emergency department evaluation were included. The initial phase involved creating a process for uploading EKGs into the medical record. The physician and nursing leadership team then undertook an education effort to implement the new EKG signing and uploading process. Progress was tracked by the leadership team and subsequent improvements were made to improve scanning rates.

**Results:** A process was developed to have EKGs performed, presented to an attending EM physician for review, and subsequently placed in a box to be scanned by the clerks into the medical record. The providers, nurses, PCAs, and clerks were educated on the process during daily morning and evening huddles. After initial education, the process was monitored for compliance. During the week after implementation, the rate of signed EKGs being scanned into patient's charts increased from 66% to an average of 80%. The process was then monitored for further improvement by monitoring for time periods when scanning was not occurring. We identified that while during our AM (7AM to 3 PM) and PM (3 PM to 11PM) shifts we had an average scanning rate of 83% and 89% respectively, this dropped down to 62% during the Overnight (11PM to 7 AM) shift. We subsequently targeted messaging to overnight providers, rotating clerks, and staff to encourage increased scanning. This helped improve overnight scanning rates to match the rates during other shifts.

**Conclusions:** The QI project helped improve the clinical pathway at the Lower Manhattan Hospital emergency department for performance of EKGs. The new process ensures that patients who undergo an EKG during their visit have it evaluated by a physician for an AMI and recorded in their medical record. Further monitoring will be needed to ensure the process is adhered to.

# A Quality Improvement initiative to establish a universal postpartum depression screening program in the Neonatal Intensive Care Unit

Georgina Hartzell, MD<sup>1</sup>, Jessica Bush, MD<sup>2</sup>, Ansi Hakkim, MD<sup>2</sup>, Nadira Jegroo<sup>2</sup>, Jane Taikina, RN<sup>2</sup>, Ashley Winn, RN<sup>2</sup>, Vanessa Zinke, LMSW<sup>2</sup>, Talia Grossman, LMSW<sup>2</sup>, Priyanka Tiwari, MD<sup>2</sup>

<sup>1</sup>Psychiatry, New York Presbyterian Hospital – Weill Cornell Medicine, New York, NY

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## Background

- Postpartum depression (PPD) is one of the most common complications of pregnancy<sup>1</sup>
- NICU hospitalization increases the risk of maternal PPD; rates estimated at 15-40%<sup>2-4</sup>
- AAP recommends routine screening for PPD at 1, 2, 4 and 6 month well-child visits, however no formal program exists for screening mothers of infants in the NICU<sup>1, 4</sup>
- Detrimental effects of untreated maternal PPD include:
  - Poorer language and cognitive development in infants<sup>5</sup>
  - Poorer parent-infant bonding<sup>6-7</sup>
  - Lower parental confidence and self-efficacy<sup>6-7</sup>
- Prior to our intervention, our NICU did not have a screening protocol for maternal PPD

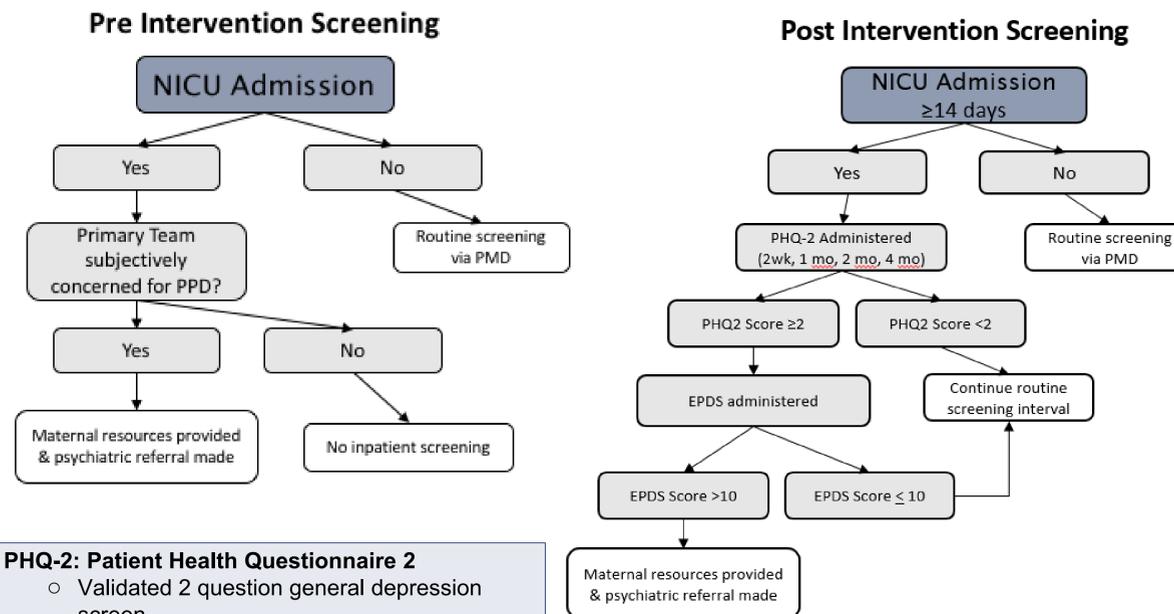
## Objectives

- Primary SMART Aim: By March 1, 2021, we would conduct PPD screens on >60% of all mothers of infants admitted to the NICU at approximately DOL 14, 30, 60 and 120.
- Secondary SMART Aim: >75% of mothers who screened positive would undergo more comprehensive PPD screening and be offered additional services.

## Methods

## Methods continued

Figure 2: Pre and Post Intervention Protocol for PPD Screening



### PHQ-2: Patient Health Questionnaire 2

- Validated 2 question general depression screen
- Self-completion
- Should be followed by a more in-depth screen if positive

### EPDS: Edinburgh Postpartum Depression Screen

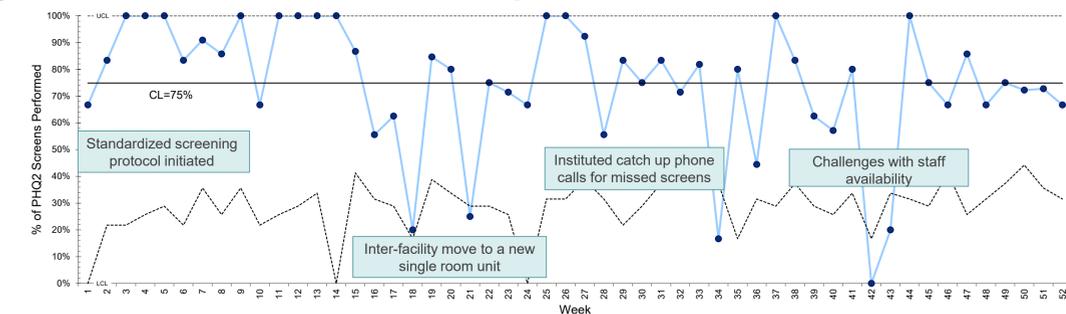
- Validated 10 question screening tool specific to PPD and anxiety
- Administered by a healthcare professional

## Results

- 269 mothers were eligible for at least one PPD screening by PHQ2 over the first year (March 2020-February 2021)
- Of the 269 women, 227 of them (84%) received a PPD screen at some point during their baby's stay in the NICU. 75% of the PHQ2 screens were completed (n=343 out of 458)
- Of the 343 PHQ2 screens completed, 15% were positive (n=53 out of 343)
- Of the 53 positive PHQ2s, 93% received a follow-up EPDS and assessment (n = 49 out of 53)
- Of the 49 EPDS screens that were performed, 59% were positive (n=29 out of 49) and all of those women were offered follow-up mental health services

## Results continued

Figure 3: P-Chart of PHQ2 Screens Completed



- Figure 3: P-Chart. This shows brief decreases in screen completion at the time of an inter-facility move and during times of limited staff availability, with improvement following the initiation of phone calls for missed screens, without a change in the center line thus far.

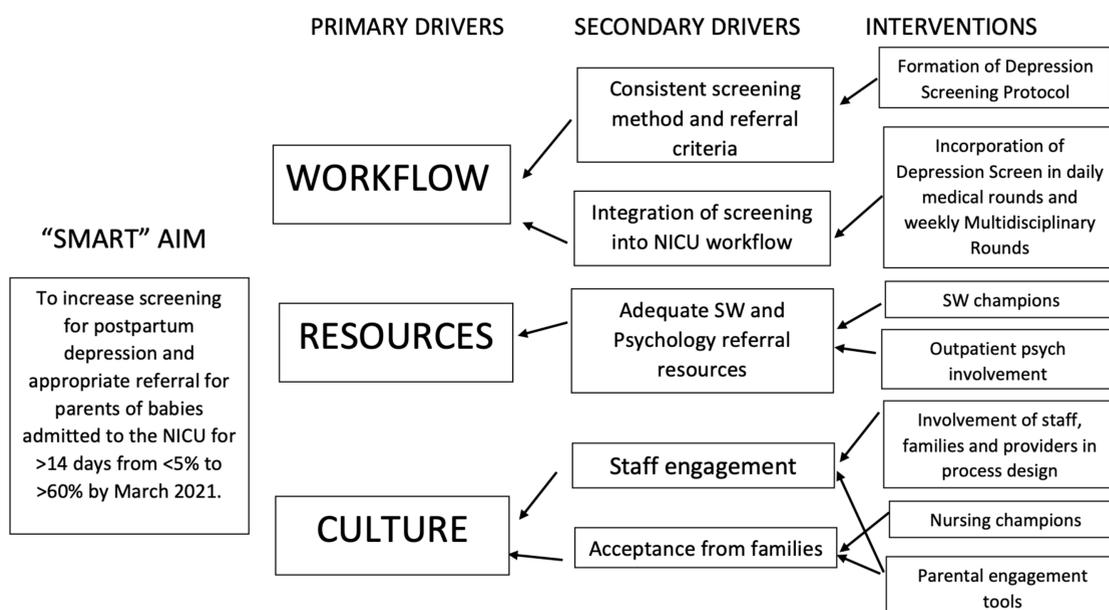
## Conclusions

- **This intervention met our aims of increasing universal PPD screening rates to >60% and providing follow-up to >75% of the mothers with positive initial screens.**
- **These screening efforts led to increased interest in and demand for NICU mental health services, which led to the creation of:**
  - New trauma-focused CBT group for NICU mothers.
  - New outpatient psychiatry clinic track to expedite psychiatric treatment for NICU mothers.
- **Barriers to screen completion included staff availability to administer and collect screens and parent willingness to complete screens.**

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Figure 1: Driver Diagram



### “SMART” AIM

To increase screening for postpartum depression and appropriate referral for parents of babies admitted to the NICU for >14 days from <5% to >60% by March 2021.

A Quality Improvement initiative to establish a universal postpartum depression screening program in the Neonatal Intensive Care Unit

Georgina Hartzell, MD<sup>1</sup>, Jessica Bush, MD<sup>2</sup>, Ansi Hakkim, MD<sup>2</sup>, Nadira Jegroo<sup>2</sup>, Jane Taikina<sup>2</sup>, Ashley Winn<sup>2</sup>, Vanessa Zinke, LMSW<sup>2</sup>, Talia Grossman, LMSW<sup>2</sup>, Priyanka Tiwari, MD<sup>2</sup>

<sup>1</sup>Psychiatry, New York-Presbyterian/Weill Cornell Medical Center, New York, NY, United States

<sup>2</sup>Neonatology, New York-Presbyterian/Weill Cornell Medical Center, New York, NY, United States

### **Statement of the Problem:**

Postpartum depression (PPD) is one of the most common complications of pregnancy. Having an infant hospitalized in the NICU significantly increases the risk of maternal PPD, with estimates ranging from 15-40%. Untreated PPD affects parental confidence and self-efficacy and has detrimental effects on infant development. The American Academy of Pediatrics (AAP) recommends routine screening for maternal PPD during ambulatory well-baby visits, however mothers of infants hospitalized in the NICU typically miss these screenings. Prior to our intervention, our NICU did not have a universal protocol for screening for maternal PPD and did not utilize any standardized tools for assessing depressive symptoms.

### **Objective/Aim of the Study:**

In March of 2020 we launched a QI initiative to implement standardized PPD screening in mothers of infants admitted to the NICU for longer than 14 days and direct them to appropriate services. Our primary SMART aim was that by March 1, 2020, we would conduct PPD screens on  $\geq 60\%$  of all mothers of infants admitted to the NICU at approximately DOL 14, 30, 60 and 120. Our secondary SMART aim was that  $\geq 75\%$  of mothers who screened positive would undergo more comprehensive PPD screening and be offered additional services.

### **Methods:**

This intervention utilized a standardized screening tool, the Patient Health Questionnaire 2 (PHQ2), to screen mothers of NICU infants at 14, 30, 60 and 120 days postpartum. Each week a member of the study team reviewed the census and identified a list of infants whose mothers were due for the PHQ2 in the following week and then administered the screens. Positive PHQ2 screens triggered an additional screen with the more comprehensive Edinburgh Postpartum Depression Screen (EPDS) and a brief assessment by the unit social worker or psychiatrist.

Inclusion criteria were mothers of infants admitted to the NICU at or beyond DOL 14. All mothers were included regardless of primary language spoken or prior history of depression.

All identifying data during the study phase was stored in a password protected hospital drive and destroyed after the study phase.

### **Fig. 1. Key Driver Diagram**

#### **Analysis**

Statistical process control p-charts were used to plot and analyze data. The center line (CL) (mean) and upper and lower control limits (UCL and LCL) were calculated using QI Charts.

#### **Results:**

269 mothers were eligible for at least one PPD screening by PHQ2 over the first year of the intervention (March 2020 - February 2021). Of the 269 eligible mothers, 84% received a PPD screen at some point during their baby's stay (N=227). 75% of the PHQ2 screens were completed (n=343 out of 458). 15% of PHQ2 screens were positive (n=53). 95% of mothers with a positive PHQ2 were screened with an EPDS within 1 week (n=49). 59% of the EPDS that were performed were positive (n=29) and all of those women were offered follow-up mental health services. Results are shown in Figure 2. This shows a brief decrease in screen completion at the time of an inter-

facility move and at times of staffing limitations, but since instituting follow-up phone calls this rate has improved, without a change in the center line thus far.

**Conclusions:**

Our maternal NICU PPD screening rates increased from 0% to 88%, which exceeded our goal of screening at least 60% of mothers. 95% of mothers with positive initial screens were provided with additional screening and follow-up, which exceeded our goal of providing follow-up to 75% of mothers. These screening efforts led to increased interest in and demand for NICU mental health services, which prompted the creation of a trauma-focused CBT group for NICU mothers and an outpatient psychiatry clinic providing expedited treatment for NICU mothers.

Figure 1: Key Driver Diagram

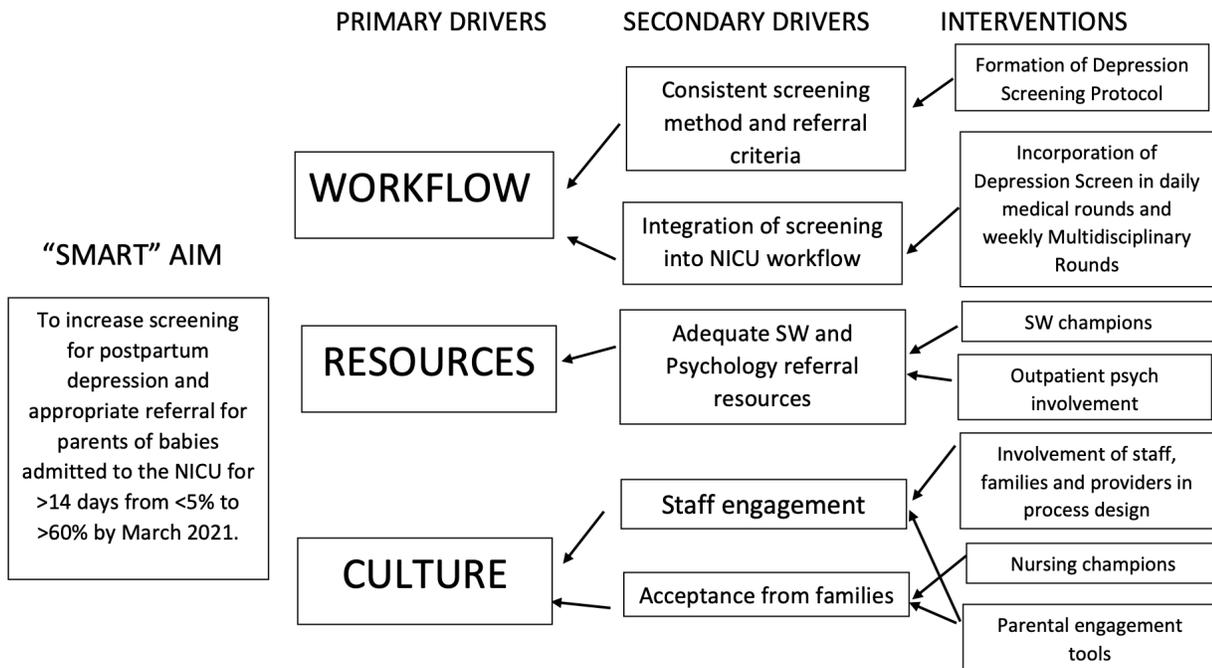
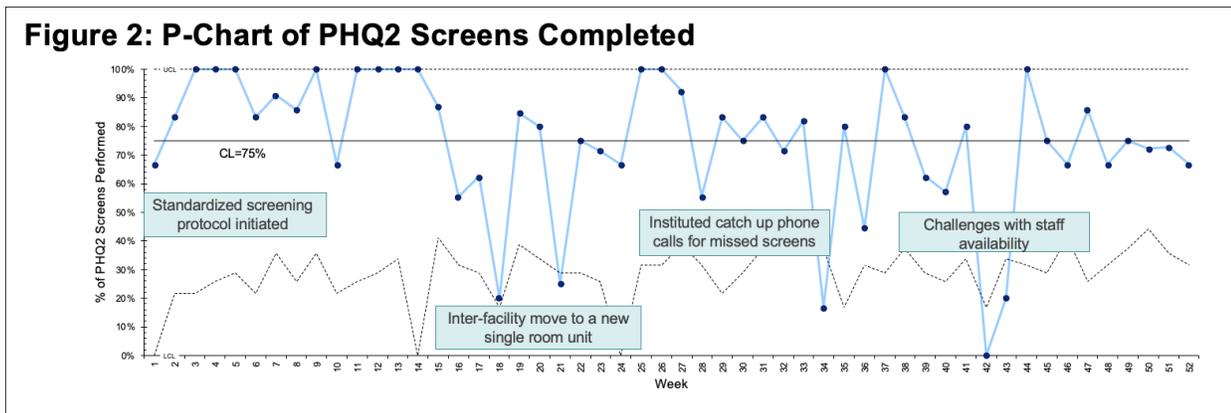


Figure 2: P-chart of PHQ2 Screens Performed





## Opioid Crisis Statistics

- More than 29 million people misuse prescription medication and illicit drugs worldwide-70% of this total are people with opioid use disorder (OUD). This causes a \$79.5 Billion per year total economic burden on the U.S. (CDC, 2017).
- In NYC: 1,487 deaths in 2017 from overdoses compared to 942 deaths in 2015 (NYP, 2018).
- In the U.S., emergency departments (ED) are the health care safety net for many-over 136 million ED visits in the U.S. annually (CDC, 2017).
- Naloxone is a pure opioid antagonist and a 34% reduction in drug deaths is associated with the use of intranasal naloxone kits during an overdose (Carter & Graham, 2013).

## PICOT Question

- **P-population**-patients identified with OUD in the ED.
- **I-Intervention**-distribution and training in the use of free naloxone kits in the ED to identified patients and/or their families.
- **C-Comparison**-OUD patients not given naloxone kits.
- **O-Measurable outcome**- identification of the number of naloxone kits that were distributed by the ED and did this intervention decrease the number of this identified patient population to ED for OUD.
- **T-Time frame**- three years

## Intranasal Nalaxone Kit Distribution

- **Objective** of this Evidence Based Project (EBP): Compare the statistical data regarding the total NYPWCMC ED presentations of this patient population one year prior to, and two years after, free intranasal naloxone kit distribution.
- **Sample**: The total number of those patients identified with the ICD-10 code within the F11 classification spectrum of OUD.
- **Data**: The quantitative data was retrieved from EagleHMS®, the ED computer patient registration system for those patients who registered in the ED, with this code, and received treatment within the study time frame: Jan-Sept 2017, Jan-Sept 2018 and Jan-Sept 2019.
- **Institutional Review Board (IRB)**: Approval was not needed as this project was not considered research.

## Results

- The initiation of Nalaxone Kit dispensing in the ED began in January 2018.
- The total number of OUD patients registered in the NYPWCMC ED by year:
  - Jan-Sept 2017: 620
  - Jan-Sept 2018: 188
  - Jan-Sept 2019: 194
- A total of 588 intranasal naloxone kits were dispensed during Jan-Sept 2019.
- The total number of OUD patients with the ICD-10 code within the F11 classification was reduced by almost 3/4 with the initiation of the Intranasal Nalaxone Kit Initiative.

## **Abstract**

### **The Opioid Crisis and The Distribution of Naloxone in the Emergency Department: A Harm Reduction Initiative**

**Authors:** Lisa Kelly, RN MSN CEN, Michael Zelenetz, MBA, Timothy McGarvey, MSN, LMSW, RN, NEA-BC

**Department of Social Work & Care Coordination, NYP**

The United States continues to face widespread overdose deaths from both prescription and illicit opioids such as fentanyl and heroin. Emergency departments (ED) are the health care safety net for many people in the United States, especially vulnerable populations such as those patients with opioid use disorder (OUD) (McDonald & Strang, 2016). Opioid overdose deaths are avoidable provided that naloxone, the opioid reversal agent, is administered in a timely manner. The objective of this project was two-fold: (1) develop an intranasal naloxone kit distribution workflow for a large, urban ED for this identified patient population; and (2) compare and contrast the statistical data regarding the total ED presentations of this patient population one year prior to intranasal naloxone kit distribution, and one year after intranasal naloxone kit distribution.

A possible decrease in the annual total of ED presentations of this patient population will allow for a more efficient flow of ED patients. Emergency department exam beds once occupied by this patient population may now be occupied by patients with other medical emergencies reducing ‘door to doctor’ wait time. This initiative can also help with health care fiscal savings. “Preventing only one patient from misusing or becoming addicted to opioid prescriptions can save more than \$14,000 in health care costs” (White, Birnbaum & Mareva, 2005). Regarding environmental change, findings will support that overdose education and the distribution of intranasal naloxone can help in controlling the opioid overdose epidemic (Giglio, et al., 2015). These findings can influence governmental policy-makers in expanding this initiative and the exploration of other community-based initiatives.

The Emergency Department interdisciplinary team (IDT) plays a distinctive role in the screening process of this patient population. Through the use of the teach-back method and compassionate care, the ED IDT can provide this patient population important education regarding the negative effects of opioid misuse and lifesaving techniques through the proper use of the intranasal naloxone kit.

## Anesthesia WorkStation Optimization: Improving Medication Safety in the Operating Room

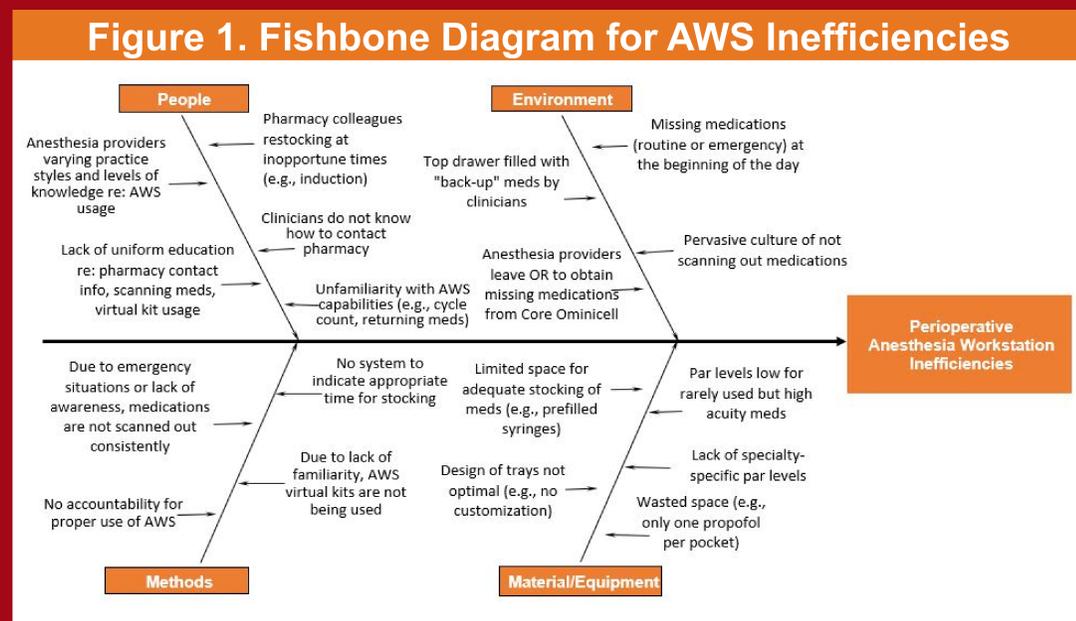
Neil Borad, MD, Prashant Angara, MD, Evgeny Bulat, MD, Katrina Milgrim, MD, Julia Scarpa, MD, Samantha L. Smith, DNAP, CRNA, Rebecca Ogunremi, BA, Shelby A. Badani, MD, Deirdre C. Kelleher, MD  
Department of Anesthesiology, Weill Cornell Medicine, NewYork-Presbyterian Hospital, New York, NY

### Background

- In 2018, **Anesthesia WorkStations (AWS)** were introduced at our hospital
  - Contains common perioperative medications
  - Tailored towards routine cases
  - Sub-specialty medication stocking not prioritized
- AWS stocking different from previous “pharmacy drawer”
  - Previously, full drawers exchanged at regular intervals for fully stocked versions
  - Now, stocking only occurs when par levels are electronically noted to be low
  - New process relies on clinicians to scan or document medications in real time
- With the new AWS, medications, including those for emergencies, have been noted missing at the beginning of the day
  - Missing medications result in inefficient and suboptimal workflows.
  - Staff leaving the OR to obtain medications results in delays & patient safety concerns
- We sought to investigate causes for these AWS inefficiencies with intentions to optimize and improve medication safety in the OR

### Methods

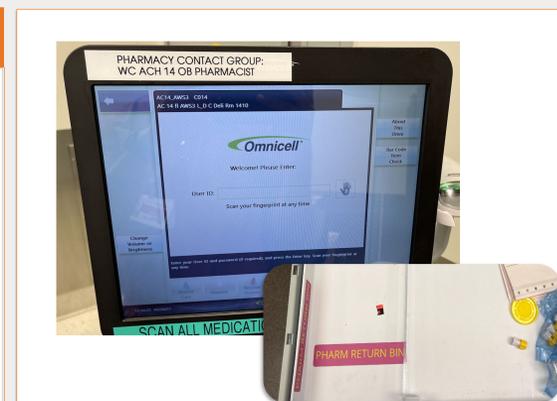
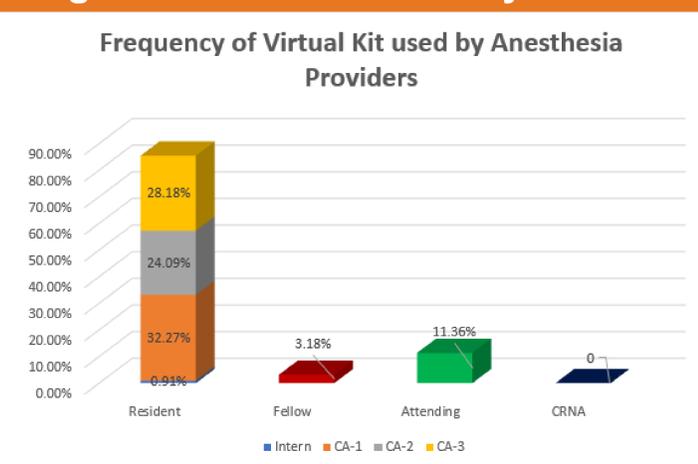
To understand the sources of the AWS inefficiencies, we surveyed anesthesia providers and conducted targeted interviews of anesthesia and pharmacy staff. The survey was used to identify perceived frequency of missing medications, need for leaving OR for required medications and knowledge and use of virtual kit and cycle count features on the AWS. Interviews assisted in clarifying clinician concerns as well as determining pharmacy workflow for restocking medications. Additionally, we were able to obtain real-time data for clinician use of corrective documentation, such as virtual kit and cycle use.



### Results

After gathering data from our survey and interviews, we created a fishbone diagram to organize the sources of AWS inefficiencies (Figure 1). From our survey and real-time practice data, we found that clinician practice varied by role. Residents tended to use virtual kits, while nurse anesthetists used cycle counts (Figure 2). Furthermore, it was identified that residents did not know the purpose of or how to do a cycle count. Nurse anesthetists were unfamiliar with the contents of virtual kits. Approximately half of survey respondents did not know how to contact pharmacy, other than by walking to the pharmacy window.

**Figure 2. Virtual Kit Use by Provider**



**Figure 3. New AWS Labeling & Return Bin**

### Proposed Solutions

- One-on-one teaching**
  - Review cycle counts, virtual kits, and methods to contact pharmacy
- Contacting pharmacy (Figure 3)**
  - Visual changes to AWS with pharmacy contact information and “how to” guides
- Return Bin**
  - Place unused medications to reduce waste and clutter in unlocked top drawer
- Additional medication drawer to reduce trips outside the OR**
  - Specialty specific by OR (i.e. neurosurgery, orthopedics, liver transplant, etc.)
  - Balance between standardization and customization

### Conclusion

By better understanding the causes of AWS inefficiencies we were able to identify ways to increase the accuracy of par levels and improve workflow efficiency for both clinicians and pharmacists. We are working to create specialty-specific drawers in designated areas, and plan to track virtual kit and cycle count use longitudinally to see if our interventions have the desired effect.

## **Anesthesia WorkStation Optimization: Improving Medication Safety in the Operating Room**

Neil Borad, MD, Prashant Angara, MD, Evgeny Bulat, MD, Katrina Milgrim, MD, Julia Scarpa, MD, Samantha L. Smith, DNAP, CRNA, Rebecca Ogunremi, BA, Shelby A. Badani, MD, Deirdre C. Kelleher, MD

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

**Statement of the Problem:** In 2018, our institution introduced Anesthesia WorkStations (AWS) to dispense perioperative medications in every anesthetizing location. The AWS contains common perioperative medications; however, it is tailored towards routine cases, resulting in commonly used sub-specialty drugs not being adequately stocked. Additionally, stocking relies on a change in clinicians' workflow, requiring scanning or use of virtual kits to notify pharmacy in real time of current par levels. Failure to adopt this new workflow results in inaccurate reporting to pharmacy as to when a restock is needed. This combination of problems leads to medications, including those needed for emergencies, to be missing from the AWS. Missing medications result in inefficient workflows as staff must leave the operating room (OR), potentially creating delays and patient safety concerns.

**Objective/Aim of the Study:** We sought to investigate causes for these AWS inefficiencies with intentions to optimize and improve medication safety in the OR.

**Project Design/Methods:** To understand the sources of the AWS inefficiencies, we surveyed anesthesia providers and conducted targeted interviews of anesthesia and pharmacy staff. The survey was used to identify perceived frequency of missing medications, need for leaving OR for required medications and knowledge and use of virtual kit and cycle count features on the AWS. Interviews assisted in clarifying clinician concerns as well as determining pharmacy workflow for restocking medications. Additionally, we were able to obtain real-time data for clinician use of corrective documentation, such as virtual kit and cycle use.

**Results:** After gathering data from our survey and interviews, we created a fishbone model to organize the sources of AWS inefficiencies. From our survey and real-time practice data, we found that clinician practice varied by role. Residents tended to use virtual kits, while nurse anesthetists used cycle counts. Furthermore, it was identified that residents did not know the purpose of or how to do a cycle count. Nurse anesthetists were unfamiliar with the contents of virtual kits. Approximately half of survey respondents did not know how to contact pharmacy, other than by walking to the pharmacy window.

Based on these findings, we implemented new AWS communication signage and one-on-one re-teaching of key workflows. We also recommended AWS customization by anesthetizing location with an additional drawer of highly used, specialty-specific medications.

**Conclusions:** By better understanding the causes of AWS inefficiencies we were able to identify ways to increase the accuracy of par levels and improve workflow efficiency for both clinicians and pharmacists. We are working to create specialty-specific drawers in designated areas, and plan to track virtual kit and cycle count use longitudinally to see if our interventions have the desired effect.

## Introduction

Venous thromboembolism (VTE) consists of pulmonary embolism (PE) and deep vein thrombosis (DVT). VTE impacts hundreds of thousands of Americans annually and is frequently a complication of hospitalization. Hospital acquired VTE (HA-VTE) is often cited as the most common cause of preventable hospital death. Pharmacological prophylaxis strategies have been shown to be effective in reducing the incidence of VTE in medical and surgical patients. In spite of the effectiveness of pharmacologic VTE prophylaxis (VTEP) there are challenges in delivery. There is evidence that missing doses of VTEP may be associated with increased risk for HA-VTE. Patient refusal is the most common reason that ordered VTEP is not administered.

