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# **Virtual Nursing Research Day Poster Showcase 2020<sup>©</sup>**

**Massachusetts General Hospital**

**The Yvonne L. Munn Center  
for Nursing Research  
and**

**The Nursing Research Day Planning  
Committee**

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# **EVIDENCE BASED PRACTICE POSTERS**



# IDENTIFYING AND ADDRESSING THE BARRIERS TO KANGAROO CARE IN CRITICALLY ILL OR PRETERM INFANTS

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## PRACTICE ISSUE

Kangaroo care is a method of holding an infant, dressed only in a diaper, on the parent's bare chest. The benefits to the infant include decreased pain perception and stress response, as well as improvements in parent-infant bonding, physiologic stability, immunity, neurodevelopment, and breastfeeding. Benefits for parents are enhancements in parent-infant bonding, confidence and competence in parenting role, breast milk production and breastfeeding longevity. Despite these benefits, it is not practiced as standard of care for many critically ill or preterm infants. We searched the literature to discover the barriers to daily kangaroo care in our neonatal population.

## PICO QUESTION

What are the barriers to implementing daily kangaroo care as compared to standard in-arms holding for critically ill or preterm infants?

## METHOD FOR SYNTHESIS OF EVIDENCE

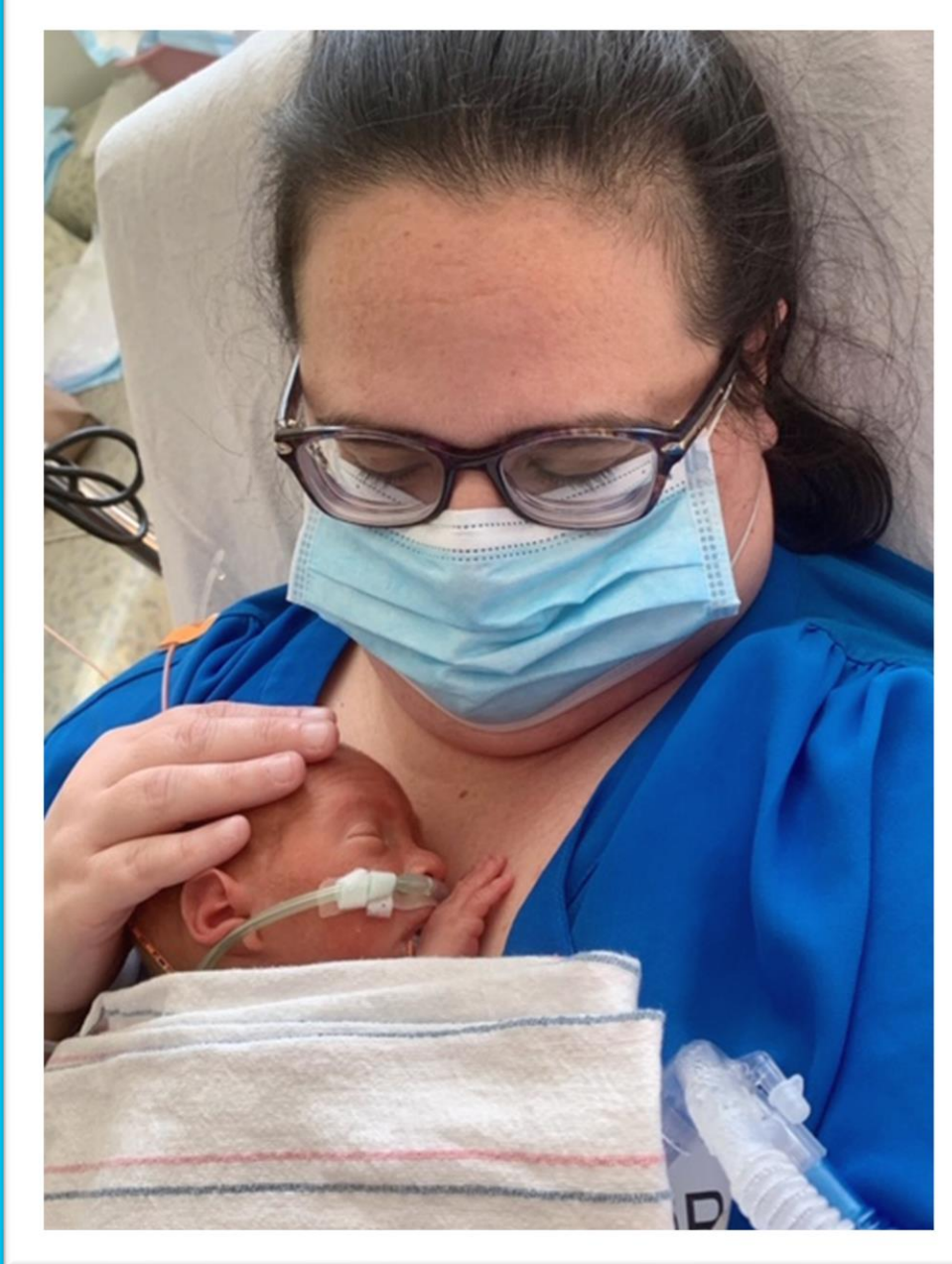
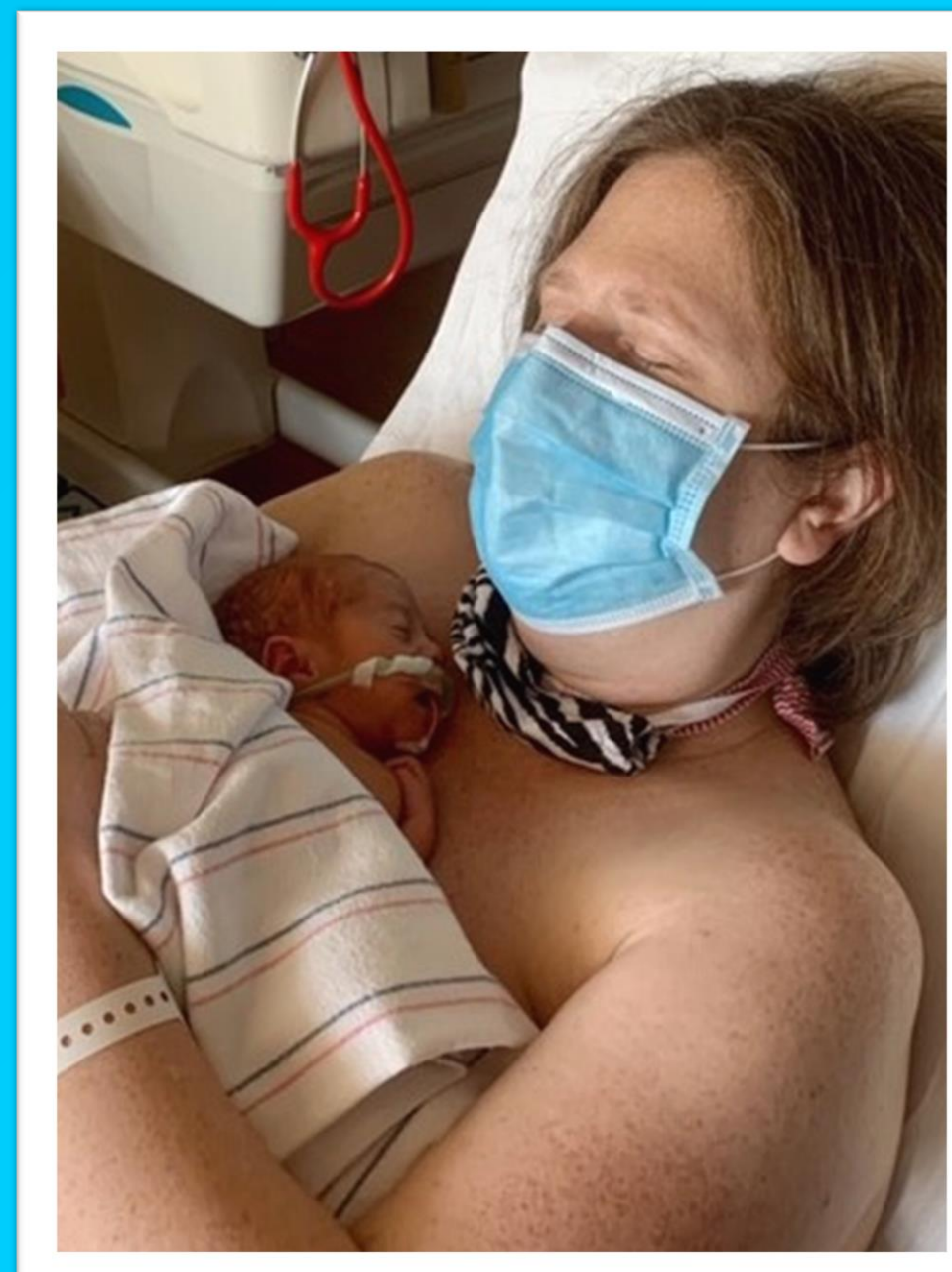
The Johns Hopkins Nursing Evidence-Based Practice model and tools were utilized. Ovid, CINAHL and Medline Complete were searched using key words: "NICU," "kangaroo care," and "skin to skin," combined with "barriers," "enable\*," "support\*," or "facilitate\*."

Fifty-eight articles were retrieved. Five were eligible for inclusion. One article was rated 2B, three were 3A, and one was 3B. Three were systematic reviews and two were original research.

Barriers include: buy-in; social support; time; concern for health of infant or mother; access to training and resources; environment; and cultural norms.

## RECOMMENDATION FOR PRACTICE OUTCOME

Provide education to staff and parents.  
Create and implement a clinical guideline for staff.



## IMPLICATIONS FOR NURSING PRACTICE

Kangaroo care is a well-documented, evidence-based intervention with positive effects for infants and families. By addressing the barriers to providing daily kangaroo care, it is possible to improve outcomes for infants and families, promote parental caregiving confidence, and decrease length of stay.

A Kangaroo Care Guideline has been created, and we are developing multi-media staff and parent education. This includes parent educational brochure, video demonstrating transfer of baby for kangaroo care, staff educational slides with in-person discussions, and nursing journal club presentation/discussion.

## SAMPLES OF STAFF AND PARENT EDUCATION

### PARENT BROCHURE (DRAFT)

NEONATAL INTENSIVE CARE UNIT

MassGeneral Hospital  
for Children

#### Kangaroo Care Tips for New Parents

Congratulations on your new little one! In this handout, you will learn tips for kangaroo care with your baby. Your nurse will also help you during your hospital stay.

**WHAT IS KANGAROO CARE?**  
Kangaroo care (also called skin-to-skin) is a wonderful way for you to bond and cuddle with your baby. Wearing only a diaper, your baby will lay against your bare chest and feel your warmth and touch. They will smell your scent and hear your voice and heartbeat. Kangaroo care can be provided by a parent or other caregiver designated by you.

**WHAT ARE THE BENEFITS OF KANGAROO CARE?**

- Helps keep your baby warm
- Stabilizes heart rate and breathing pattern
- Decreases pain and helps baby relax
- Improves feeding and growth
- Supports brain development and more restful sleep
- Helps prevent infection
- Enhances bonding with baby
- Boosts your confidence in caring for your baby and decreases your stress
- Helps increase milk supply and breastfeeding duration

**WHEN AND HOW CAN I PROVIDE KANGAROO CARE?**  
Here are some tips to provide kangaroo care:

- Begin kangaroo care as soon as possible. Your nurse will help you decide when your baby is ready for Kangaroo Care. Your baby may kangaroo as often and for as long as possible.
- Ideally, kangaroo care should happen around the time your baby receives care. In order to help with deep sleep, it is best for your baby to kangaroo for at least 1 hour.
- Wear an open front shirt or robe and remove any clothing (including a bra or camisole) that could come between skin-to-skin contact with your baby.
- Take care of personal needs (such as food, drink or using the bathroom) before providing kangaroo care. Breastfeeding mothers should pump first.
- Provide kangaroo care in a quiet, calm space. Your nurse will help provide a quiet and low stimulation environment during kangaroo care.

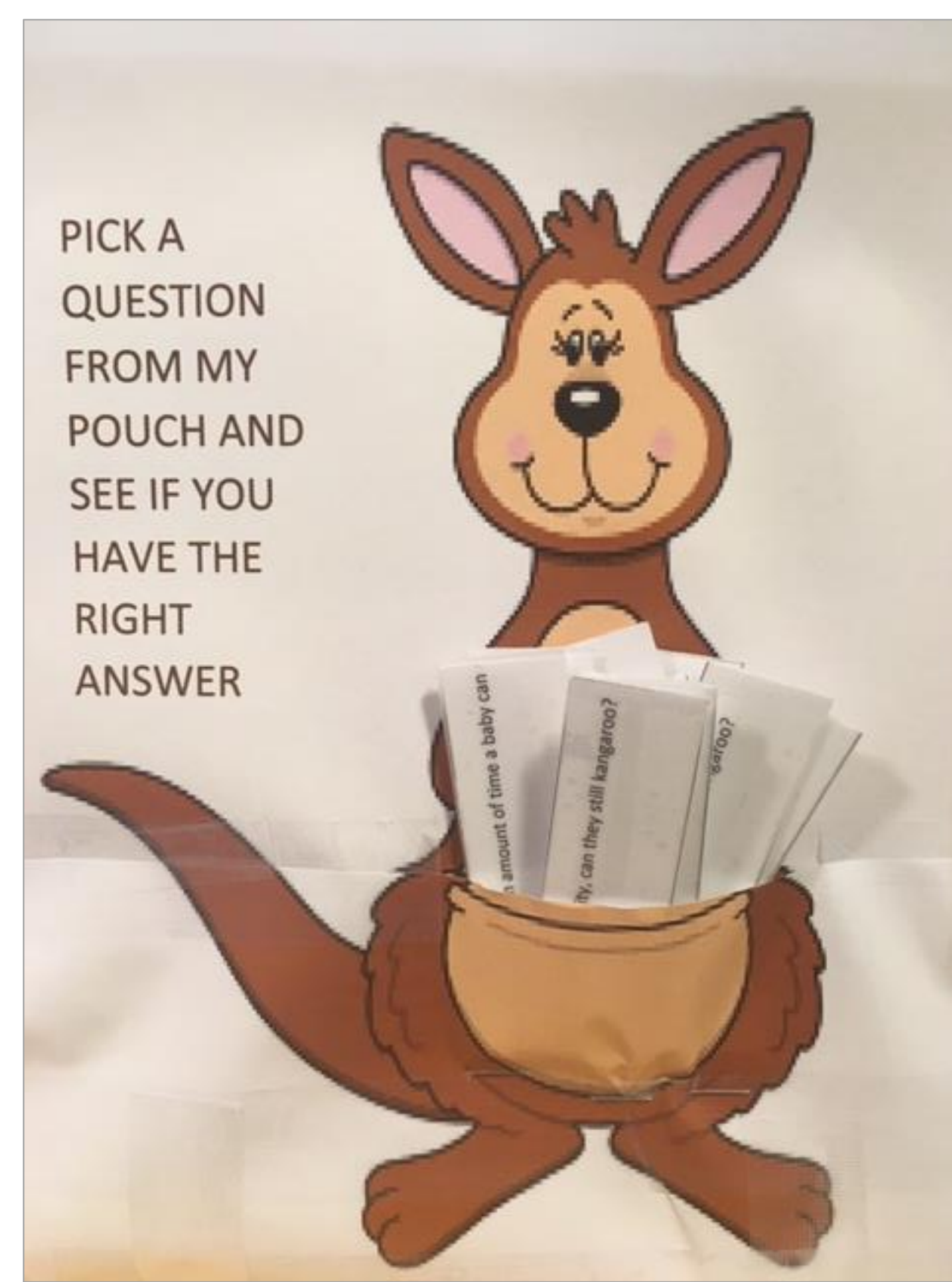
**HOW WILL I GET MY BABY INTO THE BEST POSITION?**  
Provide kangaroo care for your baby while sitting in a comfortable chair or recliner. Your nurse will help you transfer your baby to your bare chest in one of two ways. Your baby should be in an upright position with their knees tucked up and their chest resting on your chest.

There are two ways to get your baby into position—the standing transfer and the sitting transfer. Your baby's nurse will help you learn about and decide which way is best for you and your baby.

### SNAPSHOT OF PARENT/STAFF EDUCATION VIDEO OF HOW TO TRANSFER BABY IN/OUT OF ISOLETTE FOR KANGAROO CARE



### STAFF EDUCATION POSTER



### SNIPPET OF FINAL GUIDELINE IN ELLUCID

MASSACHUSETTS GENERAL HOSPITAL

NICU/LEVEL 2 NURSERIES  
Kangaroo Care Guideline

**LEVEL OF PERSONNEL:** Nursing, RRT

**DESIGNATED CLINICAL AREAS:**

NICU  
Level 2 Nurseries

**APPLICABLE POLICY STATEMENT:** Kangaroo care will be offered to all qualifying infants as standard of care.

Kangaroo Care (KC) is skin-to-skin contact between an infant and his/her mother, father, or designated kangaroo KC provider (KC provider). Kangaroo care is an evidence-based nursing intervention which has been shown to provide multiple benefits and can mitigate negative consequences of the hospital environment. The benefits for the infant include:

- physiologic stability
- enhanced infant-parent bonding
- improved self-regulation
- decreased pain perception
- reduced stress
- enhanced neurobehavioral development
- improved immunity
- increased breastfeeding incidence and duration

Parental benefits include:

- enhanced infant-parent bonding
- greater confidence and competence in their parenting role
- increased maternal breast milk production and breastfeeding longevity

**CRITICAL ELEMENTS:**

- Skin-to-skin contact must encompass the infant's full ventral surface (from navel to neck) with direct contact to KC provider's skin
- Two-person minimum transfer for all intubated patients. Communication between RN and RT should occur prior to kangaroo care time to formulate plan of care including assessment of ETT

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# SHIFTING THE PROTOCOL FOR A BOWEL PREPARATION IN HIGH RISK MEDICAL INPATIENTS

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## PRACTICE ISSUE

- Patients on an acute medical unit with multiple comorbidities, specifically renal failure (RF) and congestive heart failure (CHF), are frequently receiving large volume (4L) polyethylene glycol (PEG) colonoscopy preparation.
- The current practice heightens concern about triggering fluid volume overload.

## PICO QUESTION

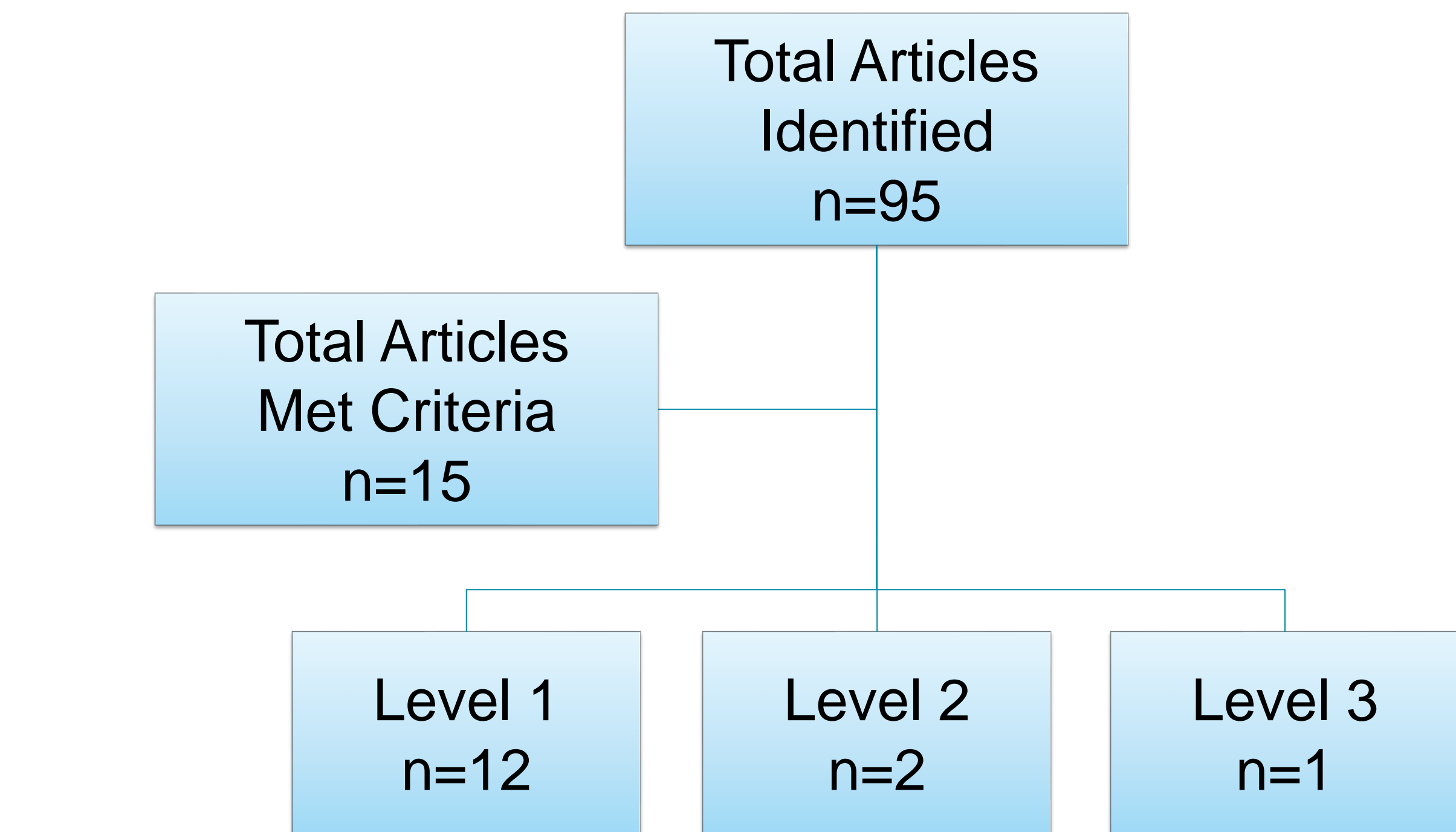
In patients with RF and CHF that are preparing for a colonoscopy (P) is a low volume preparation (I) more effective than standard care (C) in reducing volume overload associated with the preparation (O)?



## METHOD FOR SYNTHESIS OF EVIDENCE

- Literature search limited to peer reviewed English language studies, years 2016-2019 using CINAHL, OVID Nursing and OVID Medline.
- The Johns Hopkins Nursing Evidence-Based Practice model was utilized to evaluate the evidence.
- Type of bowel preparation, volume of preparation, type of setting, end-points of the studies, sample size, evidence level, quality and limitations were considered prior to synthesizing the evidence to evaluate fit, feasibility and appropriateness of potential recommendations.

## RECOMMENDATION FOR PRACTICE OUTCOME



- All were good quality.
- Three Level 1 articles compared low volume (2L) with standard volume (4L) and found comparable quality of preparation and adverse effects and an increase in patient tolerability with 2L preparation.
- Only one study included patients with RF or CHF.



## IMPLICATIONS FOR NURSING PRACTICE

- There is a need for a quality improvement project trialing the 2L PEG prep in low risk patients
- Subsequent need to conduct original research using the new bowel preparation protocol on patients with RF or CHF.
- Collaborate with the gastroenterologists to review findings of EBP project and recommendations about changes in the colonoscopy prep protocol.

## EPILOGUE

- In July 2020, Gastroenterologists at the institution shifted to a new low volume prep as a result of the publication of a Systematic Review, after the conclusion of this EBP project but during the COVID-19 pandemic and surge.
- This change will hopefully improve tolerance of the colonoscopy prep.



# TELEHEALTH AS AN ADDITIONAL NURSING RESOURCE TO MONITOR PATIENTS IN AN AMBULATORY ONCOLOGY PHASE I CLINICAL TRIAL UNIT

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## BACKGROUND AND SIGNIFICANCE

- Oncology patients in Phase I clinical trials receive study medications administered for the first time in humans. Patients need to be monitored closely by health professionals for dose-limiting toxicities during the first cycle of a clinical trial.
- Current practice is to provide contact information for the unit, expecting patients to be self-directed about calling to report new symptoms or concerns. This practice predisposes patients to possible unrelieved side effects, unscheduled clinic or Emergency Department (ED) visits, and the potential of withdrawal from the clinical trial.
- Telehealth is defined by the Health Resources and Services Administration (HRSA) as ...  
“... telecommunication technologies to support long-distance clinical health care, patient and professional health-related education. Technologies include video-conferencing, the internet and wireless communications.”<sup>1</sup>
- Telehealth reduces anxiety during cancer treatment, as measured by decreased anxiety scores on the State-Trait Anxiety Inventory.<sup>2</sup>
- Use of telehealth can promote early mitigation of side effects and complications for cancer patients.<sup>3</sup>
- Utilizing videoconferencing as a delivery method for education can enhance patient care.<sup>4</sup>

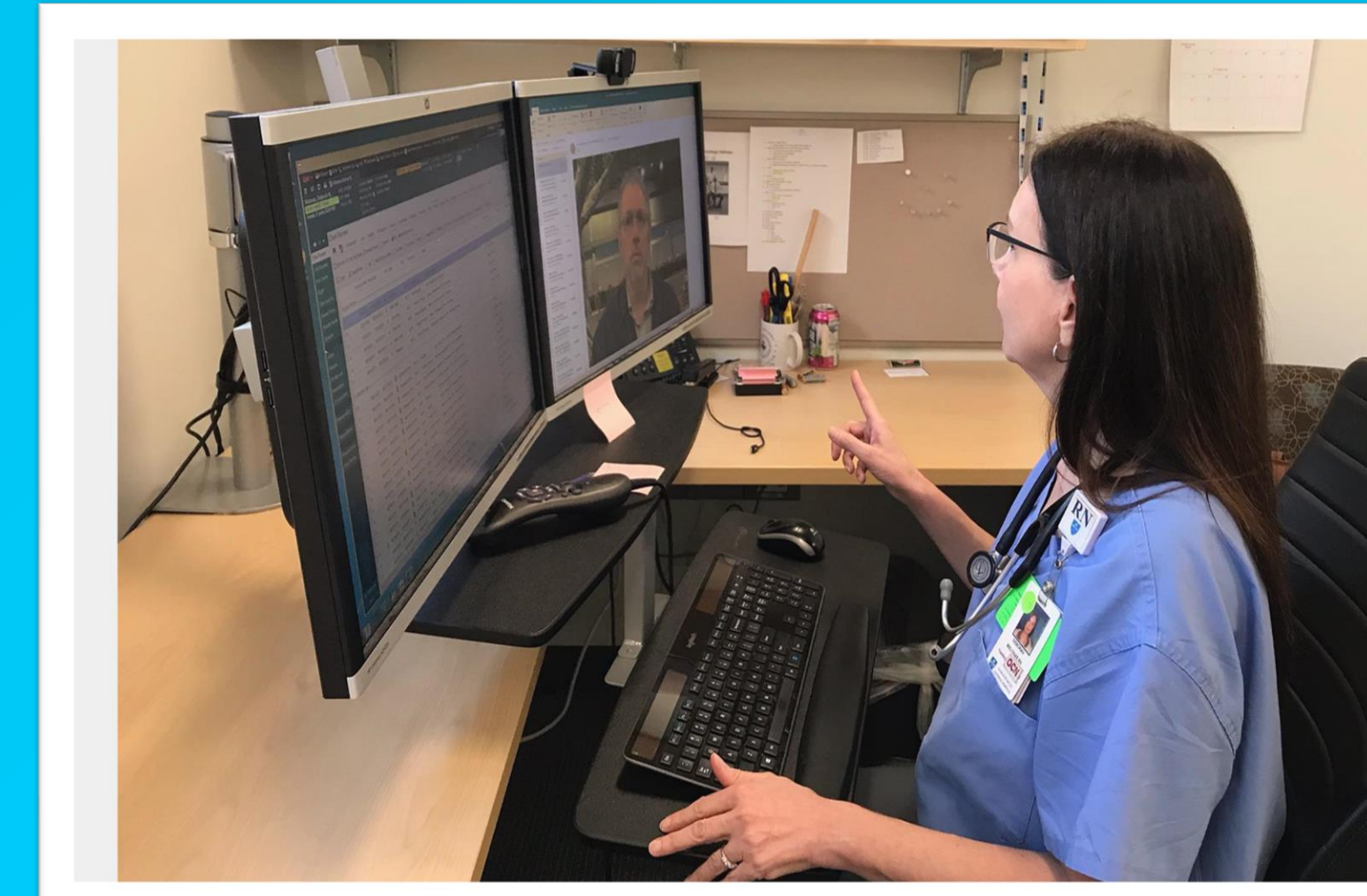
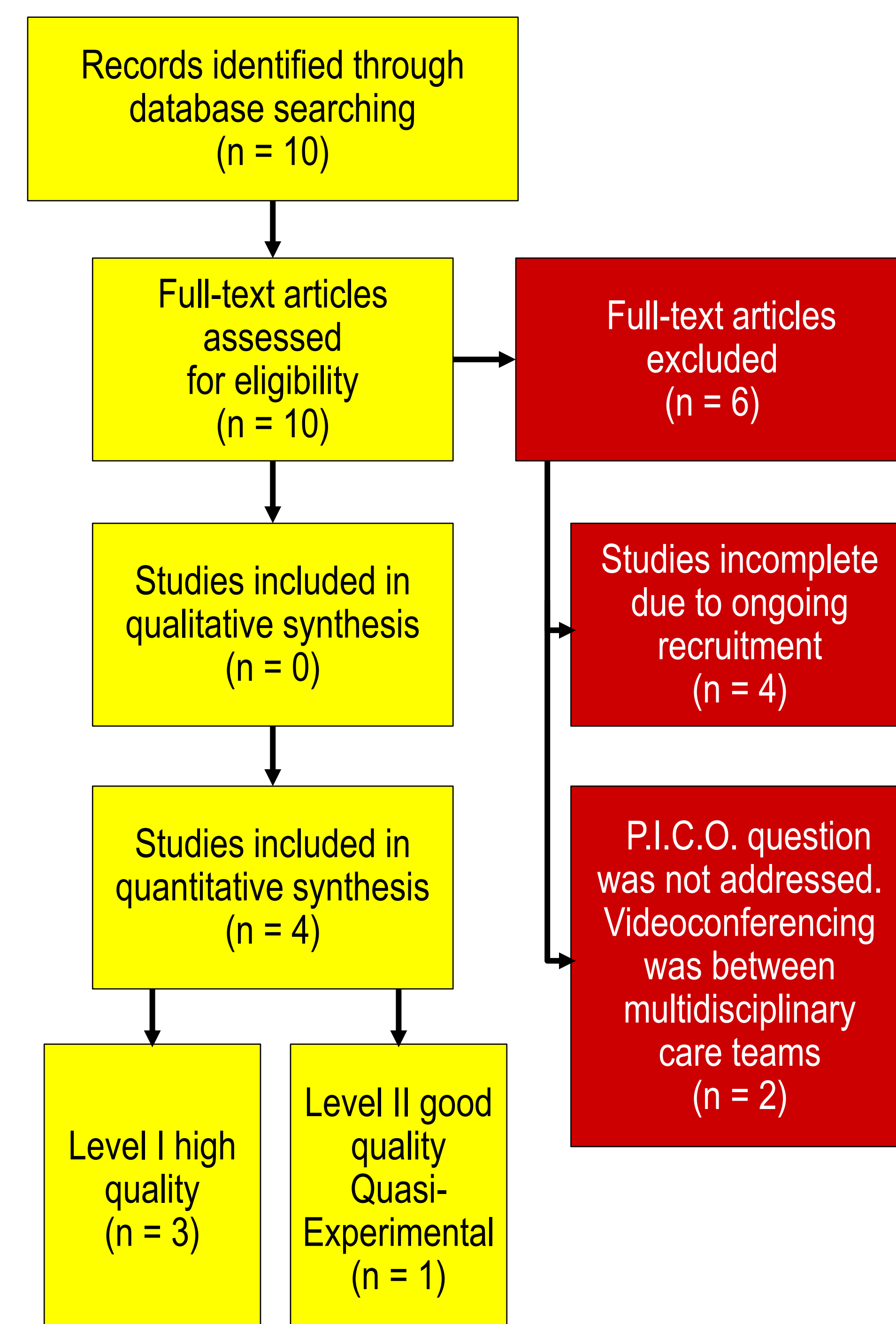
## PICO QUESTION

Compared to usual care, does a videoconference call with Phase I oncology clinical trial patients in an oncology research unit decrease the frequency and severity of side effects and toxicities?

## THE EVIDENCE

**Literature Search:** 2013-2019  
**Databases Searched:** Pubmed, Ovid, CINAHL  
**Inclusion Criteria:** Adult oncology patients, English language studies  
**Key Words:** Telehealth, Video-conferencing, Nursing, Oncology, Phase I oncology trials  
**Results:** 10 citations  
**Eligible for inclusion:** 4  
**Method of Synthesis of Evidence:** Johns Hopkins Nursing Evidence-Based Practice Model

**Figure 1.** Prisma diagram of evidence related to effectiveness of videoconferencing on symptom management in cancer patients



## RESULTS

- Four eligible studies included:**
- Three Level I High Quality Studies:
    1. Comparison of the effectiveness of education provided through videoconferencing versus clinic visits on pain coping skills of cancer patients. Results demonstrated greater adherence, fewer days to complete the coping skills intervention, and greater engagement in practice skills by patients participating in videoconferencing than attending clinic appointments.<sup>4</sup>
    2. Two phone calls at initiation of treatment effectively lowered anxiety among patients undergoing radiation therapy.<sup>2</sup>
    3. A systematic review of studies of telehealth interventions in the oncology population revealed telehealth may be effective in evaluating and managing patients with pain, depression and quality of life issues when integrated into clinical practice. Further studies are needed.<sup>5</sup>
  - One Level II Good Quality Quasi-Experimental Study:
    4. Clinical trial visits were managed and adverse events graded through telehealth videoconferencing for patients diagnosed with prostate cancer and administered Metformin for anti-cancer effects.<sup>3</sup>

## SUMMARY

- The evidence revealed that telehealth is effective at decreasing adverse effects of cancer therapy in the general population of cancer patients.
- No evidence directly related to videoconferencing for Phase I clinical trial patients.
- These findings encourage original research to evaluate the effect of videoconferencing on prevention and management of side effects of treatment while on a Phase I clinical trial.

## IMPLICATIONS FOR PRACTICE

- This study has the potential to decrease the need for unscheduled Protocol and ED visits.
- Increase patient adherence to study medication(s).

## IMPLICATIONS FOR FUTURE RESEARCH

Conduct a study evaluating the effectiveness and impact of videoconferencing on symptom management in patients following their first dose of medication in Phase I oncology clinical trials.

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EVIDENCE BASED PRACTICE FOR  
ROUTINE SUPRAPUBIC TUBE (SPT) CHANGES  
BY NURSES IN HOSPITALIZED PATIENTS  
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BACKGROUND AND SIGNIFICANCE

- **Practice Issue:** A suprapubic tube or catheter is an indwelling catheter that is placed percutaneously in the lower abdomen to drain urine from the bladder. Once a SPT has been placed, routine changes should occur every four to six weeks to prevent complications such as infection, obstruction, leakage, or nonfunctioning. Frequently, when a patient with a SPT is hospitalized, the team caring for the patient does not feel comfortable changing the tube and there is a delay obtaining a urology consult to change the SPT in a timely manner. This study aimed to evaluate the literature for evidence to support Registered Nurses (RNs) changing Suprapubic tubes in hospitalized patients.
- **PICO Question:** Among patients with chronic suprapubic tubes (P), are the rates of complications (O) similar when interval changes of the SPT are performed by nurses (I) as compared to physicians (C)?

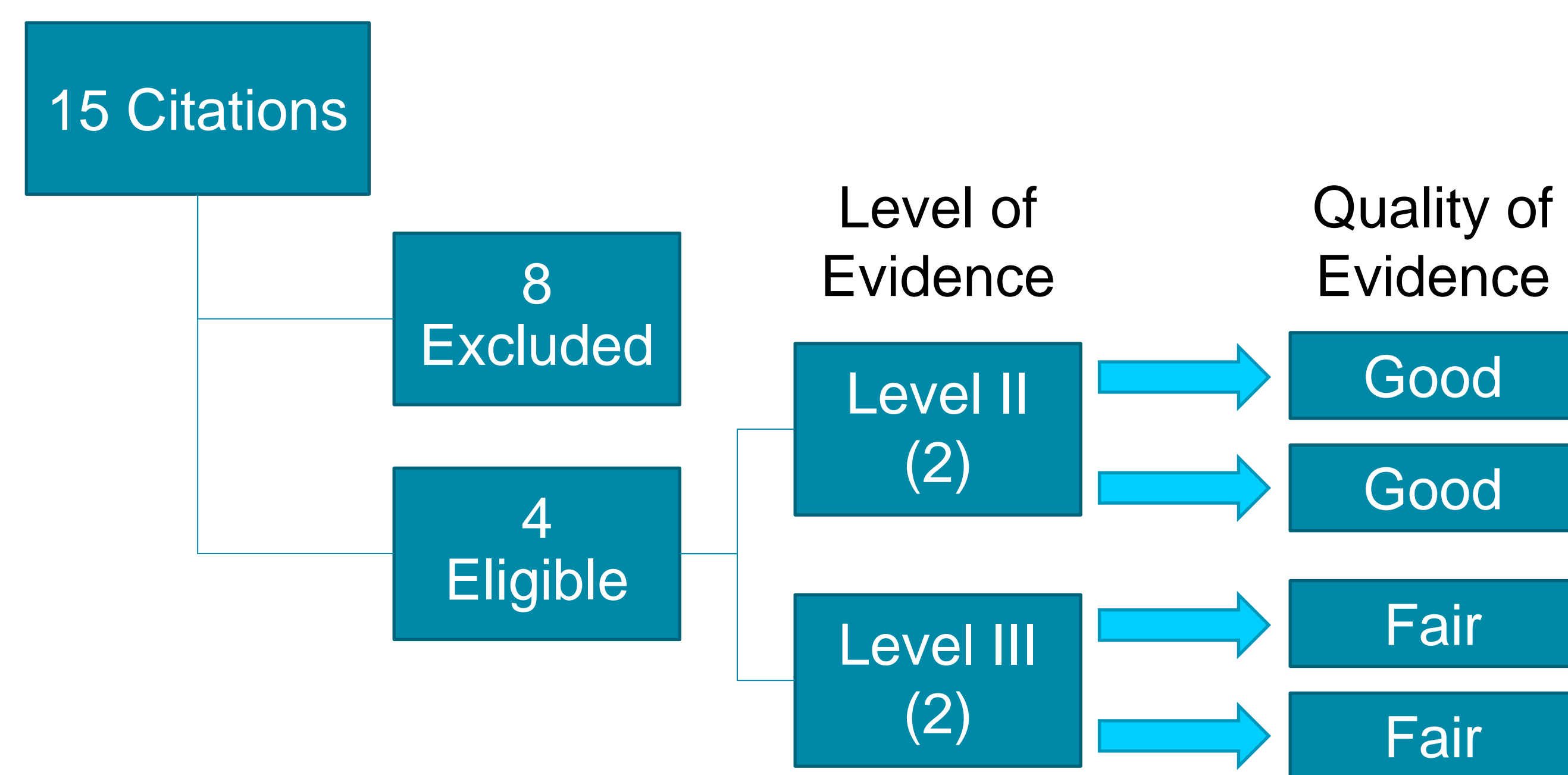
METHODS

- The literature was reviewed and evaluated for evidence level and quality utilizing the Johns Hopkins Nursing Evidence-Based Practice model
- External Evidence search:
  - OVID
  - CINAHL
  - PubMed
- Internal Evidence Search:
  - Ellucid

RESULTS

Ovid and CINAHL were searched and produced fifteen citations with eight eligible studies. Four of the eight studies addressed staff nurses as the level of personnel changing suprapubic tubes. Internal evidence included a nursing procedure about changing SPTs from Newton-Wellesley Hospital that also was reviewed.

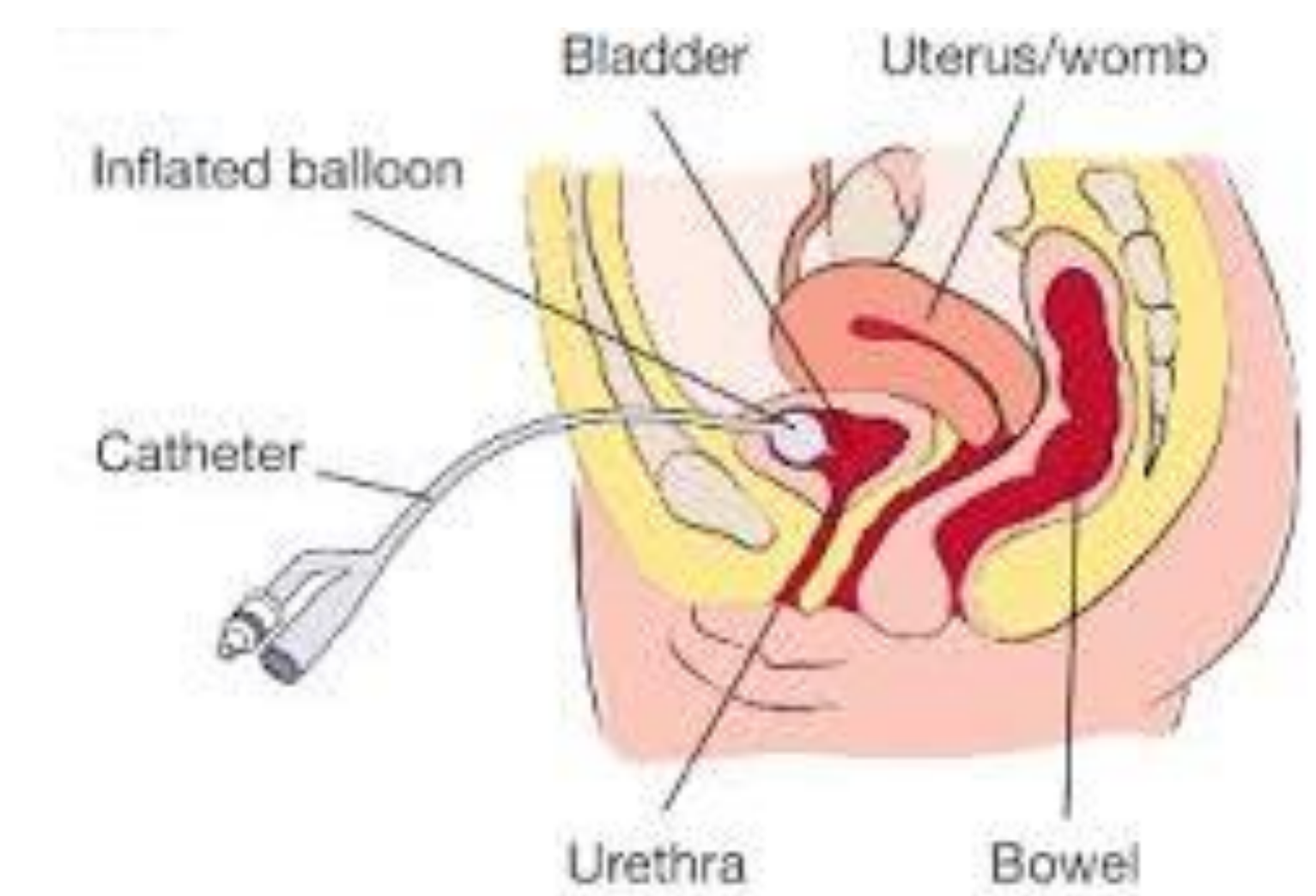
SUMMARY OF EVIDENCE



SYNTHESIS

- Although the literature was limited, the four articles that were included (two-Level II studies and two-Level III studies) supported translation into practice.
- The literature showcased nurses implementing this practice successfully with no increased risk of complications to the patient.

SUPRAPUBIC TUBE



IMPLICATIONS FOR NURSING PRACTICE AND EDUCATION

Recommendation For Practice Outcome:

- The evidence supports RNs changing suprapubic tubes in the acute care setting.
- This review supports the development of a new policy for nurses to change SPTs in patients at M.G.H.
- Develop an educational plan to advance the implementation of this procedure.
- Conduct a Quality Improvement project to assess the impact of this policy on patient outcomes.

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# ORALLY FEEDING PEDIATRIC PATIENTS WITH BRONCHIOLITIS REQUIRING NON-INVASIVE VENTILATION

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## PRACTICE ISSUE

- Pediatric patients 0-24 months with viral bronchiolitis frequently require ventilation assistance.
- Non-invasive ventilation (NIV) options include high flow nasal cannula, Continuous Positive Airway Pressure (CPAP), and Bi-level Positive Airway Pressure (BiPAP).
- Patients on NIV are often NPO (nothing by mouth) and experience agitation.
- This may lead to worsening respiratory status which may increase need for respiratory support and length of stay.
- This prompted nurses in the Pediatric Advanced Care setting to question feeding practices for patients on NIV including the benefits, the criteria for initiation, and the effects on patient outcomes.

## METHODS

- A literature search, limited to peer reviewed English language studies (1999-2019), was conducted using CINAHL, OVID Nursing, and OVID Medline. The Johns Hopkins Nursing Evidence-Based Practice model was utilized.
- In analyzing the evidence for fit, feasibility and appropriateness of potential recommendations the following were included:
  - Type of respiratory support
  - Mechanism of feeding
  - Limitations
  - Sample size
  - Evidence level
  - Quality and limitations were considered



## RECOMMENDATIONS FOR PRACTICE OUTCOME

The limited research suggests that feedings are well tolerated in patients ages 0-24 months receiving high flow nasal cannula for viral bronchiolitis.

## RESULTS

- 24 studies were identified in the search for evidence.
- 2 of 24 references were eligible for inclusion:
  - 2 Level III studies
- The overall evaluation of the evidence was good quality (consistent results, adequate sample size, some control, definitive conclusions, recommendations based on literature review)
- Both references involved high flow nasal cannula. There were no articles involving CPAP or BiPAP.
- The first article reported no difference in adverse events between orally fed and tube fed patients. The second showed low rates of aspiration and good tolerance of oral nutrition among patients aged 1-24 months receiving high flow nasal cannula for viral bronchiolitis.

## IMPLICATIONS FOR NURSING PRACTICE

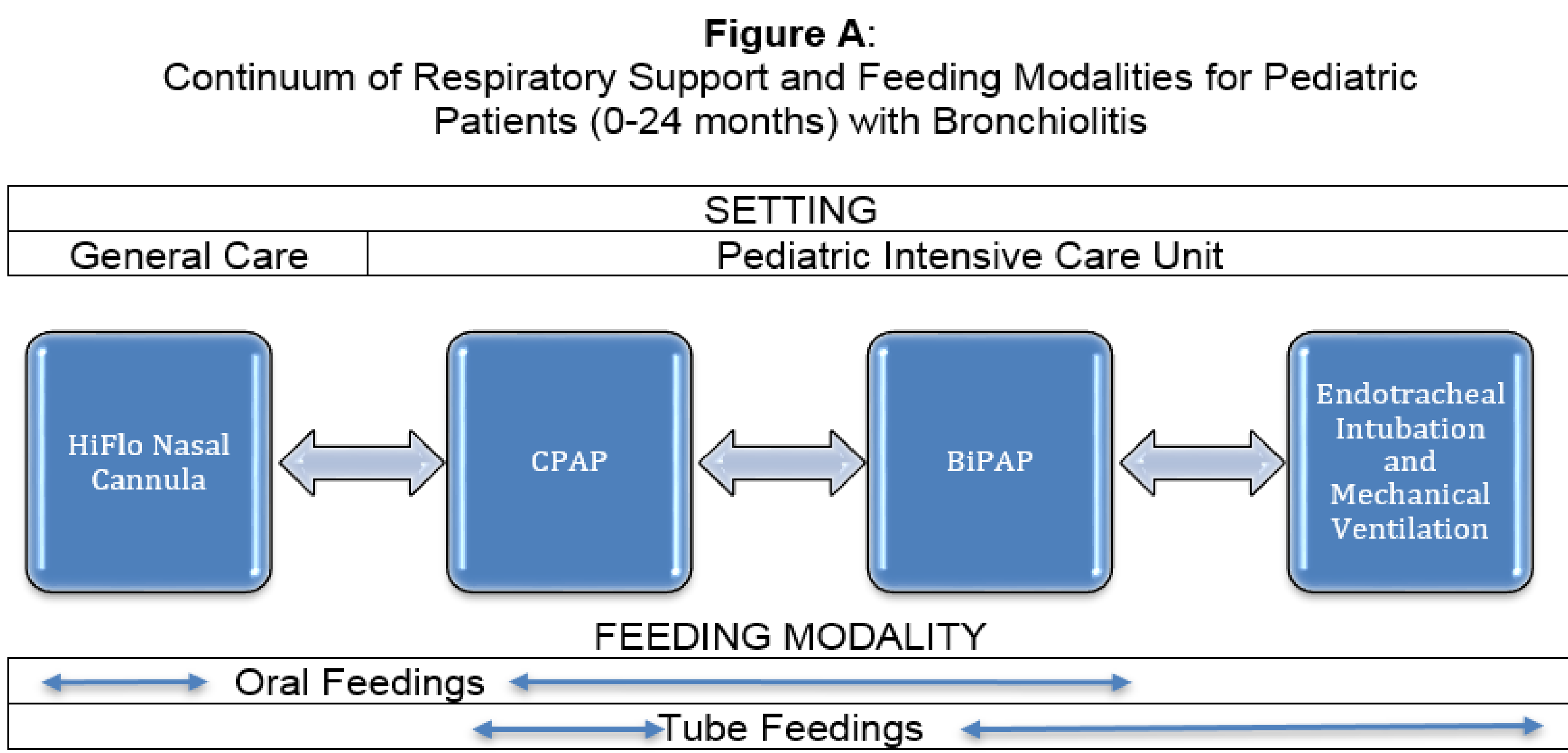
The paucity of research related to the effects of feedings on outcomes of patients with viral bronchiolitis receiving non-invasive ventilation suggests the need for original research.

## REFERENCES

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## PICO QUESTION

Do pediatric patients (age 0-24 months) who require non-invasive ventilation for viral bronchiolitis have better outcomes (less sedation, lower pain scores, shorter length of PICU stay) when receiving feedings than remaining NPO?



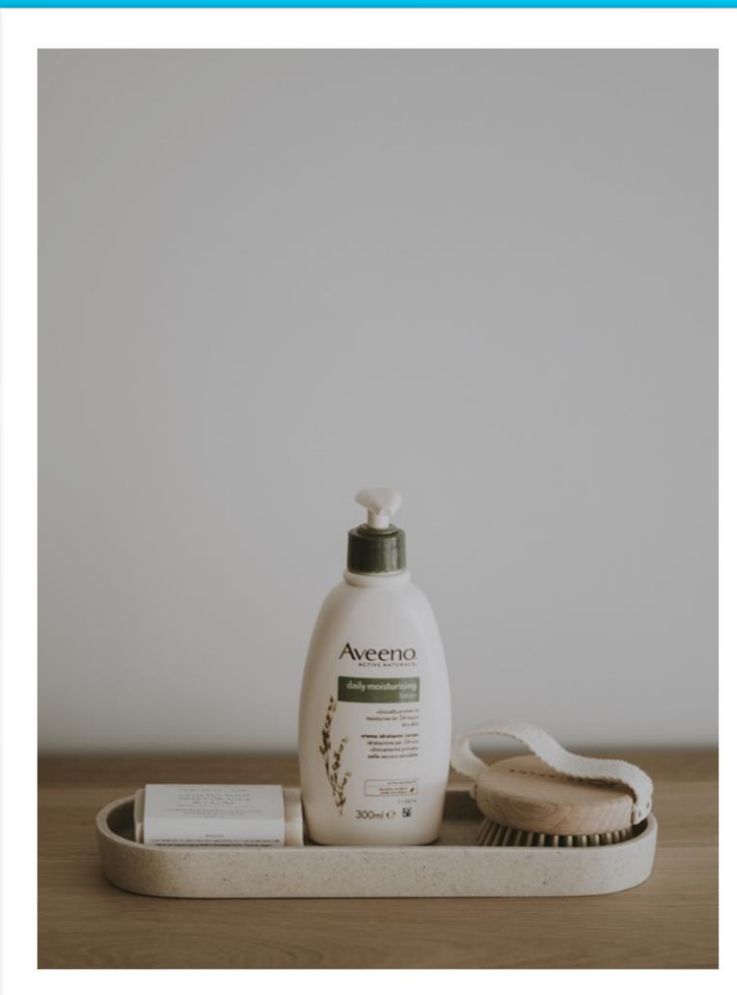
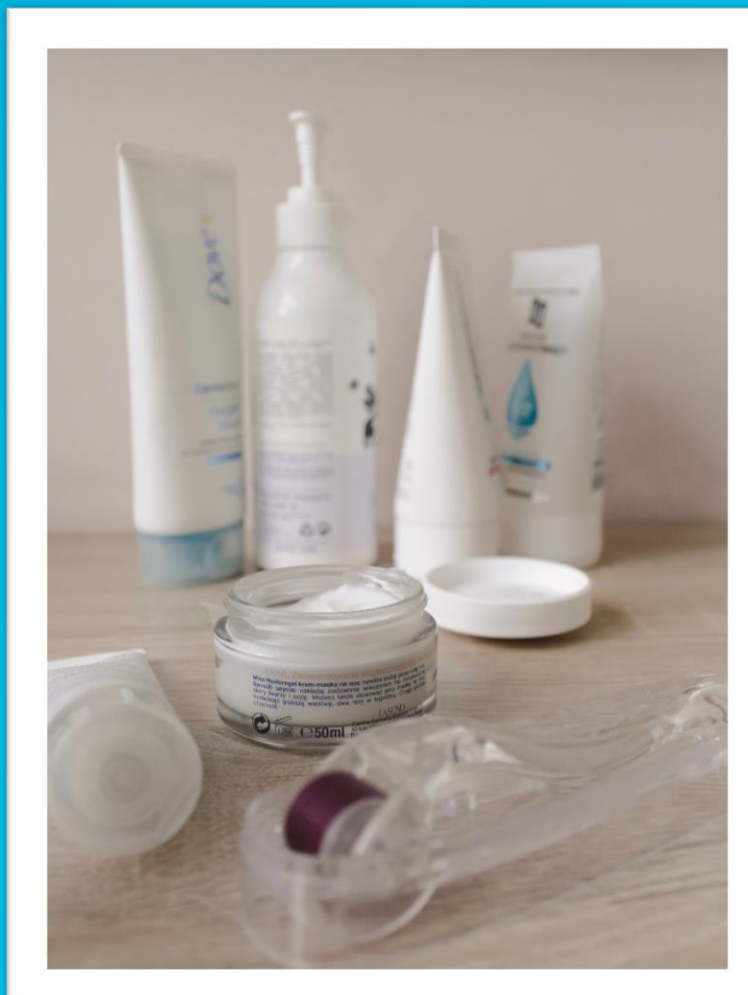


# SKIN CARE GUIDELINES: WHAT IS THE EVIDENCE REGARDING TOPICAL AGENTS ON SKIN DURING RADIATION DELIVERY?

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## BACKGROUND AND SIGNIFICANCE

- Radiation dermatitis is common and often treated with topical therapy.
- Patients are typically advised to avoid topical agents for several hours before daily radiation treatment out of concern that topical agents might increase the radiation dose to the skin.
- Restrictions of type of application of topical agents to radiation treatment field were instituted in the 1970's without scientific evidence.
- These restrictions increase patients' risk of skin breakdown, discomfort, and infection and is a source of anxiety for patients.



## PICO QUESTION

In adult patients undergoing radiation treatments (P), do topical agents on skin during dose delivery (I) compared to no topical agents (C) affect progression of skin reaction (O)?

## METHOD

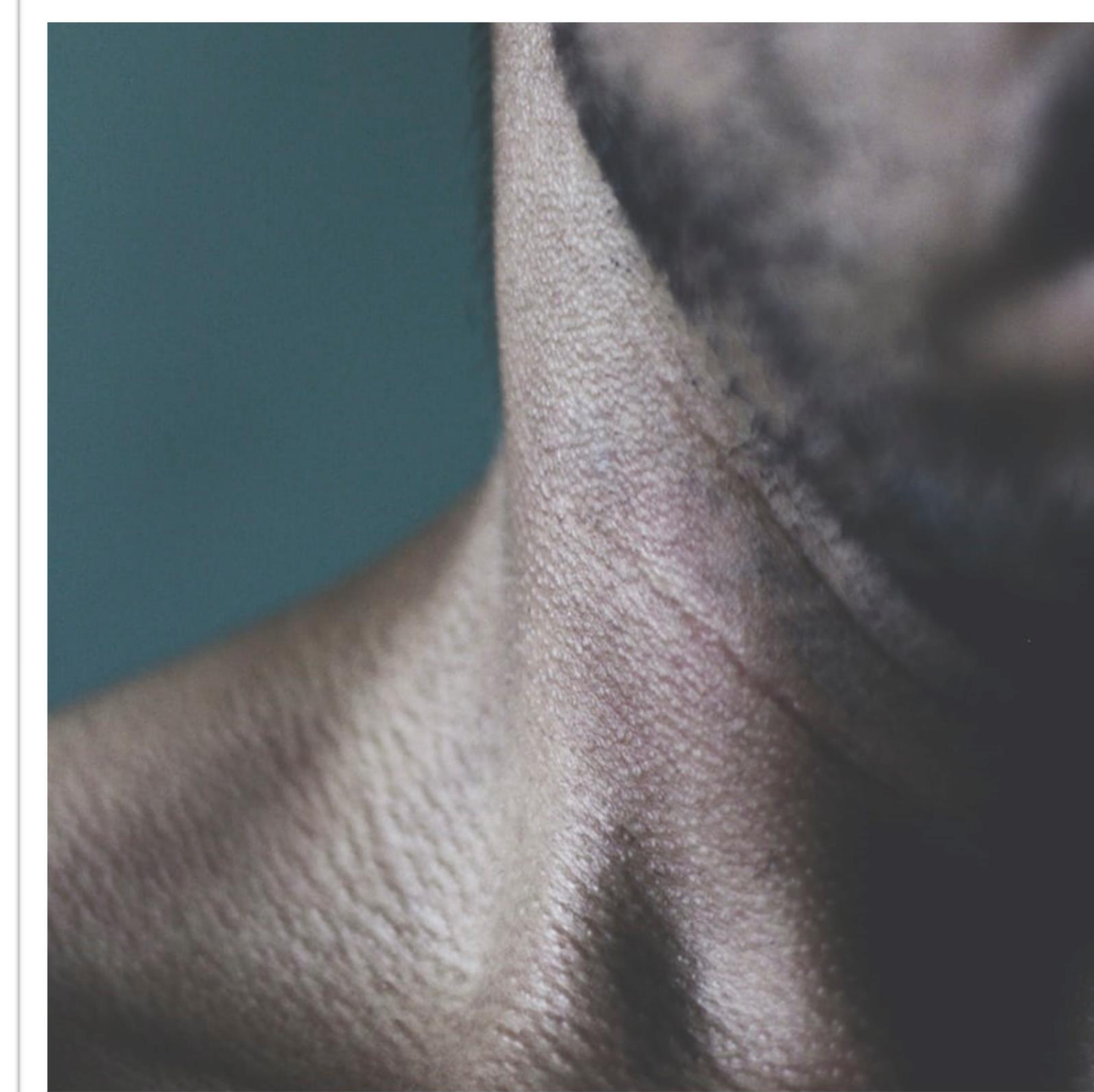
- John Hopkins Nursing Evidence Based Practice Model

### RESEARCH FLOWCHART

PICO: In adult patients undergoing radiation treatments (P), do topical agents (TA) on skin during dose delivery (I) compared to no TA (C) affect progression of skin reaction (O)?

Databases searched:  
CINAHL, OVID Medline &  
OVID Nursing  
Time span 1997-2019  
Key words *included radiation, dermatitis, cream, emulsion, emollients, ointment.*

14/95 articles reviewed.  
5/14 studies eligible to meet PICO question, English language.  
Pub. Dates: 1997-2018



## RECOMMENDATION FOR PRACTICE OUTCOME

- High-quality studies show strong evidence that there is no significant increase in skin dosing with moderate application of TAs ( $\leq 3$  mm). Realistic normal application of cream estimated to be  $\leq 0.3$  mm, or “oil-slick” thickness.
- Restrictions on the types and timing of application of skin care products to the treated area should be omitted.

## IMPLICATIONS FOR NURSING PRACTICE

- Review findings with radiation oncology collaboratives.
- Develop policies/procedures for approval.
- Conduct QI project to evaluate patient experience/outcomes.

## RESULTS

	Authors	Study Type	Products Tested	Test Device	Results	John Hopkins Nursing EBP Research Evidence Appraisal Tool
2010*	Bieck, & Phillips	Lit. Review	15 creams Normal application thickness	Tissue equiv. phantom arm	$\emptyset$ $\uparrow$ surface dose or bolus effect	Level V Rating B
2014	Morely et al.	Quantitative Pre-clinical	Water-based cream & silicon-based cream	Tissue equiv. superflab bolus	Thickness $> 0.7$ mm & $> 1.5$ mm to $\uparrow$ surface dose	Level 1 Rating B
2015	Fackrell et al.	Quantitative Pre-clinical	Silver Sulfadiazine & Zinc Oxide	RW3 solid water phantom	$\emptyset$ sig. surface dose effect except thick 3mm layer Zinc Oxide	Level 1 Rating A/B
2017	Wooding et al.	Quantitative Clinical (n=33) New Zealand/China	Mepitel silicone dressing cp. Sorbolene cream or Biafine	Clinical H&N patient nodal region	Mepitel: 29% $\downarrow$ skin toxicity $\emptyset$ sig. $\uparrow$ Dose to skin	Level 1 Rating B
2018	Baumann et al.	Quantitative Pre-clinical	Metallic & non-metallic creams	Two Arm: phantom (1) & animal (2)	1. $\emptyset$ difference skin dose w/out 1-2 mm layer cream 2. $\emptyset$ difference in tissue change on TUNEL assay	Level 1 Rating A

\*Literature review was on studies done in 1997 (Burke, & Parker) and (Meegan, & Haycocks).



# **ORIGINAL RESEARCH POSTERS**



# AFRICAN AMERICAN NURSES' SENSE OF BELONGING: NARRATIVE STATEMENTS OF CLINICAL LEADERSHIP COLLABORATIVE FOR DIVERSITY IN NURSING PARTICIPANTS

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## BACKGROUND

- U.S. population is 61.3% Caucasian and the nursing workforce is 78.5% Caucasian (National Council of State Boards of Nursing, 2015; U.S. Census, 2014)
- African American nurses represent only 9% of the nursing workforce (McMenamin, 2015)
- Research demonstrated that a diverse workforce which reflects population demographics will improve healthcare quality & reduce health disparities (Cohen, Gabriel, & Terrell, 2002; Jackson & Garcia, 2014; Phillips & Malone, 2014)
- Well-educated and confident practitioners from diverse backgrounds are essential to high quality patient care
- Development of collaborative academic-service programs between healthcare institutions and schools of nursing can facilitate the transition and retention of minority nurses into clinical practice



## PURPOSE



When one experiences a sense of personal involvement in an environment, seeing themselves as integral to it, they are experiencing belonging. A sense of belonging is vital to workplace commitment and success.

"...belonging means that your well-being is considered and your ability to help design and give meaning to its structures and institutions is realized."

— John A Powell, [www.otheringandbelonging.org](http://www.otheringandbelonging.org)

The study was conducted to examine sense of belonging among CLCDN participants. The question addressed was: **Are there differences in CLCDN participants' descriptions of 'sense of belonging' within the context of the CLCDN program and in their practice environments?**

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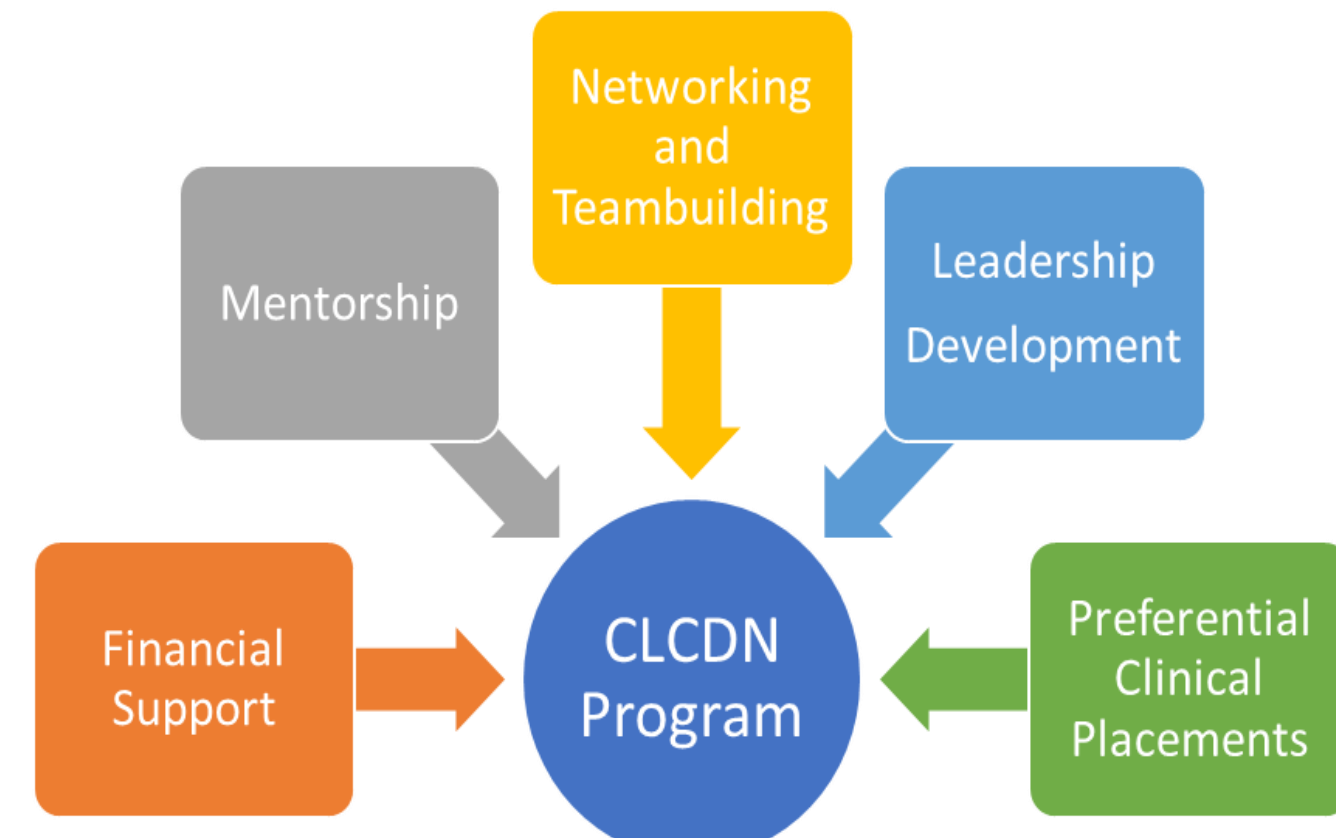
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## COMPONENTS OF THE CLCDN PROGRAM



## THEORETICAL FRAMEWORK



## METHODS

- Qualitative descriptive design
- 7 focus groups held. Each focus group lasted 90 minutes
  - Used a semi-structured interview guide
  - Demographic data were collected
  - Focus groups were audio-recorded and field notes were kept
- Thematic qualitative content analysis was used to understand the participants' perspectives
- Additional comparative analysis was completed using the NVivo 12 program and findings were cross-referenced for thematic validity

## DEMOGRAPHICS

Sample size	19	
Age	Range	25-51
	Mean±SD	34 ±7.16
Participant gender	Female	n=16 (84.2%)
	Male	n=3 (15.8%)
Race/Ethnicity	Born outside U.S.	n= 12 (63.2%)
	Born in the U.S.	n= 7 (36.8%)
First role as a professional nurse	Staff nurse	n= 18 (94.7%)
	Other	n= 1 (5.3%)
Currently working at a Partners Healthcare Hospital	Yes	n= 15 (78.9%)
	No	n= 4 (21.1%)
Partners Healthcare Hospital	Massachusetts General Hospital (MGH)	n= 9 (60.0%)
	Brigham & Women's Hospital	n= 4 (26.7%)
Healthcare Hospital	Faulkner Hospital	n= 2 (13.3%)
	Other	n= 4 (21.1%)

## RESULTS

Three themes emerged from the data:

- Identification of belonging within the CLCDN program
- Challenges to a sense of belonging within the practice environment
- Shared sense of belonging experienced with patients



## RESULTS – THEMES

### Theme 1: Identification of belonging within the CLCDN program

This theme illustrates how the CLCDN program provided an environment that facilitated a sense of belonging, peer acceptance, and inclusion by the participants and addressed how they relied on that association when facing challenges.

#### Quotes:

- "With the CLC[DN], I felt like I belonged somewhere.... there's somebody there that could say OK, you can go forward, you can move forward, and you can push it, and you can be the person you want to become through this program."
- "I felt supported not only by the CLC[DN] staff, ... but I feel like I developed a brotherhood or sisterhood while I was in the group. We had a very strong support system within each other, we studied together, we cried, we fought. It was just the support that we, ... had, I think it was great."

### Theme 2: Challenges to a sense of belonging within the practice environment

This theme represented participants' experiences of not feeling seen or having their voices heard, of being held to a higher standard, and having to work harder to achieve the same goals as their Caucasian counterparts. It reflected experiences counter to the theoretical framework of belonging which embraces authentic engagement and participation.

#### Quotes:

- "...As a nurse on... sometime[s] people ask me question[s]. Most of the time people identify me with the home health aide... you would not believe how many doctors would come and see me with a patient and [act] like I'm not visible."
- "You have to practice 120% in this place to survive. As you can see, I'm the only black nurse here. And I'm scrutinized more than everyone."
- "Oh my God, how could she do this, how could she do that, and when you hear all this coming back to you like really, really? Do they think I can't be good enough?"

### Theme 3: Shared sense of belonging experienced with patients

This theme describes the shared connection that the participants had with patients which could be a sense of racial, ethnic, cultural and/or linguistic identity which represented a sense of shared experiences that linked the participants to patients.

#### Quotes:

- "I have to say, probably I don't know if it's our struggle, our culture, [but it] make us more open to some issues that some patients have in their life."
- "I would go in, [and the patient would say] oh, thank God, you're black. And the whole day, all the 12 hours just turn around, I would just reassure the patient, like it's OK, you're in a great place..."
- "I remember literally one time a Hispanic mother said to me, it's so nice to have a nurse who's not like everyone else on the unit..."

## IMPLICATIONS FOR EDUCATION, PRACTICE AND RESEARCH

### Education:

- Opportunities exist to foster diverse nurses' positive sense of belonging during the educational trajectory and as they transition into practice
- Examining educator implicit bias, facilitating peer support groups and diverse work teams will provide a path toward a more inclusive and productive practice environment
- Structuring Academic Service Partnerships to include a mentoring component which extends through the transition to practice and focuses on fostering the sense of belonging is essential

### Practice:

- Provide opportunities for nurses of similar backgrounds to meet, allowing for the development of supportive relationships can foster a sense of belonging
- Recognize and acknowledge the impact that diverse nurses have on patient care, especially with diverse patients and families will improve their sense of belonging

### Research:

- While belonging as a concept has been studied extensively, it has yet to be fully understood. It is clear that sense of belonging is linked to workplace success. Further research into this concept within the healthcare environment is essential to diverse nurses continued growth and success

## LIMITATIONS AND CONCLUSIONS

### Limitations

Although the study's qualitative design will not support broad generalization, methodological triangulation achieved through simultaneous personal/first-hand and NVIVO analyses supports the integrity of findings and demonstrates their stability.

