Welcome to the PASHRM and HCIF Spring Conference

April 4th, 2019
ECRI Institute

Independence

THE HEALTH CARE IMPROVEMENT FOUNDATION
Building Partnerships For Better Health Care

Partnership for Patient Care

Regional Safe Community

Spring Conference
April 4, 2019

Pam Braun, BSN, MSN

Vice President of Clinical Improvement

Partnership for Patient Care (PPC)

A multi-year collaboration between Independence Blue Cross and hospitals across the five county SE PA region

- HCIF launched PPC in 2006
- Overarching goal: To accelerate the adoption of evidence-based clinical practices by pooling the resources, knowledge, and improvement efforts of healthcare providers in SEPA

Partnership for Patient Care

PPC's Vision and Values

Vision: To be the safest region in the country

PPC Advisors

- A voluntary expert panel of healthcare providers and partners from 16 organizations across SE PA
- Identifies the region's quality and patient safety priorities and provides guidance to HCIF in its PPC programs
- Provided oversight of 26 programs over 14 years

PPC Community

Through PPC, the region's quality and patient safety leaders have become a trusted, non-competitive community

"A feeling of fellowship with others, as a result of sharing common attitudes, interests, and goals."

- Don't compete on safety
- Openly share experiences, resources and best practices
- Value the contribution of one another

Shared Goal

Trust and transparency among the region's quality and patient safety leaders

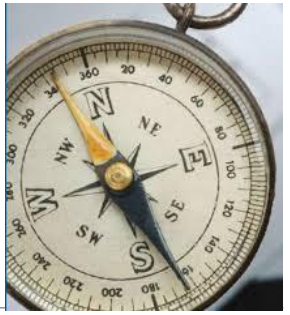
+

Expertise and experiences

=

Harm prevention

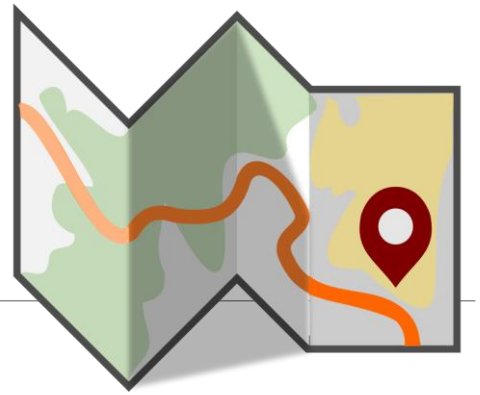
Charter



Develop a **regional safe community**

Harness the individual and collective wisdom, experiences and strengths of our regional community to advance the PPC vision by collaborating on and learning from safety event experiences and sharing patient safety approaches and best practices

Roadmap



What is a Safe Table?

Safe tables provide a forum where patient safety events are discussed and legally protected under the Patient Safety and Quality Improvement Act of 2005

AHRQ
Agency for Healthcare Research and Quality

Protections

- Face-to face, by invitation only
  - No recording
  - No identifiable notes
  - No submission of data
- Conducted within the PSO's Patient Safety Evaluation System
  - Members of PSO workforce while participating in the Safe Table
- Agree to maintain confidentiality of Patient Safety Work Product
- Authorization from facility to share Patient Safety Work Product
- No sharing protected health information (PHI) or identities of facility or individual providers

Recruitment

- ☑ Gain the support of hospital CEO's
- ☑ Get buy-in from hospital attorneys
- ☑ Hospitals signed a Limited PSO Agreement with ECRI

Risks and Benefits

Preparation

Safe Table Participants had to:

- Sign a confidentiality agreement and authorization for Safe Tables
- Review guidance materials on handling patient safety work product
- Mandatory training: 2-part webinar series
  - Overview of PSOs, legal and regulatory environment
  - Safe Tables, establishing your PSES

Safe Table Meetings

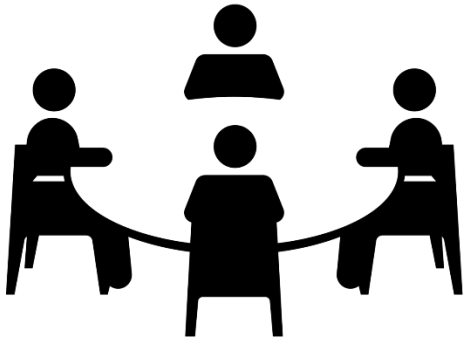
- 10 hospitals/health systems represented (all PPC-contributors)
- 1 representative per hospital/health system
- 5 in-person meetings per year
- 100% of respondents rated the value of meetings as “excellent”