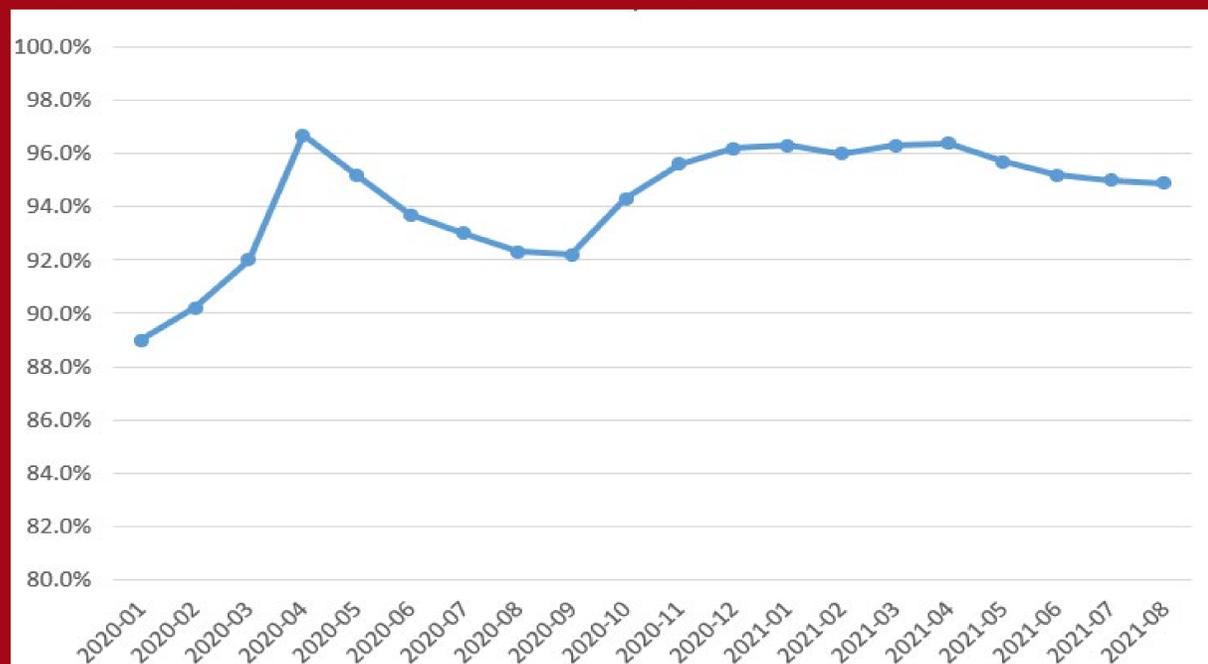
## Aim of the Study

We developed a quality improvement project with the aims of improving the rates of administering ordered VTEP through education to front line providers, scripting of how to address and escalate when patients refuse VTEP, and the creation of a dashboard that allowed for audit and feedback at the hospital, unit, and nurse level.

## Methods

A multidisciplinary team developed an online education model on the rationale for VTEP, best practices for prescribing, and scripting for how to address patients that refuse. A dashboard was created that showed if ordered VTEP was given to patients. Compliance was tracked and feedback was given to nurse leaders regularly beginning in July 2019. In January 2020, a QPS goal was established to achieve compliance of 95% or greater.

Fig. 1: Monthly compliance with administering VTEP



## Results

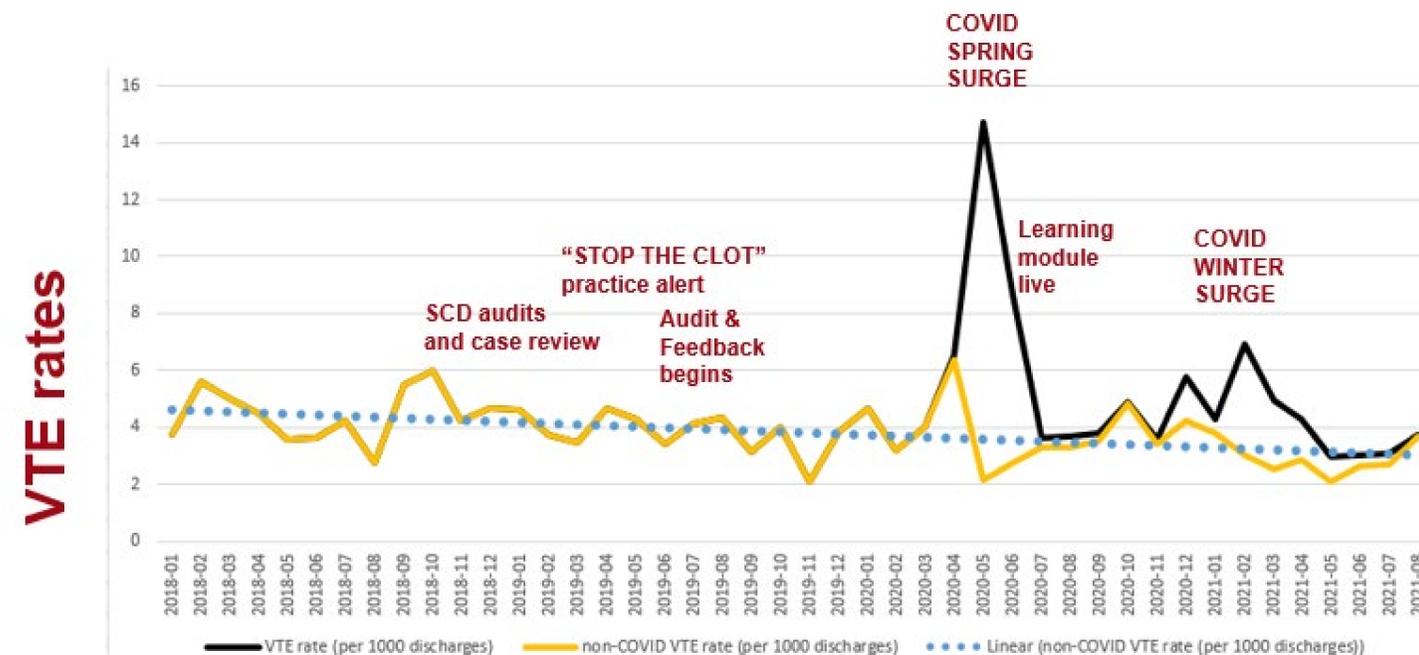
Compliance with administration of VTEP increased from 87.5% in July 2019 to 89% in Jan 2020 to 96.1% in May 2021. The COVID pandemic has had a large impact on the incidence of HA-VTE and this confounds our data as we saw an increase in HA-VTE rates around the same time as the VTEP compliance rates improved. We think that the increase in HA-VTE rates are a result of the COVID pandemic given the well described hypercoagulability associated with COVID, This is supported by the decrease in HA-VTE rate in non-COVID patients from January 2018 - August 2018 (4.11 per 1000 discharges) as compared to January 2021 - August 2021 (2.89 per 1000 discharges). Odds ratio (0.7032 [95% CI, 0.5711 - 0.8658])

## Conclusion

A multidisciplinary quality improvement project comprised of education, scripting of how to address and escalate when patients refuse VTEP, and the creation of a dashboard that allowed for audit and feedback resulted in improved the rates of administering ordered VTEP in non-COVID patients

Fig. 2: Monthly HA-VTE rates 1/18 – 8/21

## VTE rates 2018-present



# Real-time Data Access on DVT Prophylaxis Medication Administration Drives Improvement

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Department of Medicine  
NewYork-Presbyterian-Weill Cornell Medicine, New York, NY

**Statement of the Problem:** Venous thromboembolism (VTE) consists of pulmonary embolism (PE) and deep vein thrombosis (DVT). VTE impacts hundreds of thousands of Americans annually and is frequently a complication of hospitalization. Hospital acquired VTE (HA-VTE) is often cited as the most common cause of preventable hospital death. Pharmacological prophylaxis strategies have been shown to be effective in reducing the incidence of VTE in medical and surgical patients.

In spite of the effectiveness of pharmacologic VTE prophylaxis (VTEP) there are challenges in delivery. The Agency for Healthcare Research and Quality (AHRQ) cites several common failure modes in the VTEP process including failures in administering ordered VTEP. There is evidence that missing doses of VTEP may be associated with increased risk for developing in-hospital VTE. Patient refusal is the most common reason that ordered VTEP is not administered.

**Aim of the Study:** We developed a quality improvement project with the aims of improving the rates of administering ordered VTEP to 95% or greater at eight NYP hospitals by Dec 2021.

**Methods:** A multidisciplinary team conducted a review of the process to identify root causes for VTE and elicited staff feedback to gain an understanding of any barriers and challenges. Using this information, the team developed an online education model on the rationale for VTEP, best practices for prescribing, defining process requirements and expectations for nurses related to administration and scripting for how to address patients that refuse. A dashboard was created that showed if ordered VTEP was given to patients. Compliance was tracked and feedback was given to nurse leaders regularly beginning in July 2019. In January 2020, hospital leadership established an organizational QPS goal to achieve compliance of 95% or greater.

**Results:** Compliance with administration of VTEP increased from 87.5% in July 2019 to 89% in Jan 2020 to 96.1% in May 2021. The COVID pandemic has had a large impact on the incidence of HA-VTE and this confounds our data as we saw an increase in HA-VTE rates around the same time as the VTEP compliance rates improved. We think that the increase in HA-VTE rates are a result of the COVID pandemic given the well described hypercoagulability associated with COVID, This is supported by the decrease in HA-VTE rate in non-COVID patients from January 2018 - August 2018 (4.11 per 1000 discharges) as compared to January 2021 - August 2021 (2.89 per 1000 discharges). Odds ratio (0.7032 [95% CI, 0.5711 - 0.8658])

**Conclusions:** A multidisciplinary quality improvement project comprised of education, scripting of how to address and escalate when patients refuse VTEP, and the creation of a dashboard that allowed for audit and feedback resulted in improved the rates of administering ordered VTEP in non-COVID patients.

# It Takes a Village: A Team-Focused Approach to Fall Prevention in Inpatient Oncology

Weill-Cornell Medicine Quality Improvement Symposium

Dianna Assalone, MSN, RN, OCN, BMTCN, NE-BC | September 21, 2021

## Background

- Falls are one of the most common adverse events that occur to hospitalized patients.
- Oncology patients have a 50% higher chance for falls in the inpatient hospital setting than non-oncology patients (Chang et al., 2019)
- Oncology patients over 50 years old are more likely to die in-hospital after a fall than elderly patients without cancer.
- Patients with cancer are at particularly high risk for falls and unfortunately may suffer worse outcomes with falls.
  - Increased risk for fractures due to bony metastases
  - Worse bleeding due to thrombocytopenia from disease or from prophylaxis or treatment for deep vein thromboses.
- In 2020, there were 67 falls on the inpatient oncology units at New York Presbyterian: Weill-Cornell.
- In 2021, there have been 51 falls (48 unassisted) to date.

## Purpose

- To reduce total number of falls on the inpatient oncology service line (10 North, 10 Central, 10 South, and 10 West) by 15% from quarter 1 2021 to present date

## Interventions

- Engaged the interdisciplinary team: Nursing, Medicine, Environmental Services, Food & Nutrition, and Quality through meetings and tailored education
- Fall TIPS Auditing: focused on best practice and policy and encouraged peer-to-peer feedback



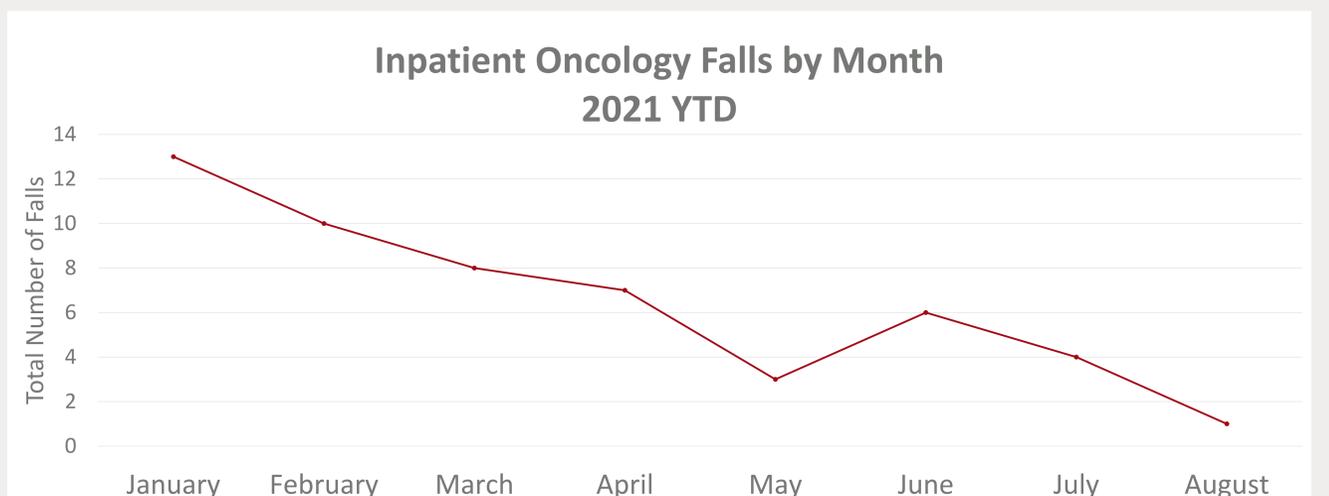
Image 1: Fall Intervention Action Plan

## Interventions, Continued

- Completed Rapid Cycle data collection on 2 units (10C & 10S) to examine current state
  - Included validation for nurses, nursing support staff, and physician associates (PA)
  - Highlighted poor fall TIPS compliance
  - Need for provider education on fall prevention measures
- Proactive Rounding: reinforced best practice, huddle messages, and lectures for nursing support staff
- Patient Education: unit fall champions led huddles and leaders reinforce fall prevention plan during rounding
- Standardized door signage based on Morse Fall Risk score



## Evaluation



- Falls peaked in January 2021, with 13 total falls
- Quarterly fall total evaluated
- 76% decrease** in falls from Q1 2021 to Q3 TD
- Involving all members of the oncology patient care team and implementing sustainable measures is essential to ensuring patient safety.
- Continued auditing and education will ensure a decrease in falls, striving towards the organization's goal of zero harm.

	Average Falls
Q1	10.33
Q2	5.33
Q3 TD	2.5



### BACKGROUND

- Increased number of emergent cases requiring Hemodialysis (HD) and Apheresis (AP) treatments during on-call hours.
- Hyperkalemia and fluid overload are the most common indications of emergent HD with available temporizing measures.
- Patients are scheduled for treatments before all temporizing measures are instituted and response re-evaluated.
- On call resources were utilized to extend normal business hours especially with high demand or delayed renal consult. On-Call hours are 2AM to 6AM Monday through Saturday and 6AM Sunday to 6AM Monday
- Over-utilization of on-call resources may lead to higher operational costs and nurse burnout.

### PURPOSE

- To promote efficient use of on-call resources by utilizing temporizing measures as first line HD and AP treatments.
- To decrease the over-utilization of on-call resources in N2/N8 HD/AP Unit while providing timely and effective HD/AP treatments.

- P = Patients requiring emergent HD/AP treatments.
- I = Does instituting temporizing measures and re-assessing
- C = Compared to immediate HD/AP treatment during on-call hours
- O = Decrease cases of emergent need for HD/AP treatment by 10%
- T = Over a year from January 2019 to December 2019.
- S = N2/N8 Hemodialysis (HD) and Apheresis (AP) Unit

### METHODS

- Initial data of on-call utilization from January to June 2019 was collected from the on-call forms completed by nurses.
- Launched the first ever Welcome Reception for Incoming Renal Fellows in July 2019. Strategies on minimizing overutilization of on-call were presented to 1<sup>st</sup> & 2<sup>nd</sup> year Renal Fellows, Renal Attending, Renal NPs, and N2/N8 HD/AP staff.
- Encouraged Primary Care Team to use temporizing measures in conjunction with timely renal consult.
- Optimized shifts with the addition of 4th shift.

### MAIN FINDINGS

- HD/AP nurses were utilized for on-call at an average of 100 cases in the first half of 2019, accounting for 54% of the total annual on-call cases. On-call cases decreased to 86 treatments or 46% of the total 2019 on-call cases six months post-implementation. ( Fig. 1)
- Medical management of HD/AP emergencies were under utilized pre-intervention at 41%. By instituting temporizing measures, 59% post-intervention, on-call utilization decreased by 8%. (Fig. 2)

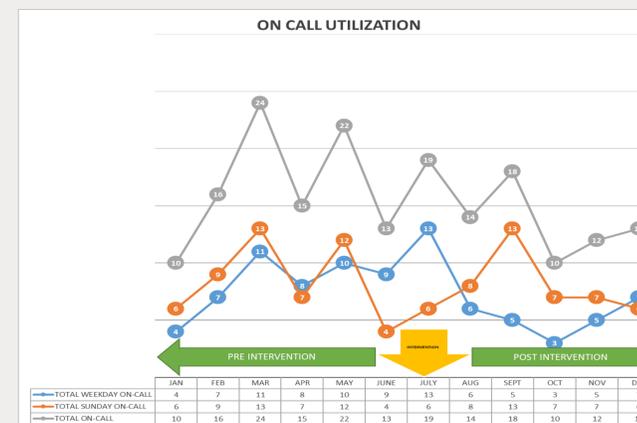


Fig. 1

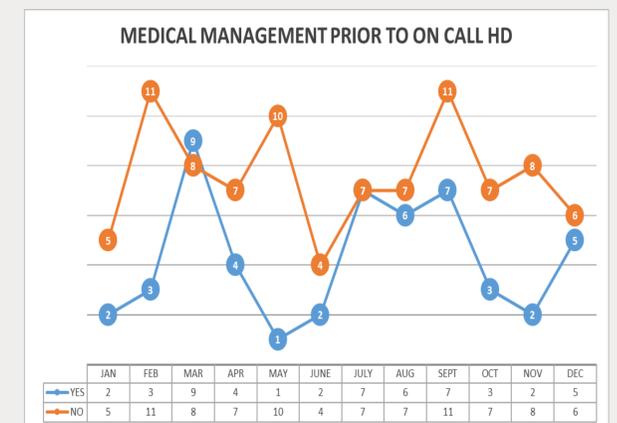


Fig. 2

### DISCUSSION

- Encourage timely Nephrology consult by the Primary team and prompt assessment and medical management of HD/AP patients by providers.
- Utilize appropriate temporizing measures as first line hemodialysis and apheresis treatments.
- Optimize shifts from 6AM to 2AM Monday to Saturday with the creation of the 4<sup>th</sup> shift instead of only the 3 shifts previously to facilitate necessary treatments.
- Continue Annual Welcome Reception/ Orientation for incoming Renal Fellows to hardwire practice and enhance engagement.
- Reinforce diligent completion of on-call forms by nurses to track and trend monthly on-call utilization.

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**Title:** Decreasing On-Call Utilization in N2/N8 Hemodialysis and Apheresis Unit

**Authors:** Maricel L.S. Calagui, MPA, BSN, RN, CNN

Uvannie Enriquez-Castro, MPA, BSN, RN, NEA-BC

**Department:** N2/N8 Hemodialysis and Apheresis Unit, New York-Presbyterian/ Weill Cornell

**1. Statement of the Problem:** *There has been an increased in number of emergent cases requiring Hemodialysis and Apheresis treatments performed by an on-call nurse outside of the Monday to Saturday 20- hour normal business hours in the N2/N8 Hemodialysis and Apheresis Unit of New York-Presbyterian Weill Cornell Medical Center. These emergent cases were done during on-call hours when an assigned on-call nurse was called from home to come in and provide the necessary treatment before all temporizing measures were instituted and response re-evaluated. The over utilization of on-call resources, especially with available temporizing measures like in cases of Hyperkalemia and Fluid Overload, may lead to higher operational costs and nurse burnout.*

**2. Objective/Aim of the study:** *This initiative is geared towards promoting efficient use of on-call resources by utilizing temporizing measures as first line Hemodialysis (HD) and Apheresis (AP) treatments. It aims to decrease the over-utilization of on-call resources while providing timely and efficient HD/AP treatments.*

**3. Project Design/Methods:** *P = Patients requiring emergent HD/AP treatments.*

*I = Does instituting temporizing measures and re-assessing*

*C= Compared to immediate HD/AP treatment during on-call hours*

*O= Decrease cases of emergent need for HD/AP treatment by 10%*

*T= Over a year from January 2019 to December 2019*

*S = N2/N8 Hemodialysis (HD) and Apheresis (AP) Unit.*

*Initial data of on-call utilization from January 2019 to June 2019 was collected from the on-call forms filled-out by nurses. Shifts were optimized with the addition of the 4<sup>th</sup> shift. On-call hours are from 2AM to 6AM Monday to Saturday and from 6AM Sunday to 6AM Monday. Medical treatments as temporizing measures were encouraged and used by Primary Team prior to Renal consult. The first ever Welcome Reception for incoming Renal Fellows was launched in July 2019.*

**4. Results:** *The N2/N8 HD/AP nurses were utilized for on-call at an average of 100 cases in the first 6 months of 2019 accounting for 54% of the total annual on-call cases.*

*Implementation of interventions in July 2019 decreased on-call use to 46% with only 86 on-call cases post-intervention. Findings showed that medical management and treatment of HD/AP emergencies were under-utilized pre-intervention at 41%. With the use of temporizing measures at 59% post-intervention, on-call use decreased by 8%.*

**5. Conclusions:** *The need for emergent HD/AP treatments is determined by the timely Nephrology consult of the Primary team after providing prompt assessment and medical management. Encouraging the use of temporizing measures as first line HD/AP treatments can minimize on-call utilization. It is vital to reassess the outcome to ascertain the need for HD/AP. Shift has been optimized up to 4<sup>th</sup> shift to facilitate necessary treatments. To hardwire practice and engagement, the Annual Welcome Reception/ Orientation for incoming Renal Fellows is important. Diligent completion of on-call forms by nurses to track and trend monthly on-call utilization has been reinforced.*

# REDUCING UNPLANNED EXTUBATIONS IN A LEVEL IV NICU

Sean Cullen MD PhD, Emily Ahn MD, Steven Pon MD, Carl Blake RRT, Rae-Jean Hemway MPA BSN RNC-NIC  
Kerry-Ann Mohrman BSN RN CBC, Jeffrey Perlman MB ChB, Snezana Nena Osorio MD MS, Priyanka Tiwari MD



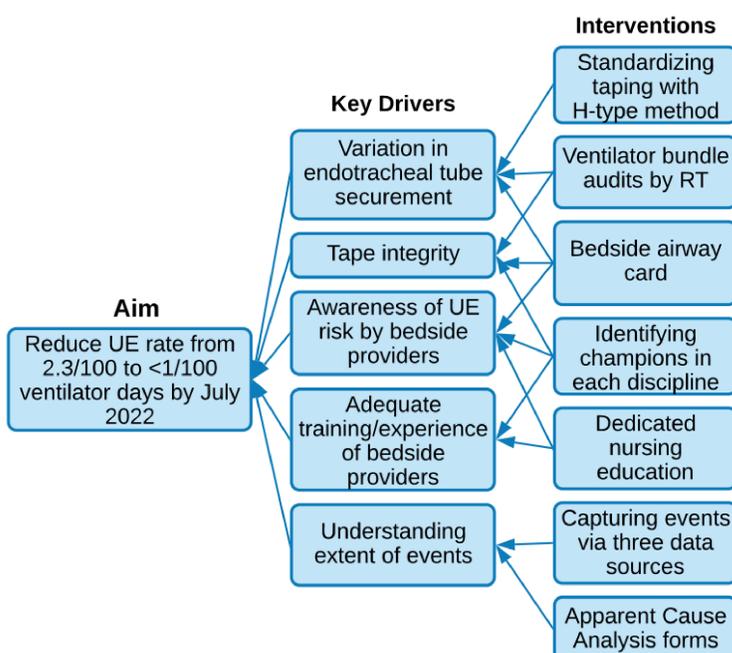
## Background

- Unplanned extubation (UE) is a frequent problem in the NICU
- UE is often due to short distance for optimal tracheal positioning, poor endotracheal (ET) securement, and use of minimal sedation
- UE can result in adverse events including the need for prolonged hospital stay, CPR or death

## SMART Aim

To reduce the rate of UE from 2.3/100 to less than 1/100 ventilator days by July 2022 in a level IV NICU

## Key Driver Diagram



## Methods

### Study Design:

Observational time series study with multiple planned sequential interventions

### Analysis:

Data were analyzed with statistical process control charts using rules for detecting special cause variation

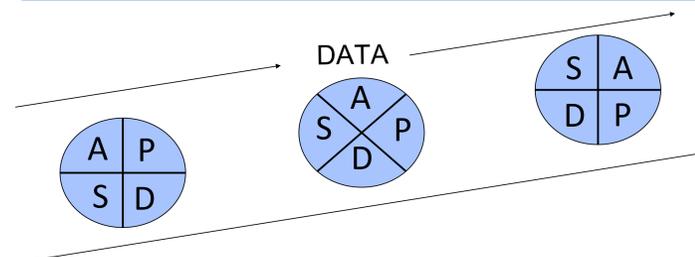
### Measures:

*Process:* Compliance with UE care bundle

*Outcome:* UE/100 ventilator days

*Balance:* Adverse events

## Plan-Do-Study-Act



### Cycle 1

- Capturing UE via three sources
- Introduction of in-line suctioning\*

### Cycle 2

- Identifying staff champions
- Nursing education
- RT audits and apparent cause analysis

### Cycle 3

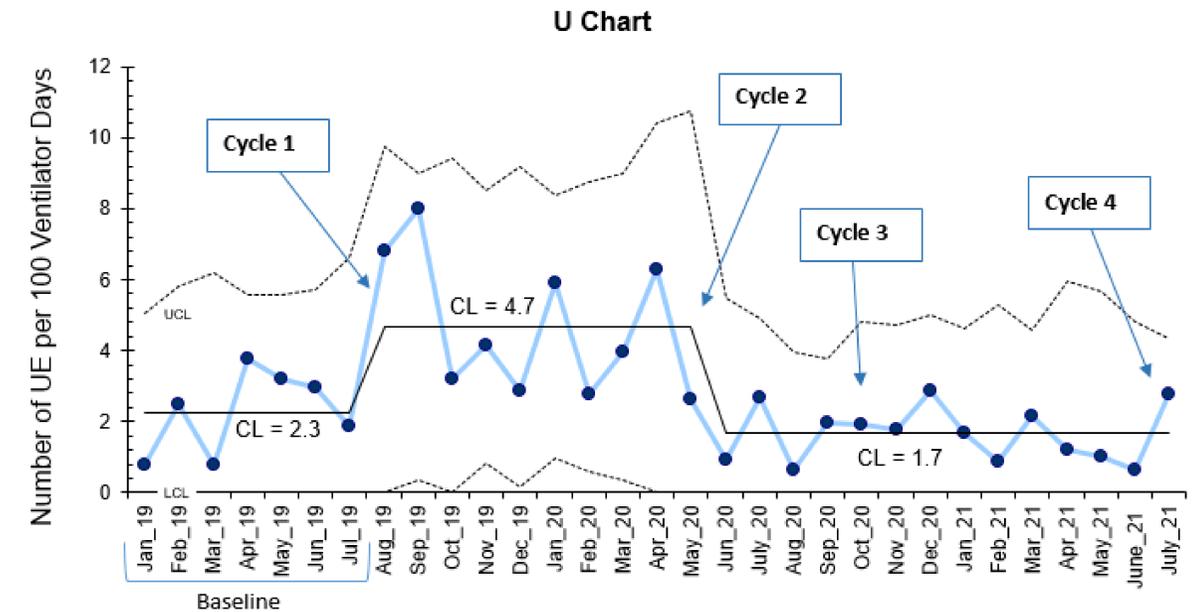
- Standardized ET taping

### Cycle 4

- Post event debriefs
- Introduction of airway cards

\* occurred at this time but not a study intervention

## Results



**Figure 1.** U-chart of UE/100 ventilator days per month  
UCL = Upper control Limit; LCL = lower control limit; CL = center line

- Baseline UE rate was 2.3/100 vent days
- Using three sources for UE identification and introduction of in-line suctioning increased the rate of UE
- Identifying champions, education, and audits/ACA forms reduced the rate of UE to below baseline
- No change was seen thus far from standardized taping
- Compliance with UE care bundle ranged between 70-100%
- No adverse events were reported

## Impact and Future Directions

- Despite an overall reduction in our UE rate our SMART Aim has not yet been obtained
- Next steps include assessing the effects of cycle 4
- Future PDSA cycles include development of a extubation readiness protocol

## Reducing Unplanned Extubations (UE) in a Level IV Neonatal Intensive Care Unit (NICU)

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<sup>1</sup>Division of Newborn Medicine, <sup>2</sup>Division of Pediatric Intensive Care Unit, <sup>3</sup>Respiratory Therapy, New York Presbyterian-Weill Cornell Medical Center

**Statement of the Problem:** UE is a frequent problem in the NICU due to short distances for optimal positioning, oral secretions impeding endotracheal tube (ET) securement, and use of minimal sedation. It has been associated with increased oxygen requirement and need for CPR.

**Objective:** Reduce the rate of UE from 2.3/100 to < 1/100 ventilator days by July 2022.

**Methods:** This ongoing quality improvement (QI) study utilized the model for improvement. A key driver diagram was developed and interventions derived from tertiary drivers. The ACA form and UE care bundle were adapted from the Solution for Patient Safety Network. Measures used include compliance with UE care bundle (process), UE/100 ventilator days (outcome), and number of adverse events during the new method of ET taping (balancing). Statistical process control charts (U-chart) were used to display and analyze data. Associates for Process Improvement rules for special cause were applied.

**Results:** Baseline rate of UE was 2.3/100 ventilator days (Figure 1). UE rates increased to 4.7/100 ventilator days with introduction of in-line suctioning devices and decreased to 1.7/100 ventilator days following identification of staff champions, education of proper in-line suctioning use, and adherence to RT-led audits and apparent cause analysis (ACA) forms. Thus far no change in UE rates were seen with standardization of ET taping. Compliance with UE care bundle ranged between 70-100%. No adverse events were reported.

**Conclusion:** Identifying champions, RT-led audits, ACAs and nursing education demonstrated a reduction in the UE rate. We hypothesize the initial increase in UE was secondary to the added weight of in-line suctioning device and lack of familiarity with the device use. Next steps include assessing the effects of implementing a patient airway card and post event debriefs. Future PDSA cycles include developing an extubation readiness protocol.

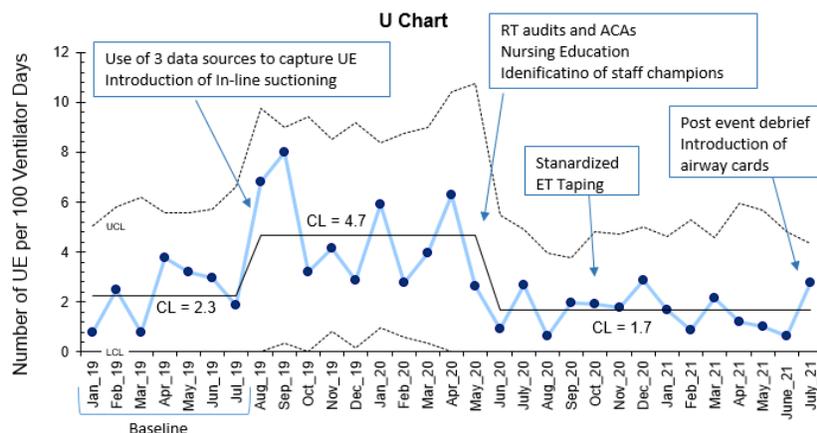


Figure 1. U chart of UE/100 ventilator days, showing decreased rate of UE over time.





## Problem Statement

Administration of ABO-incompatible blood products can lead to fatal outcomes particularly in the Emergency Department (ED) setting. Along the transfusion process map, blood collection-related errors are a significant cause of adverse transfusion reactions, and as such represent an opportunity for a focused Quality Improvement (QI) intervention.

## Objective/Aim

Our goal was to reduce blood bank specimen rejections caused by ED collection errors by 50% in three months.

## Design/Methods

This study took place at a large, urban academic medical center. Pre-intervention blood bank data on specimens drawn in the ED for the purpose of typing confirmation revealed that collection errors leading to specimen rejections were most commonly due to unacceptable draw times (UADT) for ABO Confirmation (ABO confirmations must be drawn more than 5 minutes after a type & screen), lacking phlebotomist identification (unsigned), insufficient quantity draws (QNS) and improper specimen labels. A multidisciplinary ED quality improvement project team therefore created, implemented and assessed three Plan-Do-Study-Act intervention cycles involving provider and nursing education, adjustments in electronic medical record (EMR) ordering sets, and establishment of hard stops in specimen labeling in order to reduce these practice errors. Monthly rejection averages for the year 2020 (January - September) were compared to monthly averages after (October 2020 – July 2021) implementation of QI interventions.

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## Reducing Emergency Department Specimen Rejection by the Blood Bank: An ED-BB Collaboration

Annual Weill Cornell Medicine Quality Improvement Poster session

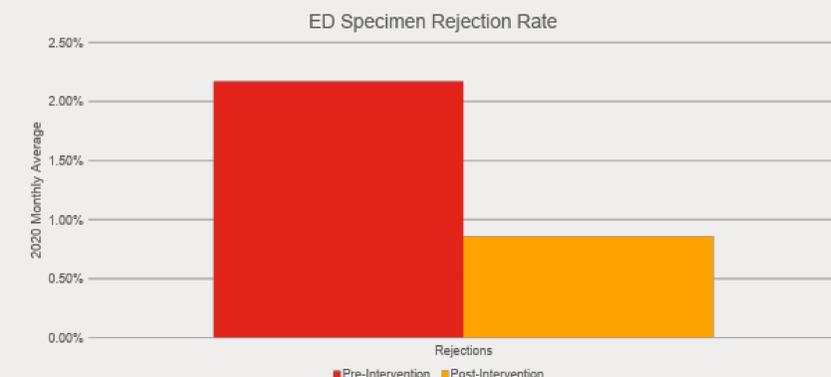
Daniel Golden, MD, MA | Tuesday, September 21, 2021

## Results

Reasons for ED specimen rejection were identified (in descending order of frequency) as: UADT, missing/illegible patient identifiers, unsigned tubes, order cancelled prior to specimen arrival, QNS specimen in tube, and improper collection technique. Following our QI interventions, the average monthly specimen rejection rate was reduced by 60% from 2.17% of specimens (18.0/829.8) to 0.86% of specimens (7.5/874.8). The largest change that took place was an 92% reduction in UADT rejections, from 1.42% of specimens (11.8/829.8) to 0.10% of specimens (0.9/874.8). In contrast, there has been a 3% increase in rejections due to other causes from 0.71% of specimens (5.89/829.8) to 0.73% of specimens (6.40/874.8).