### Conclusion

Creating and enhancing diversity and inclusion to further a sense of belonging among members of the nursing workforce is a potential outcome of partnerships like the CLCDN

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INFORMED CONSENT FOR CORONARY ANGIOGRAPHY AND  
POSSIBLE PERCUTANEOUS CORONARY INTERVENTION:  
PATIENT PERSPECTIVE WHEN CONSIDERING A DIFFERENT INTERVENTION

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BACKGROUND/SIGNIFICANCE

- Informed consent for coronary angiography (CORS) with the possibility of percutaneous coronary intervention (PCI) is complex.
- There are patients found to have coronary artery disease (CAD) that do not go onto same-setting PCI after CORS.
- Results from CORS sometimes requires consideration of other CAD treatment options.
- There is little information on the patient experience of being consented for CORS with the possibility of PCI, finding CAD, but not having PCI.

PURPOSE

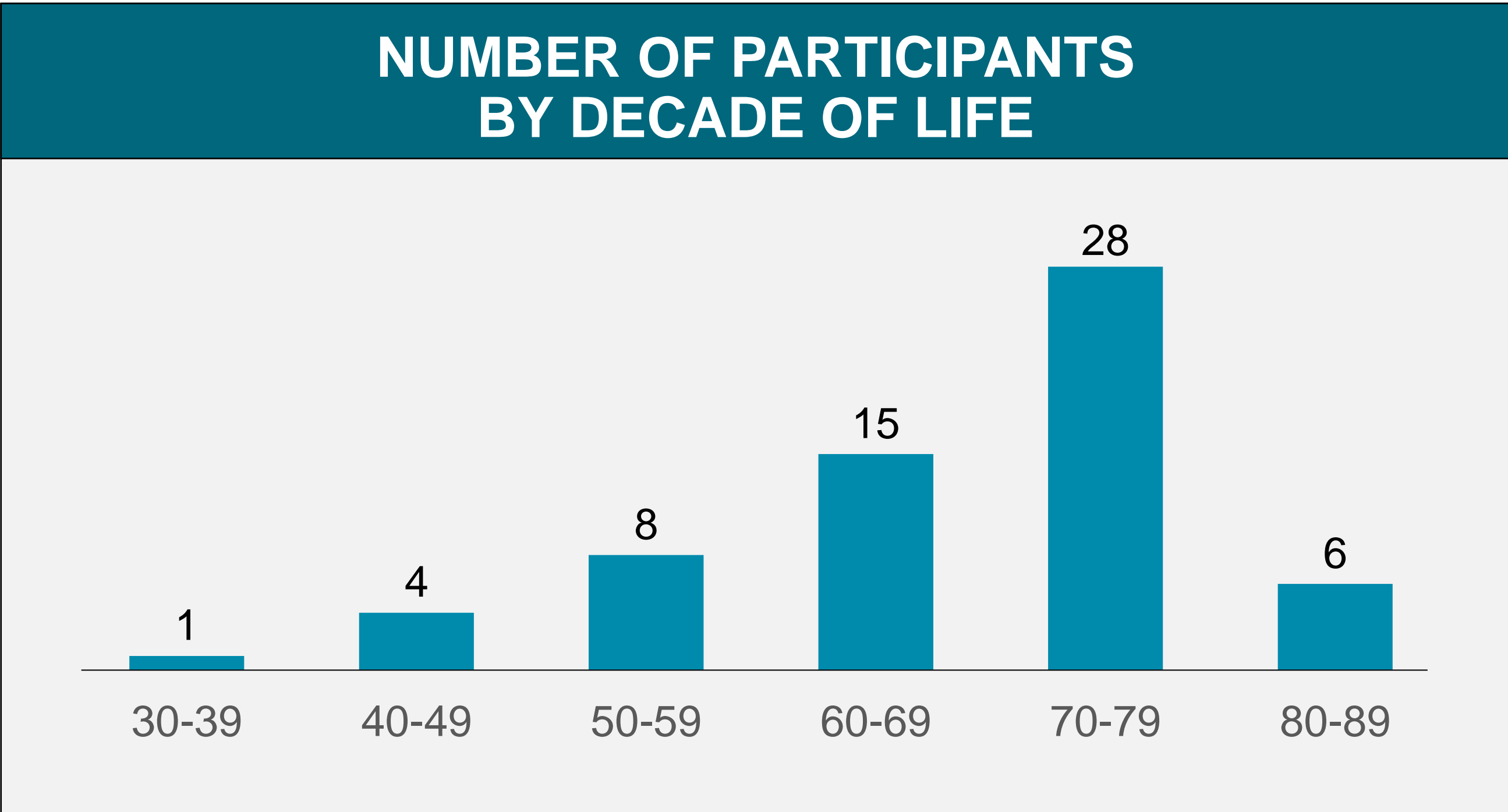
To describe the patient perspective of informed consent for CORS ± PCI, while having to consider other treatment options for their CAD.

METHODS

- A survey developed by Astin, et al, (2020) was administered to a convenience sample of CAD patients who had CORS ± PCI but did not proceed to PCI.
- The survey assessed participants’ views about informed consent, the purpose of informed consent, attitudes towards informed consent, and views about discussing treatment, risk, benefits and perceived outcomes.
- The survey items used a five-point Likert scale, indicating the participants’ level of agreement with 22 statements.
- Of the 76 eligible patients approached, 70 enrolled, and 62 participants completed the survey.

SAMPLE

SAMPLE DEMOGRAPHICS		N (%)
Gender	Male	45 (73)
	Female	17 (27)
Education	High School or less	20 (32)
	Completed or some college	19 (31)
	Advance Degree	23 (37)
Age	68.4 +/- 11.4 years	62
Current Employment	Unemployed	4 (7)
	Working	25 (40)
	Retired	33 (53)



RESULTS

- Ninety-two percent ( $n=55$ ) wanted consent to include information about all possible risks of PCI.
- Ninety-five percent ( $n=56$ ) felt that clinicians should explain “Additional procedures that are likely to be necessary.”
- A majority (97%) of participants ( $n=57$ ) felt clinicians should explain what alternative/other treatment options are available.

GENDER DIFFERENCES

- More women reported information about risks led to more worry (3.0 vs 3.9,  $t=-2.26$ ,  $p<.03$ ), information about alternatives was confusing (2.6 vs 3.5,  $t=-2.35$ ,  $p<.025$ ), and they had difficulty remembering all information during consent (2.0 vs 2.6,  $t = -2.19$ ,  $p<.03$ ).

LIMITATIONS OF THIS STUDY

- This study enrolled patients who had diagnostic angiography but did not receive a same-setting PCI and did not exclude patients who had previous experience with diagnostic angiography.
- Participants were required to be English speaking, were from a single hospital, approached after being told but before receiving their alternative treatment.

CONCLUSIONS

- Participants want consent for CORS +/- PCI to include information on risk associated with and alternate treatment options beyond same-setting PCI.
- Women reported the information difficult to remember and experienced more worry and confusion as compared to men.

IMPLICATIONS FOR PRACTICE AND/OR FUTURE RESEARCH

- This study highlights targets for nursing interventions to improve the informed consent process for patients who are consented for coronary angiography, who may not receive any intervention or PCI, but one of the other routine options, such as medication change, later PCI, or coronary artery by-pass grafting.
- A qualitative study of the patient experience may increase participation and provide greater depth of understanding.

DECLARATION OF INTEREST  
THE AUTHORS HAVE NO CONFLICT OF INTEREST TO DECLARE.



# NUDGING DISCHARGE READINESS WITH A POSTER: A SEQUENTIAL, EXPLORATORY MIXED METHODS PILOT STUDY OF CAREGIVERS

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## BACKGROUND/ SIGNIFICANCE

Many urban hospitals face a common challenge: limited space for a high number of patients. This conflict leads to high patient throughput, including complex and accelerated hospital discharges, which can impact patient perception of discharge readiness.

## PURPOSE

This study examined whether a poster that highlighted parental tasks and decisions around discharge improved perception of their child’s readiness for discharge.

## METHODS

Sequential, exploratory mixed methods design and nudge theory framework were used in 2 connected studies. Study 1 used focus groups to explore clinician perspectives on existing discharge processes.

Content analysis informed a poster intervention (Figure 1) devised to “nudge” caregivers towards readiness and self-efficacy that was then proof-of-principle tested in a randomized, controlled experiment (Study 2). The poster focused practical knowledge for specific areas of transition adjustment, such as medication issues, education, and effective communication skills around recovery behaviors, barriers, and enablers.

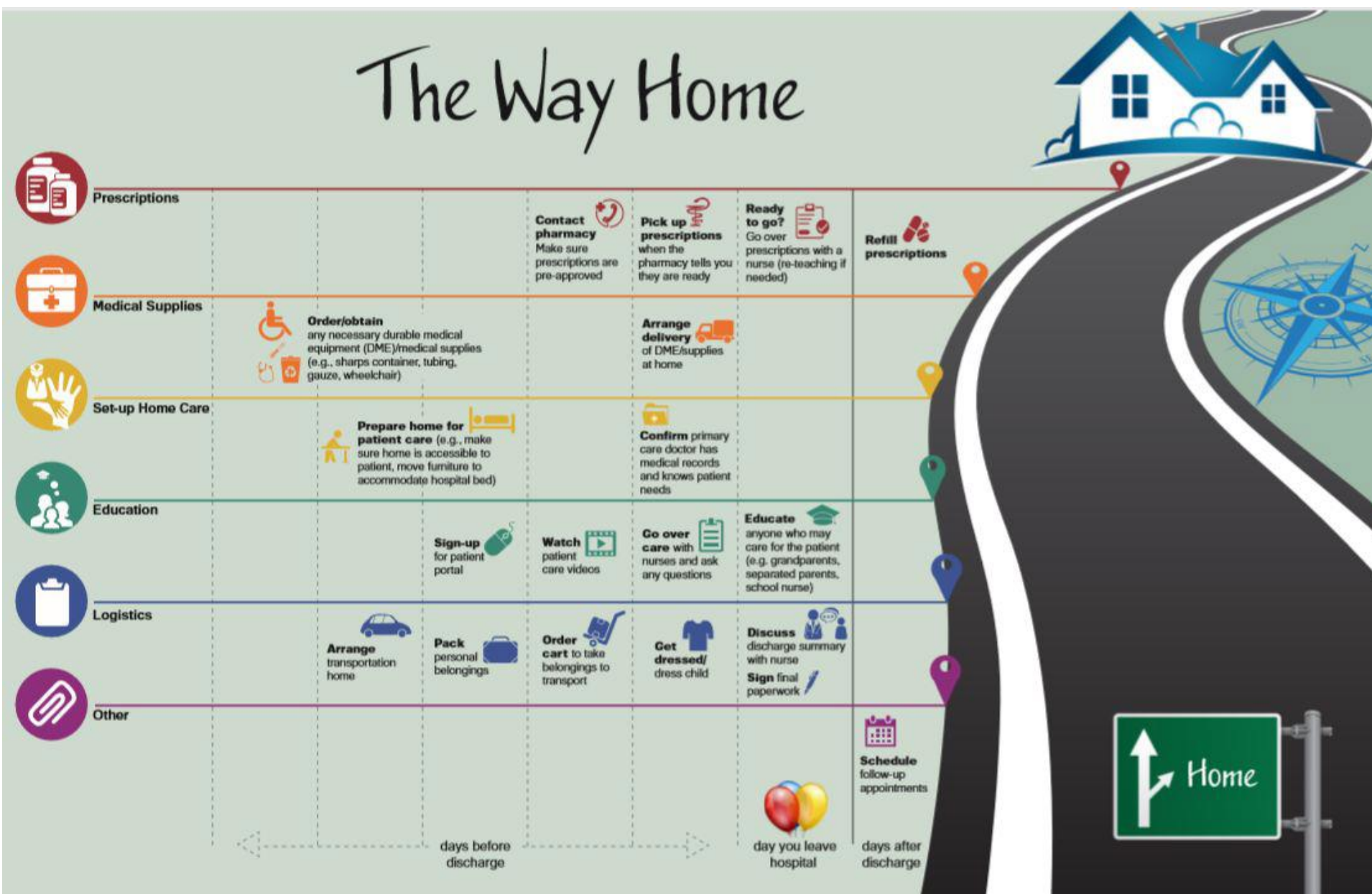


Figure 1: Poster Nudge

Caregivers (n=135) on 3 clinical units (Table 1) completed outcome measures at discharge. ANCOVA was used to test the effect of poster condition (poster vs. no poster) on caregiver readiness, preparedness, and confidence while controlling for previous admissions.

Table 1: Participating Clinical Units

Unit (Description)	No. of beds (# single beds)*	Admissions	Median length of stay days (inrange)
<b>Stem Cell Transplant</b> Provides transplantation of hematopoietic stem cells derived from bone marrow as a treatment option for acquired and congenital disease, including inherited immune deficiency syndromes, metabolic disorders, bone marrow failure syndromes, and cancers, including sarcomas, acute and chronic leukemia, Hodgkin and non-Hodgkin lymphoma <sup>‡</sup> .	14 (14)	233	7 (31)
<b>Hematology/Oncology</b> Specializes in the care of hematology and oncology patients who are admitted for chemotherapy, biotherapy, and targeted therapies to treat cancer and its effects <sup>‡</sup> .	30 (30)	1,080	5 (6)
<b>Neuroscience</b> Provides care for neurosurgical, neuro-trauma, neurovascular, neurology, and neuro-oncology patients <sup>‡</sup> .	31 (19)	2,332	3 (3)

\*Maximum occupancy across all units = 2 patient beds per room  
‡Although we did not collect demographic or medical history data for the current sample, clinical staff have confirmed that unit descriptions are broadly representative of the “typical” patients admitted, and no specific steps were taken to over- or under-sample a specific patient sub-population. Caregivers of patients receiving end-of-life support and caregivers who did not speak or read English were excluded from the study.

## RESULTS

Significant effects for poster condition were found on caregivers’ perceived readiness for discharge,  $F(1, 125)=7.75, p=0.006$ , Cohen’s  $d = 0.44$  and preparedness for the transition home,  $F(1, 121)=7.24, p=0.008$ , Cohen’s  $d = 0.44$ . Only a marginal effect was found for poster condition on caregivers’ confidence ratings,  $F(1, 125)=2.93, p=0.090$ , Cohen’s  $d = 0.29$ .

## CONCLUSIONS

Results suggest simple nudges in clinical settings may yield measurable improvements in caregiver outcomes during complex processes such as discharge.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Using rigorous experimental design, this study both demonstrated *that* and illustrated *how* ‘nudges’ might be applied in dynamic clinical environments at reasonable scale and with low-risk or administrative burden.





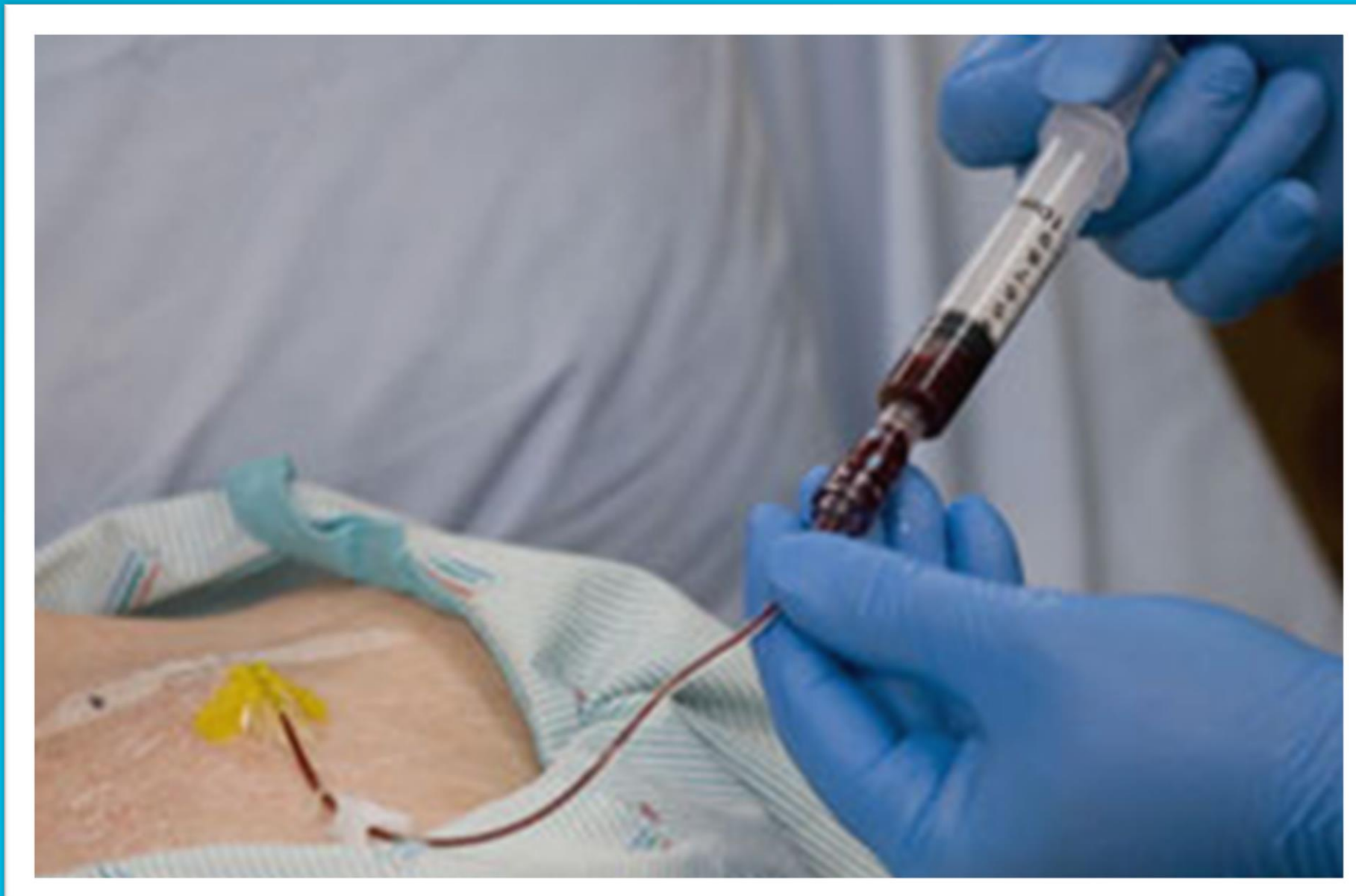
# A DOUBLE-BLIND, PROSPECTIVE, MATCHED-PAIR TRIAL COMPARING DISCARDED BLOOD ALIQUOT WITH STANDARD APPROACH FOR THE DIAGNOSIS OF BACTEREMIA IN PEDIATRIC PATIENTS WITH A CENTRAL VENOUS CATHETER (CVC);

## PRELIMINARY ANALYSIS OF SENSITIVITY AND SPECIFICITY

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### BACKGROUND AND SIGNIFICANCE

Blood cultures are common diagnostic tests. The current standard at a large pediatric hospital is to draw an initial 3mL blood aliquot to discard before obtaining the principal sample from a CVC to inoculate culture bottles. Sensitivity of the existing standard is estimated at 65.0-75.7%. Recently, limited studies have questioned whether discarding the initial aliquot of blood is necessary to increase sensitivity of the culture.

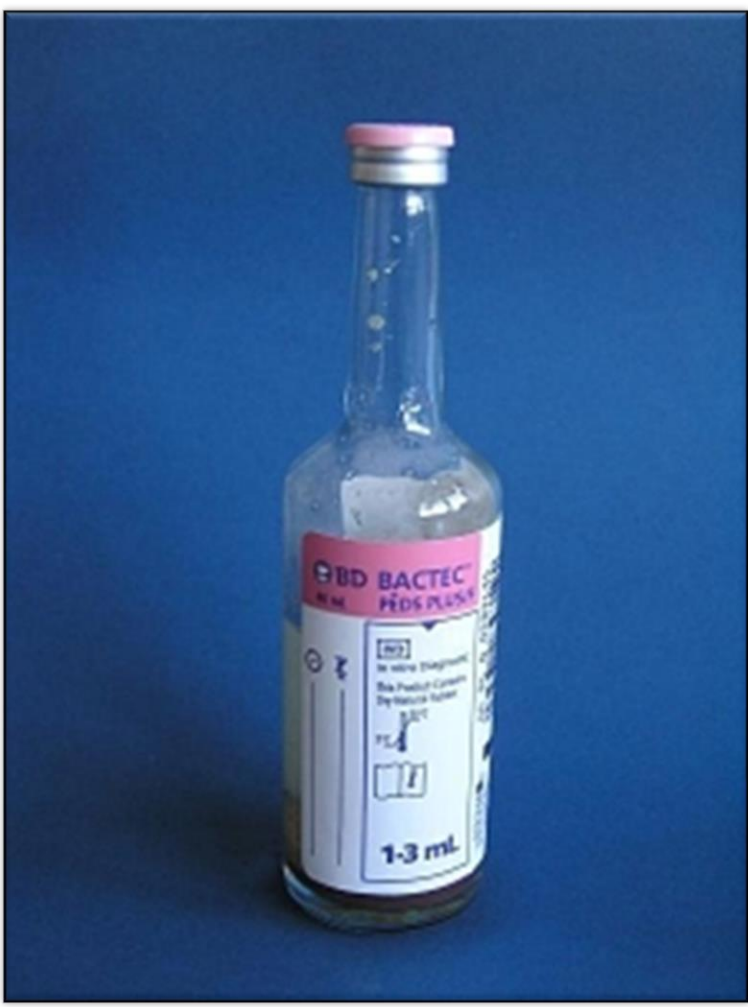


### PURPOSE

To calculate sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) of aerobic blood culture utilizing the waste aliquot compared to the routine clinical culture as reference standard in pediatric patients with a CVC.

### METHODS

3mL waste samples were obtained at the time of clinical culture using standard aseptic technique and inoculated into a BD BACTEC Ped Plus aerobic culture bottle (research culture). A 3mL clinical sample was then obtained following the same standard protocol. Blood cultures were processed using the BACTEC® 9240 instrument (Becton Dickinson, Microbiology Systems) following routine lab protocols. Positive cultures were subcultured on agarose plates and incubated for identification to the species level (MALDI-TOF; Buker). Sensitivity and specificity of the research cultures versus the gold standard clinical culture were calculated using pre-specified classification criteria.



Blood culture bottles in Bactec automatic culture machine. Microorganisms, if present, metabolize nutrients in the culture medium, releasing CO2 into the medium or utilizing oxygen in the medium. A vial sensor monitors change in fluorescence which increases as CO2 is produced or oxygen is consumed. Positive samples are announced by audible alert or onscreen notifications. Positive samples then proceed to culture and sensitivity.

### RESULTS

In 592 samples analyzed, bacteremia prevalence was 3.38% (95% CI 2.08% to 5.17%). The research sample identified 567 true negatives, 6 false negatives, 14 true positives, and 5 false positives, yielding a research culture sensitivity of 70.00% (95% CI: 45.72% to 88.11%); specificity of 99% (97.97% to 99.72%); PPV 73.68% (52.77% to 87.53%) and NPV 98.95% (97.97% to 99.46%).

### CONCLUSIONS

Results indicate that culture of the waste sample yielded sensitivity within published ranges for lower volume (<20mL) cultures.

### IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Preliminary results suggest there may be little value in drawing a waste aliquot prior to the principal sample for blood culture.



# THE PARENTAL EXPERIENCE OF HAVING A HYPOGLOSSAL NERVE STIMULATOR IMPLANTATION IN THEIR ADOLESCENT WITH DOWN SYNDROME AND SLEEP APNEA

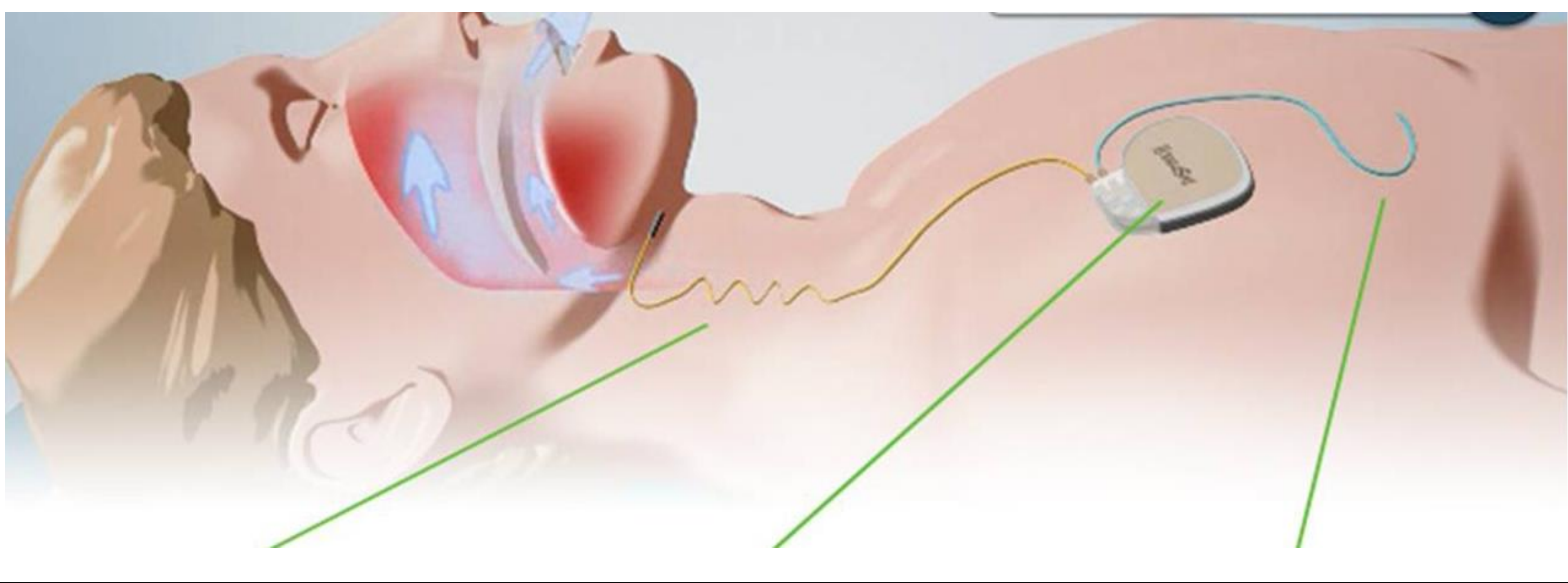
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## BACKGROUND

Obstructive sleep apnea (OSA) is present in 30-80% of Down Syndrome (DS) children, resulting in morbidity and poor quality of life. Lack of treatment for OSA can result in cardiovascular problems, learning disabilities, behavioral problems, excessive day time sleepiness and increased morbidity. DS children with persistent OSA require continuous positive airway pressure, and potentially tracheostomy as a last option to reduce apnea episodes.

A clinical trial has been undertaken to insert a hypoglossal nerve stimulator (HNS) in adolescence with DS and OSA to assess safety and efficacy on sleep (ClinicalTrials.gov: NCT2344108). The HNS is an implanted device that generates electrical impulses to stimulate the protrusion of the tongue, which is timed to inspiration. The device consists of a stimulation lead, neuro stimulator and a sensing lead.



## PURPOSE

Our interest is in the parental experience of agreeing to have an HNS inserted in their DS adolescent. Therefore, the purpose of this qualitative descriptive study was to describe the parental experience of having a HNS implanted in their adolescent with DS and OSA.

## METHODS

Prior to commencement of this study, institutional review board (IRB) approval was obtained. The investigators used an open ended qualitative descriptive design with a semi-structured interview guide.

Parents who consented to have an HNS implanted in their adolescent were asked to participate in interviews. Interviews were conducted after informed consent, over the telephone, were audiotaped and transcribed.

Basic content analysis was followed to interpret the descriptive data. We used a process of debriefing among researchers, engagement with the raw data and codes, and employed field and reflective notes to assure reliability and validity.

## RESULTS

Fifteen parents (13 mothers/2 fathers) participated. Their adolescents who had an HNS, were a mean age of 15.7 years. There were 8 males and 6 females. Three themes were identified.

### Theme one Family running out of options for OSA treatment

With continuing and escalating problems with sleep disturbances in their adolescent, parents expressed increasing distress and physicians responded by ordering more sophisticated testing. For some parents, this was their first exposure to actual concrete data to identify the severity of their adolescent's sleep issues and then the dangers of sleep apnea. One parent found from the sleep study that their child was having 45 episodes of sleep apnea per hour!

Observed regression in cognitive development and behavior.

- ‘My child was experiencing regression in behaviors that she, I mean, she had cognitive language delays that were actually regressions from where she had been in a year or 2 before’
- ‘We had gotten to the point where our son wasn’t sleeping past 2 in the morning, so we needed to do something’.

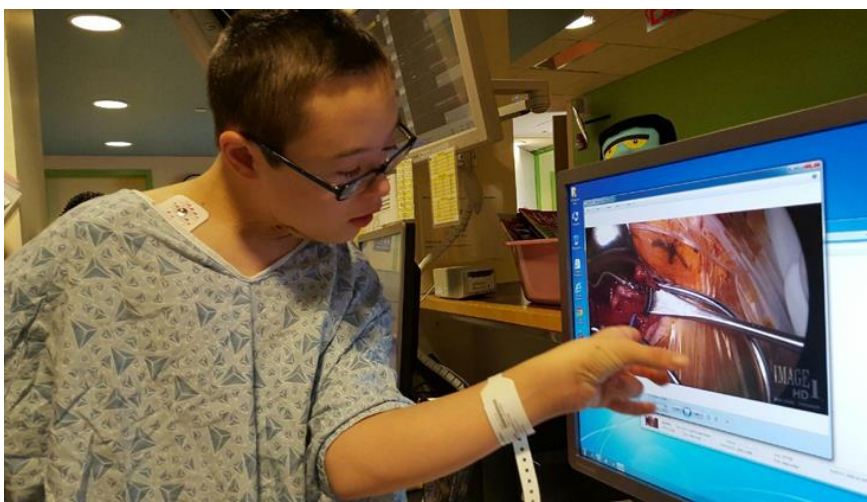
Parents actively searched for less invasive options.

- ‘I would do anything to get this trach out at the time, because it was, like 11 years, dealing with the trach.’
- ‘we tried the CPAP machine with her, four times without success.’

### Theme two Trust in the HNS multidisciplinary team

Parents cited trust in the team as a key driver of their decision for HNS implantation. Visits with the research team allowed the parents access to the experts to answer all their questions. HNS seemed to parents a less invasive, better alternative treatment option and parents had faith in the team.

- ‘his advice (physician) to us was, was something that I kind of felt like we were able to trust with pretty much any kind of question’
- ‘I saw every video he (physician) did. I found news reports and journal articles and I followed a DS physician because he had good advice. I trusted in his assessment of the HNS’
- ‘After speaking to the (company) rep just prior to the surgery, fully aware that this is new technology but that uh, in light of all of that- those collective brains getting together, um- their previous experiences prior to going with this company that manufactures this device- we felt comfortable moving forward with this procedure for S.’
- ‘So I called them (physician investigators) up, turns out that they told me about the uh, the clinical trial [...] So, during that years’ time we had time to talk to, we certainly talked to the doctors at the clinic and the doctor at her pediatrician, you know just getting perspective and concern’.



### Theme three ‘Life changing’ outcomes

After the HNS insertion and the period of adjustment of the device stimulation, parents started to log in the changes that they were seeing in their adolescent. These changes included not only altered sleep patterns in their adolescent, but also changes speech and behavior. These identified areas targeted the investigators to more objective outcomes by other specialists.

- ‘She was talking for 10 minutes. And you know, prior to surgery she used only two to three words’.
- ‘Even the tone-the muscles in his face are improving’.
- ‘We decreased his ADHD medication by 50%’.
- ‘You know, doing so much better academically. I just get reports from school; she does her work, a lot’.
- ‘I think in terms of attention and ability to, to power through and do schoolwork and things like that really where we see the biggest change’.
- ‘He’s able to go swimming’
- ‘Yep, he’s happier, when we walk in his room he smiles and gives us a hug and he’s much quicker to do what we ask him to do and happier to do what we ask him to do’.

## CONCLUSIONS



Parents described being at a breaking point and were willing to consider this novel treatment. They relied on their trust in the HNS team. Future research is needed to validate the improvements not only in sleep, but also in behavior and speech as additional potential benefits of the HNS.

The power of parents to advocate for their adolescent and to share their experience are a testimony to them. The HNS parents now have their own social media site and they have worked to develop videos that are on the MFGH/C YouTube site.



Hypoglossal Nerve  
Stimulator Device  
Demonstration



Hypoglossal Nerve  
Stimulator: What You  
Need to Know



# DECREASING CATHETER DAYS THROUGH NURSING HANDOFF, STAFF EDUCATION, AND THE NURSE DRIVEN PROTOCOL FOR CATHETER REMOVAL

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## BACKGROUND AND SIGNIFICANCE

### Why did we do the study?

- Spike in Surgical/Trauma Unit CAUTI rate (0.0 to 5.08) between October 2015–December 2015
- 2 cases of CAUTI in Quarter 1 of Calendar Year 2016

### Why does this matter?

- Increased morbidity, LOS, and health care costs
- Considered “largely preventable,” thus, a “never event”
- MGH standard of excellence – “Excellence Everyday”

### Strategies to reduce CAUTI rate?

- **Nurse education** – catheter care (Oman et al, 2012; Thomas, 2016)
- **Nurse Driven Protocol (NDP)** (Mori, 2014; Thomas, 2016)
- **Documentation** – insertion/removal/indication for urinary catheters [UC] (Bernard, Hunter and Moore, 2012; Lo et. al, 2008)
- **Focused rounding** (Thomas, 2016) and **auditing** (Wald and Kramer, 2011)
- **UC dwell time is the single most important risk factor for CAUTI** with the risk of infection increasing at a rate of 5% *per catheter day beyond the first 48 hours* of catheterization (Wald and Kramer, 2011)

## AIMS OF STUDY

1. Reduce urinary catheter (UC) dwell time and the incidence of CAUTI on White 7
2. Promote innovative uses of eCare to guide nurse-nurse shift handoff communication and documentation.
3. Increase clinical nurses' knowledge of current EBP/best practice catheter care via an educational campaign.
4. Empower staff RNs to participate in care decisions by encouraging the use of and implementing the NDP



## METHODS

**Design:** Quasi-experimental study

**Sample:** Two cohorts of patients

- Historical Controls (HC) admitted before three-intervention bundle (4/2017–11/2017)
- Prospective Patients (PP) admitted after implementation of three-intervention bundle (12/2018–5/2019)
  - **Inclusion criteria:**  
Admitted immediately after surgery to 27-bed surgical/trauma unit with a UC
  - **Exclusion criteria:**
    1. As delineated in Nurse Driven Protocol (NDP)
    2. Patient admitted to the surgical/trauma unit without a UC

**Sample size:** Based on power analysis for logistic regression analysis, small effect size (.25), power of .8, and alpha of .05, 174 patients (87/group) required for statistical significance

## PROCEDURE

### Best Practices and “Smart Text” Documentation in EPIC

1. Insertion date
2. Catheter day
3. Eligible for Nurse Driven Protocol (NDP)
4. Discussion with provider re: removal of UC
5. Anticipated removal day
6. Best Practice Catheter Care:
  - Bag maintained below bladder
  - Closed system maintained
  - Peri-care / UC care performed
  - Device secured in place

## DATA ANALYSIS

SAS software Version 9.4 (Cary, NC: SA, 2013)

### SINCERE THANKS:

- Joseph J. Locascio, Ph.D., Assistant Professor of Neurology, Harvard Medical School, and Biostatistician, Biostatistics Center, Massachusetts General Hospital
- Karen Lynch, Director of Analytics, Lab of Computer Science, Massachusetts General Hospital
- Taia Basille, Project Specialist, Reporting Information Systems, Massachusetts General Hospital
- Paul Amstein, RN, PhD, FAAN, Clinical Nurse Specialist for Pain, PCS Quality, Safety & Practice

## RESULTS

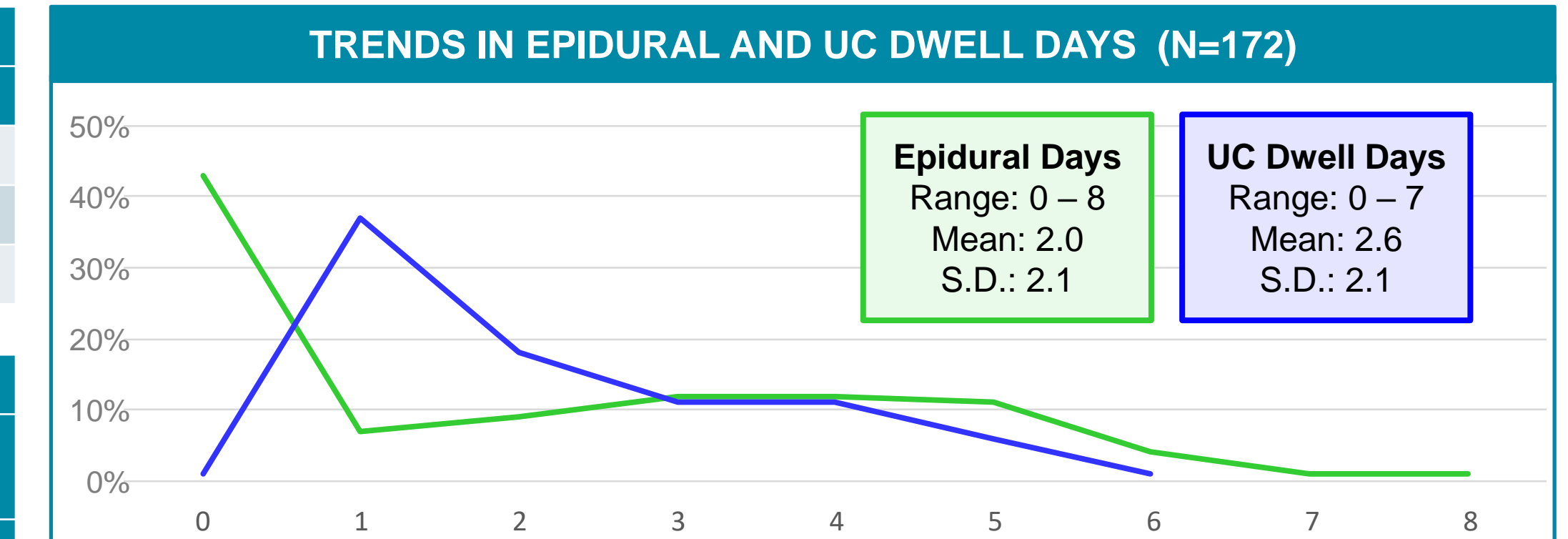
DEMOGRAPHIC VARIABLES (N=172)						
		N	X̄	SD	Min.	Max.
Age	Total	172	61 yrs	14.95	22	92
	Historical Controls	87	61 yrs	14.66	27	92
	Prospective	85	60 yrs	15.3	22	88

DEMOGRAPHIC VARIABLES (N=172)							
		Total		Historical Controls		Prospective	
		N	%	N	%	N	%
Gender	Female	94	55	87	51	85	49
Race	White	136	79	68	39.5	68	39.5
Ethnicity	Non-Hispanic/ Latino	142	82	71	41	70	41

MOST FREQUENT COMORBID CONDITIONS						
Diabetes Mellitus	26	15	8	30	18	69
Tumor	84	49	43	51	41	49
Metastatic Disease	25	15	8	32	17	68
	N	MEAN	SD	Min.	Max.	
Charlson Comorbidity Index (Total)	171	2.5	2.4	0	10	

HIGH FREQUENCY ADMITTING DIAGNOSES (N=172)			
	Total	Historical Controls	Prospective
	(N=172)	(N= 87)	(N=85)
Pancreatic Cancer	31	14	17
Colon Cancer	30	19	11
Diverticulitis	10	6	4
Pancreatic Mass	8	1	7

HIGH FREQUENCY SURGICAL PROCEDURES			
Minimal Abdominal (Gastrectomy, hernia repair, chole)	37	17	20
Moderate Abdominal (X-lap, LAR, colectomy)	82	46	36
Major Abdominal (Whipple)	42	16	26
Other (Mastectomy, Excision)	11	8	3



CASES OF CAUTI (N=172)								
	UC > 2 days		Temperature > 100.4 F		Colony Count > 100,000 *		Met all Three Criteria	
	N	%	N	%	N	%	N	%
Historical controls (N=87)	27	31	5	6	0	0	0	0
Prospective (N=84)	47	56	16	19	3	4	1	1

\* Not more than two types of bacteria; no fungi

MULTIVARIATE REGRESSION ANALYSIS (N=172) Dependent variable: UC Dwell days					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	330.9450746	66.1890149	80.67	< 0.0001
Error	165	135.3824107	0.8204995		
Corrected Total	170	466.3274854			

Initial predictor set of: Treatment Group, Gender, Surgical Procedure, Charlson Comorbidity Index (CCI), Diabetes Mellitus (DM), CCI\_Renal Disease, CCI\_Metastatic Disease, Age (linear and quadratic terms), Number of Epidural Days, and the Interaction of TXGRP with Age(linear, quadratic), Epidural Days, and Surgical Procedure.

MULTIVARIATE REGRESSION ANALYSIS (N=172) Dependent variable: UC Dwell days Proportion of variance accounted for: Eta Square 0.71					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Surg_Proc: Other	3	7.7380839	2.5793613	3.14	0.0268
CCI_DM1: YES	1	5.737969999	5.73796999	6.56	0.0113
Epi_Days	1	223.4105803	223.4105803	272.29	< 0.001

Dwell Days was significantly (p<0.0001) and strongly predicted by Epidural Days (unstandardized partial regression coefficient = B = 0.66, 95%, CI = 0.58-0.74). Other statistically significant effects were CCI\_DM1 (p=0.01) and Age (p=0.027; B=0.01, CI=0.001,0.02).

## CONCLUSIONS

- Nursing vigilance about interventions to prevent CAUTI reduced the CAUTI incidence on the surgical unit after the spike in 2015–2016 and throughout the study period.
- The single case of CAUTI in this study reflects reported trends in CAUTI when UC dwell time > 48 hours.

## IMPLICATIONS FOR PRACTICE

- Embed Best Practices in EPIC Flowsheet
- Encourage UC discontinuance, bladder scanning, and straight catheterization, PRN
- Encourage TAP blocks for analgesia to avoid urinary retention and prolonged UC dwell time

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This study was approved by the Partners Human Research Committee (Protocol # 2018 P000033, Date: 1-2-2018).



# HEALTH EQUITY IN INCOME DISPARATE WOMEN: MAKINGS OF A MIDLIFE CRISIS

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## BACKGROUND AND SIGNIFICANCE

- The association between poverty and poor health is well-established, though less is known of this relationship in midlife women.
- Midlife is characterized by increased disease risk, and engaging midlife women in preventive care is a CDC-endorsed risk reduction strategy, often influenced by behavioral and mental health characteristics.

## PURPOSE

To compare differences in modifiable behavioral and mental health characteristics in midlife women, delineated by income disparity.

## METHODS

- **Design & Sample:** Secondary analysis in 33 women enrolled in a prior menopause study. Women were classified by income disparity based on public health insurance use (MassHealth enrollment; eligibility determined by income).
- **Eligibility:** age 45-52, perimenopausal; **Ineligibility:** using hormone therapy, pregnant/breast feeding (past year), active cancer or diabetes.
- **Outcomes:** demographic characteristics; behavioral characteristics: current cigarette smoking, substance use history, current exercise, obesity (BMI  $\geq 30$ ); mood symptoms and sleep: depressed mood (**Center for Epidemiologic Studies Depression Scale [CES-D]**), anxiety (**Generalized Anxiety Disorder-7, [GAD-7]**), and sleep (**Insomnia Severity Index [ISI]**).
- **Analysis:** All variables were tested for normality prior to analysis. Groups comparisons were evaluated via Student's *t*-tests, Wilcoxon Rank-Sum tests, or Chi-square tests.

### ACKNOWLEDGEMENTS:

- Connell Postdoctoral Fellowship in Nursing Research
- This research is supported by the National Institute of Nursing Research grant # 1K23NR011833-01A1 (PI: Looby), MGH IRB Protocol number: 2009P-001315.

## RESULTS

### Demographic Characteristics (Table 1):

Groups were similar in age, race, ethnicity, education, and marital status ( $p>0.05$ ); 42% (14) were enrolled in MassHealth.

Table 1. Demographic Characteristics			
	Income Disparate (n=14)	Non-Income Disparate (n=19)	Total (N=33)
Age (mean) (SD)	47.9 (2.3)	47.6 (1.7)	47.7 (1.9)
Race (n) %			
Black/African American	(7) 50%	(8) 42%	(15) 45%
White/Caucasian	(5) 36%	(11) 58%	(16) 49%
American Indian	(1) 7%	(0) 0%	(1) 3%
More Than One Race	(1) 7%	(0) 0%	(1) 3%
Ethnicity (n) %			
Hispanic	(1) 7%	(3) 16%	(4) 12%
Completed High School/ GED (n) %	(14) 100%	(19) 100%	(33) 100%
Currently Employed (yes) (n) %*	(1) 7%	(15) 79%	(16) 48%
Currently Married (yes) (n) %	(2) 15%	(7) 37%	(9) 28%
Children (yes) (n) %*	(13) 93%	(10) 53%	(23) 70%

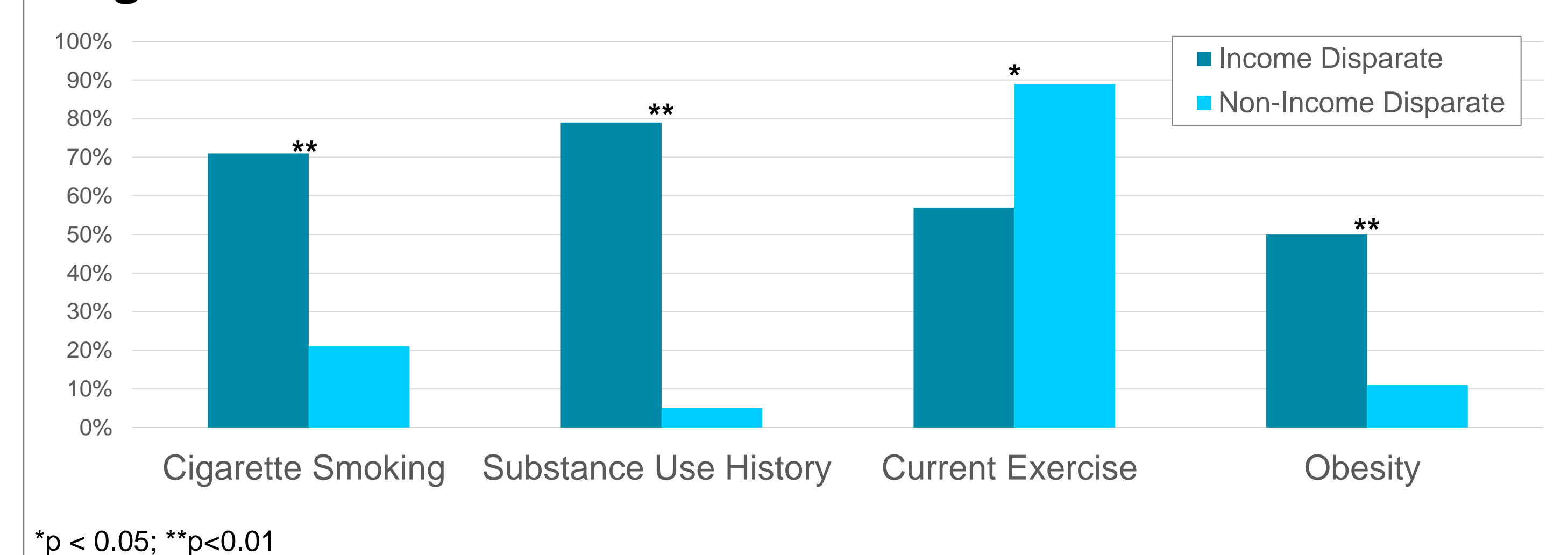
\*Significant differences ( $p \leq 0.01$ ) observed between the two groups for these variables: more income disparate women had children, while less were employed. No significant between-group differences were observed for the other variables.



### Behavioral Health Characteristics (Figure 1):

More income disparate women reported current cigarette smoking (71% [10] vs. 21% [4],  $p=0.004$ ), and substance use history (79% [11] vs. 5% [1],  $p<0.0001$ ). Fewer income disparate women reported current exercise (57% [8] vs. 89% [17],  $p=0.03$ ); more were obese (BMI  $\geq 30$ ; 50% [7] vs. 11% [2],  $p=0.01$ ).

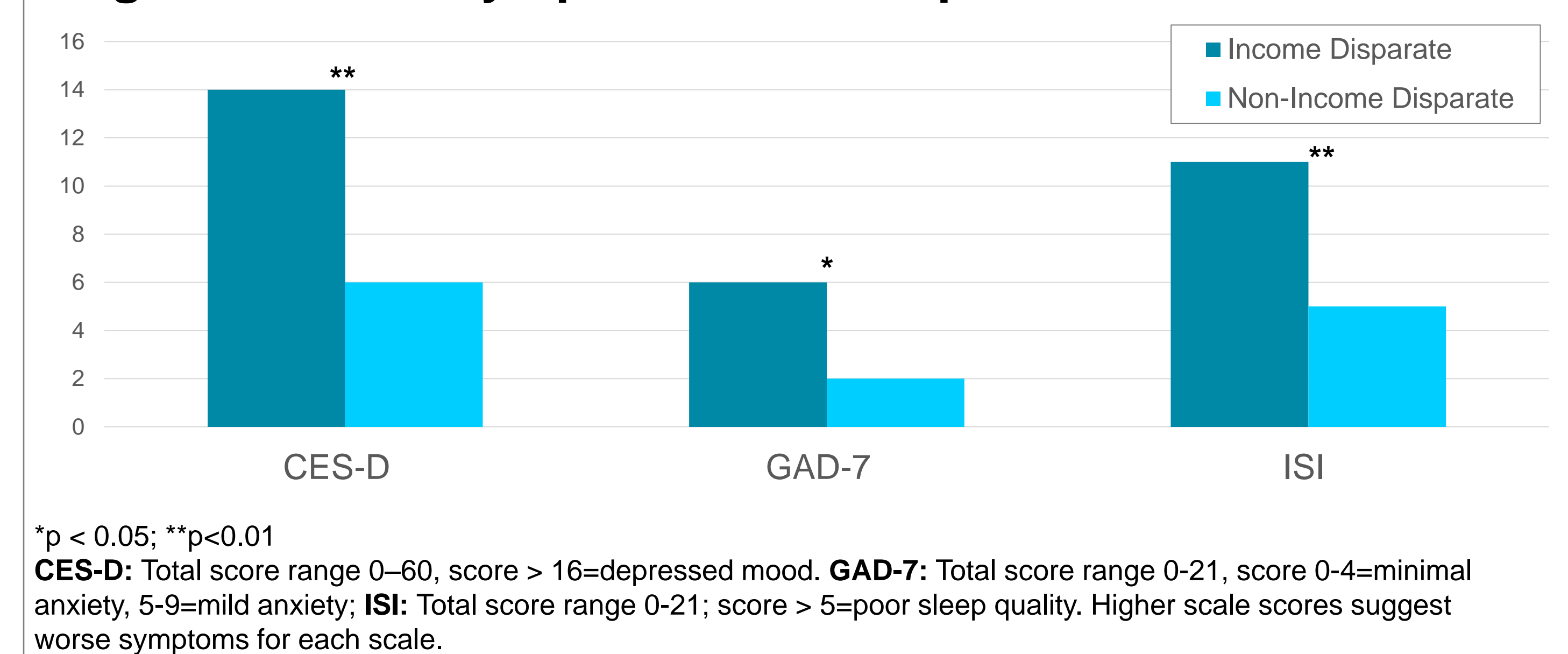
Figure 1. Behavioral Health Characteristics



### Mood Symptoms and Sleep Characteristics (Figure 2):

Income disparate women reported significantly worse mood and sleep: CES-D scores [median (IQR)] (14 (12, 24) vs. 6 (0, 9),  $p<0.0001$ ); GAD-7 scores (6 (2, 9) vs. 2 (0, 4),  $p=0.04$ ); ISI scores [mean (SD)] (11 (5.5) vs. 5 (4.4),  $p=0.004$ ).

Figure 2. Mood Symptoms and Sleep Characteristics



\* $p < 0.05$ ; \*\* $p < 0.01$   
**CES-D:** Total score range 0–60, score  $> 16$ =depressed mood. **GAD-7:** Total score range 0-21, score 0-4=minimal anxiety, 5-9=mild anxiety; **ISI:** Total score range 0-21; score  $> 5$ =poor sleep quality. Higher scale scores suggest worse symptoms for each scale.

## CONCLUSIONS

Income disparate midlife women fare differently on engagement with health-promoting behaviors, and demonstrate worse mood symptoms and sleep, suggesting a lack of parity in preventative screening and healthy aging opportunities.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

- Nurse-led interventions are needed to enhance care engagement among midlife income disparate women.
- Preventive health screenings, including behavioral and mental health characteristics at midlife, may reduce risk for disease and promote health equity early in the aging trajectory.



BACKGROUND

- Post-acute care, hospitalization-associated disability (HAD) prompts admissions to skilled nursing facilities (SNF) for Medicare-reimbursed rehabilitative care with the goal of returning the older adult to baseline function.
- Persons with dementia are at higher risk for HAD and 600 times more likely to be in a nursing home at six-months post-discharge.
- A better understanding of issues impacting the transition to SNF may inform the development of rehabilitation protocols that support individualized rehabilitation plans and services.

PURPOSE



To examine the intrinsic factors challenging the post-acute transition of older persons to a long-term, skilled nursing facility (SNF).

METHODS

- Analysis of:
- Medicare Analysis Review (MED PAR)
  - Minimum Data Set (MDS) claim data
  - In 23,662 community-dwelling persons admitted to Massachusetts SNFs from acute care hospitals in 2013.

RESULTS

- Logistic regression modeling indicates that those who had worse admission function, vision loss, hearing loss, more severe cognitive impairment, delirium, depression, lower pain frequency, were of older age and had never been married were more likely to transition to long-term stay at the skilled nursing facility.
- The model had an overall significance (Likelihood Ratio Chi-Square = 1035.8 with 15 degree of freedom,  $p < 0.0001$ ) and an area under ROC curve of 0.69. The Hosmer and Lemeshow Goodness-of-Fit indicates the model fit is adequate (Chi-Square = 12.3, df = 8,  $p = 0.1398$ ).

PATIENT CHARACTERISTICS

Variable	N (%) or Mean ± SD
Age	82.4 ± 8.1
Female	15,691 (66.3)
White	21,980 (92.9)
Widowed	11,307 (47.8)
Vision loss	3,407 (14.0)
Hearing loss	5,283 (22.3)
Dementia	4,840 (20.1)
Delirium	513 (2.7)
Depression	6,857(29.0)
Pain presence	13,440 (60.7)
Pain almost daily or constantly	6,400 (27)
Severity of cognitive impairment	12.1 ± 3.8

DISCHARGE STATUS

	N	Mean	SD	F (p)
Discharge to Community	16,972	51.7	13.5	465.02 (<.0001)
Discharge Due to Death	2,759	60.1	17.1	
Discharge to Other Nursing Facilities	628	56.5	17.1	
Did Not Discharge within First Quarter	3,322	59.5	17.1	

LOGISTIC REGRESSION MODEL FOR REMAINING IN FACILITY

Variable	B	SE	x <sup>2</sup>	p
Intercept	144.5	5.9	602.3	<.0001
Age	0.1	0.0	88.4	<.0001
White	1.5	0.4	16.9	<.0001
Widowed	1.7	0.4	37.0	<.0001
Vision loss	1.5	1.2	115.7	<.0001
Hearing loss	5.8	1.2	21.0	.0001
Dementia	2.3	0.4	31.3	<.0001
Pain almost daily or frequently	2.6	0.5	65.7	<.0001
Delirium	4.6	0.7	40.4	<.0001
Depressive symptoms	0.3	0.0	155.6	<.0001

B: unstandardized coefficient  
SE=the standard error for β

CONCLUSIONS

- Our study added to work suggesting advanced age, dementia/cognitive impairment, depression, unmarried status and physical function results in long term care placement.
- We also identified other factors including delirium, vision loss and hearing loss, which are findings not found in other studies representing factors that may be modifiable with targeted interventions.

IMPLICATIONS

- Findings indicate a need to:
- Assess and communicate multiple factors in addition to physical function across care settings from acute to rehabilitative care.
  - Develop interventions to accommodate for delirium, vision and hearing loss.

ACKNOWLEDGEMENT:

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PSYCHOLOGICAL OUTCOMES OF A PROVIDER DESIGNED  
INTERNET-STREAMED YOGA VIDEO IN BREAST CANCER SURVIVORS

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<sup>3</sup>MGH Institute of Health Professions

BACKGROUND


- In the U.S., there are more than 3.8 million breast cancer survivors.
- Breast cancer survivors often experience many physical and psychological symptoms related to treatment.
- Findings from studies exploring the experience of women with breast cancer and on oral endocrine therapy suggests that patients seek interventions from their care providers that are aimed at reducing symptoms associated with treatment.
- Yoga is increasingly recommended to mitigate psychological distress and physical challenges post breast cancer diagnosis and treatment.
- Based on findings from previous work exploring the needs of breast cancer survivors, an interdisciplinary team of providers led by advanced practice nurses developed and delivered mindfulness-based Internet-streamed yoga video aimed at improving psychological outcomes in survivors using a gentle yoga practice tailored for breast cancer.

PURPOSE

This study aimed to test the psychological outcomes of a mindfulness-based Internet-streamed yoga video in breast cancer survivors.

THE YOGA VIDEO

- The 20-minute video was developed by a multi-disciplinary team comprised of medical and surgical oncology nurse practitioners, a physical therapist, research nurse, and cancer center yoga instructor.
- Goal: to address symptoms related to treatment (surgery, radiation, chemotherapy, endocrine (hormone) therapy) for breast cancer.
- The postures incorporate movements/actions similar to exercises prescribed by surgical providers and/or physical therapists as postoperative standard of care.



METHODS

- A one-group purposive sample, repeated measure using a directed qualitative descriptive and mixed methods approach was used.
- Participants were recruited from breast oncology practices across two settings in the northeastern United States.
- Education about the video was provided and the link to the video was sent to participants.
- Demographic information, Knowing Participation in Change Short Form (KPCSF), Short Warwick-Edinburgh Mental Well-being Scale (WEMWBS) and the Generalized Anxiety Distress Scale (GAD-7) were obtained at baseline, and again at two and four weeks.
- A semi-structured interview was conducted at four weeks.

RESULTS

- Thirty-five mostly Caucasian (91.4%) women (mean age = 56) participated.
- A one-group repeated measures analysis of variance indicated statistically significant changes occurred in all measures between week 0 and week 4:
  - Decreased GAD ( $t = -2.97, p = .004$ )
  - Improved WEMWBS ( $t = 2.52, p = .008$ )
  - Increased KPC ( $t = 2.99, p = .004$ ).
- Qualitative findings suggest the overall experience of the video was positive and the women would recommend its use to others.

INSTRUMENT SCORES BY WEEK

	Week 0 ( <i>n</i> =42)		Week 2 ( <i>n</i> =37)		Week 4 ( <i>n</i> =35)	
	Mean	SD	Mean	SD	Mean	SD
Generalized Anxiety Scale	8.24	5.03	6.35	4.06	5.17	3.22
Mental Well-Being Scale	26.31	5.01	27.65	4.24	28.69	4.09
Knowing Participation in Change Scale	64.47	9.3	67.59	8.04	70	9.13

QUALITATIVE FINDINGS

Self-report of most distressing symptoms

Worry of recurrence	9
Tight surgical area	8
Medication side effects	6
Fatigue/weakness/decreased energy	6
Weight gain	5
Hair loss	5
Decreased concentration	5
Breast asymmetry	3
Breast pain	3
Back pain	2
Nerve pain	2

Self-report of management of symptoms

Complementary therapies	26
Lifestyle changes	19
Avoidance of symptoms	6
OTC meds/supplements	5
Doing nothing/no issues	2

Did the video help with any symptoms?

Yes	25
No	8
Unsure	2

CONCLUSIONS

- Quantitative results indicate the yoga video did improve the psychological outcomes of anxiety, well-being and knowing participation in change.
- Qualitative findings suggest the video was helpful in terms of promoting relaxation.
- Most participants said they plan to continue to use the video and would recommend it to a friend.
- Limitations: One site, small, homogenous sample, white and educated.

IMPLICATIONS

- A randomized clinical control trial is needed to understand generalizability.
- More work is needed to understand how this video may improve psychological outcomes, physical symptoms and biomarkers of cortisol and inflammatory marker (IL-6 and IL-1 $\beta$ ) production.
- The video may be considered as part of a toolkit to improve breast cancer survivor outcomes.

ACKNOWLEDGEMENT:

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We would like to acknowledge Erin Sullivan, ANP-BC, Cheryl Brunelle, PT, Emily Pepe, AGNP-BC and yoga instructor: Luba Zagachin



# THE PILOT TESTING OF A HEALTH-COACHED WALKING PROGRAM IN UNPAID CAREGIVERS OF PERSONS WITH DEMENTIA

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<sup>3</sup>MGH Institute of Health Professions, <sup>4</sup>Maine Medical Center

## BACKGROUND AND SIGNIFICANCE

- The number of people age 65 and older with dementia is estimated to reach 7.1 million in 2025.
- There are currently 15.7 million informal (unpaid, typically family) adult caregivers caring for people with dementia and these numbers are expected to double over the next three decades.
- Unpaid caregivers of persons with dementia have increased levels of stress, anxiety, depression and risk for poor health-related outcomes.
- Walking is widely supported as a cost-effective, accessible way to address these and other health issues.

## METHODS

- This 2-group pilot study used a quasi-experimental and qualitative descriptive design.
- Pre- and post-measures of general health (body mass index [BMI], blood pressure, heart rate, cognition, well-being, stress and perceived activity level) were obtained from caregivers at baseline and at 12 weeks in the HC and control groups.
- A directed qualitative descriptive approach was used to understand the overall experience.

## DATA COLLECTION PROCEDURE

- Using inclusion/exclusion criteria, we recruited potential participants who self identified as caregivers of a person with dementia.
- After consent, a demographic questionnaire captured participant characteristics.
- All participants were provided instruction on the CDC Activity Guidelines.
- Nurses provided HC to the randomly assigned intervention group.
- The HC was delivered at intervals (i.e. daily, every other day or weekly) as determined by the participant and in the format (text, phone call or email) that the participant chose.
- Measures were taken pre post a 12-week walking program.

## RESULTS

- Five male and 27 female caregivers (n=32) participated,  $\mu$  age 57 years.
- Each group demonstrated a statistically significant increase in steps walked ( $p= .01, -.02$ ).
- Although not significant, the intervention group did have an improvement in well-being ( $p= 0.08$ ).
- Qualitatively, caregivers reported many stresses that made self-care challenging and highlighted social isolation.
- Caregivers also reported walking helped them gain a perspective on the need for self-care.
- Those in the HC group reported feeling supported and connected to others.

Results: Demographics (n=32)			
<b>Age</b>		<b>Education</b>	
Mean (SD)	57.3 (13.8)	Some college	2 (6.2%)
Median		Associate's Degree	2 (6.2%)
(Min, Max)	60.0 (25.0, 79.0)	Bachelor's Degree	17 (53.1%)
<b>Gender</b>		Master's Degree	6 (18.8%)
Female	27 (84.4%)	Post Professional Degree	4 (12.5%)
Male	5 (15.6%)	Missing	1 (3.1%)
<b>Occupation</b>		<b>Race</b>	
Employed	18 (56.2%)	White	28 (87.5%)
Unemployed	2 (6.2%)	African American/Black	3 (9.3%)
Retired	11 (34.4%)	Asian	1 (3.1%)
Missing	1 (3.1%)	<b>Ethnicity</b>	
		Non Hispanic	32 (100%)
		Hispanic	0

Results: Mean value; subsequent 2-group t- test for comparison				
	Mean – Start	Mean – End	t-value	p-value
<b>BMI</b>				
Control	27.54	28.18	-0.32	0.75
Intervention	28.14	27.94	0.08	0.94
<b>BP systolic</b>				
Control	129.13	133.31	-0.69	0.50
Intervention	129.25	129.47	-0.04	0.97
<b>BP diastolic</b>				
Control	81.81	80.06	0.56	0.58
Intervention	81.44	78.67	0.77	0.45
<b>Heart rate</b>				
Control	72.94	75.38	-0.62	0.54
Intervention	66.81	74.13	-1.55	0.13
<b>Mini cog</b>				
Control	4.63	4.8	-0.93	0.36
Intervention	4.94	4.93	0.05	0.96
<b>Weight</b>				
Control	164.25	168.03	-0.37	0.71
Intervention	172.84	171.49	0.08	0.94
<b>Well-being</b>				
Control	25.50	26.88	-0.89	0.38
Intervention	22.79	25.88	-1.80	0.078
<b>Stress</b>				
Control	21.13	20.38	0.59	0.56
Intervention	23.94	22.00	1.37	0.18
<b>Steps</b>				
Control	4.63	6.40	-2.85	0.01
Intervention	4.63	6.13	-2.40	0.02

## GAP



Despite evidence suggesting the role of caregiver for persons with dementia is challenging, resulting in negative health outcomes, there is a critical gap in programs aimed at improving the health-related outcomes of this population.

## PURPOSE

The specific aims of this study were to:

- Establish the feasibility of a nurse health-coached (HC) walking program with caregivers of persons with dementia using wireless pedometers.
- Examine preliminary outcomes of a HC walking program using wireless pedometers on caregiver's perception of well-being, stress, and activity level.
- Qualitatively explore caregivers' experiences participating in a HC walking program using wireless pedometers.

## CONCLUSION

- Both groups improved their daily steps.
- Although not statistically significant, the HC group had an improvement in well-being and qualitatively reported less isolation and more feelings of support and connectedness.
- Qualitative findings contributed to a greater understanding of the HC walking program and needs of informal caregivers.

## IMPLICATIONS

Further work is needed to:

- Determine if this intervention is effective in a larger, more diverse population.
- Gain a greater understanding of caregivers' perceptions of other strategies to address social isolation and stress.

### ACKNOWLEDGEMENTS

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  - Ifeoma Obiora, MSN, AGNP-C and Brendah Ross, MSN, AGNP–C for their help in data collection and nurse coaching.
  - The caregivers who were willing to partner with us for this study.





# UNDERSTANDING PARENTAL RESEARCH PARTICIPATION IN THE NEONATAL INTENSIVE CARE UNIT (NICU) AND LEVEL II NURSERY

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## BACKGROUND/ SIGNIFICANCE

Traditionally neonates are an underrepresented population in research. It is for this reason it is important to understand why parents make decisions for their child to participate in research.