Safe Table Evolution

- Increased focus on SOLUTIONS
- Record and disseminate meeting highlights
- Bring and share policies, resources and tools
- Build themes into safety forum workshops

From Safe Table to Safety Forum

- Themes that emerge from Safe Table inform Safety Forum workshop topics



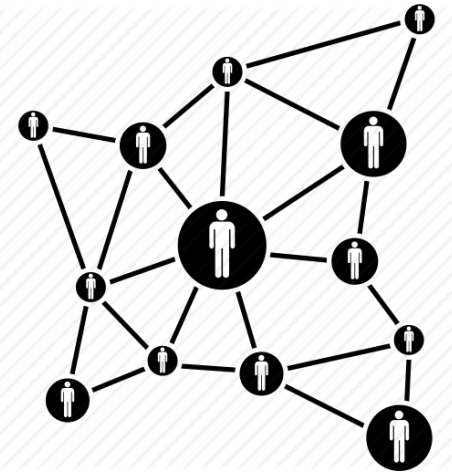
- Quality & Safety leaders from PPC and non-PPC regional hospitals are invited to attend Safety Forums further advancing regional work

Safety Forum Meetings

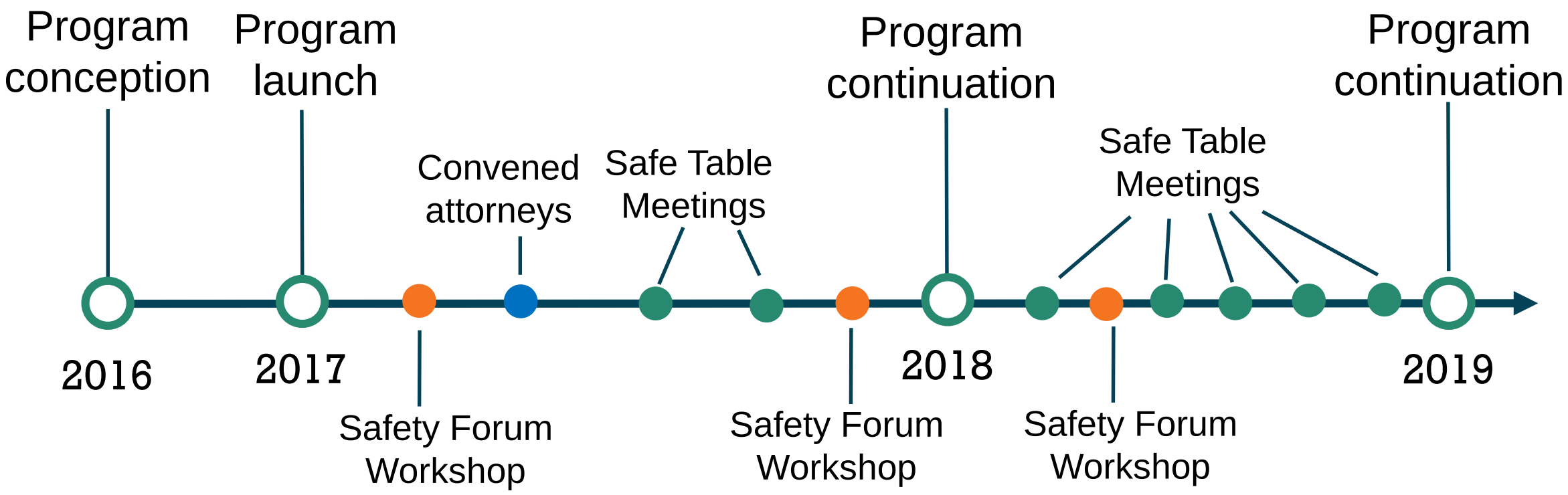
- 2 meetings per year
- 19 hospitals/healthcare organizations participate
- 78 total attendees
- 96% of attendees rated the overall quality of the meetings as “very good” to “excellent”