## Conclusion/Lessons Learned

Safe blood transfusion practices represent a crucial patient safety goal. Process improvement measures aimed at reducing collection-related errors are often straightforward and actionable in the emergency setting. Staff education, in addition to simple logistical modifications within the EMR and improved specimen labeling may significantly reduce the high-risk wrong blood in tube events with the potential for fatal transfusion-related outcomes in the ED setting.



## Reducing Emergency Department Specimen Rejection by the Blood Bank: An ED-BB Collaboration

<sup>1,2</sup>Golden DL\*, <sup>3,4</sup>Cohen T\*, <sup>1</sup>Jacobowitz AM, <sup>1</sup>Gibson C, <sup>1,2</sup>Hennessy C, <sup>4</sup>Lo D, <sup>1</sup>McCarty M, <sup>3,4</sup>DeSimone RA, <sup>1</sup>Shemesh A

<sup>1</sup>Department of Emergency Medicine, Weill Cornell Medical College, New York, New York

<sup>2</sup>Emergency Medicine Residency, New York-Presbyterian Hospital, New York, New York

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<sup>4</sup>Department of Transfusion Medicine, New York-Presbyterian Hospital, New York, New York

\*Authors contributed equally

**Statement of Problem:** Administration of ABO-incompatible blood products can lead to fatal outcomes particularly in the Emergency Department (ED) setting. Along the transfusion process map, blood collection-related errors are a significant cause of adverse transfusion reactions, and as such represent an opportunity for a focused Quality Improvement (QI) intervention.

**Objective/Aim of Study:** Our goal was to reduce blood bank specimen rejections caused by ED collection errors by 50% in three months.

**Project Design/Methods:** This study took place at a large, urban academic medical center. Pre-intervention blood bank data on specimens drawn in the ED for the purpose of typing confirmation revealed that collection errors leading to specimen rejections were most commonly due to unacceptable draw times (UADT) for ABO Confirmation (ABO confirmations must be drawn more than 5 minutes after a type & screen), lacking phlebotomist identification (unsigned), insufficient quantity draws (QNS) and improper specimen labels. A multidisciplinary ED quality improvement project team therefore created, implemented and assessed three Plan-Do-Study-Act intervention cycles involving provider and nursing education, adjustments in electronic medical record (EMR) ordering sets, and establishment of hard stops in specimen labeling in order to reduce these practice errors. Monthly rejection averages for the year 2020 (January - September) were compared to monthly averages after (October 2020 – July 2021) implementation of QI interventions.

**Results:** Reasons for ED specimen rejection were identified (in descending order of frequency) as: UADT, missing/illegible patient identifiers, unsigned tubes, order cancelled prior to specimen arrival, QNS specimen in tube, and improper collection technique. Following our QI interventions, the average monthly specimen rejection rate was reduced by 60% from 2.17% of specimens (18.0/829.8) to 0.86% of specimens (7.5/874.8). The largest change that took place was a 92% reduction in UADT rejections, from 1.42% of specimens (11.8/829.8) to 0.10% of specimens (0.9/874.8). In contrast, there has been a 3% increase in rejections due to other causes from 0.71% of specimens (5.89/829.8) to 0.73% of specimens (6.40/874.8).

**Conclusion:** Safe blood transfusion practices represent a crucial patient safety goal. Process improvement measures aimed at reducing collection-related errors are often straightforward and actionable in the emergency setting. Staff education, in addition to simple logistical modifications within the EMR and improved specimen labeling may significantly reduce the high-risk wrong blood in tube events with the potential for fatal transfusion-related outcomes in the ED setting.



### BACKGROUND

- Over a third of diabetics suffer diabetic retinopathy, a third of which is advanced enough to be considered “vision threatening”<sup>1</sup>
- Several interventions (i.e., tight blood glucose, laser treatments) have been shown to significantly reduce the risk of blindness in these patients
- The Academy of Ophthalmology thus recommends annual eye exams to screen for retinopathy in diabetic patients<sup>2</sup>
- Compared to standard screening (e.g., dilated fundus exam by an ophthalmologist), remote digital screening modalities offers greater accessibility<sup>3</sup>
- WCMC’s percentage of diabetic patients screened annually over the last ten years has hovered between 27-39% (internal data)

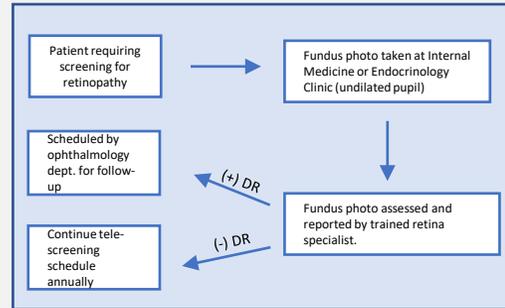
### PURPOSE

WCMC teleophthalmology service deployed four non-mydriatic (not requiring pupillary dilation) UWF fundus cameras (Optos, Marlborough, MA) to outpatient internal medicine and endocrinology offices within the Cornell system, operated by nurses and medical technicians. We seek to evaluate the efficacy of our tele-ophthalmology intervention in last 3 years.

### METHODS

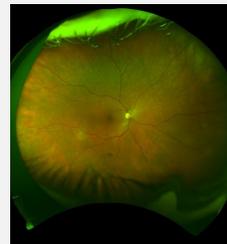
- Retrospective chart review of patients screened by our teleophthalmology service at Weill Cornell Medicine Ophthalmology from Aug 23, 2017 to February 29, 2020 (pre COVID-19).
- **Primary Outcome:** to determine the prevalence of diabetic patients who underwent a remote dilated or wide-angle fundus exam in the WCMC Primary Care Department.
- **Secondary Outcomes:** Severity of diabetic retina findings on wide-angle fundus photos, the percent of patients recommended for interval repeat teleretinal screening or referral for face-to-face follow-up in the eye clinic, and referral success rate.

### SCREENING PROCESS

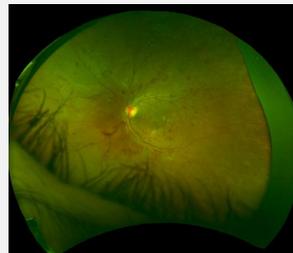


### UWF FUNDUS IMAGES

Normal without retinopathy



Abnormal with retinopathy



DM Retinopathy Severity Grade 1 <sup>st</sup> 100 patients	%
None	55%
Mild NPDR	25%
Mild NPDR + DME	2%
Mod NPDR	5%
Mod NPDR + DME	1%
Severe NPDR	1%
Severe NPDR + DME	1%
PDR	5%
PDR + DME	3%

### RESULTS

- >900 DM patients screened via teleophthalmology
- 840 patients analyzed, ongoing project
  - 18% (150) patients had some signs of diabetic retinopathy
  - 20% of patients had signs of “other” Ophthalmic disease such as glaucoma suspect (87 patients), AMD (25 patients), choroidal nevus (41 eyes)
- Thus far, of the patients with pathology, 79.9% have returned to the Ophthalmology clinic for the recommended follow up
- The vast majority of eyes had either no retinopathy (55%) or mild retinopathy (25%)
- We have identified WCMC primary care office locations with “lower” compliance rates of <20%, which may benefit from teleophthalmology screening

### CONCLUSIONS/NEXT STEPS

- Annual fundus exam compliance rates remain low
- Teleophthalmology may be a solution
- We have had success at WCMC thus far
- We are working on ways to improve and expand the teleophthalmology initiative which can lead to improved patient and WCMC/NYP outcomes
  - Place cameras in primary care locations with low fundus exam compliance rates
  - Encourage primary care providers to utilize it
    - Incentives?
    - Primary Care Physician Survey

### REFERENCES

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## **Project Name**

*Improving Quality Metrics Related to Diabetes and Diabetic Eye Examinations*

## **Authors**

Anton Orlin, Pamela Capellan, M. Abdallah Mahrous, Jason Chien, Stephanie Engelhardt & Szilard Kiss

## **Statement of the Problem:**

Diabetic retinopathy is a leading cause of vision loss in the United States. Annual screening with fundus examinations allows for early detection and treatment, which can drastically reduce the rate of vision loss. Despite this, fundus compliance rates remain low throughout the country.

## **Objective/Aim of the Study:**

The aim of this study is to improve the rates of fundus exam compliance and vision outcomes of the diabetic patients within the WCMC system. Our goal is to evaluate this teleophthalmology data-to-date, and to assess its efficacy and limitations, to improve future outcomes.

## **Project Design/Methods:**

Retrospective chart review of patients screened by our teleophthalmology service at Weill Cornell Medicine Ophthalmology from Aug 23, 2017 to February 29, 2020 (pre COVID-19). The primary outcome is to determine the prevalence of diabetic patients who underwent a remote dilated or wide-angle fundus exam in the WCMC Primary Care Department. Secondary outcomes include the severity of diabetic retina findings.

## **Results:**

We found the diabetic eye exam annual compliance rates to typically range from 25-30% at WCMC. To date, around 900 diabetic patients in the Primary Care Department, have been screened using teleophthalmology. 19% of the patients screened were determined to have any level of diabetic retinopathy. 20% of patients had “other” ophthalmic disease (87 were glaucoma suspect, 25 had macular degeneration, 41 had choroidal nevi). Those with abnormal findings were referred to our clinic. 79% of those patients successfully followed up. Of the patients referred for “in person” exam, 100 patients have undergone further evaluation to date. The majority of those patients had either no retinopathy (55%) or mild retinopathy (25%).

## **Conclusions:**

The goal of the tele-ophthalmology service at Weill Cornell Medicine Ophthalmology is to increase screening rates among the diabetic cohort seen at WCMC. Patients screened, typically had either no signs or very early/mild signs of diabetic retinopathy. Zero patients had advanced findings of vitreous hemorrhage or retinal detachment. This will allow for early detection, treatment, and improved outcomes when compared to symptomatic patients presenting to the eye clinic with more advanced disease. In addition, various other non-diabetic ophthalmic diseases, such as glaucoma and choroidal nevi were also detected early via this teleophthalmology screening program. Moving forward we plan on analyzing subsequent patients who have undergone teleophthalmology screening, and assess for any deficiencies and obstacles to the program (including a survey to all WCMC primary care providers, describing their experience thus far).

# Financial and Environmental Impact of an Initiative to Reduce Waste Related to Preparation for Emergency Cases

Deirdre C. Kelleher, MD, Jimmy Y. Lin, MD, Erin M. Adams, MD, Jason E. Crowther, MD, Shao Ping Yu, MPH, Patricia F. Mack, MD  
Department of Anesthesiology, Weill Cornell Medicine, NewYork-Presbyterian Hospital, New York, NY

## BACKGROUND

Preparedness is a cornerstone of quality anesthetic practice but can lead to over-preparation and waste. Advanced set-ups are potentially unsafe and discouraged by Joint Commission (JC).<sup>1</sup> Previously, a full anesthetic set-up was prepared nightly for emergency use. In 2020, a joint quality improvement (QI) initiative by the Anesthesiology Sustainability Committee and the Clinical Practice Committee (CPC) replaced this practice with a mobile emergency cart (Figure 1) and "virtual" medication kit. Utilizing a Plan-Do-Study-Act (PDSA) QI model, we quantified the monetary and environmental waste created by unused set-ups.

Figure 1. Full Emergency Set-up vs. New Mobile Cart



## METHODS

- †Emergency cases identified:
  - "Trauma, Burn, Critical Care" Surgeon
  - Emergency case status in record
  - ASA Physical Class 4 or 5
- Unused Set-up:
  - No emergency case
  - Not in designated OR
  - Not on night or weekend

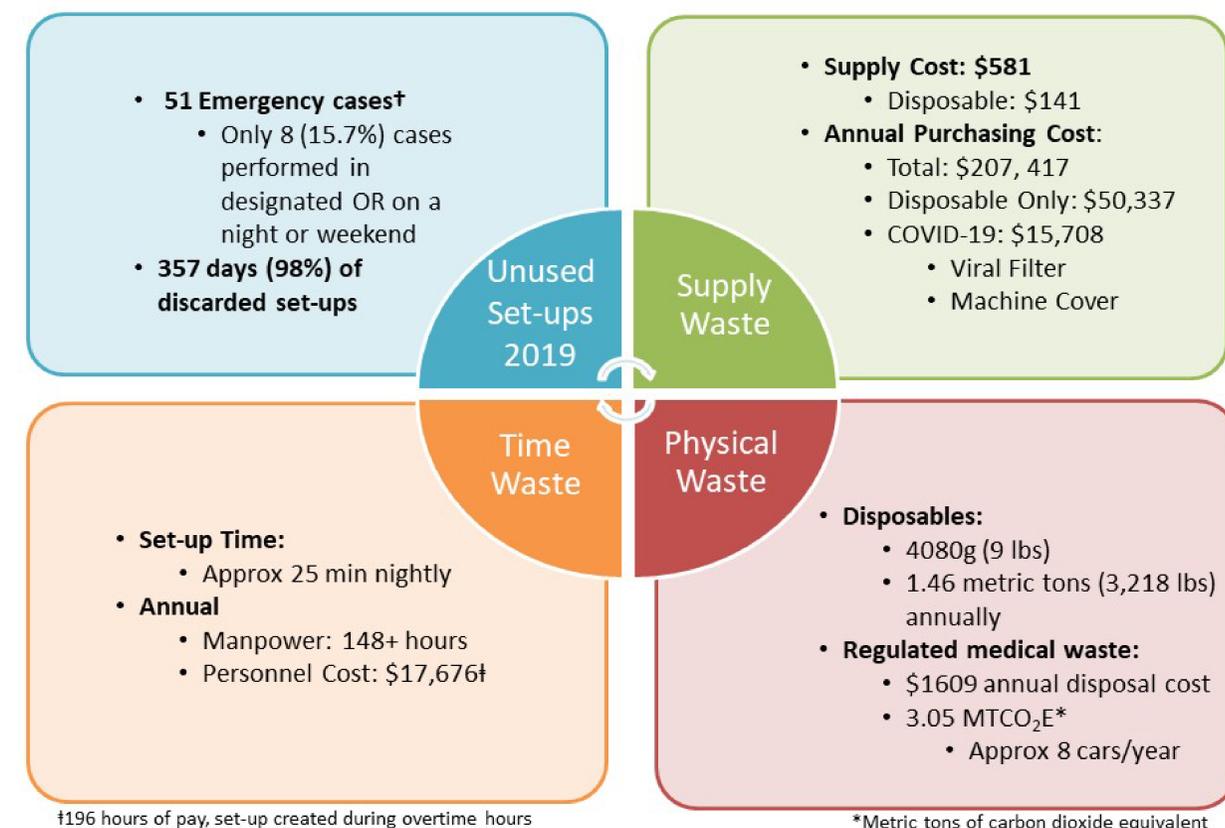
- Set-up Supplies Categorized:
  - Disposable: must be thrown away
  - Reusable: unopened, able to be used for another case
- Total Annual Purchasing Cost:
  - Materials Management and Pharmacy data

- Clinician Survey:
  - Time required for set-up
- Annual manpower hours
- Annual personnel costs
  - Costs estimated via published national CRNA salary (89.34/hour)<sup>5</sup>

- Disposables:
  - Weighed
  - Annual weight calculated
- Regulated medical waste:
  - Disposal cost: \$0.50 per pound<sup>2</sup>
  - Carbon emissions: online calculators<sup>3-4</sup>

## RESULTS

Based on estimate of 357 days that trauma set up was not used.



## CONCLUSION

Our prior practice was not only wasteful but also failed to prepare us for 84% of our emergency cases. The emergency case cart eliminates this systemic waste, potentially saving our department up to \$250,000 annually and conserving supplies and manpower. The mobile cart, available for any emergency at any time, improves our compliance with JC guidelines and our overall safety and preparedness. As part of our PDSA process, investigations into the frequency and ease of cart use are needed before expanding to other areas.

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## **Financial and Environmental Impact of an Initiative to Reduce Waste Related to Preparation for Emergency Cases**

Deirdre C. Kelleher, MD, Jimmy Y. Lin, MD, Erin M. Adams, MD, Jason E. Crowther, MD, Shao Ping Yu, MPH, Patricia F. Mack, MD

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

**Statement of the Problem:** Advanced preparation is a cornerstone of quality anesthetic practice. However, this culture has led to over-preparation and waste. The safety of advanced set-ups is now questioned, and The Joint Commission (TJC) guidelines discourage their use.<sup>1</sup> Previously, a full anesthetic set-up was prepared nightly for emergency use. In 2020, as part of quality improvement (QI), the Anesthesiology Sustainability Committee and the Clinical Practice Committee proposed replacing this practice with a mobile emergency cart, to reduce waste and better comply with national recommendations.

**Objective/Aim of the Study:** As part of the Plan-Do-Study-Act (PDSA) QI model, we sought to quantify the waste created by unused set-ups, including physical supplies and manpower and their associated costs (monetary and environmental).

**Project Design/Methods:** Using 2019 operational data, emergency cases were defined as those performed by “Trauma, Burn, and Critical Care” surgeons, documented as emergent, on ASA Physical Class 4 or 5 patients. The emergency set-up was considered used if an emergency case was performed in the designated operating room (OR) on a night or weekend. In all other situations, the set-up was considered discarded. Set-up contents were categorized as “disposable” (required to be discarded) or “reusable” (unopened or allowed to be used the next day) and their costs calculated using data from materials management and pharmacy. To quantify physical waste, “disposable” supplies were weighed. Trash removal was estimated at \$0.50 per pound, based on published averages for regulated medical waste.<sup>2</sup> Carbon emissions from the trash were estimated using online calculators.<sup>3-4</sup> To quantify time waste, clinicians were surveyed regarding the time needed to create the set-up. We estimated personnel cost based on published salaries for nurse anesthetists in our region (\$89.34/hour).<sup>5</sup>

**Results:** Of the 51 emergencies (as defined above) in 2019, only 8 (15.7%) would have used the emergency set-up, resulting in 357 (97.8%) days of discarded set-ups. The total cost of supplies was \$581, with \$141 in disposables. The estimated annual cost of discarded set-ups, ranges from \$50,337 (disposable supplies only) to \$207,417 (all supplies). COVID-19 precautions require a viral filter and machine cover (cost: \$44), adding an additional \$15,708 in waste annually. Disposable supplies weighed 4080g (9 lbs), creating 1.46 metric tons of waste (3218 pounds) annually and representing 3.05 metric tons of carbon emissions (MTCO<sub>2</sub>E) and \$1609 in annual waste removal. By clinicians’ report, the set-up requires 25 minutes to complete. Over a year, this represents over 148 hours (6 days, 4 hours, 45 minutes) and \$17,676 of salary dedicated to making discarded set-ups

**Conclusions:** Our prior practice was not only wasteful but also failed to prepare us for 84% of our emergency cases. The emergency case cart eliminates this systemic waste, potentially saving our department between \$50,000 and \$230,000 annually and conserving supplies and manpower. The mobile cart, available for any emergency at any time, improves our compliance with TJC guidelines and our overall safety and preparedness. As part of our PDSA process, investigations into the frequency and ease of cart use are needed before expanding to other areas.

**References:** 1. Neira JCV 2020 PMID: 33020001. 2. Practicegreenhealth.org 3.epa.gov/warm 4. Stopwaste.co/calculator 5. Registerednursing.org



### Context

During March of 2020, the NYC EMS system received an additional 1,128 EMS calls per day when compared to the same period in 2019. Despite additional units supplied by FEMA, patients could still not be evaluated by EMS in a timely manner. Starting March 31, 2020, area hospitals collaborated with FDNY to transfer low-acuity patients to be seen by telemedicine without an ambulance response.

### 911 Diversion to Telemedicine Workflow



Figure 1. 911 Diversion to Telemedicine workflow algorithm. Patients meeting specific inclusion criteria were transferred from 911 operator to NYP triage RN/PA. A more in depth history / screening process allowed for patients to be triaged to an NYP telemedicine visit or redirected back to FDNY dispatch for ambulance response.

### Characteristics of Diverted 911 Calls

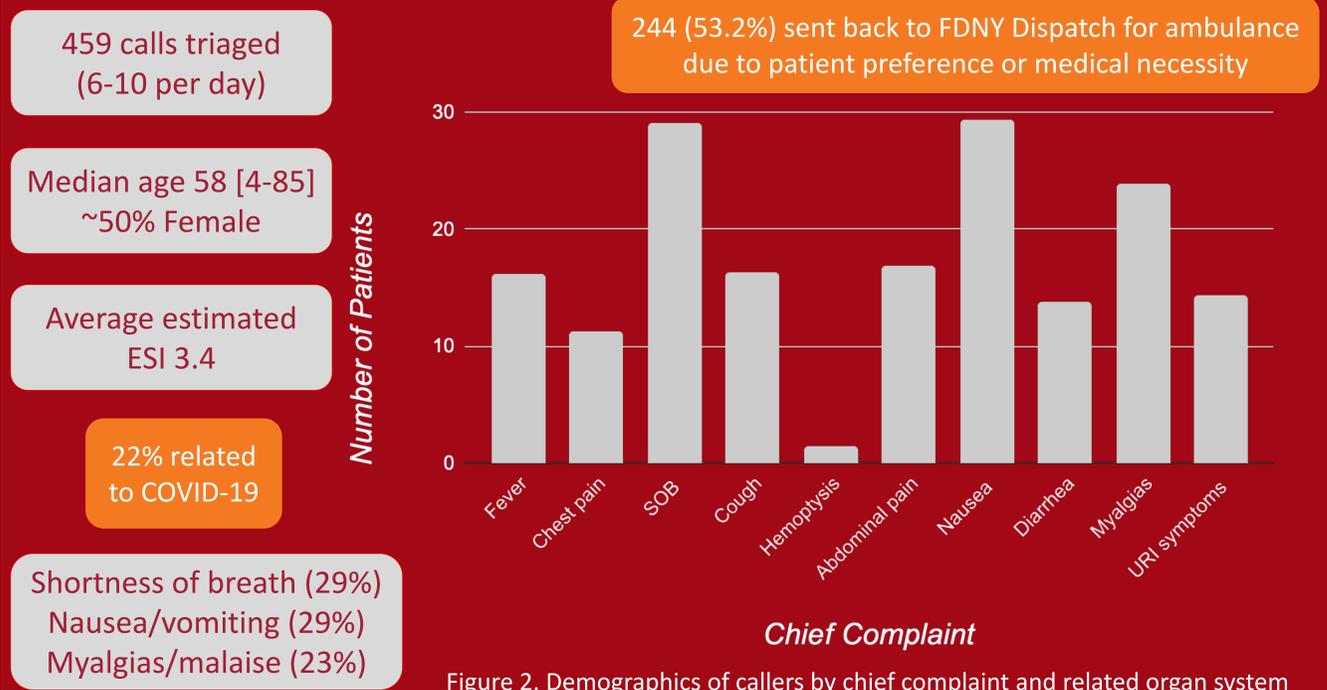


Figure 2. Demographics of callers by chief complaint and related organ system



### Diverted 911 Outcomes

Table 1. 48h Follow up of patients diverted to telemedicine. Follow up was attempted with callers 24-48H after initial diversion via RN.

- Among 320 attempted follow-ups, 144 patients (45%) were contacted
- Many patients (60%) called 911 again after triage
- None of the 15 patients completing a telemedicine visit sought additional care
- 33 patients were admitted to the hospital since the initial call, with one in the ICU

### Conclusions

Our institution **successfully** participated in a NYC-wide pilot to **divert** selected **911 calls** to hospital-based **telemedicine**, resulting in **fewer ambulance dispatches** and more appropriate allocation of EMS resources during the **COVID-19 pandemic**.

### However...

- Many callers sought subsequent care after diversion with some requiring hospitalization
- Patient acceptance of diversion decreased as pandemic conditions improved
- More specific initial screening algorithms, public education campaigns and streamlined IT workflows could significantly increase the volume and effectiveness of similar 911 diversion programs.

**Project Name:** 911 Call Diversion to Telemedicine during the COVID-19 Pandemic in New York City: Call Characteristics, Outcomes and 48-hour Follow-up at a Weill Cornell.

**Authors:** William Haussner MD, Matthew Laghezza PA, Jeanette Melchor RN, Rahul Sharma MD MBA, Brock Daniels MD MPH

**Statement of the Problem:** The COVID19 pandemic saw unprecedented increases in call volume to the New York City (NYC) 911 system. Several large health systems collaborated with the NYC Fire Department to transfer low-acuity 911 caller to hospital-based telemedicine services in to ease the burden on EMS. We describe our results from Weill Cornell along with the results of a nurse follow-up program for diverted calls.

**Objective/Aim of the Study:** To evaluate the safety and efficacy of 911 calls triaged to telemedicine without an ambulance response.

**Project Design/Methods:** Emergency dispatchers screened 911 calls using a computerized algorithm. Eligible calls were then transferred to hospital-based hotlines for further triage by a registered nurse (RN) or physician assistant (PA). An ambulance was dispatched for calls deemed not appropriate for telemedicine. Otherwise, medical information was given by the RN/PA or a telehealth visit was initiated. Data on demographics, clinical presentation and call outcomes were entered into a REDCap database during initial call. A RN attempted follow-up calls on all patients within 48 hours of initial during the first three months of the program

**Results:** Between 4/3/20-10/2/20, 459 calls were diverted to the triage line, averaging 6 to 10 calls per day. Calls originated from all five boroughs: Brooklyn (26.2%), Bronx (30.2%), Manhattan (23.5%), Queens (17.3%), and Staten Island (2.7%). The median age was 58 (range 4-85 years), and half were female. Shortness of breath (29%), nausea/vomiting (29%) and myalgias/malaise (23%) were the most common symptoms. Approximately 21.5% of calls were related to COVID-19. Among completed calls, 55% resulted in subsequent ambulance dispatch, most commonly due to medical necessity or patient preference. The proportion of calls resulting ambulance response after transfer increased as pandemic levels decreased largely due to patient preference. Among appropriate transfers, 35% were referred to telemedicine while 39% received medical advice from the triage RN/PA. However, only 15 patients were able to complete a telemedicine call, mostly due to technical issues accessing the telemedicine platform. Among the 320 attempted follow-ups, 144 patients (45%) were contacted. Many patients (60%) called 911 again after triage; none of the 15 patients completing a telemedicine visit sought additional care. Thirty-three patients had been admitted to the hospital since the initial call, with one patient in the ICU.

**Conclusions:** Weill Cornell Department of Emergency Medicine successfully participated in a NYC-wide pilot to divert selected 911 calls to hospital-based telemedicine resulting in fewer ambulance dispatches and more appropriate allocation of EMS resources during the pandemic. However, many callers sought subsequent care after diversion with some requiring hospitalization, and patient acceptance of diversion decreased as pandemic conditions improved. More specific initial screening algorithms, public education campaigns, and streamlined IT workflows could significantly increase the volume and effectiveness of similar 911 diversion programs



### Background

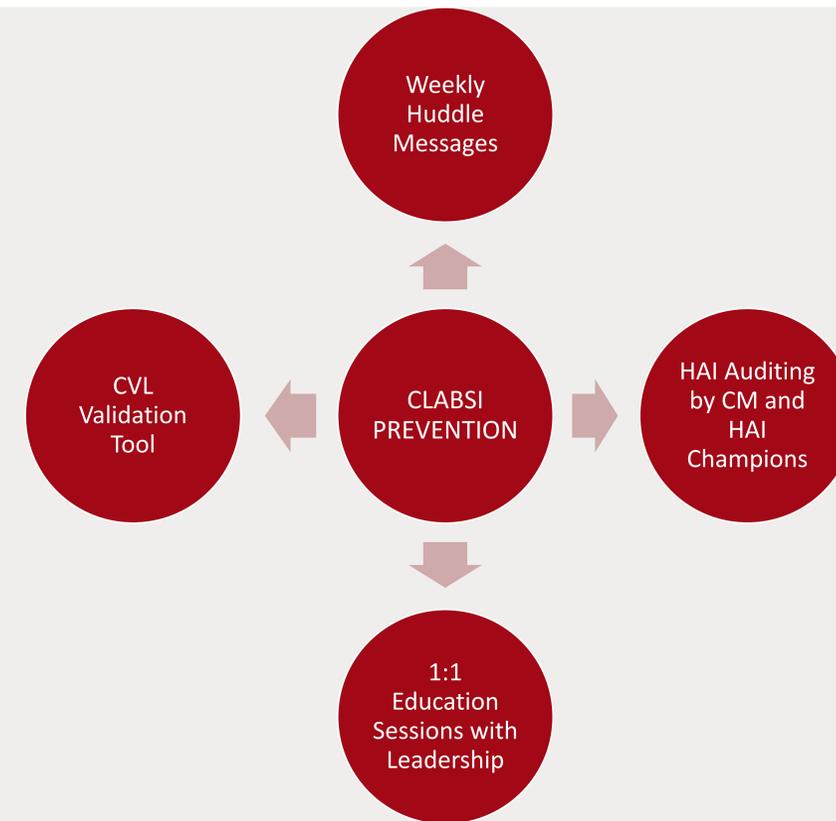
- Central line associated bloodstream infection (CLABSI) are one of the most prevalent hospital-acquired preventable infections experienced by patients, prolonging admissions and costing hospitals thousands of dollars per case (CDC, 2021).
- Oncology patients are at a considerably higher risk of developing central line infections due to their neutropenic status and disease process.
- In December 2020, a blended oncology and stem cell transplant unit, 10 North, experienced a cluster of 3 central line infections in a one month period after not having a CLABSI for 16 months.

### Purpose

- To reduce the total number of central line infections on 10 North by 15% and improve overall nurse competency on central line maintenance.

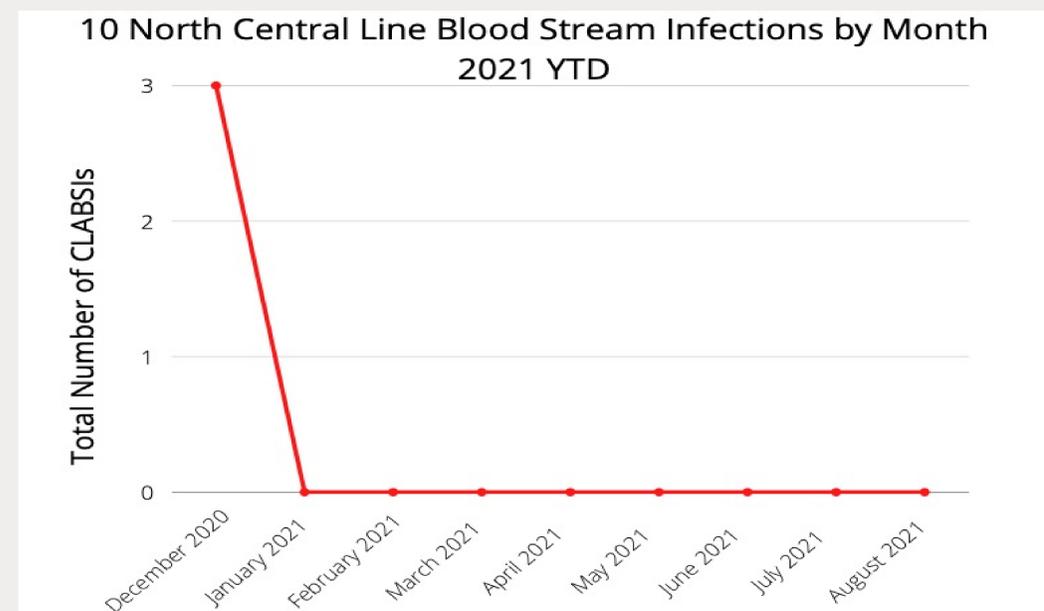
### Interventions

- Nursing leadership devised a central line validation checklist based on the organization’s policies to assess and provide mentorship to nurses on the following domains:
  - PICC, Broviac, Mediport dressing changes, blood culture and lab specimen collection, and chlorhexidine gluconate (CHG) treatment process.
- To provide consistency, the clinical manager and program coordinator validated all nurses.
- Validation highlighted 2 pivotal areas of opportunity for 10 North nurses:
  - blood culture and lab specimen collection process and CHG treatment process and pertinent patient education.
- Nursing leadership provided one-on-one mentoring for each nurse and provided them with the resources needed to care for central lines using evidence based practice.
- Nursing leadership collaborated with unit champions to develop education and huddle messages presented weekly.
- After the validation period, unit champions audit their peers monthly on central line best practice, with at least 10 audits per month.



### Evaluation

- All 10 North nurses were validated within 1 month, completed by the end of January 2021.
- After the validation period, there have been no new central line infections on 10 North, resulting in a **100% reduction** in CLABSI for this unit.



## **Utilizing Central Line Practice Validation to Reduce CLABSI (Central Line Associated Bloodstream Infection) Incidents on an Oncology Unit**

*Daniel Cernivani, BSN, RN, OCN, BMTCN & Dianna Assalone, MSN, RN, OCN, BMTCN*

**Background:** Central line associated bloodstream infection (CLABSI) are one of the most prevalent hospital-acquired preventable infections experienced by patients, prolonging admissions and costing hospitals thousands of dollars per case (CDC, 2021). Oncology patients are at a considerably higher risk of developing central line infections due to their neutropenic status and disease process. In December 2020, a blended oncology and stem cell transplant unit, 10 North, experienced a cluster of 3 central line infections in a one month period after not having a CLABSI for 16 months.

**Purpose:** To reduce the total number of central line infections on 10 North by 15% and improve overall nurse competency on central line maintenance.

**Intervention:** Nursing leadership devised a central line validation checklist based on the organization's policies to assess and provide mentorship to nurses on the following domains: PICC, Broviac, Mediport dressing changes, blood culture and lab specimen collection, and chlorhexidine gluconate (CHG) treatment process. To provide consistency, the clinical manager and program coordinator validated all nurses. Validation highlighted 2 pivotal areas of opportunity for 10 North nurses: blood culture and lab specimen collection process and CHG treatment process and pertinent patient education. Nursing leadership provided one-on-one mentoring for each nurse and provided them with the resources needed to care for central lines using evidence based practice. Nursing leadership collaborated with unit champions to develop education and huddle messages presented weekly. After the validation period, unit champions audit their peers monthly on central line best practice, with at least 10 audits per month.