## PURPOSE

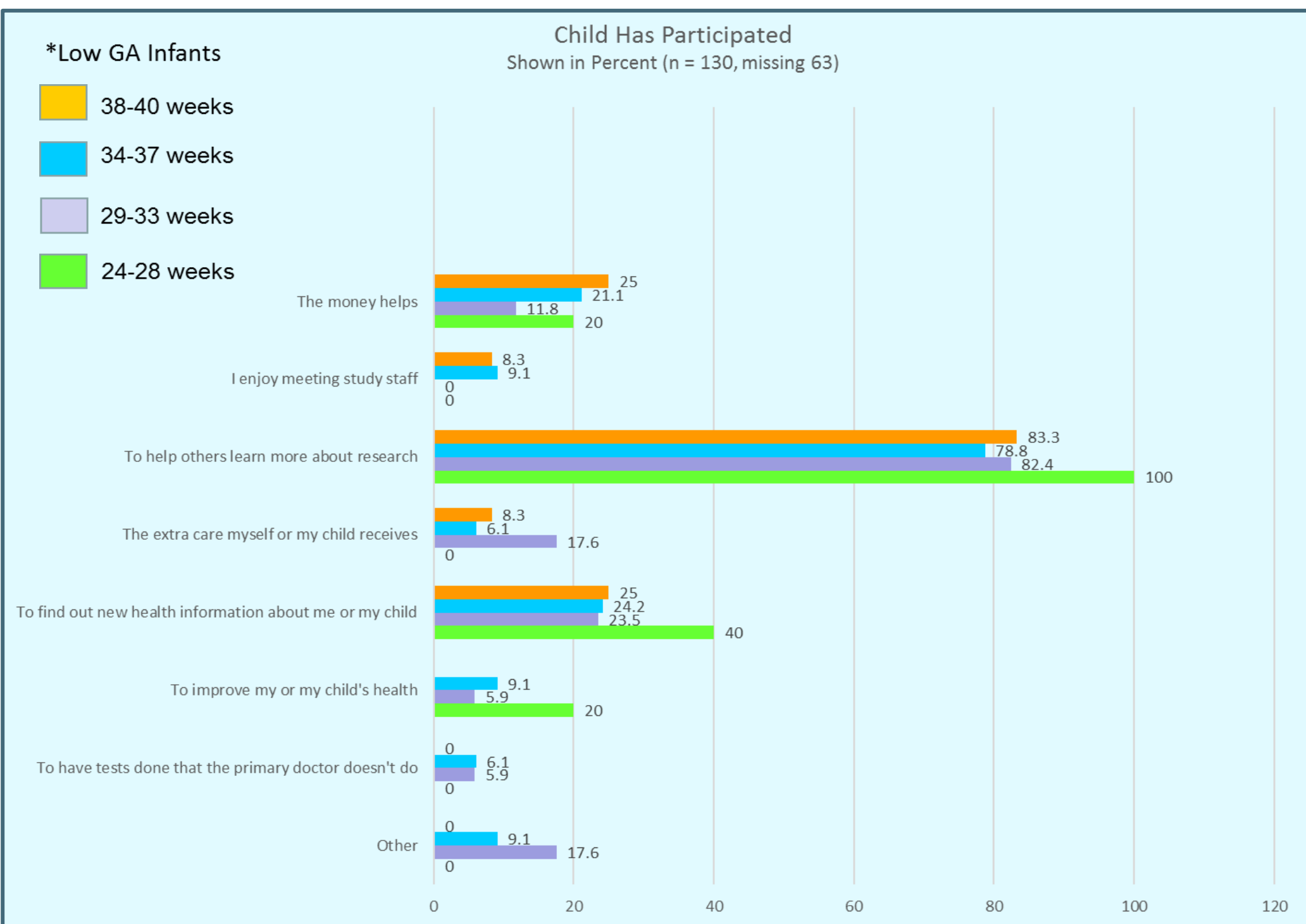
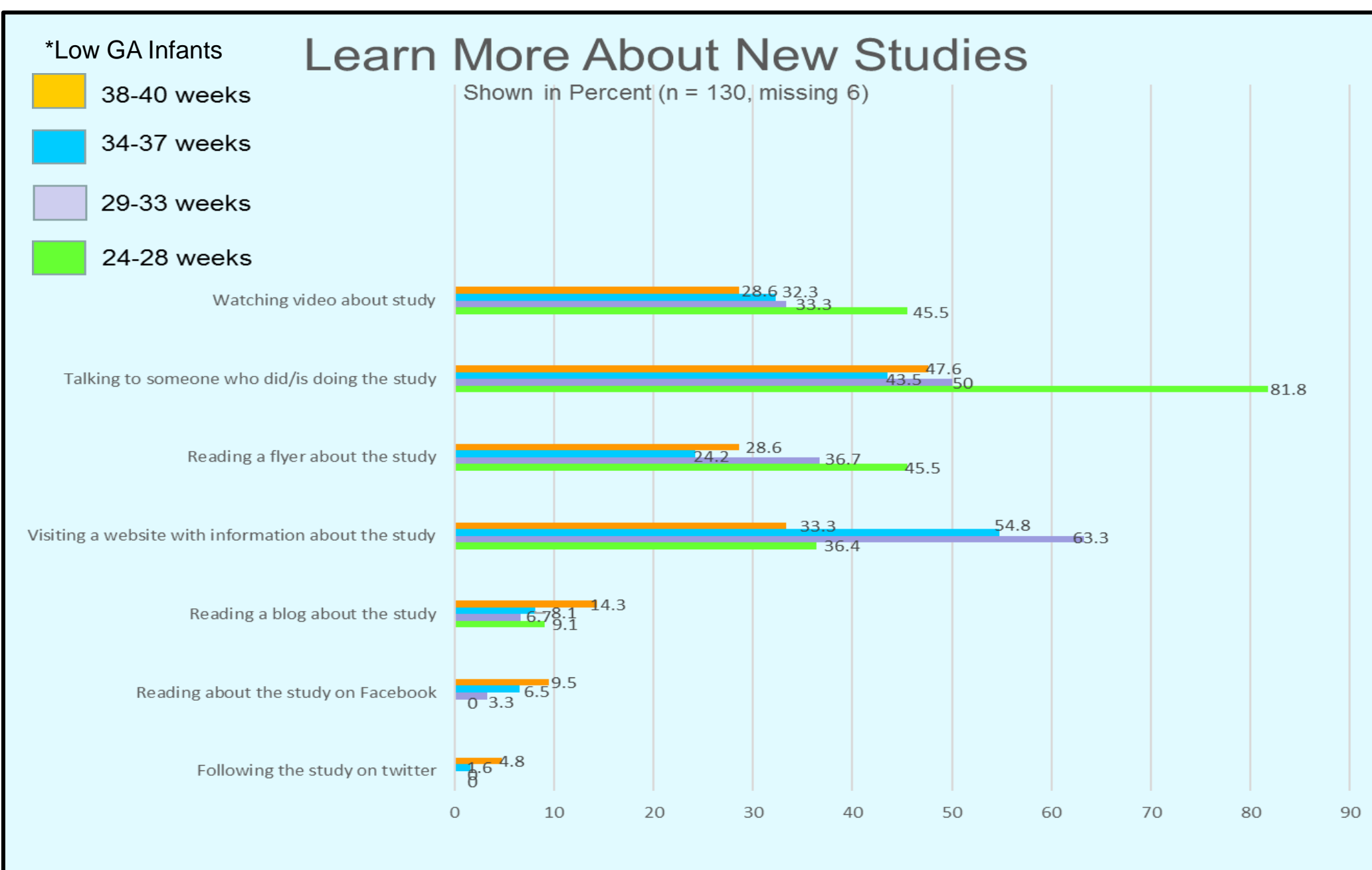
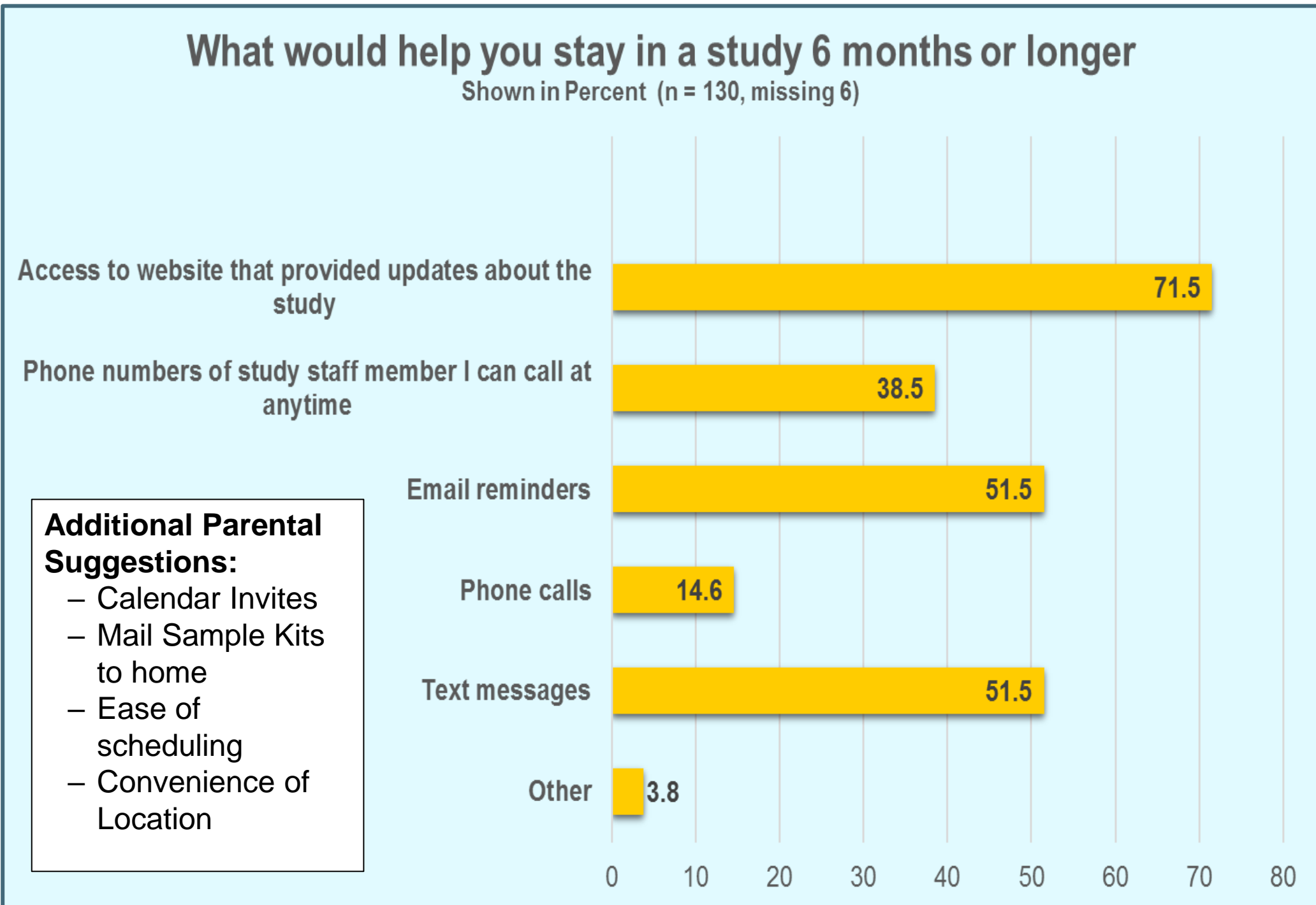
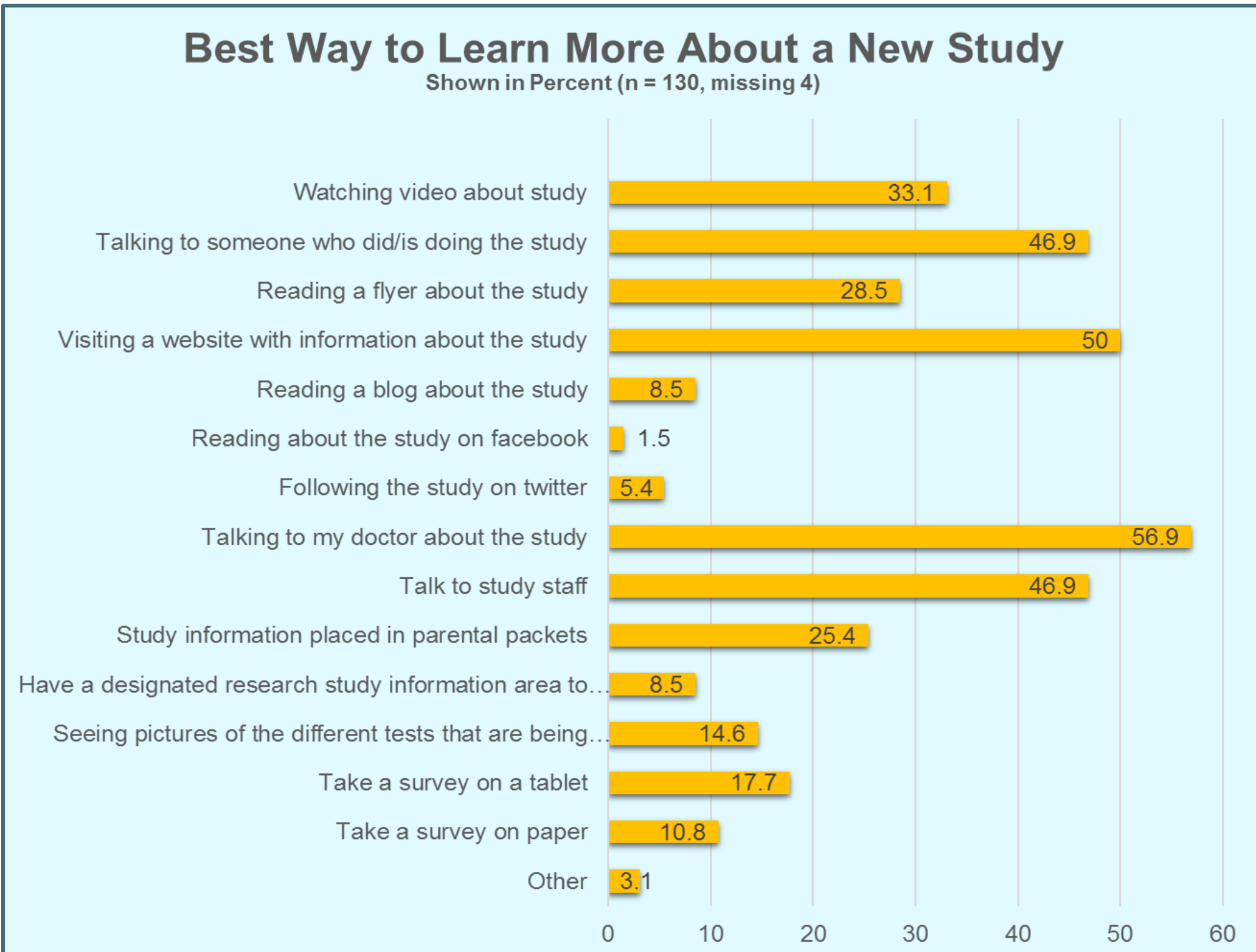
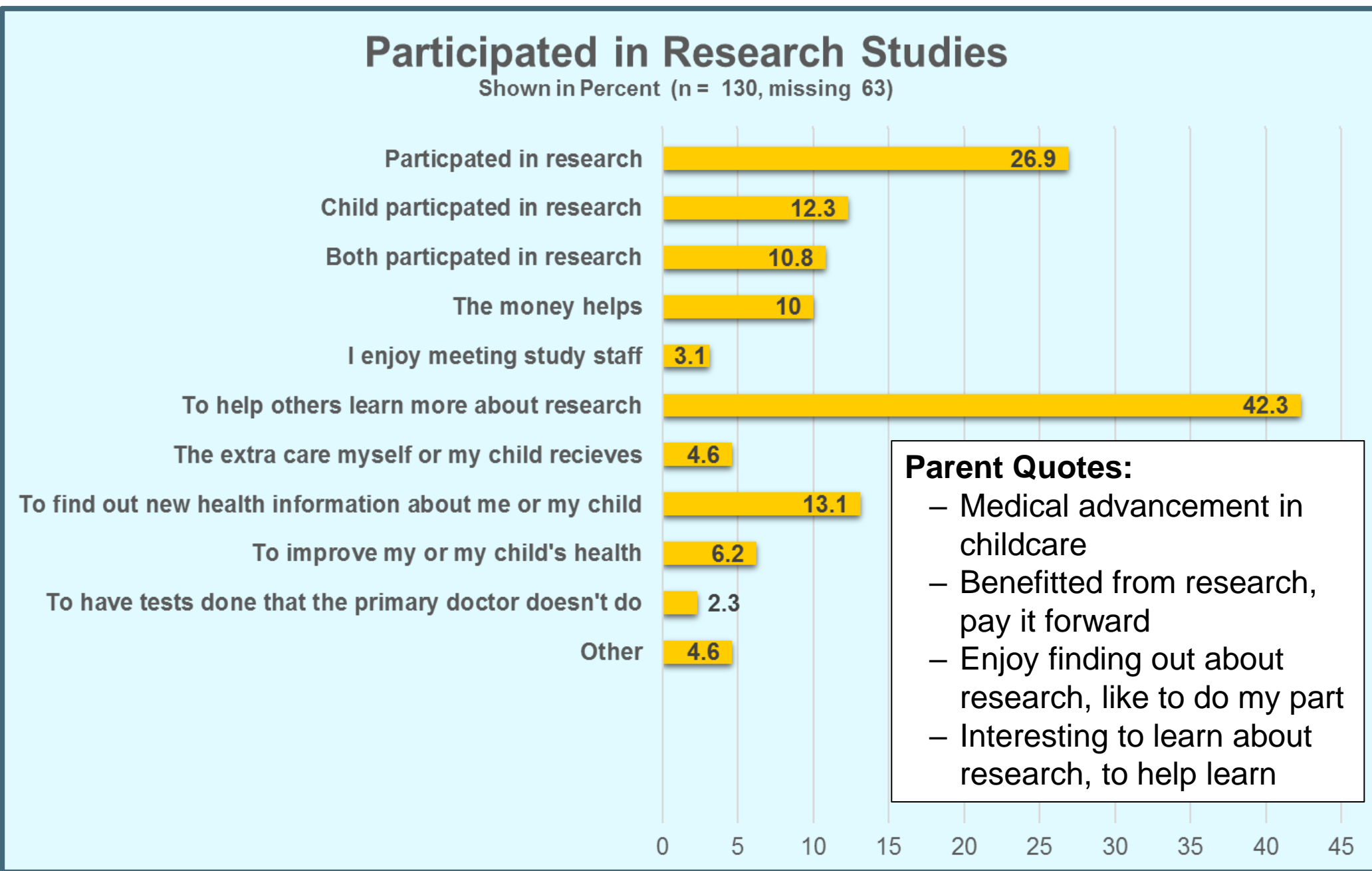
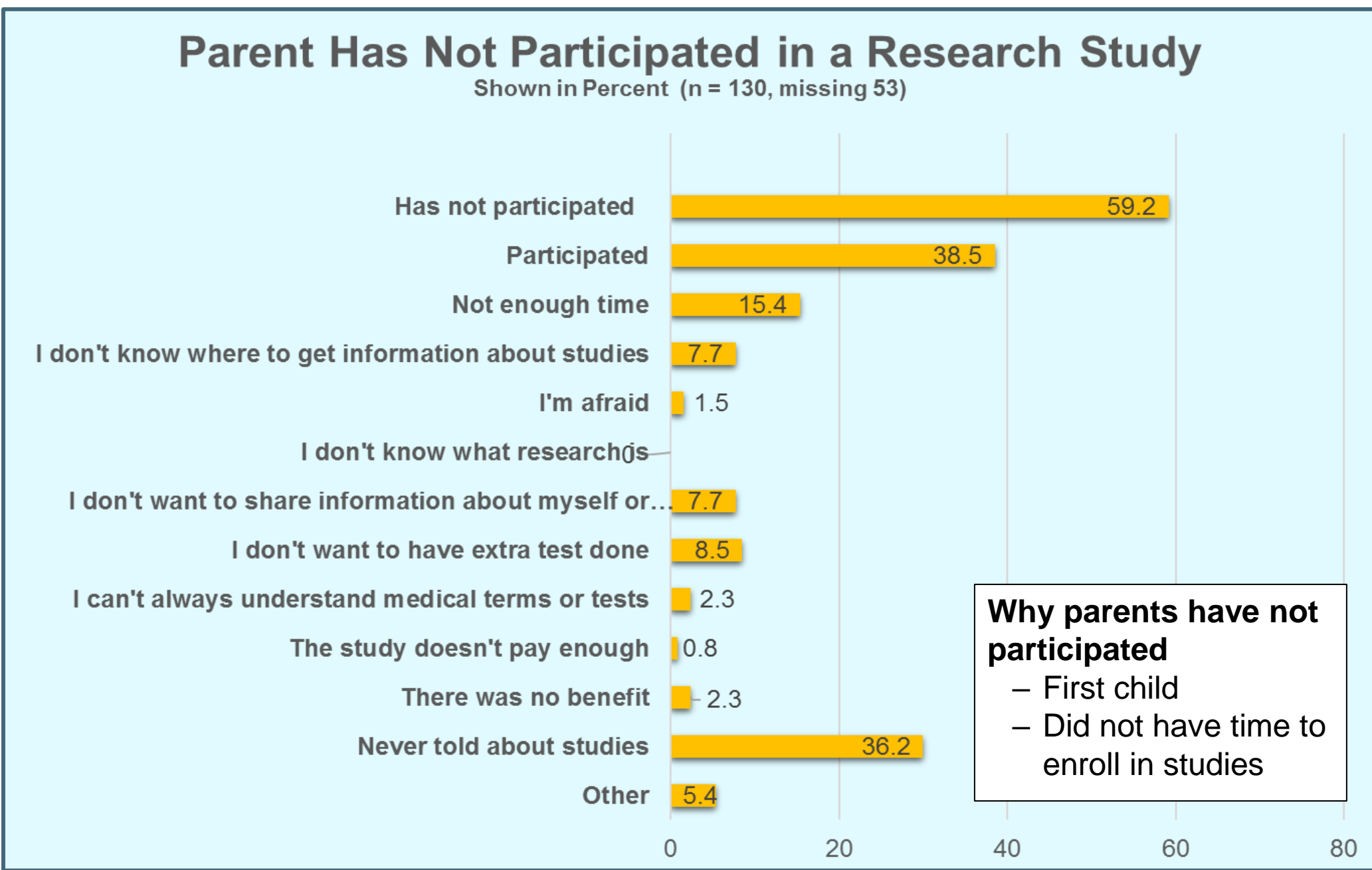
To evaluate facilitators and barriers for parental research participation in the neonatal intensive care unit (NICU) and Level II Nursery.

## METHODS

- Mothers, fathers or significant others who had a child in the NICU/Level II Nursery completed a voluntary survey within 72-hours of discharge.
- The survey evaluated parental facilitators/barriers for giving consent for their child.
- Percentages were calculated for each answer.
- Responses to open-ended question are presented verbatim.

## RESULTS

- Surveys were collected from June 2018-March 2019.
- 130 surveys were returned with a 93% response rate.
- Parents felt they were never told about studies 36.2%.
- Participation was done to help others learn more about research 42.3%.
- Parents wanted to engage with researchers 46.9%, healthcare providers 56.9% or other parents 46.9% to discuss studies.
- Parents also wanted information via videos 33.1%, websites 50% or flyers 28.5%.
- For long-term study engagement parents wanted updates via:
  - websites 71.5%
  - to talk with study staff 38.5%
  - to receive email reminders 51.5%
  - text messages 51.5%
- No major differences were noted between mothers and fathers.
- When evaluated by gestational-age (GA) it was noted that parents of lower GA infants needed more information to enroll children in studies 81.8% and wanted to find out new health information about their child 23.5-40%.



## CONCLUSIONS

Parents want to connect with study staff, providers and other parents who are involved in studies. Engaging with parents also supports longitudinal research. However, we need to do a better job promoting studies and providing up-to-date educational resources for parents to learn about research.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Developing educational strategies to increase research visibility can assist parents understanding on how they can engage in research opportunities.









# GLOBAL AND DOMAIN-SPECIFIC COGNITIVE FUNCTION IN LIVER TRANSPLANT RECIPIENTS

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## BACKGROUND AND SIGNIFICANCE

- The prevalence of cognitive impairment in the liver transplant population has been documented.<sup>1–4</sup>
- However, current research is largely limited to liver transplant recipients within early periods of transplant trajectory (e.g., less than 18 months).<sup>1–4</sup>
- Examining the cognitive trajectory beyond early periods of transplantation would inform the design of interventions to improve long-term health outcomes for liver transplant recipients.

## PURPOSE

- To enhance the understanding of cognitive function in liver transplant recipients, this study aimed to:
- Describe global and domain-specific cognitive function (e.g., memory and executive function) in recipients who survived more than six months after liver transplantation.
  - Describe patient and clinical characteristics of recipients with impaired global and/or domain-specific cognitive function.

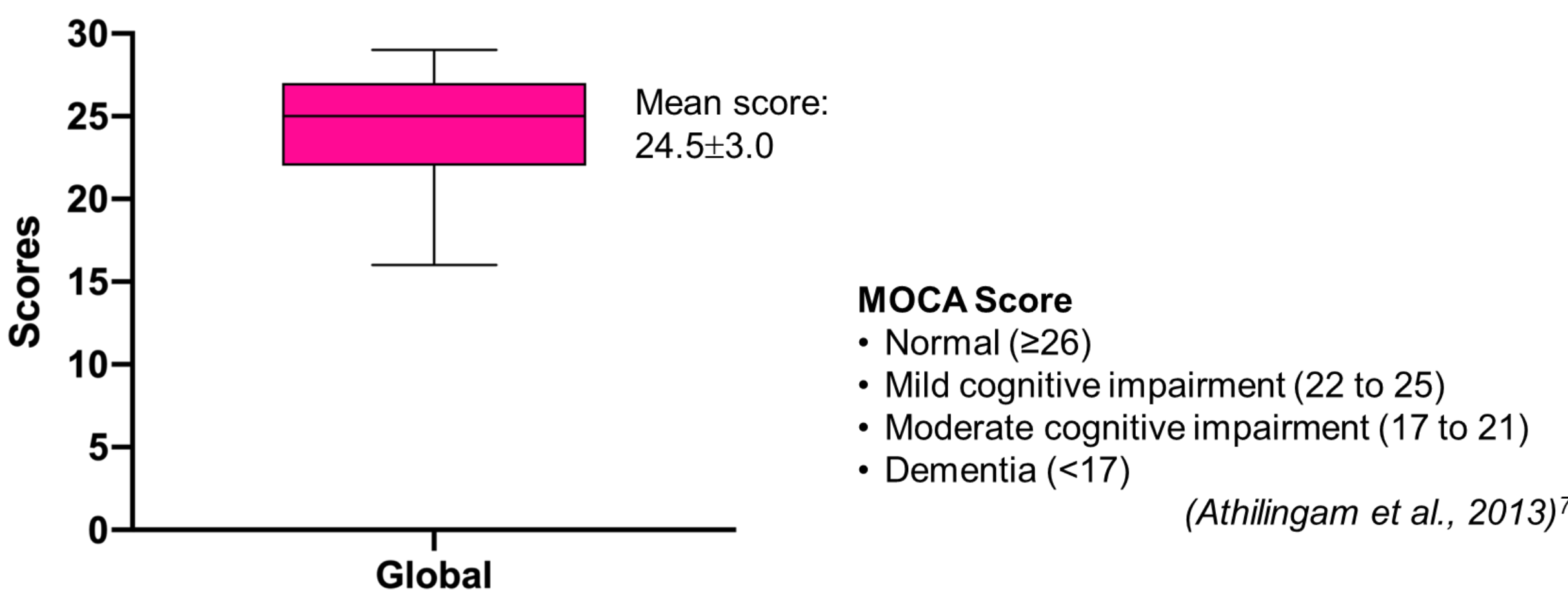
## METHODS

- Secondary data analysis using cross-sectional data.<sup>5</sup>
- **Population:** Adult liver transplant recipients who survived more than 6 months post-transplant.
- **Measures:**
  - Cognitive function was measured by the Montreal Cognitive Assessment (MoCA). Four cognitive domains (Visuospatial/Executive functioning, Memory, Attention, and Language) were calculated based on the work of Vogel et al. (2015).<sup>6</sup>
  - Patient and clinical characteristics were assessed using a self-report patient information questionnaire.
- **Data analysis:** T-tests, Mann-Whitney tests, and Kruskal-Wallis tests.

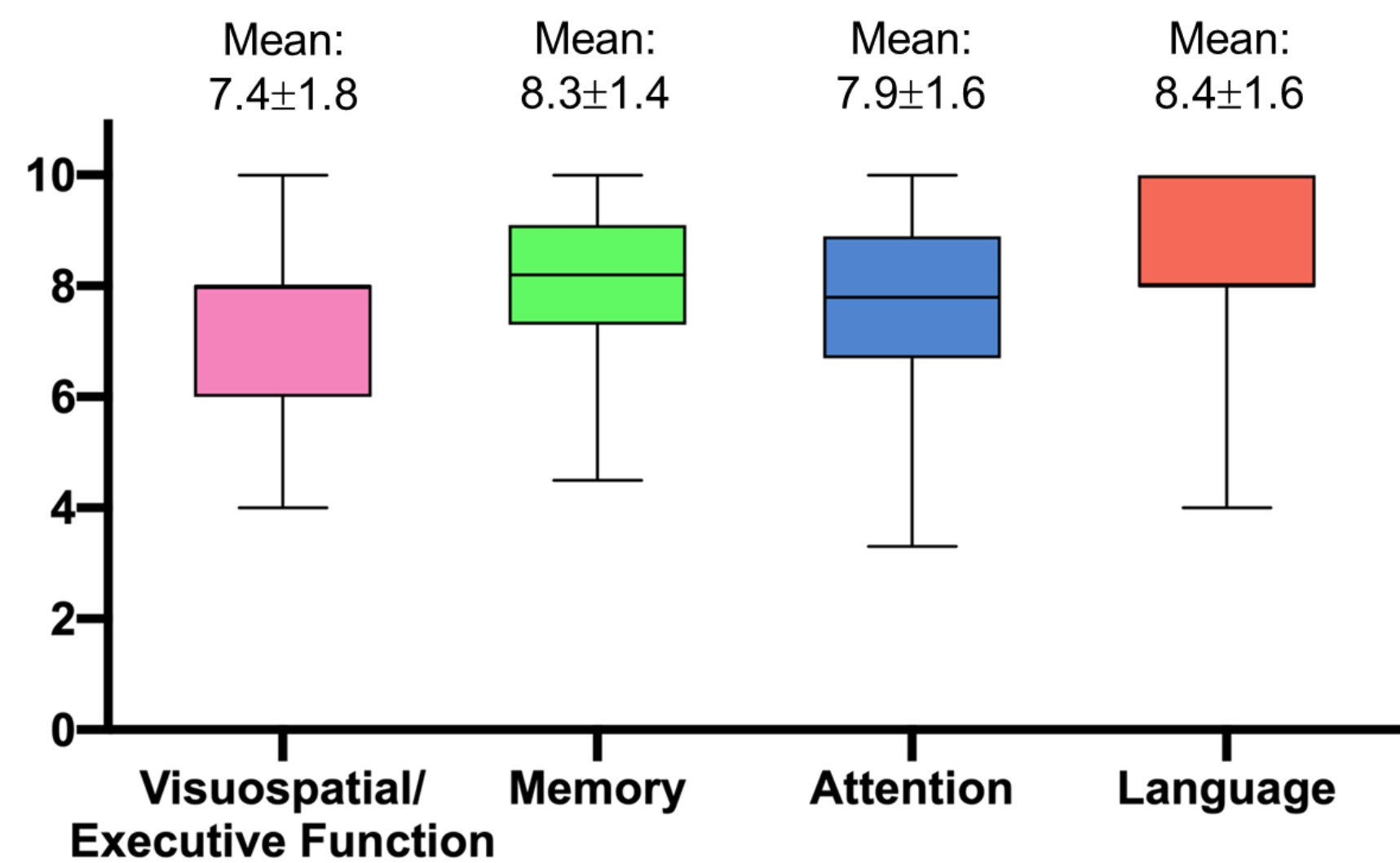
## RESULTS

- **Participant characteristics (n=107):**
  - Majority of the participants were male (n=64, 60.0%), married (n=72, 67.3%), white (n=102, 95.3%), and received a deceased donor liver transplant (n=90, 91.8%).
  - They had a mean age of 61.0 (SD=11.9) and a mean 14 years of education (SD=3.1), and the mean time elapsed since liver transplant was 7.6 years (SD=6.5, minimum-maximum: 0.5–28, median: 6, interquartile range: 10).

### Global cognitive function



### Domain-specific cognitive function



### Global and domain-specific cognitive function by patient and clinical characteristics

	Global cognitive function	Domain-specific cognitive function			
		Visuospatial/executive function	Memory	Attention	Language
<b>Age (years)</b>					
18-40 (n=7)	25.3 <sup>a</sup>	3.9 <sup>a</sup>	9.9	7.3	4.0
41-64 (n=50)	25.2 <sup>a</sup>	3.9 <sup>a</sup>	9.2	7.4	4.3
65+(n=50)	23.7 <sup>b</sup>	3.5 <sup>b</sup>	8.9	6.7	4.2
<b>Sex</b>					
Female (n=43)	25.0	3.6	9.6	7.2	4.1
Male (n=64)	24.2	3.8	8.8	7.0	4.3
<b>Education (years)</b>					
≤12 (n=49)	24.2	3.7	8.8	6.7	4.0
>12 (n=58)	24.8	3.7	9.3	7.4	4.4
<b>Years from LT</b>					
<1 (n=12)	25.3	4	8.7	7.8	4.3
1-5 (n=35)	24.7	3.8	8.9	7.3	4.2
5-10 (n=24)	24.5	3.6	9.4	6.9	4.1
≥10 (n=36)	24.1	3.6	9.2	6.7	4.2
<b>Donor types</b>					
Deceased (n=90)	24.4	3.6	9.0	7.1	4.2
Living (n=8)	25.3	4.4	9.3	7.1	4.3

Bold: p < 0.05  
a>b

## CONCLUSIONS

Findings of this study provide preliminary support that many liver transplant recipients experience cognitive impairment regardless of their time since transplantation and that key characteristics may signal risk for cognitive impairment.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

In nursing practice, regular examination of cognition for extended time points post-transplant should be prioritized. Future longitudinal studies should focus on developing strategies to address cognitive impairment in the population.

## LIMITATIONS

- As a secondary data analysis that used data from a single center, cross-sectional study,
- Generalizability of this study is limited.
  - The findings regarding cognitive function do not indicate changes over time.
  - The variables in this analysis were limited to the data as collected.

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# HEALTHCARE EXPERIENCE OF PEOPLE WHO INJECT DRUGS (PWID)

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## BACKGROUND AND SIGNIFICANCE

Hospitalization for the sequela of injecting drugs presents a unique opportunity to engage People Who Inject Drugs (PWID). However, little is known about the healthcare experiences of PWID.

## EXPERIENCES OF PWID WITH HOSPITALIZATION

People who inject drugs (PWID):

- Often face discrimination in inpatient setting (*Maffina et al., 2013*)
- More likely to leave against medical advice (AMA) and higher risk for worsening health (*Biancarelli et al., 2019*)
- Rarely feel safe, welcomed, or without stigma in hospital (*St Marie, 2014*)
- Avoid care due to fear over loss of control of prescribed opioids (*St Marie, 2014*)
- Face increased risk of overdose after discharge related to change in tolerance (*Ravndal & Amundsen, 2010*)

### WHAT IS ALREADY KNOWN?

Risks of Negative Interactions	Benefits of Positive Interactions
Stigmatization and discrimination in healthcare ( <i>Henwood et al., 2014</i> ): <ul style="list-style-type: none"><li>• Decreases engagement in care</li><li>• Decreases disclosure of health info and drug use</li><li>• Increases vulnerability to infections (HIV and HCV)</li><li>• Decreases connection with harm reduction services</li></ul>	<ul style="list-style-type: none"><li>• Higher quality care is predicted by provider characteristics of positive affect, sympathy and concern (<i>Skinner et al., 2007</i>)</li><li>• PWID who establish effective rapport are more likely to:<ul style="list-style-type: none"><li>• Honestly disclose drug use</li><li>• Adopt provider recommendations</li><li>• Maintain continuity of care</li><li>• Seek timely care (<i>Salvaggio, McKim, Taylor, &amp; Wild, 2013</i>)</li></ul></li><li>• Lower levels of substance use when substance misuse support was offered in hospital (<i>Wakeman et al., 2017</i>)</li></ul>

## PURPOSE

We aimed to understand perception of healthcare experiences in PWID including elements of positive and negative rapport.

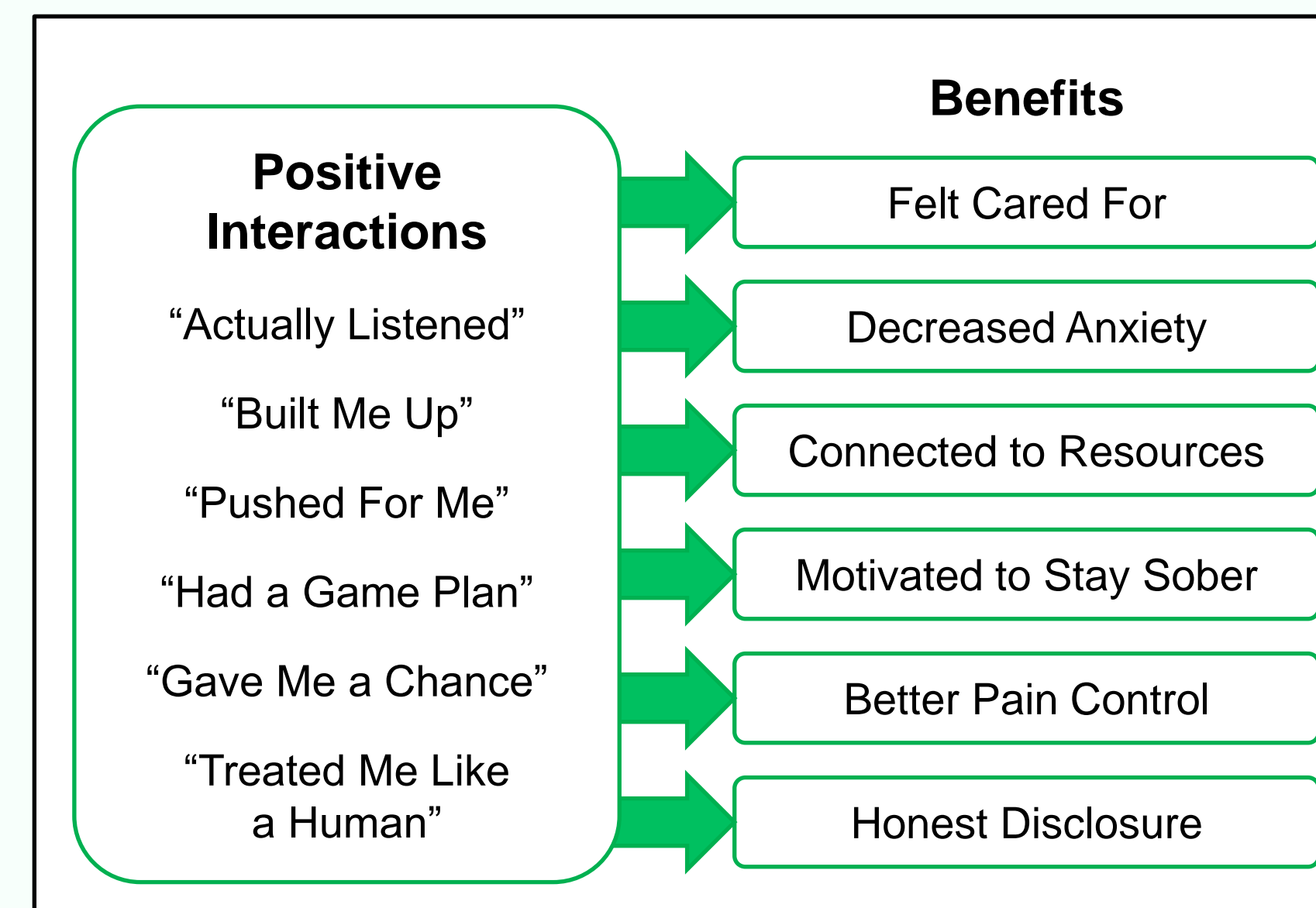
## METHODS

- A qualitative descriptive and conventional content analysis approach was used
- Hospitalized individuals (n=17) experiencing a complication of injecting recruited from 4 NH hospitals
- Participants completed a survey and semi-structured interview
- Data collection March 2018015–April 2019
- \$10 Honorarium
- Analysis used a phenomenological approach
- Theme titles derived from in-vivo quotes
- Pseudonyms used to reference participants

## RESULTS

- 17 total participants. Most (ages 22-58) injected heroin/fentanyl prior to hospitalization.
- Overall, participants reported they could disclose health info to providers but rarely felt supported.
- Some identified nurse champions who engaged them.
- Six Positive Interaction themes with reported benefits were identified (see graphic):
  1. *Built Me Up*
  2. *Pushed for Me*
  3. *Had a Game Plan*
  4. *Actually Listened*
  5. *Gave Me a Chance*
  6. *Treated Me Like a Human*
- Five Negative Interaction themes with adverse consequences were identified (see graphic):
  1. *Just Another Junkie*
  2. *Treated Like Less Than a Human*
  3. *Less Freedom Than Jail*
  4. *Made Me Jump Through Hoops*
  5. *Luck of the Draw*

### THEMES OF POSITIVE INTERACTIONS FOR PWID



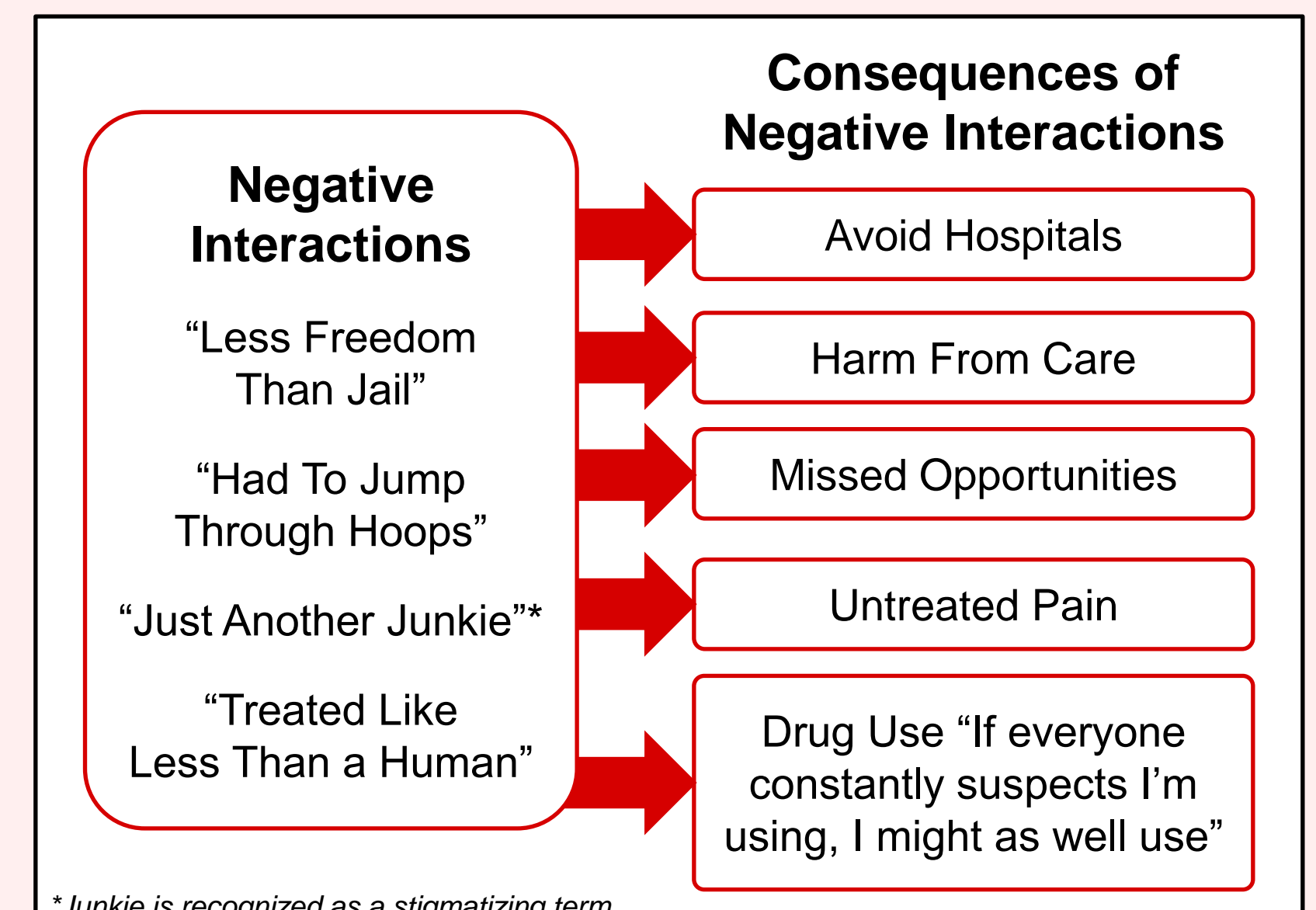
**Pushed for Me** "The nurses that were here sat with me all night, all night I stayed up in pain, and 'cus like they can't give me medicine before it's due... so they sat with me and watched me in pain all night, till the doctor came to me, they were there, and the nurses were at my side saying 'Her medicine's not working'" (Melissa, 39F)

"The nurses are taking time to call (the recovery support person)... And they're taking the time to try to help you... (instead of) leaving you alone in the room and waiting till you're discharged." (Brandon, 26M)

**Treated Me Like a Human** "It was like, I wasn't treated like a like an addict. You know **I was treated like a normal patient.** Verse where I've been in some hospitals where it's like 'he's an addict, let's get him in and out... don't treat em like they're an outcast.'" (Brandon, 26M)

"I would just suggest ... just being like 'Hey, listen... I'm not trying to judge you, I'm not trying to you know come at you.' ... have 'em say 'we know it's a disease, addiction is a disease, just like any other disease.' I mean when you disarm somebody right away that's an addict and you tell 'em that it's, cause it is the truth of the matter.'" (Jason, 45M)

### THEMES OF NEGATIVE INTERACTIONS FOR PWID



\*Junkie is recognized as a stigmatizing term but was a direct quote from multiple participants

**Treated Less Than a Human** "I OD'd on the street steps one year, and that's when they put me in the hospital, and they narc'd me and just left me in a room. They didn't feed me, they didn't change my clothes, I didn't have access to bathroom. It was pretty bogus, really." (Mary, 55F)

**Had to Jump Through Hoops** "If you go into some place and you ask for help you should be able to get it... it wasn't hard for me to get into the methadone clinic. I don't understand why it's harder for me to [get] suboxone, it doesn't make any sense to me, it should be just as easy, why aren't there more prescribers? ... it shouldn't be hard for me to get a thirty day supply leaving the hospital, especially when I'm going to a 28-day program... it's frustrating... I'm at a hospital right, there's tons of doctors here... I don't think you should have to jump through [hoops] to do it either, even if you're on the street." (Josh, 32M)

## CONCLUSIONS

Positive interactions were reported to be associated with opportunities for engagement and improved outcomes whereas negative interactions in this sample led to poor care and lower provider-patient engagement.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

- Learning from PWID's experiences may foster care engagement. Future work should examine specific interventions to develop engagement
- Participatory research with PWID has potential to improve the health of PWID
- One champion makes a HUGE Difference
- Collaborate on the plan: Recognize decision-making for patients as possible stigma
- Openly discuss triggers for drug use and how the environment can minimize these
- Care about PWID "more than they care for themselves"
- Consider the impact of taking away "freedoms" on overall health, consider protocols that allow for these to be undone

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# DESCRIBING THE PHASE I ONCOLOGY CLINICAL TRIAL POPULATION: A RETROSPECTIVE CHART REVIEW

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## BACKGROUND/SIGNIFICANCE

- Exciting discoveries are changing the face of early-phase oncology clinical trials. The overarching goal of oncology clinical trials is to improve the health and quality of life of patients with cancer.
- Participation in clinical trials add complexity to the life of participants
- Over the last decade, cancer drug development has become more targeted, with improved response rates and benefits for participants.<sup>1,2</sup>
- Clinical trial participants are generally among the most functionally well of the cancer patient population, yet, they experience similar symptom burdens to advanced cancer patients once they are receiving treatment on clinical trials.<sup>3,4,5</sup>
- Many are living longer with successful cancer treatments as a result of clinical trials.<sup>2</sup>
- Despite the exciting new therapeutic approaches evaluated in early-phase clinical trials, these novel therapies can add complexity to patients' care.
- Little is known about the use of supportive services among participants in early-phase clinical trials
- This patient population provides a unique opportunity to explore the patient experience in early-phase trials.

## PURPOSE

Describe the Phase I oncology clinical trial population in our cancer center and identify implications for practice that may improve the experience of clinical trial participants

## METHODS

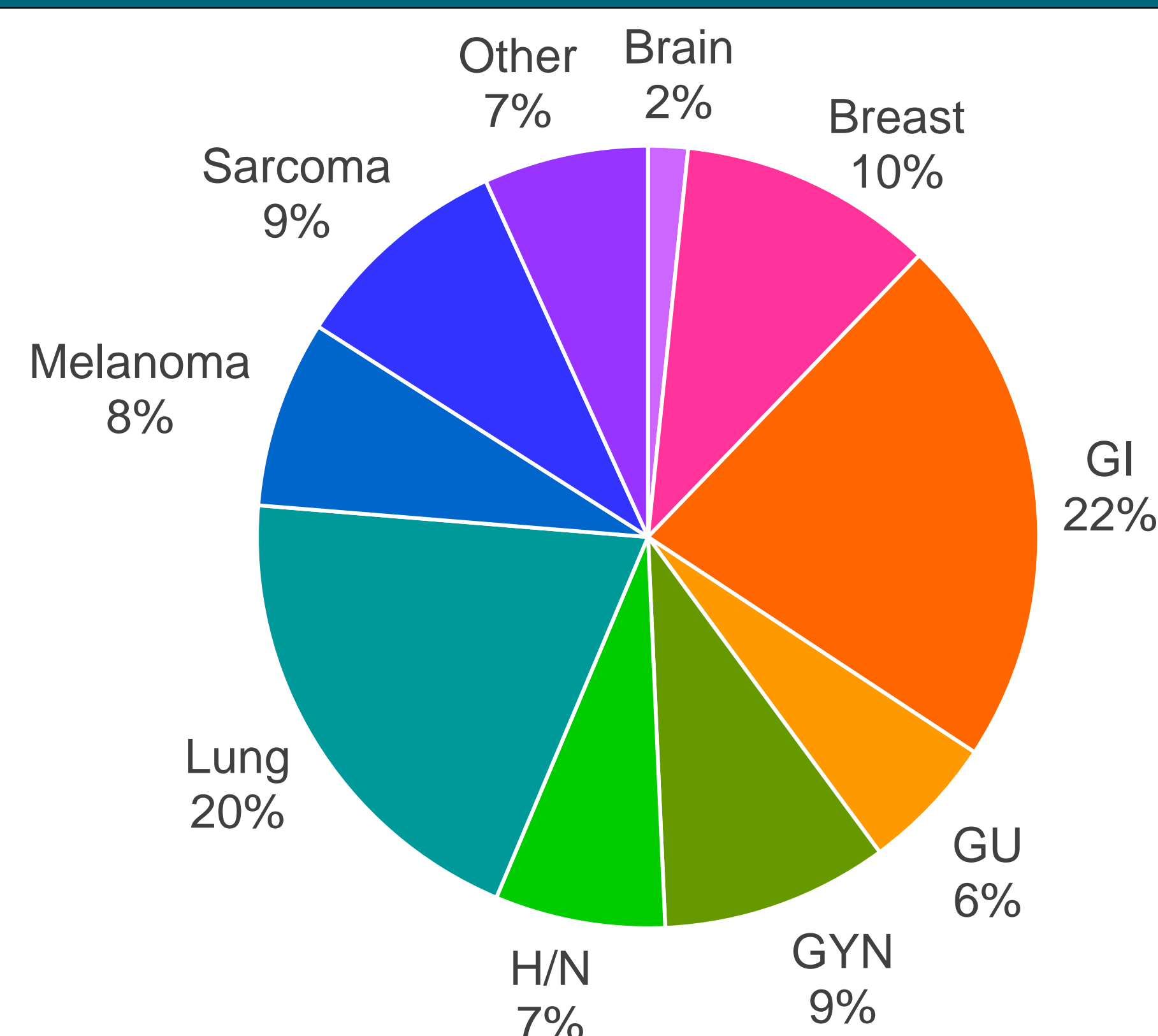
- An observational study involving a retrospective chart review of persons with cancer enrolled in a Phase I clinical trial from 2017-2019
- All statistical analysis was performed using SPSS v.24 software

## RESULTS

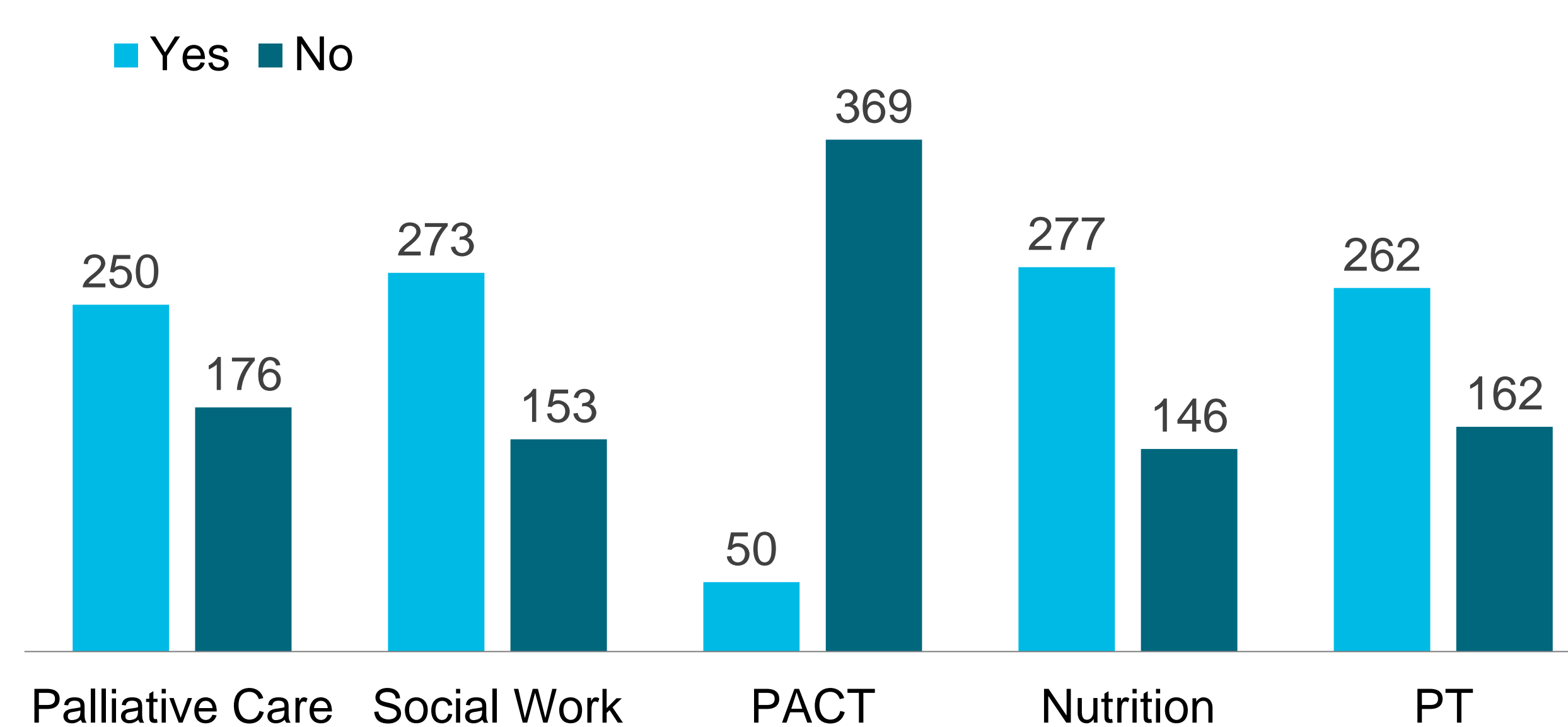
TABLE 1: PARTICIPANT CHARACTERISTICS (N=426)

Age	20.5 - 85.2 years (mean= 60.5 years)
Gender	
• Female	239 (56.1%)
• Male	187 (43.9%)
Race	
• Caucasian	363 (85.1%)
• Asian	24 (5.6%)
• African American	7 (1.6%)
Days on Treatment	0 – 777 days (90.1 days)
Metastatic disease - Yes	416 (97.7%)
• 1-2 sites	237 (55.6%)
• 3 or more sites	188 (44.1%)
Performance Status: 0-1	421 (98.8%)
GI Cancers	94 (22.1%)
Lung	85 (20%)
Breast	45 (10.6%)

### CANCER DIAGNOSIS



### UTILIZATION OF SUPPORTIVE CARE RESOURCES



*“Our patients are the ultimate  
North Star of all we do”*

## CONCLUSIONS

- Phase I clinical trial participants often have advanced stages of disease and utilize high rates of supportive care resources
- Phase I clinical trial participants represent a population who may benefit from interventions targeting their supportive care needs

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

- Findings will ultimately lead to improvements in care and the patient experience of clinical trial participants
- Knowledge of trends and use of supportive care resources while participating in early-phase oncology clinical trials will guide the development of targeted interventions (type, timing, intensity)

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- This study was approved by the Partners Institutional Review Board, Protocol Number: 2019P002155.



# NUTRITIONAL STATUS IS ASSOCIATED WITH NEW-ONSET DELIRIUM IN ELDERLY, ACUTE CARE, ORTHOPEDIC TRAUMA PATIENTS

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## BACKGROUND

- Delirium is a common, preventable complication that occurs in up to 60% of elderly acute care orthopedic trauma patients.<sup>1</sup>
- It is associated with prolonged length of stay, increased utilization of healthcare services, and higher one-year mortality.<sup>2</sup>
- Nutritional status prior to hospitalization is associated with increased risk for delirium. Recent studies report worse outcomes for malnourished, delirious patients.<sup>3</sup>
- Few studies have investigated this association among elderly orthopedic trauma population in the United States.

## AIM/HYPOTHESIS

- Examine the association between pre-admission nutritional status and new-onset delirium (NOD) among elderly orthopedic fracture patients.
- Pre-admission nutritional status is associated with NOD in elderly, acute care, orthopedic trauma patients.

## METHODS

- Study Design/Setting** – Retrospective analysis of data from the Massachusetts General Hospital (MGH) Geriatric Inpatient Fracture Trauma Service (GIFTS) research repository.
- Study Participants** – Patients with GIFTS consultation between January 2017 through August 2018 (n=644).
- Exclusion Criteria** – History of dementia, moderate or severe cognitive impairment or delirium during initial GIFTS consultation.
- Intervention** – GIFTS consultation with 24 hours of admission.
- Measurements** – Mini-Nutritional Assessment-short form (MNA-SF), Delirium-Confusion Assessment Method (CAM).
- Data Analysis** – Multiple variable logistic regression.

## RESULTS

- The incidence of NOD was (93/471), 20%. Patients with poor nutritional status, as defined by the MNA-SF score were 14% more likely to develop delirium (OR 1.14; 95% CI = 1.05-1.28).
- Dichotomizing nutritional status demonstrated that malnourished patients (MNA-SF 0-7) had a two-fold higher risk (OR 2.07; 95%CI 1.01-4.35) of developing NOD compared to patient who were not malnourished (MNA-SF 8-14).

Table 1.  
Demographic and clinical features of study cohort (n=471)

	Delirium (n=93)	No Delirium (n=378)	P value
Age (years)	80 ± 8	84 ± 8	<0.001
Sex			0.04
Female	18 (19%)	113 (30%)	
Male	75 (81%)	265 (70%)	
Marital status			0.05
Single or widowed	24 (26%)	64 (17%)	
Married or with partner	69 (74%)	314 (83%)	
Baseline disposition			<0.001
Institutionalized	25 (27%)	42 (11%)	
Home	68 (73%)	336 (89%)	
GFR (ml/min)	51 ± 16	55 ± 16	0.03
CCI	7 ± 2	6 ± 3	<0.001
FRAIL score	3 ± 1	2 ± 1	<0.001
MNA-SF score			0.11
Malnourished (0-7)	28 (30%)	45 (12%)	
At risk of malnutrition (8-11)	36 (39%)	170 (45%)	
Normal nutrition status (12-14)	29 (31%)	163 (43%)	
Type of fracture			0.89
Lower extremity	77 (83%)	310 (82%)	
Upper extremity	7 (8%)	34 (9%)	
Other	9 (9%)	34 (9%)	
ICU admission			0.18
Yes	8 (9%)	19 (5%)	
No	85 (91%)	359 (95%)	
Length of stay (days)	7 (IQR 5-10)	5 (IQR 4-7)	< 0.001
Discharge disposition			0.02
Non-home	89 (96%)	329 (87%)	
Home	4 (4%)	49 (13%)	
In-hospital mortality			0.03
Yes	4 (4%)	4 (1%)	
No	89 (96%)	374 (99%)	

CCI: Charlson Comorbidity Index, MNA-SF: Mini Nutritional Assessment-Short Form, GFR: glomerular filtration rate, FRAIL: Fatigue, Resistance, Ambulation, Illness, and Loss of weight. Data are presented as mean ± standard deviation, median (interquartile range), or proportions, and compared using t-tests, Wilcoxon signed rank test, and chi-square tests, respectively.

Table 2.  
Logistic regression model for new-onset delirium

Primary Regression Model – Nutritional Status and New-onset Delirium			
	OR	95%CI	P value
Age	1.36	1.01-1.07	0.03
Female sex	0.59	0.35-1.01	0.05
Single or widowed	1.05	0.53-2.05	0.90
Pre-admission institutionalization	2.02	1.07-3.79	0.03
CCI	1.07	0.96-1.19	0.25
GFR	1.00	0.98-1.01	0.58
FRAIL score	1.19	0.96-1.46	0.11
MNA-SF Score	0.86	0.78-0.95	0.003
Secondary Regression Model – Malnourished vs. Non-malnourished*			
	OR	95%CI	P value
Age	1.04	1.01-1.07	0.03
Female sex	0.61	0.36-1.03	0.06
Single or widowed	1.02	0.52-2.00	0.96
Pre-admission institutionalization	2.07	1.11-3.88	0.02
CCI	1.07	0.96-1.19	0.25
GFR	1.00	0.98-1.01	0.60
FRAIL score	1.31	1.08-1.58	0.006
MNA-SF Score	1.08	1.03-1.14	0.003
Not malnourished (8-14)	-	-	
Malnourished (0-7)	2.07	1.02-4.27	0.04

OR: odds ratio, CI: confidence interval, CCI: Charlson Comorbidity Index, GFR: glomerular filtration rate, FRAIL: Fatigue, Resistance, Ambulation, Illness, and Loss of weight. MNA-SF: Mini Nutrition Assessment-Short Form.

## CONCLUSIONS

- In hospitalized, elderly, orthopedic trauma patients, poor nutritional status may be a modifiable risk factor for NOD.
- Future studies are needed to determine if aggressive nutritional interventions can reduce the incidence of NOD and improve outcomes in this cohort of patients.

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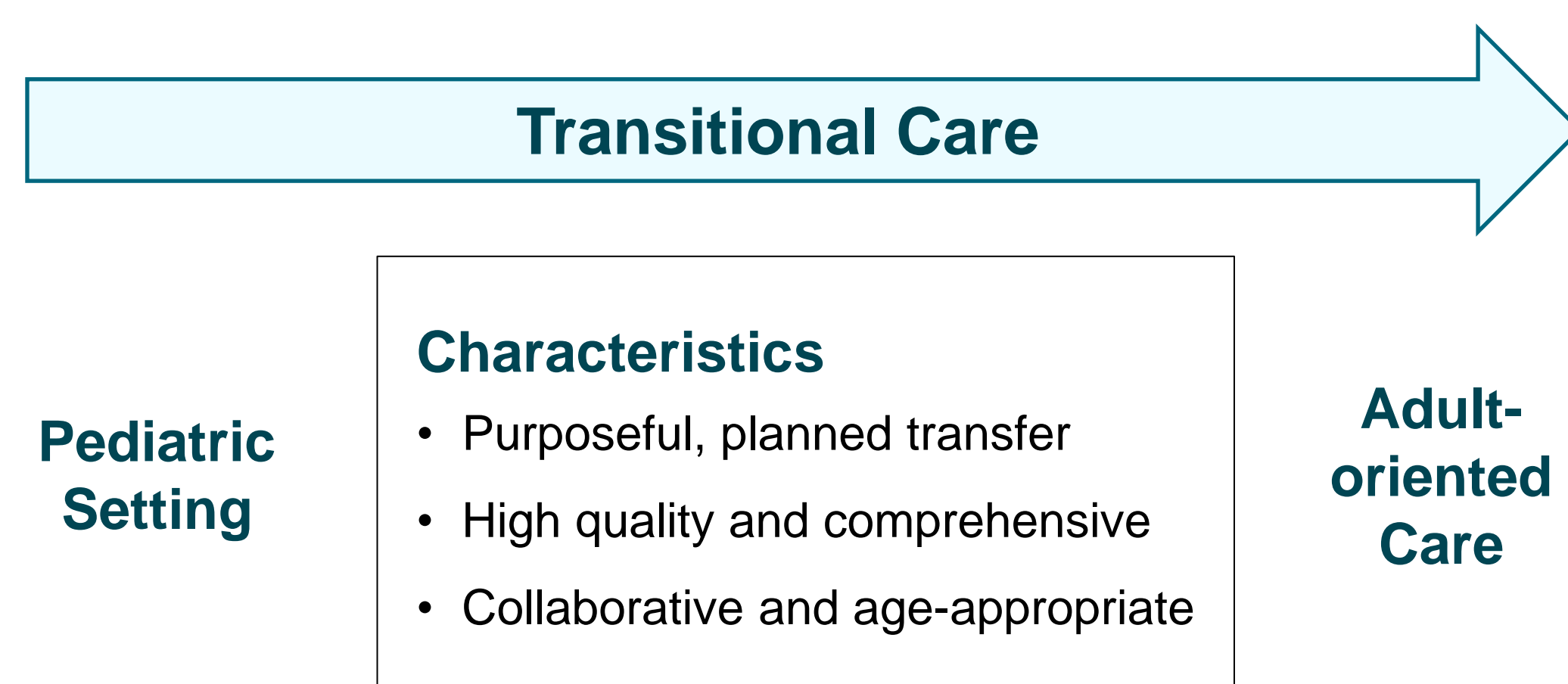


# STRUCTURE, PROCESS, AND OUTCOMES OF TRANSITIONAL CARE IN ENDOCRINOLOGY: PILOT RESULTS FROM THE INTERSECT STUDY (INTERNATIONAL STUDY OF ENDOCRINE CARE DURING TRANSITION TO ADULT-ORIENTED CARE)

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Massachusetts General Hospital, Boston, MA

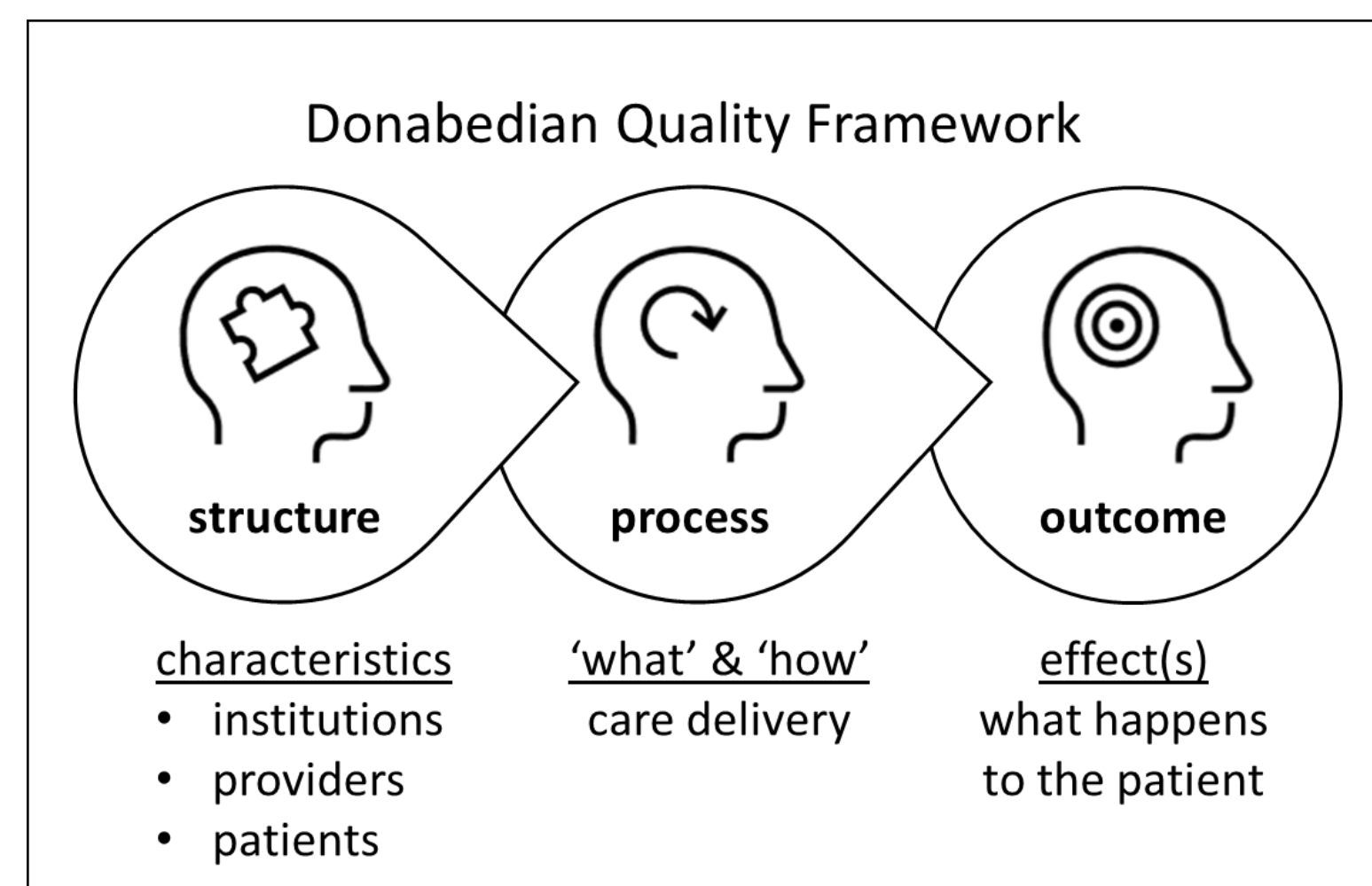
## BACKGROUND/SIGNIFICANCE

Structured transitional care (TC) is the planned, purposeful transfer from pediatric to adult care that aims to maintain high quality, developmentally appropriate care. Little is known about how endocrine TC is structured internationally, the process of TC, and what outcomes are a priority for endocrine TC.



## PURPOSE

The purpose of this survey study was to use the Donabedian framework to better understand endocrine TC and to identify key elements for the successful implementation of TC internationally.



## METHODS

The Donabedian framework (structure-process-outcome) guided the international web-based survey examining TC programs for adolescents and young adults (AYAs) 16-25 years-old. The survey examined: 1) best practices i.e. six core elements of TC (Center for Health Care Transition Improvement 'Got Transition'); 2) nursing involvement; 3) perceived importance of the '10 priority outcomes' identified by an international multi-disciplinary Delphi process (Fair et al. JAMA Pediatrics, 2016); and 4) promoters/barriers to implementation. Descriptive analysis was conducted for close-ended questions and thematic analysis for open-ended questions. Rankings by endocrine clinics were compared to the '10 priority outcomes'.

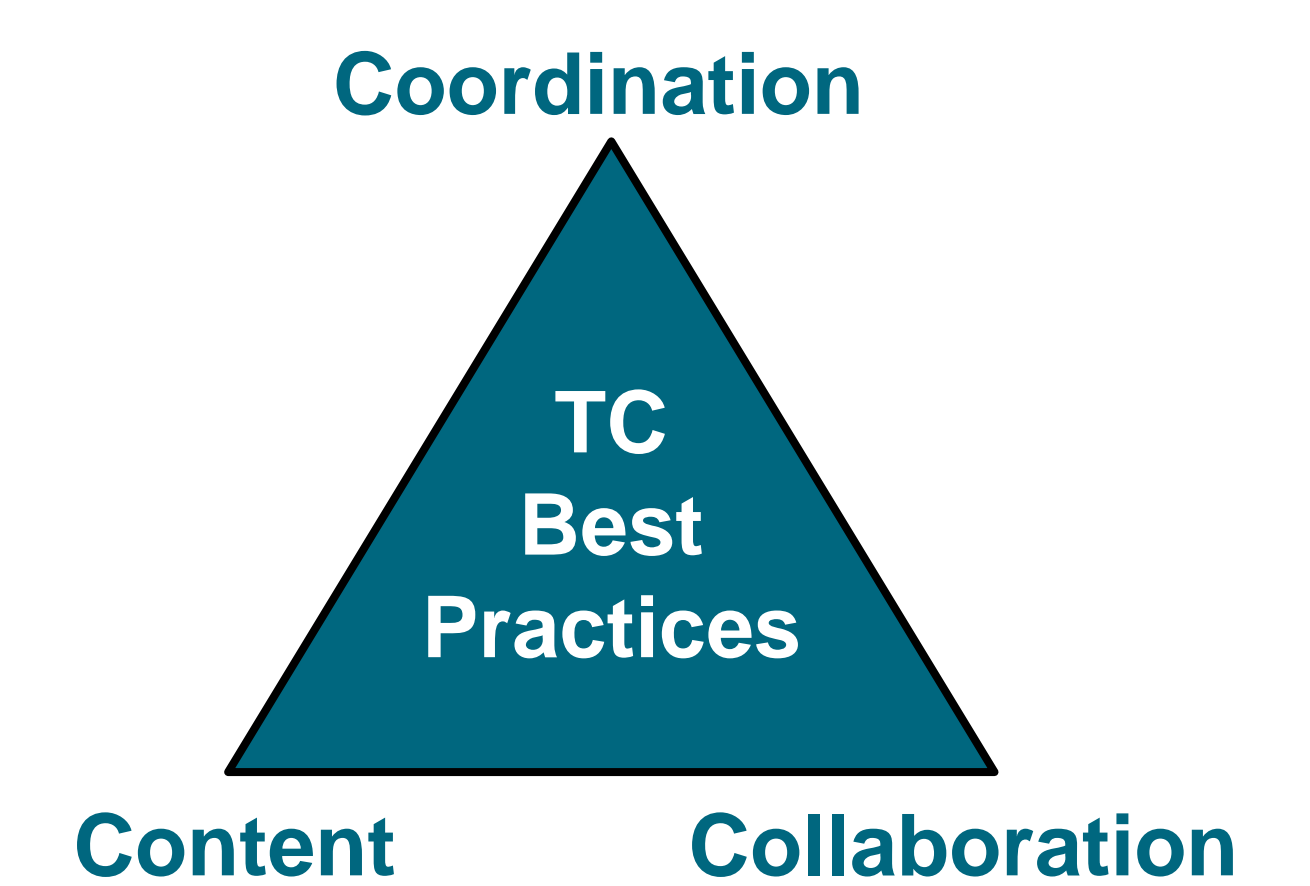
### 10 Priority Transition Outcomes (Fair et al. 2016)

1. Achieving optimal quality of life
2. Self-managing own condition
3. Understanding characteristics of conditions and complications
4. Knowing names and purpose of medications
5. Adherence to medications/other treatments
6. Attending most medical appointments
7. Having a medical (health) home
8. Avoidance of unnecessary hospitalizations
9. Understanding health insurance options
10. Having a social network of friends.