Safety Forum Benefits

- Focus on customized regional learning opportunities
- Workshop format and sharing of tools
- Networking opportunity with peers from local hospitals/healthcare organizations
- Learn from regional and national experts



Timeline


Program conception
Program launch
Convened attorneys
Safe Table Meetings
Program continuation
Safe Table Meetings
Program continuation
2016
2017
Safety Forum Workshop
Safety Forum Workshop
2018
Safety Forum Workshop
2019

Next Steps

- 2019 ASHRM presentation of this program by Claudette Fonshell of HCIF and Barbara Rebold of ECRI Institute
- Continue with Safe Table meetings and identifying regional themes
- Plan for next Safety Forum meeting in Fall 2019 with focus on Safe Table themes

How to Get Involved

- Contact Pam Braun (pbraun@hcifonline.org) for inquiries about Safe Table
- Contact Claudette Fonshell (cfonshell@hcifonline.org) if interested in being notified of the next Safety Forum event

Questions?

2018 Delaware Valley Patient Safety & Quality Award Program Winners

Abington Jefferson Health

2L Ambulation & W.A.G.S. Program

Walking after General Surgery

Karen M. Perez, RN-BC, BSN,
Team Coordinator,
2 Lenfest Surgical Intermediate Unit

Megan Reinhart, RN-BC,
BSN, Team Coordinator,
2 Lenfest Surgical Unit

Updated Progress (since award):

2L Ambulation Program:

- **Cardiology:**
  - **Heart Failure Unit Adopts Ambulation Program**
    - Helping heart failure patients reduce post-op complications
    - Getting patients out of bed and ambulating sooner

Updated Progress (since award):
2L Ambulation Program:

- **H.E.L.P Boards:**
  Adopted throughout the hospital. Identifies patients who are appropriate to walk with a volunteer or a Therapy Dog and their handler

Updated Progress (since award):

2L Ambulation Program:

- **W.A.G.S. Program**
  - Added more dogs
  - Total: 3
  - More engaged Patients

Updated Progress (since award):

2L Ambulation Program:

- **Hospital-wide Leadership Presentation**
  - Presented Unit-based results to upper-level nursing leadership

Implementation of 2L Ambulation Program:

Project Goals:

- Ensure that patients are ambulating and when they are not, identify barriers to ambulation
- Improve patient participation in care
- Improve patient satisfaction
- Implement changes hospital wide
- Reassess barriers identified and find solutions in order to improve time out of bed for patients

Implementation of 2L Ambulation Program:

Research:

- Over a few months, ask patients about their time out of bed to chair and their time out of bed to the halls including amount of laps completed
(e.g. Vascular patient vs. Bariatric Patient)

- This information will be used to determine a baseline of time out of bed for a variety of different surgeries

Implementation of 2L Ambulation Program:

Next Steps:

- Patients will have an order in the chart for OOB – Ambulate per Protocol

The order will include WHICH protocol to follow

- - Laparoscopic
- - Laparotomy
- - Thoracic
- - Lower Extremity Bypass
- - Non-Operative

Implementation of 2L Ambulation Program:

Next Steps:

Once protocols have been agreed upon by the Surgical Attending's

Order in clinical program will look like this:

☐ **Out of bed Protocol** - Ambulation Protocol - Thoracic Surgery

Once this order is placed, nursing will find the corresponding Patient Ambulation Protocol Document for the patient room

Implementation of 2L Ambulation Program:

Next Steps:

- Implement H.E.L.P. Board at safety huddles to assist in identifying appropriate patients for walking.

Adding Therapy DOGS Research Shows that…

A growing body of research suggests that utilizing certified Animal-Assisted Therapy (AAT) dogs helps to **encourage physical activity as well as reduce stress and anxiety.**

Adding Therapy DOGS Research Shows that…

In a systematic literature review of quantitative studies on dog-assisted interventions in healthcare, Lundqvist *et al.* suggest that **utilizing therapy dogs had positive effects on stress and mood.**

Adding Therapy DOGS
Research Shows that…

The official journal of the Association of Perioperative Registered Nurses states that **some of the goals that can be met by using trained and certified therapy animals are:**