**Evaluation:** All 10 North nurses were validated within 1 month, completed by the end of January 2021. After the validation period, there have been no new central line infections on 10 North, resulting in a 100% reduction in CLABSI for this unit. Continued mentorship, education, and auditing of best practice will ensure we continue to minimize our incidence of central line infections on 10 North, with the overarching objective to maintain a zero harm environment.

### **References**

Beaudry, J., & ScottoDiMaso, K. (2020). Central Line Care: Reducing central line--associated bloodstream infections on a hematologic malignancy and stem cell transplant unit. *Clinical Journal of Oncology Nursing*, 24(2), 148–153. <https://doi-org.ezproxy.cul.columbia.edu/10.1188/20.CJON.148-152>

Centers for Disease Control and Prevention. (n.d.). Centers for Disease Control and Prevention. <https://www.cdc.gov/>.

**Background**

- Central Venous Access Devices (CVADs), commonly known as central lines, should only be utilized when necessary for medical treatment.<sup>1</sup>
- The use of CVADs can cause morbid complications, including central line associated blood stream infections (CLABSIs).<sup>1</sup>
- CLABSI reduction strategies have been largely focused on device insertion and maintenance, with less attention paid to device discontinuation.<sup>4</sup>
- When no longer indicated for medical treatment, CVADs should be discontinued to reduce CLABSI risk.<sup>2</sup>
- An indication-based assessment tool promotes reduction of CVAD utilization as a CLABSI prevention strategy.<sup>2</sup>

**AIM**

This project was aimed to determine if the use of an RN assessment tool promotes the discontinuation of unnecessary CVADs and decreases Central Line Days in acute care inpatient settings.

**Methods**

- This assessment tool was created and implemented on 11 South A, a 23-bed blended Medicine Telemetry/Medicine Stepdown Unit at NewYork-Presbyterian Weill Cornell Medical Center
- The Standardized Utilization Ratio (SUR) for CVADs on this unit was 0.876 in 2019; below the comparable national average.
- Day-shift RNs were educated on the project, via email and in-person, and were asked to complete the assessment tool, Monday-Friday from August through October 2020 to coincide with the timing of Interdisciplinary Rounds.
- When completing the tool, the RNs were asked to assess the necessity of their patient’s CVAD based upon a list of potential indications.
- If the RN assessed that “no apparent indication” existed, the RN was prompted to discuss the CVADs ongoing necessity and potential for discontinuation with the primary medical team.
- RNs were asked to record their assessments and whether it resulted in the CVAD’s discontinuation.
- Central Line Days was used as a comparative measure of CLABSI risk reduction during the pre-implementation period and implementation period.

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**Assessment Tool**

**Step 1: Select Patient’s Central Venous Access Device (CVAD)**

- PICC (peripherally inserted central catheter)
- Central venous catheter (tunneled/non-tunneled, includes hemodialysis catheters)
- Implanted Port accessed with Huber Needle

**Step 2: Assessment - Select the current indication for CVAD**

- Intravenous (IV) infusions/antibiotics anticipated for ≥ 4 weeks
- Vesicants:
  - Chemotherapy
  - Total Parenteral Nutrition (TPN)
  - Other \_\_\_\_\_
- Poor peripheral access:
  - Unable to obtain suitable/reliable PIV or Midline
  - Frequent phlebotomy (≥ 3x/day)
- Hemodialysis
- End-of-life treatment
- Planned discharge with CVAD for IV infusions/antibiotics
- 
- No apparent indication

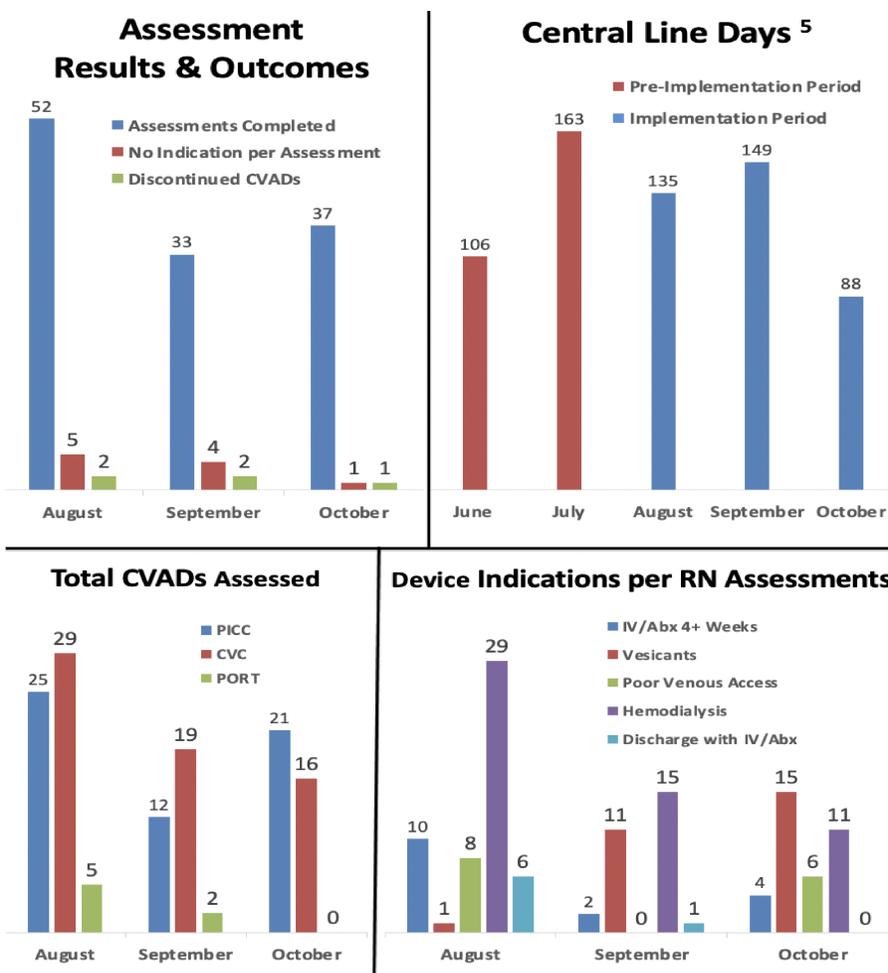
**Step 3: Results – Select result of CVAD assessment**

- Indicated per Step 2 (if selected, assessment is complete)
- No apparent indication exists per assessment - RN to prompt device removal discussion with primary medical team (proceed to Step 4)

**Step 4: Outcome – Select outcome of device removal discussion with primary medical team**

- CVAD removed
- CVAD remains as per medical team rationale: \_\_\_\_\_

**Results**



**Narrative Results**

- During the implementation period, a total of 122 assessments were completed by RNs.
- Of those 122 assessments, 10 CVAD assessments conducted by RNs had “no apparent indication” for medical treatment, which prompted device necessity discussions with the primary medical teams.
- Of those 10 device necessity discussions, 5 resulted in CVADs being promptly discontinued by the primary medical teams, as they were in agreement that the devices were no longer medically necessary.
- The remaining 5 discussions with the primary medical teams were repetitively initiated by RNs, as prompted by assessments, on two or more consecutive days until an agreement on the medical necessity was reached.
- All CVADs assessed by RNs as having “no apparent indication” were ultimately discontinued.
- As compared to the pre-implementation period, there was no statistically significant change in Central Line Days during the implementation period ( $P=0.698$ , 95% CI, -88.718 to 67.718), although an average monthly reduction of 8.1% was observed.

**Conclusion & Implications**

- RNs have the knowledge and understanding to correctly and accurately determine the ongoing necessity of CVADs for medical treatment in the acute care setting.
- Results suggest a daily indication-based CVAD necessity assessment can be included as part of a general nursing CVAD assessment.
- CVAD indication assessments can promote early device discontinuation as part of a unit’s CLABSI prevention strategy.
- The addition of an RN assessment tool that encourages interdisciplinary discussion can lead to increased nursing influence over its sensitive quality outcome indicators, such as CLABSI rates.
- Further research is needed to determine if the consistent use of an assessment tool would lead to a decrease in Central Line Days over time.

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# Web-based Tool to Assess Breast Cancer Risk at a Gynecologic Oncology Clinic



**Weill Cornell  
Medicine**

2021 Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Anna Cornelius-Schechter, Muhammad Ahsan, Jenny Lin, Nora Badiner, Eloise Chapman-Davis, Hannah Krinsky, Karen Bolouvi, Daniel Litvin, Evelyn Cantillo, Kevin Holcomb, Melissa K. Frey

## Background

- Approximately 13% of women in the U.S. develop breast cancer over their lifetime
- Approximately 40,000 women die from breast cancer annually
- Tyrer-Cuzick (TC) is a risk model that can identify women at high risk, offering the opportunity for intensive breast cancer screening
- However, completing TC is time-intensive and, as a result, the model has not been uniformly integrated into many outpatient clinics
- We aimed to evaluate a web-based tool to assess TC prior to new patient gynecologic oncology clinics
- **We hypothesize that use of a web-based tool to calculate TC breast cancer risk will be feasible and result in utilization of breast cancer screening for women at elevated risk**

## Methods

- All patients scheduled for a gynecologic oncology new patient appointment between 9/2019-8/2021 were offered enrollment in this IRB-approved prospective trial
- Enrolled patients were randomized to standard of care family history collection through a physician interview vs. utilization of a web-based tool
- Results of the randomized control trial will be presented separately at this conference
- Sub-analysis of patients that completed the web-based tool including the TC risk score
- TC lifetime breast cancer risk  $\geq 20\%$  were considered “high-risk” for breast cancer
- As part of the quality improvement project, patients at high-risk based on TC score were:
  - » Referred for genetic testing (if not previously completed)
  - » Referred for intensive breast screening including annual breast MRI/mammogram

### References:

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## Results

- 60 patients randomized to the web-based tool completed the TC risk model
- Among patients who completed the TC, 15 (25%) had a significantly elevated lifetime breast cancer risk score (defined as  $\geq 20\%$ )
- Among 8 patients without prior genetic testing, 8 (100%) were referred to genetic testing and 1 (13%) completed genetic testing
- Among 15 patients at high-risk for breast cancer based on TC score, 15 (100%) were referred for intensive breast screening

Table 1. Patients completing the Tyrer-Cuzick risk model identified as high risk

Median age	45 (23, 69)
Race	
White or Caucasian	12 (80%)
Black or African American	0 (0%)
Asian	1 (7%)
Native American/Alaskan	0 (0%)
Decline to answer	2 (13%)
Ethnicity	
Not Hispanic/Latino	12 (80%)
Hispanic/Latino	1 (7%)
Decline to answer	2 (13%)
Known prior BRCA mutation	2 (13%)
Prior breast cancer	0 (0%)
Prior genetic testing	7 (47%)

## Conclusion

- A web-based tool that collects personal and family health history and generates breast cancer risk is an exciting application of health information technology
- 100% of patients found to have an elevated lifetime breast cancer risk were referred for intensive breast cancer surveillance and 100% without prior genetic testing were referred for genetic testing
- Outpatient clinics should consider integrating web-based cancer risk models into care algorithms

## **Web-based tool to assess breast cancer risk for women presenting to a gynecologic oncology visit.**

**Authors:** Anna Cornelius-Schechter, Muhammad Ahsan, Jenny Lin, Nora Badiner, Eloise Chapman-Davis, Hannah Krinsky, Karen Bolouvi, Daniel Litvin, Evelyn Cantillo, Kevin Holcomb, Melissa K. Frey

**Background:** Approximately 40,000 women die from breast cancer each year in the United States, highlighting the importance of identifying high-risk women prior to breast cancer development. Risk models exist, including the Tyrer-Cuzick (TC) model but have not been widely implemented due to the time required to perform the risk assessment and interpret results. We aim to report our experience with a web-based application (WBA) to complete the TC model for women prior to a scheduled gynecologic oncology clinic visit.

**Methods:** All patients scheduled for a gynecologic oncology new patient appointment between 9/2020-9/2021 were offered enrollment in an institutional review board-approved prospective trial. Patients were randomized to standard of care gynecologic oncology visit versus utilization of a WBA completed either at home or in the office prior to the appointment (randomized 1:1:1). The WBA collects personal and family health history and utilizes this information to generate a TC score. As part of the trial protocol, women with a TC score reflecting a lifetime risk of breast cancer  $\geq 20\%$  were referred to the institution's high-risk breast clinic which provides counseling on genetic testing, breast screening and breast cancer prevention. The WBA also generated additional information on personal and family cancer, the results of which are reported separately.

**Findings:** One hundred and fifteen patients were randomized to utilization of the WBA (80 at home, 35 in office), which included completion of the TC model. Median patient age was 54 (range 23-88). Eighty-five patients (74%) completed the WBA. Fifty-two patients completed the WBA at home (65%). Thirty-three patients completed the WBA in the office (94%). Sixty (71%) patients entered sufficient information in the WBA to complete the TC model (34 (43%) at home, 26 (74%) in office). Of these patients, 15 (25%) had a significantly elevated lifetime breast cancer risk score (defined as  $\geq 20\%$ ). Prior to participation in this study, 7 (47%) of these high-risk patients had genetic testing and 2 (13%) had known BRCA mutations; however, none had a prior history of breast cancer. Nine (60%) of the patients who were identified as having elevated risk also met National Comprehensive Cancer Network (NCCN) guidelines for genetic testing, 6 of whom had prior genetic testing.

**Conclusions:** The COVID-19 pandemic has pressed the healthcare system to better utilize technology to provide safe and equitable medical care. A WBA for collection of personal and family health history and generation of cancer risk models completed prior to the physician appointment is an exciting application of such technology. When piloted in a gynecologic oncology practice, 71% of patients who completed the WBA entered sufficient information to complete the Tyrer-Cuzick risk model and 25% of these patients were found to have a significantly elevated breast cancer risk warranting follow-up care.



## Standardization of Night Rounds in the Pediatric Intensive Care Unit: A Fellow-led Quality Initiative Project

### Annual Weill Cornell Medicine Quality Improvement Poster session

Charles Bergman, Rebecca Jacobowitz, Julie Levasseur, Zachary Hena, Priyanka Mehrotra,  
Juliana Romano, Eric Wilsterman, Joseph Dario, Kristin Crosby, Arabela Stock, Megan Toal | September 21st, 2021

#### Problem:

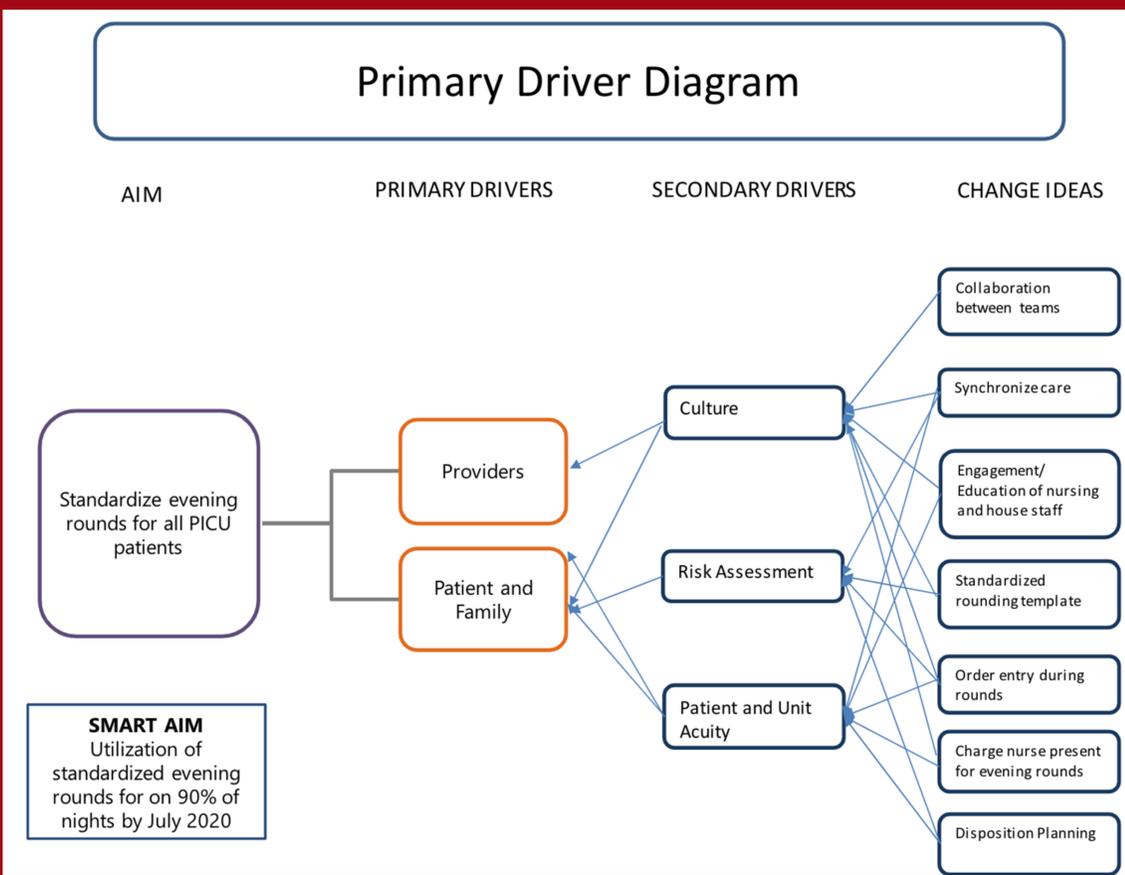
- The Pediatric Intensive Care Unit (PICU) team consists of many members who must constantly adapt to changes in the clinical status of the patients.
- Rounding is one way to ensure a shared mental model among the team.
- Although our unit had formal day time rounds, nighttime rounding was traditionally fellow-led and varied in quality, duration and in participation

#### Objective:

- To address the variability of nighttime rounding, we designed and implemented a formalized night rounding system and hypothesized that this would improve satisfaction and communication among PICU team members.

#### Methods:

- Pre-intervention data was collected via a survey distributed to all nurses inquiring about experience with night rounds.
- We implemented a standardized night rounding format that was fellow-led and included input and addressed concerns from all team members including the charge nurse and respiratory therapists.
- Surveys were redistributed after 6 months to elicit feedback. Data collected nightly included the total time spent rounding.



#### Night Rounding Format

**One liner** – given by the resident

- o includes patient summary and illness severity

#### Review Patient Status

- o Nurse provides updates
- o Nurse expresses any concerns

#### Action List

 – reviewed by fellow

- o Review plan for the evening
- o Discuss missing or needed orders
- o Lab schedule
- o Imaging
- Situational Awareness – by fellow
- o Promote shared mental model
- o Contingency planning for the evening

#### Synthesis

 – by nurse

- o Nurse repeats back plan
- o Review any additional concerns by medical team

#### Nursing Qualitative Feedback:

*“Since the idea of night rounding with the entire PICU team at night began, I feel that patient care is over all better. We are all on the same page regarding the night plan and questions are answered”*

*“As night charge it really helps keep updated on what’s going on the unit and what will happen for the rest of the shift”*

*“Everyone does a great job and communicates well. I feel like our teamwork has really improved”*

*“I really appreciate night rounds....it is nice to have a time dedicated to express nursing concerns.”*

*“I really like night rounds! I feel like it gives night nurses a say in care plans....”*

#### Results:

- There was an improvement in the frequency of night rounds from 40% to 72% by the end of the project. Of note, there was a 2-month disruption in this project due to COVID-19.
- 30 RNs completed the pre-intervention survey and 13 completed the post-intervention survey.
  - » 29.4% increase in the number of nurses who responded that they agree or strongly agree that there is a shared mental model regarding patient care among members of the PICU night team (55.2% vs. 84.6%).
  - » 21.7% increase in the number of nurses who responded they agree or strongly agree that they have a positive experience with night rounds (55.2% vs. 76.9%).

#### Conclusions:

- The implementation of standardized night rounding improved nursing satisfaction and communication among the team in our PICU. Efficiency improved as the length of time spent rounding decreased. Feedback from nurses and other providers was critical to develop and ensure the success of our new night rounding structure.

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3. Vats, Atul, MD, FAAP, Goin, Kristin, et al. The impact of a lean rounding process in a pediatric intensive care unit\*. *Crit Care Med.* 2012;40(2):608-617.

**Title:** Standardization of Night Rounds in the Pediatric Intensive Care Unit: A Fellow-led Quality Initiative Project

**Authors:** Charles Bergman, Rebecca Jacobowitz, Julie Levasseur, Zachary Hena, Priyanka Mehrotra, Juliana Romano, Eric Wilsterman, Joseph Dario, Kristin Crosby, Arabela Stock, Megan Toal

**Department:** Department of Pediatrics - Division of Pediatric Critical Care Medicine

**Statement of the Problem:** The Pediatric Intensive Care Unit (PICU) team consists of many members who must constantly adapt to changes in the clinical status of the patients. Rounding is one way to ensure a shared mental model among the PICU team. Although our unit had formal day time rounds, nighttime rounding was traditionally fellow-led and varied in quality, duration and in participation.

**Objective/Aim of the study:** To address the variability of nighttime rounding, we designed and implemented a formalized night rounding system and hypothesized that this would improve satisfaction and communication among PICU team members.

**Project Design/Methods:** This study was a quality improvement initiative led by the PICU fellows in a 23-bed PICU at a tertiary children's hospital. Pre-intervention data was collected via a survey distributed to all nurses inquiring about experience with night rounds. Our intervention was to implement a standardized night rounding format that was fellow-led and included input and addressed concerns from all team members. Additional effort was made to include the charge nurse and respiratory therapists in rounds. Surveys were redistributed after 6 months to elicit feedback. Data collected nightly included the total time spent rounding. During the height of the coronavirus-19 pandemic there was a disruption in data collection, however, night rounds continued.

**Results:** There was an improvement in the frequency of night rounds from 40% to 72% by the end of the project. Of note, there was a 2-month disruption in this project due to COVID-19. 30 nurses completed the pre-intervention and 13 completed the post-intervention survey. There was a 29.4% increase in the number of PICU nurses who responded that they agree or strongly agree that there is a shared mental model regarding patient care among members of the PICU night team (55.2% vs. 84.6%). There was a 20.9% increase in the number of PICU nurses who said they agree or strongly agree that they feel they know and understand the plan for patients at night (48.3% vs. 69.2%). There was a 21.7% increase in the PICU nurses who responded they agree or strongly agree that they have a positive experience with nighttime rounds (55.2% vs. 76.9%).

**Conclusions:** The implementation of standardized night rounding improved nursing satisfaction and communication among the team in our PICU. Efficiency improved as the length of time spent rounding decreased. Feedback from nurses and other providers was critical to develop and ensure the success of our new night rounding structure.

### Background: Telemental Health (TMH)

- Decades of research on TMH has supported its use in improving access to mental health care without compromising quality
- Barriers to TMH clinical implementation: patient and provider expectations and preferences for in-person care, regulatory obstacles, concerns regarding the appropriateness of virtual services, lack of access to technology, and difficulties with virtual service reimbursement
- In March 2020, the COVID-19 pandemic forced clinic closures and patients and providers were required to adopt TMH across the country
- Following this transition, we surveyed patients and providers of our two hospital campuses to understand their experiences with TMH

### Methods: TMH Patient and Provider Surveys

- Patient and provider-specific surveys (20-24 questions) were created and emailed to study participants across the Manhattan and Westchester campuses between July and October 2020
- Surveys included demographic information and questions regarding patient and provider experiences with TMH

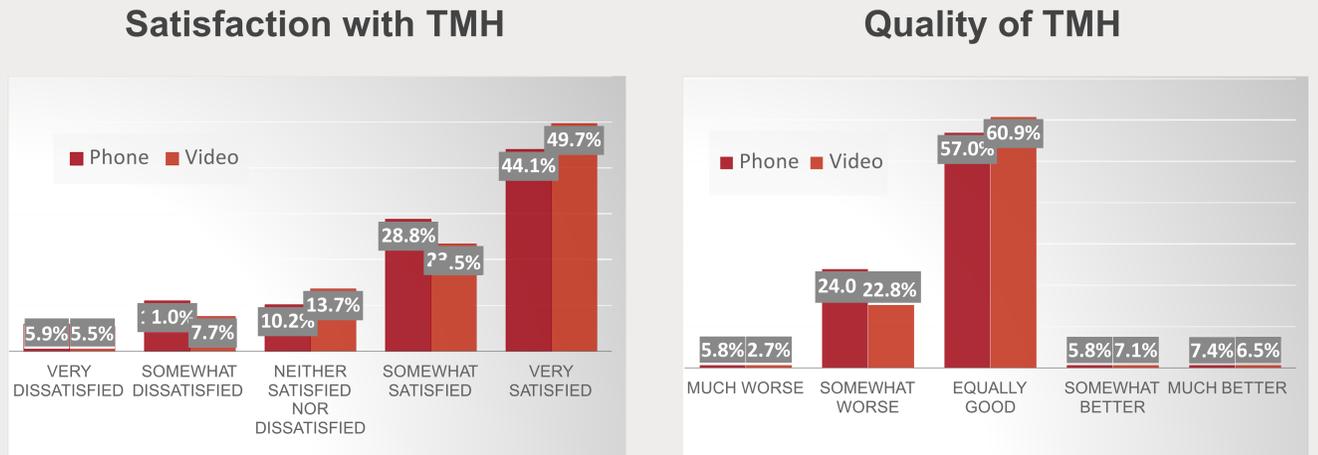
### Results: TMH Patient and Provider Surveys

- Patient and provider characteristics:

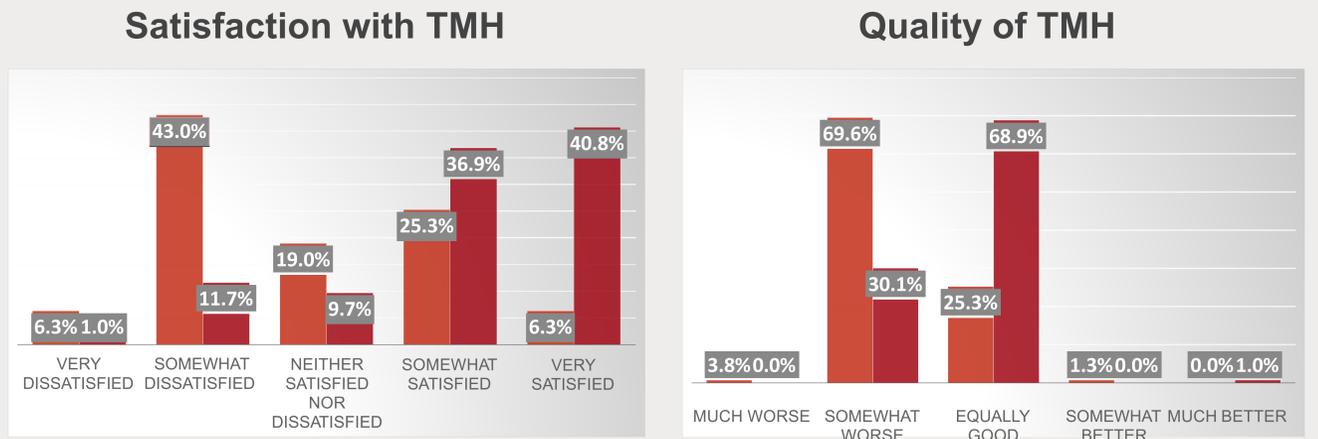
Outpatient Respondents N = 247	Total Responses N (%)
<b>Gender</b>	214
Male	66 (31%)
Female	148 (69%)
<b>Age</b>	219
18-45	83 (38%)
46-65	82 (37%)
>66 Years old	54 (25%)
<b>Race</b>	207
Black	16 (8%)
Latinx	16 (8%)
White	164 (79%)
Other	11 (5%)
<b>Insurance</b>	215
Private	101 (47%)
Public	107 (50%)
None/Unknown	7 (3%)
<b>Income</b>	167
Up to 40k	71 (42.5%)
40-85k	46 (27.5%)
>85k	50 (30%)

Provider Respondents N = 122	Total Responses N (%)
<b>Years in Practice</b>	92
0-5 years	23 (25%)
6-10 years	16 (17%)
11-15 years	17 (18%)
16-20 years	9 (10%)
21+ years	27 (29%)
<b>Clinical Setting</b>	143
Adult Population	80 (56%)
Partial Hospital or Day Program	24 (17%)
Child/Adolescent	39 (27%)

### Patient Results: TMH Quality and Satisfaction



### Provider Results: TMH Quality and Satisfaction



### Conclusions, Limitations, Future Directions

- Patients found TMH more accessible, convenient, and flexible, while also eliminating transportation time and costs. Frustrations included technical difficulties, privacy, and concerns about sessions from home
- Patients and providers are generally satisfied with TMH, despite finding the quality of care to be the same or somewhat worse compared to in-person care. Patient and providers are interested in a hybrid model of care.
- Limitations: selection bias (non-random sample, digital survey), less racially diverse population than clinic/community, technology barriers
- Future research must identify barriers to TMH and systemically work to address these barriers to improve access to mental health care.

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Title: Patient and Provider Experiences of Telemental Health During the COVID-19 Pandemic in a New York City Academic Medical Center

Authors: Abigail Benudis, M.D., M.P.H.; Yochai Re'em, M.D.; Dora Kanellopoulos, Ph.D.; Andrew Moreno; Jess Zonana, M.D.

Department: Psychiatry

- 1. Statement of the Problem:** Decades of research on telemental health (TMH) have supported its use in improving access to mental health care without clearly compromising quality [1],[2],[3],[4]. In pre-pandemic research, patient satisfaction with TMH tended to be positive, while provider opinions about TMH improved with use [5]. Despite the accumulation of favorable evidence, there have been significant barriers to TMH clinical implementation. In March 2020, the COVID-19 pandemic forced clinic closures and required patients, providers, and healthcare systems alike to adopt TMH.
- 2. Objective/Aim of the study:** We aimed to evaluate patient and provider experiences with TMH at an academic outpatient psychiatry department in New York City.
- 3. Project Design/Methods:** Patients and providers completed online surveys evaluating their experience with TMH during the COVID-19 pandemic. Surveys were distributed to 1,178 patients and 287 providers from July - October 2020.
- 4. Results:** 42.5% of providers and 21% of patients responded to the survey. The majority of patient and provider respondents rated the quality of phone and video visits as “equally good” or “somewhat worse” than in-person visits, while the majority of respondents were “somewhat satisfied” or “very satisfied” with video visits. Patients and providers preferred a hybrid model for future care. Common barriers to TMH included privacy, technical difficulties, and wi-fi access.
- 5. Conclusions:** Patients and providers appeared willing to exchange some degree of quality for satisfaction with TMH. This study did not demonstrate with statistical significance any specific patient populations that would benefit more or less from TMH, suggesting that TMH may be a successful model for diverse patient populations. Our results suggest that providers, payors, and regulators should facilitate hybrid care delivery models that incorporate TMH beyond the pandemic.

References:

- [1] Berryhill MB, Culmer N, Williams N, Halli-Tierney A, Betancourt A, Roberts H, King M. Videoconferencing Psychotherapy and Depression: A Systematic Review. *Telemed J E Health*. 2019 Jun;25(6):435-446.
- [2] García-Lizana F, Muñoz-Mayorga I. What about telepsychiatry? A systematic review. *Prim Care Companion J Clin Psychiatry*. 2010;12(2):PCC.09m00831.
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# A Quality Improvement Initiative to Assess Feasibility of an Evidence-Based Group Therapy Intervention in the Neonatal Intensive Care Unit

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## Background

- Having an infant hospitalized in the NICU significantly increases a parent's risk for anxiety, depression and PTSD.
- Psychiatric conditions affect a parent's quality of life and negatively impact child development and wellbeing, thus identifying and treating mental health problems in NICU parents should be a priority.
- Prior to our intervention, the NYP/Weill Cornell NICU did not offer any evidence-based mental health treatment interventions for NICU parents.

## Objectives

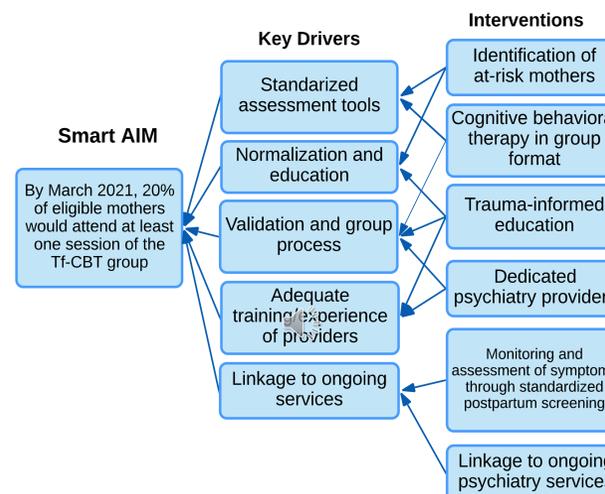
- The aim of this study was to assess the feasibility of implementing a Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) group for mothers of infants with prolonged NICU stays (> 3 weeks)
- Our SMART aim was that by March 2021, 20% of eligible mothers would attend at least one session of the TF-CBT group.

## Methods

- We assessed the feasibility of implementing a 6-session manual-based TF-CBT psychotherapy program validated for NICU parents.
- Group was conducted virtually twice a week for 3 weeks, led by a psychology post-doctoral fellow and a NICU social worker.
- Two rounds of recruitment and group programming were completed between December 2020 and March 2021.
- Eligibility criteria included English-speaking mothers of babies either born at < 32 weeks EGA or with congenital/cardiac anomalies that are likely to remain admitted for > 3 weeks from start date of group.
- All eligible mothers were approached by the group leaders to assess interest and screen for appropriateness for group therapy modality (i.e. no acute safety concerns).
- Data was collected by group leaders at all stages of recruitment and throughout the 6-session group intervention. Descriptive statistics were used for data analysis.