## RESULTS

Invitations were sent to authors of publications/posters on endocrine TC from the past 10 years. Eight responses were recorded from academic medical centers across seven countries (Chile, Denmark, Finland, France, Netherlands, Switzerland, and U.S.A). Transition care was deemed structured (n=3), semi-structured (n=2) and unstructured TC (n=3). Only 2/8 received institutional funding. Two practices involved nurses in assessing transition readiness and cited direct clinical care, therapeutic education and emotional support for AYAs/families as important contributions. Groups lacking nursing involvement expressed desire for a nursing role if financed.

The most commonly used 'Got Transition' core elements were: providing supporting materials, confirming adult visit and consulting with adult providers. Only one group formally collected TC outcome data. "Self-management" was rated the most important TC outcome. "Understanding the condition/complications" and "attending medical appointments" were seen as having relatively higher priority for endocrine TC. Barriers related to lack of financial support and low institutional priority. Involving key stakeholders facilitated implementation. Having a dedicated nurse was noted as an opportunity for improving TC.



### Six Core Elements

1. Establishing a transition policy
2. Tracking and monitoring
3. Assessing readiness
4. Transition planning
5. Transfer of care
6. Transfer completion

### Promoters and Barriers to Establishing TC

#### Barriers

- Financial limitations
- Low institutional priority

#### Promoters

- Stakeholder engagement
- Use of technology (EHR)
- Dedicated TC coordinator

## CONCLUSIONS

Implementation of structured TC has been fragmented and most practices do not fully utilize recommended best practices ('Got Transition'). Few practices formally collect outcome data. The major perceived barrier to implementing TC is financial. Promoters of effective implementation included stakeholder engagement and a dedicated TC coordinator. Clinics incorporating transition nurses value their discipline-specific contributions.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

The pilot study points to a role for nursing in providing comprehensive, high quality care for AYAs with chronic endocrine conditions. A larger sample is needed to validate pilot findings.



# IDENTIFYING FACTORS INFLUENCING RELATIONSHIP FORMATION BETWEEN PEDIATRIC NURSES AND INTERNS

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## BACKGROUND

- Collaborative relationships between nurses and interns are fundamental to providing optimal patient care
- Relationships allow disciplines to work collaboratively, learn from each other, and provide enhanced care
- While there are many potential barriers and facilitators of collaborative relationships, it is not clear what factors are necessary for their successful development

## PURPOSE

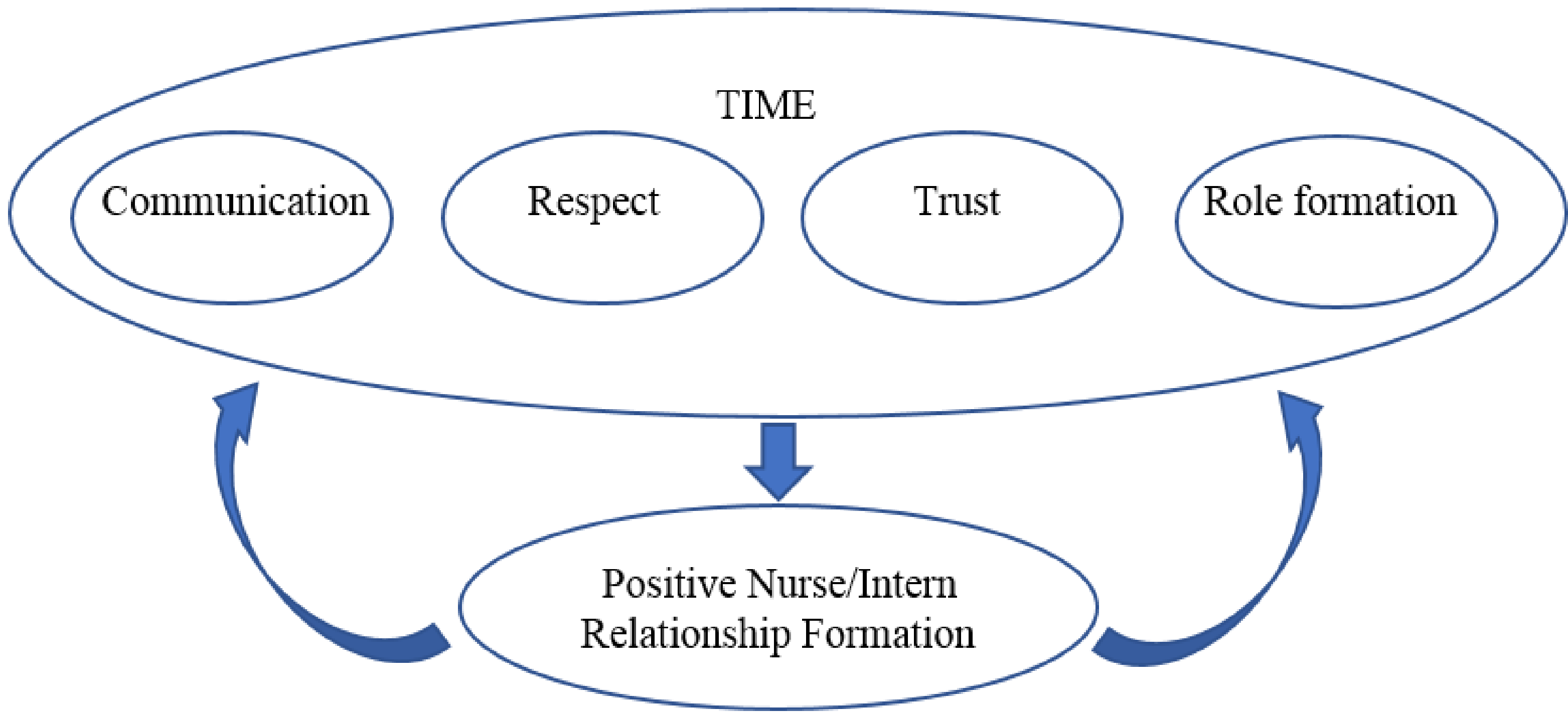
- This study explored nurse and intern experiences working together to identify factors that influence or impede collaborative relationships

## METHODS

- Three focus group discussions on pediatric units in an academic medical center
- One focus group included nurses (n=5) and two included second year pediatric residents reflecting on their intern year (n=2 and n=4)
- Thematic data analysis completed by three independent coders resulted in six themes

## RESULTS

FIGURE 1: IDENTIFIED FACTORS INFLUENCING RELATIONSHIP FORMATION BETWEEN PEDIATRIC NURSES AND INTERNS



Authors: Lori Pugsley, Ariel S. Frey-Vogel, Kristina Dzara

- This model describes how the identified factors interact
- Importantly, both nurses and residents
  - value the importance of effective, in-person communication
  - aspire to be viewed as capable in their roles
  - appreciate that trust and respect are essential for patient care
  - understand that time is needed for these to occur
- Nurses desire to be valued members of the healthcare team
- Residents desire to be respected as physicians in training
- Barriers to relationship formation between nurses and interns include:
  - Lack of role understanding
  - Relying on traditional hierarchical assumptions
  - Working in parallel rather than collaboratively
  - Being overwhelmed
- Ultimately, both groups felt time was needed to build trust, respect, effective communication, and role confidence
  - For interns, this meant learning what constitutes the nursing role while gaining understanding of their own role and responsibilities
  - For nurses, this meant figuring out what they can trust interns with over time
- Over time, nurses and interns learn to communicate with each other, gain and give respect, build trust, and determine their own role as well as the role of the other group

## CONCLUSIONS

- There are four key shared values that should be met for a positive relationship between nurses and interns to form:
  - good communication
  - mutual respect
  - building trust
  - role formation
- These values take time to be established and may have to be built and rebuilt when they are breeched
- Determining how to decrease the time to establish these factors may enable relationship formation to occur earlier in the intern year

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

- By finding ways, early in the intern year, to enhance communication, establish respect and trust, and support role understanding, nurse and intern relationships could be formed sooner
- Earlier relationship formation may allow the pair to work more collaboratively, learn from each other, and provide enhanced care to patients
- Programs to partner nurses and interns to receive interprofessional core competency training and shadow each other to gain role understanding may foster interdisciplinary relationship development
- Our model suggests that shadowing alone may not be effective unless it were complemented by a longitudinal curriculum over the intern year with an explicit emphasis on communication, respect, trust, and role understanding



# THE IMPACT OF WORK ENVIRONMENT AND WORK STRESS IN THE RELATIONSHIP BETWEEN SHIFT WORK AND HEALTH BEHAVIORS IN NURSES

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## BACKGROUND

- Nearly one-half of all U.S. workers report having work stress.
- Work stress, a type of stress, stimulates the stress response and leads to cardiovascular and metabolic illness.
- One in five U.S. employees work non-standard (shift work) hours.
- Approximately 80% of nurses report work stress. Nurses working in a hospital setting are typically shift workers.
- Shift work has been associated with increased risk of cardiometabolic disease and early mortality.

## RESEARCH QUESTIONS

- Determine whether work environment moderates the relationship between shift work type and health behaviors (diet, sleep), and
- Determine whether work stress mediates the relationship between shift work type and health behaviors.

## SIGNIFICANCE

- Cardiometabolic disease includes non-modifiable and modifiable risk factors.
- Modifiable risk factors for cardiometabolic disease include overweight/obese, high BP, dyslipidemia, and sleep, which are also related to stress response and the untoward consequences of work stress.
- Nurses are at risk for cardiometabolic disease secondary to work stress and/or shift work.
- Risk for cardiometabolic disease is further compounded through lack of participation in proximal risk factors for cardiometabolic disease.

## METHODS

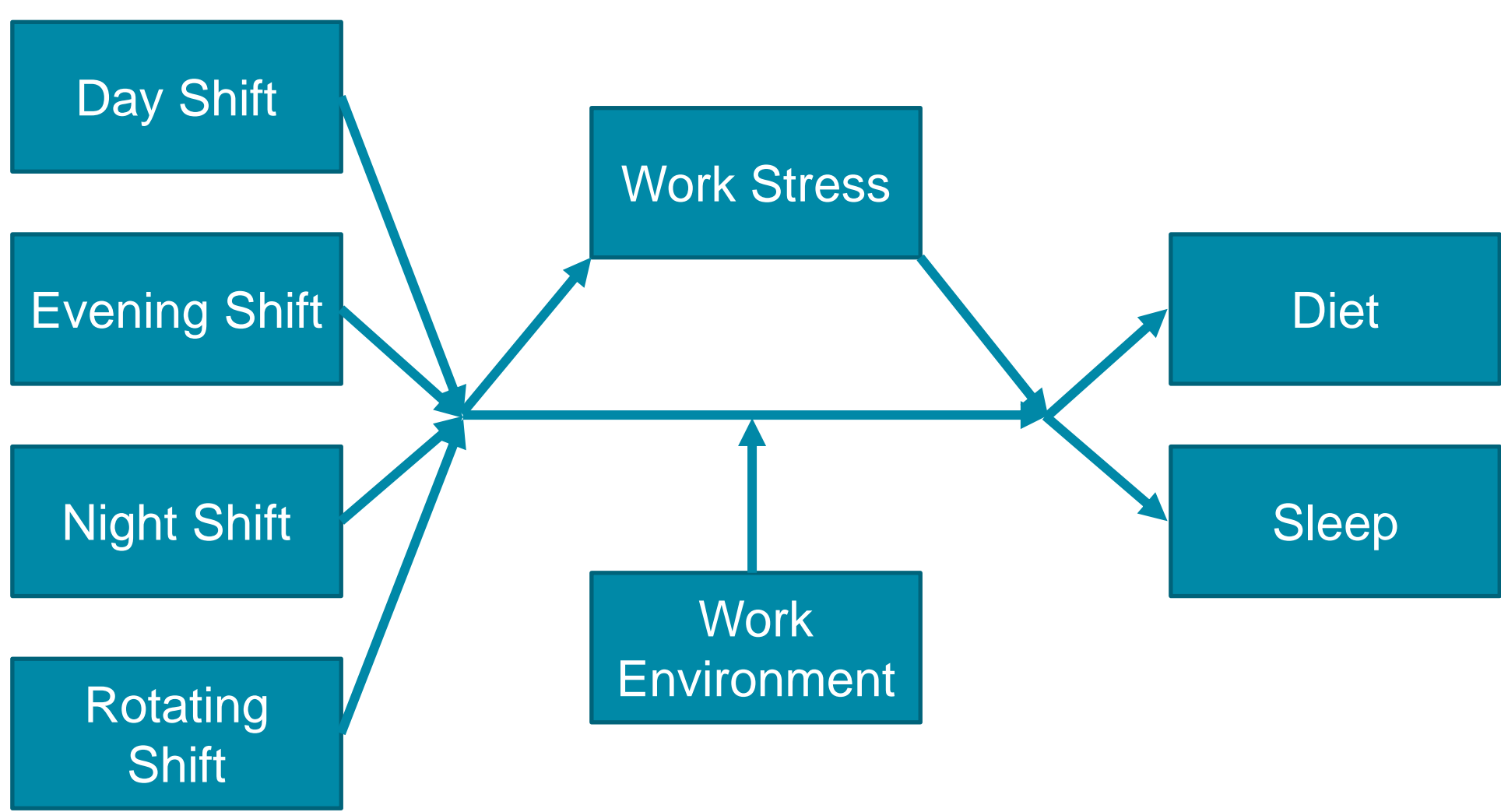
A cross-sectional, secondary analysis design was used to explore relationships between and among variables using data derived from the *Boston Hospital Workers Health Study: Using a longitudinal database to assess the health impact of work organization in hospitals*.

**A1.** Determine whether work environment (work relationships) moderates the relationship between shift work type (day, evening, night, rotating) and health behaviors (diet, sleep).

H1: Positive work relationships reduces the impact of shift work type (day, evening, night, rotating) on health behaviors (diet, sleep).

**A2.** Determine whether work stress (job strain) mediates the relationship between shift work type (day evening, night, rotating) and health behaviors (diet, sleep).

H2: High work stress (job strain) increases the impact of shift work type (day, evening, night, rotating) on health behaviors (diet, sleep).



## INSTRUMENTS

### Health Behaviors

- Diet: 10 questions from PrimeScreen, a brief dietary screening tool
- Sleep: 7 questions from Pittsburg Sleep Quality Index

### Work environment

- Collegiality: 4 questions from People Oriented Culture Subscale
- Bullying: 4 questions from Workplace Psychological Violence Behaviors Questionnaire
- Support: 2 questions for coworker subscale and 3 questions from supervisor subscale within Job Content Questionnaire

### Work Stress

- 14 job demands subscale questions from Job Content Questionnaire
- 9 job control subscale questions from Job Content Questionnaire

## RESULTS

**Diet.** There was a slight negative relationship between work culture and diet for day shift workers. As work culture became more positive, diet was worse. For rotating shift workers, the relationship was positive. As culture became more positive, diet improved. Diet improved as coworker support increased for the evening shift workers compared to the day shift workers. The effect of bullying on the relationship between shift work and diet was different for the evening shift versus the day shift. For evening shift workers, as bullying increased, diet worsened. There was no effect of bullying on diet for day shift workers. The relationship between work stress and shift work type did not affect diet.

**Sleep.** There was a significant difference in the number of hours of sleep for the night shift versus day shift, with the night shift reporting less sleep than the day shift. For evening shift workers, there was an overall effect of supervisor support on sleep. As supervisor support increased the number of hours slept increased. The effect of coworker support on the relationship between shift work and sleep was different for the evening shift versus the day shift workers. Compared to the day shift, there was a stronger effect of coworker support on hours slept with evening shifts. As coworker support increases, the amount of sleep increased. The relationship between work stress and shift work type did not affect sleep.

## DISCUSSION

The purposes of this secondary analysis were (1) to determine if work environment moderated the effect of shift work type on proximal health behaviors that increase risk for cardio-metabolic diseases and (2) to determine if work stress mediated the effect of shift work type on proximal health behaviors that increase risk for cardio-metabolic diseases . Measures of work environment, e.g., bullying and collegiality, as well as measures of work stress were used. Findings suggested that work environment significantly moderated the effect of shift work type and health behaviors (diet, sleep). The effect of work environment on evening shift workers was especially significant. Evening shift workers were the lowest in number, yet they had some significant findings in both diet and sleep. Nurses reported work stress. The prevalence of work stress was high (66%) among nurses, but no mediation effects were found.

## CONCLUSION

Further study is needed regarding the effect of work environment and work stress on the relationship between shift work and proximal health behaviors. The data in this study were limited by the structure and content of the larger dataset. In the nurse population working in two large, urban hospitals work environment moderated the relationship between shift work type and health behaviors in nurses. The magnitude of effect varied shift to shift. Work stress had no effect in the relationship between shift work type and health behaviors.

## FUTURE DIRECTIONS

Future studies should examine the long-term effects of work environment on proximal health behaviors that increase risk of cardio-metabolic disease. A closer examination of the effect of work stress in nurses is warranted. Exercise was not included in this study; however, exercise would be an important to assess in terms of work environment and work stress.

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# ETHICS CONSULTATION AND THE OPIOID EPIDEMIC

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## BACKGROUND

- Recent dramatic rise in opioid use, addiction, and overdose in the U.S.<sup>1,2</sup>
- Increase in the number of patients hospitalized with opioid use disorder (OUD)
- There is a gap in research to date on ethical issues that arise in treating and caring for patients hospitalized with OUD.

1. Kolodny et al. *The prescription opioid and heroin crisis: a public health approach to an epidemic of addiction. Ann Rev Public Health* 2015; 36:559-374.  
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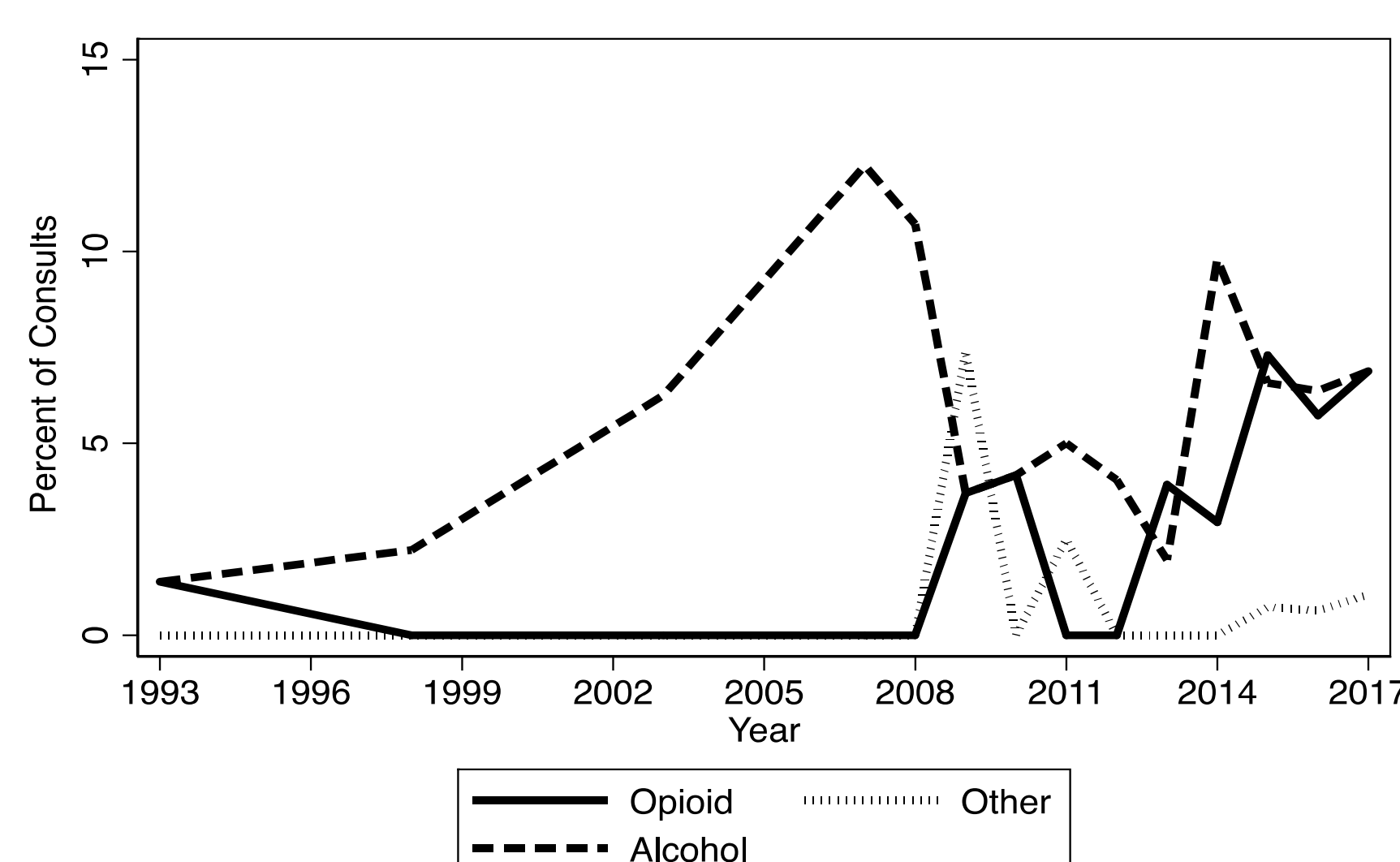
## RESEARCH GOAL

Retrospective cohort study to characterize ethics consult questions among inpatients with OUD at Massachusetts General Hospital (MGH) from 1993-2017.

## METHOD

- Database of ethics consults from 1974-2018
  - Every 5 years from 1974-2007, then yearly
- Demographic, clinical, and consult-related data
  - 69 fields
  - 286 possible variables
- Managed in REDCap
- Reason for ethics consultation was identified using an inductive analytic process followed by iterative sampling.

### ETHICS COMMITTEE CONSULTS INVOLVING SUBSTANCE USE DISORDERS 1993–2017



## OUD CONSULTS AND THEMES

### Comparison Between Ethics Consultation For Cases Involving Opioid Use Disorder Versus Other Reasons For Consultation

	Non-OUD case (n=1019)	OUD case (n=42)	p-value
Age, median (IQR)	65 (53-77)	42 (28-54)	<0.001
Female, n (%)	415 (40.8)	20 (47.6)	0.42
White, n (%)	722 (73.4)	30 (71.4)	0.72
Born outside the United States, n(%)	242 (32.5)	1 (3.3)	<0.001
Receiving disability benefits, n(%)	215 (21.2)	17 (40.5)	0.007
Un- or underinsured, n(%)	219 (21.7)	30 (73.2)	<0.001
Homeless, n (%)	22 (2.4)	12 (35.3)	<0.001
Mental health co-morbidity, n (%)	74 (7.3)	10 (24.8)	0.001
Time to ethics consultation, median (IQR)	11 (4-24)	7 (3-18)	0.10
>1 meeting, n (%)	301 (35.0)	9 (24.3)	0.22

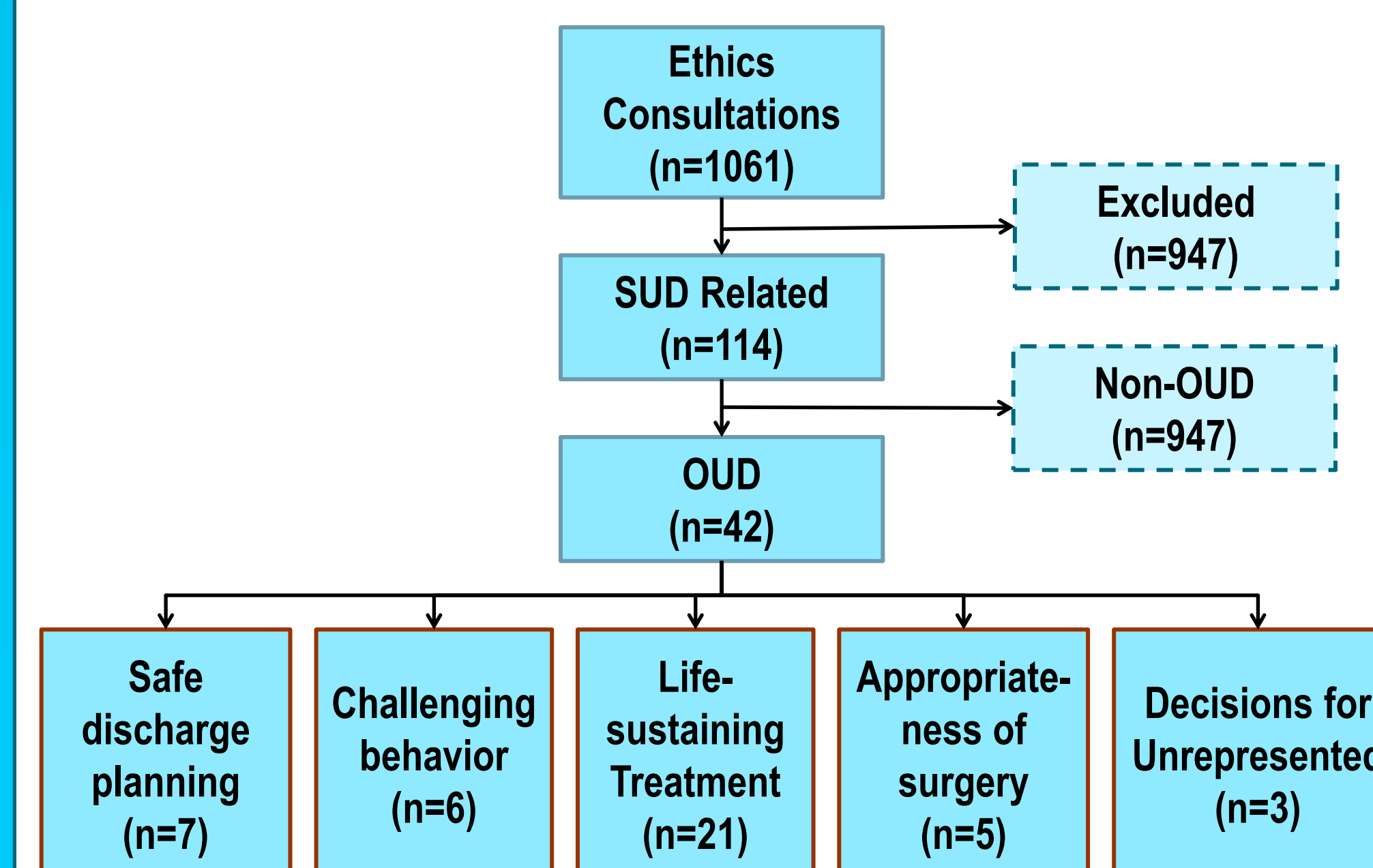
### Characteristics of Patients in Ethics Consultation Cases Involving Opioid Use Disorder (n=42)

Characteristic	
Hospitalized in intensive care unit, n(%)	23 (54.8)
Consulting service, n(%)	
Internal medicine	30 (71.4)
Surgery	8 (19.1)
Other	4 (9.5)
Advance care planning documents, n(%)	
Formal health care proxy document	19 (45.2)
Living will	1 (2.4)
Disposition, n(%)	
Deceased	17 (40.5)
Home	12 (28.6)
Acute rehabilitation facility	8 (19.1)
Skilled nursing facility	4 (9.5)

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<sup>8</sup> RAND Corporation

## STUDY COHORT



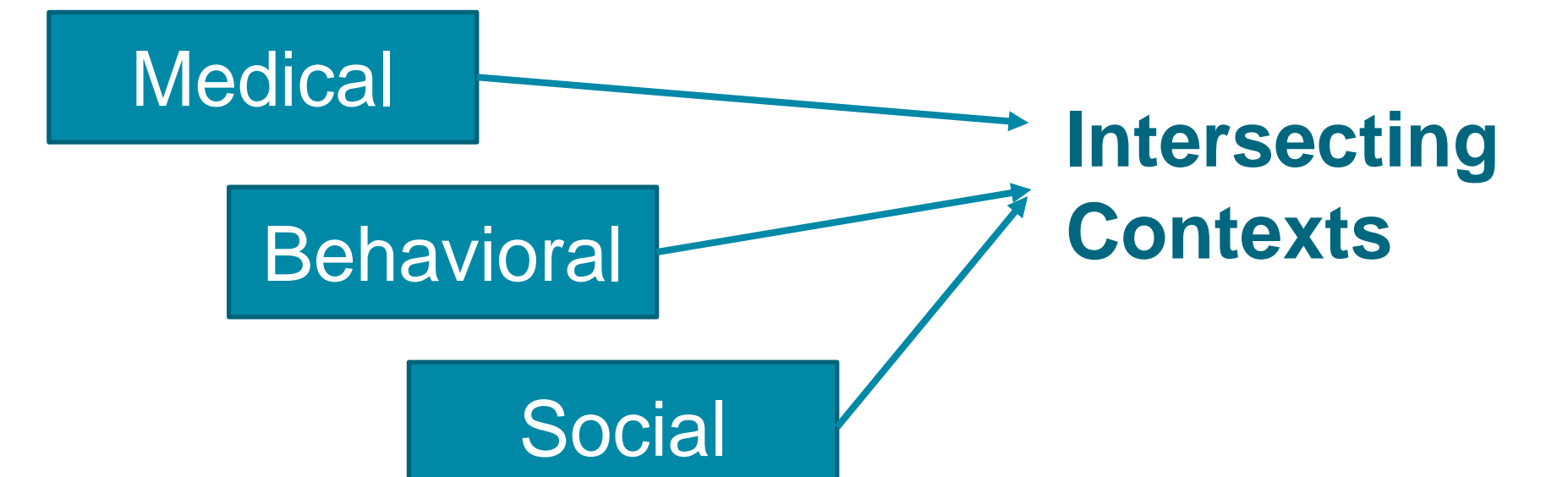
## CONSULT THEMES

- Safe discharge planning:**
  - Medical team's responsibility for patient safety after discharge
  - Mitigating risk of relapse
  - Opioid medications in the home and where to safely discharge the patient
- Challenging behavior/pain management:**
  - Non-adherence to advice for treatment
  - Verbal or physical threats to care team
  - Behaviors that adversely impacted the provision of nursing care
  - Managing self-reported pain without potentiating OUD
- Life-sustaining treatment (LST)**
  - Family desire to withhold and/or withdraw LST vs. team opinion that patient could recover
  - Team opinion that patient was at end of life vs. family desire to continue LST
- Appropriateness of surgery**
  - Should surgical interventions (valve replacement, organ transplant) be offered if ongoing drug use may adversely impact success?
- Decision-making for unrepresented patients**
  - Who should make medical decisions for patients with OUD who are homeless or socially-isolated and who do not have a surrogate decision-maker?

## DISCUSSION

- Our primary findings in this single-center retrospective cohort study were that the number of ethics consultations for patients with OUD increased beginning in 2009, which parallels trends in the opioid epidemic in the US.
- OUD consult patients were more likely to be younger, receiving disability benefits, more likely to be un- or underinsured, and more likely to have a co-morbid mental health diagnoses than other ethics consultation cases.

### “MULTIFACETED” SITUATIONS



## KEY ROLES OF ETHICS CONSULTANTS

- Emphasized the social complexity of these cases
- Called attention to the person behind the opioid use disorder
- Minimized stigmatization
- Encouraged reflection on patient characteristics (*including age, ethnicity, gender and/or mental health diagnoses*)
- Mediated conflict
- Emphasized utilization of inpatient substance use disorders consult (ACT) service and/or the psychiatry consult liaison service

## CONCLUSIONS AND RESEARCH-PRACTICE IMPLICATIONS

- Rise in requests for OUD ethics consults parallel trends in the opioid epidemic in the US
- Multidisciplinary teams needed to manage disease burden, psycho-social-behavioral and ethical complexities
- Ethics consultants provide a source of support to clinicians, patients and families in navigating decision making
- Additional research should focus on the experience of ethical decision making by families and clinicians in these emotionally charged situations



# EXPERIENCE WITH A REVISED HOSPITAL POLICY ON NOT OFFERING CARDIOPULMONARY RESUSCITATION

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Thomas H. McCoy MD<sup>2,8</sup>, Ellen M. Robinson, RN PhD HEC-C<sup>2,5</sup>

## BACKGROUND

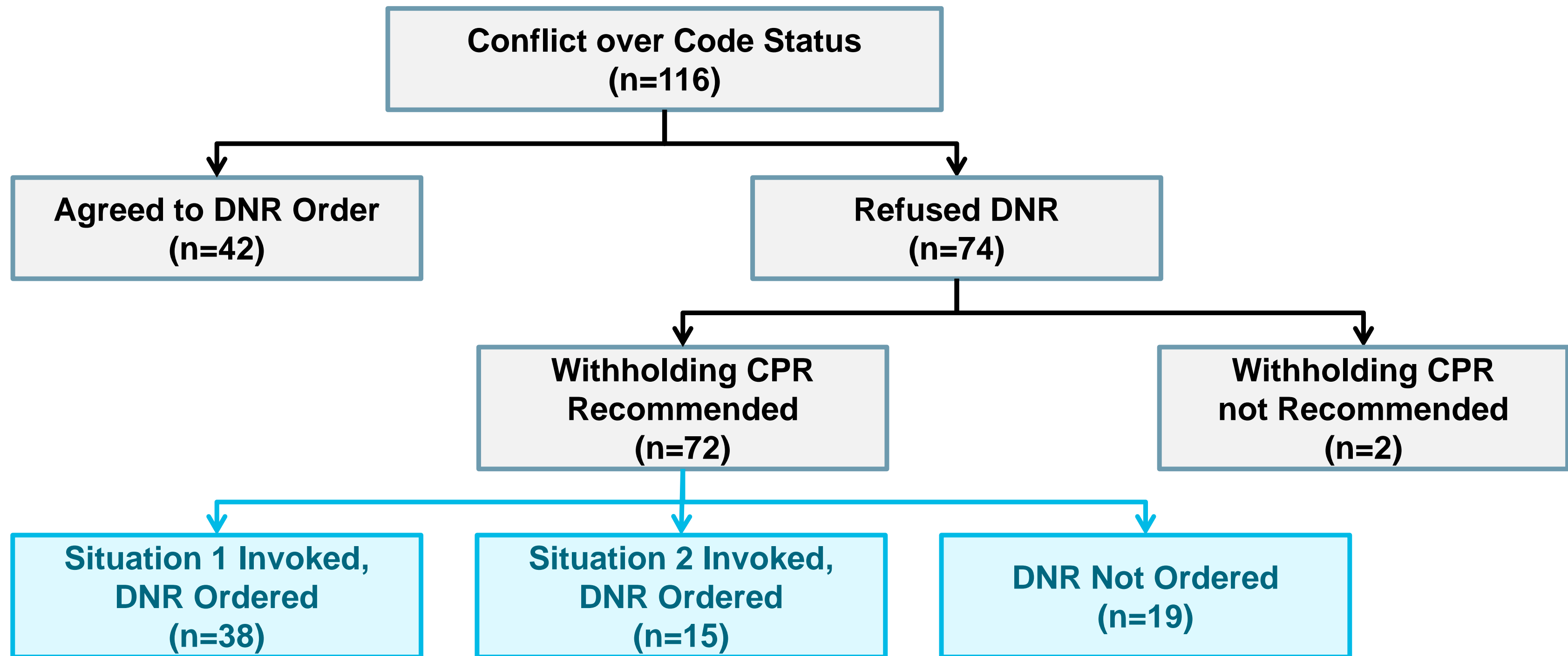
- MGH has had a “Doing No Harm” policy since 2007
- Part of a broader life-sustaining treatment policy (1998)
  - “Physicians and other health care providers are not obligated to offer or provide life-sustaining treatments that have no clinical indication or have no reasonable likelihood of providing benefit to the patient, or more benefit than harm, in the context of his or her values, prognosis, and agreed-upon treatment goals.”
- If CPR will cause harm without bringing meaningful benefit, particularly in the context of the patient’s values and prognosis, physicians should not offer it
- Experience with the policy suggested it was being invoked for two distinct groups:
  - Patients who were believed to be imminently or actively dying and for whom CPR was not expected to reverse their dying process or intervene on their underlying disease.
  - Patients who were not imminently dying but whom clinicians believed – because of debility or medical condition – would not survive CPR to the point of successful hospital discharge.
- The Doing No Harm policy was revised in 2013 to reflect these separate clinical situations

MGH Policies and Procedures: Life-Sustaining Treatment Policy		
Prior Policy	Revised Policy	
<b>Section 2.1.1</b> Physicians and other health care providers are not obligated to offer or provide life-sustaining treatments that have no clinical indication or have no reasonable likelihood of providing benefit to the patient, or more benefit than harm, in the context of his or her values, prognosis, and agreed-upon treatment goals.	3.6. Doing No Harm -- The responsible physician always has an overriding responsibility to protect the patient from harm. In some clinical situations, the responsible physician may determine, after exploring and documenting a patient’s values and beliefs, and in conjunction with clinicians involved in the patient’s care, that attempting CPR would be more harmful than beneficial for the patient. In such situations, the responsible physician may decide to not offer CPR. In two such situations, the responsible physician may follow simple guidelines for entering appropriate limitation of life sustaining treatment orders.	
<b>Section 2.5.8</b> Doing No Harm: The responsible physician always has an overriding responsibility to protect the patient from harm. The physician is encouraged to consider protecting an imminently dying patient from potential harms of cardiopulmonary resuscitation (CPR) by suggesting this protection to the patient or surrogate or by not offering CPR if it is not deemed to be a responsible treatment option and by entering appropriate code status orders. The responsible physician may obtain a second opinion about not offering CPR from another senior or experienced physician or from the Optimal Care Committee (clinical ethics consultation committee) and may also request advice from the Office of General Counsel. If the responsible physician decides not to offer CPR the patient or surrogate should be informed of this decision and its rationale and assured that the patient will continue to receive the highest possible quality of care.	<b>Situation 1:</b> The responsible physician should consider protecting a patient who is imminently dying from CPR’s potential harms by not offering CPR and entering the appropriate orders. In this situation, the responsible physician may decide, but is not required, to obtain a second opinion about not offering CPR from another senior or experienced physician or from the Optimal Care Committee (clinical ethics consultation committee) and may also request advice from the Office of General Counsel. If the responsible physician decides not to offer CPR the patient or surrogate should be informed of this decision and its rationale and assured that the patient will continue to receive the highest possible quality of care.  <b>Situation 2:</b> The responsible physician also may consider not offering CPR to a patient who is not imminently dying but who has no reasonable chance of surviving CPR to the point of leaving the hospital. In this case, if, after careful discussion with the patient or surrogate, the patient or surrogate does not assent to the plan, orders to withhold CPR should be entered only if another senior or experienced physician and a consultant from the OCC concur with the plan and only if this concurrence has been documented in the medical record.  In either circumstance, the responsible physician who decides not to offer CPR should inform the patient or surrogate of this decision and its rationale and assure that the patient will continue to receive the highest possible quality of care.	

## OBJECTIVES

- To evaluate cases considered under the revised policy, including the recommendations of ethics consultants regarding code status, and how often and in which situations these recommendations were followed
- To assess whether age, race/ethnicity, country of birth, or functional status prior to admission was associated with the decision to withhold CPR without patient or surrogate consent

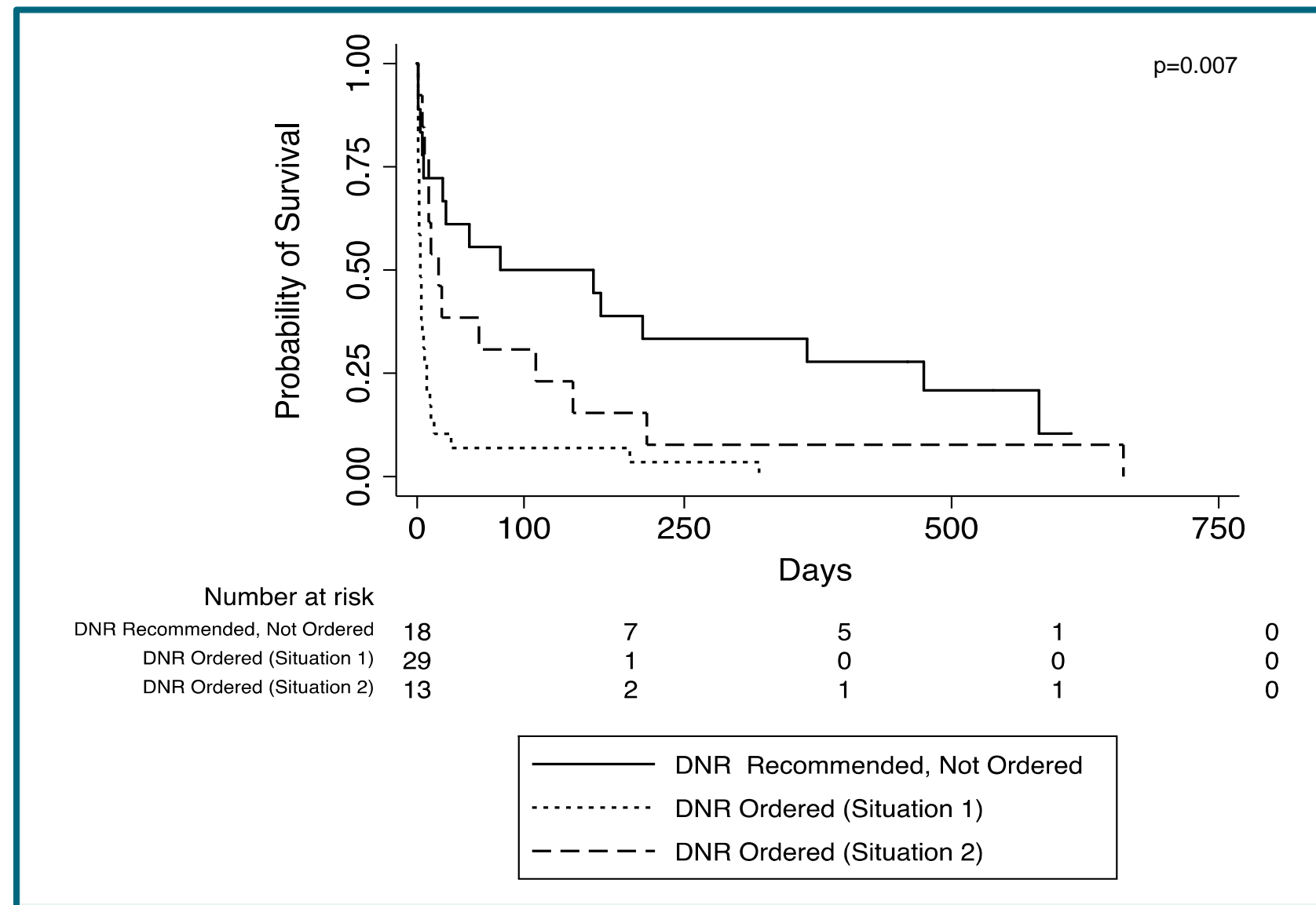
## RESULTS



Characteristics of Patients Consulted for Disagreement about Do Not Resuscitate Status (n=116)	
Age, y, median (IQR)	67 (55-81)
Race/ethnicity, n(%)	
White	71 (61.2)
Black	25 (21.5)
Asian	9 (7.8)
Hispanic	5 (4.3)
Other	6 (5.2)
Born outside the United States, n(%)	45 (38.8)
Complete dependence prior to admission, n(%)	51 (44.0)
Hospitalized in intensive care unit, n(%)	64 (55.2)
Critically ill, n(%)	75 (64.7)
Days hospitalized prior to consultation days, d, median (IQR)	11 (4-21)
Source of full code request, n(%)	
Patient	7 (6.0)
Surrogate	109 (94.0)
Relationship to patient, n(%)	
Adult Child	47 (43.1)
Spouse	34 (31.2)
Sibling	11 (10.1)
Other	17 (15.5)

Relationship Between Select Patient Characteristics and Acceptance of Do Not Resuscitate (DNR) Status Following Initial Ethics Consultation			
Variable	Accepted Recommend DNR (n = 42)	Did Not Accept Recommend DNR (n = 74)	P
Age, y	66.9 ± 16.3	65.7 ± 19.0	0.72
Non-white race/ethnicity	14 (35.0)	29 (39.2)	0.66
Born outside of the United States	18 (47.4)	27 (38.0)	0.34
Complete dependence	16 (38.1)	35 (47.3)	0.34
Critically ill	26 (62.0)	49 (66.2)	0.64

Comparison Between Cases in Which Cardiopulmonary Resuscitation (CPR) Was and Was Not Withheld			
Variable	CPR Withheld (n=53)	CPR not Withheld (n=19)	P
Situation 1 case	38 (71.7)	7 (36.8)	0.007
Age, y	67.9±17.1	61.4±21.8	0.19
Non-white race/ethnicity	21 (39.6)	8 (42.1)	0.85
Born outside of the United States	20 (39.2)	7 (38.9)	0.98
Complete dependence	23 (43.4)	12 (63.2)	0.14
Critically ill	39 (73.6)	10 (52.6)	0.09



**Figure 1.** Kaplan-Meier survival curves for three populations: patients for whom ethics consultants recommend a DNR order but it was not placed; patients for whom a DNR order was placed without patient or surrogate consent under policy Situation 1 (imminently dying); patients for whom a DNR order was placed without patient or surrogate consent under policy Situation 2 (not imminently dying but believed will not survive CPR to the point of successful hospital discharge). Survival following DNR order was significantly worse in Situation 1 patients compared to Situation 2 (p=0.007 by log-rank test).

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- Social Service, Massachusetts General Hospital
- Departments of Psychiatry and Internal Medicine, Massachusetts General Hospital
- Department of Psychiatry Massachusetts General Hospital
- Rand Corporation

## OTHER OUTCOMES

- The median time from DNR to death among patients where DNR was ordered without consent was 4 days (IQR 1-12). The 90-day mortality rate among these patients was 88.2%.
- Six patients who were made DNR under Situation 1 survived to discharge, two of whom were enrolled in hospice and died shortly thereafter.
- Among the 19 patients who remained full code despite ethics consultant recommendation, 6 had an in-hospital arrest. Of those, only 1 was successfully resuscitated, with significant neurologic injury.
- Three patients who remained full code despite ethics consultant recommendations were alive at the end of the study follow-up but were functionally dependent and living in a health care facility.

## CONCLUSIONS

- Over a four-year experience with a hospital policy on not offering CPR that distinguishes between patients who are and are not believed to be imminently dying, we found no evidence that the decision to place a DNR order without patient or surrogate consent was associated with age, race, country of birth, or functional status.
- Physicians were more likely to place these orders for patients who are believed to be imminently dying.

## IMPLICATIONS FOR PRACTICE AND/OR FUTURE RESEARCH

- Nurses, house officers and respiratory therapists in direct care roles are first line clinician responders to provide cardiopulmonary resuscitation. When there is clinical consensus that CPR is non-beneficial and harmful for a patient, clinicians appreciate ethics consultation and organizational policy support to aid in the careful consideration to protect such patients from harm
- Future research seeking surrogates’ perceptions in application of a ‘Do No Harm’ policy and their experiences during and after their loved one’s death or hospital discharge would provide further insight into the utility of this policy that intends to protect patients nearing end of life from inappropriate and harmful resuscitation



# CLINICAL NURSE ENGAGEMENT IN EVERYDAY ETHICAL DELIBERATIONS ABOUT CRITICALLY ILL CARDIAC MEDICAL AND SURGICAL PATIENTS

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## BACKGROUND

- The MGH Heart Center Intensive Care Unit (HCICU) is comprised of the cardiac intensive care unit (CICU) and cardiac surgical intensive care unit (CSICU). RNs from both ICUs voiced moral distress about decision making regarding candidate selection for transplant and mechanical circulatory support (MCS) as well as continuing LST for patients receiving prolonged MCS and other LSTs when recovery is not promising.
- HCICU RNs aimed to increase engagement in ethical deliberations about the benefits/burdens of LST for critically ill cardiac patients, as well as increase participation in cardiac transplant and MCS interprofessional deliberations where decisions are made about eligibility.



Heart Center ICU Education Session

## RESEARCH QUESTIONS

- What is the impact of unit education and interdisciplinary forums for ethical deliberation about challenging clinical cases on RN moral distress, ethics self-efficacy and perception of ethical environment?
- Does RN engagement in structures and processes that evaluate patient candidacy for cardiac transplant and MCS impact moral distress, ethics self-efficacy and perception of ethical environment?

## METHODS

### Pre and Post Surveys administered through REDCap

- Olson's Hospital Ethical Climate Survey-SF (HECS)** is a 16-item scale (5-point Likert scale) designed to assess RN perceptions of workplace ethical climate
- Measure of Moral Distress Health Care Professionals Scale- (MMD-HP)** is a 27-item questionnaire that measures frequency and intensity of moral distress experienced in clinical situations.
- Ethics Self Efficacy Scale (SEED)** is based on Bandura's template for constructing self-efficacy scales (UCLA developed by Pavlish & Brown-Saltzman).

## PRACTICE INTERVENTIONS

- RN participation in Transplant and VAD Multidisciplinary Deliberation Meetings
- Educational strategies:
  - HCICU education facilitated in small group discussions and lectures by HC Interdisciplinary providers on many components of transplants and MCS
  - Dissemination clinical and ethical literature on related topics
- Ethics Rounds: Interdisciplinary discussions to reflect upon cases and ethical implications of practice
- Long Term Care Rounds

- 85 participants completed at least 1 of the 3 assessments (HECS, SEED, or MMD-HP) pre-intervention and 51 participants completed at least one assessment post-intervention. Participants completing the pre- and post-surveys did not differ significantly on age, education, years practicing as a registered nurse or years practicing as a nurse in the ICU (Table 1)

Table 1. Demographic data for participants completing at least one assessment						
	Pre-Intervention		Post-Intervention		Test	Test Statistic
	N	N	N	%		
Age					Chi-Squared	X <sup>2</sup> (1) = 0.17 0.68
20-35	56	65.88	31	60.78		
36-50	29	34.12	20	39.22		
Education					Chi-Squared	X <sup>2</sup> (2) = 1.41 0.49
RN Associate Degree/ Diploma	5	5.88	2	3.92		
RN BSN or RN Direct Entry	77	90.59	45	88.24		
RN MSN	3	3.53	4	7.84		
RN PhD or DNP	0	0.00	0	0.00		
Years of Practice as RN					Chi-Squared	X <sup>2</sup> (1) = 0.35 0.55
10 or less	54	63.53	29	56.86		
greater than 11	31	36.47	22	43.14		
Years of Practice as ICU RN					Chi-Squared	X <sup>2</sup> (1) = 0.08 0.78
10 or less	55	64.71	31	60.78		
11 or more	30	35.29	20	39.22		

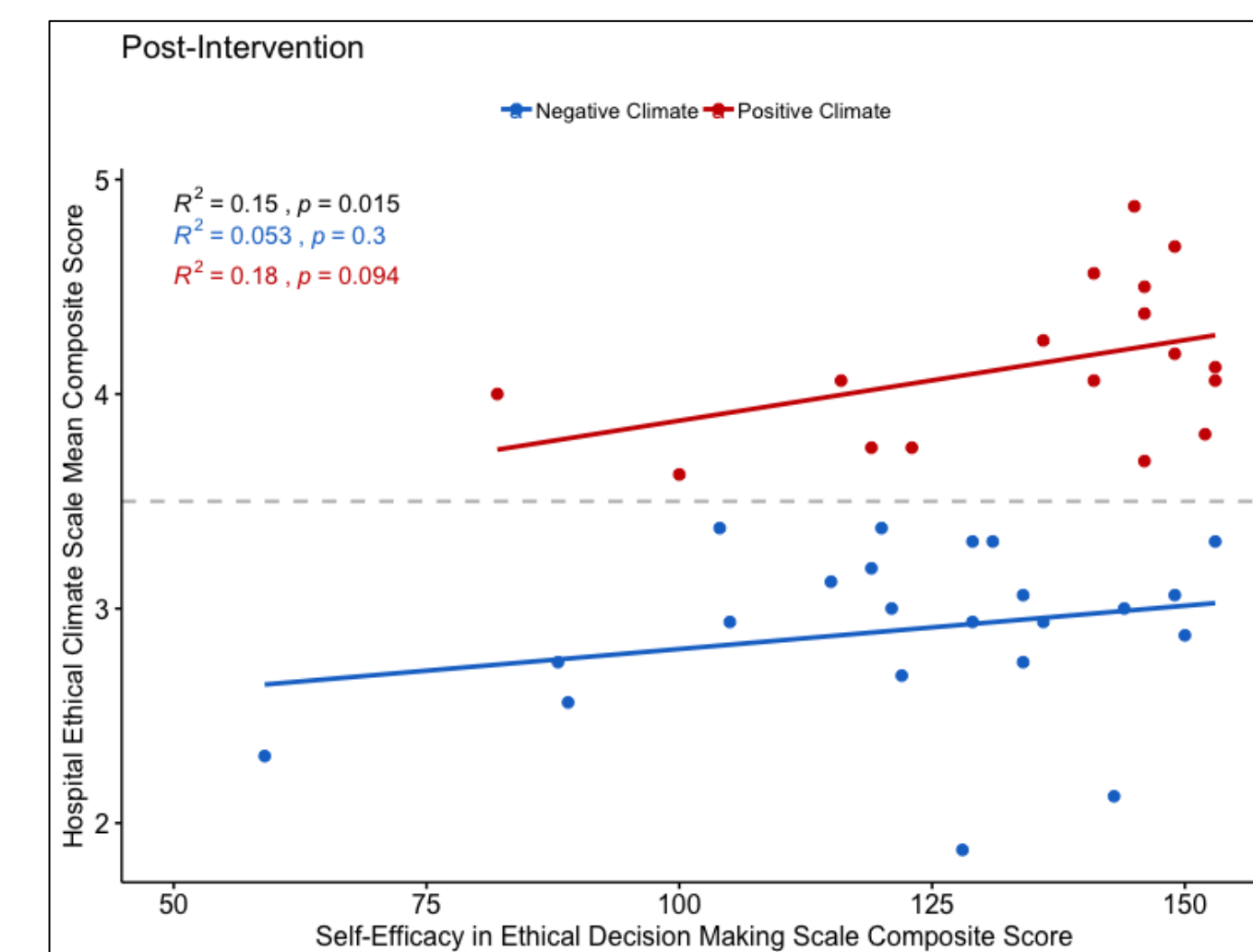
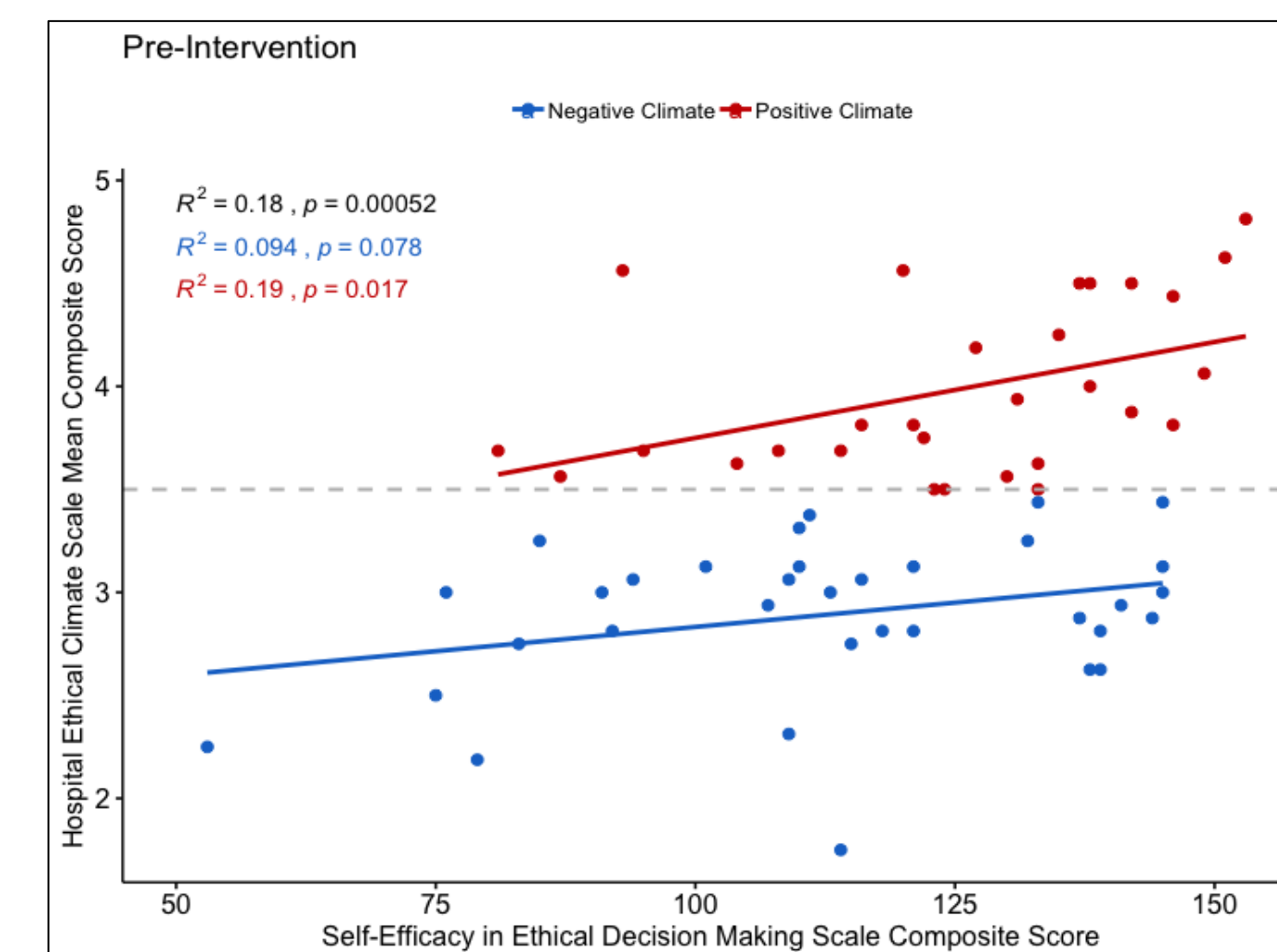
- Significant change in SEED (*ethics self efficacy*) scores between pre-and post-intervention surveys ( $W = 892.5$ ,  $p = 0.02$ ). Participants completing the post survey had significantly higher SEED scores than those completing the pre survey
- No significant difference in HECS (*ethical climate*) scores ( $t(97.19) = 0.33$ ,  $p = 0.74$ ) and MMD-HP (*moral distress*) scores ( $t(95.68) = -1.78$ ,  $p = 0.08$ ) between the pre- and post surveys
- Using composite score of the HECS (*ethical climate*), 45.88% (39/85) participants completing the HECS pre-intervention indicated a positive ethical climate. 45.10% of participants completing the HECS post-intervention indicated a positive ethical climate; thus, not a significant difference between pre- and post survey administrations in the overall perception of positive or negative ethical climate ( $X^2 (1) = 0.0079$ ,  $p = 0.93$ ).

Table 2: Comparison of ethical assessment pre- post-intervention									
	Pre-Intervention			Post-Intervention			Test	Test Statistic	P
	N	Mean	SD	N	Mean	SD			
HECS	85	54.98	10.48	51	54.31	11.59	Two sample t-test	t = 0.33	0.74
SEED (Median - IQR)	63	121	30.83	39	134	27	Wilcoxon test	W = 892.5	0.02*
MMD	67	138.67	74.10	47	164.60	78.26	Two sample t-test	t = -1.78	0.08

Abbreviations:  
HECS - Hospital Ethical Climate Survey  
SEED - Self-Efficacy in Ethical Decision Making Scale for Nurses  
MMD - Measure of Moral Distress  
SD - Standard Deviation  
IQR - Interquartile Range

## STUDY RESULTS

- There was a significant positive correlation between HECS (ethical climate) mean composite score and SEED (ethics self efficacy) composite score pre-intervention ( $R^2 = 0.18$ ,  $p < 0.01$ ) and post-intervention ( $R^2 = 0.15$ ,  $p < 0.02$ )



The 5 events listed on the MMD-HP (*moral distress*) which were rated as happening the most frequently indicated by a score of 4:

Rank	Pre-Intervention			Post-Intervention		
	Question Number	Question	Question Number	Question	Question Number	Question
1 (Highest)	MMD5	Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it.	MMD5	Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it.		
2	MMD2	Follow the family's insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient.	MMD1	Witness healthcare providers giving "false hope" to a patient or family.		
3	MMD1	Witness healthcare providers giving "false hope" to a patient or family.	MMD19	Have excessive documentation requirements that compromise patient care.		
4	MMD19	Have excessive documentation requirements that compromise patient care.	MMD28	Continue to participate in care for a hopelessly ill person who is being sustained on mechanical cardiac support, when no one will make a decision to withdraw support.		
5 (Lowest)	MMD28	Continue to participate in care for a hopelessly ill person who is being sustained on mechanical cardiac support, when no one will make a decision to withdraw support.	MMD24	Be required to care for patients who have unclear or inconsistent treatment plans or who lack goals of care.		

The 5 events listed on the MMD-HP which were rated as being the most distressing indicated by a score of 4:

Rank	Pre-Intervention			Post-Intervention		
	Question Number	Question	Question Number	Question	Question Number	Question
1 (Highest)	MMD5	Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it.	MMD28	Continue to participate in care for a hopelessly ill person who is being sustained on mechanical cardiac support, when no one will make a decision to withdraw support.		
2	MMD28	Continue to participate in care for a hopelessly ill person who is being sustained on mechanical cardiac support, when no one will make a decision to withdraw support.	MMD5	Continue to provide aggressive treatment for a person who is most likely to die regardless of this treatment when no one will make a decision to withdraw it.		
3	MMD1	Witness healthcare providers giving "false hope" to a patient or family.	MMD1	Witness healthcare providers giving "false hope" to a patient or family.		
4	MMD2	Follow the family's insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient.	MMD16	Be required to care for more patients than I can safely care for.		
5 (Lowest)	MMD8	Participate in care that causes unnecessary suffering or does not adequately relieve pain or symptoms.	MMD2	Follow the family's insistence to continue aggressive treatment even though I believe it is not in the best interest of the patient.		

- Significant positive effect of age, years of experience as an RN, and years of experience as an ICU RN on HECS (*ethical climate*) and SEED (*ethics self efficacy*) scores (Table 3).
- Older RNs and RNs with more years of practice/ICU practice had higher composite scores in ratings of ethical climate and ethics self-efficacy.
- No significant relationship between any of the three demographic variables and the MMD-HP (moral distress) composite scores.

Table 3: Effect of Demographic Variables on Assessment Composite Scores Controlling for Time Point				
	HECS	SEED	MMD	
Age	B = 5.42, p = 0.005*	B = 12.52, p = 0.007*	B = -22.71, p = 0.13	
Years of practice as RN	B = 4.37, p = 0.02*	B = 12.57, p = 0.006*	B = -23.05, p = 0.12	
Years of practice as an ICU RN	B = 4.86, p = 0.01*	B = 12.82, p = 0.005*	B = -20.43, p = 0.17	

\*p < .05

## CONCLUSIONS

- Self-efficacy in ethical decision making scores significantly increased before and after the practice intervention, suggesting that RNs perceived an enhanced voice in challenging decision making on behalf of patients
- Older nurses & nurses with more years of ICU practice rated ethical climate as more positive and had higher self efficacy scores.
- Moral distress scores did not change c/w emerging expert thought/literature that patient care in quaternary care settings will always present morally distressing situations given interface of technological advances and willing patients or their families who seek to extend their lives with such advances. Experienced nurses can remain resilient and highly effective in such situations, given their capacity for moral agency, moral imagination and moral community (Traudt, Liaschenko & Peden-McAlpine, 2016)
- HCICU RN participation in decision making forums for patients can inform interdisciplinary decision making processes with added knowledge about the patient's response to his disease and condition. Patient response to disease is the domain of professional nursing practice (ANA Social Policy Statement, 2015)
- Educational forums with multiple disciplines can enhance interprofessional collaboration and positively impact RN ethics self efficacy
- Mentoring RNs new to HCICUs in ethical decision making may be critical to job satisfaction and retention

## FUTURE DIRECTIONS

- Continue to include staff RNs in VAD and transplant committee meetings
- Continue education regarding advanced cardiac disease and advanced therapeutic options (medicine, surgery MCS, transplant), including the impact of disease and therapies on patients and families.
- Continue to create reflective spaces with interprofessional colleagues about ethical decision making for patients, families and clinicians in the experience and care of these patient populations
- Actively engage and support staff to foster resiliency given the ethically challenging practice environment of leading quaternary care Heart Center ICUs
- Assess opportunities to further integrate RNs into decision making processes for their patients and collaborate with our multidisciplinary teams.



FINANCIAL TOXICITY IN ONCOLOGY PATIENTS:  
THE IMPACT OF AN EDUCATIONAL INTERVENTION FOR NURSES

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BACKGROUND

- Financial toxicity (FT) describes the harmful personal financial burden faced by patients and families receiving costly medical care (Zafar, 2016).
- Common concerns include loss of earnings for the patient and family members and out-of-pocket costs including coinsurance, deductibles, copays and premiums (McDougall, Ramsey & Shih, 2014).
- Evidence suggests oncology patients pay more out-of-pocket for care than those with other chronic illnesses (Zafar, 2016).
- Ramifications of FT range from emotional distress to personal bankruptcy.

PURPOSE

The purpose of this project was to educate oncology nurses on the impact of FT on oncology patients and to increase nurses' knowledge and confidence on how to facilitate management of FT in oncology patients.

METHODS

- Design:** This project received IRB approval and was conducted as quality improvement.
- Sample and Setting:** A convenience sample of 313 oncology registered nurses that belong to the Boston Oncology Nursing Society (BONS) were invited to participate.
- Procedures:**  
Based on the most contemporary information on FT, the investigator developed, narrated and electronically administered a web-based educational program for oncology nurses.
- Data were collected over a 7-week period via web-based surveys.
  - Multiple choice questions elicited participant demographics.
  - Likert-scale style, and open-ended questions were used to measure nurses' pre/post educational program knowledge and confidence related to FT.
  - A course evaluation followed completion of the program.

DATA ANALYSIS

Descriptive and comparative statistics were utilized to summarize the participant demographics and survey results. Data were analyzed using IBM Statistical Package for the Social Sciences (SPSS), version 25.

RESULTS

- Of 313 BONS members, 33 nurses completed the study requirements for a recruitment rate of 10.5%.
- Confidence, Perception of Knowledge and Knowledge Related to Financial Toxicity**
- Pre and post survey item results revealed statistically significant improvements in nurses' confidence, perception of knowledge and knowledge related to FT of oncology patients (Tables 1,2).
  - Cumulative results for confidence and knowledge of FT (i.e. perception of knowledge and knowledge) were examined by assigning one point for each correct answer, and revealed statistically significant improvements following the education (<0.001-0.016).
- Course Evaluation**
- 29 of the 33 participants completed a course evaluation.
  - Most participants found the program content “extremely useful” to their practice (54%) and meeting their needs (78.8%).
  - Thematic analysis of open-ended questions revealed that nurses were interested in learning more about the cost of care and impact on patients, resources available for patients and families, and the COST (COMprehensive Score for financial Toxicity) tool used to assess patients for FT.

DISCUSSION

- Oncology nurses reported significant increases in confidence and knowledge about FT following the educational intervention.
- Next steps will be to expand this educational program to a larger audience.
  - Future research should explore educating nurses caring for other patient populations who are at risk for FT and implementation of a standardized FT assessment tool as part of a comprehensive nursing assessment.

Acknowledgement: Michele DeGrazia PhD RN NNP-BC FAAN, Scholarly Project Faculty Advisor

TABLE 1: CONFIDENCE AND PERCEPTION OF KNOWLEDGE

CONFIDENCE			
Confidence Level	Pre n(%)	Post n(%)	Difference*
I am confident in my understanding of financial toxicity			
Strongly Agree	5 (15.2)	21 (63.6)	
Somewhat Agree	12 (36.4)	9 (27.3)	
Neither Agree or Disagree	6 (18.2)	1 (3.0)	
Somewhat Disagree	7 (21.2)	0	
Strongly Disagree	3 (9.1)	1 (3.0)	
I am confident in the questions to ask my patients in regard to financial concerns			
Strongly Agree	2 (12.1)	19 (57.6)	
Somewhat Agree	11 (33.3)	9 (27.3)	
Neither Agree or Disagree	5 (15.2)	2 (6.1)	
Somewhat Disagree	10 (30.3)	0	
Strongly Disagree	3 (9.1)	1 (3.0)	
I am confident in the empathetic responses I can give my patients to engage in further discussions about their financial concerns			
Strongly Agree	5 (15.2)	23 (69.7)	
Somewhat Agree	18 (54.5)	8 (24.2)	
Neither Agree or Disagree	2 (6.1)	0	
Somewhat Disagree	5 (15.2)	0	
Strongly Disagree	2 (6.1)	1 (3.0)	
I am confident in my referrals to address my patient's financial concerns			
Strongly Agree	5 (15.2)	22 (66.7)	
Somewhat Agree	18 (54.5)	7 (21.2)	
Neither Agree or Disagree	2 (6.1)	2 (6.1)	
Somewhat Disagree	5 (15.2)	0	
Strongly Disagree	2 (6.1)	1 (3.0)	

PERCEPTION OF KNOWLEDGE			
Confidence Level	Pre n(%)	Post n(%)	Difference*
I am knowledgeable regarding the costs associated with the care my patients receive			
Strongly Agree	3 (9.1)	13 (39.4)	
Somewhat Agree	13 (39.4)	42.4 (14)	
Neither Agree or Disagree	7 (21.2)	3 (9.1)	
Somewhat Disagree	6 (18.2)	1 (3.0)	
Strongly Disagree	4 (12.1)	1 (3.0)	
I am knowledgeable of the team members that can assist with my patient's financial concerns			
Strongly Agree	11 (33.3)	22 (66.7)	
Somewhat Agree	16 (48.5)	6 (18.2)	
Neither Agree or Disagree	2 (6.1)	2 (6.1)	
Somewhat Disagree	1 (3.0)		
Strongly Disagree	3 (9.1)	1 (3.0)	
Patients with cancer spend more annually on out-of-pocket treatment-related expenses than patients without cancer			
Strongly Agree	24 (72.7)	29 (87.9)	
Somewhat Agree	5 (15.2)	1 (3.0)	
Neither Agree or Disagree	4 (12.1)	2 (6.1)	
The COST screening tool is used to measure financial toxicity in cancer patients			
Strongly Agree	8 (24.2)	27 (81.8)	
Somewhat Agree	6 (18.2)	1 (3.0)	
Neither Agree or Disagree	17 (51.5)	4 (12.1)	
Strongly Disagree	1 (3.0)	0	

\*Related Samples Wilcoxon Signed Rank Test

TABLE 2: KNOWLEDGE

Question	Pre n(%) correct	Post n(%) correct	Sig (McNemar's Test)
The best time to assess a patient's financial concerns is? Throughout the Patient's Course of treatment			
	25 (75.8)	25 (75.8)	1.00 NS
Financial Toxicity is defined as? The harmful personal financial burden faced by patients and families receiving cancer treatment			
	33 (100)	32 (97.0)	1.00 NS
Which of the following is NOT a symptom of financial toxicity? Drug Addiction			
	31 (93.9)	31 (93.9)	1.00 NS
Which of the following services can help prevent financial toxicity? All of the Above			
	31 (93.9)	30 (90.9)	1.00 NS
In one study of Medicare Part D patients who were taking 1 of the top 5 selling oral cancer drugs, how many reported discontinuation of their cancer therapy due to expensive out-of-pocket costs? 70%			
	5 (15.2)	17 (51.5)	<0.001







# NURSING PRACTICES AND PERCEPTIONS RELATED TO CODE DOCUMENTATION IN THE ELECTRONIC HEALTH RECORD

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## BACKGROUND

Accurate documentation of medical codes in real time contributes to appropriate delivery of life-saving interventions and provides a detailed record to identify opportunities for quality improvement and to reference when medicolegal questions arise.