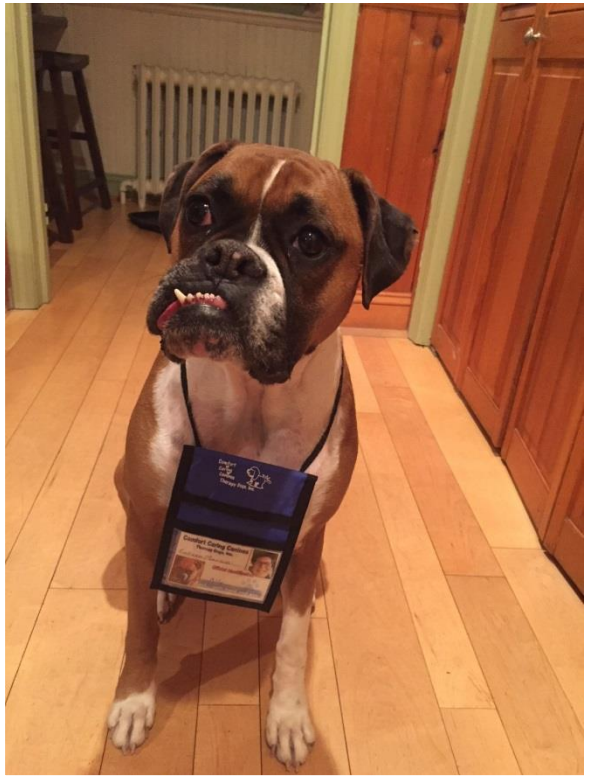
- **Reducing stress preoperatively**
- **Motivating patients to have a positive attitude**
- **Promoting postoperative activity**
- **Reducing the need for pain medication**

(Miller & Ingram, 2000).

Our Patient's Story:

- Post/Op/Day #2 Hernia Repair
- PMH: Anxiety and Depression

Not Just any Dog …



An AAT-Certified Dog is:

- An Animal-Assisted Therapy (AAT) certified animal who participates in structured programs designed by health care professionals
- A dog who has this specialty certification

Questions?

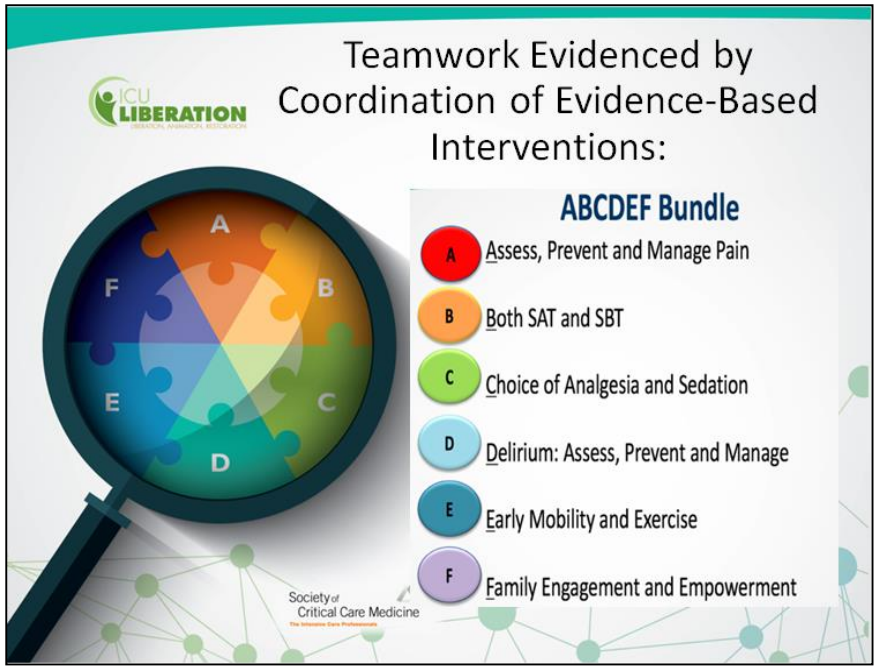
Update

ICU Liberation: Executing the ABCDEF Bundle Daily

April 4, 2019

Penn Medicine

Enacting the ABCDEF Bundle



Society of Critical Care Medicine:
ICU Liberation

- 69 ICUs across USA

Penn Medicine:

- 6 Hospitals
- 16 ICUs

Design

Clinical Algorithm

Patient hemodynamically stable

+

Patient meets criteria for sedation minimization and/or spontaneous breathing

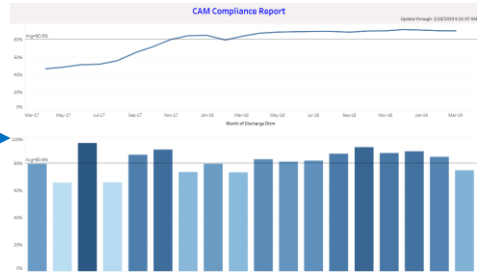
Real time feedback

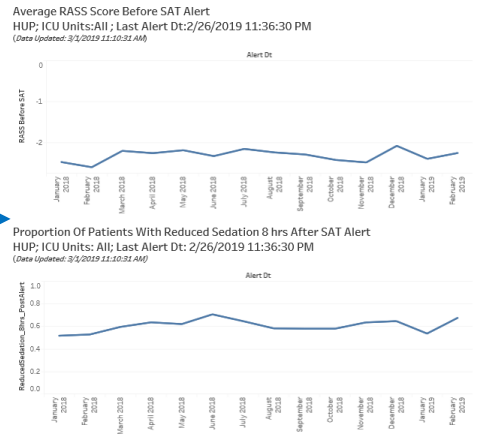
Text alerts to RT and RNs

ICU Board For I-LEAD

Updates the ICU Board

Tracking performance





PAIN, AGITATION, AND DELIRIUM
GUIDELINE FOR MECHANICALLY VENTILATED PATIENTS

Penn Medicine
University of Pennsylvania Health System

Standard PAD Assessments
- NRS or BPS every 4 hours and prn post pain meds
- RASS every 4 hours and more frequently as needed
- CAM-ICU every 12 hours

Is patient in **PAIN?**
NRS score, or
BPS (set goal, usually < 6)

YES

Fentanyl
Intermittent Dosing Preferred
12.5-100mcg IV bolus q10-15 min
to target NRS/BPS;
then q1-2 hours PRN
Max: 200 mcg q1-2 hours or dose limiting side effect

Use continuous infusion if frequent bolus dosing, hypotension from IV bolus, or max bolus achieved without control of pain
Begin infusion at 12.5-25 mcg/hr, bolus with 50% of the hourly rate every hour PRN.
Max: 500 mcg/hour
If appropriate consider enteral analgesics or a PCA

NO

Is patient at goal RASS?
Determine goal (usual -1 to +1)

NO

YES

Evaluate causes

Continue Standard PAD Assessments
If on cont. infusion opiate, consider transition to intermittent analgesia or no pain medication

OVER-SEDATED

AGITATED

Vent Asynchrony

NO

YES

Analgosedation Interruption
- OR -
Dose minimization to Target

Modify ventilator settings

Persists

Assess for and treat pain if present
Consider deeper goal RASS with respiratory suppression medication
1st line sedative: **PROPOFOL**

If propofol contraindicated

Lorazepam/Midazolam (institution specific)
Intermittent Dosing:
1-2 mg IV bolus every 10-15 minutes to goal RASS, then bolus every 2-4h PRN
Max: 6 mg every 2-4 hours or dose limiting side effect

Continuous Infusion:
Use only if propofol contraindicated and hypotension from IV boluses or max IV bolus dose reached without control
Initiate: 0.5 mg/hour; Max rate: 10 mg/hour
(monitor for propylene glycol toxicity – lorazepam only)

- Assess for and treat pain, delirium, and substance abuse if present
- Minimize deliriogenic meds
- Assess and treat reversible causes of agitation
- Review home medication list
- Use non-pharmacologic interventions first

Hyperactive Delirium (CAM-ICU +)

Non-pharmacologic management

Persists

Consider **antipsychotic** OR **sedative**
Sedative:
dexmedetomidine
(if guideline appropriate)
or propofol

Anxiety (CAM-ICU –)