## Methods (continued)

Figure 1: Driver Diagram

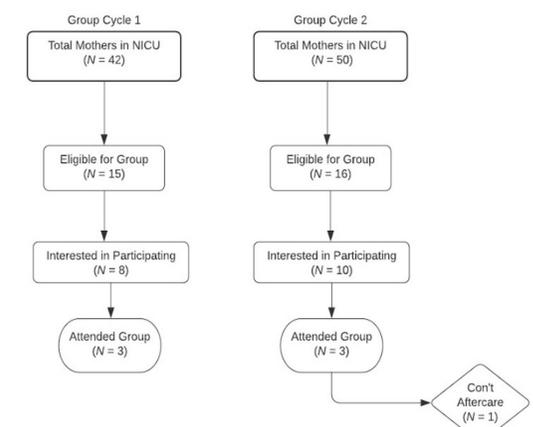


## Results

- 1st cycle (12/07/2020 - 12/23/2020): 15 out of 42 mothers were eligible (36%), 8 of 15 were interested (53%), 3 attended (20% of eligible mothers). 0 continued aftercare.
- 2nd cycle (02/08/2021-03/01/2021): 16 out of 50 mothers were eligible (32%), 10 of 16 were interested (63%), 3 attended (19% of eligible mothers).
- 1 enrolled in women's clinic/followed beyond group completion.

## Results (continued)

Figure 2: Process Map



## Conclusions

- A large proportion of mothers were eligible for our groups (32-36%) and approximately 20% of those we were eligible chose to attend groups, which met our SMART aim.
- Barriers to participation included mothers returning to work, change in infant's medical status, and infant discharge from the hospital.
- Cost of implementation was low (2 hrs/week, < .05 FTE per clinician)
- Training, recruitment and outreach was efficient (~ 1 hr/ week)
- Mothers expressed satisfaction with virtual platform, ability to connect with NICU mothers, which had previously been limited due to NICU design (single-family rooms) and COVID-19 related social distancing measures, and reported benefit from interventions
- Future plans include expanding the inclusion criteria and to obtain baseline depression, anxiety and PTSD screens and to follow those screens throughout the Tf-CBT group.

## References

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## A Quality Improvement Initiative to Assess Feasibility of an Evidence-Based Group Therapy Intervention in the Neonatal Intensive Care Unit

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### **Statement of the Problem:**

Having an infant hospitalized in the NICU significantly increases a parent's risk for anxiety, depression and PTSD. These psychiatric conditions affect a parent's quality of life and negatively impact child development and wellbeing, thus identifying and treating mental health problems in NICU parents should be a priority. Prior to our intervention, the Cornell NICU did not offer any evidence-based mental health treatment interventions for NICU parents.

### **Objective/Aim of the Study:**

The aim of this study was to assess the feasibility of implementing a Trauma-Focused Cognitive Behavioral Therapy (TF-CBT) group for mothers of infants with prolonged NICU stays. Our SMART aim was that by March 2021, 20% of eligible mothers would attend at least one session of the TF-CBT group.

### **Methods:**

We assessed the feasibility of implementing a 6-session manual-based Tf-CBT psychotherapy program designed specifically for NICU parents. The group was conducted virtually twice a week for 3 weeks, led by a psychology post-doctoral fellow and a NICU social worker. Two rounds of recruitment and group programming were completed between December 2020 and March 2021. Eligibility criteria included English-speaking mothers of babies either born at < 32 weeks EGA or with congenital/cardiac anomalies that are likely to remain admitted for  $\geq 3$  weeks from start date of group. All eligible mothers were approached by the group leaders to assess interest and screen for appropriateness for group therapy modality (i.e. no acute safety concerns). Data was collected by group leaders at all stages of recruitment and throughout the 6-session group intervention. Descriptive statistics was used for data analysis.

### **Results:**

1st cycle (12/07/2020 - 12/23/2020): 15 out of 42 mothers were eligible (36%), 8 of 15 were interested (53%), 3 attended (20% of eligible mothers). 0 continued aftercare.

2nd cycle (02/08/2021-03/01/2021): 16 out of 50 mothers were eligible (32%), 10 of 16 were interested (63%), 3 attended (19% of eligible mothers). 1 enrolled in women's clinic/followed beyond group completion.

### **Conclusions:**

We found that a large proportion of mothers were eligible for our groups (32-26%) and approximately 20% of those we were eligible chose to attend groups, which met our SMART aim. Challenges to attendance included mothers returning to work, change in infant's medical status, and infant discharge from the hospital. The cost to implementation was low and the training process was simple. Mothers expressed satisfaction with virtual platform in that they could attend while at the infant's bedside or home. The group program also allowed for increased socialization between NICU mothers, which had previously been limited due to NICU design (single-family rooms) and COVID-19 related social distancing measures. We found that there was a high level of interest and sufficient participation in evidence-based group psychotherapy programming among the NICU mothers in our population. Future plans include expanding the inclusion criteria and to obtain baseline depression, anxiety and PTSD screens and to follow those screens throughout the TF-CBT group.

### Statement of the problem:

- ❖ Poor coordination of care for the cardiac patient during the transition between the hospital and ambulatory setting has several negative downstream consequences that impact quality and safety of patient care, including:
  - » patients missing hospital follow up appointments
  - » readmission to the hospital
  - » Medicine reconciliation errors leading to patient safety events
  - » significant cost to the health care system
  - » Negative impact on overall patient experience
- ❖ Our focus in this project is to improve the cardiac transition of care for the hospitalized patient through improving communication and coordination between the inpatient and outpatient settings.



### Objective and Design:

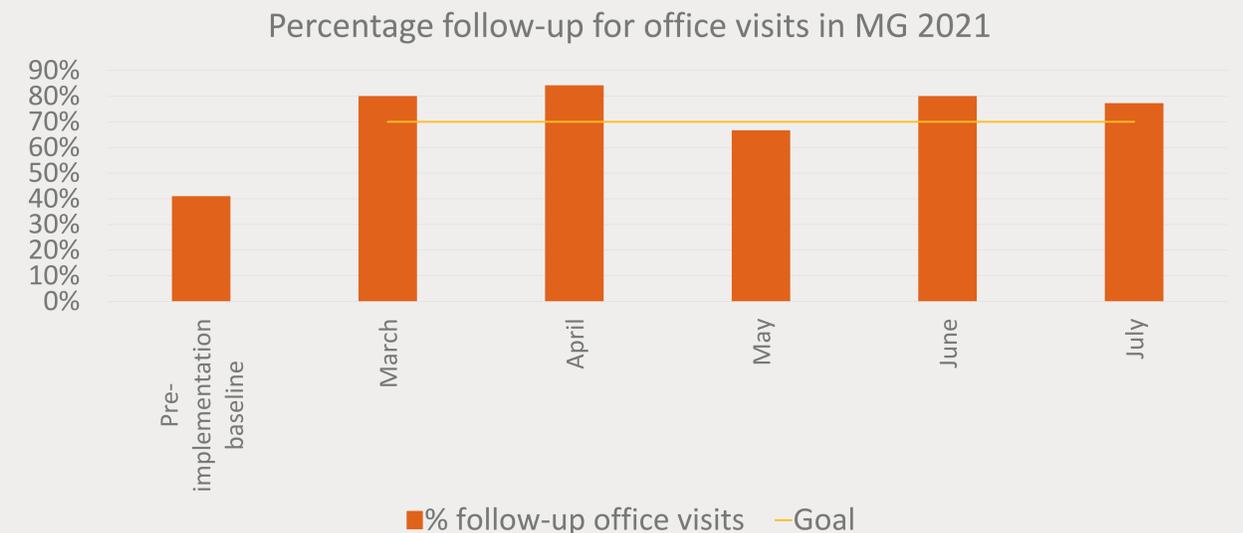
- ❖ The aim of the project was to create and establish a program to coordinate transitional care for the cardiac patient.
- ❖ A multidisciplinary team consisting of members from the inpatient and outpatient cardiology and radiology departments was formed. The IHI's model for improvement was used as a framework. Multiple PDSA cycles were conducted for each test of change.
 

The project measures are as follows:

  - » Improve compliance with percentage of post hospital discharge follow-up appointments
  - » Establish the transitional care management visit for the medical group setting

### Results:

The cardiology transitional team was successfully created and conducted PDSAs on a small subgroup of patients. The cardiology consult service identified patients requiring hospital follow-up visits once discharged. The transitional care team then coordinated with the patient, medical group, and the insurance to set up the appropriate transitional management visit within two weeks of discharge. Additionally, a member from the team reached out to the patient within two days of discharge to document the patient's clinical status and perform a medicine reconciliation.



### Conclusion:

While ensuring that the patient is firmly established as an outpatient, we identified a gap with the compliance of post hospital follow-up appointments. The cardiac transition team took over creating the outpatient post hospital follow-up appointments instead of leaving it to the patient to call for an appointment or the hospital patient navigators. It was clear that forming a dedicated cardiac transition team ensured a more clear and effective method of providing patients appropriate cardiology follow up appointments. This improved the percent of successful follow up appointments, and is anticipated to lead to improved quality of care as well as reduced readmissions. Additionally, we hope this initiative will reduce potential medication errors that frequently occur in the transitional period and lead to an overall improved patient experience.

***Project Name:***

Improve transition of cardiac care.

***Authors:***

Gregory Pontone, MD; Joseph Verrengia; Keziah NarayanaJaya, PA; Cammy Zheng; Leonid Lipkovich; Erin Moroney; Latha Subramaniam, MD

***Statement of the problem:***

Poor coordination of care for the cardiac patient during the transition between the hospital and ambulatory setting has several negative downstream consequences that significantly impact quality and safety of patient care. One problem arising from poorly structured transition is that many patients miss follow-up appointments that are scheduled upon discharge. This results in unnecessary and costly readmissions to the hospital. Additionally, inadequate follow-up for medicine reconciliation leads to potential medication errors and patient safety issues. Lastly, overall patient experience is negatively impacted. Our focus in this project is to improve the cardiac transition of care for the hospitalized patient through improving communication and coordination between the inpatient and outpatient settings.

***Project Design/Methods:***

A multidisciplinary team was formed to establish the aim of the project. The team consists of members from the inpatient and outpatient cardiology and radiology departments. The IHI's model for improvement was used as a framework. Multiple PDSA cycles were conducted for each test of change. The project measures are as follows:

- Improve compliance with percentage of post hospital discharge follow-up appointments
- Establish the transitional care management visit for the medical group setting

***Results:***

The cardiology transitional team was successfully created to conduct PDSAs on a small subgroup of patients. The cardiology consult service identified patients requiring hospital follow-up visits once discharged. The team coordinated with the patient, medical group, and the insurance to set up the appropriate transitional management visit within two weeks of discharge. Additionally, a member from the team reached out to the patient within two days of discharge to document the patient's clinical status and perform a medicine reconciliation.

The team continues to work on establishing the transitional care management visit. We realized through the PDSA cycles, that there needs to be an automated reminder to place a call to the patient within a 2-day timeframe post hospital discharge. The team is currently working on methods to capture the exact timing the call can be made to the patient via the electronic health record system (EPIC).

***Conclusion:***

There were many lessons learned and barriers that were encountered throughout the process. While ensuring that the patient is firmly established as an outpatient, we identified a gap with the compliance of post hospital follow-up appointments. We noted the importance of the two day follow-up phone call to ensure patient follow-up and to serve as the first line of medicine reconciliation. The cardiac transition team took responsibility over creating the outpatient post hospital follow-up appointments instead of leaving it to the patient to call for an appointment or the hospital patient navigators. It was clear that forming a dedicated cardiac transition team ensured a more clear and effective method of providing patients appropriate cardiology follow up appointments. This improved the percent of successful follow up appointments, and is anticipated to lead to improved quality of care as well as reduced hospital readmissions. Although there were many challenges encountered during the course of the project, the cardiology transition team proved to be successful in improving the overall patient experience and will result in improved patient outcomes.

## Background

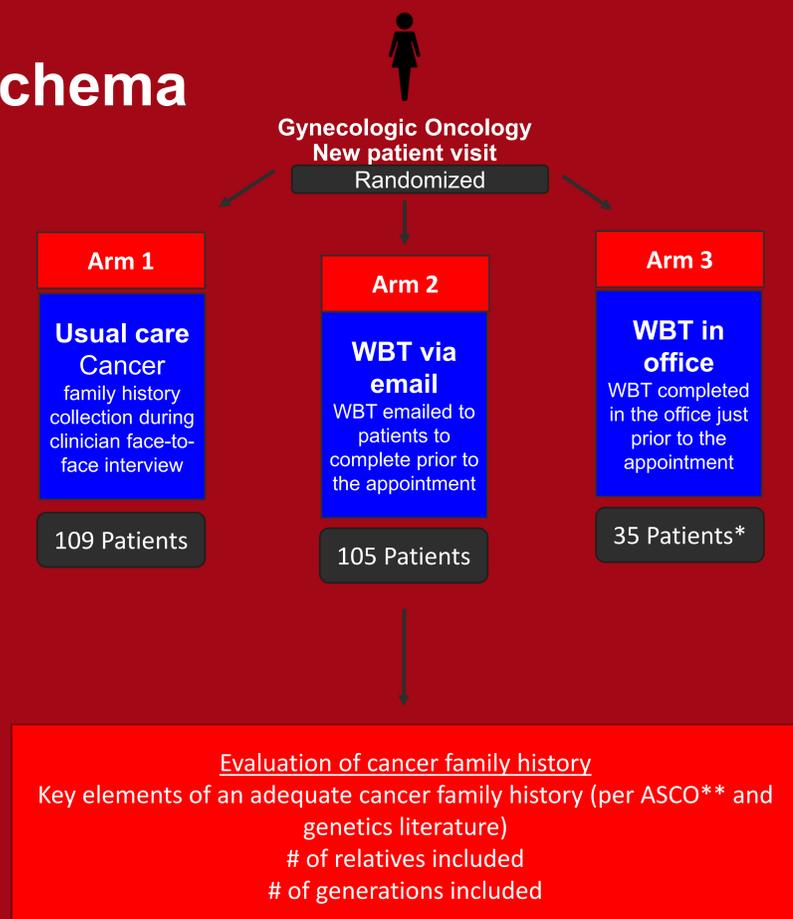
It is estimated that 1% of the United States population harbors a familial cancer mutation that places patients at increased risk of developing gynecologic malignancies. Correct family cancer history is key for identification of individuals at risk for familial cancer syndromes, however, the variability in scope and accuracy of these history can be quite wide. There are a multitude of barriers to collecting an adequate cancer family history, not limited to lack of provider training, inconsistent documentation options in the electronic medical records, inadequate time given to patients to contact relatives, and limited appointment times.

Comprehensive family history can require more than 30 minutes of provider-patient time, while the average time spent on family history during a history and physical exam is less than 2.5 minutes.

## Objective

- evaluate if a web-based tool for cancer family history collection versus usual care (collection via clinician face-to-face interview) increases the proportion of patients with an adequate cancer history

## Study Schema

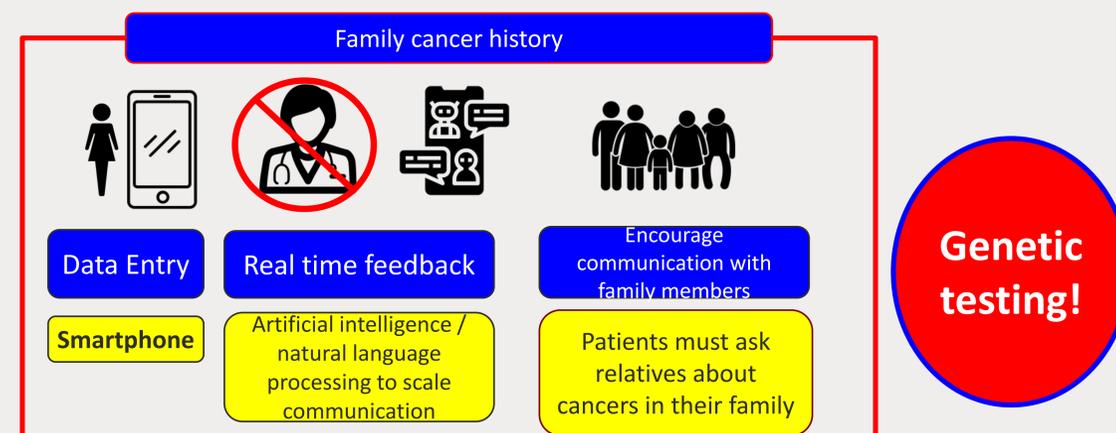


\*Arm 3 closed early due to COVID-19 pandemic (intentional minimization of time spent in the office and contact with clinical staff)  
\*\* Lu KH et al. American Society of Clinical Oncology Expert Statement: Collection and User of a Cancer Family History for Oncology Providers. JCO (2014).

## Results

	Arm 1: Usual Care	Arm 2: WBT via email	Arm 3: WBT in Office	P Value
1 <sup>st</sup> Degree Relatives	83%	60%	81%	NS
2nd Degree Relatives	48%	60%	89%	< 0.001
Maternal & Paternal	67%	60%	91%	0.003
Ethnicity	3%	55%	91%	<0.001
Adequate Cancer family history	0%	38%	43%	<0.001

- Web-based tools resulted in more robust cancer family history:
  - » Greater # of generations included
  - » Greater # of relatives included
  - » Improved collection of an adequate cancer family history
- However, completion of the web-based tool was significantly lower when administered
  - » Email (60%) vs. Office (94%)
- Completion in the office with assistance by clinical staff is not scalable
  - » Especially during Covid-19 pandemic



## Conclusions

- The majority of individuals with familial cancer syndromes are not aware
- Technology (including web-based tools) can overcome many of the limitations in the current practice of cancer family history collection
- Future cancer family history tools much prioritize:
  - » Patient convenience
  - » Patient safety during the COVID-19 pandemic
  - » Translating a high-risk cancer family history into genetic testing

**Title:** “Using health information technology to improve collection of family cancer history: Prospective randomized trial of a web-based tool in a gynecologic oncology outpatient clinic”

**Investigators:** Corbyn Nchako, Jenny Lin, Hannah Krinsky, Karen Bolouvi, Daniel Litvin, Noelani Wang, Charlene Thomas, Paul Christos, Muhammad Ahsan, Sunidhi Singh, Evelyn Cantillo, Ravi Sharaf, Eloise Chapman-Davis, Kevin Holcomb, Melissa Frey

**Introduction:** It is estimated that 1% of the United States population harbors a familial cancer mutation that places patients at increased risk of developing gynecologic malignancies. With the detection of such mutations, patients and their families can undergo cancer screenings, cascade testing and in some cases even risk-reducing surgical procedures. Correct family cancer history is key for identification of individuals at risk for familial cancer syndromes. There are a multitude of barriers to collecting an adequate cancer family history, not limited to lack of provider training, inconsistent documentation options in the electronic medical records, inadequate time given to patients to contact relatives, and limited appointment times.

The impetus of our study was to investigate whether technology can help overcome these limitations of family cancer history collection. A Web-Based Tool (WBT) can be used to help address this issue. Patients input their family data (by question prompts) into a WBT website that generates a genetic pedigree, risk assessment for certain cancers and risk assessment for certain mutations. We evaluated whether a WBT (versus collection via clinical face-to-face interview) increases the proportion of patients with an adequate cancer history.

**Method:** Patients who underwent a ‘new patient’ office visit from 9/2019 – 9/2020 were offered enrollment in an IRB-approved prospective trial. Participants were randomized into 1 of 3 study arms. Arm 1 (Usual Care) participants had cancer family history collected during clinician face-to-face interview. Arm 2 (WBT via email) patients had a link to the WBT e-mailed to them to be completed prior to their appointment. Arm 3 (WBT in office) patients completed the WBT in the office just before their appointment. Adequate cancer family history was defined as 1) 1<sup>st</sup> degree relatives, 2) 2<sup>nd</sup> degree relatives, 3) maternal and paternal lineage, 4) ethnicity, 5) For family members with cancer: Age of diagnosis and type of cancer. This was based upon SGO Expert statement by Lu KH et al. (2014).

**Results:** Arm 1 contained 109 patients, Arm 2 105 patients, and only 35 patients in Arm 3, however the smaller number was due to early closure of that recruitment arm due to effects of the Covid-19 Virus on office operations. 60% of patients in Arm 2 and 94% of patients in Arm 3 completed the WBT. Arm 3 had a statistically significant difference in the degree of second-generation relatives (89% vs 48 and 60%,  $p<0.001$ ), maternal and paternal relatives (91% vs 67 & 60%,  $p<0.03$ ), and ethnicity included (91% vs 3 and 55%,  $p<0.001$ ) data that was included. There was a non-significant difference in the percentage of first-degree relatives in comparison of Arm 3 (81%) to Arms 1 and 2 (83% & 60%, respectively). Adequate cancer family history was found to be met in a statistically significantly larger proportion of the Arm 2 (38%) and Arm 3 (43%), versus Arm 1 (0%) cohort ( $P<0.001$ ). Overall, the WBT intervention results in more robust cancer family history: greater # of generations included, greater # of relatives included, and improved collection of adequate cancer family history. Our intervention also showed that completion of the WBT was significantly lower when administered via email (60%) vs. office (94%). Patients cited difficulty with technology, concern about privacy and forgetting about the WBT invitation as reasons for not completing the WBT at home.

**Conclusions:** Technology (including WBTs) can help overcome many of the limitations in the current practice of cancer family history collection to help equip patients and providers with the knowledge and tools to better characterize these malignancies and personalize patient care. To maximize patient involvement and effectiveness, future cancer family history tools must also optimize patient convenience and translate positively identified high-risk cancer family histories into genetic testing.

### Background.

- Transition of pediatric patients with chronic medical conditions to the adult health care system is associated with adverse outcomes
  - » Adverse outcomes include increased disease activity and increased usage of emergency medical services
- Transitional care is a purposeful and planned process that guides adolescents and young adults from child-centered pediatric care to the adult healthcare system
- Over half of children with chronic rheumatic disease will need ongoing rheumatology care in adulthood
- Prior to this project, there has been no formalized process of transitional care in the pediatric rheumatology clinic at Hospital for Special Surgery (HSS)

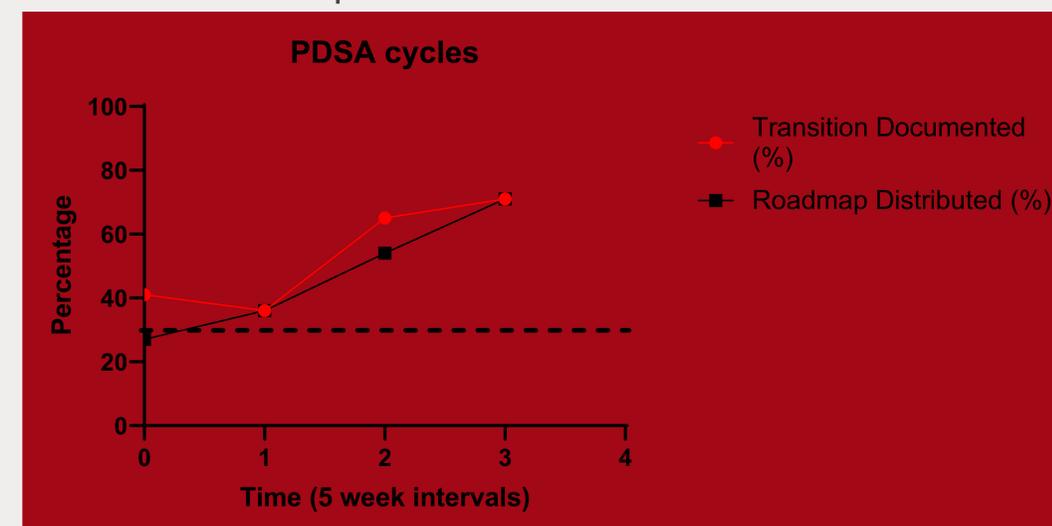
### Objectives and Project Design.

- Our objective is to formalize a process of transitional care using a Quality Improvement approach
- We started with two SMART AIMS
  - » 1. Distribute “Transition Roadmap” to patients 14 years of age or greater with chronic rheumatic diseases with goal to distribute to >30% of patients after two months
  - » 2. Document discussion of transition in the progress note at least once every 6 months for patients 14 years of age or greater with chronic rheumatic disease with goal of documenting >30% after 2 months
- We also sought to generate a simple and high-fidelity transfer for care to the adult rheumatology clinic at HSS
  - » A multidisciplinary team was established including both pediatric and adult attending physicians, fellows, nurses, and social work

**Additional Authors: Karen Onel MD, Alexa Adams MD, Sarah Taber MD, and Nancy Pan MD**

### Results.

- After attaining baseline data, 3 PDSA cycles each lasting five weeks were done
- The following interventions were made:
  - » Email and verbal reminders to providers prior to appointments, creation of Smart-phrase in Epic with addition to progress notes and addition of reminder into provider notes on Epic



- 7 patients were transferred from the pediatric clinic to the adult clinic
  - » All 7 have been successfully seen in the adult clinic with all having a second follow up in place

### Conclusion and Future Directions.

- We have improved dissemination of a “transition roadmap” and improved documentation of patient discussion regarding transition using a QI approach
- There has been initial success in the transfer of care using after the formation of a multidisciplinary team of including adult and pediatric stakeholders
- In addition to improving on existing work, we also hope to implement strategies for to help patients lacking the needed skills to navigate the adult-health care system



# Development of a Standardized Obstetric Anesthesiology Consultation Workflow through Process Mapping and Sequential Plan-Do-Study-Act (PDSA) Cycles to Improve Patient Access

Jaime Aaronson MD, Sarah Wu BA, Jason White MD, Angelica Delgado MD, Dorian Batt MD, Shao Ping Yu MPH, Hong Jun Li MHA, Patricia Fogarty Mack MD, and Sharon Abramovitz MD | September 21, 2021

## Introduction:

- There is a growing need for obstetric anesthesiology consultation.
- The presence of medical risk factors (e.g. cardiopulmonary, neurologic, hematologic) should trigger a referral for antenatal anesthesia assessment and multidisciplinary planning where relevant to decrease the risk for adverse maternal outcomes<sup>1</sup>
- Prior to March 2020, high risk obstetric anesthesiology consults at Weill Cornell (WC) and Lower Manhattan Hospital (LMH) were performed ad hoc, in-person when a clinical team was available
- Inefficiencies in communication, multidisciplinary planning, and lack of standardization resulted in missed opportunities for patient access and continuity of care

## Methods:

- Process mapping was conducted to understand existing obstetric anesthesiology consultation workflows and identify opportunities for change
- Sequential PDSA cycles introduced changes in an iterative process to include optimization and development of standardized referral, scheduling, clinical, billing, and compliance workflows (Figure 1)
- Pre- and post-intervention analyses were performed nine months prior and nine months after each intervention

## Results:

- After conversion of in-person consults to phone consults in March 2020, there was a 23.2% increase in consults performed between April 2020-December 2020 compared to June 2019-February 2020 (Figure 2)
- After development of a centralized referral listserv in July 2020, there was a 36.2% increase in consults performed between August 2020-April 2021 compared to October 2019-June 2020 (Figure 3)
- After the shift of our workflow to EPIC in October 2020, there was a 12.4% increase in consults performed between November 2020-July 2021 compared to January 2020-September 2020 (Figure 4)

## Conclusions:

- In response to the COVID-19 pandemic, we optimized and standardized our obstetric anesthesiology consultation workflow
- By streamlining the referral process, we performed an increased number of consults
- We were able to increase patient access to care as well as improve continuity of care
- We expect this to lead to both increased patient and provider satisfaction and possibly improved maternal outcomes
- Future study may be needed to collect data on indicators of outcome measures, including continuity of care, patient and provider satisfaction, and maternal outcomes

Figure 1. Plan-Do-Study Act Sequential Cycles: Obstetric Anesthesiology Workflow Optimization

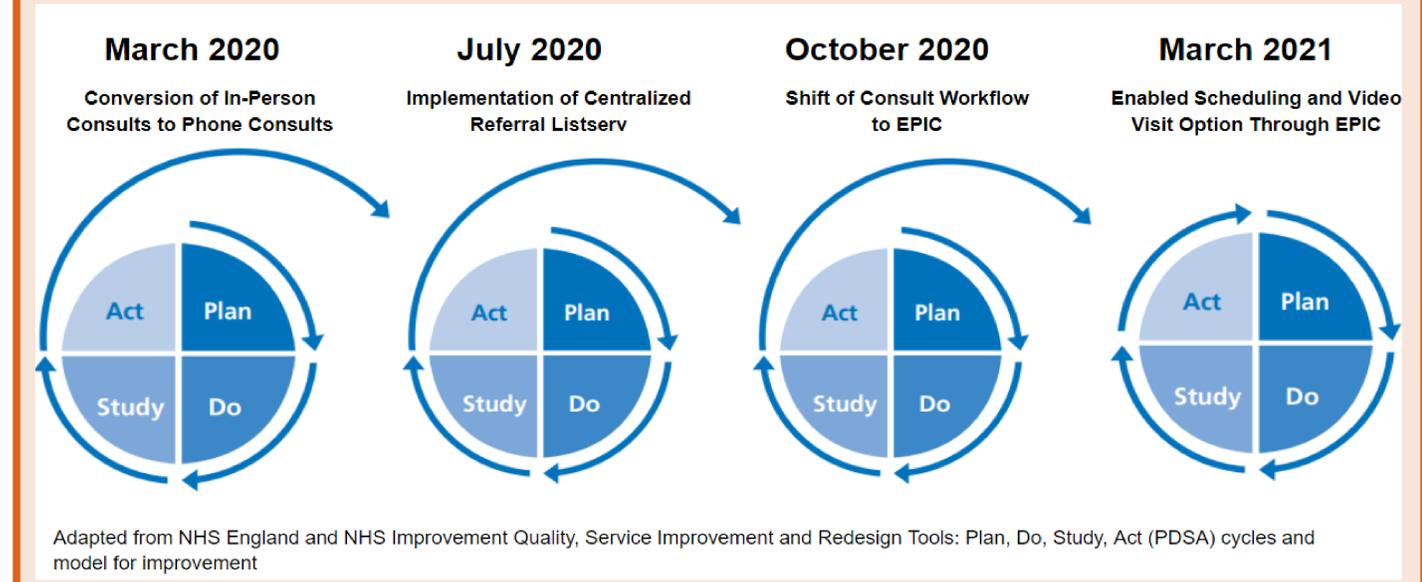


Figure 2. Change in Consult Volume after Conversion from In-Person to Phone Consults

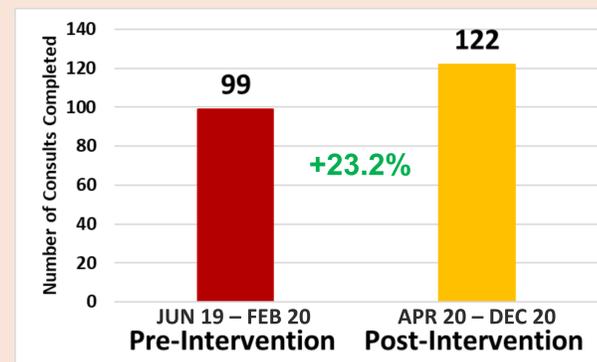


Figure 3. Change in Consult Volume after Implementation of Centralized Referral Listserv

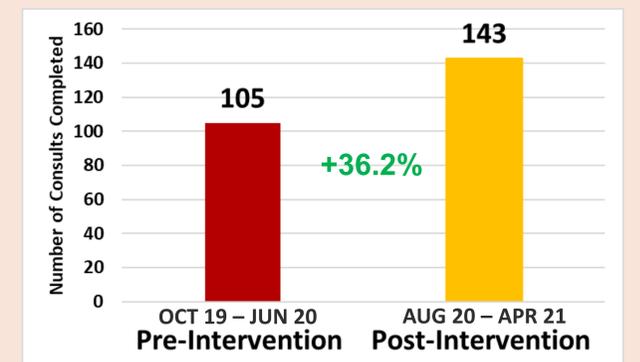
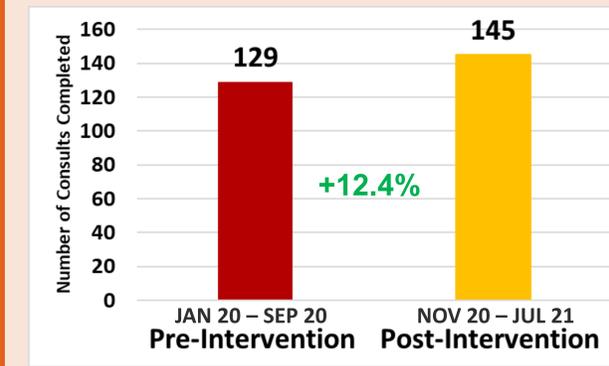


Figure 4. Change in Consult Volume After Shift of Consult Workflow to EPIC



@WCMAnesthesia

For questions or comments, please email Sharon Abramovitz ([sea2003@med.cornell.edu](mailto:sea2003@med.cornell.edu))

1: Lockhart, E M. Hincker, A. Klumpner, T T. et al, Consultation, Surveillance, Monitoring, and Intensive Care (COSMIC): A Novel 4-Tier Program to Identify and Monitor High-Risk Obstetric Patients From the Clinic to Critical Care, Anesthesia & Analgesia: June 2019 - p 1354-1360



# Improving Parkinson’s Disease Patient Engagement Through Virtual Programming During the COVID-19 Pandemic

## Weill Cornell Medicine Quality Improvement and Patient Safety Symposium

Maissa Trabilsy, MA; Natalie Hellmers, MSN, RN, ACNP-BC; Lynda Nwabuobi, MD

Andrea Lee, MD; Harini Sarva, MD | September 21, 2021

**Statement of the Problem:** The COVID-19 pandemic left many individuals with Parkinson’s disease (PD) isolated, and in need of engagement, sense of community and physical activity. Social isolation (loneliness) is an underestimated risk factor for poor health outcomes and increased mortality, especially in the elderly population. In PD, a sedentary lifestyle and lack of exercise and physical activity worsen the motor and non-motor symptoms of the disease.

**Objective/Aim of the Study:** The goal of the initiative was to improve community engagement among individuals with PD who are part of our movement disorders practice at the Weill Cornell Parkinson’s Disease and Movement Disorders Institute, as well as other outside members. Specifically, we aimed to create an ongoing virtual forum for engagement, exercise, socialization, education and support.