Informal feedback from pediatric ICU nurses regarding the challenges of code documentation following the implementation of a new electronic health record (EHR) revealed nurses were uncomfortable using the code documentation tool.

## PURPOSE

To assess nurses' perception and practices of code documentation and to identify opportunities for improvement.

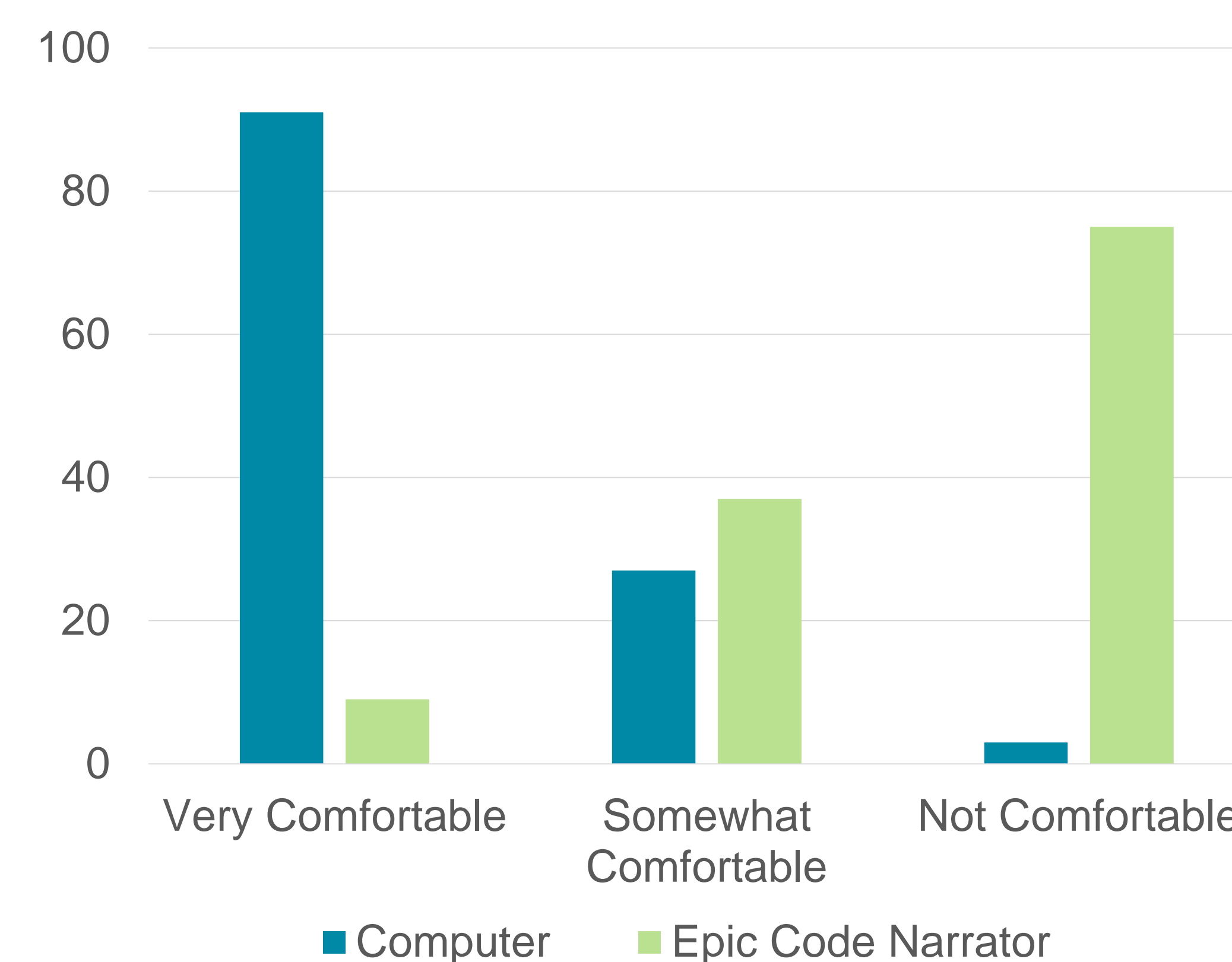
## METHODS

- An anonymous REDCap survey was distributed to all inpatient nurses working in a single, university-based, quaternary care hospital.
- Participation in the study was voluntary and consent was implied by survey completion.

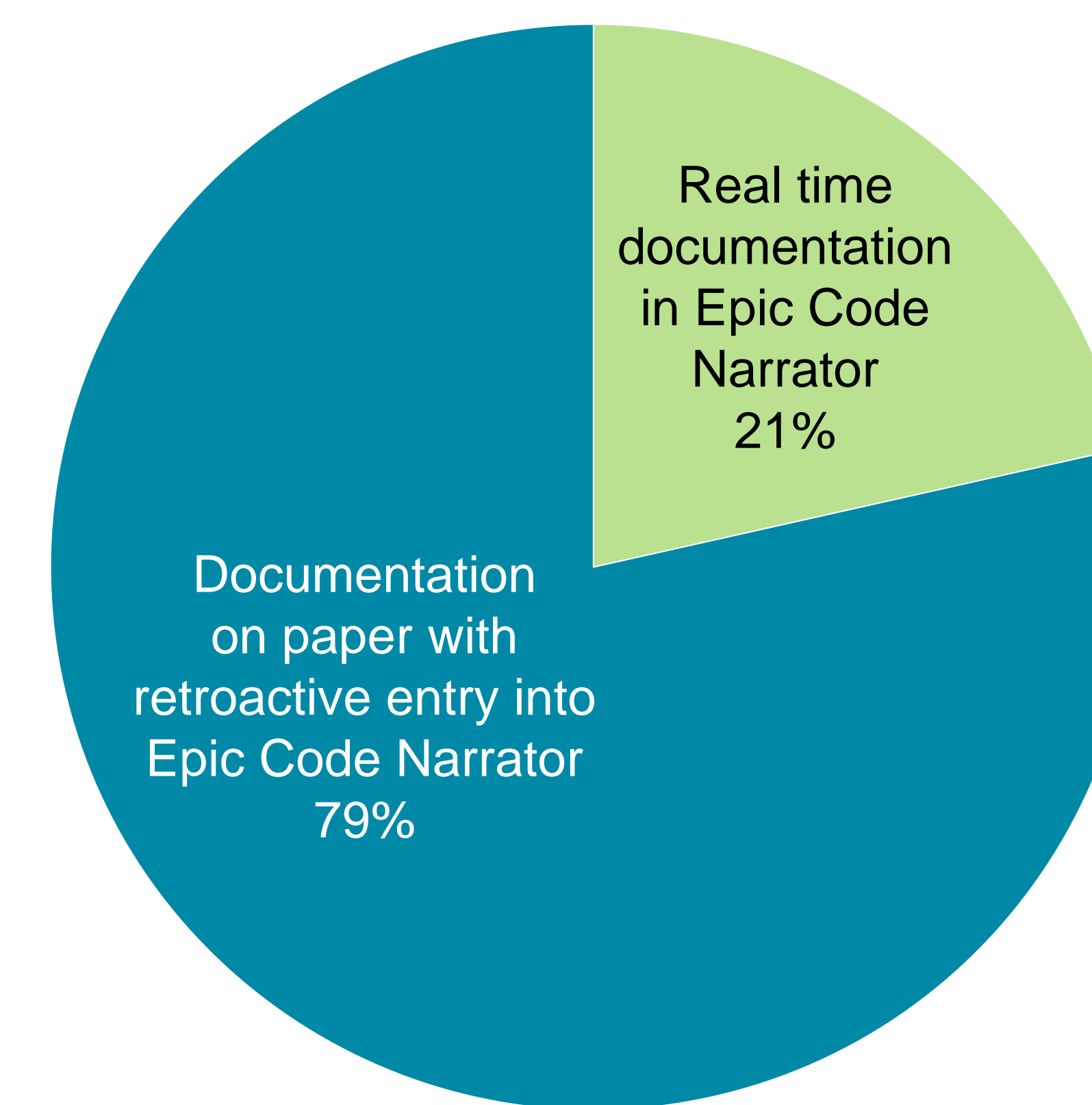
## RESULTS

- Surveys distributed: 3121
- Surveys completed: 432 (14%)
  - 81% felt comfortable using computers for personal use
  - 9% were comfortable using the EHR for code documentation
  - 26% participated in a code where details inaccurately recorded in EHR
  - 92% think more practice documenting codes in EHR would be helpful
  - 95% indicated functionality upgrades would improve their ability to accurately document codes in Epic Code Narrator in real time

ICU NURSING LEVEL OF COMFORT  
USING COMPUTERS VS EPIC CODE NARRATOR



WHICH METHOD OF CODE DOCUMENTATION  
DO YOU FEEL IS MORE ACCURATE?



### Representative responses to the request for ideas to improve Epic Code Narrator functionality

- More one-stop medication options
- More opportunity to free text comments
- Faster way to log into Epic Code Narrator to begin documenting
- Simplify the screen by removing extraneous information that can be documented outside the Code Narrator
- Use language and format that more closely mimics the paper format nurses are used to using
- All code documentation should be in one "tab" and clicking in and out of screens should not have to happen
- Make the documentation more linear without having to jump from different spots on page to enter info
- Codes happen infrequently so more training would improve proficiency

## CONCLUSIONS

- Most inpatient nurses in a single institution feel uncomfortable documenting codes directly into the EHR, and some question the accuracy of this documentation.
- Based on specific recommendations from end-users, improving EHR functionality and increasing opportunities to document simulated codes may ease EHR navigation.
- This may lead to more accurate and efficient documentation and greater nurse satisfaction.

## FUTURE DIRECTIONS

Future research and work needs to be focused on increasing the functionality of the code narrator and on opportunities to provide in-situ simulation for code documentation.

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# PRESSURE INJURY DEVELOPMENT, MITIGATION, AND OUTCOMES IN PATIENTS MANUALLY PRONED FOR ARDS DUE TO COVID-19

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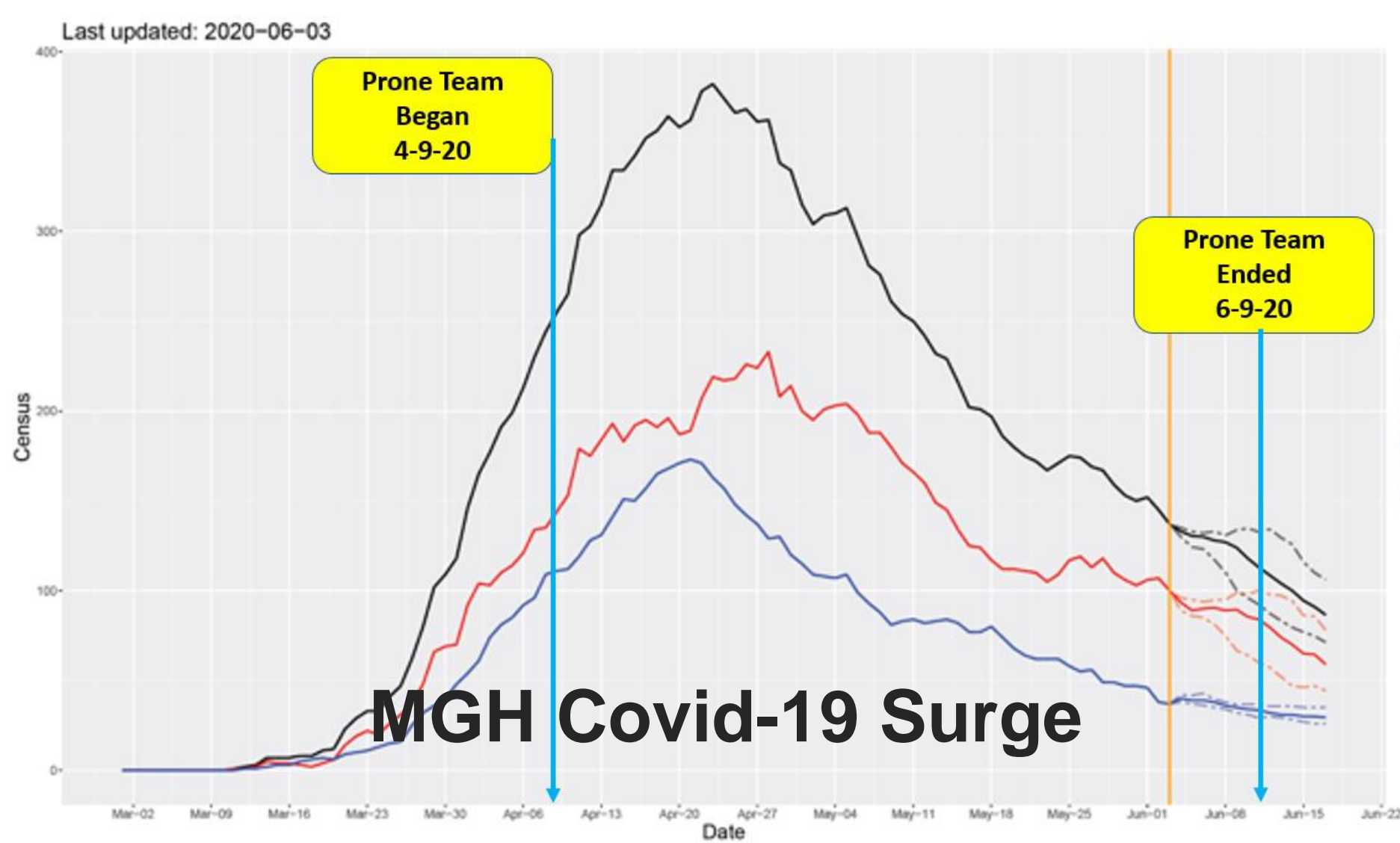
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## BACKGROUND AND SIGNIFICANCE

- First Covid 19 cases reported in Wuhan, China in January, 2020.
- The pandemic surged in Massachusetts in April, 2020.
- Patients with Covid-19 developed severe Acute Respiratory Distress Syndrome (ARDS).
- Early proning emerged as a powerful therapy for managing patients with ARDS due to Covid-19.
- A Proning team was launched on April 9, 2020 to support the workload of proning a large cadre of severely ill critical care patients.
- Research has demonstrated that pressure injuries (PIs) are one of the complications of prone positioning, although the highest risk body parts and most effective strategies and products to mitigate PI have not yet been elucidated.



MGH Proning Team  
April 9, 2020–June 9, 2020  
Team Members: N=75



## PURPOSE

The purpose of this study was two-fold:

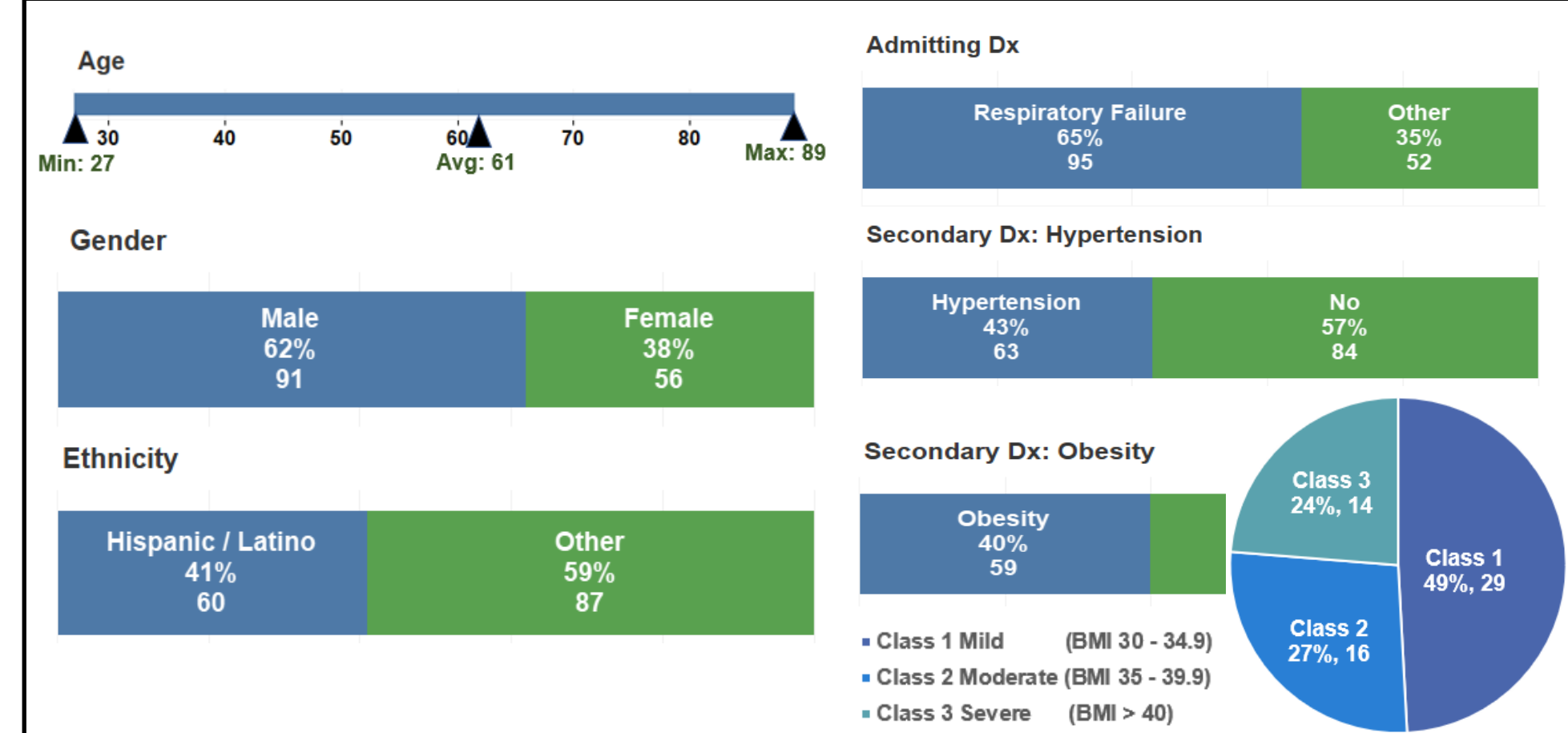
- Describe trends in PI incidence in adult critical care patients who were prone for severe ARDS due to COVID-19, and
- Examine effectiveness of products and strategies to mitigate PIs.

## METHODS

- Retrospective review of the electronic medical records and Skin/Tissue Safety Reports.
- Data collected on demographic, clinical, laboratory, treatment, and outcome variables.
- Data analyzed using SPSS Version 24.
- Descriptive statistics performed on demographic and physiological variables.
- Fisher's exact tests were computed for categorical data and Cox regression analysis, for survival analysis.

## RESULTS

### PROFILE OF PATIENTS PRONED FOR COVID-19 (N=147)



### PROFILE OF PATIENT PRONED FOR COVID-19 (N=147)

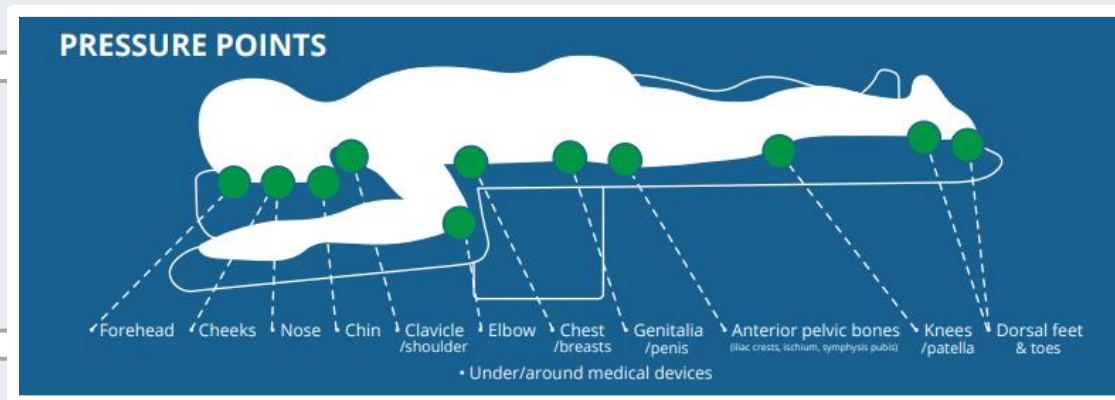
Sequential Organ Failure Assessment (SOFA)	N	%	Range	Mean
Total score			1-15	8
> 11	12	8%		
Cardiovascular				
Low dose vasopressor	42	29%		
High dose vasopressor (≥1) (norepinephrine/vasopressin)	62	42%		
Hematology			206 –	2945
D-Dimer			> 10,000	
Normal: < 500	2	1%		
> 10,000	9	6%		
ICU LOS:			4-41 days	19
Hosp. LOS:			5-52 days	26

### TRENDS IN TURN DURATION AND P-F RATIO IN PATIENTS WITH COVID-19 (N=147 PATIENTS/450 TURNS) (4/9/2020-6/8/2020)

Variable	N	Duration (Hrs)		PaO2-FiO2 Ratio (PFR)				Duration: Mean: 58 hr
		Range	Mean	N	Min	Max	Mean	
Turn 1 (P)	130	2-139	38	79	42	238	123	P/F Ratio Mean: < 124 • Prone: 257 • Supine: 40 hr
Turn 2 (S)	131	2-163	40	76	95	550	257	
Turn 3 (P)	130	1-300	54	43	8	353	142	
Turn 4 (S)	92	2-116	45	42	94	500	252	
Turn 5 (P)	60	1-82	20	22	51	260	149	
Turn 6 (S)	35	1-155	43	20	161	340	248	
Turn 7 (P)	20	3-155	41	11	102	247	144	
Turn 8 (S)	20	16-81	39	11	153	423	253	
Turn 9 (P)	9	27-137	76	6	118	168	147	
Turn 10 (S)	8	16-69	39	6	172	400	274	
Turn 11 (P)	2	22-52	37	2	87	110	99	
Turn 12 (S)	2	5-52	29	1	293	293	293	
Turn 13 (P)	1	142	142	1	96	96	96	
Turn 14 (S)	1	48	48	1	225	225	225	

### MECHANISMS OF PRESSURE INJURIES DURING PRONING

- Commercial Endotracheal Tube (ETT) Holder
  - Cheeks, Nose, Mouth
- Taping ETT with Fabric Adhesive Tape
  - Nose, Mouth
- Prone Position
  - Head-to-toe, Anterior/lateral face
- Supine Position
  - Head-to-heel, posterior



### COMPARISON OF PI STAGE AND BODY SITE BY ETT SECUREMENT METHOD (N=147)

Location	Commercial Holder (N=46)				Taping (N=14)			
	Stage II	DTI	Unstageable	Mucosal	Stage II	Stage III	DTI	Mucosal
Cheeks	12	7	1	1				
Lip	5	2	1	1				
Mouth		1						
Nares / Nose	5	1						
Tongue								

(As size of bubbles increase, number of PIs increase)

## ANTERIOR PIs DUE TO PRONING

### INITIAL PRESSURE REDISTRIBUTION PRODUCTS (4/9/2020-6/8/2020)



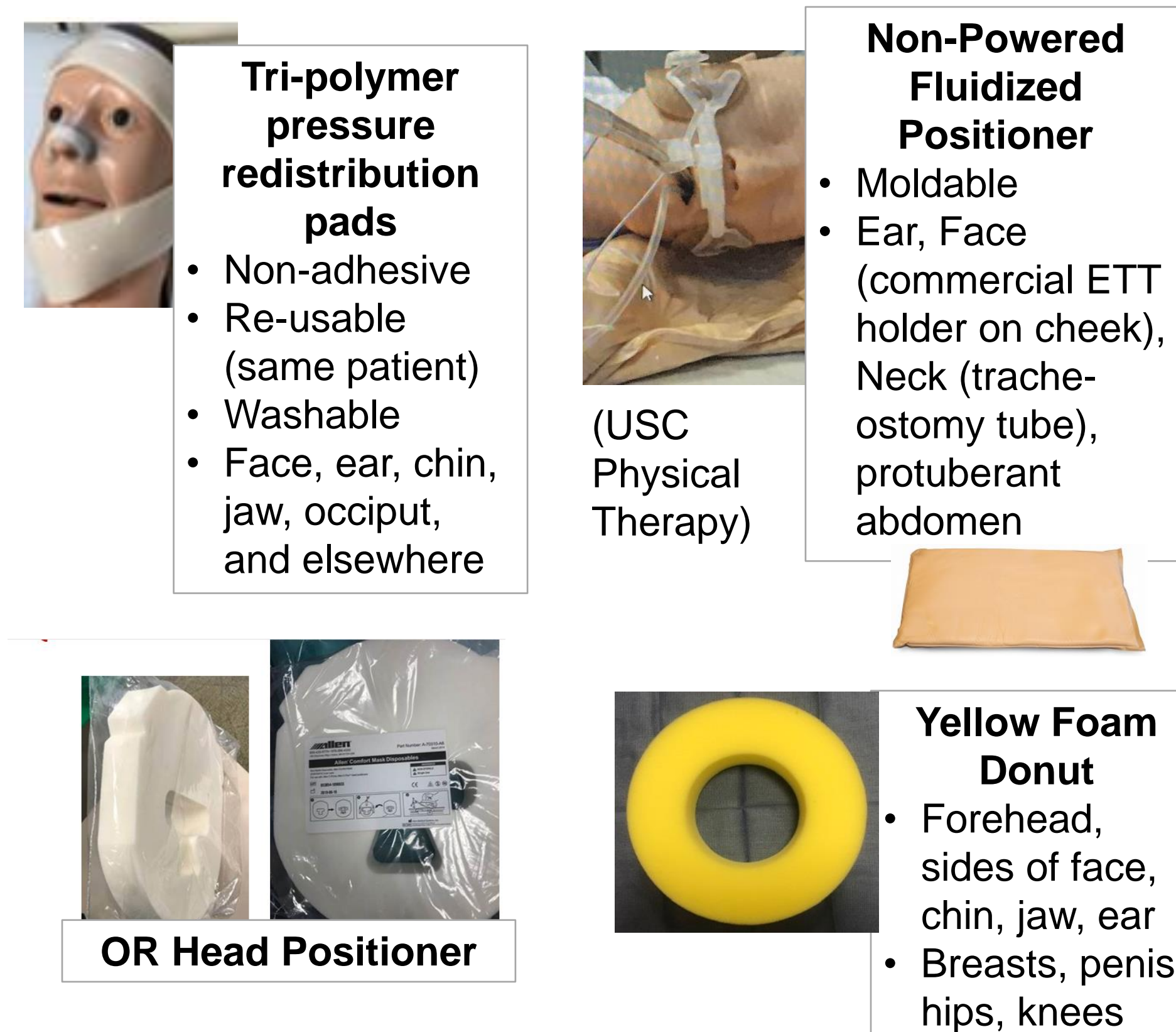
- Air-Lock Cushion**
- Head/Face
  - Chest/Abdomen
  - Swimmer's Arm/Leg(s)

- Heel Protector**
- On side
  - Under lower legs
  - At ankle and above

- Gel Cushion**
- 6"x 6" (Thick version)
  - Water-based, non-toxic food grade gel, moldable
  - Head, Ears, Chin, Penis, Knees

- Silicone-coated foam dressings**
- Forehead, sides of face, chin, jaw, ear
  - Breasts, penis, hips, knees

### ADDITIONAL PRESSURE REDISTRIBUTION PRODUCTS (4/23/20-6/8/20)



- Tri-polymer pressure redistribution pads**
- Non-adhesive
  - Re-usable (same patient)
  - Washable
  - Face, ear, chin, jaw, occiput, and elsewhere

- Non-Powered Fluidized Positioner**
- Moldable
  - Ear, Face (commercial ETT holder on cheek), Neck (tracheostomy tube), protuberant abdomen

- OR Head Positioner**

- Yellow Foam Donut**
- Forehead, sides of face, chin, jaw, ear
  - Breasts, penis, hips, knees

### PRESSURE INJURY PREVENTION PRODUCT EFFECT BY BODY SITE AND PI STAGE

	BEFORE (N=97)					AFTER (N=28)		
Location	Stage II	Stage III	DTI	Unstageable	Not Staged	Stage II	DTI	Not Staged
Abdomen	3		1	1				
Chest/Breast	3		1			2	1	1
Chin/Jaw	2		1	1		1	1	
Ears	12		1		1	2	1	
Face		1	1		2	2	1	1
LE - Knees	1		10	1		1		
Lower Extremities	5		13		1	2	1	1
Mouth/Lip	2				1		1	2
Nares/Nose	3		1			1	1	
Neck	5	1			2		1	
Penis/Scrotum	1		1		2	2		
Upper Extremities	2		1			1	1	

(As size of bubbles increase, number of PIs increase)

(As size of bubbles increase, number of PIs increase)

## POSTERIOR PIs DUE TO SUPINE POSITION

### Pressure Injury Pattern: Supine Position (N=147)

Bed Type	N	%	Sacro-Coccygeal Pressure Injuries	
			N	%
<b>General Care Bed</b> Nonpowered, pressure redistribution	27	18%	8	30%
<b>Standard Critical Care Bed</b> Powered, pressure redistribution, integrated circuits	80	54%	18	23%
<b>Fluid Immersion Simulation Mattress</b>	11	8%	2	18%
<b>Air Fluidized Bed</b>	1	1%	0	
<b>Bariatric Bed</b>	2	1%	1	
<b>Missing</b>	26	18%		
<b>Total</b>	147	100%	33	22%

## CONCLUSIONS

- This study illustrates the relationship between PI development and extrinsic risk factors (e.g. pressure, prolonged immobility) and intrinsic risk factors (e.g. weight, morphology of tissues, vasopressors)
- Substantially fewer facial PIs with ETT taping than commercial ETT holder that adhered to cheeks
- Pressure redistribution products (PRPs) may vary in effectiveness at preventing PIs
- Members of the Proning Team facilitated rapid diffusion of new PRPs
- Powered support surfaces may be more effective than non-powered support surfaces at redistributing pressure and preventing PIs

## IMPLICATIONS

Standardized methods for testing dressings and devices for properties such as immersion, envelopment, and preservation of perfusion are needed to inform product selection and customize care for patients.

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# **QUALITY IMPROVEMENT POSTERS**



PRIMARY CARE NURSE MANAGERS’ PERCEPTIONS OF  
WHY LEADER POSITIONS REMAIN VACANT

Jean Bernhardt PhD CNP

Massachusetts General Hospital, Boston, MA

BACKGROUND

- Fewer nurses are seeking their first nursing leadership position.
- Nurse manager positions remain vacant for long periods.
- Health care is shifting to outpatient settings.
- Current nurse managers can create opportunities to attract future nurse leaders.
- Current nurse managers may not demonstrate job fulfillment
  - Appear to be dissatisfied with job
  - Taking work home, 24/7
  - No longer providing direct care

THEMES

- Themes from focus groups that informed survey development:
- Current nurse manager finds job undesirable
    - “Who wants to work 24/7?”
    - “I never get out on time”
  - Functions of being a nurse manager are not appealing
    - “I have so little time to care for patients anymore.”
    - “I am always in meetings.”
  - Thought potential nurse managers more likely to leave than stick around
    - “She plans to go back to school.”

IMPLEMENTATION

- 18 question Likert scale electronic survey developed from prior focus groups
- 5-point scale — strongly disagree to strongly agree
- 15 current nurse managers invited in 2017

OBJECTIVE

To examine perceptions of nurse managers toward opportunities for developing future nurse leaders.

AGREEMENT WITH  
LEARNING STRATEGIES

	NMs median n=12 (SD)
Sharing management duties	2.2 (0.51)
Shadowing and observing current nurse manager	3.5 (0.28)
Covering for nurse manager when out of office	2.8 (0.60)

AGREEMENT WITH PERCEPTION  
OF FORMAL TRAINING NEEDS

	NMs median n=12 (SD)
Leadership development	4.8 (0.65)
Communication skills	4.8 (0.65)
Human resources management	3.6 (0.53)
Financial management	2.8 (0.64)
Operational management	3.4 (0.76)

IMPLICATIONS FOR PRACTICE

- Nurse managers are not interested in sharing duties or having others cover for them. This may be related to others do not know the job or it will take too much time to train them. This may be a lost opportunity to create supportive experiential learning for future leaders.
- Nurse managers perceive that developing nurse managers need leadership and communication training, but not financial training. This may be representative of an academic medical center.
- Nurse managers behaviors and expressions about their positions may relay an unappealing position that is unattractive to potential nurse managers.

*This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.*

*\*References available.*



# A PILOT STUDY: VIDEO TEACHING DURING GLOBAL HEALTH MISSIONS TO INCREASE NURSE CONFIDENCE

Kevin Mary Callans BSN RN; Elisabeth Croll BSN RN; Kim Whalen MSN RN;  
 Sarah Buck BSN RN; and Jen Samiotes MSN RN  
 Massachusetts General Hospital, Boston, MA

## BACKGROUND AND SIGNIFICANCE

- A team of MGH affiliated physicians, nurses and other health care professionals conducts medical/ surgical care mission trips to deliver care to children with complex airway conditions in developing countries. The team educates in country physicians and nurses so that they are able to provide the same type of care independently.
- During a mission trip to El Salvador, in country nurses expressed a desire to learn how to perform trach care. The contribution of nurses to positive health care outcomes can be undervalued in global health missions.



Cuando para succionar su hijo  
 “When to Suction Your Child”

## PERFORMANCE IMPROVEMENT/OUTCOME

- Ten nurses completed the pre- and post-assessment instrument. The average score increased from 72.2% (an average score of 36.1 out of 50) to 91.2%, an indicator of improved nurse confidence.
- Nurses expressed enthusiasm about taking ownership of their practice and the convenience and ease of watching the teaching videos.

## OBJECTIVES

Improve the confidence of in-country nurses on all aspect of trach care.



## IMPLEMENTATION

- The mission team developed an on-line curriculum to assess learning needs and style of learning of in-country nurses.
- Nurses completed a pre-teaching assessment at the beginning of a Spring 2019 mission.
- Four Spanish-language trach teaching videos were made accessible to nurses by pointing their phone cameras at QR codes posted on the floor. The QR codes are links to a MGH affiliated YouTube hosting site.
- A post-teaching assessment was performed at the end of the mission.



## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Video teaching is a low cost, effective methodology for teaching nurses. Smart phones are widely available in many developing countries. The El Salvador nurses retained access to teaching videos after the mission team left and are able to watch them at their convenience. The mission team can share new Spanish-language videos with in-country nurses by emailing the QR codes. Easy access to teaching videos has wide application in the medical mission field.



IMPLEMENTING AND EVALUATING  
AN URGENT TRIAGE PROGRAM  
IN AN AMBULATORY CANCER CENTER

Julie Cronin, RN, DNP, OCN and Laura Chambers White, RN, MPH  
Massachusetts General Hospital, Boston, MA

BACKGROUND/SIGNIFICANCE

- Emergency Department utilization by oncology patients is high; approximately 300 patients/month.
- Patients present most often M-F, 8am-4pm.
- Approximately 30% of these patients were discharged from the ED.
- Top five symptoms reported in ED: nausea/vomiting, diarrhea, shortness of breath, pain, and fevers.
- Having symptoms triaged by an experienced oncology nurse may have prevented these patients from presenting to the ED.

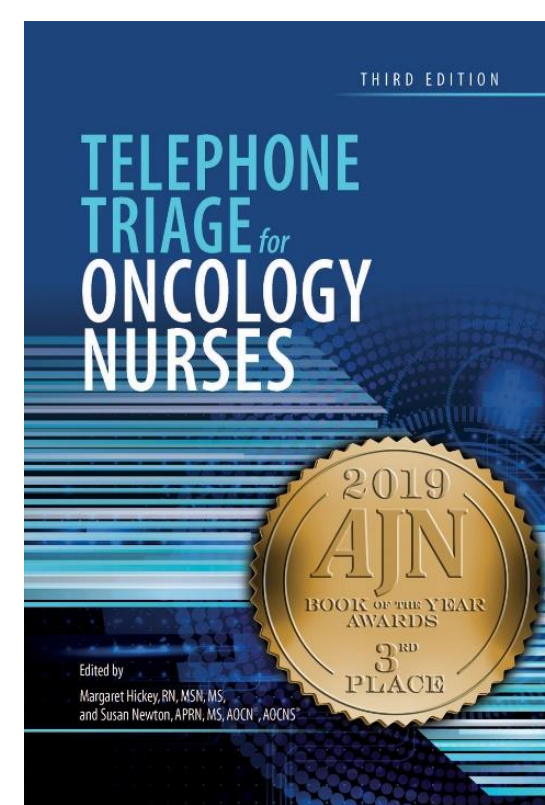
PURPOSE

The purpose of this program was to design an urgent triage call line to allow patients to reach a provider to discuss symptoms before presenting to the Emergency Department. The goals were:

- Decrease ED utilization
- Increase patient satisfaction

INTERVENTIONS

- A multidisciplinary task force was formed to design this program. The ONS Telephone Triage for Oncology Nurses 3rd edition book was used to inform the process of nursing triage.
- Triage assessment criteria and EHR standard documentation was developed.
- Nurse training occurred over two-month period and the “pilot” phase occurred over three months.
- A prompt was added to the Cancer Center telephone line to alert patients of new triage line availability.
- “Urgent” appointment slots were added into daily provider schedules to allow for same day visits. Each disease team decided on a “centralized” vs. “decentralized” model for managing patient calls.



DISEASE TEAMS

**Decentralized:** Head and Neck, Neuro Onc, Melanoma, Thoracic, GI, Sarcoma

**Centralized:** Gyn Med Onc, Breast, Lymphoma, Myeloma, Benign Heme, GU

EVALUATION

- An urgent triage nurse is available from 8am-4:30pm, M-F.
- Number of calls received from March to December: 3,624.
- Number of urgent same day appointments booked: 810.

- Data shows the number of patients that presented to the ED overall has increased.
- However, the number of patients being discharged from the ED has decreased.
- *This indicates the number of patients that are clinically appropriate to receive care in the ED is improving.*

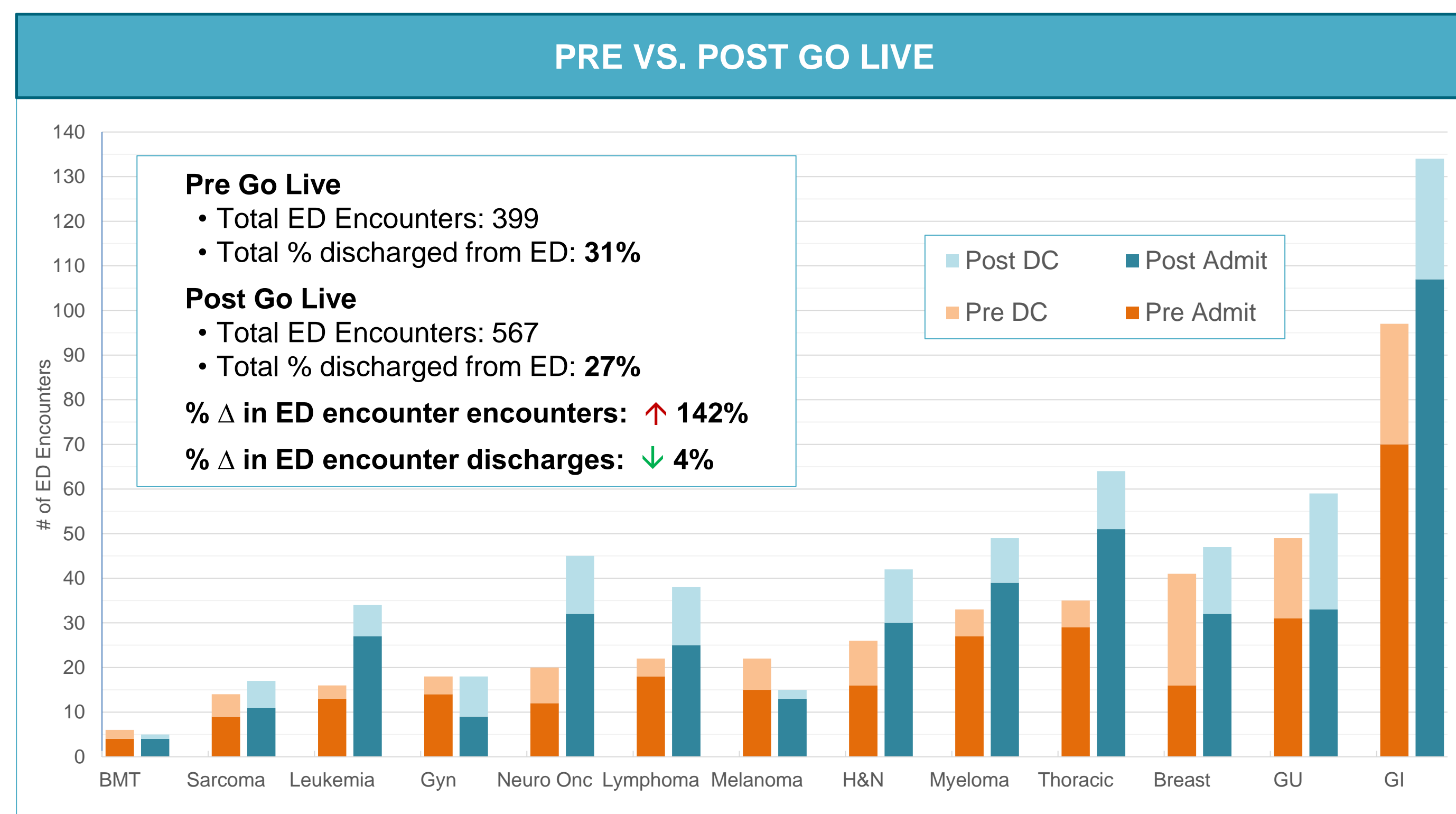
- Patients report increased satisfaction with being able to connect to an experienced clinician.

CALL CENTER DATA	
Baseline Cancer Center Call Center volume:	4,200–4,500 calls per week
Newly implemented urgent line volume (March-June):	• Total 1,976 calls to urgent line • ≈164 calls per week
Peak times for calls:	11:00am and 2:00pm

DEPARTMENTAL DATA

- Decentralized groups that booked the highest percentage of same day appointments reduced ED discharges to home.
- The department, as a whole, is successfully taking care of more of our patients in the ambulatory setting.
- Utilization of same day slots was low overall. There was a trend towards increased same day slots and decreased ED discharge as a percent of overall ED use.

DISEASE GROUP	PERCENTAGE OF APPTS BOOKED SAME DAY	CHANGE IN ED DISCHARGES TO HOME
GU	1.27%	↑ 7%
Breast	1.92%	↓ 29%
Myeloma	2%	↓ 12%
Lymphoma	2.17%	↑ 16%
Thoracic	1.59%	↑ 3%
Neuro Onc	1.91%	↓ 11%
H&N	2.27%	↓ 9%
Melanoma	2.33%	↓ 19%
GI	3.84%	↓ 8%
Sarcoma	4.05%	↓ 1%



DISEASE TEAM EXAMPLES

DISEASE TEAM:	BREAST	GI	MELANOMA
Call Center	Centralized	Started Centralized → Decentralized as of June 2019	Started Centralized → Decentralized as of April 2019
Percentage of Same Day Appointments booked March–June	1.92%	3.84%	2.33%
Pre Go Live <ul style="list-style-type: none"><li>• Total ED Encounters:</li><li>• Total % discharged from ED:</li></ul>	• 41 • 61%	• 97 • 28%	• 22 • 32%
Post Go Live <ul style="list-style-type: none"><li>• Total ED Encounters:</li><li>• Total % discharged from ED:</li></ul>	• 47 • 32%	• 134 • 20%	• 15 • 13%
% Δ in ED encounter discharges to home:	↓ 29%	↓ 8%	↓ 19%

INNOVATION

- This program encourages patients to speak with a provider before utilizing the emergency department.
- This program will continue to evolve with the goal of keeping patients from seeking care in the Emergency Department when their care can be managed in alternative ways.

TEAM:

**Administration**

Beth Souza, Judie Panagiatopoulos, Colleen Anderson, Kevin Lynch

**Quality and Safety**

Therese Mulvey, Anne Chang Strickland

**Infusion Center (Yawkey 8)**

Julie Cronin, Laura Chambers White, Phil Saylor

**Leadership Team**

Erika Rosato, Kellyann Jeffries, Roni Woods, Ephraim Hochberg

**Clinical Team**

Brianne McGree NP, Sara Stevens NP, Jennifer Ackil NP, Mary McNeice NP, Michelle Knowles NP

REFERENCE:

Oncology Nursing Society (2019). Telephone Triage for Oncology Nurses Third Edition.

*This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.*



# DEVELOPING A LUTATHERA TREATMENT PROGRAM IN AN AMBULATORY ONCOLOGY DEPARTMENT

Laura Chambers White, RN, MPH; Mimi Bartholomay, RN, MSN; Julie Cronin, RN, DNP, OCN;  
Julie Conlin, RN; John Opolski, RN; Shelia O'Donoghue, RN  
Massachusetts General Hospital, Boston, MA

## BACKGROUND/ SIGNIFICANCE

- Lutetium Lu 177 Dotatate (Lutathera) was approved in 2017 to treat adults with somatostatin positive gastroenteropancreatic neuroendocrine tumors (GEP-NETS).
- Prior to approval patients had limited treatment options.
- Treatment with Lu-Dotatate resulted in increased progression free survival and a higher response rate than high dose Octreotide LAR in this patient population, allowing systemic radiotherapy to be delivered directly to tumor cells.

## OBJECTIVES

- The purpose of this program was to design and implement a Lutathera treatment program in an ambulatory oncology department.
- Components to training included Lutathera overview, pretreatment work up, side effects, room preparation, treatment plan review, patient teaching, role of nuclear medicine and role of nursing.

This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.

## WHAT IS LUTATHERA?



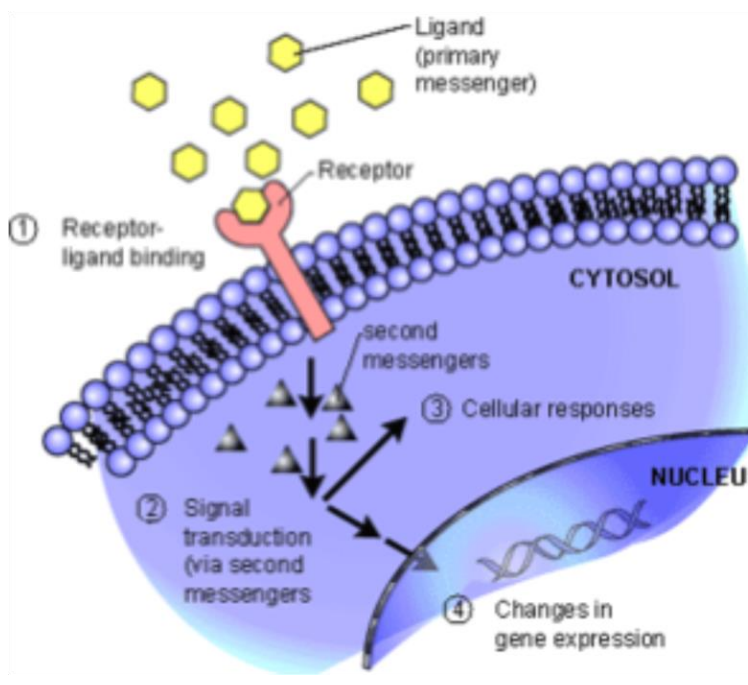
- Lutetium Lu 177 dotatate
- Approved (2017) for use in the US to treat adults with gastroenteropancreatic neuroendocrine tumors (GEP-NETs) that are somatostatin positive
- Systemic radiotherapy that allows the delivery of radionuclides directly to the tumor cells
- Infusion given q 8 weeks x 4 treatments with an Amino Acid infusion as a kidney protectant, and anti-emetics to manage nausea

### SIDE EFFECTS

- Nausea & vomiting (primarily r/t amino acid infusion)
- Myelosuppression
- Hepatotoxicity (<1%)
- Renal Toxicity (<1%)
- Hypokalemia
- Infertility (permanent or temporary)
- Hyperglycemia
- Carcinoid Crisis (<1%)

### THE LUTATHERA TREATMENT

- For neuroendocrine tumors with somatostatin receptors
- Radiopharmaceutical drawn into cell
- Targeted therapy or "PRRT"



### LUTATHERA ORDER SET

LUTATHERA 177 DOTATATE

1. Check for contraindications (see below)

2. Check for allergies (see below)

3. Check for renal function (see below)

4. Check for liver function (see below)

5. Check for electrolyte levels (see below)

6. Check for pregnancy status (see below)

7. Check for current medications (see below)

8. Check for current lab results (see below)

9. Check for current vital signs (see below)

10. Check for current patient history (see below)

11. Check for current patient education (see below)

12. Check for current patient consent (see below)

13. Check for current patient assessment (see below)

14. Check for current patient intervention (see below)

15. Check for current patient evaluation (see below)

16. Check for current patient follow-up (see below)

17. Check for current patient discharge (see below)

18. Check for current patient referral (see below)

19. Check for current patient consultation (see below)

20. Check for current patient collaboration (see below)

21. Check for current patient communication (see below)

22. Check for current patient participation (see below)

23. Check for current patient involvement (see below)

24. Check for current patient engagement (see below)

25. Check for current patient empowerment (see below)

26. Check for current patient self-management (see below)

27. Check for current patient self-efficacy (see below)

28. Check for current patient self-regulation (see below)

29. Check for current patient self-advocacy (see below)

30. Check for current patient self-empowerment (see below)

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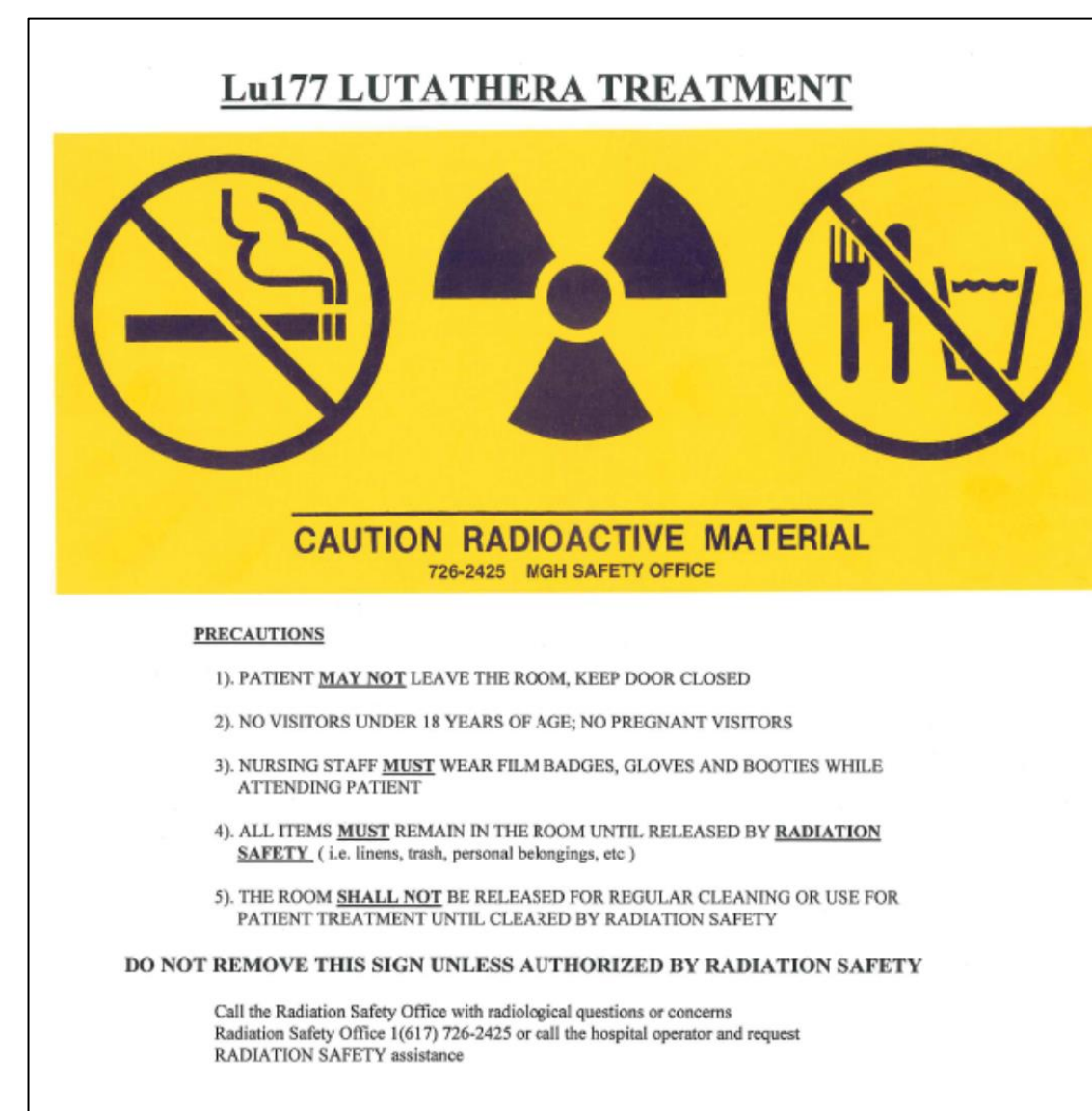
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### RADIATION SAFETY PRECAUTIONS

- Indicates *potential* hazard
- No pregnant staff without approval of Radiation Safety Officer (RSO)
- Do not enter room with sign (or comparable one) unless you have had Lutathera/Radiation Safety training
- Staff entering room will have radiation badges provided by RSO
- Radiation limits:
  - Occupational limit 5000 mrem/year
  - Public or Occasional limit 100 mrem/year
  - KUB = 650 mrem
  - ~1.6 mrem per case
- PPE: Chemotherapy PPE + booties
- Waste bins: Red waste bins
- ALARA – Keep exposure “As Low As Reasonably Achievable”



## IMPLEMENTATION

- Program development involved a collaborative team including Nursing, Physician, Pharmacy, Nuclear Medicine, Radiation Safety and Administrative leadership across inpatient, ambulatory, oncology and emergency services.
- The process began with interdisciplinary meetings to review patient treatment criteria, patient flow, management and medication administration during clinical trials.
- Nursing education included an overview of disease pathology, specifics of medication administration, symptom management, a review of carcinoid crisis, treatment procedures and basic radiation safety teaching.
- Protocols were developed in collaboration with leadership from the emergency department (ED) to prepare for rapid patient transport in the event of carcinoid crisis or an ED visit after treatment.

## PERFORMANCE IMPROVEMENT/OUTCOME

- Approximately one year following implementation, in total, 15 nurses were trained to care for patients receiving Lu-Dotatate.
- Over 30 individual patients have been treated with 75+ total treatments administered.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

- Interdisciplinary collaboration and planning have allowed for a successful treatment program in an ambulatory care department.
- Treatment options continue to be evaluated for appropriateness and safety to be administered in the ambulatory setting.
- Ensuring proper training and preparation can facilitate successful implementation of programs such as Lutathera in an ambulatory setting.



# IMPLEMENTATION OF A STANDARDIZED ELECTRONIC HANDOFF TOOL FOR ADVANCED PRACTICE PROVIDER PASS-OFF

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Massachusetts General Hospital, Boston, MA

## BACKGROUND

- The goal of this project, was to implement a standardized electronic handoff tool, for advance practice providers (APPs) to use at the time of patient transfer to and from the Neurology Intensive Care Unit (ICU).
- A comprehensive literature review showed that there was minimal literature on handoff tools for APPs, and presently, there was no formal handoff process for patients transferring from a neurology ICU.
- It is estimated that there are approximately 210,000–255,000 deaths per year related to medical errors<sup>1,2</sup>. Literature shows that 80% of medical errors are directly related to miscommunication by healthcare providers at the time of patient transfer<sup>3</sup>.
- By standardizing communication, providers are able to communicate in a more concise manner, leading to a decrease in medical errors, preventable adverse events, sentinel events, healthcare spending, and an increase in provider satisfaction<sup>4,5,6</sup>.

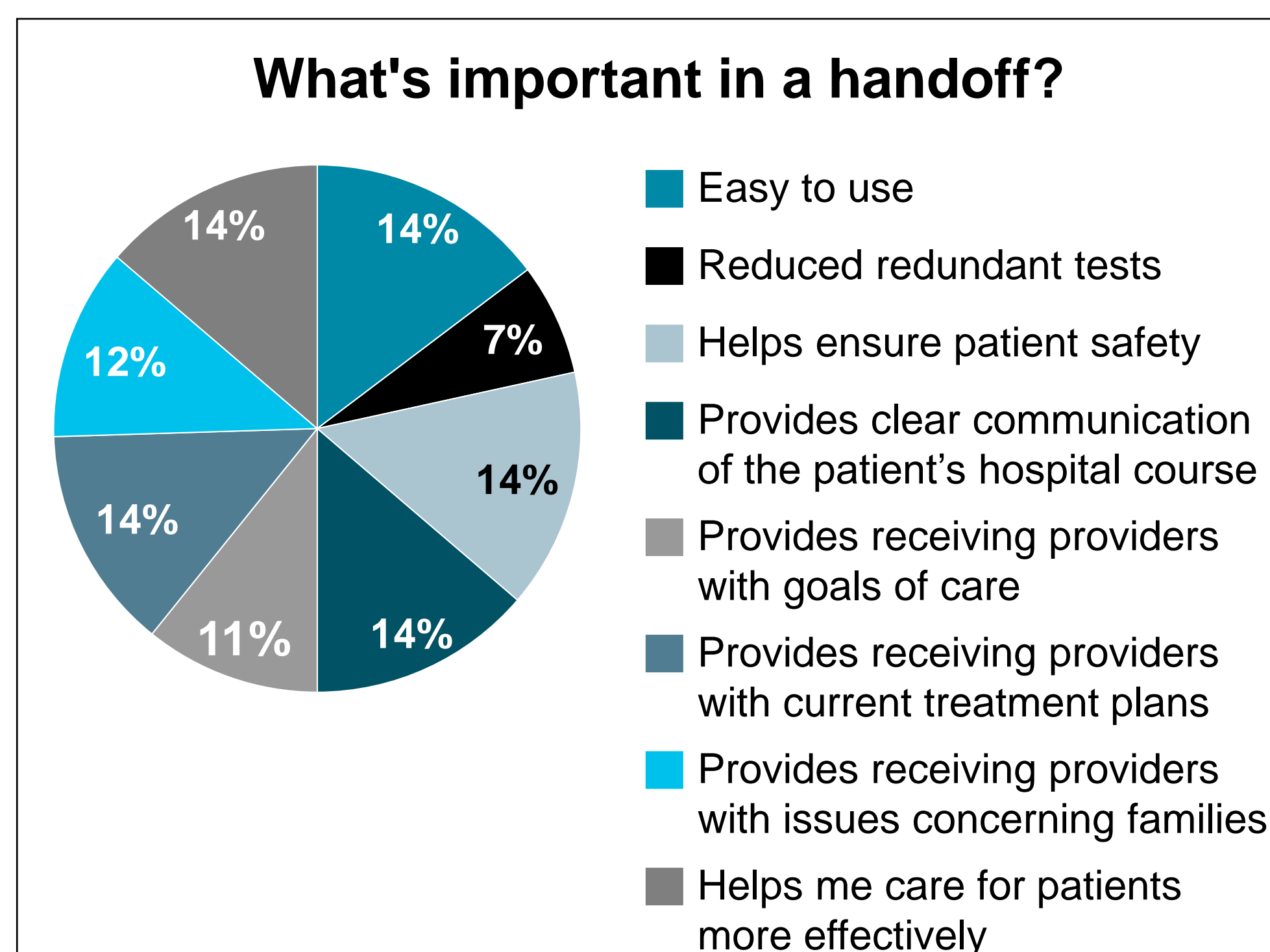
## OBJECTIVES

The primary objective of this quality improvement project was to increase the rate of documentation by APPs using a standardized handoff tool for patients transferring from the neurology ICU. Secondary objectives include:

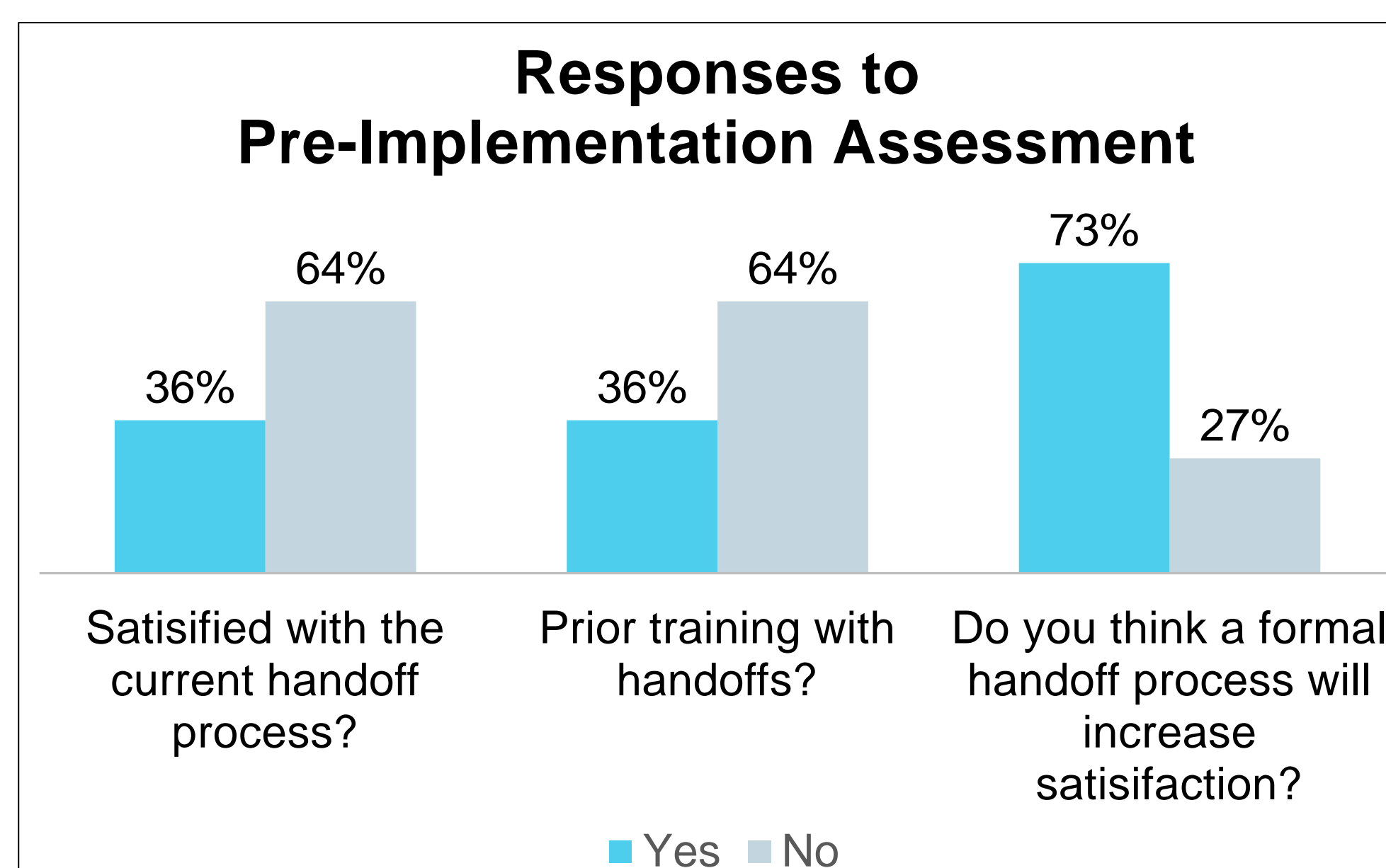
- Complete a comprehensive literature review.
- Implement a pre-project needs assessment of the APPs in both the neuro ICU and neurosciences floor.
- Implement the electronic handoff tool into the electronic health record for all neurosurgery patients transferring to and from the neuro ICU to the neurosciences floor.
- Evaluate APP satisfaction with the electronic handoff tool and new handoff process.

## METHODS

- A comprehensive literature review was completed, to help guide the design and population of the electronic handoff tool.
- Prior to implementing the new electronic handoff tool, a needs assessment was electronically sent to the APP participants.
  - What is your current handoff process?
  - Are you satisfied with your current handoff process?
  - What is important to you in a handoff?

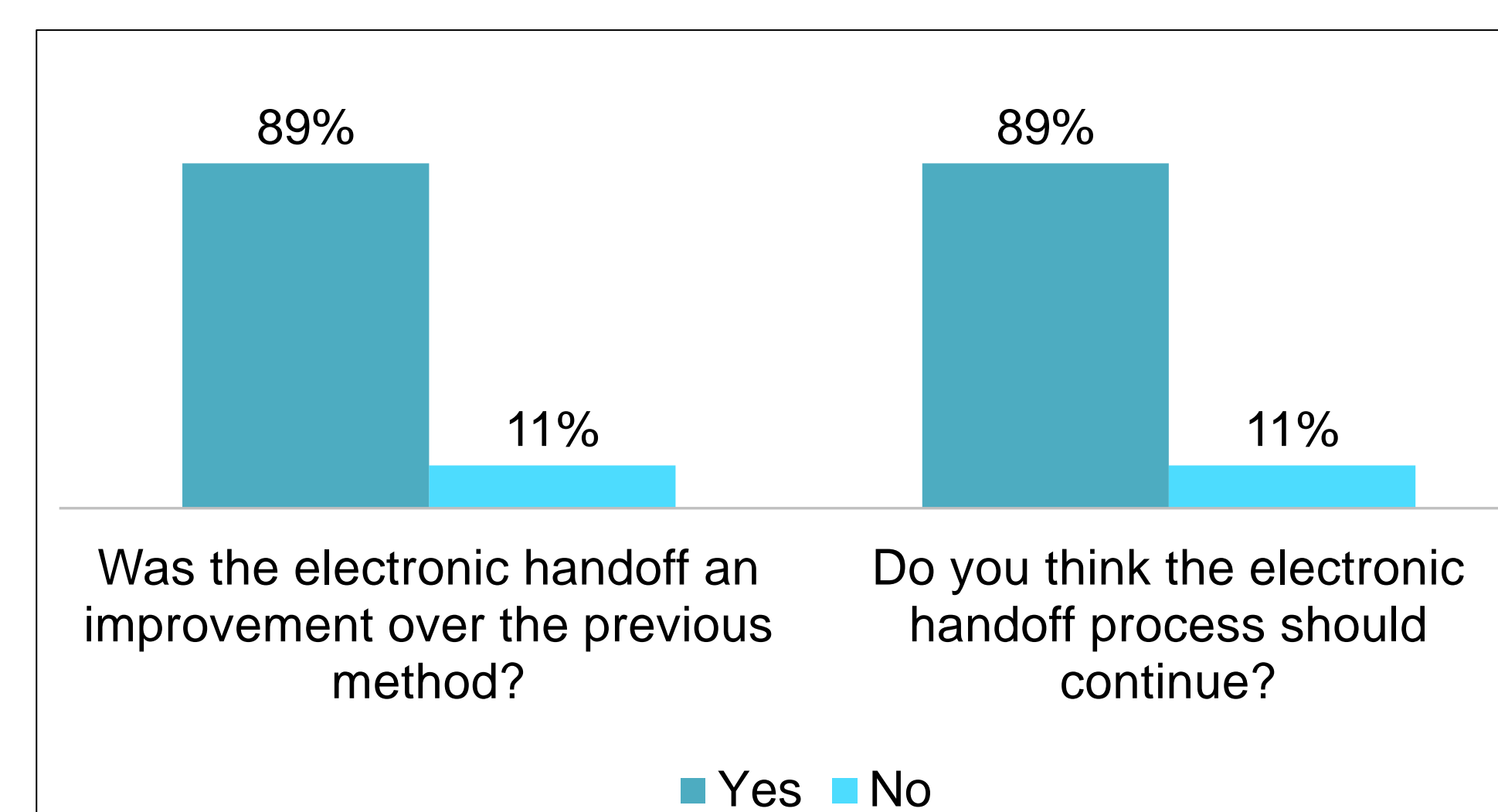


- Implementation of the electronic handoff tool, which was completed between 12/01/2019–01/31/2020.
  - Each APP was provided with access to and education on the standard smart phrase.
- Once the implementation was completed, a post-assessment was electronically sent to the participants.
  - Do you think the electronic handoff tool was an improvement over your previous handoff method?
  - How satisfied were you with the electronic handoff tool?
  - Do you think the handoff process should continue?

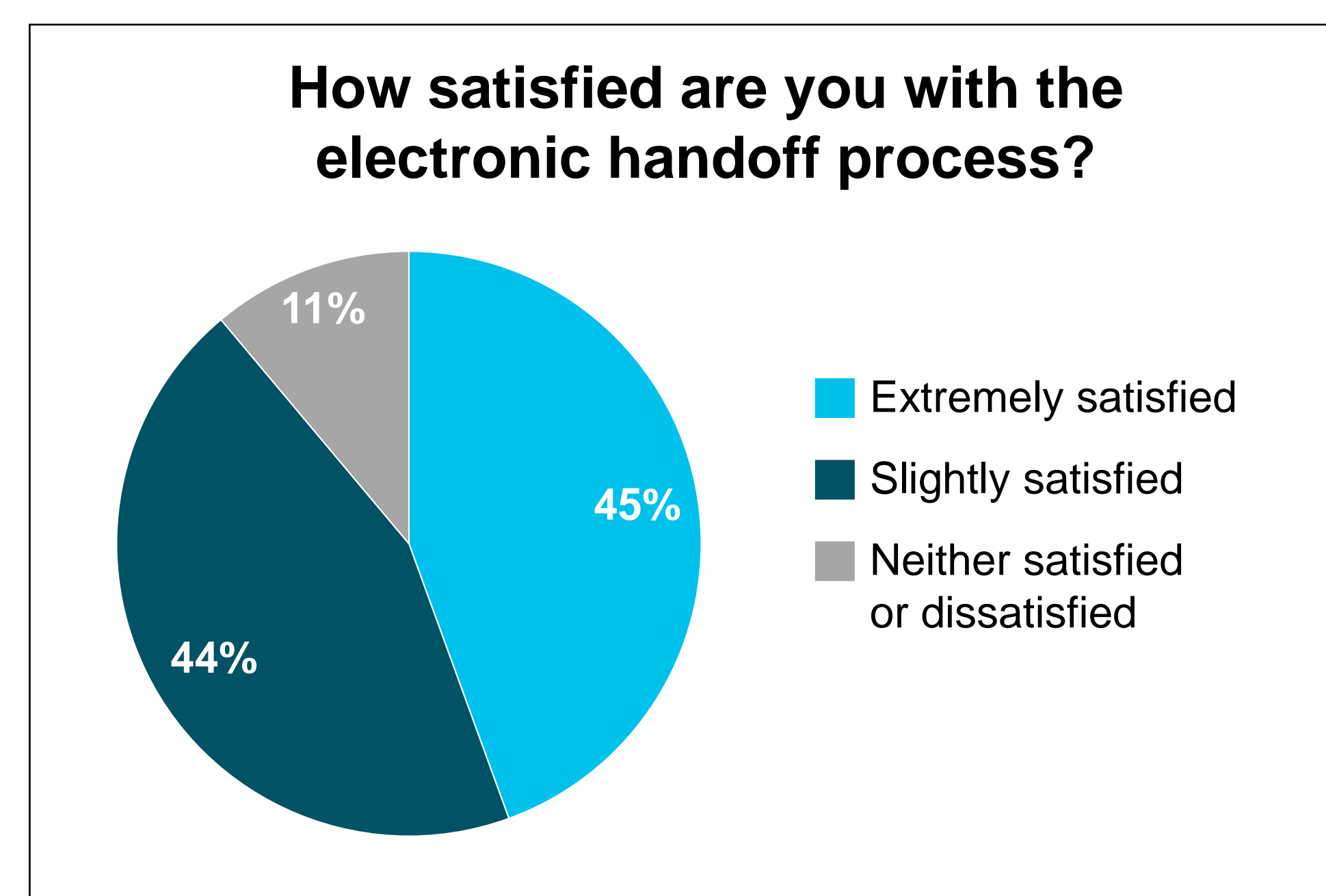


## RESULTS

- The quality improvement implementation was implemented between 12/01/2019–01/31/2020.
- During that time there were:
  - 66 total handoffs completed.
  - 105 total neurosurgery patients were transferred.
  - 63% of neurosurgery patients transferred with completed electronic handoffs.
- Results from the post-implementation assessment:



- The results showed that:
  - 89% of participants were satisfied with the handoff tool.
  - 53% increase in satisfaction over previously used method.
  - 16% increase in satisfaction when compared to perception in pre-assessment.