**Project Design/Methods:** We partnered with PD affiliated organizations including Movement Disorders Education and Exercise Inc. (MDEE), the American Parkinson Disease Association (APDA), The George Center Parkinson’s Choir, and Sephardic Community Center Rock Steady Boxing, and, our own patients, caregivers and patient advocates to create programming tailored to the PD community. We also organized monthly virtual support groups for PD patients, led by an experienced PD nurse practitioner and informal educational talks on PD, given by a movement disorders neurologist. The programming was open to anyone with PD, ambulatory and non-ambulatory, as well as all caregivers. All programs were conducted on Zoom and each lasted 1 hour. Data was obtained after each exercise session through a Qualtrics online survey on demographics, PD history, level of physical activity, and general feedback. In order to enhance the marketing of the programming, we improved communication with our patients via a newly created email account that we used to blast events to our patients. We also posted flyers in our office and shared them on social media.

**Results:** As a result of our partnerships, we successfully organized the following programs for our PD community:

- > Monthly Tai Chi classes led by an experienced Tai Chi instructor (10-44 participants)
- > Dance class (22 participants)
- > Laughter yoga class (23 participants)
- > Hand movement workshop (40 participants)
- > Art therapy (10 participants)
- > “Ending Parkinson’s” book discussion with Dr. Ray Dorsey (57 participants)
- > “Singing with Parkinson’s” by The George Center Parkinson’s Choir (referred patients)
- > Sephardic Community Center Rock Steady Boxing (referred patients)
- > Parkinson’s disease educational talks with WCMC Clinical Translation Science Center every other month (35-70 participants)

Table 1. details the survey results from a well-attended class. The majority of the group enjoyed the class (70%) and 80% planned to participate in future events.

**Conclusions:**

A virtual program is a feasible resource to improve community engagement among individuals with PD. Participants found it easily accessible, enjoyed the programming and planned to return to future events. Feedback was incorporated for each subsequent program to improve satisfaction. With the robust positive response, we demonstrated that this is a vital component of our comprehensive care model and will continue to enhance and expand it to target the goals and meet the needs of the PD community.

Table 1. Demographics and Feedback from 12/3/2020 Tai Chi Class

	No. (%)
<b>Participants</b>	44
<b>Survey respondents</b>	30 (100)
<b>Age (years)</b>	
50-60	3 (10)
60-70	7 (23)
70-80	13 (44)
>80	7 (23)
<b>PD diagnosis</b>	29 (97)
<b>Disease duration (years)</b>	
0-2	6 (21)
2-5	13 (45)
>5	10 (34)
<b>Do you exercise? (yes)</b>	30 (100)
<b>Do you participate in other virtual exercise programs? (yes)</b>	13 (43)
<b>Did you enjoy the class? (yes)</b>	21 (70)
<b>Was the class easily accessible online? (yes)</b>	23 (77)
<b>Are you likely to participate in future events?</b>	
Likely or very likely	24 (80)
Very unlikely	3 (10)
<b>Why did you choose to attend the event?</b>	
Wanted more exercise	21 (70)
Free of cost	6 (20)
Social interaction	5 (17)
Bored at home	4 (13)
<b>Do you think the event met its goals of improving balance, motor skills, and increasing social interaction among the Parkinson Disease community?</b>	
Yes or definitely yes	20 (67)
No	3 (10)
<b>Feedback</b>	“Please do this again” “Great class” “More Tai Chi” “Would like to continue with this program on a weekly basis” “Felt it was over my head” “Would like a video to follow what I missed” “I liked the fact he was going slow and repeating always the same until we got it right” “Had right blend of oral instruction and physical therapy” “On the email notifications, having the date and time would help”

## **Improving Parkinson's Disease Patient Engagement Through Virtual Programming During the COVID-19 Pandemic**

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- Parkinson's disease educational talks with WCMC Clinical Translation Science Center every other month (35-70 participants)

### **Conclusions:**

A virtual program is a feasible resource to improve community engagement among individuals with PD. Participants found it easily accessible, enjoyed the programming and planned to return to future events. Feedback was incorporated for each subsequent program to improve satisfaction. With the robust positive response, we demonstrated that this is a vital component of our comprehensive care model and will continue to enhance and expand it to target the goals and meet the needs of the PD community.



## A Focus on Influenza Vaccinations for Pediatric Patients During a Pandemic

Annual Weill Cornell Medicine Quality Improvement Poster Session

Lisa Bartucca MD, Dana Greene MD

Mentors: Noemi Charnow MD, Snezana Nena Osorio MD, MS | Sept 21, 2021

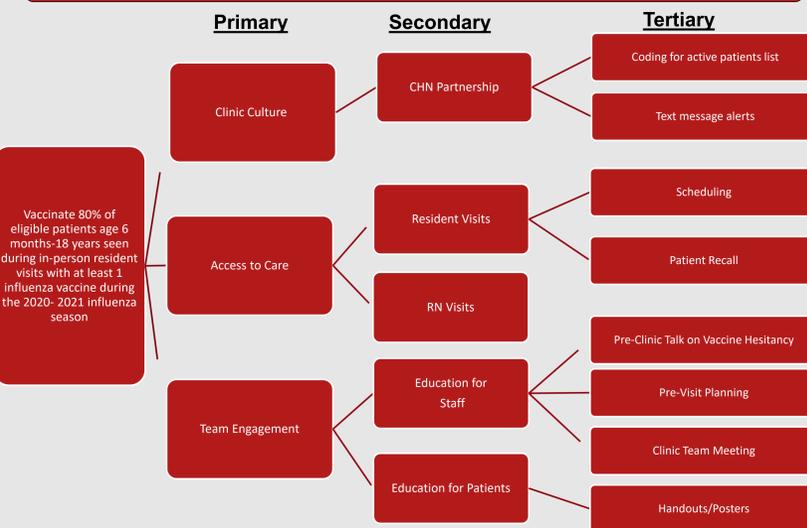
### Background/Relevance

- In the pediatric population, up to 80% of influenza-associated deaths have occurred in unvaccinated children 6 months and older
- A higher incidence of hospitalization and complications from the flu occur in asthmatic patients
- Lower income, non-white, and urban populations report lower vaccination rates
- Given these factors, particularly during COVID-19 pandemic, influenza vaccination among pediatric patients is especially important

### Objectives

- To vaccinate 60% of eligible patients age 6 months-18 years seen during in-person resident visits with at least 1 influenza vaccine during the 2020-2021 influenza season
- To increase the influenza vaccination rate among asthmatic patients from historical baseline of 46% to 60% during the 2020-2021 influenza season

### Key Driver Diagram



### Methods

#### Study Design

- Quality improvement observational study with multiple planned interventions

#### Study Population

- Included patients aged 6 months to 18 years at a Federally Qualified Health Center resident clinic in Long Island City, NY; those patients also with coded diagnosis of asthma

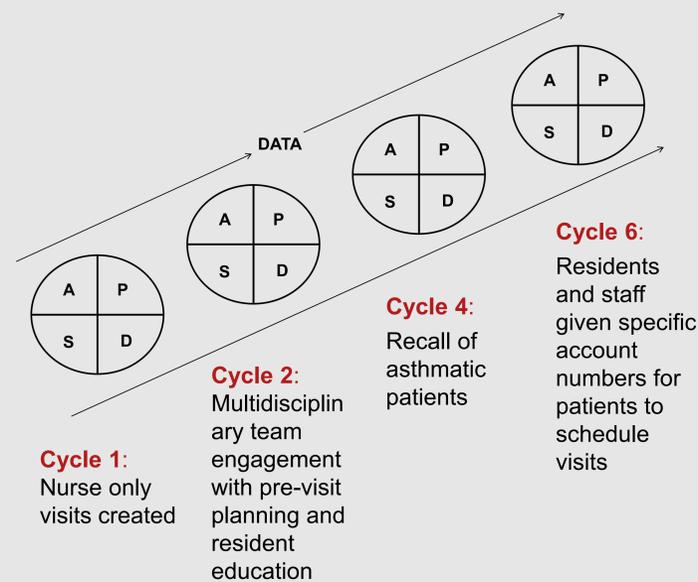
#### Data Extraction

- A retrospective chart review with data extracted from the electronic medical record was used to acquire vaccination and visit show rates throughout the season.

#### Analysis

- Data interpreted with statistical run charts

### Plan Do Study Act Cycles



### Results

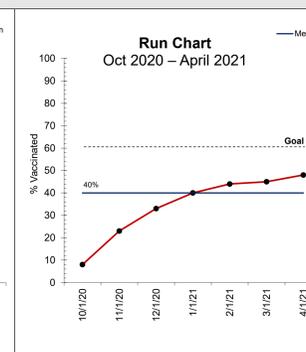


Figure 1: Cumulative Asthmatic Patients Vaccinated during 2019-2020 and 2020-2021 Influenza Seasons

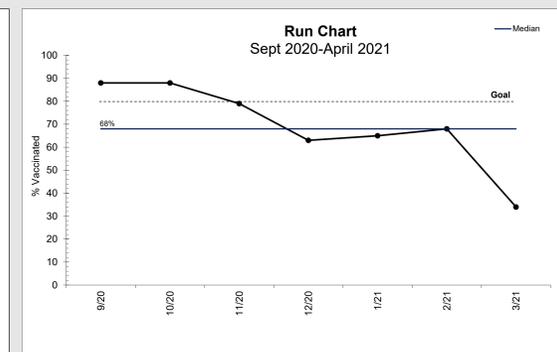


Figure 2: Patients Vaccinated During In-Person Resident Visits

### Limitations

- The school closures and shift to remote-only learning was an unanticipated impediment to vaccinate our high risk population.
- Parents perceived their risk of influenza to be low due decreased exposure during the COVID-19 pandemic, in addition to heightened vaccine hesitancy, made influenza vaccine refusal higher than expected

### Anticipated Impact

- An infrastructure is now in place to improve vaccination rates in vulnerable pediatric populations for future influenza seasons, with a potential shift to the COVID-19 vaccine (if or when it becomes available).
- Our increased team engagement and focus on addressing vaccine hesitancy will be particularly important in the upcoming seasons.

### Acknowledgements

Special thanks to the LIC continuity clinic attendings Dr. Rolston, Dr. Lee and Dr. Amin, to the amazing LIC clinic residents, and to all of the nurses and medical staff for their hard work on this project to improve the health of our pediatric patients

Title: A Focus on Influenza Vaccinations for Pediatric Patients during a Pandemic

Authors: Lisa Bartucca, MD, Dana Greene, MD, Noemi Charnow, MD, Szenana Nena Osorio, MD, MS

Statement of the Problem: Influenza and its associated complications represent the 8th leading cause of death in the United States. In the pediatric population, up to 80% of influenza-associated deaths have occurred in unvaccinated children 6 months and older, with a higher incidence of hospitalization and complications in asthmatic patients. Lower income, non-white, and urban populations report lower vaccination rates. Given these factors, particularly during the COVID-19 pandemic, influenza vaccination among pediatric asthmatic patients is especially important.

Objective/Aim of the Study: To increase the influenza vaccination rate of all eligible patients aged 6 months –18 years seen during in-person visits with at least 1 influenza vaccine and to increase the vaccination rate among asthmatic patients from baseline 46% to 60% during the 2020-2021 influenza season.

Project Design/Methods: The quality improvement project was conducted at a Federally Qualified Health Center resident clinic in Long Island City, NY, and included all eligible patients aged 6 months to 18 years with a particular focus on those with a diagnosis of asthma. At the start of influenza season, nurse-only vaccine visits (RN visits) were created to allow for increased capacity to administer vaccines. A multidisciplinary team focused on pre-visit planning, and targeted asthmatic patient recall throughout the influenza season. A retrospective chart review with data extracted from the electronic medical record was used to acquire vaccination and visit show rates. PDSA cycles were utilized throughout the project.

Results: Of the 312 asthmatic patients eligible for the influenza vaccination, 48% were vaccinated at the clinic during either physician or RN visits. Show rate for RN visits was 74% and the mean was 70% for patients vaccinated during in-person resident clinic visits throughout the influenza season. The creation of RN visits did not alter compliance with annual well child visits, the balancing measure.

Conclusions: Team engagement, creation of RN visits, and pre-visit planning with targeted patient recall can be an effective tool to increase vaccine capability among asthmatics during a pandemic. Although unanticipated difficulties made it challenging to reach our intended vaccination goal of 60% this season, a successful show rate of RN visits and overall team enthusiasm for this project provides optimism that we will reach our goal in future seasons. The school closures during the fall and winter months and shift to remote-only learning was an unanticipated impediment to vaccinate our high risk population. Parents perceived their risk of influenza to be low due decreased exposure during the COVID-19 pandemic, in addition to heightened vaccine hesitancy, made influenza vaccine refusal higher than expected.



**PROTOCOLIZED INTERDISCIPLINARY BEHAVIORAL MANAGEMENT OF  
MEDICALLY DECOMPENSATED EATING DISORDER PATIENTS ON A PSYCHIATRY CONSULTATION-  
LIAISON SERVICE CAN REDUCE LENGTH OF STAY**

Weill Cornell Medicine Annual Quality Improvement Poster session

Miriam E. Goldblum, M.D. (faculty supervisor: Anna Dickerman, M.D.) | September 21<sup>st</sup>, 2021

**Problem Statement:**

Medically decompensated eating disorder patients are often challenging to manage on a consultation-liaison psychiatry service due to the lack of a specialized milieu and limited training of medical staff. Meeting the medical clearance criteria necessary for psychiatric admission can become unnecessarily prolonged and lead to delays in initiating formal treatment. While specialized eating disorder units have implemented structured behavioral care plans geared toward rapid weight restoration<sup>1</sup>, this is not yet considered the standard of care in medical/surgical settings.

**Objectives/Aims:**

- To refeed and medically stabilize eating disorder patients in a safe but timely fashion, thus expediting transfer from the general hospital setting to inpatient psychiatry for further treatment
- To reduce length of stay for eating disorder patients in the general hospital setting
- To standardize treatment and facilitate improved interdisciplinary communication between all team members and services involved in the care of eating disorder patients in the general hospital setting

**Design/Methods:**

- We developed a behavioral care plan and distributed this to all team members, including the primary team, consultation-liaison psychiatry, nursing, nutrition and support staff.
- This protocol was based on typical behavioral care plans used on inpatient psychiatric eating disorder units. It included standardized and step-wise processes addressing the following concerns:
  - Environmental Assessment and Precautions
  - Observation Level
  - Visitor Policy
  - Patient Activity and Behavior, including specific goals and objectives around food in-take
  - Oral Medication Administration
- The behavioral care plan utilizes principles of operant conditioning, rewarding patients for desired healthy behaviors (e.g., increasing caloric in-take) by loosening environmental restrictions such as 1:1 observation.

**Results:**

We performed a pilot of the protocol on a patient R.Q., a 27-year-old woman whose family brought her to the hospital for severe weight loss due to anorexia nervosa. Her BMI on admission was 12.4 and her labs were notable for transaminitis. Upon consultation, we instituted a behavioral care plan with initial restrictions in place including 1:1 observation, limitation of exercise, and strict meal times. The protocol involved a “reward” system with successive privilege levels in which restrictions would be incrementally loosened based on the patient’s meal consumption. Conversely, failure to meet caloric parameters would result in initiation of nasogastric tube feeding. We explained and distributed this plan to the patient and family, primary team, nursing, and nutrition services. The patient was ultimately able to meet medical clearance criteria for psychiatric admission; her medical length of stay was 14 days (compared to an average of 20.7 days for other similar patients on our C-L service).

**Conclusion/Lessons Learned:**

There are no standardized guidelines that exist in the literature for managing the refeeding of eating disorder patients on primary medical services. We propose that C-L services consider more broadly implementing interdisciplinary, regimented behavioral care plans akin to those used on psychiatric eating disorder units. This may help ensure that such patients receive the psychiatric standard of care while simultaneously reducing length of stay and time to medical clearance.

<sup>1</sup> Redgrave GW, Coughlin JW, Schreyer CC, et al. (2015). Refeeding and Weight Restoration Outcomes in Anorexia Nervosa: Challenging Current Guidelines. *Int J Eat Disord*, 48(7), 866-873.

PROTOCOLIZED INTERDISCIPLINARY BEHAVIORAL MANAGEMENT OF  
MEDICALLY DECOMPENSATED EATING DISORDER PATIENTS ON A C-L SERVICE  
CAN REDUCE LENGTH OF STAY

Background: Medically decompensated eating disorder patients are often challenging to manage on a consultation-liaison psychiatry service due to the lack of a specialized milieu and limited training of medical staff. Meeting the medical clearance criteria necessary for psychiatric admission can become unnecessarily prolonged and lead to delays in initiating formal treatment. While specialized eating disorder units have implemented structured behavioral care plans geared toward rapid weight restoration<sup>1</sup>, this is not yet considered the standard of care in medical/surgical settings. We describe the case of a difficult eating disordered patient who was highly resistant to refeeding, but did ultimately respond to a rigorous interdisciplinary behavioral protocol. The patient achieved medical clearance for transfer to an inpatient psychiatric unit within a shorter time frame than is typical for such patients on our service.

Case: R.Q. is a 27-year-old woman whose family brought her to the hospital for severe weight loss due to anorexia nervosa. Her BMI on admission was 12.4 and her labs were notable for transaminitis. Upon consultation, we instituted a behavioral care plan with initial restrictions in place including 1:1 observation, limitation of exercise, and strict meal times. The protocol involved a “reward” system with successive privilege levels in which restrictions would be incrementally loosened based on the patient’s meal consumption. Conversely, failure to meet caloric parameters would result in initiation of nasogastric tube feeding. We explained and distributed this plan to the patient and family, primary team, nursing, and nutrition services. The patient was ultimately able to meet medical clearance criteria for psychiatric admission; her medical length of stay was 14 days (compared to an average of 20.7 days for other similar patients on our C-L service).

Discussion: This case illustrates an effective approach to refeeding eating disorder patients on C-L services that expedites medical clearance while simultaneously initiating important behavioral treatment that would otherwise be deferred to the inpatient psychiatric setting. Successful implementation necessitates engagement of all involved disciplines in order to avoid splitting and mixed messages. Staff education is also critical, since non-psychiatric providers may have strong countertransference and become entangled in counterproductive bargaining that ultimately hinders medical stabilization. Clear and consistent communication helps reduce confusion among the patient and staff while reinforcing the goals of treatment.

Conclusion:

There are no standardized guidelines that exist in the literature for managing the refeeding of eating disorder patients on primary medical services. We propose that C-L services consider more broadly implementing interdisciplinary, regimented behavioral care plans akin to those used on psychiatric eating disorder units. This may help ensure that such patients receive the psychiatric standard of care while simultaneously reducing length of stay and time to medical clearance.

References:

1. Redgrave GW, Coughlin JW, Schreyer CC, et al. Refeeding and Weight Restoration Outcomes in Anorexia Nervosa: Challenging Current Guidelines. *Int J Eating Disorders* 2015; 48(7):866-873.

### Background

- Obese patients with breast cancer have poorer clinical outcomes and mortality, independent of their menopausal and estrogen receptor (ER) status.
- Obesity is also associated with an increased risk of distant recurrence and secondary malignancies, both in the contralateral breast and other primary sites.
- Obese breast cancer patients may have a reduced response to treatment.
- It is essential that patients be made aware of this association between obesity and poorer breast cancer outcomes and be referred to available obesity healthcare teams to reduce these risks.

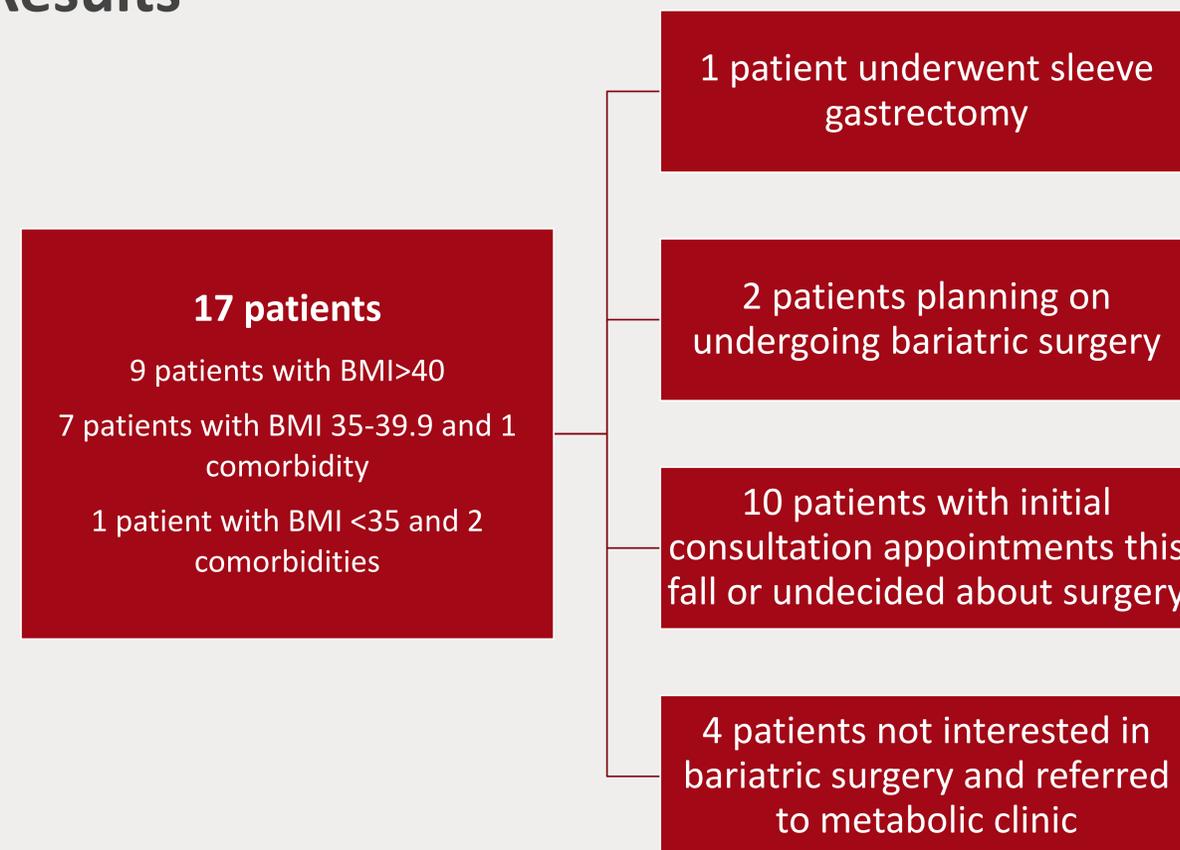
### Objective

- To reduce breast cancer-related morbidity, mortality, and overall health in obese patients by referring appropriate candidates to the bariatric surgery program.

### Methods

- Included patients with breast disease who received treatment at NewYork-Presbyterian Queens from March 2020 to present.
- Active treatment defined as surgery, radiation, or chemotherapy. Survivorship period defined as within 6 months of completing active treatment or no later than one year from the date of diagnosis, and extended to 18 months for patients receiving hormonal and targeted therapy.
- After receiving active treatment, obese breast cancer patients in the survivorship period or beyond, who met the criteria for bariatric surgery, were offered enrollment into the program.
- Bariatric surgery candidates included patients with BMI over 40; patients with BMI 35-39.9 with at least one obesity-related comorbidity, such as type II diabetes mellitus, hypertension, obstructive sleep apnea, hyperlipidemia, or hypercholesterolemia; and patients with BMI under 35 with two comorbidities.

### Results



### Conclusions and Future Directions

- In the pilot phase of this program, 17 patients were referred to the bariatric surgery clinic. Three patients have already undergone or are planning to undergo bariatric surgery, and four patients have been referred to the hospital’s metabolic clinic.
- These patients now have an opportunity to improve their prognosis and overall health, and this work represents a general strategy for reducing the morbidity and mortality of breast cancer in obese patients, the second most common cause of cancer-related death in women. .
- To improve outcomes beyond serious and severe obese patients, overweight (BMI 25-29.9) and Class I Obesity (BMI 30-34.9) patients with breast cancer or high-risk breast disease will be referred to outpatient nutrition services, the metabolic clinic, and an exercise program.

## **Breast Cancer and Obesity, a Lifestyle Development (BOLD) Program**

Angelina Kim MD, Lauren Elreda MD, Joel Ricci-Gorbea MD, Manmeet Malik DO.

**Background:** Several studies have shown that obese patients with breast cancer have poorer clinical outcomes and higher mortality, independent of their menopausal and estrogen receptor (ER) status. Obesity is also associated with an increased risk of distant recurrence and secondary malignancies, both in the contralateral breast and other primary sites. Additionally, obese breast cancer patients may have a reduced response to treatment. It is essential that patients be made aware of this association between obesity and poorer breast cancer outcomes and be referred to available obesity healthcare teams to reduce these risks.

**Objective:** To reduce breast cancer-related morbidity, mortality, and overall health in obese patients by referring appropriate candidates to the bariatric surgery program.

**Methods:** The authors identified patients with breast disease who received treatment at NewYork-Presbyterian Queens from March 2020 to present. Reflecting the National Accreditation Program for Breast Centers (NAPBC) criteria, active treatment was defined as surgery, radiation, or chemotherapy. Survivorship period was defined as within six months of completing active treatment or no later than one year from the date of diagnosis, and was extended to 18 months for patients receiving hormonal and targeted therapy. After receiving active treatment, obese breast cancer patients in the survivorship period or beyond, who met the criteria for bariatric surgery, were offered enrollment into the program. Bariatric surgery candidates included patients with BMI over 40; patients with BMI 35-39.9 with at least one obesity-related comorbidity, such as type II diabetes mellitus, hypertension, obstructive sleep apnea, hyperlipidemia, or hypercholesterolemia; and patients with BMI under 35 with two comorbidities.

**Results:** Since initiating the program, 17 patients were referred to the bariatric surgery clinic. Nine patients had a BMI over 40, seven patients had a BMI 35-39.9 with one or more comorbidity, and one patient had a BMI under 35 with two comorbidities. Thirteen patients accepted the referral, and four patients were not interested in bariatric surgery. Two patients are planning on undergoing bariatric surgery, and one patient had a laparoscopic sleeve gastrectomy. The other ten patients referred either have their initial consultation appointment this fall or are undecided regarding surgery and are having ongoing discussions about bariatric surgery. The four patients who refused bariatric surgery referral are following up with the metabolic clinic.

**Conclusions:** In the pilot phase of this program, 17 patients were referred to the bariatric surgery clinic. Three patients have already undergone or are planning to undergo bariatric surgery, and four patients have been referred to the hospital's metabolic clinic. These patients now have an opportunity to improve their prognosis and overall health, and this work represents a general strategy for reducing the morbidity and mortality of breast cancer in obese patients, the second most common cause of cancer-related death in women. In the future, we also plan on referring patients with high risk breast disease to the bariatric surgery clinic if they are deemed appropriate candidates. Additionally, to improve outcomes beyond serious and severely obese patients, overweight (BMI 25-29.9) and Class I Obesity (BMI 30-34.9) patients with breast cancer or high-risk breast disease will be referred to outpatient nutrition services, the metabolic clinic, and an exercise program.



# Tele-Navigation: Using remote work with telemedicine to help patients navigate the healthcare system

2021 Quality Improvement Poster Session

Matthew Laghezza, Donna Tso, Rosemary Joaquin-Reyes, David Bodnar, Peter Steel

## Objective

- Transform the Emergency-department (ED)-based Patient Navigator Program into a Tele-Navigation Program, where Patient Navigators were able to work remotely but still have the opportunities to support our patients.

## Method

- With the help of the Digital Health Team, we deployed a Telemedicine Cart into a specific area in the Emergency Department where they were left plugged in. Frontline staff were educated of the new tele-program during daily huddles. In addition, provider staff were educated during monthly administrative meetings and weekly e-mails.

## Results

- **July 2020- April 2021**
- # of Tele-Navigation: 341
- #/% of Tele-Navigation w/ Intervention (pt agreed to services): 256/ 75%
- Tele-Navigation Compliance: 159 (yes, saw provider) /190 (all appts.) = 84% compliance
- Phone Compliance: 2198 (yes, saw provider) /3004 (all appts.) = 73% compliance



## Conclusion

- In the height of a pandemic when staff safety is of utmost importance, tele-navigation was more successful than a telephone call.

Tele-Navigation: Using remote work with telemedicine to help patients navigate the healthcare system

Matthew Laghezza, MS, MBA, PA-C  
Donna Tso, MPA  
Rosemary Joaquin-Reyes  
David Bodnar, MD  
Peter Steel, MD

**Statement of the Problem:** Our complex healthcare system can be challenging to navigate under the best of circumstances and these challenges are compounded for those who are uninsured, undocumented, living in poverty or have limited English proficiency.

**Objective/Aim of the Study:** The COVID-19 pandemic led to many staff members working from home. Our aim was to transform the Emergency-department (ED)-based Patient Navigator Program into a Tele-Navigation Program, where Patient Navigators were able to work remotely but still have the opportunities to support our patients.

**Project Design/Methods:** With the help of the Digital Health Team, we deployed a Telemedicine Cart into a specific area in the Emergency Department where they were left plugged in. Frontline staff were educated of the new tele-program during daily huddles. In addition, provider staff were educated during monthly administrative meetings and weekly e-mails.

ITS developed a change to the original "Patient Navigator Consult Order" to include an option for telemedicine which would alert the Patient Navigator of a consult and in which area that patient was resided. Patient Navigators were educated and trained on the use of Telemedicine Carts and webside manner.

**Results:**

July 2020 – April 2021	
Total Number of Tele-Navigations	341
Total Number of Phone Interventions	5,833
% of Tele-Navigation w/ Intervention	75%
% of Phone Interventions w/ Intervention	66%
<b>Tele-Navigation Patient Compliance:</b>	<b>84%</b>
<b>Phone Patient Compliance:</b>	<b>73%</b>

**Conclusions:** In the height of a pandemic when staff safety is of utmost importance, tele-navigation was more successful than a telephone call. Using telemedicine to connect with patients to help navigate the healthcare system is an important first step to something that can be distributed across any healthcare system.

# Increasing HPV Immunization Rates in a Community-Based Academic Clinic in Queens, NY



P. Zhen Chan, MD MBA; Matthew Murray, MD; Cynthia Perez, MD; Mario Martinez, MD;  
Christopher Xanthos, MD; Alexandra Sasha Licon-Freudenstein, MD; Daniel Birkhead, MD; Melanie Gao, MD; Robyn Rosenblum, MD



Department of Pediatrics, NewYork-Presbyterian Hospital / Weill Cornell Medical Center, New York, NY<sup>1</sup>

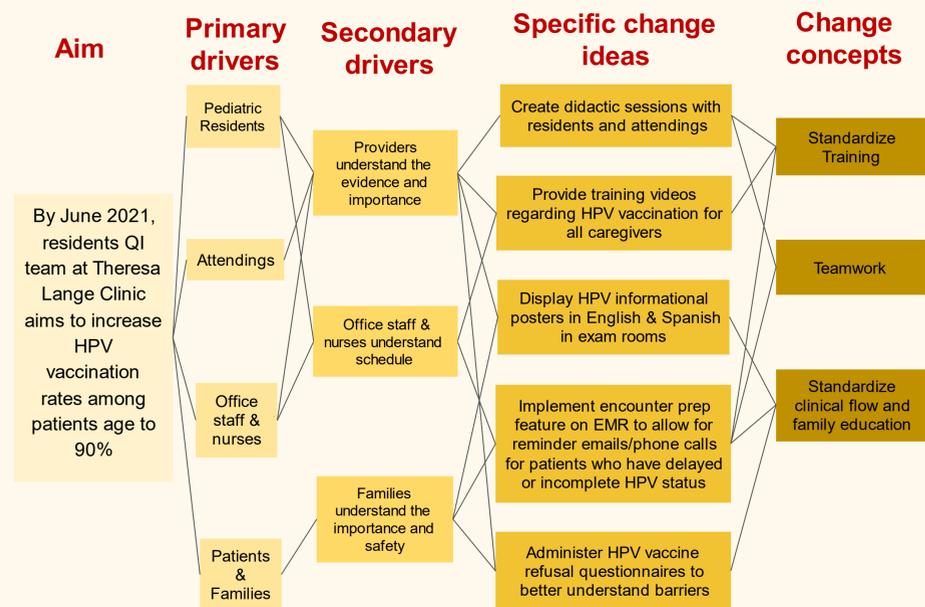
## Background

- Human papillomavirus (HPV) is the most common sexually transmitted infection in the US and the leading cause of cervical, vaginal, penile and anal cancers.
- The AAP recommends all children begin the HPV vaccination series by age 11. Despite its effectiveness, initiation of the HPV series nationally (68.1%) is significantly lower than that of Tdap (88.9%) and other childhood vaccines.

## Objective

- To increase HPV vaccination rates among patients age 13-18 to 90% in a community-based academic clinic in Queens, NY.

## Key Driver Diagram



## Methods

### Study Design:

- Observational time series study with multiple planned sequential interventions based on the Model for Improvement

### Patient population:

- All well-child visits of 13 through 18-year-olds over time period of March 2019 through January 2021

### Process Measures:

- Percent of patients who completed HPV vaccination series
- Percent of patients who initiated HPV vaccination

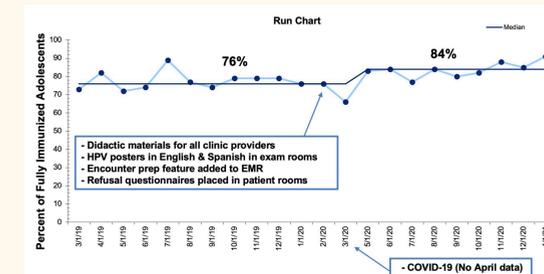
### Balance Measures:

- Percent of patients who are Tdap vaccinated

### Analysis:

- Data interpreted by age groups (13-14, 15-16, 17-18) and sex assigned at birth (M, F) with run charts using rules for detecting special cause variation

## Results

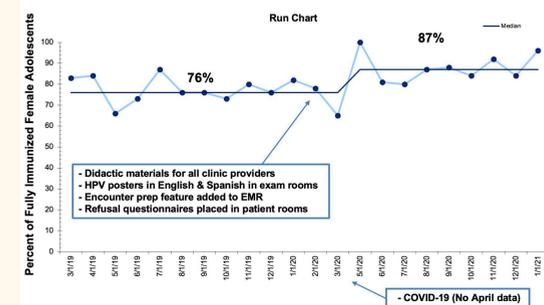
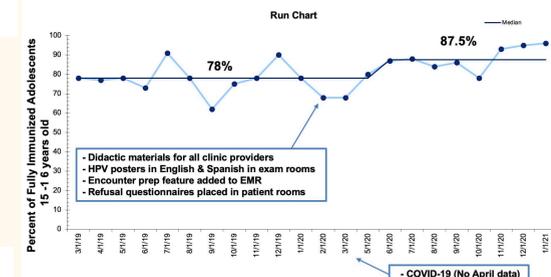


### Overall HPV Vaccination Rates

A signal of change was detected with an increase in median rates of vaccination from 76% to 84% of all patients analyzed.

### Age 15-16 Vaccination Rates

A signal of change was detected with an increase in median rates of vaccination from 78% to 87.5% of patients aged 15-16.



### Female Vaccination Rates

A signal of change was detected with an increase in median rates of vaccination from 76% to 87% of female patients.

- Median rate of HPV vaccine initiation remained unchanged at 9.5%.
- Median rate of HPV vaccination in males remained unchanged at 78.5%, in 13-14 age group patients at 77%, and 17-18 age group at 85%.
- Median rate of Tdap vaccinations remained unchanged at 98%.

## Impact and Future Directions

- This ongoing QI initiative demonstrates increased HPV vaccination rates in our clinic after several simple, low-cost interventions.
- Our next steps include improving completion rates for males and initiation of HPV vaccination at 9 years old.

## Timeline of Interventions

Interventions	Sept. 2019	Oct. 2019	Nov. 2019	Dec. 2019	Jan. 2020	Feb. 2020	March 2020
Training videos for caregivers	[Blue arrow spanning Sept. 2019 to March 2020]						
HPV didactic materials for residents					[Blue arrow spanning Jan. 2020 to March 2020]		
HPV didactic materials for all providers in clinic						[Blue arrow spanning Feb. 2020 to March 2020]	
HPV posters in English/Spanish posted in exam rooms						[Blue arrow spanning Feb. 2020 to March 2020]	
Encounter prep feature developed on Athena						[Blue arrow spanning Feb. 2020 to March 2020]	
Blank HPV refusal questionnaires are now in patient rooms						[Blue arrow spanning Feb. 2020 to March 2020]	

**Acknowledgments:** Special thanks to all our faculty and staff for their help on this project and their dedication to improving the health of our patients at the Theresa Lang Children's Ambulatory Center.

**Title:** Increasing HPV immunization rates in a community-based academic clinic in Queens, New York

**Authors:** P. Zhen Chan, MD, MBA; Matthew Murray, MD; Alexandra Licon-Freudenstein, MD; Christopher Xanthos, MD; Cynthia Perez, MD; Mario Martinez, MD; Daniel Birkhead, MD; Melanie Gao, MD; Robyn Rosenblum, MD

**Background:** Human papillomavirus (HPV) is the most common sexually transmitted infection in the US and the leading cause of cervical, vaginal, penile and anal cancers. The AAP recommends all children begin the HPV vaccination series by age 11. Despite its effectiveness, initiation of the HPV series nationally (68.1%) is significantly lower than that of Tdap (88.9%) and other childhood vaccines.

**Objective:** To increase HPV vaccination rates among patients age 13-18 to 90% in a community-based academic clinic in Queens, NY.

**Methods:** The Model for Improvement was used for this quality improvement (QI) project. From March 2019 through November 2020, the resident led QI team performed several plan-do-study-act (PDSA) cycles to test interventions designed to improve HPV vaccination rates (Driver diagram, Figure 1). We used Athena EMR to collect monthly HPV vaccination data from all 13-18 years old well visits. We used as process measures the number of patients who initiated HPV vaccination and the number of patients who completed the HPV series. Tdap vaccination rate was used as the balancing measure. Data were analyzed by age range in years (13-14, 15-16 and 17-18) and by gender. We used run charts to display and analyze data. Run chart rules were applied to detect signal of change.

**Results:** In this study of 1,142 patients, we detected a special cause variation for completed HPV vaccination series with an increase in rates from 76% to 83% (Figure 2). Analysis by age and gender showed similar improvement within the 15-16 age group (77.5% to 87%, Figure 3) and for female patients 76% to 87% (Figure 4). Note the special cause variation in each measure in 4/2020 when rates were lowest due to COVID-19. The Tdap balancing measure showed no change from its baseline of 98%. There was no change in the rate of patients who initiated HPV vaccination (10%). Sixteen deferral questionnaires have been completed, with safety and lack of necessity as the leading concerns.

**Conclusions:** This ongoing QI initiative demonstrates increased HPV vaccination rates in our clinic after several simple, low-cost interventions. The most impactful intervention was a brief family survey providing insight into safety and efficacy concerns regarding HPV vaccination and perceived lack of necessity. Our next steps include improving completion rates for males and initiation of HPV vaccination at 9 years old.



# Addressing Childhood Obesity Through Community Partnership

Weill Cornell Medicine Quality Improvement Poster Session, September 21, 2021

Leida Voulgaropoulos MD, Sasha Licon MD, Yurhee Lee MD, Matthew Murray MD, Surabhi Menon MD, Tatiana Ndjatou MD, Laurie Gordon MD

## Background

- Childhood obesity is a major public health concern in the United States and is associated with significant morbidity and mortality.<sup>1</sup>
- Childhood obesity rates increased during the Covid pandemic with more pronounced increases among patients who were ages five to nine, Hispanic, Non-Hispanic Black, publicly insured, and lower income.<sup>2</sup>
- Low parental and adolescent health literacy has been shown to be associated with higher rates of child and adolescent obesity.<sup>3</sup>
- Partnering with a community organization may be an effective way to improve health literacy in nutrition.

## Objectives

- To collaborate with a community organization to address childhood obesity by providing education and resources to lower income and minority families.

## Methods

- We partnered with StreetSquash, a private nonprofit organization that offers academic tutoring, squash instruction, community service, college preparation, leadership development, and mentoring for ages 11-24.
- We developed interactive presentations on topics of nutrition and healthy behaviors that we presented twice at Street Squashes' virtual family meetings from 1/2021 – 4/2021.
- We administered a survey before and after the presentations to further assess parents' understanding of nutrition and obtain feedback for future sessions. The survey consisted of five questions on topics food groups, nutrition labels, and obesity.
- We collected and assessed data on the following parameters: (1) Number of pre- and post-survey responses (2) Overall responses (3) Responses to specific questions.

Pre-survey



Presentation



Post-survey

## Results

We collected preliminary pilot data with four pre-survey responses and one post-survey response. There was a low rate of survey completion.

- From the survey responses, we found that:
  - » Three of the four pre-survey respondents felt comfortable reading nutrition labels and the single post survey respondent felt comfortable reading nutrition labels
  - » The mean score on knowledge questions was 42% in the pre-survey group and the post survey respondent scored 50%
  - » No one correctly answered which food group should take up the most space on your plate.
  - » Most knew that BMI > 95th%ile indicated obesity

## Discussion

- Our preliminary findings suggest that there continues to be a need for nutrition education in the group studied.
- Some improvement was seen in pre- and post-survey knowledge scores however we are unable to make any statistical conclusions due to small sample size.

## Next Steps

- Further collaborate with StreetSquash to provide educational interventions in obesity prevention and nutrition education and study the outcomes of the educational interventions
- Conduct a formal needs assessment for the communities StreetSquash serves

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1. Kumar S, Kelly AS et al. "Review of Childhood Obesity: From Epidemiology, Etiology, and Comorbidities to Clinical Assessment and Treatment." *Mayo Clin Proc.* 2017 Feb; 92(2):251-265.
2. Jensen, Brian P., Mary Kate Kelly, Maura Powell, Zoe Bouchelle, Stephanie L. Mayne, and Alexander G. Fiks. "COVID-19 and Changes in Child Obesity." *American Academy of Pediatrics.* 2021 May; 147 (5) e2021050123
3. Chari, R., Warsh, J., Ketterer, T., Hossain, J., & Sharif, I. (2014). Association between health literacy and child and adolescent obesity. *Patient education and counseling*, 94(1), 61-66.

## **Addressing Childhood Obesity Through Community Partnership**

Leida Voulgaropoulos MD, Sasha Licon MD, Yurhee Lee MD, Matthew Murray MD, Surabhi Menon MD, Tatiana Ndjatou MD, Laurie Gordon MD

**Background:** The rising prevalence of childhood obesity is associated with significant morbidity and mortality. Social determinants of health including race, ethnicity, neighborhood environment, and single parent households are associated with higher rates of childhood obesity. Moreover, childhood obesity rates increased during the Covid pandemic with more pronounced increases among patients who were ages five to nine, Hispanic, Non-Hispanic Black, publicly insured, and lower income. Low parental and adolescent health literacy have been shown to be associated with higher rates of child and adolescent obesity. Partnering with a community organization may be an effective way to improve families' health literacy in nutrition, and lead to decreased rates in obesity.

**Objective:** To collaborate with a community organization to address childhood obesity by providing education and resources to lower income and minority families.

**Methods:** We partnered with StreetSquash, a private nonprofit organization that offers academic tutoring, squash instruction, community service, college preparation, leadership development, and mentoring for ages 11-24. We developed interactive presentations on topics of nutrition and healthy behaviors that we presented twice at Street Squashes' virtual family meetings. We administered a survey before and after the presentations to further assess parents' understanding of nutrition and obtain feedback for future sessions. The survey consisted of five questions on topics food groups, nutrition labels, and obesity. We collected and assessed data on the following parameters: (1) Number of pre- and post-survey responses (2) Overall responses (3) Responses to specific questions.

**Results:** The mean score on knowledge questions was 42% in the pre-survey group and the post-survey respondent score was 50%. Three out of four pre-survey respondents felt comfortable reading nutrition labels and the post-survey respondent felt comfortable reading nutrition labels.

**Conclusion:** Our preliminary findings suggest that there continues to be a need for nutrition education for this group. Answers to pre-survey questions are aligned with older nutrition guidance that has since been revised. Next steps include continuing collaborating with StreetSquash to provide educational interventions, studying the outcomes of the educational interventions, and conducting a formal needs assessment for the communities that StreetSquash serves.

## Background

- Between 2013-2025, inpatient colorectal surgeries are expected to increase by more than 40% along with an 18% increase in geriatric colorectal surgery. Geriatrics are predicted to develop unprecedented diversity, particularly in New York City. Changing demographics are concerning for future disparities of care. Elderly immigrant patients with low socioeconomic status are more likely to have higher stage colorectal cancer at diagnosis and less likely to undergo colorectal cancer screening. Urgent non-elective colorectal surgery requires time-sensitive information delivery and may appropriately assess patient counseling success. Given our heterogeneous geriatric patient population, we sought to identify any potential deficits in patient counseling through postoperative outcomes.

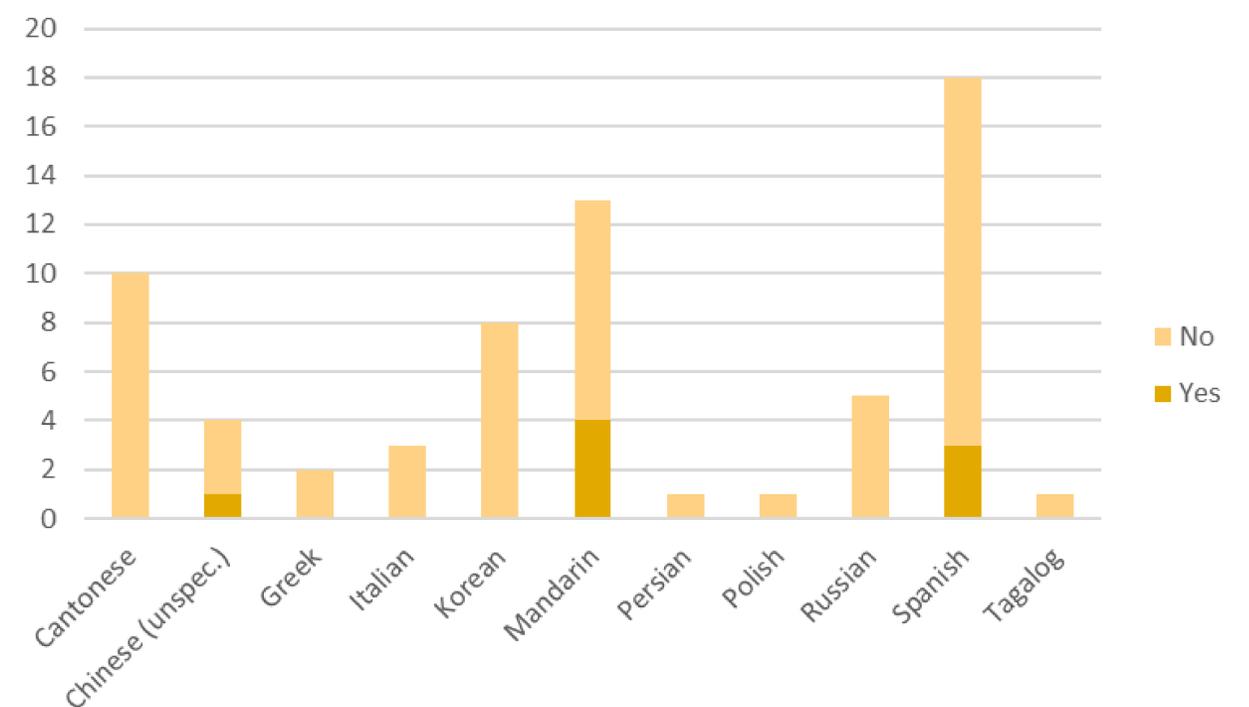
## Methods

- Single-institution retrospective study on geriatric patients (age >65 years) undergoing non-elective colectomy during the period 2015-2020. Baseline, perioperative, and postoperative data were abstracted from a prospectively derived database used to submit data to the National Surgical Quality Improvement Program. Univariate and bivariate models were conducted using SAS 9.4.

## Results

- 162 patients. Mean age was 78.3 years. 40% were male. 66 patients spoke 10 non-English primary languages. 21 attending surgeons were proficient in 3 non-English languages. Attending surgeon spoke the primary language of 108 patients and required translation for 53 patients. Language disparity was not associated with preoperative demographics, or postoperative discharge disposition ( $p=0.27$ ), 30-day readmission ( $p=0.14$ ), septic shock ( $p=0.59$ ), 30-day reoperation ( $p=0.31$ ), and 30-day mortality ( $p=0.62$ ).

Language overlap between primary surgeon and patient



## Conclusions

- Elderly patients with language barriers experience acceptable outcomes in urgent colorectal surgery. Findings may not represent non-operative cases or out-of-hospital mortality.

## Background

Enhanced recovery after surgery (ERAS) programs utilize standardized protocols and guidelines to improve patient recovery.

- The primary goal of ERAS initiatives is to enhance the patient experience through active participation in the recovery process, while reducing hospital length of stay.

- ERAS encompasses 4 main stages:

1. Planning and preparing before surgery
2. Reducing physical stress of the operation
3. Managing post-operative analgesia
4. Early feeding and ambulation

- ERAS programs have been implemented and evaluated in many surgical subspecialties, but less is known about their effect on the current opioid epidemic.

## Objective

To compare opioid prescription (Rx) practices before and after implementation of an ERAS protocol for cesarean delivery (CD).

## Study Design

An ERAS-CD program was implemented at Weill Cornell on 10/22/18:

All patients undergoing CD were maintained on an ERAS pathway of care, which included a multimodal analgesic regimen.

- Pre-operative Acetaminophen 975mg PO with sip of water
- Intra-operative spinal or combined spinal epidural anesthesia
- Intrathecal Morphine 150mcg or epidural Morphine 3mg
- Fluid co-load, Phenylephrine infusion starting at 50mcg/min
- Ketorolac 30mg IV at beginning of fascia closure
- Post-operative standardized pain regimen:
  - Motrin and Acetaminophen around the clock; oxycodone only as needed
  - Hydromorphone 0.2mg IV PCA q10mins for breakthrough
- Using a healthcare analytics platform, we compared the proportion of patients who received an opioid Rx upon discharge 12 months before (October 2017 – September 2018) and 12 months after (November 2018 – October 2019) implementation of an ERAS-CD program, with October 2018 being excluded as a run-in period.
- For patients who received a Rx, we compared the average number of pills and amount in mg prescribed per patient.
- Chi square and Student's T test were used for statistical comparison with  $p < 0.05$  considered statistically significant. Categorical data are expressed as n (%) and continuous data are expressed as mean +/- standard deviation

## Results

In the pre-ERAS-CD group, 1113 (64.4%) of the 1729 women received an oxycodone prescription upon discharge. In the post-ERAS-CD group, 712 (40.6%) of the 1753 women who had a CD received an oxycodone prescription, a statistically significant reduction from the pre-ERAS-CD group ( $p < 0.0001$ ). When looking specifically at the patients who received an oxycodone prescription, the number of pills, milligram amount prescribed per patient, and mean morphine milligram equivalents received by each patient was significantly reduced.

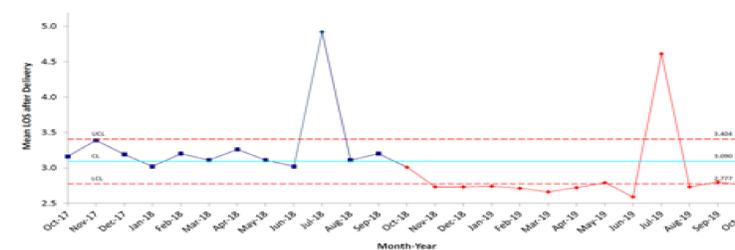
**Table 1. Patient demographic and delivery data pre- and post- Enhanced Recovery After Surgery for Cesarean Delivery program implementation**

Characteristic	Cesarean Delivery Patients		p
	Pre-ERAS-CD (n=1729)	Post-ERAS-CD (n=1753)	
Maternal Age at Delivery, years	35.3 +/- 5.1	35.3 +/- 5.0	0.99
<35 years	735 (42.5%)	760 (43.4%)	0.59
≥35 years	994 (57.5%)	993 (56.6%)	
Race-Ethnicity			<b>0.02</b>
White	862 (49.9%)	942 (53.7%)	
Asian	284 (16.4%)	277 (15.8%)	
Hispanic	128 (7.4%)	107 (6.1%)	
Black	124 (7.2%)	97 (5.5%)	
Other	122 (7.1%)	99 (5.6%)	
Unknown or missing	209 (12.1%)	231 (13.2%)	
Insurance Payer Status			<b>0.05</b>
Private	1495 (86.5%)	1555 (88.7%)	
Government	234 (13.5%)	198 (11.3%)	
Nulliparity			0.32
Yes	848 (49.1%)	890 (50.8%)	
No	721 (41.7%)	697 (39.8%)	
Unknown or missing	160 (9.3%)	166 (9.5%)	
Prior Cesarean Delivery			0.90
Yes	651 (37.7%)	657 (37.5%)	
No	1078 (62.3%)	1096 (62.5%)	
Type of Gestation			0.49
Singleton	1601 (92.6%)	1633 (93.2%)	
Twin	116 (6.7%)	108 (6.2%)	
Triplet	2 (0.1%)	4 (0.2%)	
Unknown or missing	10 (0.6%)	8 (0.5%)	
Gestational Age at Delivery, weeks	38.3 +/- 2.3	38.3 +/- 2.3	0.99
≥37 weeks	1483 (85.8%)	1536 (87.6%)	0.12
34-36 6/7 weeks	178 (10.3%)	150 (8.6%)	
28-33 6/7 weeks	51 (3.0%)	44 (2.5%)	
<28 weeks	11 (0.6%)	20 (1.1%)	
Unknown or missing	6 (0.4%)	3 (0.2%)	
Preterm Delivery (<37 weeks)			0.14
Yes	240 (13.9%)	214 (12.2%)	
No	1489 (86.1%)	1539 (87.8%)	
Case Mix Index	0.88 +/- 0.18	0.97 +/- 0.20	<b>&lt;0.0001</b>

**Table 2. Opioid metrics for patients receiving an oxycodone prescription pre- and post- Enhanced Recovery After Surgery for Cesarean Delivery program implementation**

	Pre-ERAS-CD (n=1113)	Post-ERAS-CD (n=712)	p value
Overall number of oxycodone pills prescribed	28,147	11,920	--
Mean number of oxycodone pills prescribed/patient	25.3 +/- 13.7	16.7 +/- 8.7	<b>&lt;0.0001</b>
Mean amount of oxycodone prescribed/patient (mg)	127.2 +/- 71.0	83.7 +/- 43.3	<b>&lt;0.0001</b>
Mean MME prescribed/patient (mg)	70.9 +/- 72.7	45.7 +/- 48.0	<b>&lt;0.0001</b>

**Figure 1. Pre-post ERAS-CD Length of Stay (LOS) control chart**



Note: Pre-ERAS-CD period is outlined in blue and post-ERAS-CD period is outlined in red.

## Conclusion

After implementation of an ERAS protocol at our institution, we observed a decline in the amount of oxycodone pills and mg equivalents prescribed to patients following CD.

- Although the observed reduction in oxycodone prescribing is likely multifactorial, ERAS programs may serve a promising role in addressing the current opioid epidemic. *Reduced LOS (Figure 1) maybe acting as a confounder.*

- Future goals include:

- Correlation of inpatient opioid usage and discharge Rx
- Assessment of TAP block utilization after CD at our institution
- Evaluation of outcomes in complex patient populations:
  - History of opioid use disorder
  - Severe allergy to Motrin and/or Acetaminophen
  - Contraindications to Motrin and/or Acetaminophen

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@RobertWhiteMD

# CODE-ONC: A multidisciplinary quality improvement initiative to reduce time to ED antibiotic administration for febrile neutropenic pediatric oncology patients

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## Background

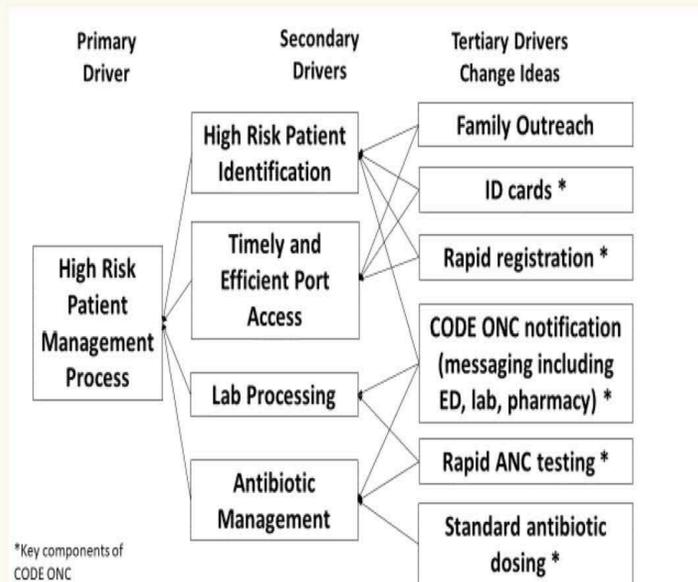
- Early antibiotic administration, within 60 minutes from arrival to the pediatric emergency department (PED), is considered standard of care for febrile neutropenic pediatric oncology patients
- Many factors contribute to prolonged time to antibiotic administration (TTA), including: delay in recognition of patient arrival, difficult port access, poor communication between teams, and the need to wait for the complete blood count (CBC) result to determine neutropenia

## SMART AIM

To reduce TTA for febrile neutropenic pediatric oncology patients in the PED from the current median of 96 minutes to <60 minutes by June 2021

## Key Driver Diagram

Key stakeholders developed a driver diagram. Tertiary drivers comprised the components of the **CODE-ONC** intervention



## Methods

### Study Design:

Observational QI project with sequential experimentation

### Patient population:

Patients ≤18 years presenting to the PED with an oncologic process and fever and/or history of fever

### Process Measure:

- 1) Time to CBC result
- 2) Time to antibiotic administration (TTA)

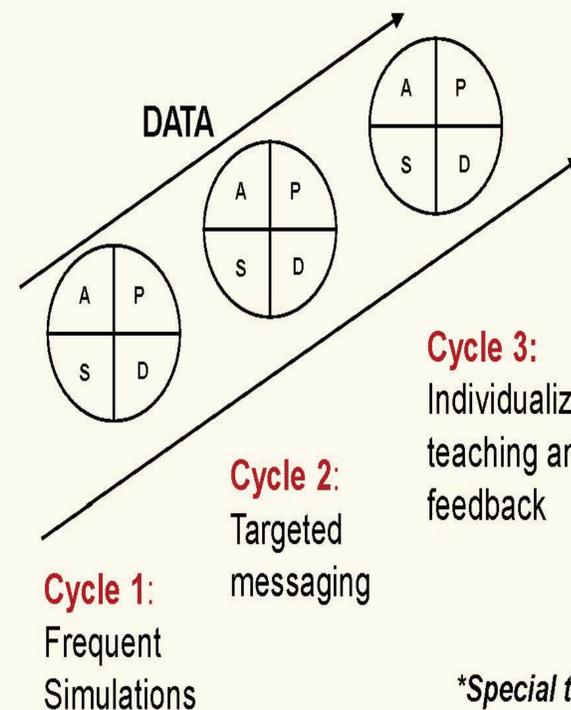
### Balancing Measure:

Need for escalation of care

### Analysis:

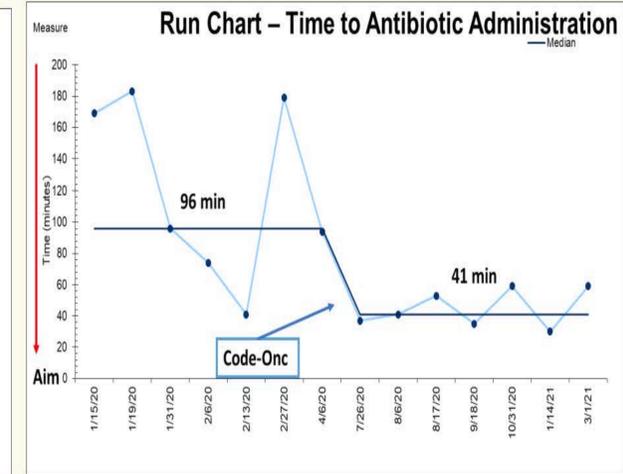
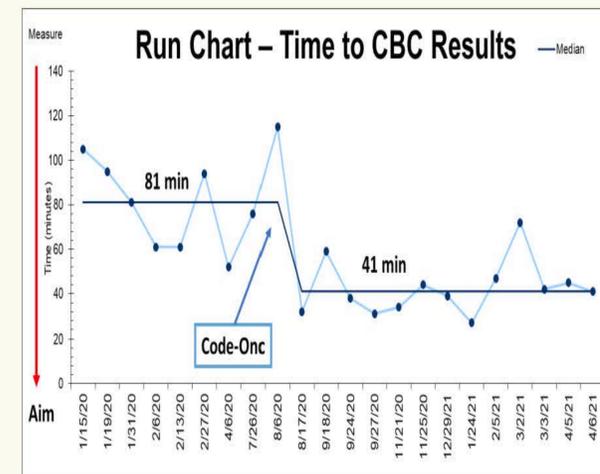
Run charts were utilized to display and analyze data. Run chart rules were applied to detect signal of change

## Plan Do Study Act Cycles



## Results

### 22 CODE-ONC activations; 8 neutropenic patients requiring antibiotics



- Median time to CBC (rapid ANC) decreased from 81 → 41 minutes

- Median TTA decreased from 96 → 41 minutes

No patient required escalation of care

## Impact and Future Directions

- Implementation of the **CODE-ONC** QI initiative improved TTA for febrile neutropenic pediatric oncology patients to <60 minutes from arrival, while preserving antibiotic stewardship
- We continue to conduct monthly simulations and provide individualized feedback and education following each **CODE-ONC** activation
- Our next cycle includes establishing an electronic health record notification for **CODE-ONC**

*\*Special thanks to Sherron Andrews and Sabrina Racine-Brzostek, MD, PhD (Laboratory Medicine), Maryam Zaeem, PharmD, BCPS (ED Pharmacy), and Melaney Gordon, RN, Alexandra Tsepukh, RN, and Jason Salvatierra, RN (ED Nursing).*



## ED Follow Up Center: Standardized Follow Up of Discharged High Risk Abdominal Pain Patients

Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium | Tuesday, September 21, 2021

<sup>1</sup>McCarty M, <sup>1</sup>Steel P, <sup>1</sup>Sharma R

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### Background

- ED return visits occur for many reasons
- Most concerning is missed diagnosis and progression of disease/clinical deterioration
- Returns also commonly related to inadequate discharge planning or instruction
- Patients discharged with abdominal pain are at an increased risk of returning within 72 hours
- Patients discharged with “negative” or “normal” abdominal imaging at increased risk of returning to the ED and needing admission.
- No standardized process exists for follow up of these patients

### Goals/Objectives

Does the establishment of an ED follow up center reduce adverse outcomes and unnecessary 72 hr ED returns in patients discharged from the ED after “normal” or “negative” abdominal imaging?

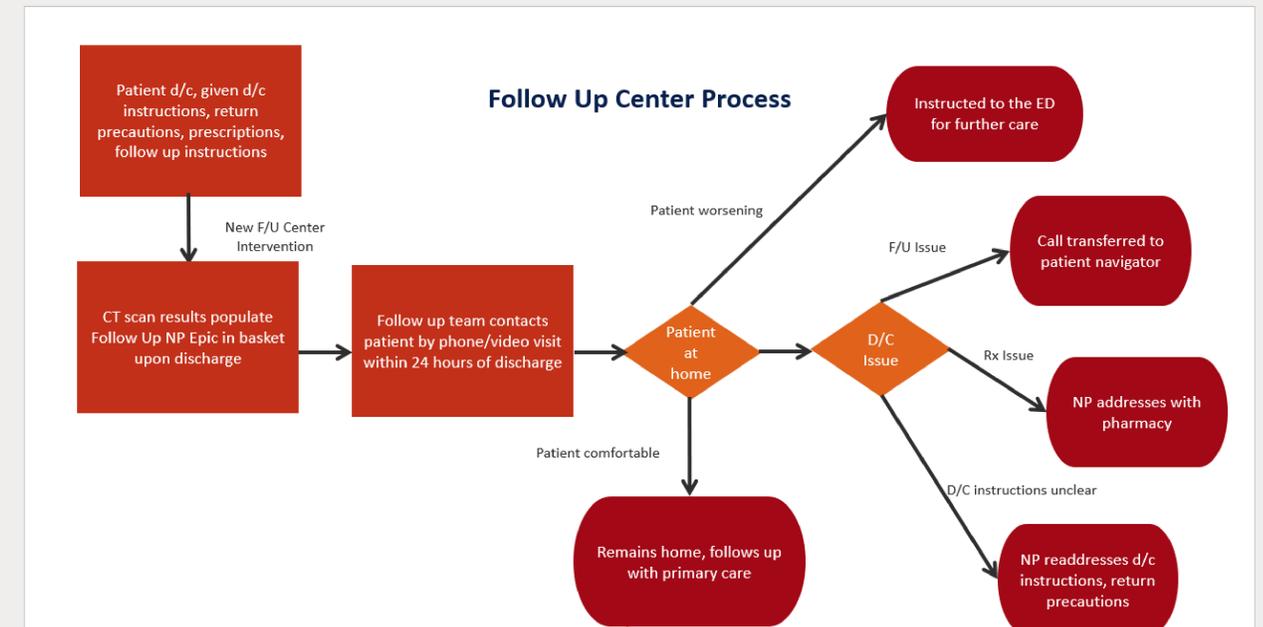
The aim of this project is to evaluate the establishment of an ED follow up center with NP led callback of 90% of patients discharged from the ED at WC and LMH who received abdominal imaging within 24 hours to assess the impact on 72hr return visits 6 months after call center establishment

### Pre-intervention Data

Counts	Cornell	LMH	Total
<b>Total</b>	2399	1284	3683
<b>72h</b>	132	56	188
<b>72h + Admit</b>	49	21	70
<b>Between 72h and 7d</b>	67	40	107
<b>Between 72h and 7d + return</b>	28	3	31

Percentage	Cornell	LMH	Total
<b>72h</b>	5.5%	4.4%	5.1%
<b>72h + Admit</b>	37.1%	37.5%	37.2%
<b>Between 72h and 7d</b>	2.8%	3.1%	2.9%
<b>Between 72h and 7d + return</b>	41.8%	7.5%	29.0%

### ED Follow Up Center Process Map



### Next Steps

- Complete post intervention period
- Collect post Intervention Data
- Consider expansion of project and follow up center workflow to other high risk ED patients
- Expand follow up center to other NYP East Campus ED Sites



## BACKGROUND

- Colorectal cancer (CRC) is a very common and lethal malignancy.
- Screening for CRC decreases both incidence and mortality.
- CRC screening rates are below target levels, even among patients with adequate access to care and insurance coverage.
- Weill Cornell Internal Medicine Associates (WCIMA) providers have noted that many of their patients remain unscreened, despite being referred for CRC screening.

## AIM

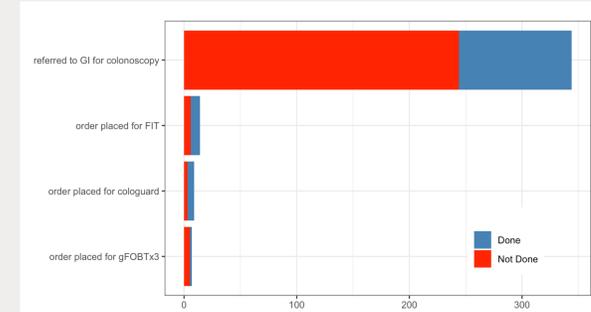
- We aim to increase the rate of CRC screening completion in the WCIMA BLUE area patients by 20% over a 12-month period by utilizing patient outreach, providing patients with educational information about CRC screening, and by notifying providers of patients who have not completed screening.
  - » **CRC screening completion** is defined as completion of ANY CRC screening test within 12 months of the PCP placing an order in EPIC indicating that the patient needs CRC screening or surveillance.