## PERFORMANCE IMPROVEMENT/OUTCOME

- Twelve APPs participated in the implementation.
- Of the 11 APPs who completed the pre-assessment, 65% were unsatisfied with the existing handoff process, and 73% felt that a standardized electronic tool would increase job satisfaction.
- During the implementation period, there was documentation using the electronic handoff tool for 66 of the 173 transfers (38%), involving 63% of all neurosurgery patients.
- Nine APPs completed the post-assessment, of which 8 (89%) felt extremely satisfied or some what satisfied with the handoff tool because they perceived improvements in care processes.

## DISCUSSION/IMPLICATIONS FOR PRACTICE

- The implementation of an electronic handoff process resulted improvements in APP satisfaction with the transfer process and in perceived improvements in patient care.
- This practice change has the potential to enhance communication between APP groups through standardization of processes and information.
- More investigation is required to determine its impact on mitigating medical errors.

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This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.



# CREATING A CULTURE OF RESILIENCY AND IMPROVING RETENTION AMONG CRITICAL CARE NURSES

Catherine Cusack, BSN, RN, CCRN; Brittney Barron, MS, CNP;  
Victoria Patterson, MS, RN, CNL, CCRN; Laura R. Lux, MS, RN, CCRN  
Massachusetts General Hospital, Boston, MA

## BACKGROUND

- Nurses play a critical role in healthcare
- Evidence supports nursing retention aligns with positive patient outcomes
- Critical care nurses are vulnerable to turnover
- Moral distress is linked to decreased job satisfaction
- Unit-specific full time RN turnover rate was 44.4% in 2018

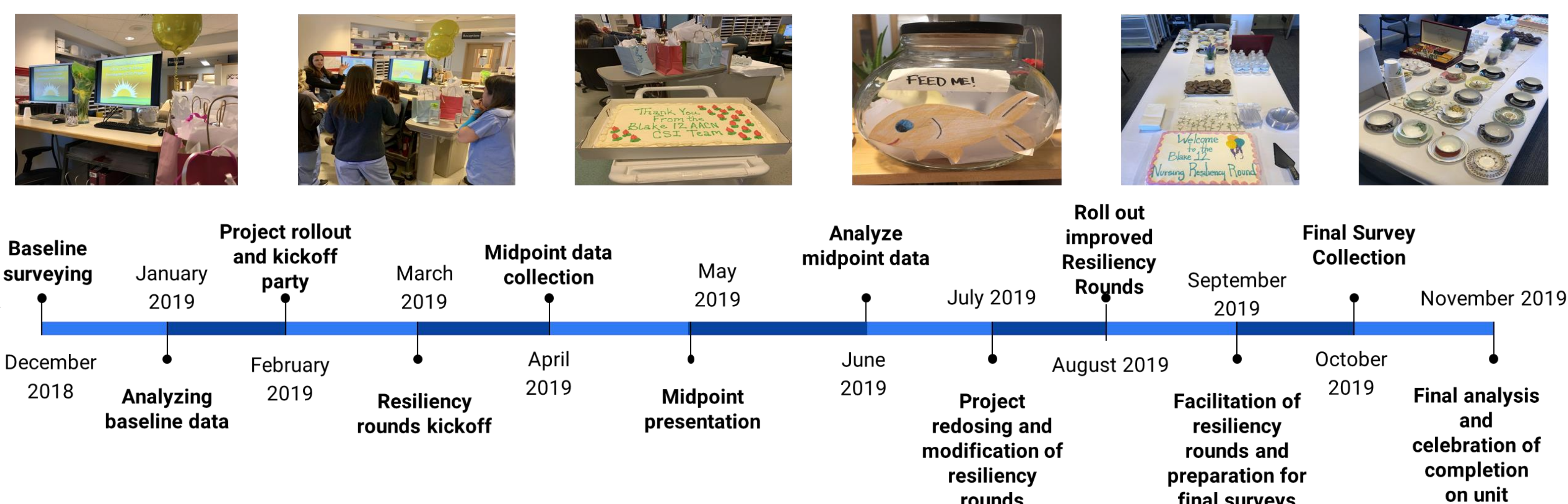
## PURPOSE

Create a culture of resiliency evidenced by a decrease in unit turnover and increase in satisfaction and moral distress

## INTERVENTIONS

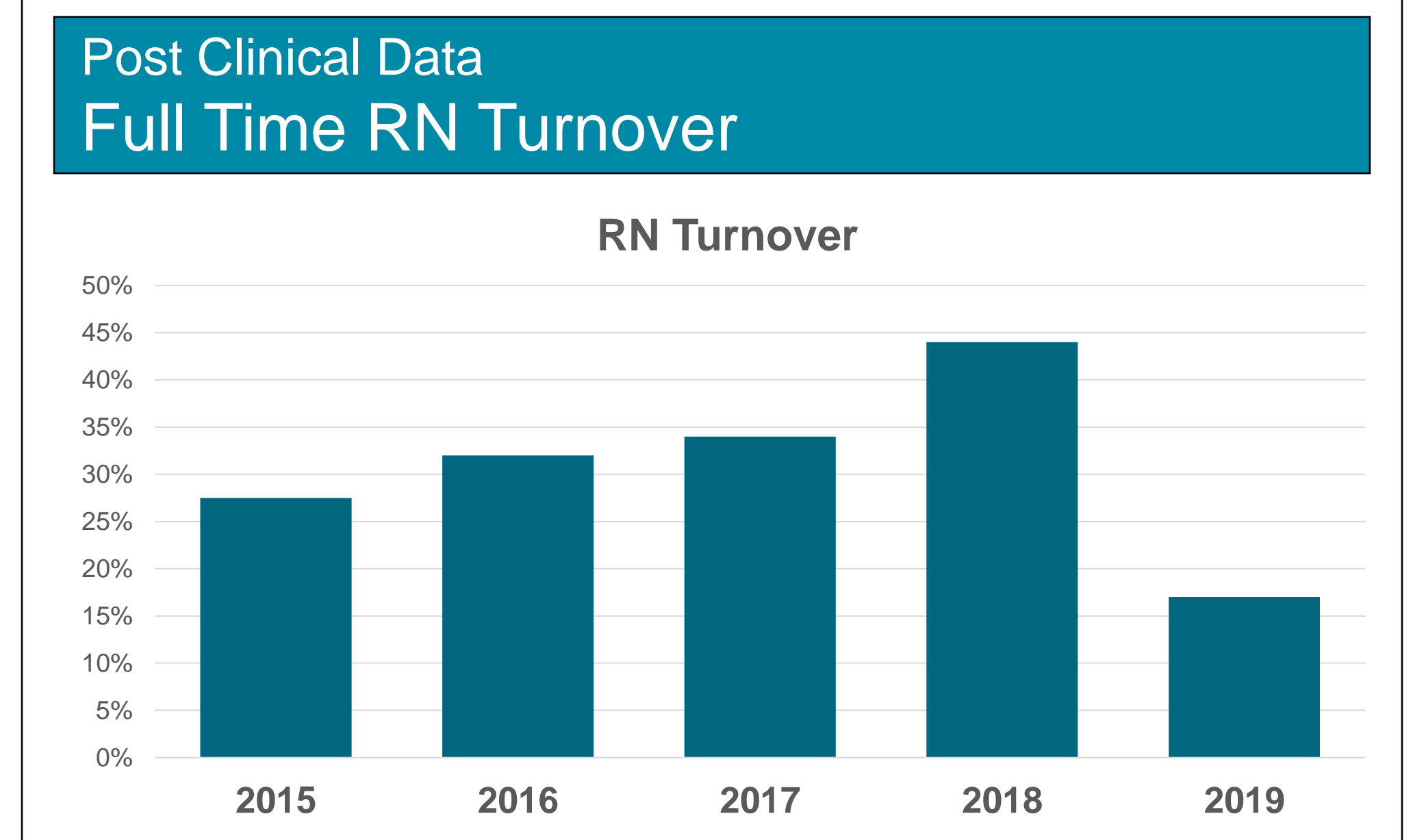
- Measure of Moral Distress Healthcare Professionals Survey
- Healthy Work Environment Assessment Tool
- Job Enjoyment and Satisfaction Survey
- Unit-Based Resiliency Rounds
  - A way for nurses to openly discuss experiences with moral distress, compassion fatigue, and burnout
  - Supported by Unit Leadership and Multi-Disciplinary Team, including the hospital Nurse Ethicist, Chaplaincy, and Social Work
  - Held twice monthly on the day shift and once monthly on the night shift
  - Designated unit champions facilitate communication and interventions
- RN Helper Role
  - A nurse who comes in to provide dedicated assistance to fellow nurses on the unit
  - Does not have a patient assignment
- Meaningful Recognition through a “Fishbowl”
  - Located at the nurse’s station and all staff can write positive experiences
  - Sent out in a weekly email

## KEY ACTIVITIES AND DATES



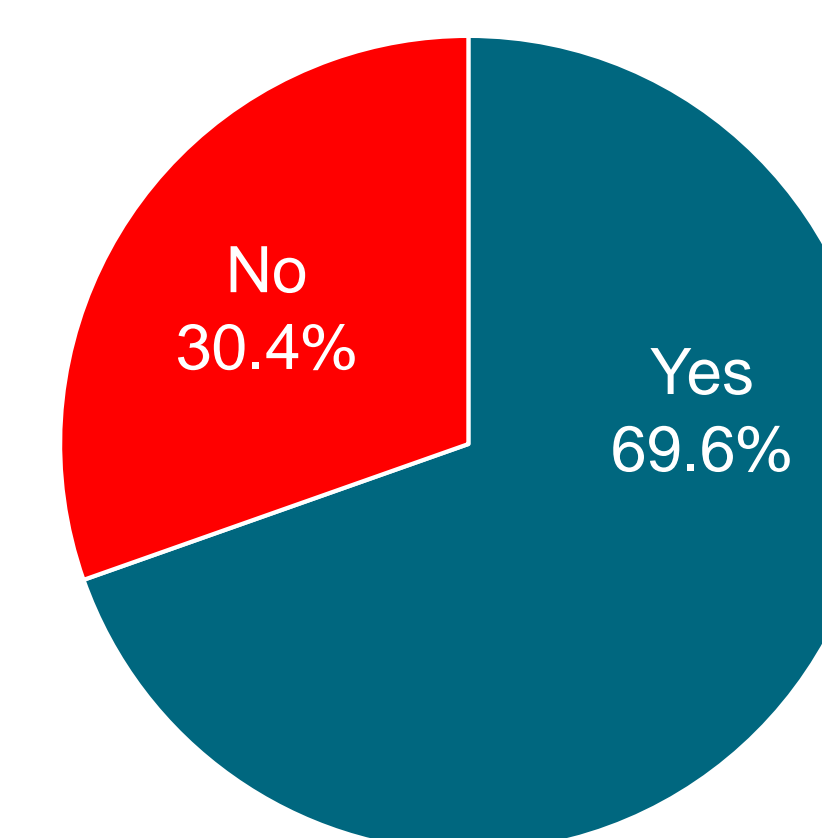
## RESULTS

- Job satisfaction increased to 48.1% from 21%
- Frequency of moral distress decreased to 2.46 from 3.08
- Level of distress reported decreased to 3.13 from 3.42
- 69.6% staff reported resiliency rounds to decrease moral distress
- Unit RN turnover decreased to 18% for 2019



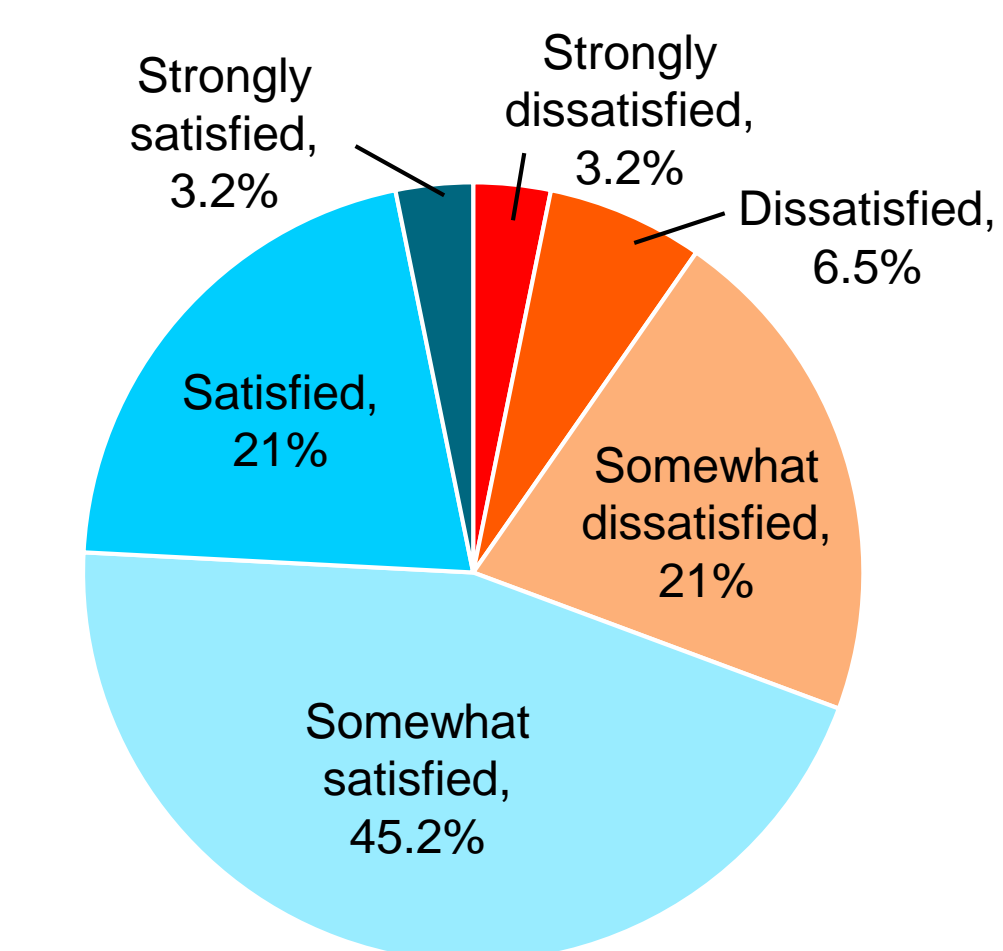
### Post Clinical Data Evaluation of Resiliency

Has resiliency rounds helped decrease your moral distress?

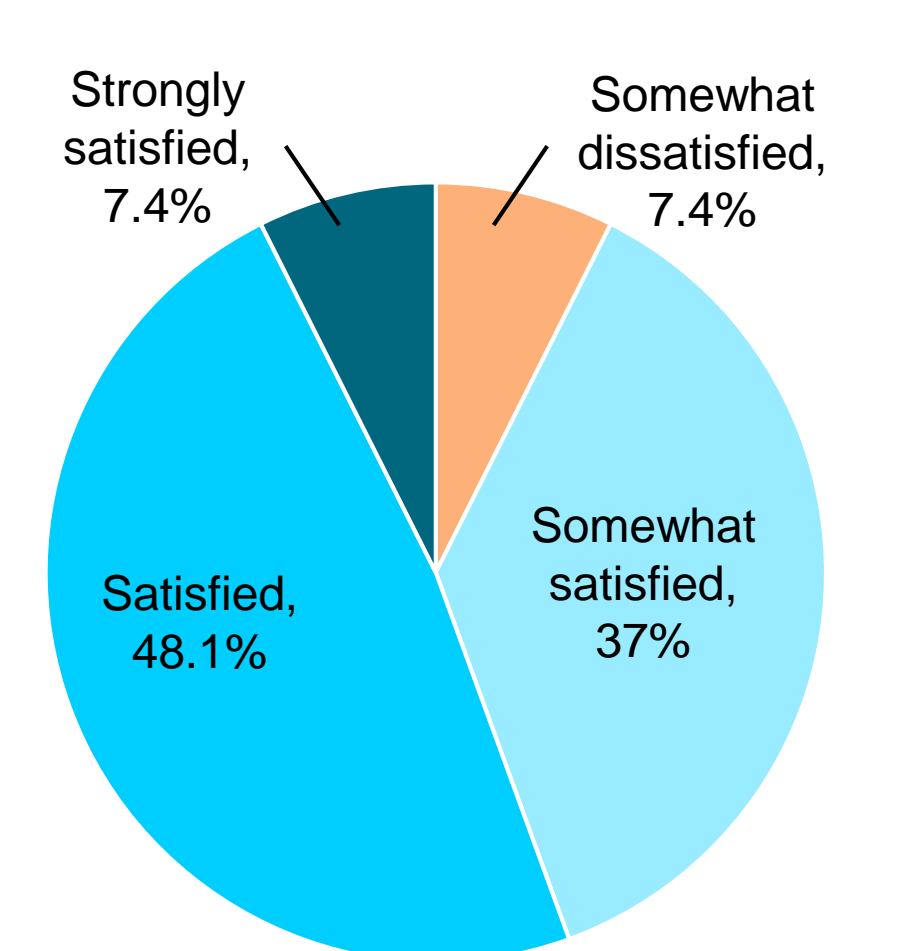


### Post Clinical Data Job Enjoyment and Satisfaction Survey

Baseline RN Job Satisfaction



Post RN Job Satisfaction



## COST SAVINGS

Registered Nurse Turnover Cost (recruitment cost, onboarding, lost productivity): \$52,100			
2018	26 RNs	26 x \$52,100 =	\$ 1,354,600
2019	11 RNs	11 x \$52,100 =	\$ 573,100
Cost Savings after CSI Implementation			\$ 781,500

## IMPLICATIONS FOR FUTURE RESEARCH

- Moral Distress contributes to nurse turnover
- Interventions can decrease moral distress and increase retention

This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.





# NURSE-DRIVEN IMPLEMENTATION OF BUBBLE CPAP IN A UGANDAN NURSERY

Jennifer Duran RN, BS

Neonatal Intensive Care Unit, Massachusetts General Hospital, Boston, MA  
Partner: Mbarara Regional Referral Hospital, Mbarara, Uganda

## BACKGROUND AND SIGNIFICANCE

A leading cause of mortality in the low resource setting is respiratory compromise of the newborn. Bubble Continuous Positive Airway Pressure (bCPAP) has been identified as an effective intervention for respiratory distress. Nurse-driven implementation of bCPAP in the low resource setting has not been well studied.

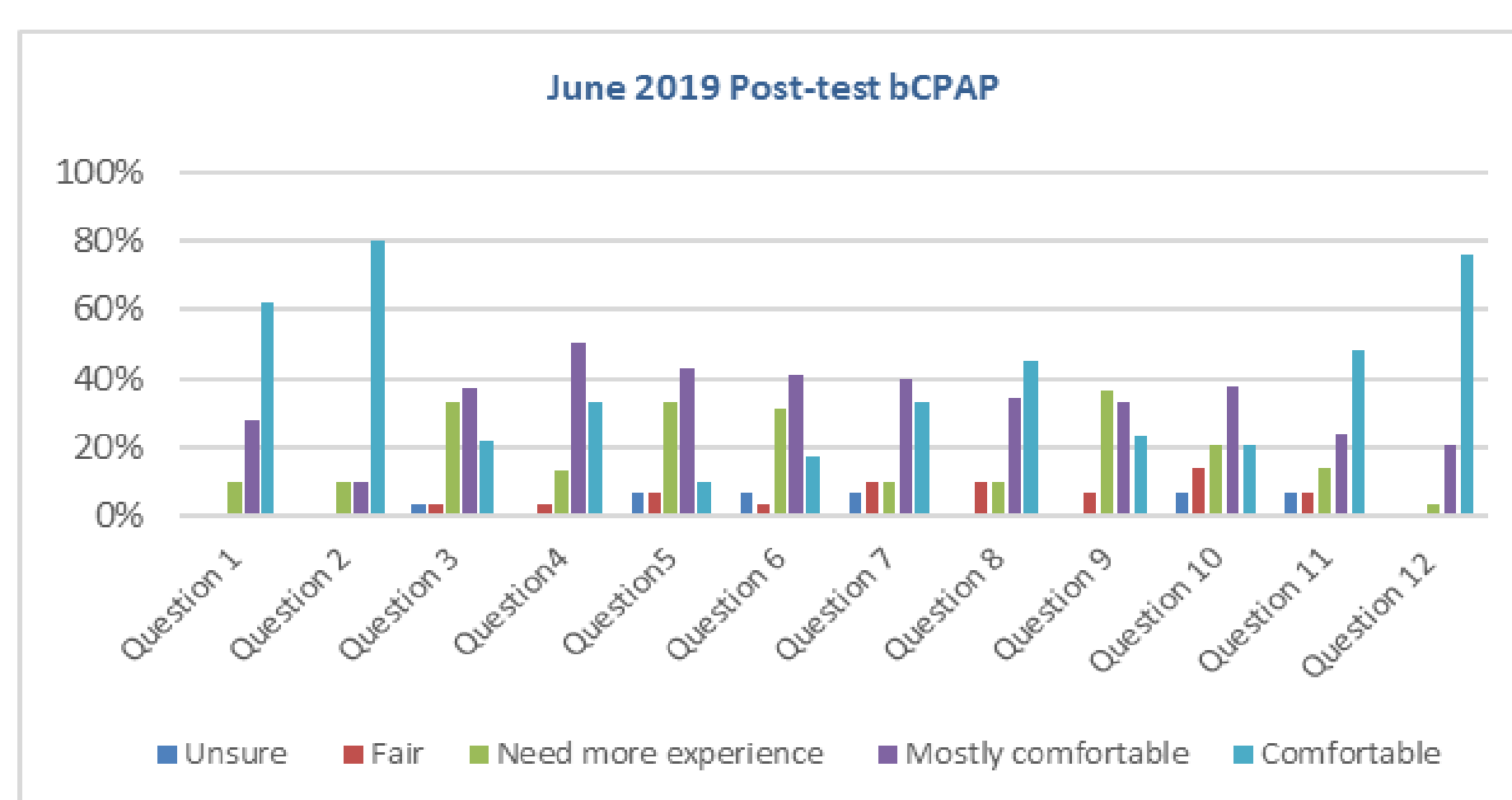
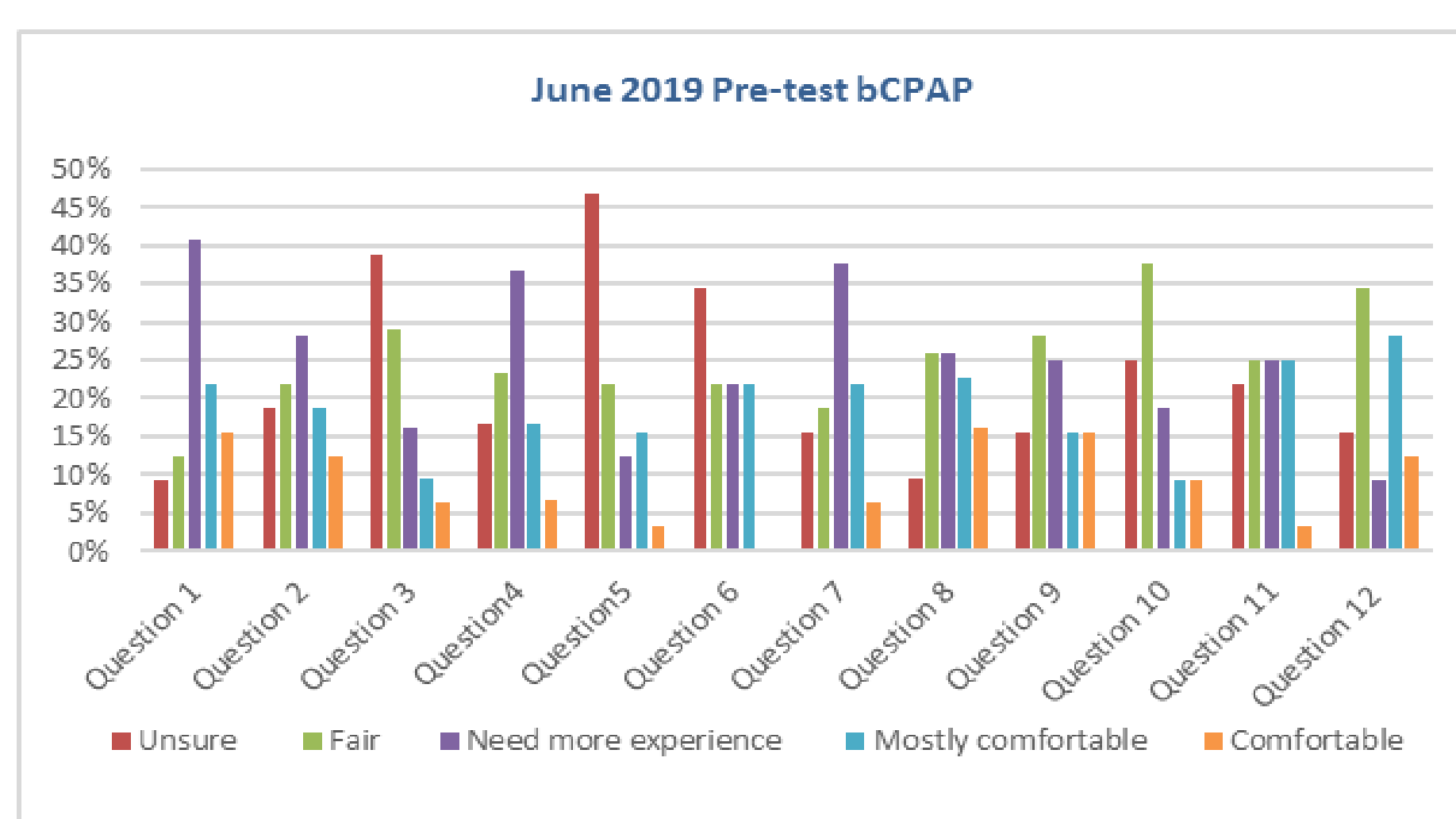
## OBJECTIVE/LEARNING OUTCOMES

- Implementation of bCPAP in a Ugandan nursery through a nurse-driven multi model educational approach.
- Learning outcomes:
  - Determine knowledge gain through written assessment pre/post lecture series
  - Build bCPAP device as a multidisciplinary clinical team
  - Properly assess newborns using the respiratory severity scale (RSS)
  - Describe contraindications for bCPAP use
  - Educate family/caregivers about the benefits and functioning of bCPAP

## IMPLEMENTATION

Participant education:

- 38 clinical healthcare workers
- Pre assessment conducted prior to education to establish baseline knowledge
- Neonatal pathophysiology and physical assessment utilizing the respiratory severity scale (RSS) to determine eligibility for bCPAP
- Written exam conducted after education to evaluate comprehension of concepts
- Participants divided into multidisciplinary groups to assemble bCPAP devices using instructional materials
- Competency skills checklist used to assess accuracy of assembly
- At the completion of the course, assessments were administered and again at three months post intervention



## bCPAP BUILDING SESSION



Device components ready for assembly



NICU nurse facilitates group discussion



Assembly completion demonstrated on neonatal mannequin



Multidisciplinary team assembling bCPAP device



Parents of first baby placed on bCPAP with Dr. Stella and Jennifer



Participants for bCPAP course

## PERFORMANCE IMPROVEMENT/OUTCOME

- Successful completion of the nurse driven didactic and practical sessions enabled learners to identify prospective patients who could benefit from bCPAP. Learners immediately identified four patients that met bCPAP criteria.
- Educational impact was demonstrated by ongoing incorporation of the RSS and physical assessment skills. Additionally, learners recognized contraindications to bCPAP and discontinued use appropriately.

### Participant quotes from the 45 day post assessment survey:

**Question: What are your thoughts on the use of bCPAP in the NICU?**

- "It has greatly improved on the outcome of premature babies with Acute Respiratory distress syndrome"
- "It has helped on service delivery. Babies are no longer referred" "Such a helpful initiative"
- "It is really greatly helping the neonates who need it"
- "After 8 months of bCPAP use, we had our lowest mortality rate of 7%, down from the previous month of 13%. This is the lowest we have ever had! Thank you and may we continue to work together for the better. Our target is less than 5%. We will get there."

Dr. Stella, Lead Pediatrician, February 8, 2020

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Nurse driven education can be used to implement lifesaving therapies in low resource settings. Further research is needed to assess the educational impact on the sustainability of bCPAP and how this influences patient outcomes.

## SPECIAL ACKNOWLEDGEMENT



# IMPROVING ACCURACY OF THE EXPECTED MORTALITY RATE FOR A SERVICE LINE BY TARGETING PRIORITY RISK FACTORS (ICD-10 DIAGNOSIS CODES) – A PILOT PROGRAM

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<sup>1</sup>Case Management, Massachusetts General Hospital, Boston, MA

<sup>2</sup>MGH/MGPO Edward P. Lawrence Center for Quality and Safety

## BACKGROUND AND SIGNIFICANCE

- The mortality observed-to-expected (O/E) ratio for a service line within our institution was higher than that of peer institutions.
- Risk-adjustment mortality outcomes are common metrics used in assessing hospital quality performance both internally and externally in rankings such as U.S. News Best Hospitals.
- One approach to improving risk-adjusted mortality outcomes is to ensure the accuracy of the expected rate by targeting specific comorbidities that may be under-captured when compared to peer hospitals.

## OBJECTIVE

Increase the capture and coding of specific priority risk factors (ICD-10 secondary diagnoses) at or below the national median.

## IMPORTANCE OF DOCUMENTATION

- Medical documentation of patient comorbid conditions is a primary factor that affects risk-adjusted mortality outcomes.
- The Elixhauser comorbidity index is a well-known and cited method of categorizing patient comorbidities based on ICD diagnosis codes.
- Use of Elixhauser has gained traction in national hospital quality circles as it is now a main factor within the US News risk adjustment methodology.

## DIFFERENCES IN RISK MODELS

### Example Risk Factors in 2020



**Elixhauser comorbidities** (secondary diagnoses), Base DRG, patient demographics, dual-eligibility, etc.



AHRQ CCS categories (ICD-10 diagnosis and procedure codes), patient demographics, admission source, etc.



“Clinically pertinent” ICD-10 diagnosis and procedure codes, patient demographics, admit source, payer, etc.

## METHODS

- Analyze capture rates for Elixhauser comorbidities using Vizient Clinical Database for MGH and peer AMCs.
- Prioritize those with capture rates below the peer group median.

### Example: **Fluid & Electrolyte Disorders:**

26% of Medicare FFS discharges had a secondary diagnosis of fluid and electrolyte disorders (FY16-18).

- MGH capture rate: 26%
- AMC median: 33%

- Create **CDI Guide**

- Organized by body system
- Grouped by Elixhauser comorbidity
- Drill-down to ICD-10 diagnosis level
- Priority risk factors flagged

Metabolic		
E8771	Transfusion-assoc. circulatory overload	
E860	Dehydration	
E861	Hypovolemia	
E869	Volume depletion, unspecified	
E870	Hyperosmolality and hypernatremia	
E871	Hypo-osmolality and hyponatremia	
E872	Acidosis	
E873	Alkalosis	
E874	Mixed disorder of acid-base balance	
E875	Hyperkalemia	
E876	Hypokalemia	
E8770	Fluid overload, unspecified	

- Increase **CDI Team Education** and raise awareness of these priority risk factors *regardless* of impact to revenue.

## CDI QUERY EXAMPLE

Patient name  
MRN  
The clinical documentation for *patient name* has prompted this request.

**Please provide a corresponding diagnosis for the decreased sodium level.**

{“Hyponatremia”, “Other explanation of clinical findings, please specify\*\*\*”, “Unable to clinically determine”}

We are making this request because the medical record includes the supporting facts below:

Clinical Indicators:

3/17: NA 130

3/18 NA 131

3/19 NA 134

Risk Factors: hydrochlorothiazide, abnormal renal function

Treatment: Sodium chloride 0.9% bolus 500ml, Trending Sodium, Held ARB/HCTZ combo

Moving forward, please document in your progress note and/or discharge summary.

Thank you in advance,  
CDI Specialist, RN

## CDI PROCESS

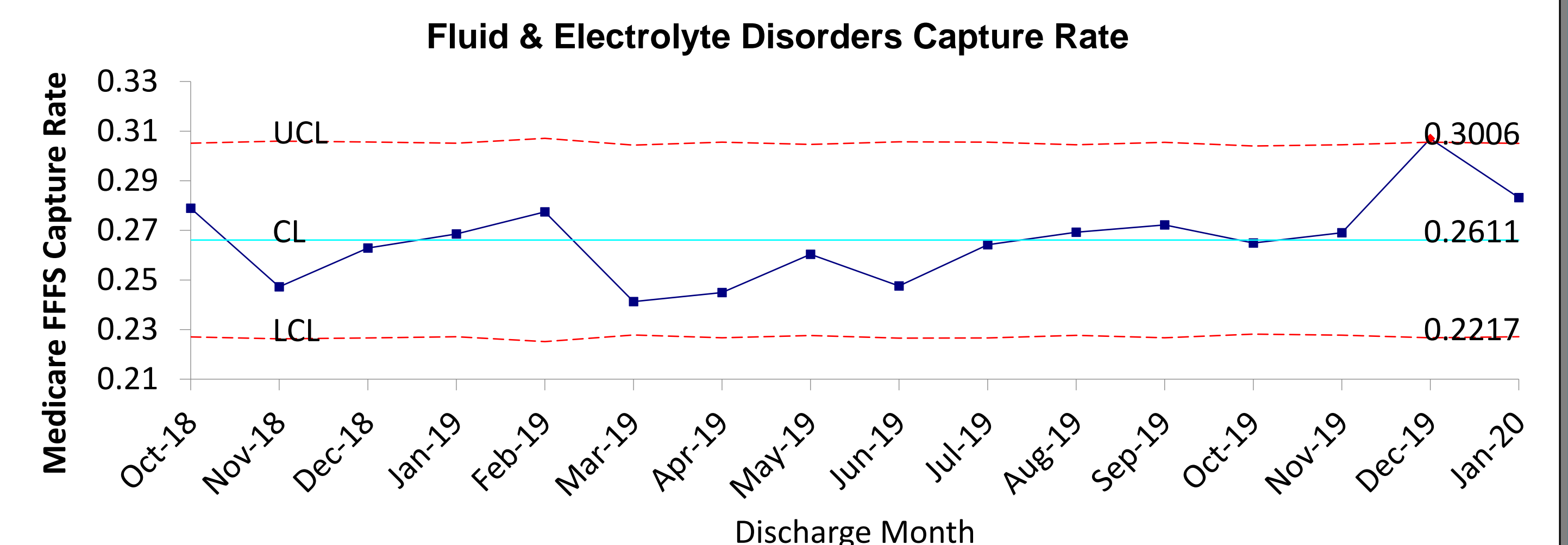
- CDI reviews all lab results for abnormal findings. The nurse will send an electronic query to the physician in EPIC, requesting the documentation of appropriate diagnosis (e.g. hyponatremia, hypokalemia).
- All fluid and electrolyte priority risk factor diagnoses are entered into the CDI database.
- The CDS compares the final coded ICD-10 diagnoses against the database to ensure that all have been coded.

## PROCESS MEASURES

Goal 1:	Metric	Baseline	Jan-20	Feb-20
Increase query rate from 12% to 15%	Discharges	140	155	166
	Review Rate	87%	85%	84%
	Queries	16	20	20
	Query Rate	12%	15%	19%

Goal 2:	Metric	Baseline	Jan-20	Feb-20
Increase agreement rate from 83% to 90%	Service X Agreement Rate	83%	90%	83%
	Total Agreement Rates	82%	90%	85%

## PRELIMINARY RESULTS



## IMPLICATIONS

- Increased attention to capturing priority risk factors may be applicable for other service lines who seek to improve performance in risk adjusted mortality outcomes.
- Improved accuracy of expected rates ensure accurate evaluation in national public rankings of quality performance.

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# CREATION OF A NEUROPROTECTIVE DEVELOPMENTAL CARE TEAM AND IMPLEMENTATION OF DEVELOPMENTAL CARE ROUNDS ON A GENERAL PEDIATRIC CARE UNIT

Cathleen Durham RN, MSN, CPN, Susan Riley PT, MS, DPT, PCS, Lara Hirner MS, CCC-SLP, Lori Pugsley RN, BSN, MEd, Lauren Cosgrove MA, OTR/L, Jessica Sorbo MS, CCC-SLP, Taylor Stockstad OTD, OTR/L, Victoria Peake MS, OTR/L, Christine Gooley MS, OTR/L, Jessica Ahonen PT, DPT, PCS, Melissia Tecci MS, CCLS, CIMT, Rebecca Warsofsky MS, CCLS, Ashley Reardon CCLS, Katharine Gerne MA M.Div., BCC, Brian M. French, RN NPD-BC, PhD  
Massachusetts General Hospital, Boston, MA



## BACKGROUND AND SIGNIFICANCE


Neuroprotective developmental care is an evidence-based, best practice standard that uses comprehensive strategies to minimize negative effects of the hospital care environment to maximize patient and family outcomes. Classically associated with premature and critically ill hospitalized infants in the neonatal intensive care environment (NICU), neuroprotective interventions include things like controlling noxious external stimuli, safeguarding sleep, clustering nursing care, optimizing nutrition, and positioning and handling techniques to promote brain development. Family participation in these strategies through education, coaching, and mentoring is essential. Despite known benefits to infants in the NICU, neuroprotective care is not consistently integrated in more general pediatric care environments.

## OBJECTIVES

The primary purpose of this project was to promote developmental care practices, educate parents, families, and unit staff, and enhance individualized care through interdisciplinary discussion and care planning at the bedside.

## IMPLEMENTATION

- A developmental care team consisting of a nursing practice specialist, registered nurse, occupational therapist, speech-language pathologist, physical therapist, child life therapist, and clinical providers was created to identify infants ages 0-6 months that transferred from the NICU or that would benefit from a neuroprotective developmental support.
- Weekly developmental care rounds at the bedside were implemented to integrate parents and enhance individualized infant care through interdisciplinary discussion and care planning.
- A developmental care plan tool was developed to consistently and systematically document recommendations and progress through interventions.



DEVELOPMENTAL CARE PLAN for \_\_\_\_\_

Team Members: ☐ Occupational Therapy ☐ Speech Therapy ☐ Physical Therapy ☐ Child Life

POSITIONING:

☐ Pictures with Child Life to model positioning recommendations

For sleep:

SIDS guidelines

Change orientation in crib at regular intervals

Barriers if unable to tolerate: \_\_\_\_\_

For Play:

ENVIRONMENTAL STRESSORS/SOOTHERS:

Things that stress me out:

☐ Bright lights  
☐ Loud sounds  
☐ Abrupt transitions  
☐ Other: \_\_\_\_\_

Things that help me soothe/make me happy:

☐ Swaddle  
☐ Swaying/bouncing/rocking  
☐ White noise/shushing  
☐ Being held  
☐ Pacifier  
☐ Other: \_\_\_\_\_

☐ Caregivers interested in learning infant massage with OT or Child Life

GENERAL SAFETY:

☐ Crib rails up whenever unattended  
☐ Within arm's reach whenever crib rails down

ADDITIONAL INFORMATION FROM FAMILY AND STAFF (what matters to me and my family):  
\_\_\_\_\_  
\_\_\_\_\_

SLEEP

Safe Sleep:

Safe Sleep Ready? ☐ Yes ☐ No

If no, barriers? \_\_\_\_\_

If yes:  
☐ HOB flat since date: \_\_\_\_\_  
☐ No barriers in bed since date: \_\_\_\_\_

Sleep:

☐ I sleep between cares, let me rest if I am sleeping  
☐ I am working on sleeping through the night  
☐ I am awake between cares, please play with me!

DEVELOPMENTAL PLAY (Skills I'm working on):

Vision:

Skill: \_\_\_\_\_

Supportive Equipment: \_\_\_\_\_

Language/Auditory:

☐ Talk to me during/between cares  
☐ Read to me daily  
☐ Music I like: \_\_\_\_\_

Motor:

(tummy time, supportive sitting, reaching, rolling, etc.)

Skill: \_\_\_\_\_

Frequency: \_\_\_\_\_

Other: \_\_\_\_\_

## PERFORMANCE IMPROVEMENT/OUTCOME

Weekly developmental care rounds began on October 16, 2019 and are ongoing. To date, 22 infants have participated resulting in an aggregate of 72 individualized interventions. The most frequently recommended interventions are safe sleep, language stimulation, and tummy time. Anecdotally, nursing staff and families report increased knowledge of, confidence with, and practice of neurodevelopmental protective care.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Neuroprotective developmental care can be successfully implemented in more general pediatric care areas and are well-accepted by families and staff. Further studies are needed to determine if interventions improve clinical outcomes for these patients.

## RESULTS FOR PARENTAL SURVEY

"I have learned to have patience with my baby."  
"How to do tummy time with a trach and G Tube."  
"The Developmental Care Plan helped me teach my husband how to calm the baby."

### Acknowledgment:

We would like to acknowledge and thank all the families and nurses for their commitment and support to the development and implementation of this quality improvement project.

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USE OF DEXTROSE GEL  
FOR INFANTS WITH HYPOGLYCEMIA  
AFTER 1 YEAR OF IMPLEMENTATION

Susan M O’Sullivan MSN RNC, Kim Francis PhD, RN, PHCNS-BC  
Massachusetts General Hospital, Boston, MA

BACKGROUND AND  
SIGNIFICANCE

Hypoglycemia is one of the most common complications in the first 48 hours of life, which may have lasting neurological consequences if not treated properly. An Evidence Based Practice (EBP) team of staff nurses found strong evidence that use of glucose gel on the buccal mucosa is a beneficial treatment for infants with hypoglycemia. A quality improvement initiative was undertaken to implement the practice of using glucose gel for infants with hypoglycemia.

OBJECTIVES

Determine whether the application of glucose-gel to the buccal mucosa for hypoglycemia decreases infant-mother separation, need for peripheral intravenous (PIV), dextrose and admission to a higher level of care.

IMPLEMENTATION

We first obtained information about the practice from other institutions that had already implemented the gel, we obtained approval from various committees, added gel to our existing hypoglycemia algorithm, EPIC and the policy in ELLUCID and added the gel to the formulary.

- Provider Education included:
- PowerPoints
  - Demonstration with Feedback
  - Flip books
  - Show and Tell of Dextrose Administration
  - Practice ordering and obtaining Gel in EPIC

Use of the glucose gel went live in June 2018.

PERFORMANCE  
IMPROVEMENT/OUTCOME

A 3-month evaluation pre/post glucose-gel demonstrated an 80% reduction in the requirement for PIV dextrose and admissions to a higher level of care as well as lower infant separation from mother. A 1-year review was then undertaken to see if the improvements with using glucose gel was sustained. During the post-gel period (May 2018 – August 2019), 34% of infants received gel and 4% required PIV as compared to the pre-gel period (April 2017 – April 2018) when 13% of infants required a PIV. In total, there was a 69% reduction in PIV dextrose during the 15-month post-gel period.



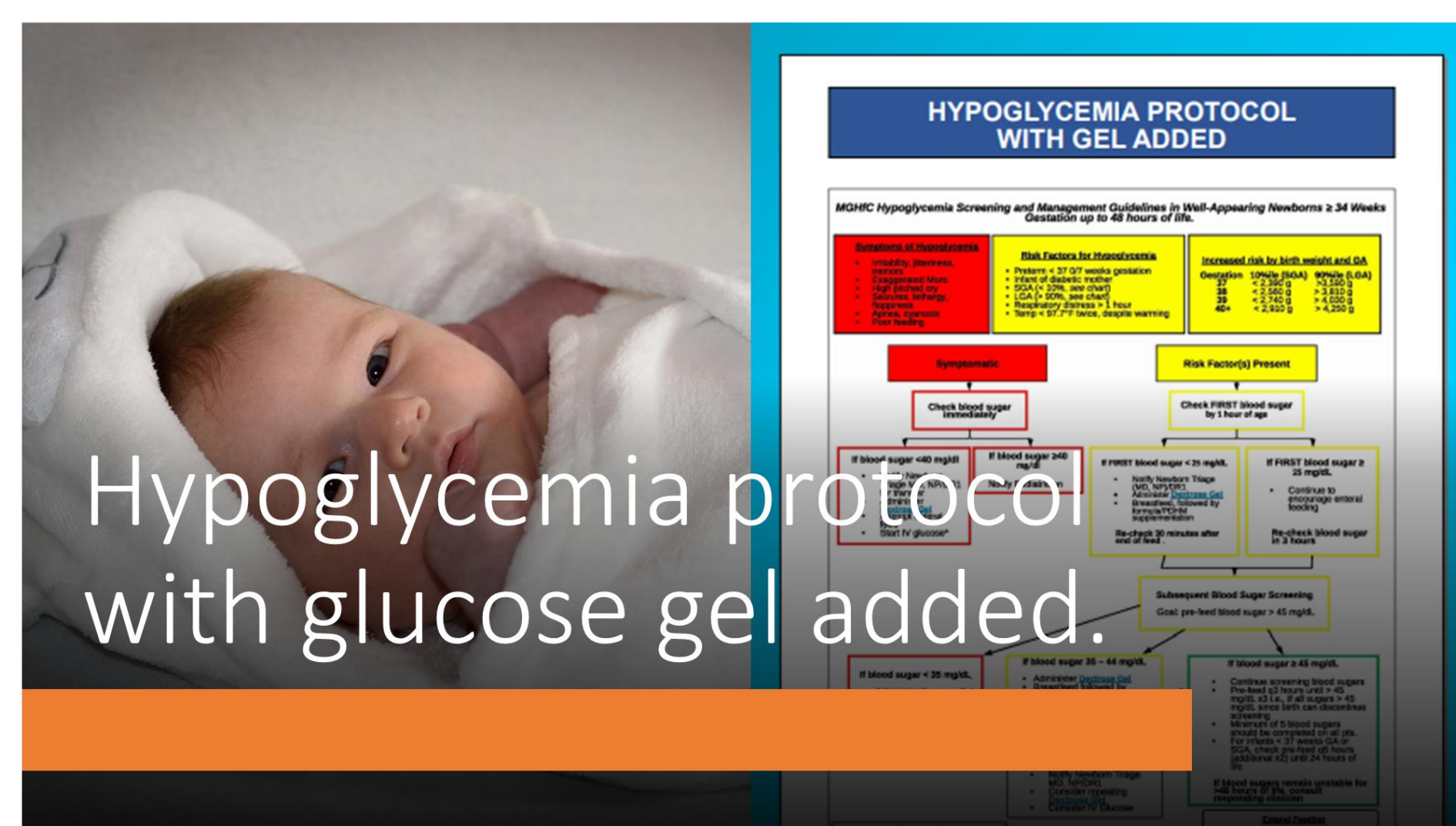
IMPLICATIONS FOR  
NURSING PRACTICE  
AND/OR  
FUTURE RESEARCH

Utilizing EBP to answer a nurse driven clinical question and initiating quality improvement strategies can have long term benefits for patients. Glucose gel continues to allow mothers and infants to remain together, decreasing unnecessary invasive procedures and decreasing length of stay by avoiding a higher level of care. Currently a cost analysis is underway to determine financial impact of gel use.



Provider Education included  
PowerPoint Presentations

Glucose gel is administered buccally based on infant's weight.



Pre  
Gel

- April 2017 to April 2018
- No Gel received
- 13% Required PIV dextrose

Post  
Gel

- May 2018 to August 2019 (15 mos.)
- 34% Received Gel
- 4% Required PIV dextrose

In Total  
69%  
Reduction  
in PIV  
Dextrose  
in 15 mos.



# IMPROVING DOCUMENTATION OF DELIVERY ROOM TEMPERATURES FOR “SMALL BABIES” BORN AT <32wks or ≤1500g

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## AIM

Amongst “small babies” born < 32 weeks or ≤1500g admitted to the Newborn Intensive Care Unit (NICU) from the Delivery Room (DR), we aimed to increase our percentage of documented DR temperatures from **23% to 80%** by February 22, 2020 (4 months).

## INTERVENTION

- **PDSA cycle 1 (Early Oct 2019):** Presented problem/baseline data/aim statement at department wide “PICNIC” meeting and resource nurse monthly meeting, as an initial “call for change”. Began process of updating the Thermoregulation Guideline of the VLBW on our CPG website Ellucid.
- **PDSA cycle 2 (Late Oct 2019):** Updated Thermoregulation of the VLBW Guideline approved and published on Ellucid. Additionally, based on diagnostic data from resource nurses, increased availability and standardized location of thermometers in the delivery rooms/resuscitation kits.
- **PDSA cycle 3 (Oct/Dec 2019):** Developed a SmartPhrase to use within our existing electronic medical record (EMR) to prompt nurses to document the delivery room temperature in their resuscitation note (see Figure 1). Resource nurses began using the SmartPhrase in October, NRTs (another group of delivery room nurses) began using a similar version in December.
- **PDSA cycle 4 (Dec 2019):** Placed laminated reminder cards on transport isolettes (see Figure 2).

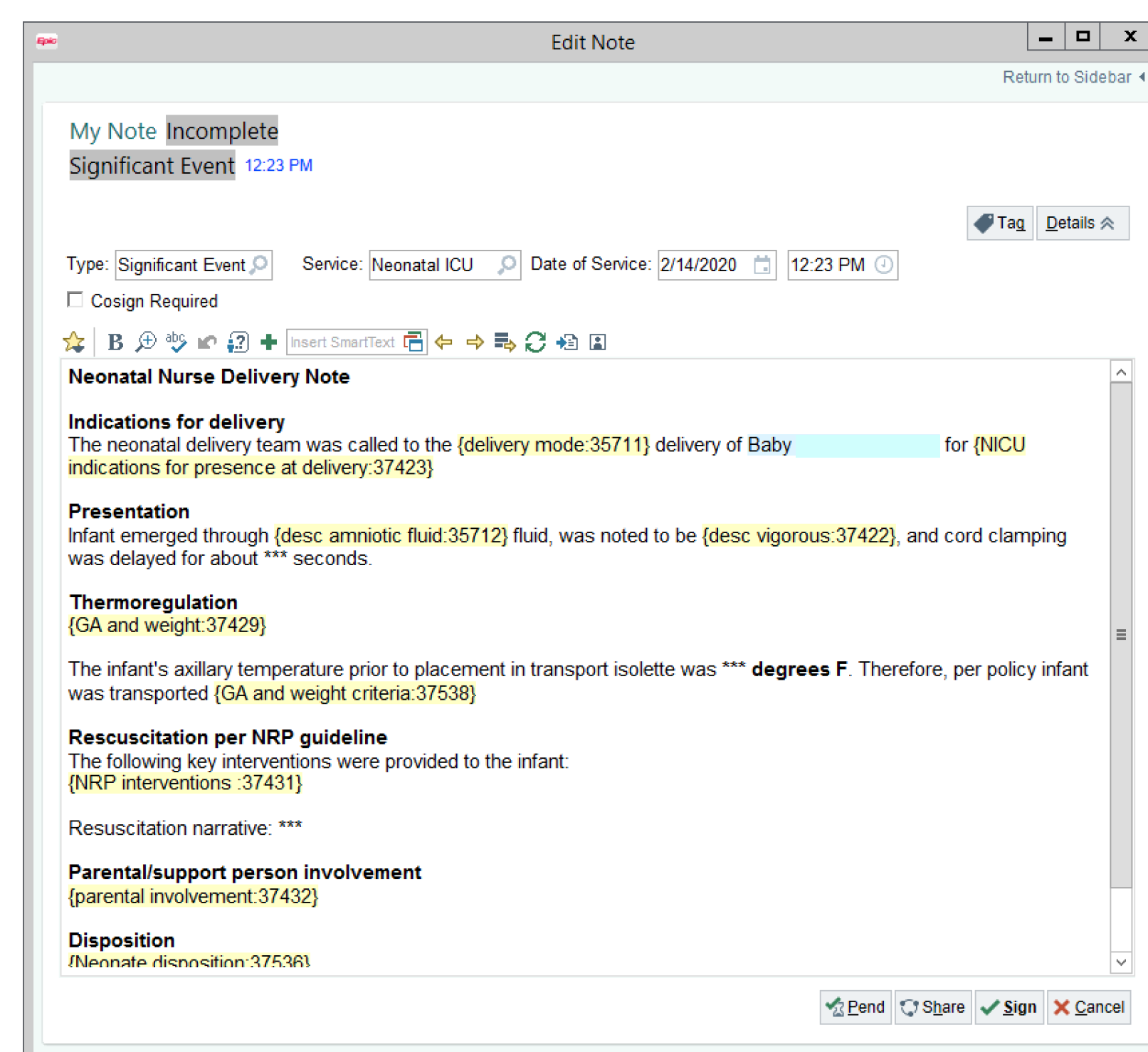


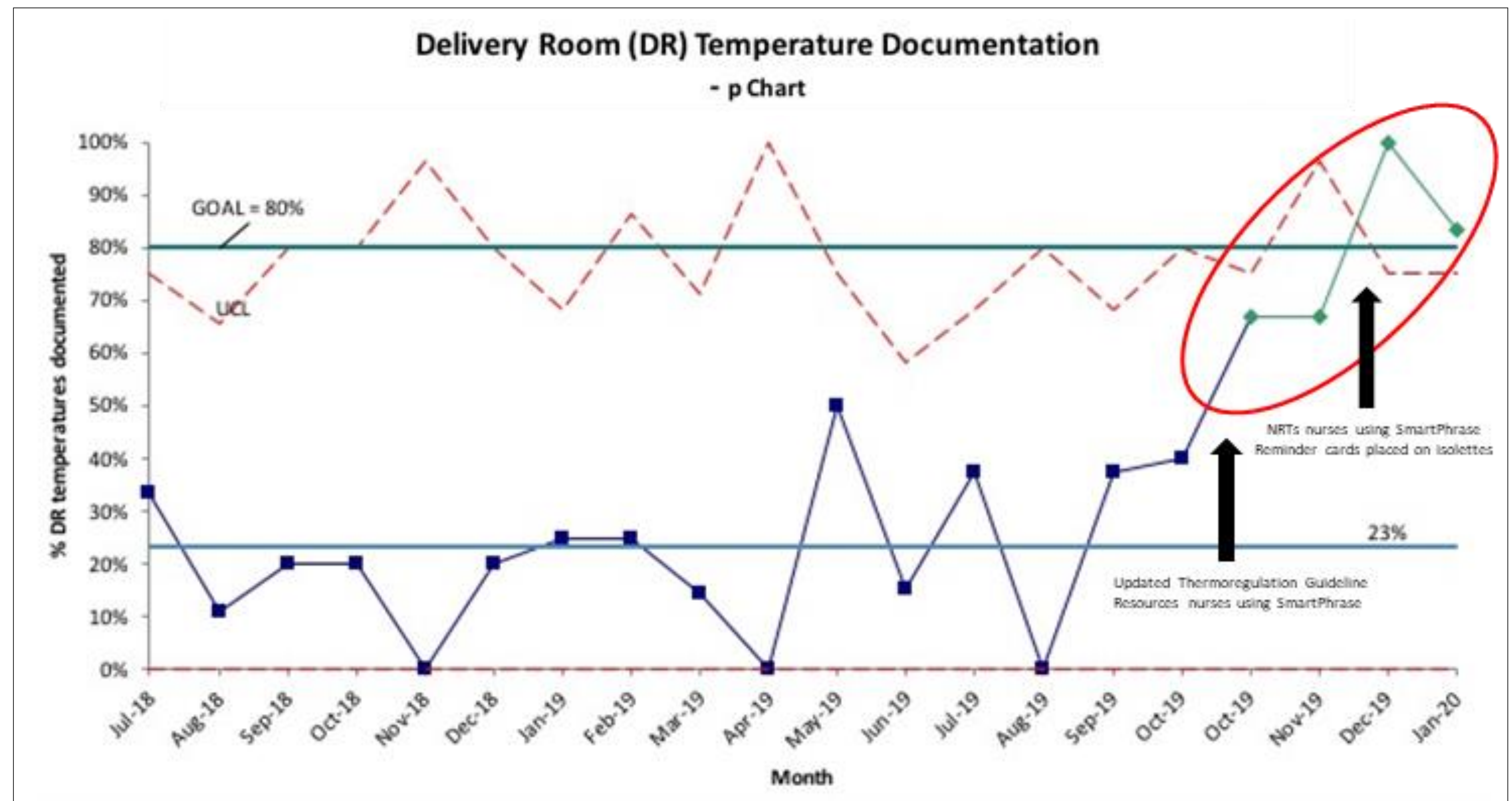
Figure 1

< 32 Weeks or ≤1500 g	
< 99° F	Transport WITH mattress
> 99° F	Transport WITHOUT mattress

Figure 2

## RESULTS

Delivery room temperature documentation showed special cause variation after only 4 months of implementation of four PDSA cycles. By the end of Jan 2020, documentation was up from a median of **23% to 83%**.



## CONCLUSIONS

Using methods and tools already present within their current workflow, neonatal delivery room nurses were **successful** in improving delivery room temperature documentation from **23% to 80%**.

## NEXT STEPS

With this improved system of documenting delivery room data, we will now have access to the information we need to make informed decisions regarding thermoregulatory policy changes in an effort improve outcomes for our smallest and most vulnerable patients.

- Begin to track/report delayed cord clamping time
- Begin to track/report proper use/placement of polyethylene wrap in the delivery room
- Begin to track/report proper use/placement of thermal mattress in the delivery room
- Begin to track /report NICU admission temperatures

### TEAM:

- MGHfC NICU Resource Nurses
- MGHfC SCN NRTs
- MGHfC NICU Neonatologists

### PROJECT SPONSORS:

- Serguei Roumiantsev, MD, PhD
- Margaret Settle, RN, PhD, NE-BC



This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.



# SIMULATION TRAINING: AN IMPORTANT TOOL TO IMPROVE STAFF RESPONSE TO EMERGENCY SITUATIONS IN THE AMBULATORY SETTING

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## BACKGROUND AND SIGNIFICANCE

- Ambulatory procedural areas, such as the Endoscopy Unit at 165 Cambridge Street, are often supported by community vs hospital-based medical emergency response systems.
- It is imperative that staff working in ambulatory sites recognize and intervene at the first sign of patient deterioration.
- Recognizing this, MGH mandated semi-annual medical emergency drills with a debriefing as part of its Medical Emergency Response Plan.

## OBJECTIVE

To provide a simulation-based learning experience to enhance the recognition and management of medical emergencies occurring during GI procedures in the ambulatory setting.

## IMPLEMENTATION

- The Endoscopy Simulation Planning Committee including the Nursing Practice Specialist, staff nurses, and Knight Simulation Program staff collaborated to develop a 1-hour in-situ simulation program.
- Fifteen nursing and support staff including RNs, GI techs and PCAs participated in one of two sessions in which a simulated patient experienced a medical emergency.
- Staff worked together to manage the patient during this event.
- A CPR manikin, cardiac simulator, defibrillator and other supplies were used to create a realistic environment.
- The program was designed to provide an opportunity for staff to meet the following objectives:
  - Recognize early signs of over sedation and intervene
  - Follow ACLS guidelines in caring for the patient
  - Assume identified roles during the resuscitation
  - Recognize the need to contact EMS for the patient
  - Provide support to the family
  - Follow appropriate steps to transfer the patient to the ED
- The scenario was followed by a debriefing, which provided an opportunity for self-reflection, dialogue, and feedback.
- Participants completed a post-course survey. They rated the following four criteria using a Likert scale:
  - The patient scenario was realistic
  - The simulation enabled me to participate as if I was in a real medical emergency
  - I learned skills and behaviors that I can apply to future medical emergencies/codes
  - The simulation was a useful instructional methodology

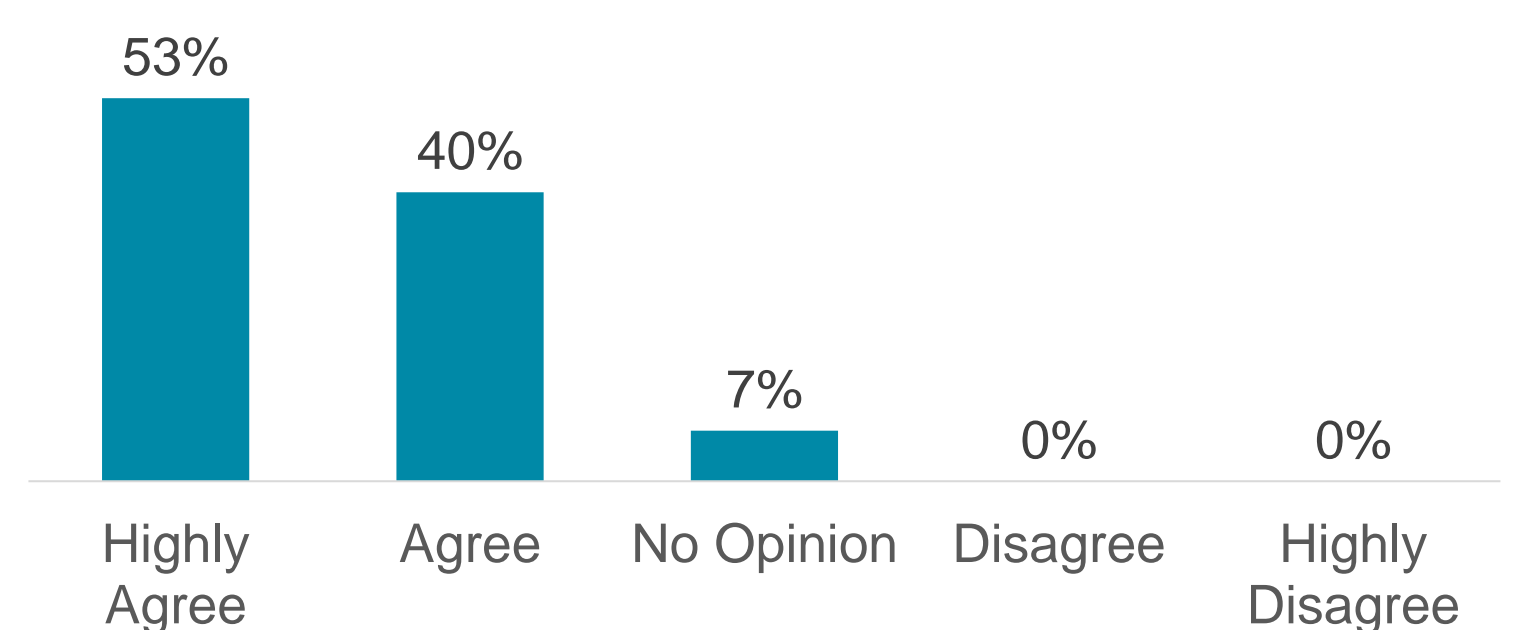


This event took place in November 2019, prior to universal mask and eye protection policy.

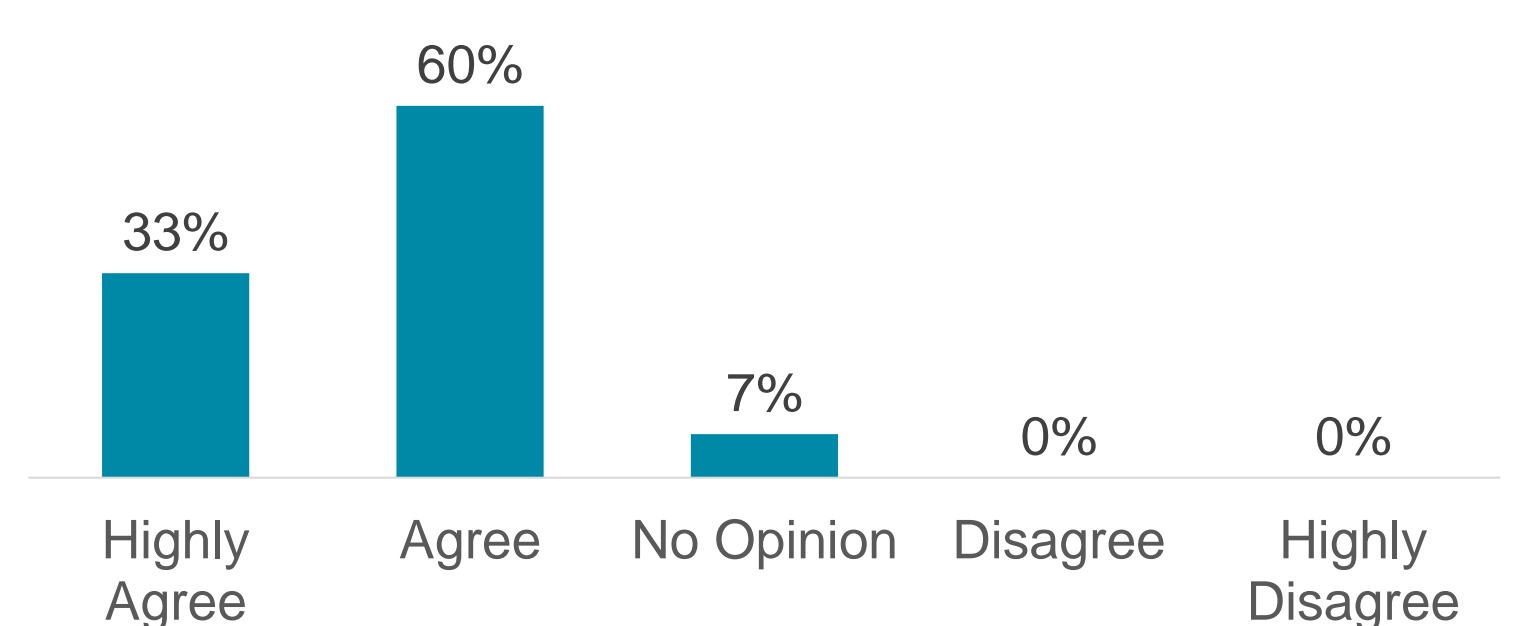
## PERFORMANCE IMPROVEMENT/OUTCOME

Ninety-three percent of participants “highly agreed” or “agreed” that the scenario was realistic, that it enabled them to participate as if they were in a real medical emergency and that they learned skills and behaviors that they can apply to future medical emergencies/codes. Eighty-six percent of participants “highly agreed” or “agreed” that the simulation was a useful instructional methodology.

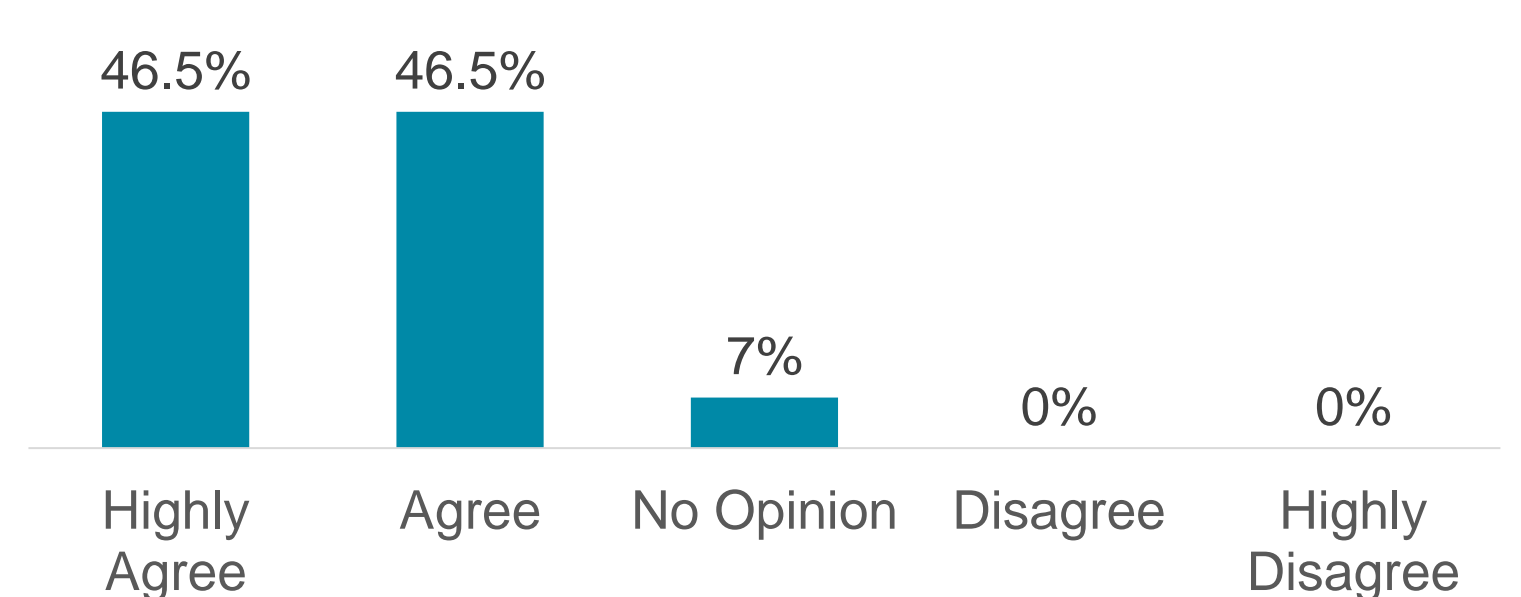
The patient medical scenario was realistic.



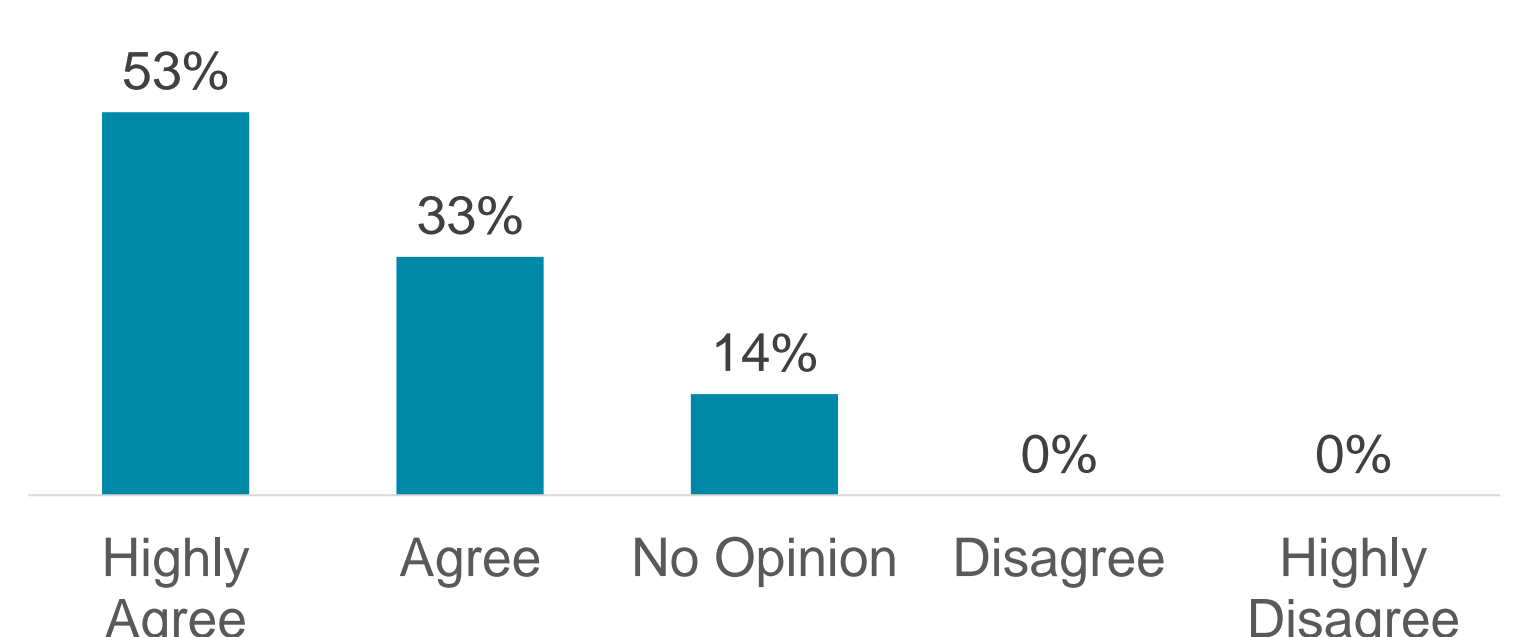
The simulation enabled me to participate as if I was in a real medical emergency.



I learned skills and behaviors that I can apply to future medical emergencies/codes.



The simulation was a useful instructional methodology.



## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

- Integration of simulation-based education provides an opportunity for staff to practice and strengthen the skills needed to provide an urgent and organized response to patient emergencies.
- The format can easily be adapted and used in other ambulatory and procedural settings.

This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.



# SIMULATION SUPPORTS A NURSING PRACTICE CHANGE: INVASIVE HEMODYNAMIC MONITORING OF THE PATIENT WITH HEART FAILURE IN THE INTERMEDIATE CARE AREA

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## BACKGROUND AND SIGNIFICANCE

- Heart Failure is a chronic progressive condition where the heart muscle is weakened. The heart pumps inefficiently causing fluid retention and hemodynamic compromise.
- Tailored therapy
  - Pulmonary Artery Catheters are used to measure the pressures in various parts of the heart to guide diuresis and titration of PO and IV vasoactive medications in order to optimize fluid balance and cardiac output.
- Historically, the process for managing Heart Failure patients requiring tailored therapy with hemodynamic monitoring has required an ICU admission. To optimize treatment time, a decision was made to manage a select group of these patients on the Interventional Cardiology Unit. RNs on this unit had no prior experience using hemodynamic monitoring for tailored therapy. RNs are critical in identifying and addressing the risks associated with managing these patients.
- Simulation education was part of a multimodal program used to prepare staff for this change in practice. The comprehensive education program also included didactic learning, 4 hour hands-on precepted experience, caring for a patient with a pulmonary artery catheter, in the ICU and/or procedural areas and on-unit waveform interpretation practice skill sessions.

## OBJECTIVES

The RN will demonstrate understanding of the care and collaborative management of Heart Failure patients requiring invasive hemodynamic monitoring.



## IMPLEMENTATION

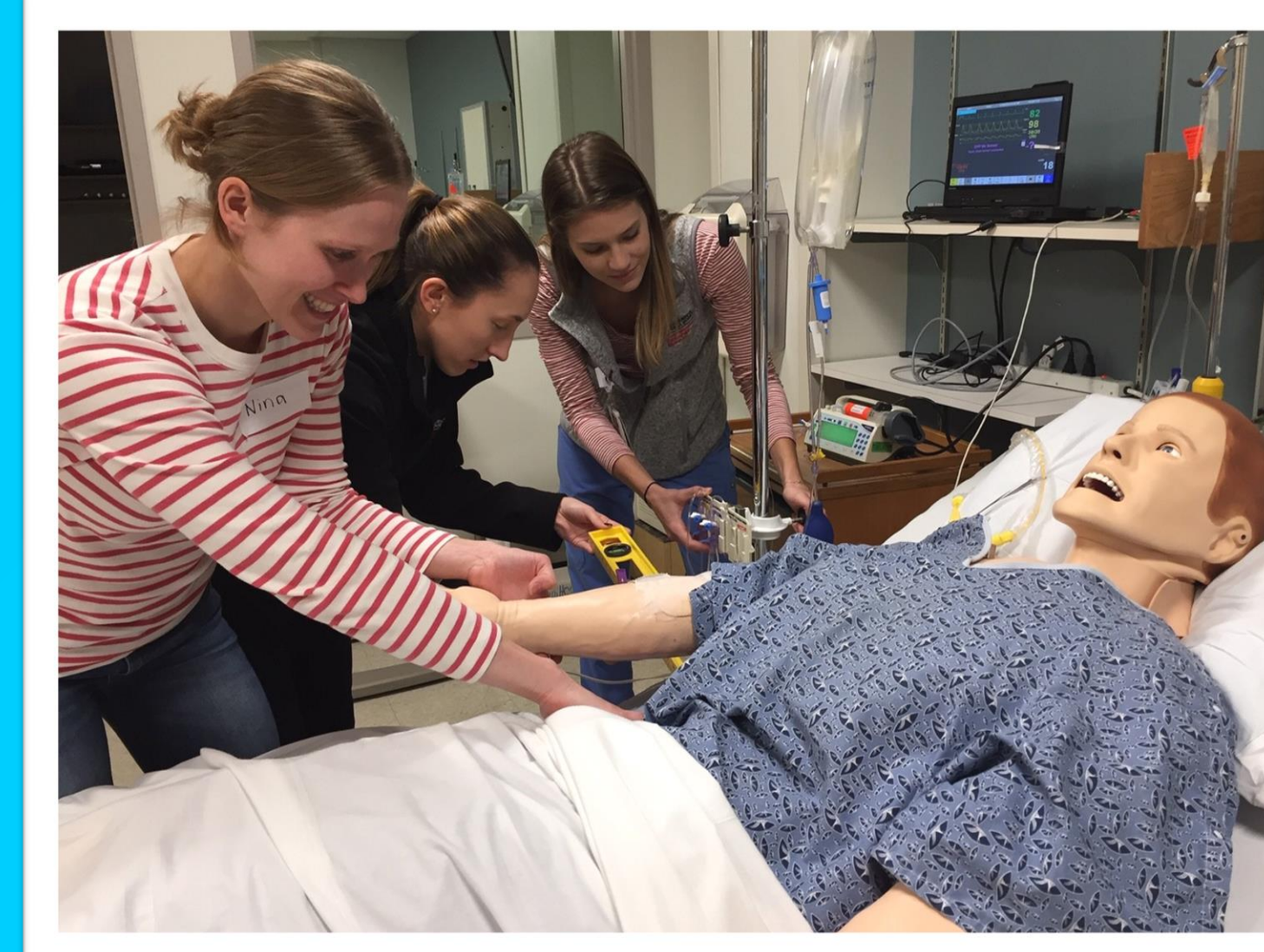
- Clinical Nurse Specialists and subject matter experts collaborated to develop and implement a 4-hour simulation program.
- Forty-five RNs participated in seven simulation sessions.
- The scenarios were followed by a faculty-guided debriefing providing an opportunity for dialogue, identification of knowledge gaps, and feedback.

### Nurses said:

- "I will certainly apply all of this to my patient care."
- "I will apply what I learned today in all patient care associated with PA line and continue to learn from my colleagues as time goes on."
- "More confident delivery of care."
- "Having better understanding of the care of patients with PA line."
- "Know what information to have at hand prior to contacting the provider."
- "Faculty and teaching methods are very helpful and knowledgeable."
- "Very good sim lab discussion, opportunity to ask many questions too."
- "The debriefing was very helpful."
- "Having Ellison 11 CNSs as well as Blake 8 CNS was very helpful!"

## CASE SCENARIOS

- Five simulation scenarios provided nurses the opportunity to: practice using systems to measure hemodynamics, integrate patient assessment findings with hemodynamic data, and troubleshoot issues and complications.
- In each scenario, nurses cared for a simulated Heart Failure patient with a pulmonary artery catheter. Scenarios focused on different skills and knowledge including:
  - Start of shift patient assessment integrating equipment check and hemodynamic pressure measurement.
  - Responding to spontaneous catheter migration into wedge position.
  - Collaborative care of patients with non-sustained ventricular tachycardia, hypotension, and worsening renal failure.



## PERFORMANCE IMPROVEMENT/OUTCOME

- All RNs completed a course evaluation and reported that the program addressed the learning outcome, enhanced their current knowledge base, would help them to improve patient care, and provided new ideas or information they expect to use.
- In response to faculty observation and participant feedback, the program was revised to include a skill station and additional scenario. The skills station allowed all participants to practice drawing a simulated mixed venous oxygen saturation blood sample. A sixth scenario focused on the care of a patient who decompensates after an inotropic infusion is weaned.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

- Simulation is powerful instructional tool to consider using when implementing a practice change.
- It provides a learning opportunity for staff to gain knowledge and experience in a simulated patient care environment.

*This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.*



# ELECTRONIC DOCUMENTATION TOOL TO OPTIMIZE DATA COLLECTION

## IN INFANT AND TODDLER FOOD ALLERGY RESEARCH

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### BACKGROUND AND SIGNIFICANCE

- Research has shown that early exposure to some highly allergenic foods may help protect children over the long term through allergen desensitization and help them to expand their diets.
- Outcomes of Early Allergen Introduction* is an infant/toddler food allergy research study, which involves food challenges to explore trajectories of the infant/toddler allergic responses.
- Historically, nurses documented patient reactions on paper flowsheets which proved problematic for data collection and analysis.
- The Food Allergy Flowsheet in Epic did not sufficiently capture the range of the infant/toddler allergic responses.
- Without an electronic age-appropriate mechanism for data collection, evidence-based standards of care could not be developed.

### OBJECTIVES

The purpose of this quality improvement project was:

- to streamline nursing documentation of infant/toddler allergic responses during food challenges
- to improve accuracy of data collection during infant/toddler research food challenges by capturing more detail for future analysis

### IMPLEMENTATION

- Research nurses, the food allergy study team and MGH eCare worked collaboratively to create an infant/toddler food allergy flowsheet in Epic.
- Training for nursing consisted of shadow charting, testing scenarios and at the elbow support.

#### PAPER ALLERGY SYMPTOM FLOWSHEET

SPD # 1339	Time point	Actual Time	Symptoms	Observations	Notes
1325			Onset of hives after 1st bite of banana	Hives on face	05
1341			Onset of hives after 1st bite of banana	Hives on face	05
1350			Onset of hives after 1st bite of banana	Hives on face	05
1358			Onset of hives after 1st bite of banana	Hives on face	05
1408			Onset of hives after 1st bite of banana	Hives on face	05
1415			Onset of hives after 1st bite of banana	Hives on face	05
1421			Onset of hives after 1st bite of banana	Hives on face	05
1431			Onset of hives after 1st bite of banana	Hives on face	05
1440			Onset of hives after 1st bite of banana	Hives on face	05
1445			Onset of hives after 1st bite of banana	Hives on face	05
1450			Onset of hives after 1st bite of banana	Hives on face	05
1458			Onset of hives after 1st bite of banana	Hives on face	05
1467			Onset of hives after 1st bite of banana	Hives on face	05

#### SHADOW CHARTING

SPD # 1339	Time point	Actual Time	Symptoms	Observations	Notes
1404			Onset of hives after 1st bite of banana	Hives on face	05
1410			Onset of hives after 1st bite of banana	Hives on face	05
1415			Onset of hives after 1st bite of banana	Hives on face	05
1421			Onset of hives after 1st bite of banana	Hives on face	05
1431			Onset of hives after 1st bite of banana	Hives on face	05
1440			Onset of hives after 1st bite of banana	Hives on face	05
1445			Onset of hives after 1st bite of banana	Hives on face	05
1450			Onset of hives after 1st bite of banana	Hives on face	05
1458			Onset of hives after 1st bite of banana	Hives on face	05
1467			Onset of hives after 1st bite of banana	Hives on face	05

#### INFANT/TODDLER EPIC FLOWSHEET

3/3/20	1234	1601	1602	1604	1605	1606
Infant/Toddler Food Challenge						
Infant/Toddler Food Challenge Symptoms						
Behavioral Changes (Infant/Toddler)						
Behavioral Changes Observed						
Cause of Behavior Change						
Behavioral Changes Muscle Tone						
Behavioral Changes Instructiveness						
Behavioral Changes Consolability						
Behavioral Changes Look/Gaze						
Behavioral Changes Speech/Cry						
Urticaria (Infant/Toddler)						
Urticaria						
Total Number of Distant Hives						
Largest Distant Hive's Mean Diameter (in mm)						
Distant Urticaria Intensity/Severity						
Distant Urticaria Dermatographism						
Distant Urticaria Location						

#### DOSES FOR BAKED EGG FOOD CHALLENGE



#### FOOD CHALLENGE IN ACTION



### PERFORMANCE IMPROVEMENT/OUTCOME

- A nursing education tool evolved from the terminology and definitions used to describe allergic reactions.
- The use of targeted nursing assessments resulted in an expanded understanding of trajectories and timelines associated with the infant/toddler allergic responses.
- Comprehensive data analysis and improved data integrity were facilitated by structured, consistent, and systematic documentation.
- Patient safety was improved by the consistent language and heightened awareness that the careful documentation populating the flowsheet *is the data*.
- Accurate interpretation of infant/toddler allergic reactions was enabled by the systematic review of food allergy symptoms.
- Data became usable, allowing for ease of entry into Redcap for analysis and for promoting safer patient outcomes.
- Improved team communication developed.

### IMPLICATIONS FOR NURSING PRACTICE

- Establishment of evidence-based standards of care for infants and toddlers with food allergies.
- Potential model for future research to streamline documentation of food challenges in older children and adults.
- Expand use of electronic documentation tools in clinical research nursing.

This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.

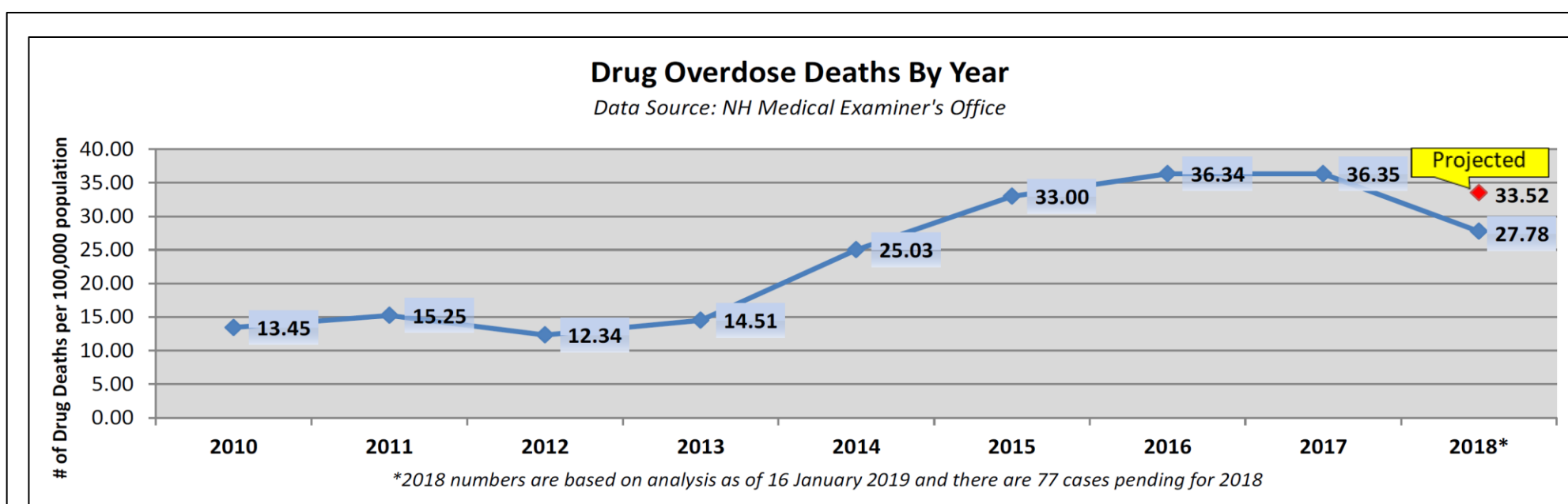


# A PILOT OF EMERGENCY DEPARTMENT-INITIATED BUPRENORPHINE FOR OPIOID WITHDRAWAL AND OPIOID USE DISORDER: A QUALITY IMPROVEMENT PROJECT

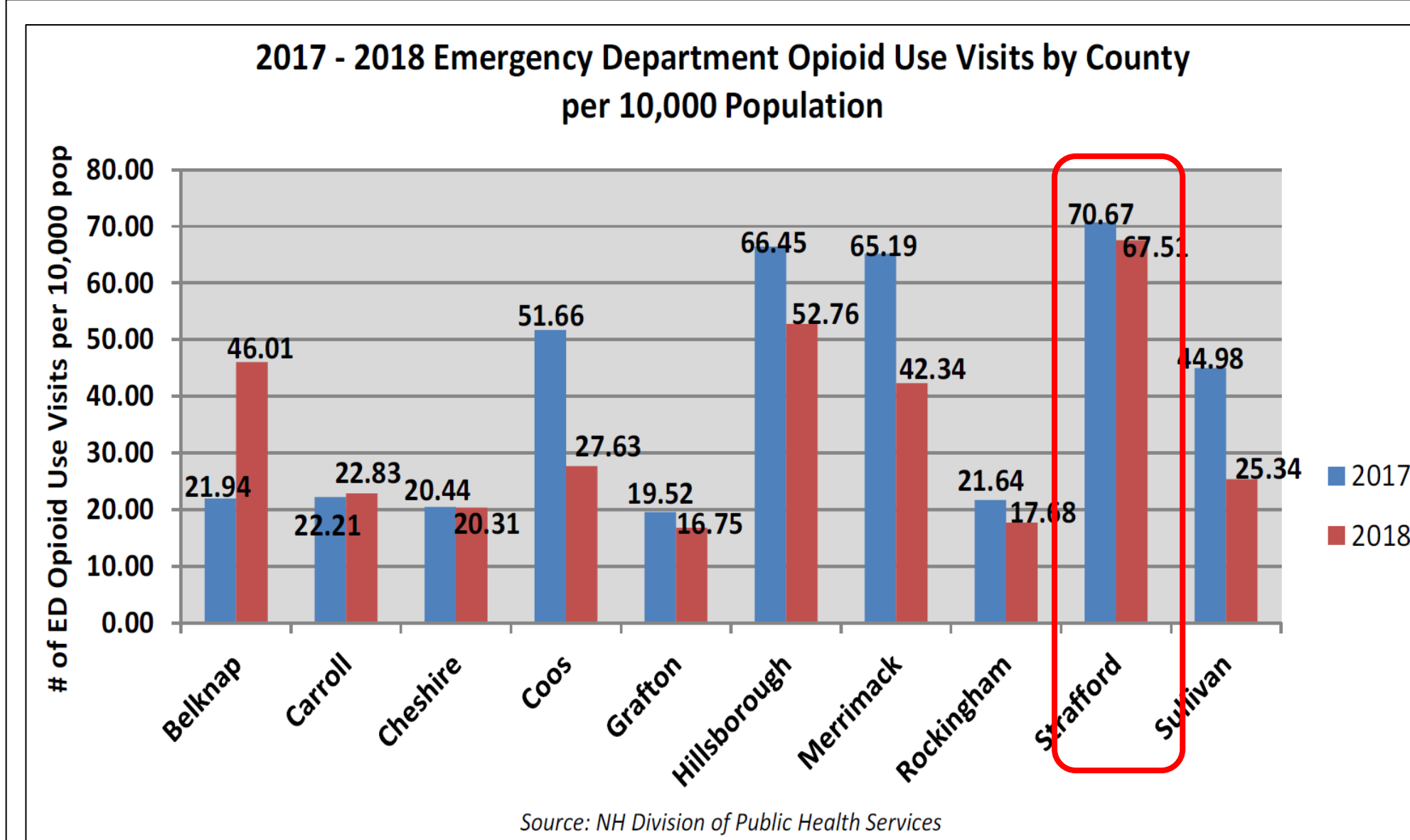
**Jason R. Lucey, DNP, FNP-BC; Kerry Nolte, PhD, FNP-BC; Kellie Mueller, Med;  
Stacey Savage, MSN, RN, CPEN, CEN; and Lukas Kolm, MD, MPH, FACEP**  
**Massachusetts General Hospital, Boston, MA**

## BACKGROUND

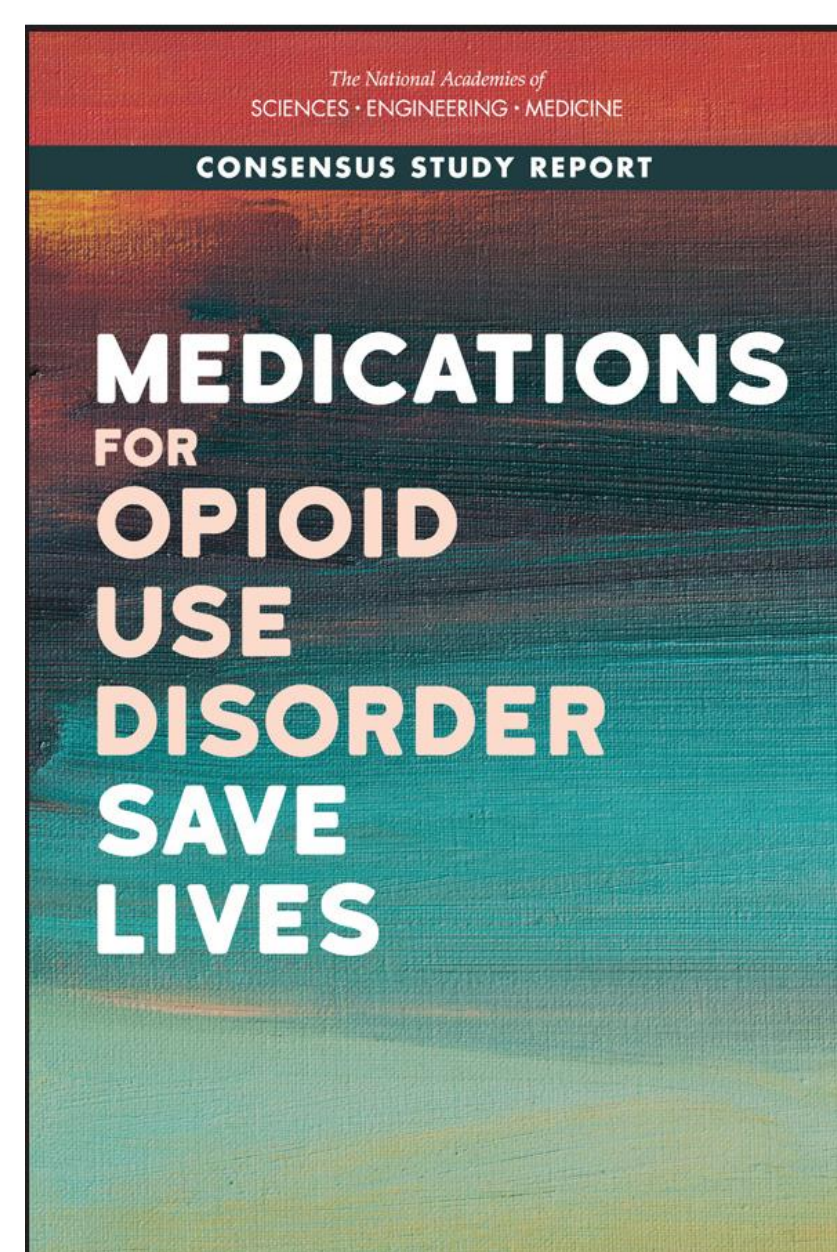
Emergency department (ED) visits for opioid problems are common. Buprenorphine is evidence-based therapy for opioid use disorder (OUD) and withdrawal. Easy access to medications for OUD remains a challenge. Research supports ED-initiated buprenorphine for treatment engagement as superior to non-pharmacologic options in treatment better than non-pharmacologic alternatives.



Total NH overdose deaths: 2015=439, 2016=485, 2017=488, 2018=446 (plus 24 pending cases)



For the 3rd year in a row, in 2018, residents from Strafford County had the most opioid-related ED visits



2019 Consensus Report conclusion: Failure to offer medications for OUD in any care setting is unethical

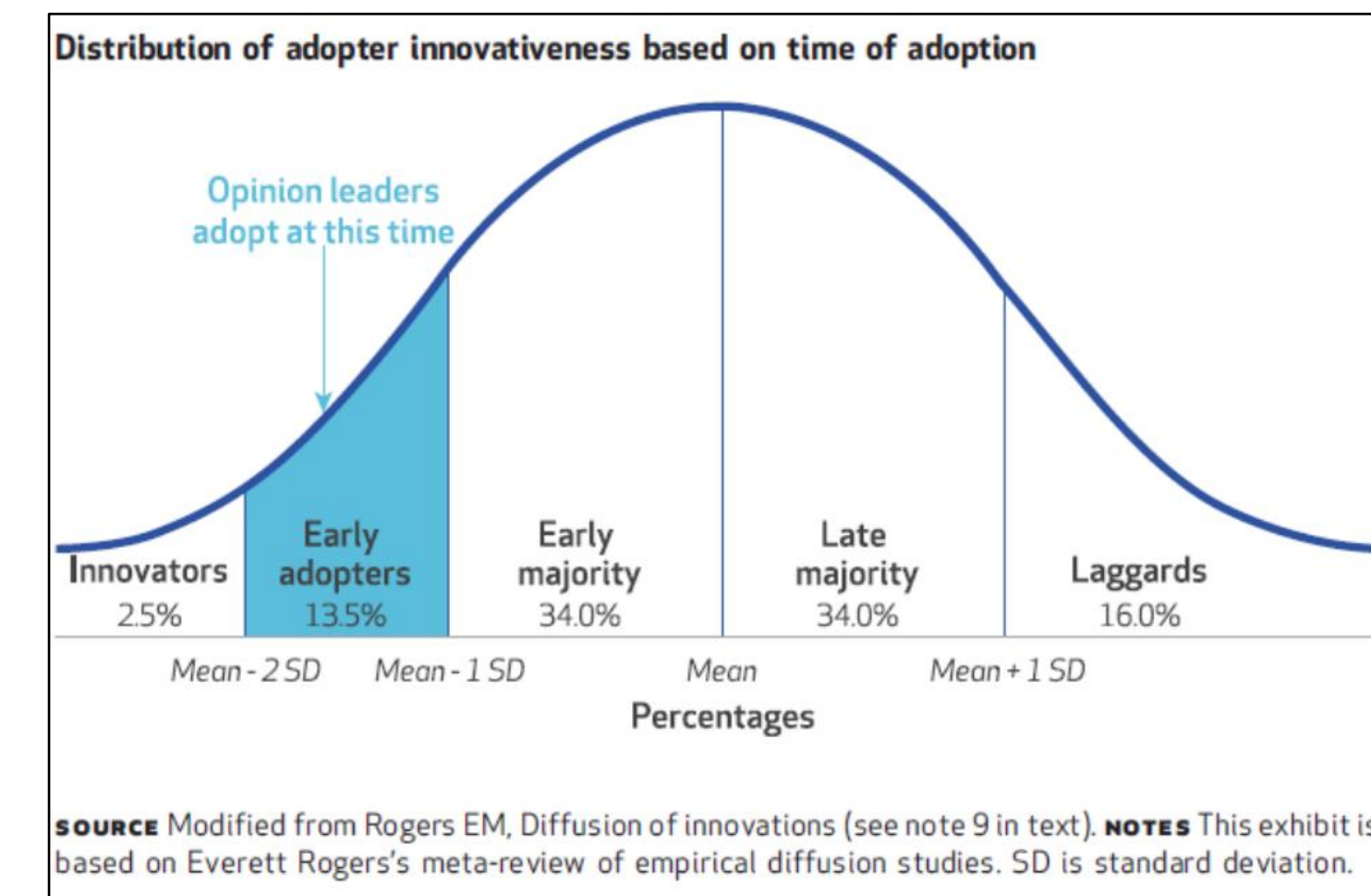
Medication-based treatment is effective across all treatment settings studied to date. Withholding or failing to have available all classes of FDA-approved medication for the treatment of opioid use disorder in any care or criminal justice setting is denying appropriate medical treatment.

## OBJECTIVES

- 1) To develop a pilot process providing ED buprenorphine for opioid withdrawal or treatment of OUD
- 2) To recruit/train cohort of staff on process
- 3) To track process

## IMPLEMENTATION

Using national/regional guidelines, a process for ED-initiated buprenorphine was developed through stakeholder meetings. Using a Diffusion of Innovation model, a staff cohort was trained. Buprenorphine waiver training was facilitated. Process trainings were conducted. Patient case reports were completed.



ED-Initiated Buprenorphine Pilot- Case Reporting Form

Initials of reporter: \_\_\_\_\_

Date/Time of Patient Encounter: \_\_\_\_\_

Other staff/partners involved in this case? ☐ RN, ☐ MD, ☐ Behavioral Health, ☐ Social Worker, ☐ Recovery Coach

Was patient in withdrawal?	Y / N
If yes, was COWS performed?	Y / N
• COWS score?	
Buprenorphine dosed in ED?	Y / N
Buprenorphine RX given?	Y / N
Overdose education/naloxone kit provided?	Y / N
• How many days supply?	
Referral? (check which applies)	
• Doorway	<input type="radio"/> Direct contact <input type="radio"/> Left message
• Groups	<input type="radio"/> Direct contact <input type="radio"/> Left message
• Addiction Recovery Services	<input type="radio"/> Direct contact <input type="radio"/> Left message
Appointment?	Appt date: _____
If appointment confirmed during ED visit:	Where? _____

Please comment on the following:

What were barriers you encountered in delivering ED initiated buprenorphine for this patient (i.e. insurance issues, transportation, patient reluctance, staff support)?

What do you see as potential improvements to the process of initiating a patient on buprenorphine?

## PERFORMANCE IMPROVEMENT OUTCOMES

Guidelines were vetted/approved. 60% of full-time ED MD's obtained DEA waivers to prescribe buprenorphine. Trainings were provided. In first month, 16 unique case reports were collected. High adherence to most process steps were seen: Opioid withdrawal scales (COWS) performed, buprenorphine administered for COWS score  $\geq 8$ , discharged with prescription after ED dosing, home induction for COWS < 8, discharged with prescription, and care coordination referral. Lower adherence was noted for recovery coach involvement and overdose education/ naloxone provision.

ED Buprenorphine Trainings	
Buprenorphine Waiver Trainings	
Type of Training	Number/Type of Staff
• In-person Buprenorphine Waiver Trainings (offered by regional trainers)	1 Physician
• Online Buprenorphine Waiver training	5 Physicians
WDH Process Trainings	
• Drop-in onsite trainings by Project Leader	6 MAT Waivered Physicians 14 Nurses 4 Physician Assistants 4 Social Workers 3 Recovery Coaches 2 Psychiatric Nurse Practitioners 2 Pharmacists 1 Behavioral Health Clinician 1 Paramedic
• Recorded Process Training	Distributed by email to all ED/ Behavioral Health/ Social Work staff

ED Buprenorphine Initiation Process Compliance Analysis			
Process Step	n	Total applicable cases	Percent Compliant
COWS Performed and Documented on Case Report	14	16	87.5
Buprenorphine Dosed in ED (COWS >8)	9	9	100
Discharged with Prescription (RX) After ED Induction	7	9	77.8
Home Induction RX provided (COWS <8)	7	7	100
Cases where RX Given at Discharge (waivered provider)	14	16	87.5
Overdose Education/Naloxone Provided	3	9	33.3
Referred to Doorway	13	16	81.25
Recovery Coach involved	9	16	56.25

Barriers Encountered and Potential Improvements	
Barriers Encountered	<ul style="list-style-type: none"> <li>"Patient stated <u>did not get relief</u> from dosing in ED"</li> <li>"Patient actively using (while in ED no less) and <u>not ready to start med</u> or accept change in lifestyle. Left AMA (against medical advice)."</li> <li>"Putting in RX in ED electronic record was laborious"</li> <li>"Computerized Physician Order Entry (CPOE) one-time orders are not well-built" (2 instances)</li> <li><u>None</u> (15 instances)</li> </ul>
Potential Improvements	<ul style="list-style-type: none"> <li>"It would be great if it was easier for providers to order"</li> <li>"Easier entry of RX into ED electronic record"</li> <li>"Clear documentation of COWS score in EMR. As a pharmacist, I would like to know the score and symptoms in case any additional treatment/symptom care can be recommended"</li> <li>"All forms in one location"</li> <li>"Assuring follow-up appointment as soon as possible"</li> <li>"Patient also received Ativan in ED. Patient qualified for 8mg dose. Will send email as to whether to add 8mg tabs, because we only have 2mg tabs in ED."</li> <li>"Not sure if possible but <u>definite follow-up arrangement</u> would be helpful"</li> </ul>

Process adjustments were made during implementation for continuous improvement based on feedback from case reports, frequent conversations/check-ins with providers and staff. Adjustments included corrections to phone numbers listed in guideline, requests for changes to order entry and listed medications in EMR, revision of RX instructions for brevity and to allow interchanges of buprenorphine products and enhancing communication process between ED and Doorway care coordination.

## IMPLICATIONS

This project created access to buprenorphine where it was unavailable before. A majority of MD's became waived, well above the target to sustain innovation. Odds of better patient outcomes are improved. Despite limitations in data accuracy, lessons learned may be useful to other organizations. Future analysis including statistical process control measures and health record data collection will be valuable.

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Special thank-you to:



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EMPOWERING NURSES TO INCORPORATE THE  
SERIOUS ILLNESS CONVERSATION FRAMEWORK INTO  
REGULARLY SCHEDULED PATIENT-CENTERED CARE CONFERENCES  
DURING AN INPATIENT ONCOLOGY ADMISSION

Olivia Marshall, RN, BSN, Francesca Miceli, RN, BSN and Natalie Rosenlieb, RN, BSN, CHPN  
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BACKGROUND/  
SIGNIFICANCE

Advance care planning (ACP) conversations do not occur on a scheduled basis in the inpatient adult oncology setting. Evidence shows that these conversations occur late in the trajectory of a patient’s cancer diagnosis as the patient nears end-of-life, ultimately leading to high-stress goals of care meetings. Early conversations allow for high-quality, goal-concordant care and promotion of patients’ quality of life throughout the course of serious illnesses. Often when discussions take place, there is inconsistent documentation in the electronic health record (EHR) that would allow the information to be referenced by all members of the healthcare team.

Inpatient oncology nurses have a unique role in facilitating and encouraging ACP. Nurses are central to supporting consistent communication and understanding within the patient’s care team. Research conducted in critical and palliative care settings shows that nurses report barriers for participating in or conducting advance care planning (ACP) conversations include a lack of empowerment and understanding of their scope of practice.

PURPOSE

- Implement standardized, nurse-led patient-centered care conferences to
1. Provide education to nurses with a goal of increasing nurse empowerment.
  2. Improve consistency and content of ACP discussions with oncology patients, their families, and the inpatient oncology healthcare team.
  3. Increase consistency of EHR ACP documentation and completion of advance directives.

INTERVENTIONS

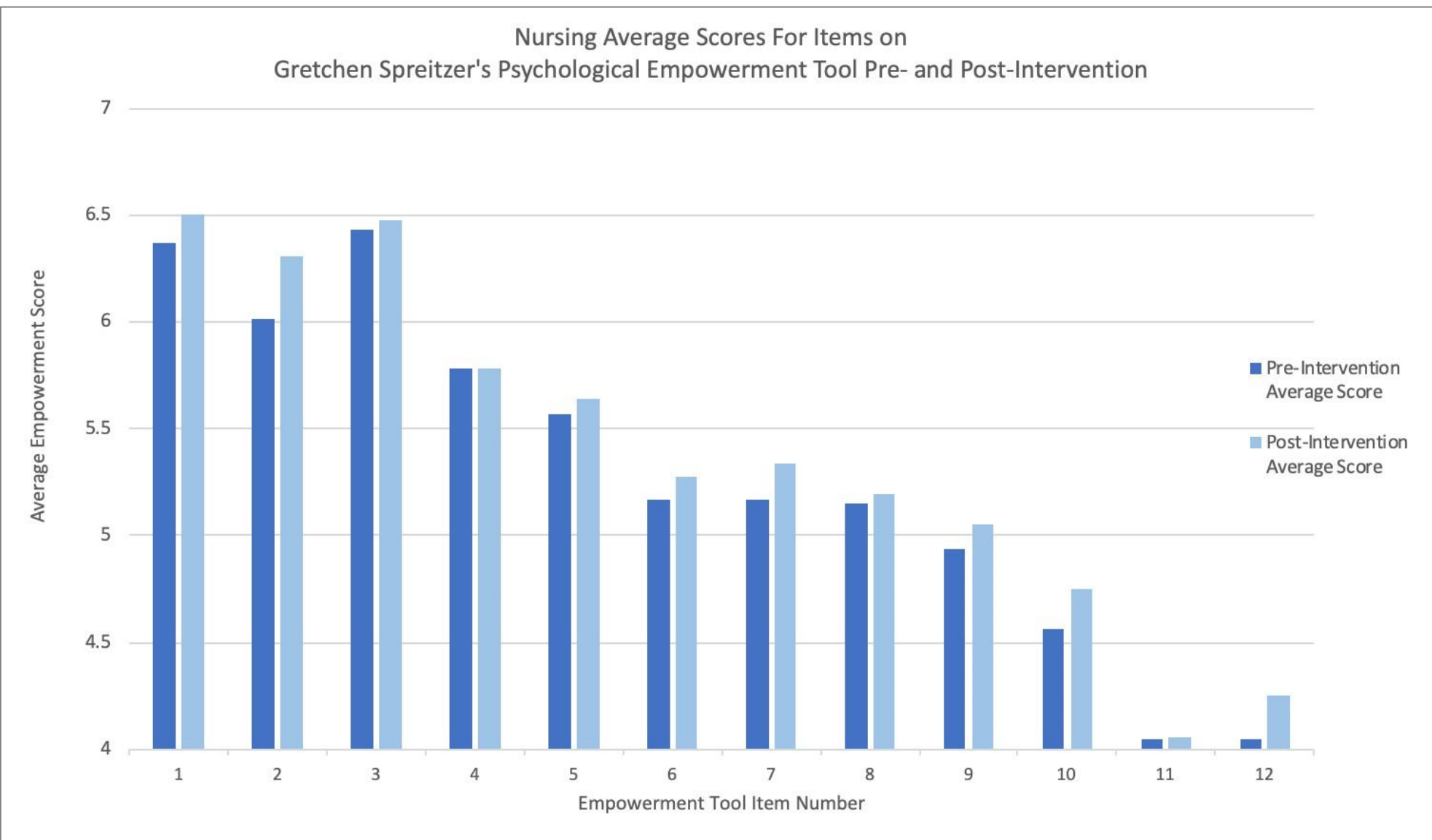
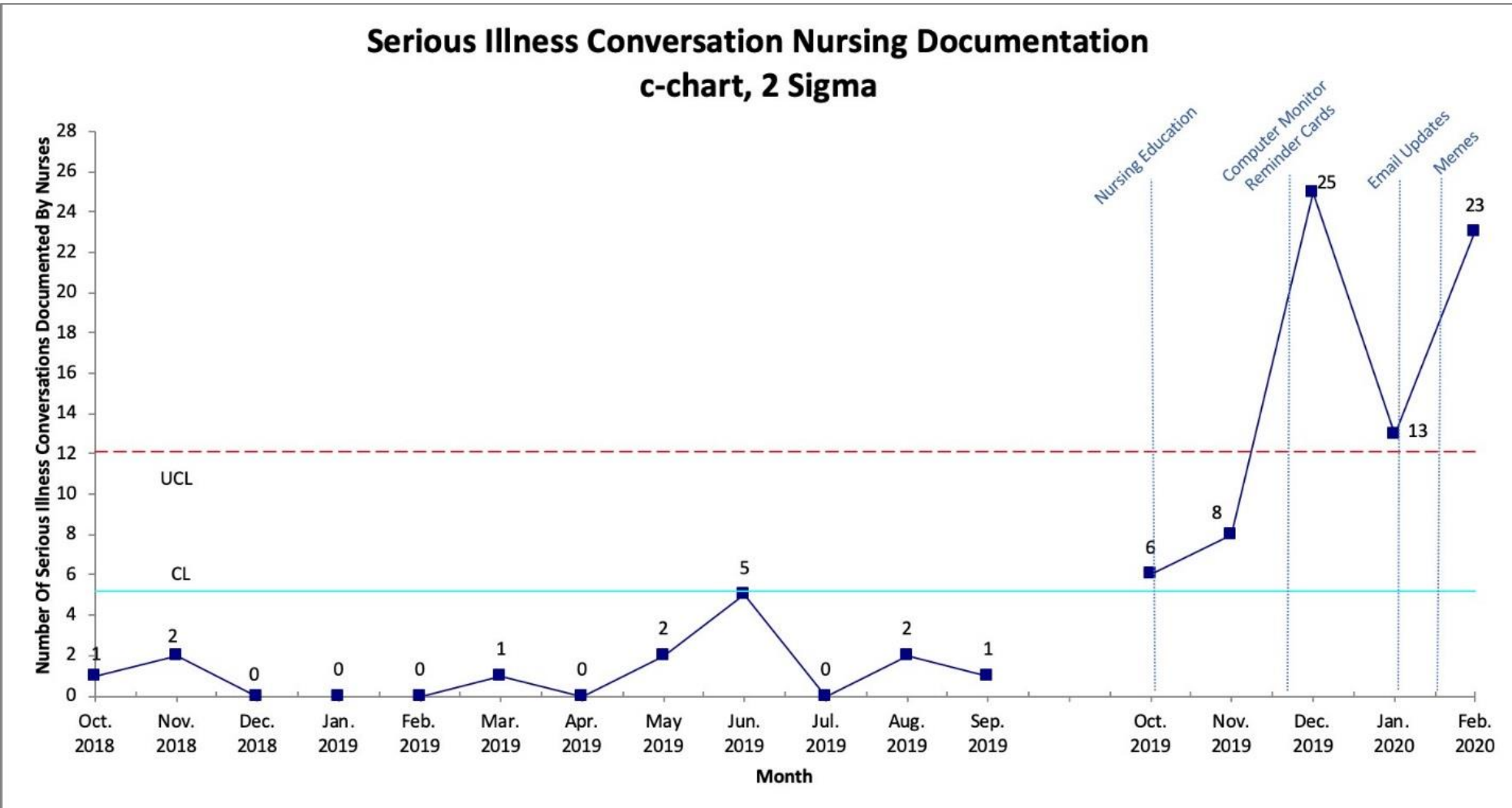
- Inpatient Oncology Registered Nurses (RNs) were given a pre- and post-intervention survey to assess knowledge and feelings of empowerment utilizing Gretchen Spreitzer’s Psychological Empowerment Tool.
- Multiple educational sessions provided to discuss RN scope of practice, scheduled ACP meetings and documentation held throughout October 2019 for nurses to attend. An email with a slide show and video was sent out to nurses for all of those who were unable to attend educational sessions.
- Nurse directed patient-centered care conferences were to occur within 72 hours of admission and continue at 96-hour intervals utilizing an evidence-based framework, the Serious Illness Conversation Guide (SICG).

IMPLEMENTATION  
PROCESS

- Pre-intervention EHR review conducted monthly (July 2019–October 2019) to assess baseline SIC documentation by RNs
- Bi-weekly EHR review throughout intervention period (November 2019–February 2020)
- Educational sessions held in October 2019 and individual education as needed throughout intervention
- “Tip sheets” posted to each computer at nurses’ station
- Reminders to RNs during daily morning safety huddle
- Memes placed around unit to encourage participation

OUTCOMES

- 4 out of the 14 conversations (28.5 %) were documented within 72 hours of patient admission prior to intervention.
- 27 out of 74 conversations (36.5%) were documented within 72 hours of patient admission post intervention.
- 61.1% of the surveyed nurses agree that using the term “patient-centered care conference” makes it easier to approach conversations with patients and their families regarding their serious illnesses.



ACKNOWLEDGEMENTS:

We would like to thank the Reich Fellowship for funding this Quality Improvement project and the Continuum Project for inspiring our research. We would also like to thank our mentors, Heather Carlson, APRN-BC, Meg Soriano, RN, MBE, Barbara Cashavelly, RN, DNP, NE-BC, Marianne Ditomassi, RN, DNP, MBA, NEA-BC, FAAN, and Debra Burke, RN, DNP, MBA, NEA-BC, along with the Palliative care team at Massachusetts General Hospital.

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NURSING IMPLICATIONS

- Oncology nurses should feel empowered to lead ACP conversations with their patients and may use the Serious Illness Conversation guide to help facilitate dialogue.
- Utilizing the phrase “Patient-Centered Care Conference” instead of “Goals of care” or “Family meeting” may improve frequency and quality of Serious Illness Conversations.
- Nurses can contribute valuable information to ensure goal-concordant patient care and serve as leaders on the patient’s care team.

NEXT STEPS

Next Steps to Promote and Maintain Empowerment for Nurse Led Conversations:

- Build education into new hire orientation for new graduate oncology nurse residency program at MGH.
- Add Serious Illness educational tool to competency for new hires with previous nursing experience.
- Build in reminder for Serious Illness Conversations into Work List and Admission Navigator; Nurses will be prompted with option to document conversation or to defer, as clinically indicated.
- Engage Attending RN to incorporate a review of the “Last Documented SIC” into daily morning rounds with patient care team.
- Provide additional and continued unit-based education to staff nurses.

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# UTILIZING TELECOMMUNICATION TO PROVIDE PATIENT CENTERED CARE FOR ADULTS NEWLY DIAGNOSED WITH GI CANCER: A QUALITY IMPROVEMENT PROJECT

Laurie Miller, DNP, APRN-BC, CNRN  
Massachusetts General Hospital, Boston, MA

## AIM STATEMENT

- PURPOSE:**
- Reduce anxiety and distress in newly diagnosed GI oncology patients before initiating active treatment
- WHEN/HOW WILL IT TAKE PLACE:**
- Three month period of time from June 1– October 1, 2019
  - Mechanism for direct communication by phone with a GI oncology nurse practitioner
    - Answer questions
    - Provide support
    - Initiate interventions to support services
  - Utilize screening tools to measure anxiety and distress pre and post-intervention
  - Measure patient satisfaction at the end of the QI project.
- MEASURING SUCCESS:**
- Patient’s will demonstrate a 25% reduction in anxiety with the telephone interventions during their gap period.
  - Patient’s will demonstrate a 25% reduction in distress with the telephone interventions during their gap period.
  - There will be no (0%) patient unable to sign informed consent at the start of care because of anxiety or distress.
  - There will be a 90% patient satisfaction rate with the telephone communication process.

## BACKGROUND

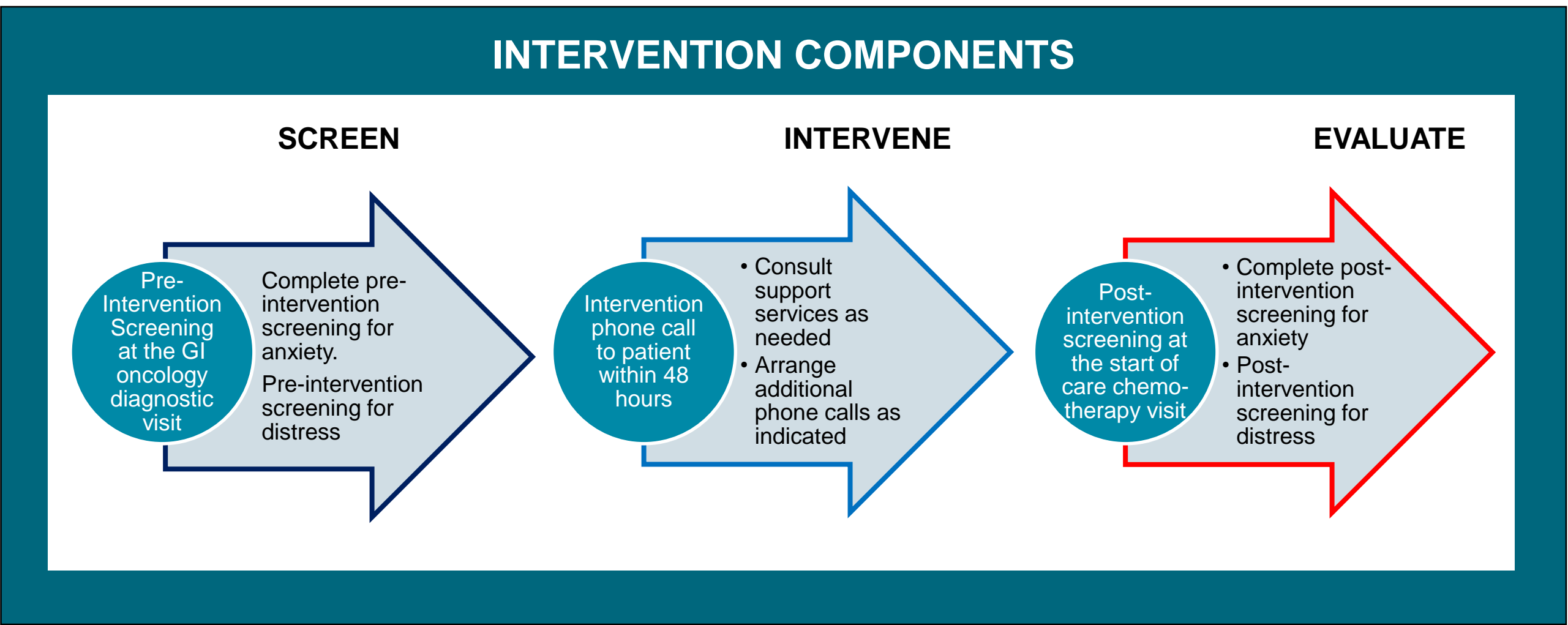
- Anxiety and distress can
- reduce a patient’s quality of life
  - impact their capacity to make important medical decisions
  - reduce their desire to follow through with treatment regimens
  - effects their family and work relationships,
  - can cause depression and risk of self-harm,
  - incite unnecessary side effects from medications
  - shorten overall survival

**ACKNOWLEDGEMENTS**  
This project was supported and mentored by Dr. Gene Harkless, DNSc, APRN, FNP-BC, CNL, FAANP, Associate Professor at the University of New Hampshire and Dr. Ryan Nipp, GI Oncologist at Massachusetts General Hospital, in Boston, MA

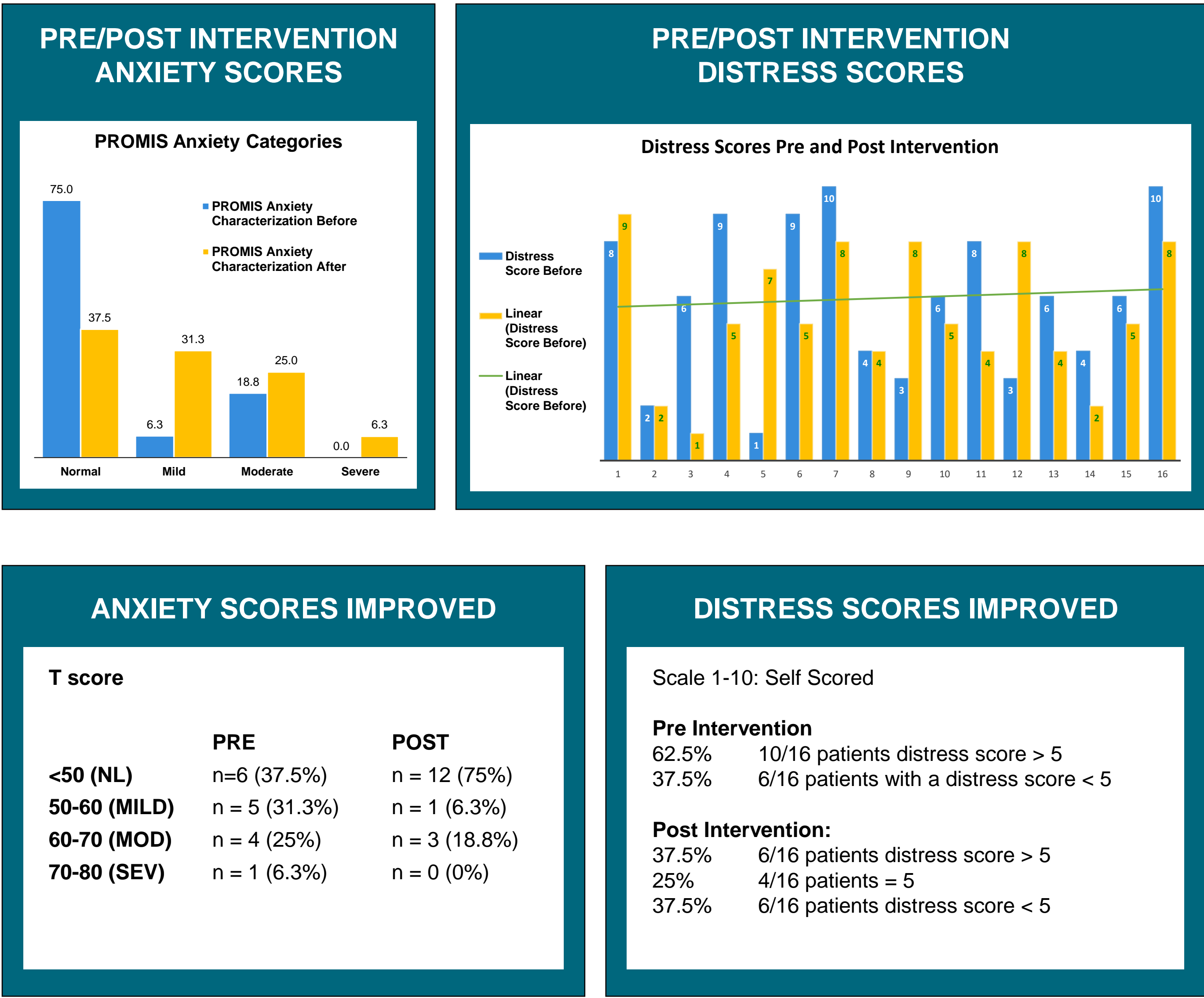
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## METHODS

- Anxiety**
- PROMIS (Patient Reported Outcome Measurement Information Systems) anxiety short form
- Distress**
- NCCN (National Cancer Care Network) Distress Thermometer and screening problem list
- Patient Satisfaction**
- PSSC (Patient Satisfaction with Cancer Care) evaluation of satisfaction from screening to diagnosis and treatment



## RESULTS



## DISCUSSION

- Additional Positive Outcomes:**
- No treatment postponements due to anxiety
  - 10 patients received early intervention Social service consults
  - 8 patients received early intervention Nutrition consults
  - 2 patients received early intervention Psych-oncology consults
  - 0 patients required hospitalization due to side effects at Week 1 toxicity check
  - 0 patients requiring additional management of side effects at Week 1 toxicity check
- Patient Satisfaction Data:**
- 50% return rate on surveys
  - Overall high satisfaction with the telephone calls
  - “Phone calls were very informative”
  - “I didn’t feel as anxious after I talked to the NP”

## CONCLUSION

- This project was effective in demonstrating a statistically significant reduction in anxiety scores and improved distress scores
- There was a high degree of patient satisfaction with the phone call communications
- Reduced anxiety and distress can improve treatment adherence which is linked to patient satisfaction
- Treatment adherence can prevent side effects and reduce hospitalizations and was demonstrated in this QI project

## FUTURE RESEARCH

- Larger scale study that examines a control vs intervention group to determine effect of phone calls on a more diverse group of GI cancer patients
- Further examine the relationship between the telephone communications, improved treatment adherence and reduced side effects.

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# MIDWIFING THE MIDWIVES: EDUCATION AND PRECEPTORSHIP AT LIRA UNIVERSITY, UGANDA

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## BACKGROUND AND SIGNIFICANCE

Lira University is currently Uganda's only bachelor's-prepared midwifery program, and aims to become a beacon of high-quality maternal and newborn care. However, the low-resourced region struggles with recruitment and retention of providers, and student midwives receive little mentorship in the clinical setting. Due to this, students lack confidence in their abilities to perform skills such as normal deliveries and emergency obstetrics management, resulting in preventable maternal and neonatal morbidity and mortality. To improve these outcomes, faculty at Lira University partnered with MGH Global Nursing to provide preceptor support for students during their clinical rotations.



Lira University College of Midwifery



Maternity Ward at  
Lira Regional Referral Hospital

## OBJECTIVE/LEARNING OUTCOMES

The goal of the partnership between MGH and Lira University was to improve the quality of Lira's midwifery education by modeling and reinforcing key principles of clinical preceptorship and evidence-based care. Learning outcomes included:

- 1. Perform safely and competently in the labor and delivery suite**
  - a) Demonstrate the ability to accurately complete and utilize partograph tools to inform patient care
  - b) Document and interpret history and physical exams, including vital signs, vaginal exams, and normal and abnormal assessment findings
  - c) Display observed improvement in key midwifery competencies and clinical skills
  - d) Provide thorough verbal and written patient handoffs during both routine change-of-shift and urgent/emergent situations
- 2. Demonstrate understanding of normal versus abnormal labor and delivery**
  - a) Respond appropriately to low, medium, and high risk clinical findings
  - b) Interpret vital signs correctly
  - c) Consult with interdisciplinary team members in a timely manner for abnormal labor progress and obstetric emergencies
  - d) Respond with proficiency and due urgency to emergencies as presented in case studies and clinical scenarios
- 3. Conduct thorough patient histories and physical assessments for postpartum mothers and neonates in the home setting**

## IMPLEMENTATION

Over a two-week period, formal lectures were conducted for forty 3rd-year midwifery students and two assistant faculty members, introducing the concepts of SOAP notes, delivery notes, and verbal and written handoffs. The certified nurse-midwife Global Nursing Fellows also served as clinical preceptors for thirty-two 3rd-year midwifery students, who had the opportunity to apply lifesaving skills in the intrapartum and postpartum settings.



Students learn about SOAP notes  
and delivery documentation



CNM Jennifer Neczypor precepting  
students in the maternity ward



Student midwife Fiona evaluates a postpartum mother  
with preeclampsia during a home visit

## PERFORMANCE IMPROVEMENT/OUTCOME

Student midwives were precepted during one hundred postpartum home visits and fifty spontaneous vaginal deliveries of singleton and twin newborns in cephalic and breech presentations. Students verbalized increased comfort in the clinical setting after the intervention. After two weeks, over 90% of student midwives accurately utilized partographs for clinical decision-making and could correctly demonstrate how to safely manage obstetric emergencies. By the end of Postpartum Day Seven, all thirty-two students appropriately performed over 90% of the maternal and neonatal postpartum exams.



Student midwife Damalie  
teaches a new mother about  
newborn warning signs



Proud student midwife Eric with two of  
his patients – a healthy mother and her daughter,  
the first baby that he delivered

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Clinical preceptorship clearly improves midwifery students' skills, engagement, and confidence in labor and postpartum management. Additional educational interventions are indicated to address faculty knowledge gaps with regards to the principles of adult learning, and to best support clinical staff and students at Lira University.

## SPECIAL ACKNOWLEDGEMENT



IMPROVING SERIOUS ILLNESS CONVERSATIONS IN A  
GASTROINTESTINAL ONCOLOGY CLINIC:  
A QUALITY IMPROVEMENT INITIATIVE IN A BOSTON HOSPITAL

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Massachusetts General Hospital, Boston, MA

BACKGROUND

- Stage IV Gastrointestinal Cancers frequently have a limited prognosis of 1-2 years. In the absence of serious illness conversations (SIC) and advanced care planning (ACP), this population of patients are often the recipients of crisis driven, aggressive care at the end of life.
- Unfortunately, less than a third of patients with metastatic gastrointestinal cancers reported a SIC with their clinician upon diagnosis or at the first oncology visit.
- We aimed to train providers on serious illness communication. This helped providers have deeper quality and meaningful conversations with their patients.
- The goal in training clinicians would diminish anxiety around initiating these emotionally difficult conversations.
- Provider communication skills around advanced care planning can help guide patients and their families to ask appropriate questions. This could open the door for meaningful, goal focused dialogue and improved outcomes for patients and their families.

PURPOSE

To describe provider experience (oncologists and oncology nurse practitioners) with the conversation guide and understand facilitators and barriers to implementation of advanced care planning.

METHODOLOGY

- We conducted in-depth interviews with 5 clinicians (oncologist and oncology NP) providing care to GI Cancer patients in an academic medical center.
- Interviewed clinicians to understand their perception of the serious illness conversation training and its subsequent use in clinical practice. Also gathering impressions of barriers and facilitators to implementation.
- Feedback recommendations for future implementation for all disease centers.
- We transcribed all the interviews.
- Two coders independently reviewed the qualitative interviews and categorized the data into broader issues and themes.

RESULTS

- We conducted interviews with gastrointestinal oncologists (n=3) and oncology nurse practitioners (n=2).
- Nurse practitioners and oncologists thought the training and tool was very beneficial.
- Differing philosophies between MD and NP groups:
  - On the timing of when to initiate the serious illness conversation.
  - A concern from both role groups around causing worry for patients/families by having these conversations.
  - Fear that seeing the documented conversations in a patient’s medical record gave permission for any provider to make end of life decisions. Primary teams wanted to be the primary decision makers with the patient and family.

Positive Perceptions

Learning Framework:

“Loved the training, thought it was great. Loved that there was a structured script to use. This training will change practice by giving me more confidence to continue the conversation.” (NP and MD)

Negative Perceptions

Training:

- During clinic time less than ideal, the burden of having to be away from a clinic on a clinical day was difficult. (NP)

Role play anxiety:

- “There was anxiety around having to share the space with peers and being watched and judged.” (MD)

Logistics of using the guide:

- Not knowing where to find it in the days following the training was not intuitive. (NP)
- Clinic demands and being away from patient care. (MD)
- Too hypothetical to use script in clinical practice. (NP)
- “Least helpful, role playing and having to use an actual formalized script provided to us.” (NP)

Facilitators

1. Taking responsibility for early prognostic exposure. “More initiative from the MD about prognosis would allow the invitation to use it more.” (NP)
2. Enhancing documentation quality throughout the trajectory. “Documentation quality is excellent and should be available for every patient in each visit.” (NP)
3. Substantiating, quantifying work flow.
4. Financial incentive. (MD)
5. Easy workflow.

Barriers

- Patient reluctance.
- Logistics of integration into the workflow.
- Patient fear and clinician discomfort in imitating these conversations.
- Concern about documentation would impact acute decision making “You do not want the module to be the decision maker for your patients, still want to be the primary oncologist that can share in decision making.” (MD)
- Time constraints to having the conversations.

SUMMARY

The aim of this project was to elicit behavior change in an area of healthcare that is in desperate need of improved communication. Training GI Oncologists and GI Oncology Nurse Practitioners has helped uncover a fragmented process for taking care of the seriously ill and often terminally ill cancer patient. Often the philosophy/goal is to follow a path to cure disease and along the way the patient’s wishes, goals and hopes become disconnected from treatment planning and goal concordant care is sidelined.

IMPLICATIONS FOR FUTURE RESEARCH

- These findings help illustrate clinicians lack of communication training, which intern affects patients with advanced GI cancers to have exposure to highly medicalized care at the end of life.
- Studying when to implement these conversations and how to integrate them into the workflow from the initial consultation.

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Special thank-you to:  
GI Oncology Nurse Practitioners and Oncologists



University of New Hampshire



Continuum Project  
LIVING WELL WITH SERIOUS ILLNESS



# AMBULATION NATION: A PROGRAM TO PROMOTE PATIENT MOBILIZATION AND DECREASE LENGTH OF STAY

Caity Carter BSN, RN; Haley Ralph BNS, RN; Heather Vallent, MS, RN, GCNS-BC  
Bigelow 11 General Medicine  
Massachusetts General Hospital, Boston, MA

## BACKGROUND AND SIGNIFICANCE

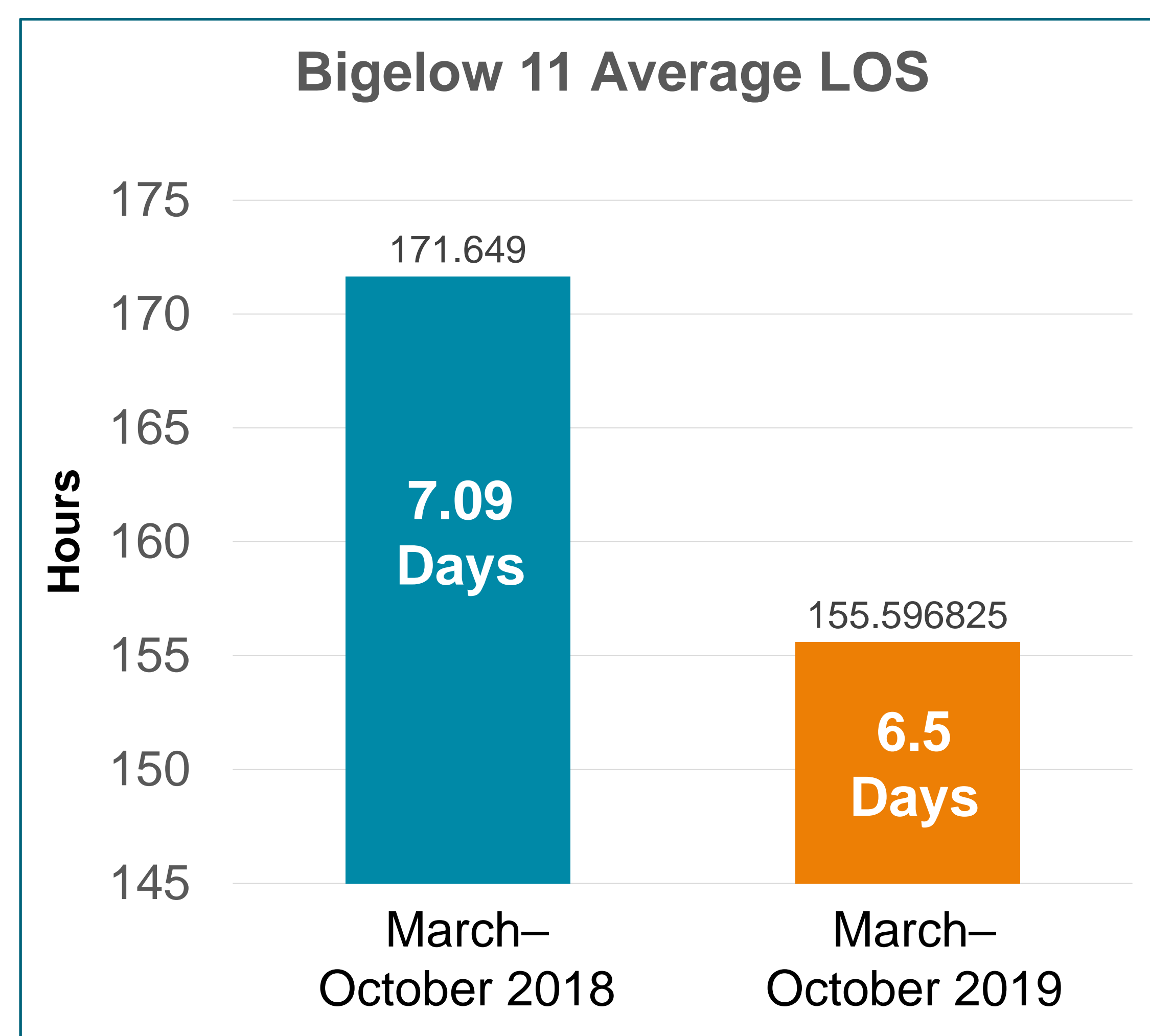
- Early mobilization of patients may decrease hospital length of stay and iatrogenic complications related to immobility.
- Due to competing priorities and varying levels of knowledge and motivation, mobilization of patients may be overlooked on general medical units.
- On one general medical unit, it was noted that nurses did not prioritize the mobilization of patients.
- The unit had no standard to document a patient's mobility status in the electronic medical record.

## PURPOSE

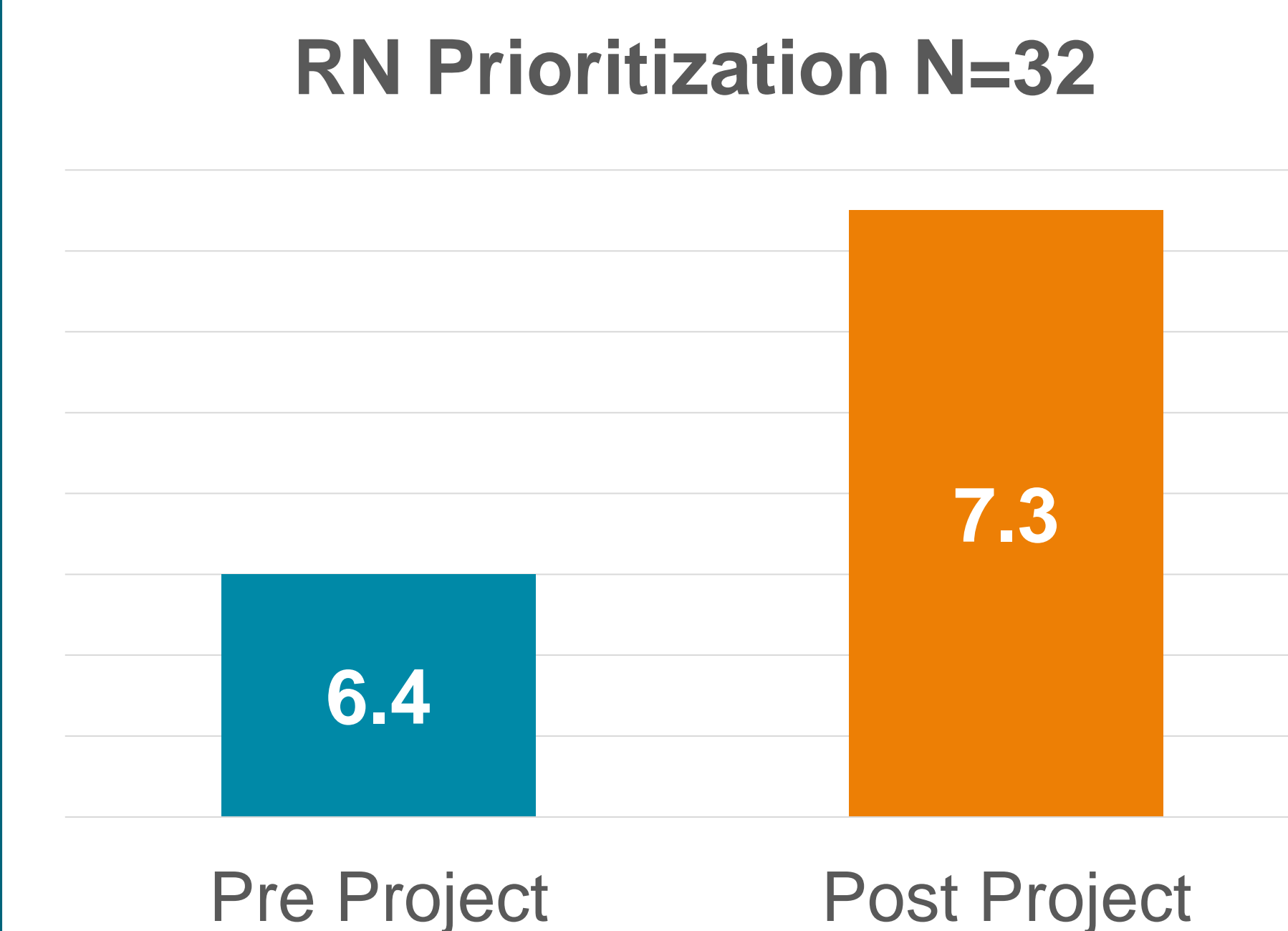
1. To increase knowledge of nurses in the importance of mobilizing patients.
2. To address the barriers that prevent nurses from mobilizing patients.
3. To impact hospital length of stay through engagement of nurses and patients/families in mobilization.