## METHODS

- Retrospective chart review performed to determine the baseline CRC screening completion rate among WCIMA patients.
- Weekly EPIC data reports and chart review to track patients in whom CRC screening tests have been ordered by the PCP for the **IMPROVEMENT PERIOD**.
- For WCIMA **BLUE area** patients who have not completed CRC screening 4-6 months after referral placement, patient outreach via **Connect message or telephone call**.
  - » Patient outreach includes information about importance of CRC screening & options for stool-based testing.
- Tracking of outcome and process measures.

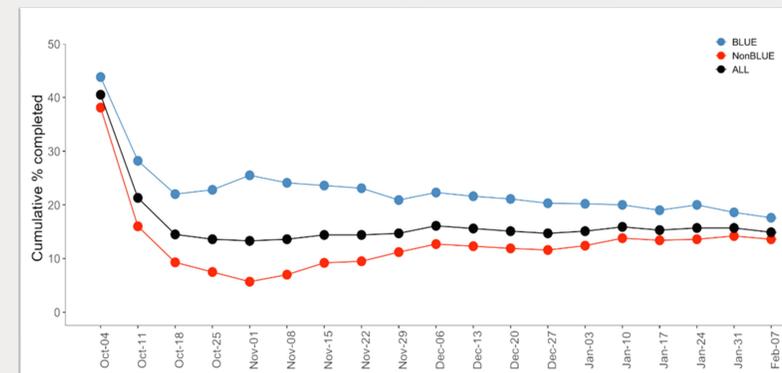
## RESULTS

- Baseline data from patients referred for CRC screening during March 2018 and March 2019 -



- » Most patients (92%) were referred for colonoscopy for CRC screening.
- » Patients were more likely to complete FIT (57%) or Cologuard (67%) testing than they were to complete colonoscopy (29%) or gFOBT (29%).

- Interim data from our **IMPROVEMENT PERIOD**: Patients referred for CRC screening between October 4, 2020 – February 14, 20201.



- Total of 744 patients referred
- Mean of 36 patients referred per week (range 15 to 56)
- 34% (251 patients) are BLUE area patients
- 111 patients have completed a screening test overall, for an **overall screening completion rate of 15%**.
  - BLUE area patients have a screening completion rate of 18%.
  - Non-BLUE area patients have a screening completion rate of 14%.

## CONCLUSIONS

- Based on March 2018 and March 2019 data, the pre-COVID CRC screening completion rate among WCIMA patients is 34% overall.
  - » 92% of patients were referred for colonoscopy, however patients were approximately twice as likely to complete a single-sample stool-based CRC screening test compared to a multi-sample stool-based test or a colonoscopy.
- Additional time will be needed to determine the effects of COVID, patient outreach, and educational initiatives on the WCIMA CRC screening completion rate.

## Background:

- Patients of Chinese descent remain an underresearched community
- A significant ~20% of patients at LMH are of Chinese descent
- Language, cultural differences, and poor health literacy impact communication, satisfaction with health system, and patient care
- No validated surveys with regards to bloodwork, nutrition views in Chinese patient population in USA. Paucity of literature re: attitudes towards life-sustaining measures

## Aim:

- To improve the care of the Chinese / Chinese American patient population at LMH by understanding their level of medical comprehension through conducting surveys of inpatient general medicine Chinese patients over a period of 3-6 months.

## Study Design:



- Over the phone and in person qualitative surveys conducted
- Mainly “Agree/Disagree/Not Sure” multiple choice questions
- Both patients and their families
- Questions regarding bloodwork, IV hydration, PEG tubes, code status

## Population Characteristics:

Elderly patients

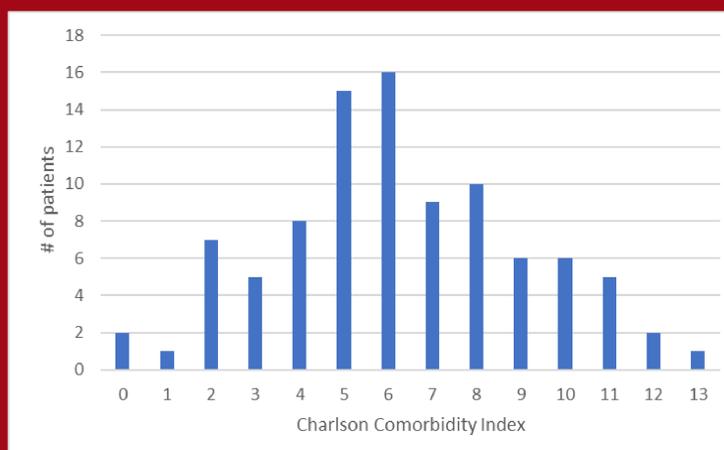
(62% were at least 80 years old)

Higher comorbidity index

(11 out of 93 died, 12%)

Usually lived in USA 25+ years,  
but most comfortable  
communicating in Chinese

>60% surveys were with family

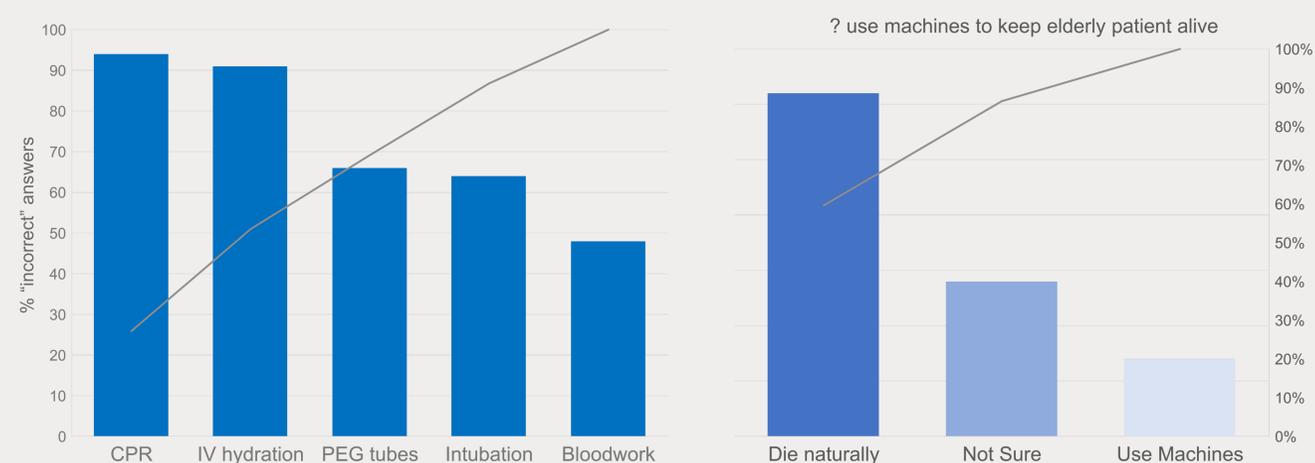


## Outcomes:

- # surveys attempted = 93
- # responses obtained = 59
- # incomplete surveys = 7
- # complete surveys = 52 (or 56% of those attempted)

## Results: Identified Areas of Education Need

- All areas had room for improvement for health literacy
- However, IV hydration and CPR were two areas that <10% of those surveyed answered at least 50% questions ‘correctly’
- Understanding of CPR / Intubation was poor, but most did not feel machines should be used to keep elderly ill patients alive



## Conclusions and Next Steps:

- Chinese patients at LMH are generally older with multiple comorbidities
- Despite this, generally poor understanding of life-sustaining / life-prolonging medical interventions
- Family members play large role in decision-making (family-centric)
- Next steps:
  - 1) Provider education
  - 2) Interventions to improve end-of-life decision making and clarity to healthcare providers (e.g., involving patients’ families and completing MOLST forms / ACP)



Weill Cornell  
Medicine



## Using Clinical Decision Support in Electronic Medical Record to Improve Mineralocorticoid Receptor Antagonist Prescription Rates in Hospitalized Patients with Heart Failure

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Chief Resident for Quality Improvement and Patient Safety  
Department of Medicine  
Weill Cornell Medical College

### BACKGROUND

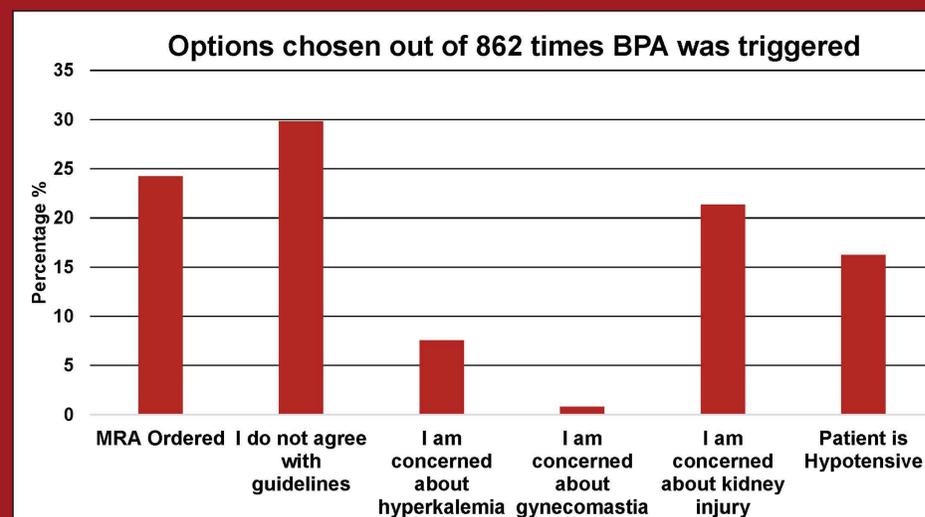
- Mineralocorticoid antagonists (MRA) reduce mortality in patients with heart failure (HF) with reduced ejection fraction and reduce hospitalization in patients with heart failure with preserved ejection fraction.
- Initiation of MRAs during a hospitalization is recommended by an expert consensus decision. However, despite these benefits and recommendations from clinical practice guidelines, MRAs are largely underutilized as described by many previously published studies.
- In a recent study, we have shown that the MRA prescription rates were similarly very low; however, potassium supplements were among most commonly initiated prescriptions. This finding argues against the commonly cited concern of hyperkalemia as the reason for not starting MRAs in heart failure patients as potassium supplements are exclusively given to patients with hypokalemia.
- At NewYork-Presbyterian Hospital Weill Cornell Medical Center, among 1463 patients with HF eligible for MRA initiation, 55.3% had potassium supplements and only 26.2% had MRAs.
- The aim of our study was to increase mineralocorticoid receptor antagonist prescription rates by 10% compared to baseline in eligible HF patients with potassium supplement prescriptions, hospitalized in NYP-Weill Cornell medicine services within 6 months (between 4/13/2021 and 10/13/2021).

### METHODS

- We designed a quasi-experimental intervention study with interrupted time series design. Baseline period was between 10/13/2020 – 4/12/2021 and intervention period was 4/13/2021 – 10/13/2021
- We included patients who were aged 18 and above, admitted to medicine services, had eGFR >30 mL/min and serum potassium <5 mg/dL, and diagnosis of HF. We excluded those with allergies to spironolactone and eplerenone

# Preliminary analyses suggest that a targeted BPA that triggers when a provider orders potassium supplement in a hospitalized patient with heart failure eligible for MRAs might increase MRA prescriptions.

Central Figure



Please e-mail [ozu9001@med.cornell.edu](mailto:ozu9001@med.cornell.edu) for questions

Scan the code to see the BPA design

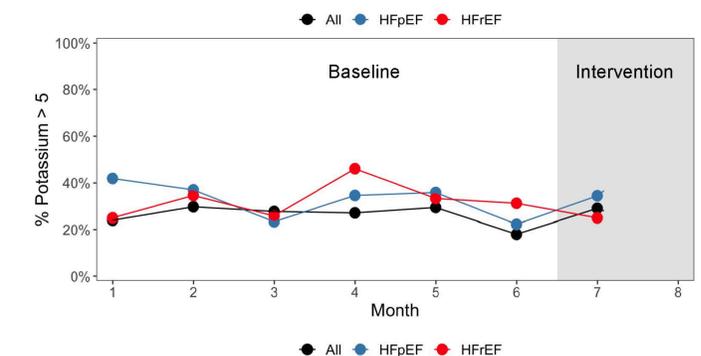
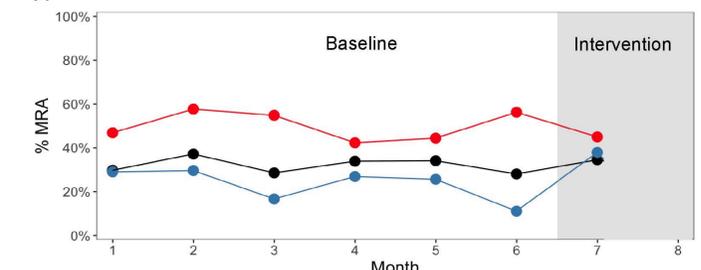


### METHODS (Continued)

- We designed a best practice alert (BPA) that would trigger when a provider is attempting to order potassium supplements in an eligible HF patient.
- We have used incentives, social norms, and defaulting behavioral economics principles to design the BPA to ensure clinician engagement. (Please scan the QR code to see the BPA)

### RESULTS

- >2500 patients with diagnosis of heart failure admitted between 10/12/2020 – 5/12/2021 to medicine services
- 1895 were eligible for MRA initiation
  - GFR >30 mL/min/1.73m<sup>2</sup>
  - Serum potassium level <5
  - Not allergic to spironolactone or eplerenone
- 1198 of MRA eligible patients with HF had hypokalemia (K <4)
  - 30.5% did not get any treatment for hypokalemia
  - 64.4% received potassium supplement in hospital
  - 32.3% had prescription for MRAs in hospital
- Run charts below represent 832 patients who received treatment for hypokalemia



### STUDY MEMBERS

Member	Role in the project
Parag Goyal, MD, MPH	Mentor
Jihui Lee, PhD	Biostatistician
Jennifer Inhae Lee, MD	Quality Improvement Academy Advisor
Jonathan Elias, MD	Implementation of EMR Alert
Michael Wagner, MD	Protocol Design, Data Collection
Evan Sholle	Data Collection (Bioinformatics)
Michael Kim	Data Collection
Yiye Zhang, PhD	Data Collection (Bioinformatics)

### Background

- 26% of all births are induced, and elective labor inductions on the rise
- Outpatient cervical ripening (OCR) with a balloon leads to
  - » 9-10 hours of inpatient time saved → cost savings!
  - » No increased risk of adverse outcomes
  - » Increased patient satisfaction

### Need

- Limited L&D rooms and limited nursing staffing → delays in care
- Need to focus collective attention on highest acuity patients

### Gap in Knowledge

- Among eligible pregnant women at NYP/WCM, is OCR effective at
  - » Decreasing L&D length of stay?
  - » Improving nursing and L&D room utilization?
  - » Decreasing total costs of delivery at NYP?

### Aim Statement

- S** • To decrease L&D length of stay among low risk pregnant women at 39-41 weeks gestation
- M** • From 25 to 17 hours
- A** • Targeting at least 60% of eligible patients
- R** • To improve L&D flow and resource utilization
- T** • Within 12 months of program initiation

### Study Design

- Inpatient and outpatient provider education regarding safety, efficacy, and logistic for scheduling
- Balloon “champion” team assembled
- Low risk, eligible pregnant women offered OCR by outpatient provider

### Outcome Measures

1. Mean # hours on L&D
2. % with additional ripening
3. Patient satisfaction
4. OCR costs

### Process Measures

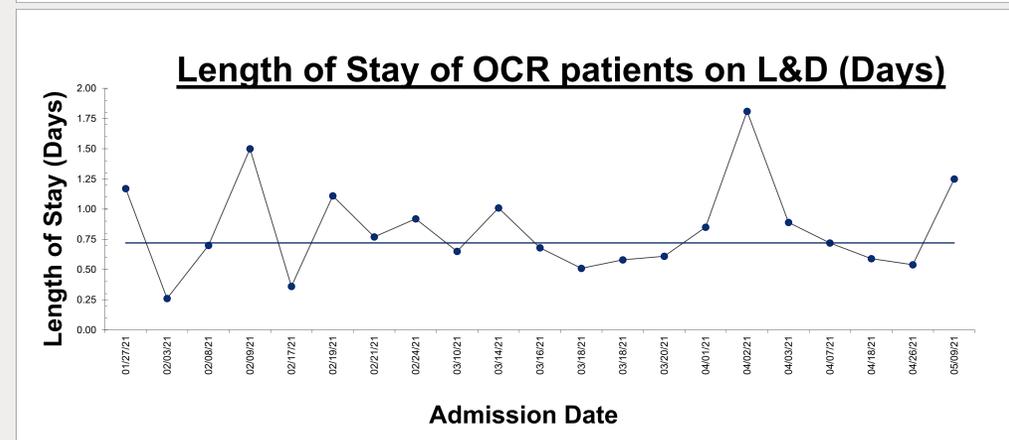
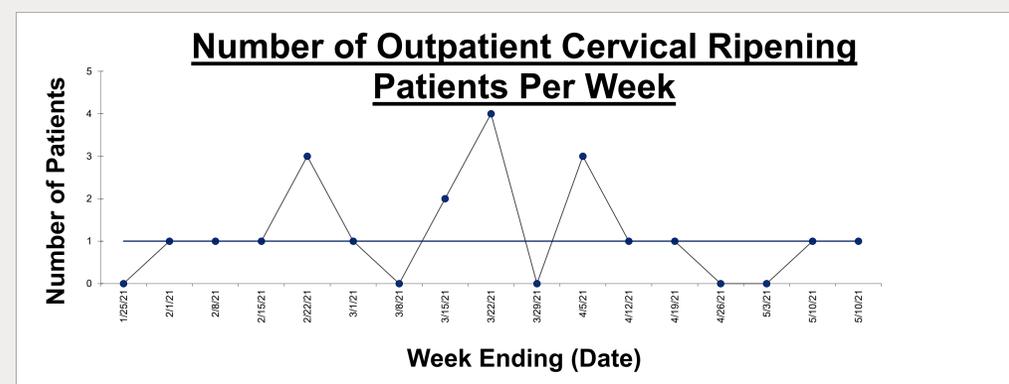
1. % eligible choosing OCR
2. % with successful balloon placement
3. % ineligible scheduled

### Balancing Measures

1. # overnight calls + triage visits
2. # admissions prior to scheduled

### Results

- 1/11/2021: Education + logistics implementation
- 1/27/2021: 1<sup>st</sup> patient



### Next Steps

- Increase number of OCR patients per week
- Gather data on eligible patients undergoing inpatient induction
- Gather cost data for inpatient induction & OCR
- Understand impact on nursing & L&D room utilization and flow
- Improve return rate of patient satisfaction survey

# Decreasing Unplanned Readmissions for Children with Neurologic Conditions

Annual Weill Cornell Medicine Quality Improvement and Patient Safety Poster Symposium

Jamie Lee Palaganas MD | September 21, 2021

**Background:** Readmission rates in pediatric patients widely vary in the literature from 6-30%. Children with high medical complexity account for 18.8% of total admissions. Children with Neurologic conditions have 3<sup>rd</sup> highest volume of index admissions when compared to other chronic illnesses.

## Statement of the Problem:

Children with Neurologic conditions such as epilepsy, migraines, autoimmune conditions have unpredictable courses that can result in unplanned readmissions. With the shift from fee for service to quality measure driven care, there is increasing importance on improving the transitions of care and the system processes that lead to unplanned readmissions.

## SMART Aim:

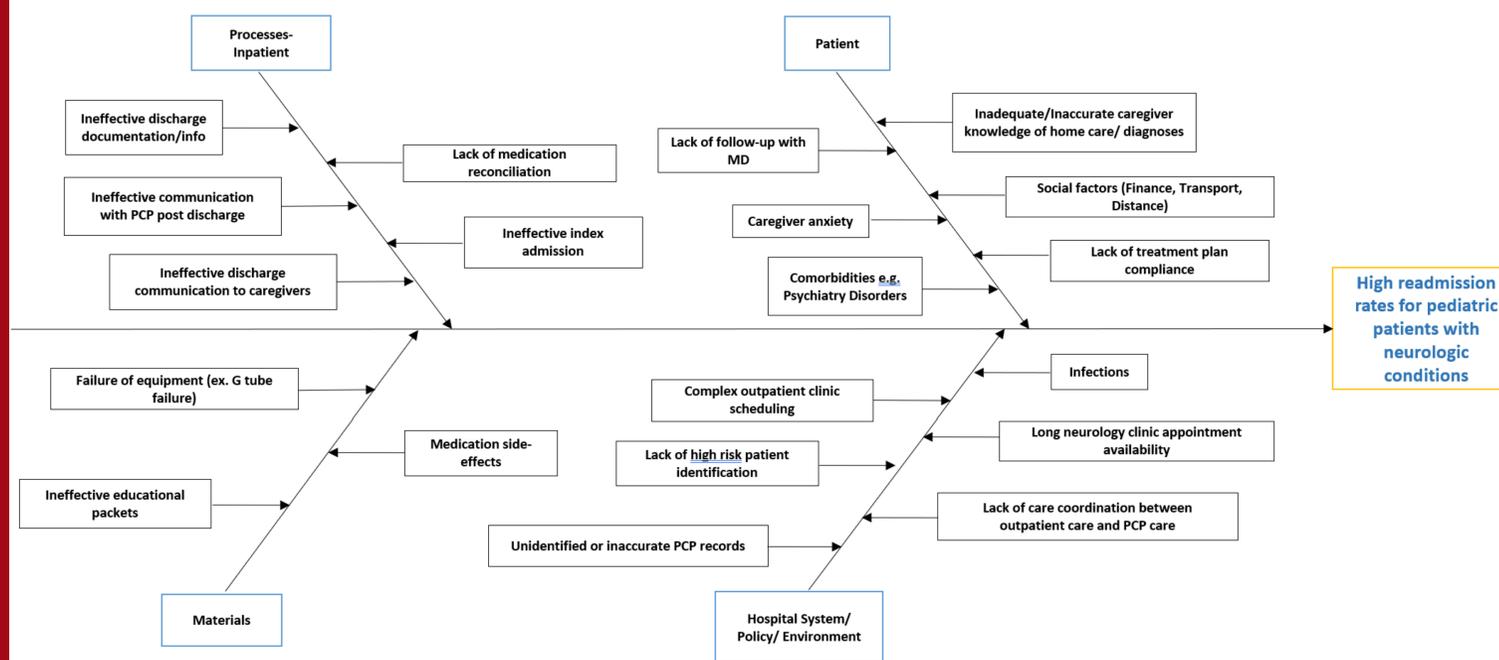
By June 2022, we aim to decrease the unplanned readmission rate for patients with pediatric neurologic conditions admitted to the Komansky Children's Hospital by 20%

## Project Design/Methods:

This is an observational, timeseries study of pediatric patients < 21 yo with neurologic conditions, discharged from any of the pediatric services (medical or surgical).

Data will be displayed and analyzed using SPC charts. Subgroup analysis by age, diagnoses and demographic factors will be performed. API rules will be applied to detect special cause variation. Descriptive statistics will be used to analyze survey data

## Neurology 30-day Readmission: Fishbone Cause & Effect Diagram



**Outcome Measure**

• 30-Day Unplanned Readmission Rate

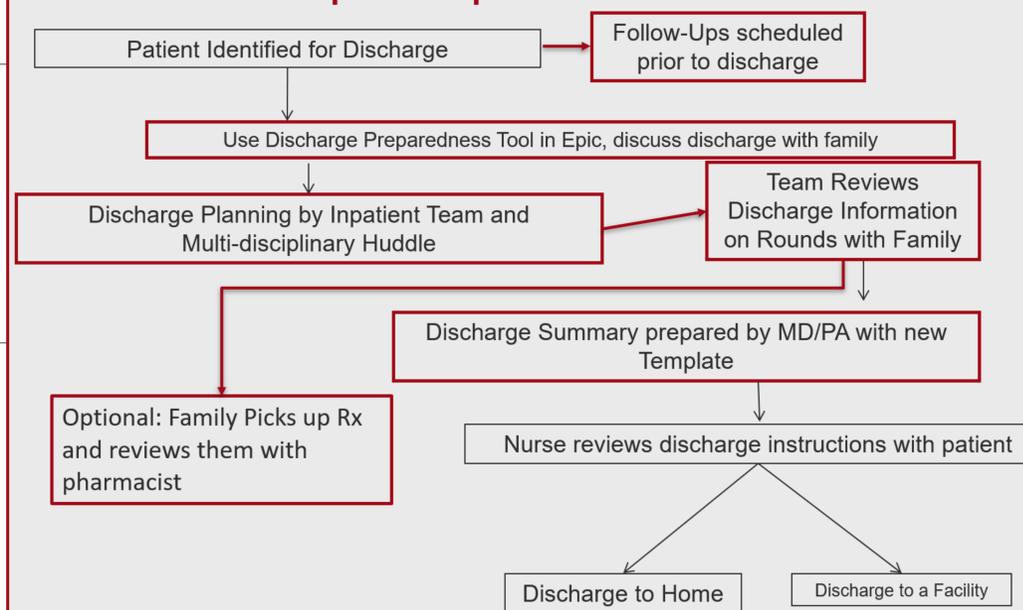
**Process Measures**

- Discharge Template Compliance
- Compliance with Discharge Preparedness Checklist
- % of Follow-up appointments within 30 days of discharge

**Balancing Measures**

- Length of Stay
- Time spent on discharge summary
- Perception of "Service vs Education"
- Increased frequency of Urgent Care/ED visits

## Process Map: Proposed



## Challenges:

- COVID shutdown
- EPIC Rollout
- IRB challenges
- Discontinuation of Primary Neurology Service

## Next Steps:

- Baseline Data Acquisition and Analysis
- Identify High Risk Diagnoses and Demographic Factors
- Meet with MDs, RNs and PAs to optimize workflow
- Pilot Discharge Preparedness Tool
- Pilot Discharge Templates



Kalliope Tsirilakis, MD | September 21, 2021

**Background:**

- 2007 NAEPP- EPR3 Asthma Management Guidelines and 2019/2020 GINA Guidelines make recommendations for standardized management of acute asthma exacerbations and status asthmaticus, including medication dosing, assessing response to treatment, and algorithms for admission and discharge planning including an asthma action plan and follow up.
- Lack of adherence to guidelines in EDs and Inpatient Units leads to variable care, treatment delays, and longer length of stay

**Root Cause:**

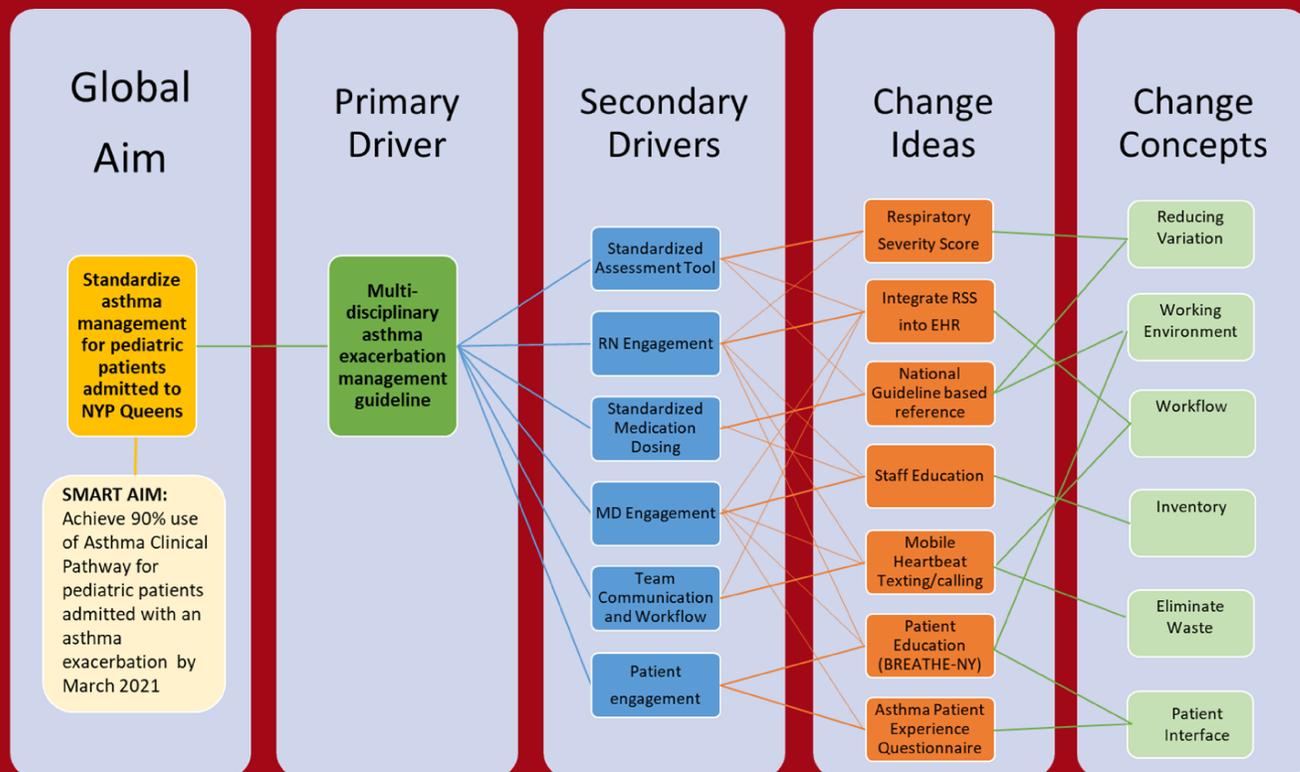
- NYP Queens Pediatrics has no standardized guideline for the assessment and management of pediatric patients admitted with an acute asthma exacerbation or status asthmaticus.

**SMART Aim:**

Achieve 90% use of an Asthma Clinical Pathway for pediatric patients admitted with an asthma exacerbation by March 2021

**Study Design:**

- Observational, time series study design using planned sequential experimentation



**Outcome Measures:**

- RSS and pathway utilization
- Time to wean albuterol
- Length of stay in hours

**Process Measures:**

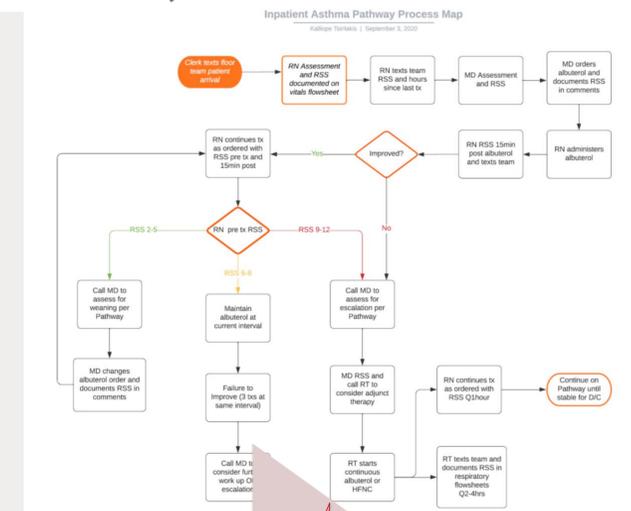
- RN and MD RSS documentation and pathway concordance
- Adherence to guideline dosing of asthma medications

**Balancing Measures:**

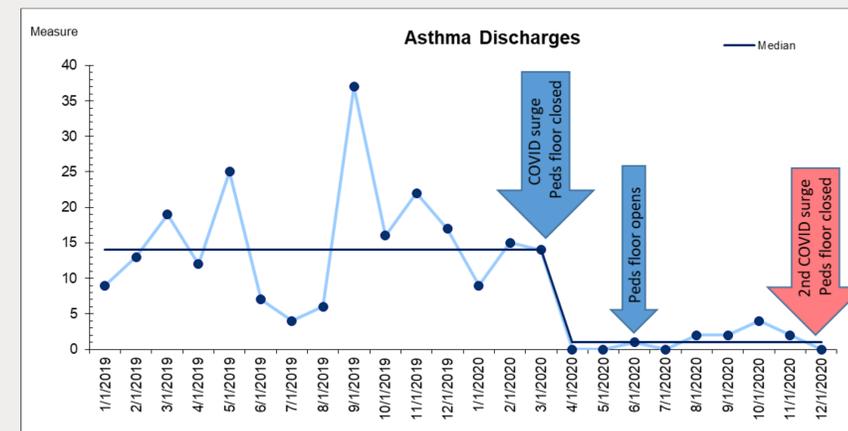
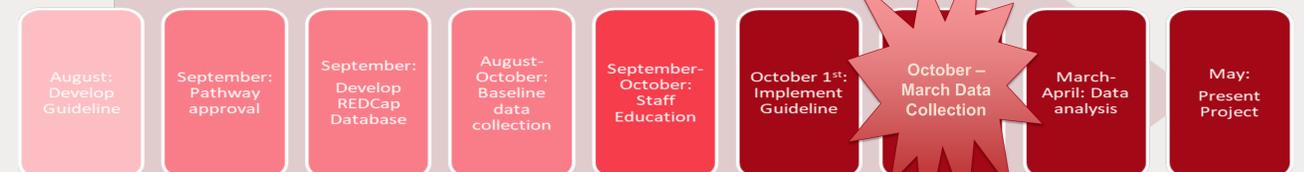
- Escalation of care after weaning
- Pathway deviation

**Interventions:**

- Implement respiratory severity score
- Develop asthma exacerbation pathway
- Define communication and workflow
- Guidelines based medication management



**Project Timeline:**



**Barrier to Implementation:** First COVID-19 surge and quarantine greatly decrease asthma exacerbations to almost zero.

**Special Cause:** Second COVID-19 surge closes Pediatric Inpatient Unit December 2020- May 2021.

**Future Directions:**

- With EPIC go live at Queens in June, collaborated on NYP enterprise wide respiratory severity score to be implemented across all sites
- Beginning discussions with Cornell, Columbia, and Methodist about enterprise wide Acute Asthma Exacerbation Pathway based on new RSS
- Continued collaboration with Pediatric ED for Pathway Implementation at Queens
- Resume data collection after EPIC go live and new RSS and pathway integrated

**Project Team:**

Jennifer Small, NP, AE-C; Irina Trifonova, MD; Zenna Solomon, MD; Erika Surinach, RN; Regina Langer, Pharm-D; Martiny St Juste, RRT; Sophia Silao; Carla Cangemi, MD; Katiana Garagozolo, MD

Special thanks to Snezana Osorio, MD