## IMPLEMENTATION

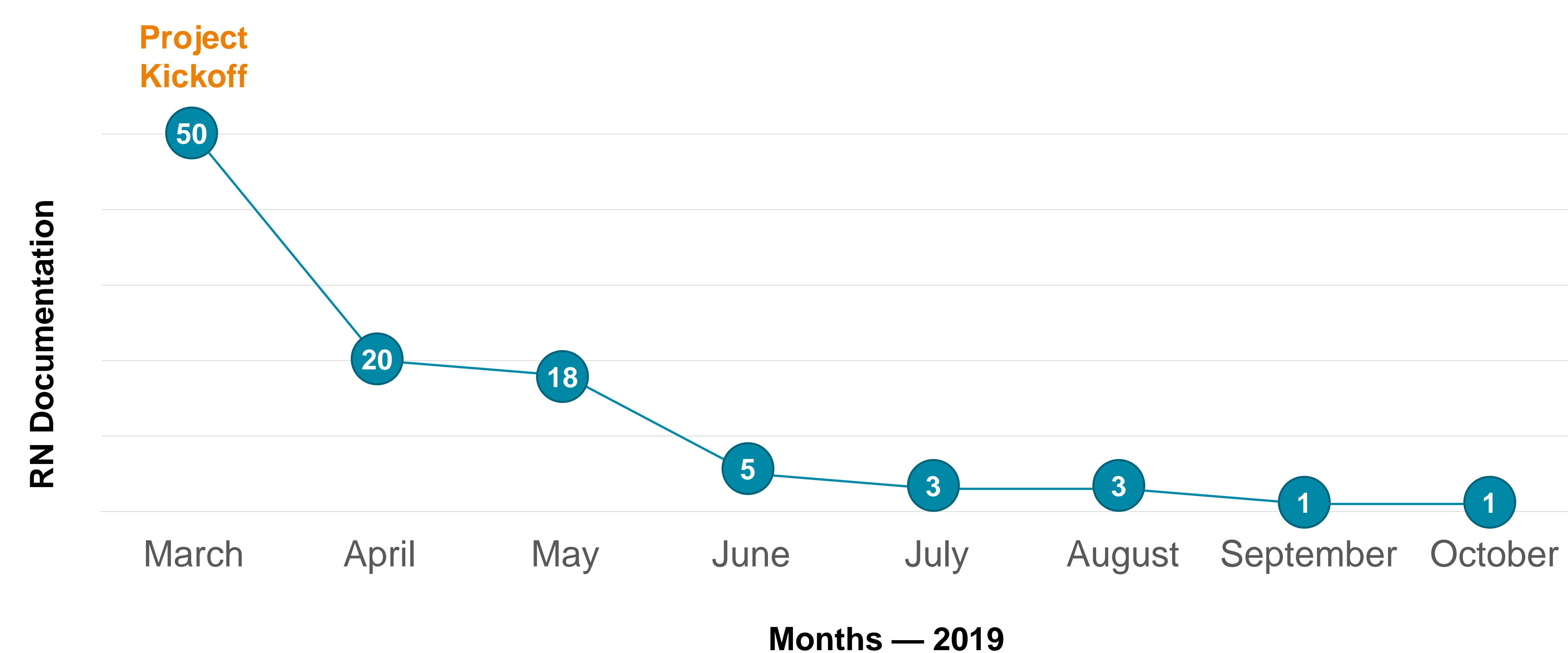
- Pre and post survey on barriers to mobilizing patients
- Educational sessions on safe mobilization practices were given by physical therapists
- A unit-specific documentation guideline was implemented



On a scale of 0 to 10, please identify how you prioritize mobilizing patients during your shift (0 you do not prioritize; 10 you prioritize it greatly):

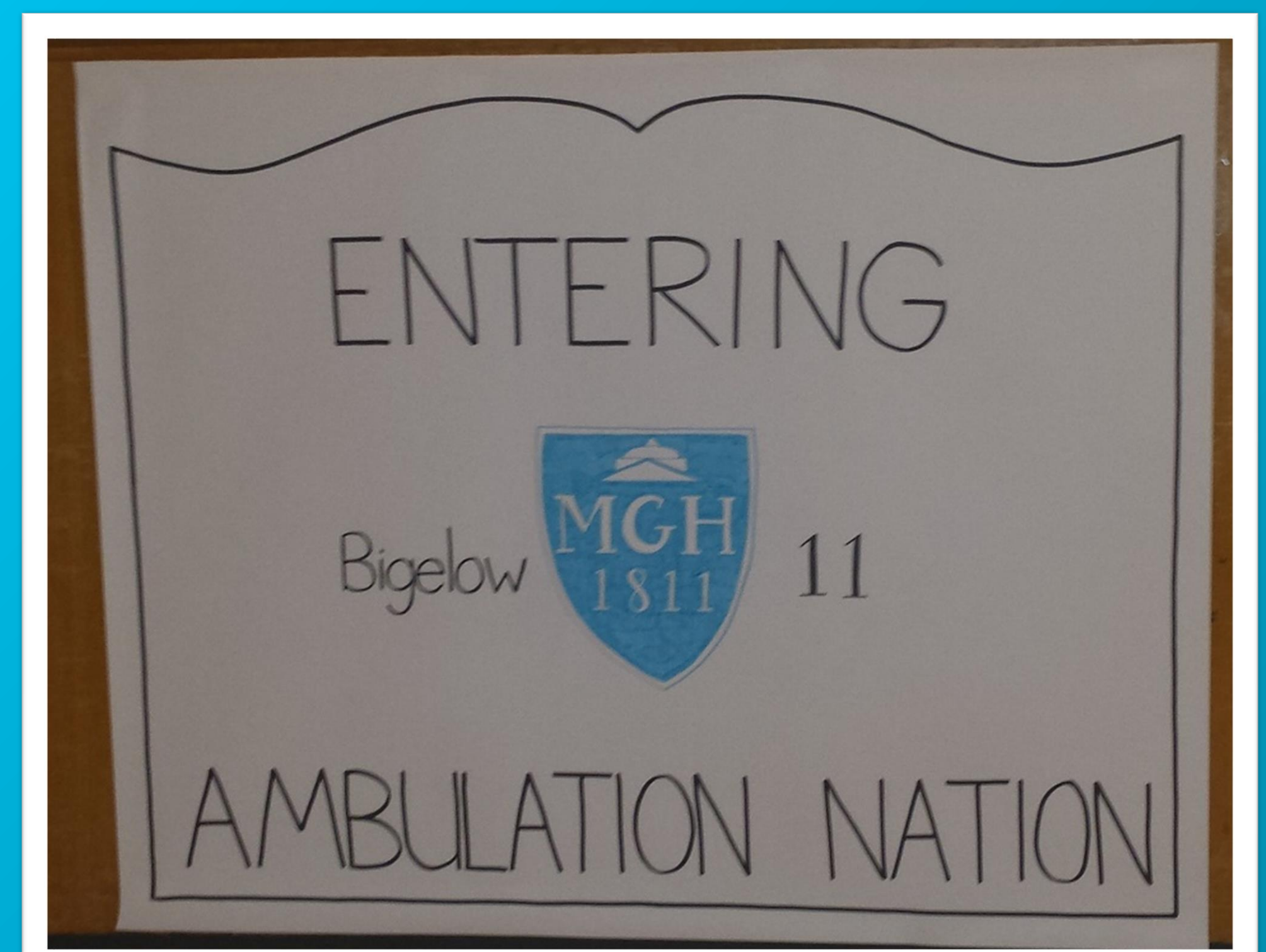


### Documentation of “Activity as Tolerated” in Electronic Medical Record EMR)



## IMPLICATIONS

- Replicated in hospital on a larger scale
- The effects of early and frequent mobilization may influence pressure ulcer rates, fall rates, quality of sleep, delirium and quiet at night scores





# CREATION AND IMPLEMENTATION OF A SIMULATION-BASED TRAINING EXPERIENCE TO INCREASE STAFF MEMBER EMERGENCY PREPAREDNESS AT A SATELLITE AMBULATORY CARE CENTER

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## BACKGROUND

Medical simulation is an incredibly valuable learning tool. Many opportunities exist for simulation training on the main campus. However, those simulation courses do not address emergency preparedness within a free-standing ambulatory care center. Therefore, we created and implemented a quarterly program including different real-life scenarios enhancing role clarity to prepare staff in emergency situations.



## IMPLEMENTATION

Simulation training was implemented in the ambulatory surgical unit over the past year. Offered quarterly, it focused on emergency scenarios such as malignant hyperthermia, myocardial infarction, vascular emergencies, and local anesthetic toxicity. A Likert-scale and open-response survey was created specifically for this training and used to assess participant's experiences in the program.

## PERFORMANCE IMPROVEMENT/OUTCOME

Survey responses of participants indicated a knowledge gap of the location for emergency response equipment, which led simulation trainers to create and implement a scavenger hunt. During the debriefing sessions, staff stated they had better understanding of role clarity and closed-loop communication technique, because of practice during the simulation training. Staff reported an increased comfort level with utilizing these techniques in their daily practice. Participant responses on the Likert-scale stated that the simulation experience enhanced teamwork and communication skills by improving their knowledge and awareness of discipline-specific roles and responsibilities. The simulations included clinical review of commonly encountered patient emergency situations in our satellite ambulatory care center. Staff stated an increased clinical knowledge of commonly encountered patient emergency situations and an improved comfort level when the emergency arises.

## PROGRAM FEEDBACK

**Question:** Please comment on the strengths and weaknesses of the session, and share any suggestions for program improvement.

**Response:** "I thought the entire program was strong. It not only sharpened professional skills, but emphasized the importance of proper communication between team members, which in the heat/stress of a crisis, that important aspect can get lost. It was great and I was so happy I went."

## OBJECTIVES

The goal of this simulation intervention was to enhance closed-loop communication and debriefing, improve teamwork, define roles and familiarize staff with emergency preparedness and emergency equipment at an outpatient setting.

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

Future analysis will include data on patient outcomes. Given the positivity from the staff, the next step is to measure the response time of an emergency situation. Staff identified further need to improve their comfort level of IV placement, defibrillator usage, and code cart stock familiarity in an emergency.



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FORECASTING MELICULAR  
DETERMINISTIC  
VALIDATION TIMESTAMPS GRAPHICAL  
ENUMERATION OLFIELD EVACUATING  
STOCHASTIC CALIBRATION DISPERSION  
MISLEADINGLY ENGINEER TIME INVARIANT  
PHYSICS UNDERLYING VALUES  
CONTEXTS SUBSURFACE CORDON  
SIMULATOR MATHEMATICAL NUMERIC DISCRETE  
IMPORTANT EVENT ERROR DATA

**SIMULATION**

VERIFICATION DIFFERENTIAL TRAFFIC EXAMPLES  
THEORY PARAMETER ACTUAL ANALOG  
ROADWAY MATRIX LARGE SYSTEM  
EXPECTED VARIABILITY ANALYSIS  
MODEL PREPROCESSOR KINETICS  
INTERCHANGES MOLECULES DEVELOP  
EQUATION ASTROPHYSICS REPRESENTED  
DEBUGGING AGGLOMERATION



# SIMULATION TO ENHANCE NURSES' PROFICIENCY IN CARING FOR PATIENTS WITH ECMO: A PILOT QUALITY IMPROVEMENT INITIATIVE

Kathleen Schultz, RN, DNP, AGACNP-BC; Ivana Nikolic, MD;  
Maureen Hemingway, RN, DNP, CNOR; Emil Petrusa, PhD  
Massachusetts General Hospital, Boston, MA

## BACKGROUND AND SIGNIFICANCE

Extracorporeal membrane oxygenation (ECMO) is an advanced, life-saving treatment that uses a pump to circulate blood through an artificial lung providing oxygenation to the body. Patients requiring ECMO have severe, life-threatening illnesses that prevent their heart and/or lungs from functioning normally. Nurses caring for ECMO patients must be prepared for routine and emergency situations; rapid, accurate responses to emergency situations involving complex technology require regular practice. Therefore, we sought to develop high-fidelity simulation training to better promote and maintain the relevant clinical skills required for ECMO.

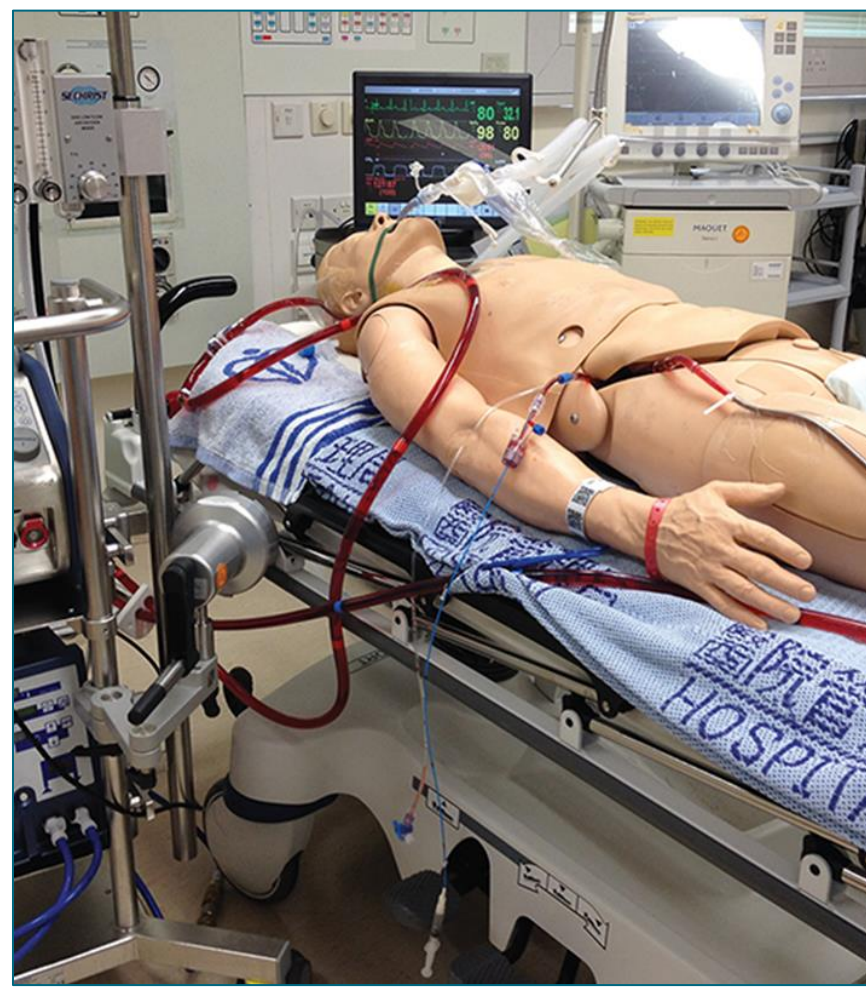
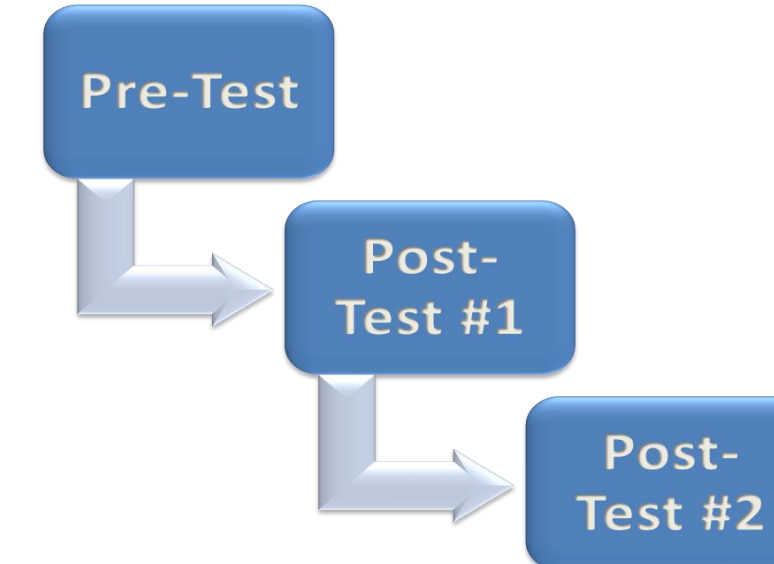


Photo: <https://www.intechopen.com/books/extracorporeal-membrane-oxygenation-advances-in-therapy/simulation-training-on-extracorporeal-membrane-oxygenation>

## METHODS OF MEASUREMENT

- Developed quiz questions
- General and specific knowledge assessed
- Vetted by ECMO Nurse Experts
- Demographics Survey
- KSA Survey



ECMO Quiz	
<b>Hypovolemia (4)</b>	
1. Which of the following is a common sign of hypovolemia in VA ECMO?	
a. Hypertension	
b. Increased CVP	
c. Chatter	
d. Increased SaO2	
2. If the positioning of the venous cannula is confirmed to be in the correct place, what is the most common cause of a low flow alarm?	
a. Return cannula too large	
b. Hypovolemia	
c. Kinked tubing	
d. Thrombus formation	

After participating in the simulations, how do you feel your management of emergency situations has improved?

Not At All — Low — Slightly — Neutral  
Moderately — Very — Extremely

After participating in the simulations, how do you feel your confidence in bedside management of the ECMO patient has improved?

Not At All — Low — Slightly — Neutral  
Moderately — Very — Extremely

If you had the choice between simulation or traditional classroom education, which would you choose and why?

## DISCUSSION

- ECMO simulation for bedside nurse re-education is feasible
- Statistical significance not achieved for aggregate test scores
- Staff perception tremendously positive
- Limitations:
  - Small sample size
  - Variability in confederates attending simulation
  - Time commitment of simulation design and implementation
  - Unable to acquire a simulation ECMO circuit

"(As a) Visual as well as hands-on learner, simulation is better suited to my learning style."

"More interactive, easier to grasp ideas and practice real situations."

"Puts the Powerpoint (sic) knowledge into action and it's much less anxiety producing to make a mistake on a dummy."

"I felt I learned more during simulation and that I actually understood and absorbed the information better."

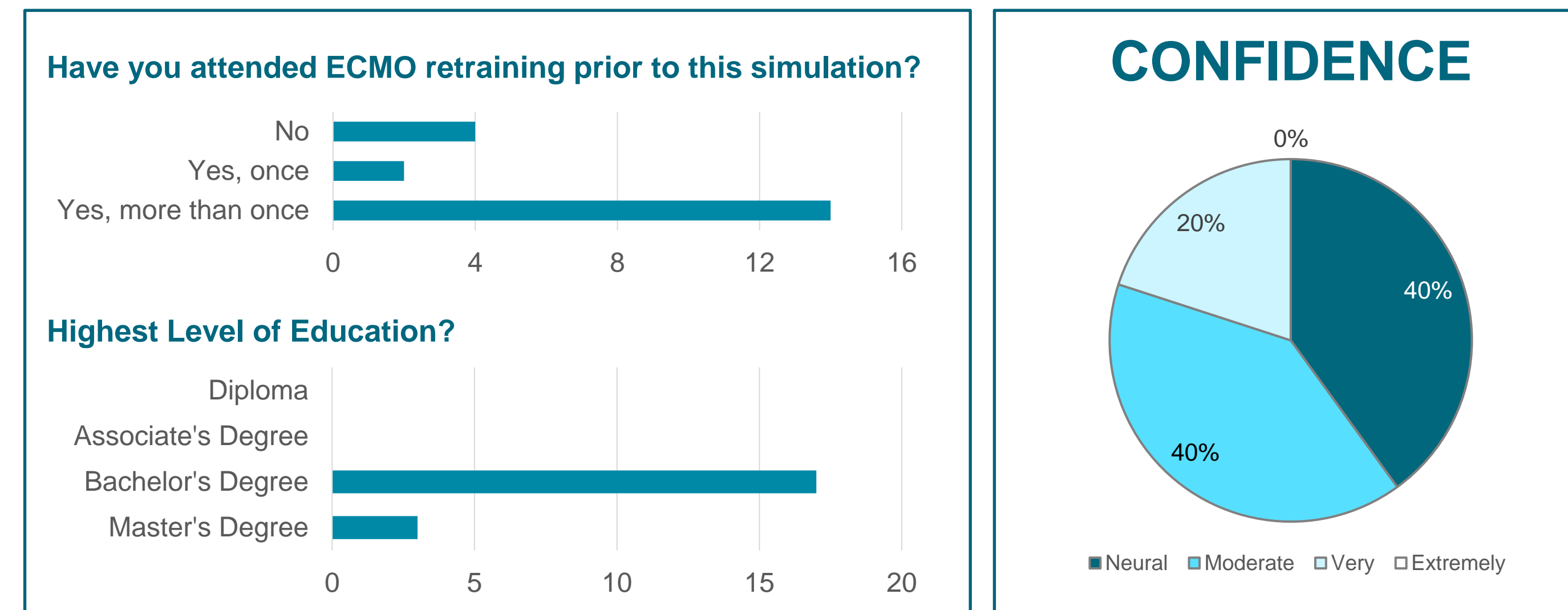
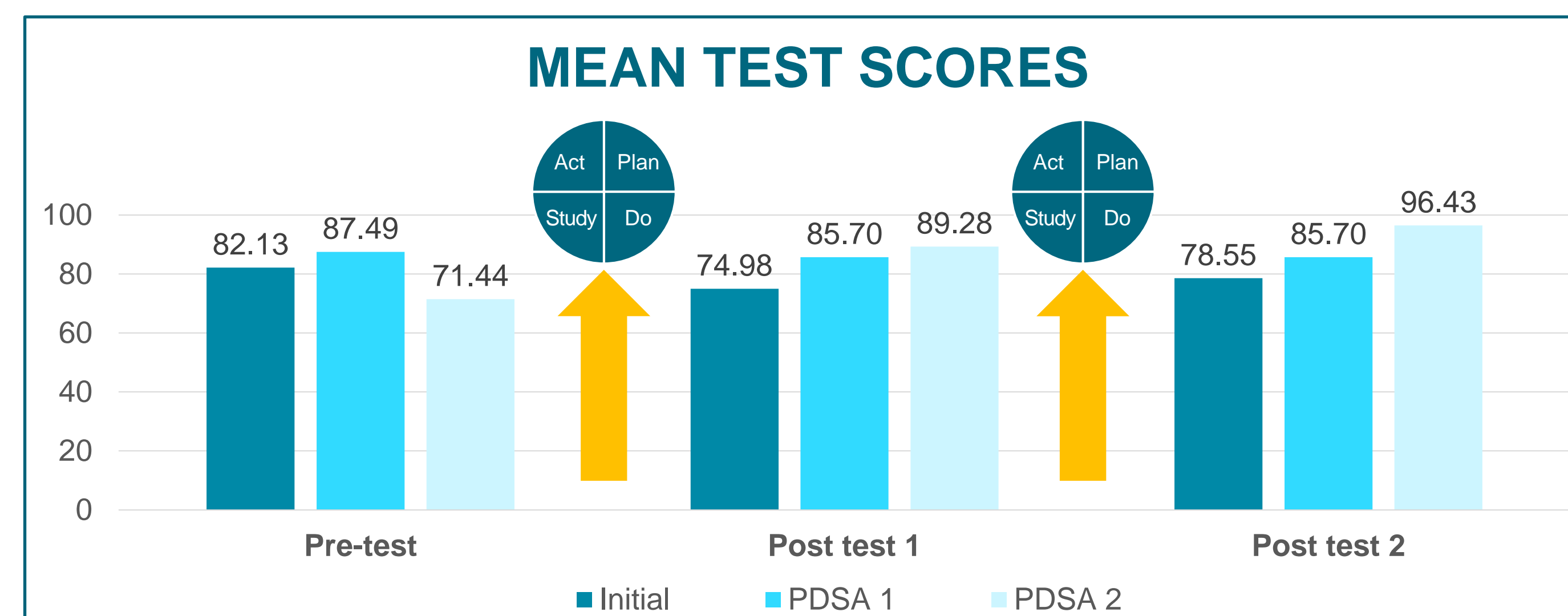
## PURPOSE

The primary aim of this project was to design and implement high-fidelity simulation and assess its effect on nurses' knowledge and bedside skill in the management of ECMO patients. Availability of ECMO simulation is an indication for Platinum Status, which is the highest level of recognition from ELSO.



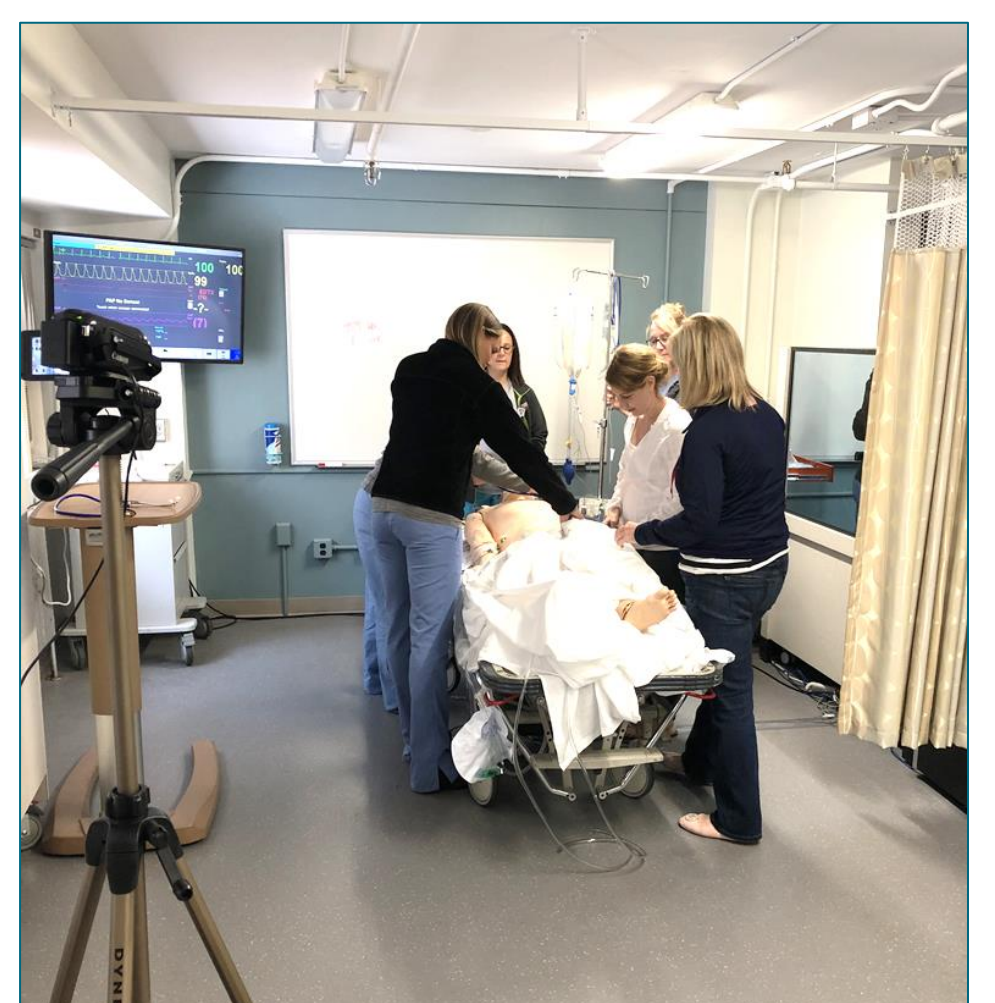
## PRELIMINARY RESULTS

20 nurses participated with an average pretest score was 80.7, average posttest score was 87.1 for the educational standard, 82.8 following simulation. Staff expressed positivity toward this experience and requested extension of the program to a full-scale initiative. A two-tailed, paired t-test was not statistically significant when comparing all data sets, likely due to the small sample size but did show a significant relationship ( $p < .05$ ) between the first pilot simulations and after PDSA adjustments were made. The first PDSA developed take-away points for the final debriefing. The second PSDA cycle clarified exam questions to more accurately reflect knowledge rather than test taking abilities.



## IMPLICATIONS

- Pilot simulation training demonstrated increased knowledge of nurses in caring for patients on ECMO
- Further assessment is indicated to determine whether this program improves clinical outcomes or decreases complications in patients receiving ECMO
- Simulation program is feasible
- Technology and finance in place
- Supports the institutional goal of ELSO platinum status
- Full roll out of adapting simulation into retraining is to be determined
- Dedicated staff is imperative
- Better time to roll out



## IMPLEMENTATION

The improvement intervention consisted of developing and implementing common key ECMO emergencies into 2 hours of simulated scenarios with performance evaluation followed by debriefing. Knowledge assessments using an investigator-derived survey were completed at baseline, after review of our unit's educational standard, and after simulation to assess current knowledge level, document further knowledge deficits, and to demonstrate if the simulation made any improvement in test scores. PDSA (Plan-Do-Study-Act) methodology was used to guide the simulation scenarios based on real-time participant performance, feedback, and assessment scores. Baseline, pre-intervention assessment scores were then compared to post-test scores for the self-directed educational standard and the simulation exercises.



# ESTABLISHING AN INTERPROFESSIONAL CARE TEAM FOR PATIENTS WITH HIGH CONSEQUENCE INFECTIOUS DISEASES

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Kim Whalen, MSN, RN; Jennifer Samiotes, RN, CCRN; Cristin LaVita, RN, CCRN;  
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## BACKGROUND

- In 2015, MGH received federal designation as the New England Regional Ebola and other Special Pathogens Treatment Center for patients who have or are suspected of having high consequence infectious diseases (HCIDs).
- The lack of a care team and limited availability of policies, procedures and training recommendations to support safety and efficacy was acknowledged.



## IMPLICATIONS FOR NURSING PRACTICE

- The lessons learned in the creation, ongoing training, and sustainment of this team can be extrapolated for use in other patient care situations and can serve as a model for similar teams in other facilities.
- Impact of Biothreats Response Team Creation on COVID-19 Response:
  - Interdepartmental relationships developed through the BRT enhanced the conversion of the Pediatric Intensive Care Unit, to care for critically ill adults with COVID-19
  - BRT members have a high level of knowledge and comfort with personal protective equipment and as such, served as experts in the rapid expansion of training and education across the hospital
- Next steps for the Biothreats Response Team include:
  - Formalizing team onboarding through the implementation of an orientation class
  - Expansion of the subspeciality capabilities of the team
  - Changes in training and education to include online learning activities and expansion of training and education programs to support the Region
  - Team members serving as subject matter experts for other programs in the Region

## OBJECTIVE

To develop an interdisciplinary team, the Biothreats Response Team (BRT) and the requisite policies and procedures to safely and effectively care for patients with confirmed or suspected HCIDS.

## PERFORMANCE IMPROVEMENT OUTCOMES

### Team Membership

- Presently, there are 157 team members, including auxiliary members; recruitment is ongoing.
- The clinical team is comprised of 54 RNs, 20 MDs, and 17 RTs.
- A retention rate of ~80% is observed among the clinical team over a 3-year period.
- Attrition in team members is mainly due to changes in role within the organization and change in employment status.
- Anecdotal evidence suggests high satisfaction among team.

### Team Trainings

- Team trainings and exercises allowed staff to come together and learn across disciplines and specialties.
- Since 2017, over 25 trainings and exercises have occurred.
- Super Users are embedded at the local level and support both training and activations.

### Policy & Protocol Development

- Since 2017, over 35 policies and procedures have been established.
- Using a continuous process improvement methodology policies and procedures are implemented during trainings and exercises and team member feedback is then incorporated to strengthen these documents and enhance staff and patient safety.

## IMPLEMENTATION

- Team recruitment commenced in March of 2016.
- A volunteer model was established and was comprised of experienced staff from the Medical ICU and the Pediatric ICU including registered nurses (RNs), attending physicians (MDs), and respiratory therapists (RTs).
- Team members worked with staff from Emergency Preparedness, Infection Control, Laboratory, Environmental Health and Safety, and Materials Management to establish policies, procedures and training materials.
- Drills were held to test and refine the newly created documents.

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Malone, S. (2014, December 2). Massachusetts hospital treating possible Ebola patient. *Scientific American*. <https://www.scientificamerican.com/article/massachusetts-hospital-treating-possible-ebola-patient/>

U.S. Department of Health and Human Services Office of the Assistant Secretary for Preparedness and Response. (2017). *Regional Treatment Network for Ebola and Other Special Pathogens*. <https://www.phe.gov/Preparedness/planning/hpp/reports/Documents/RETN-Ebola-Report-508.pdf>



IMPROVING CLINICAL RESEARCH FLOWSHEET COMPLETION RATES

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Casandra McIntyre RN, MTS Nurse Director/NPS of Termeer Center for Targeted Therapies

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INTRODUCTION

Paper flowsheets are used in the Termeer Center for Phase 1 clinical trials as a guide for the Infusion Nurse to follow the complex schedule and time sensitive data collection of the day. The baseline measurement of flowsheet completion per the ALCOA standards was 8%. A higher rate of flowsheet completion would result in fewer deviations, better executed protocols, less downstream work for members of the research team, and reflect the high quality research done in Termeer.

AIM

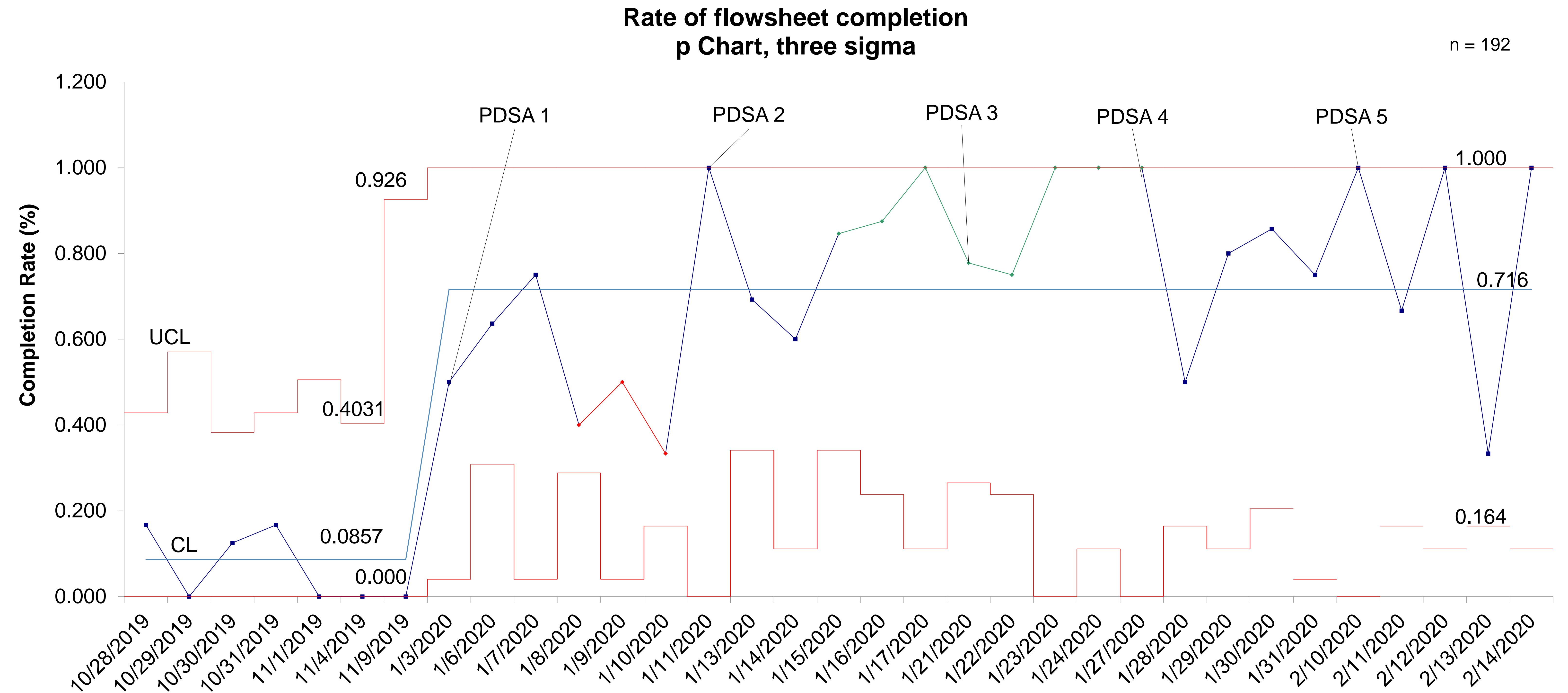
Increase rate of overall completion of flowsheets in Termeer by infusion nurses and CRCs from 8% to 70% by focusing on the attributable, contemporaneous, and original ALCOA categories by February 26, 2020.

INTERVENTION

Collection of diagnostic data and interviewing front line staff before and during implementation guided the interventions for each PDSA cycle.

- **PDSA 1:** Flowsheets are now located on bright yellow clipboards. This allows all staff to easily locate flowsheets for documentation. New “Incomplete” and “Complete” baskets provided giving staff an improved workflow to obtain complete documentation. Example of a “perfect flowsheet” was provided to staff to use as a reference of best practice.
- **PDSA 2:** Leadership provided staff with real time feedback regarding flowsheet documentation.
- **PDSA 3:** Review with staff available collected data. Feedback session with staff to encourage engagement.
- **PDSA 4:** Hand off to staff: Monitor staff self-management.
- **PDSA 5:** Review recent FDA audit of flowsheets with staff which enhanced awareness and understanding of flowsheet importance.

RESULTS



DISCUSSION

The implementation of the colorful clipboards allows all staff to easily locate flowsheets. Prior to this CRC staff members expressed difficulty in locating flowsheets in the unit. Additionally, incomplete flowsheets were being submitted at end of patient appointment as there was no process to obtain missing documentation from other team members. The addition of an “Incomplete” and “Complete” basket provided staff a central location to locate flowsheets when documentation is necessary. As there is some nuance in flowsheet documentation a reference flowsheet was added to clipboards which provides an example of best practice. Additionally, ongoing education continues to be provided for front line staff to further understand the overall importance of this documentation.

CONCLUSIONS

Improved completion rate of flowsheets to 71%, surpassing our aim of 70%. This was made possible due to the dedication of the front line staff.

NEXT STEPS

- Staff member will continue to collect and review flowsheets. This will help identify trends and work with ND to analyze data and provide feedback to staff.
- Incorporate flowsheets into education for role groups that are involved in flowsheet.
- Continue to share findings.

TEAM

- **Termeer Infusion:** Kathryn Somers, Margaret Carr
- **Regulatory:** Steven Ripley, Tyler Holley, Miriam McClung
- **Research Nursing:** Barbara Rattner, Aishlinn Lundin, Margaret Joyce

PROJECT SPONSORS:

- Therese Mulvey MD
- Robert Herman



# THE POTENTIAL ROLE OF NURSES IN TELEMEDICINE: IMPROVING HEALTH OUTCOMES

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## BACKGROUND

- Telemedicine, through the use of video interaction, allows the cultivation of ongoing relationships between nurses and individuals living with chronic disease
- As an alternative to the telephone, this HIPPA secured modality is accessed via a firewall protected Internet connection
- Telemedicine has the potential to allow for an enhanced mean of communication between healthcare providers (HCPs) and the individual, family and/or caregivers

## TELEMEDICINE

“Information, communication, and monitoring technologies which allow healthcare providers to remotely evaluate health status, give educational intervention, or deliver health and social care of patients in their homes.” (Barken, 2018)

## OBJECTIVES

The aim of this quality improvement initiative was to understand

- 1) Nurses’ experience in using telemedicine
- 2) The areas of focus and time spent for telephone communication with patients/caregivers

## METHODS

- HCPs were surveyed using an author-developed questionnaire in conjunction with a time survey
- Findings indicate that 76% of RNs and NPs who currently work with individuals living with chronic diseases had little or no experience with telemedicine

### TELEMEDICINE QUESTIONNAIRE (N=51)

1. Are you an RN/NP?
2. How many years have you been practicing?
3. Do you currently work in the outpatient or inpatient setting?
4. What do you know about telemedicine?
5. What experience have you had with managing patients via telemedicine?
6. What do you see as the benefits of implementing telemedicine in your practice?
7. What are the challenges?
8. How would you like to utilize telemedicine? (data collection, clinical assessment, patient education)
9. What would you like to see incorporated in your telemedicine experience as a provider?

- Investigated the amount of time nurses spent on the telephone triaging patient care over the course of a work week
- Utilized a tally sheet of assigned topics
- Total hours of documented telephone time: 34.41 hours

### TIME STUDY RESULTS (N=7)

	0 -5 minutes	6 or more minutes	Total number of phone calls	% of phone calls greater than 6 mins.
Symptom Management	23	45	68	66%
Health Education	6	10	16	63%
Family/Caregiver Education	3	7	10	70%
Medication Questions	53	20	73	27%
Medication Education	17	8	25	32%
Medication Reconciliation	7	13	20	32%
Lab/Imaging Results	19	11	30	37%
Total	128	114	242	47%
Total number of minutes	640	684 (min. amount of minutes)		

## DISCUSSION

- There are important patient/caregiver and family needs that are currently addressed through telephone communication
- Telemedicine is an evolving means that virtually extends and expands the scope of care to encompass an individual’s primary residence
- This more interactive modality should be integrated into care settings to enhance communication between HCPs and those served

## CONCLUSION

- Nurses are invested in their patient population. When implementing telemedicine it is important to involve nurses in order to have a successful outcome.
- The visual component of telemedicine allows HCPs the ability to assess individuals. This modality also reduces the financial and time burden on the individual.

## FUTURE RESEARCH

- Researching the role of Nurses as “Telefacilitator Advocates: an Advocate for the individual and caregiver” (Cook, 2018)
- Work is needed to evaluate the feasibility and satisfaction of use of telemedicine as compared to usual telephone communication
- Focusing on Broadband as a Social Determinants of Health

*This project was undertaken as a Quality Improvement Initiative at Massachusetts General Hospital, and as such was not formally supervised by the Institutional Review Board per their policies.*

“People look up to a Doctor, but they look a Nurse in the eye.” –B. Dolan



# SLEEP WELL BE WELL

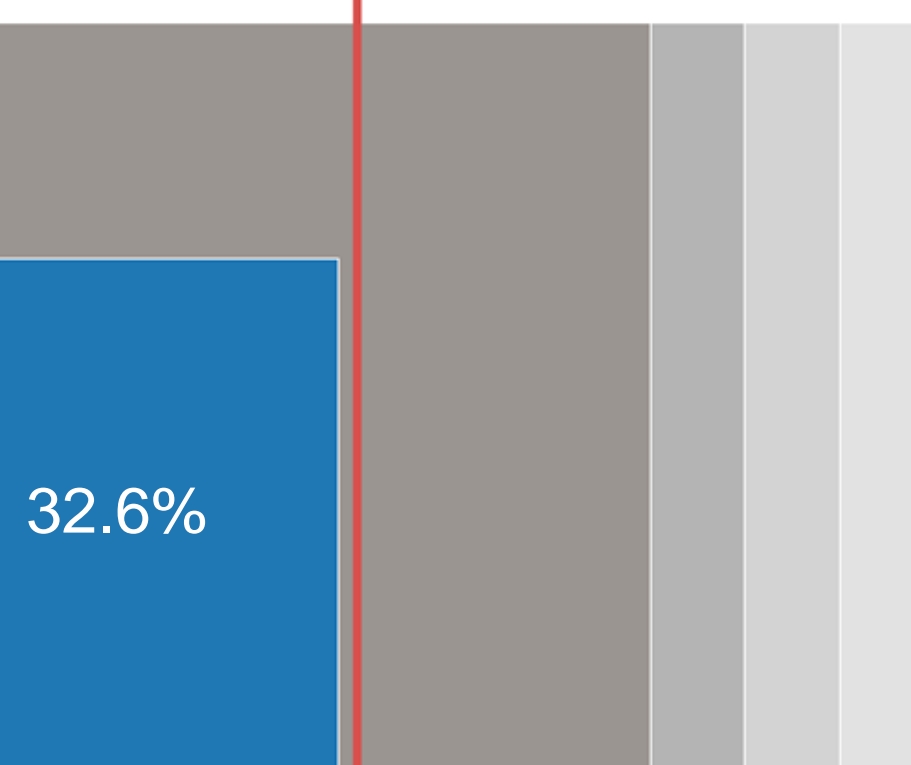
Kelly Hutchinson, BSN, RN  
Melissa Pace, BSN, RN  
Carolyn Velez, RN, ACCNS-AG-BC CARN  
Massachusetts General Hospital, Boston, MA

## BACKGROUND/ SIGNIFICANCE

The Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey is administered to patients upon hospital discharge to obtain an understanding of the patient's hospital experience. One question addresses "Quietness at Night." This score was measured on an inpatient surgical unit at an urban academic medical center and was below the national benchmark at 32.6%. Unit-level surveys indicated that 80% of patients reported a problem with noise: 48% due to staff interruptions to provide care, 22% due to equipment and/or alarms, 19% due to "other" reasons (loud doors, lights, helicopter, etc.), and 11% due to talking at the nurse's station. A quality-improvement project "Sleep Well Be Well" was implemented to address this problem.

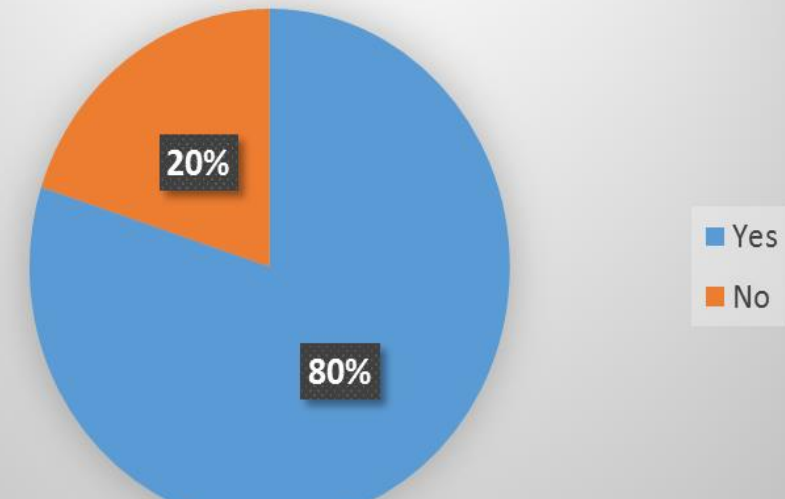
## PRECLINICAL DATA

Ellison 8  
Quiet at Night  
n=267



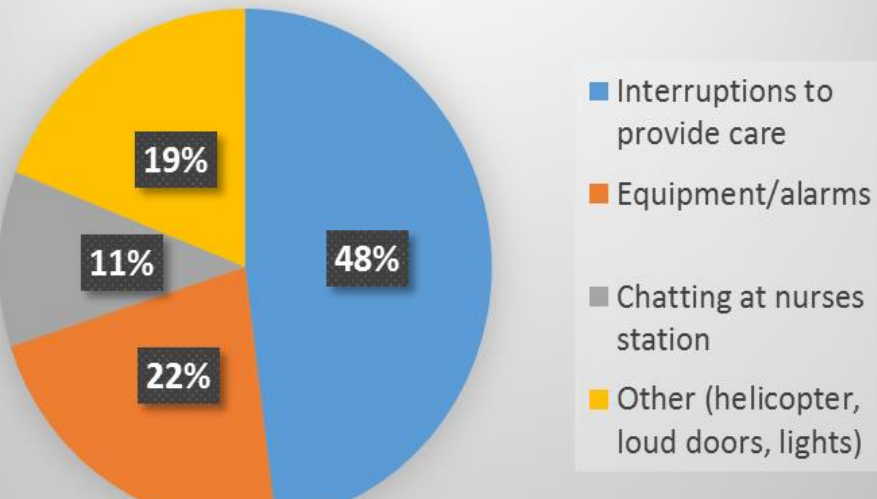
## PRECLINICAL PATIENT SURVEY DATA

Is There a Noise Problem on the Unit?



N = 30 out of possible 65

Worst Source of Noise on the Unit

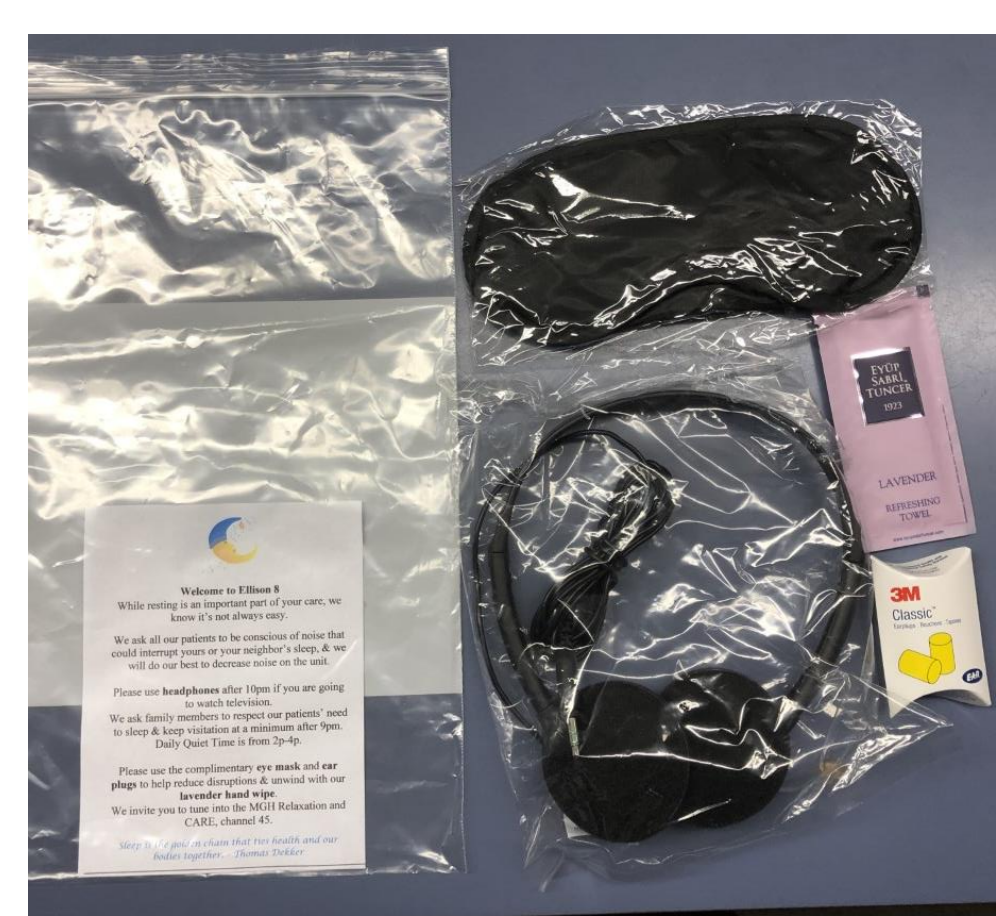


## OBJECTIVES

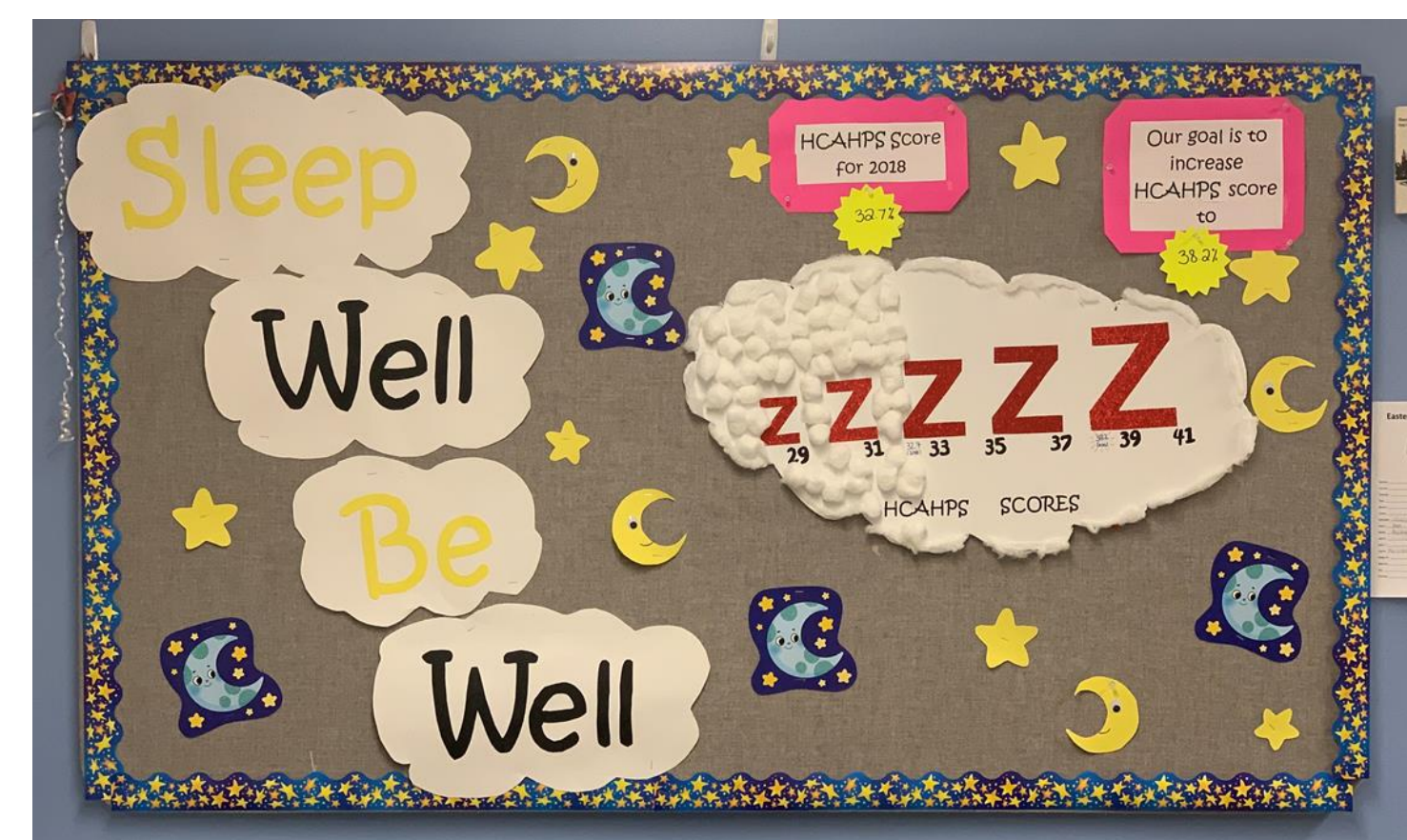
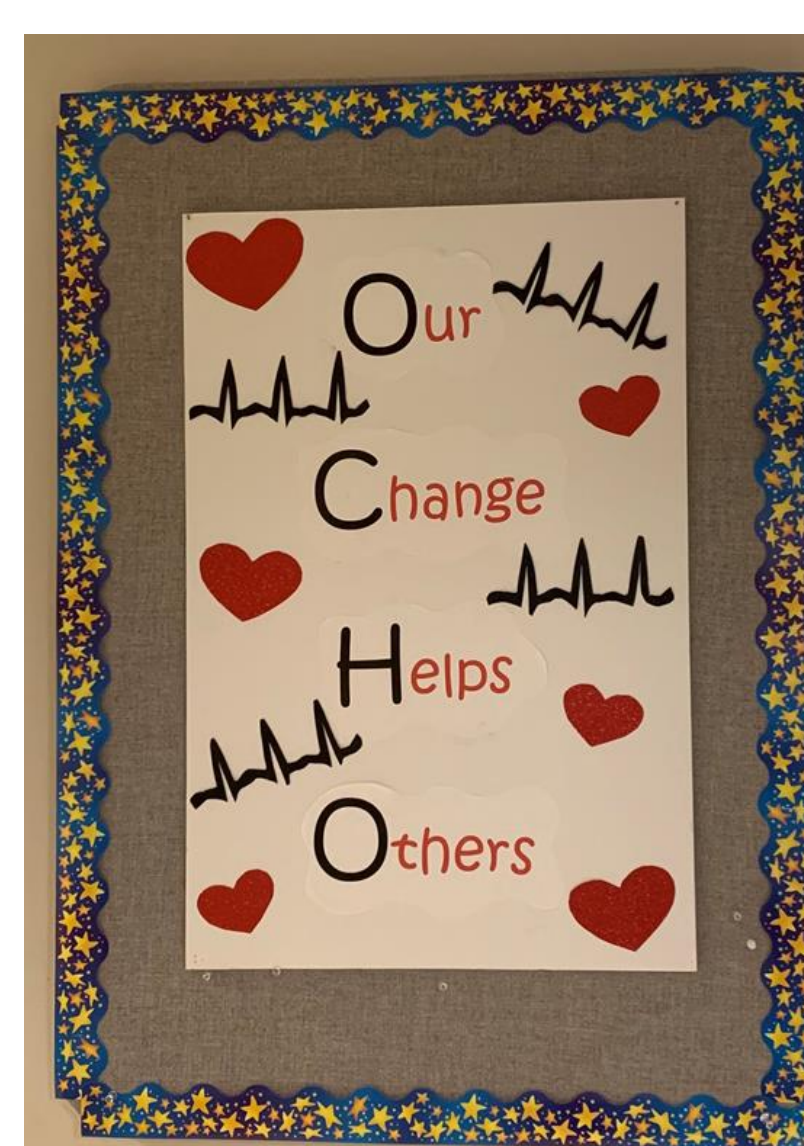
- Improve HCAHPS score by 5.5%
- Educate staff on "Sleep Well Be Well"
- Ensure 100% of new admissions receive sleep kits (bag with ear plugs, headphones, eye mask, and lavender wipe)
- Less than 2 red light events per night on Yacker Tracker (a decibel reader; red light events occur when noise is higher than the desired decibel level).



Investigators Kelly and Melissa with a Yacker Tracker



Contents of sleep kit



## IMPLEMENTATION

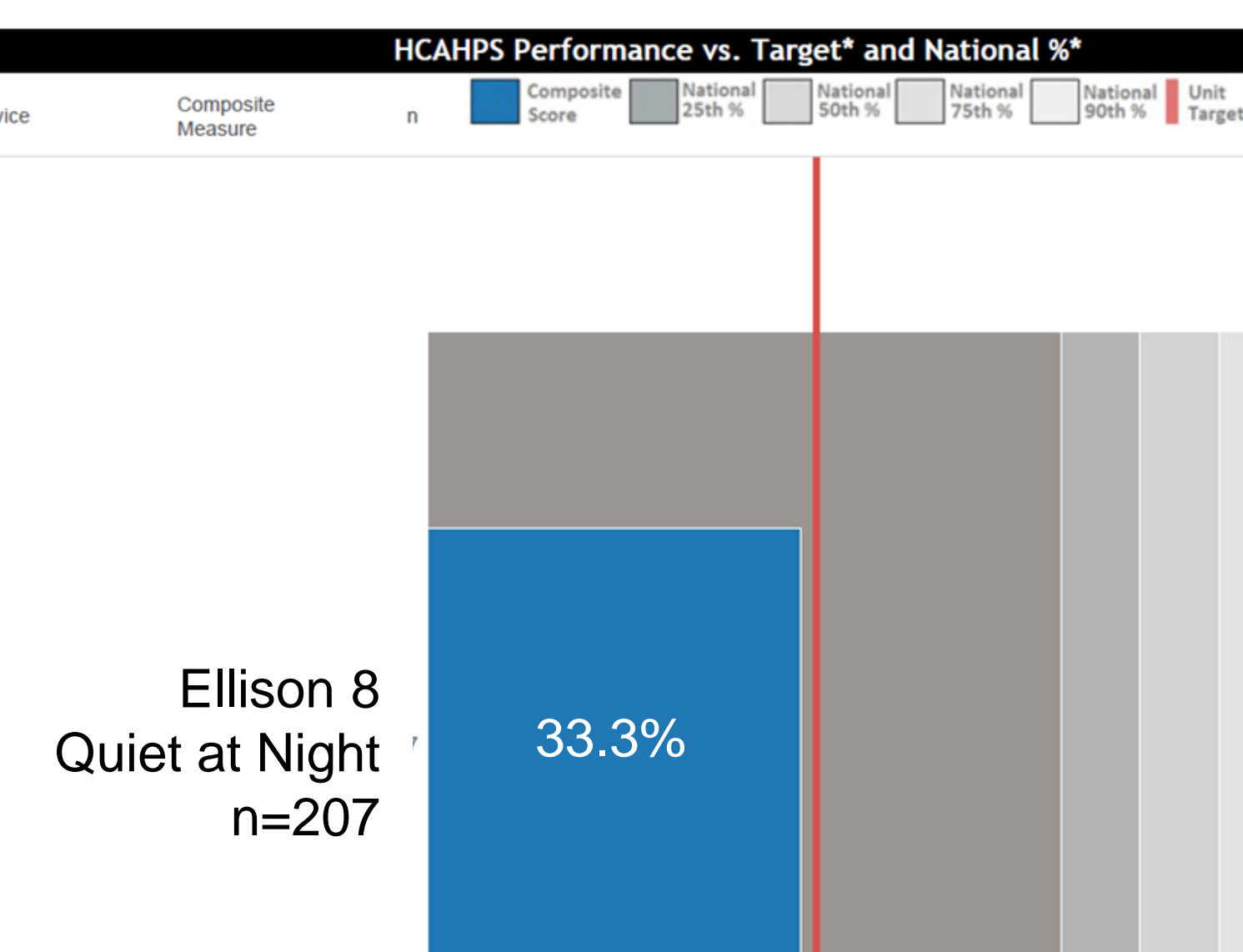
Staff were educated regarding the importance of minimizing noise and disruption, the use of sleep kits and the purpose of the Yacker Tracker with in-person didactic sessions, informative bulletin boards and educational emails. The utilization of sleep kits and number of "red light" events a night were audited. Staff were re-educated mid-way through the intervention and given incentives including flashlights for ID badges.



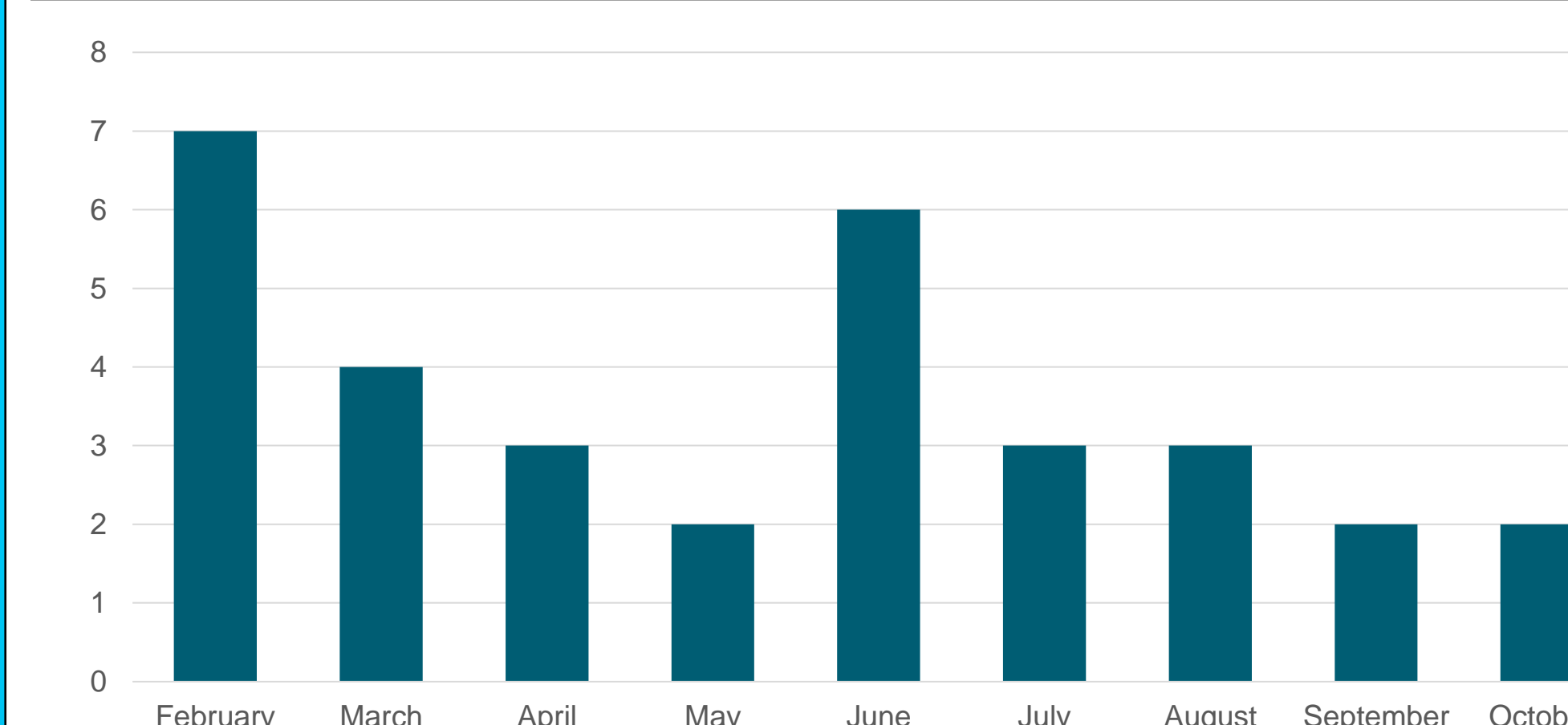
## PERFORMANCE IMPROVEMENT/OUTCOME

Over 6 months, the unit's Quiet at Night score increased 0.7% to 33.3%, the number of "red light" events reduced steadily and nearly 100% of new admissions received sleep kits. In post-intervention surveys, 72% of patients reported a problem with noise: 44% due to staff interruptions to provide care, 29% due to equipment and/or alarms, 18% due to "other" reasons (loud doors, lights, helicopter, etc.), and 9% due to talking at the nurse's station.

## POSTCLINICAL DATA

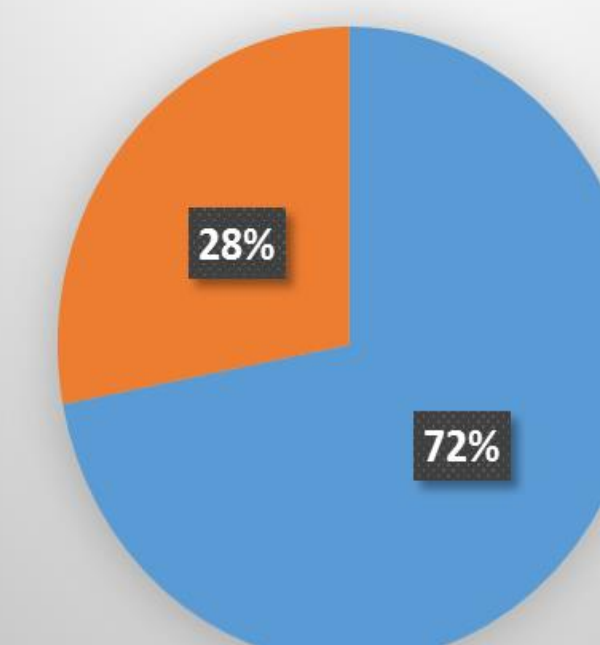


## RED LIGHT EVENTS

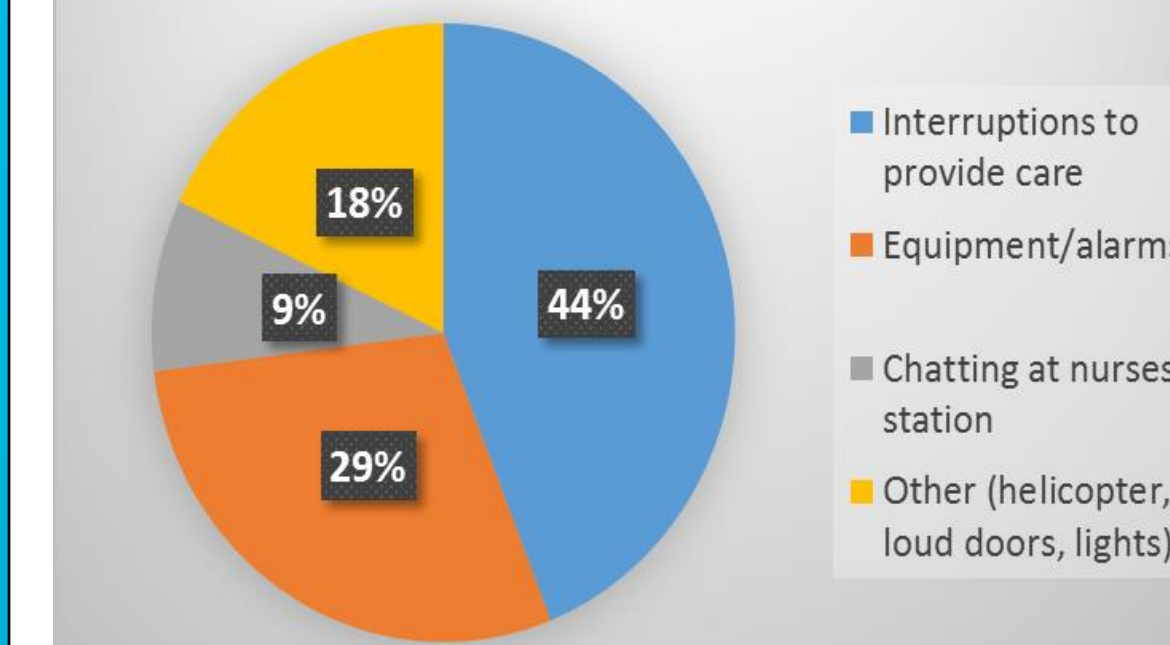


## POSTCLINICAL PATIENT SURVEY DATA

Is There a Noise Problem on the Unit?



Worst Source of Noise on the Unit



N = 23 out of possible 50

## IMPLICATIONS FOR NURSING PRACTICE AND/OR FUTURE RESEARCH

The Quiet at Night score is affected by many factors and can therefore be difficult to improve upon. Through the current intervention, there was an observed reduction in the number of "red light events" and patient's perception of talking at the nurse's station, and an 8% reduction in patients reporting a problem with noise. Nonetheless, the post-intervention surveys indicate that 91% of patients who reported noise was a problem felt it was due to a baseline environmental problem, though there remains an opportunity for future research to continue to improve upon the patient experience.