Redirect/reassure
Symptom management and non-pharmacologic therapy

If anxiety continues consider intermittent benzodiazepine

Dexmedetomidine
SEE UPHS DEXMEDETOMIDINE GUIDELINE FOR USE

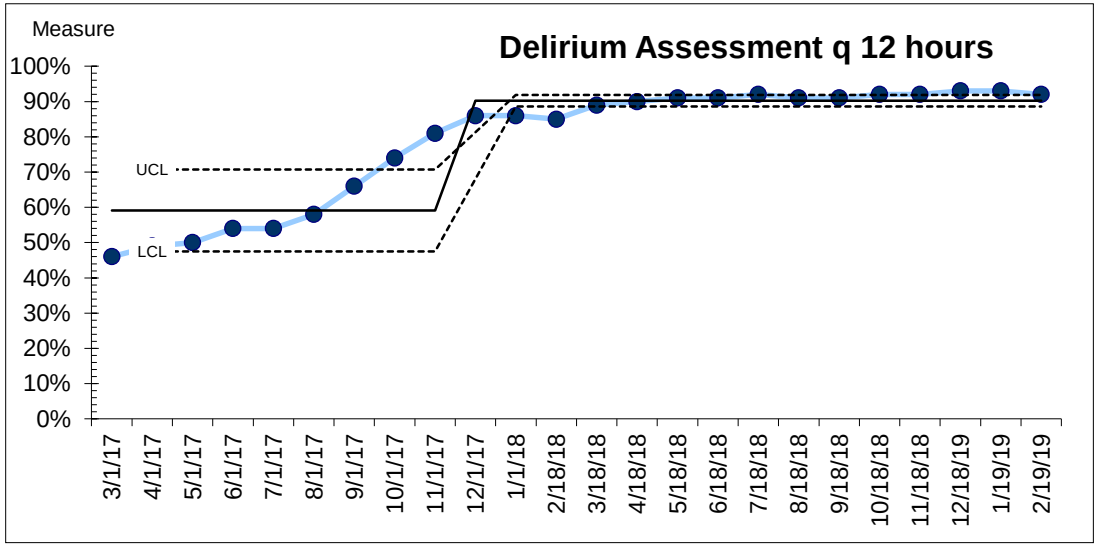
Agitation without delirium (CAM-ICU –)

Continue to pursue cause of agitation (previous box)
If control is necessary:
consider a sedative to achieve RASS -1 to +1
propofol or dexmedetomidine

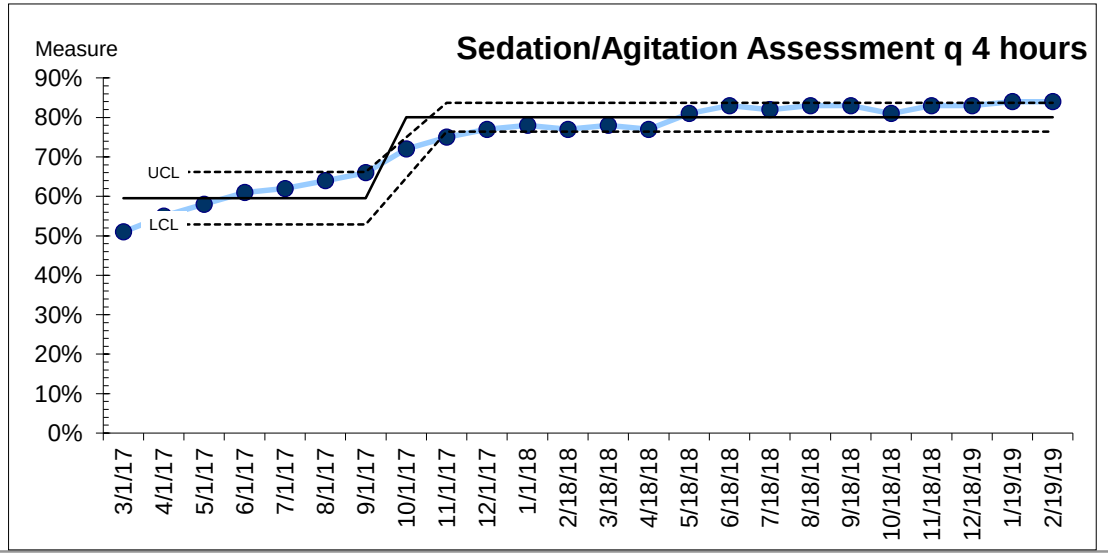
Propofol
DO NOT BOLUS
Max infusion rate: 80 mcg/kg/min
SEE UPHS PROPOFOL GUIDELINE FOR USE

Nursing Assessment

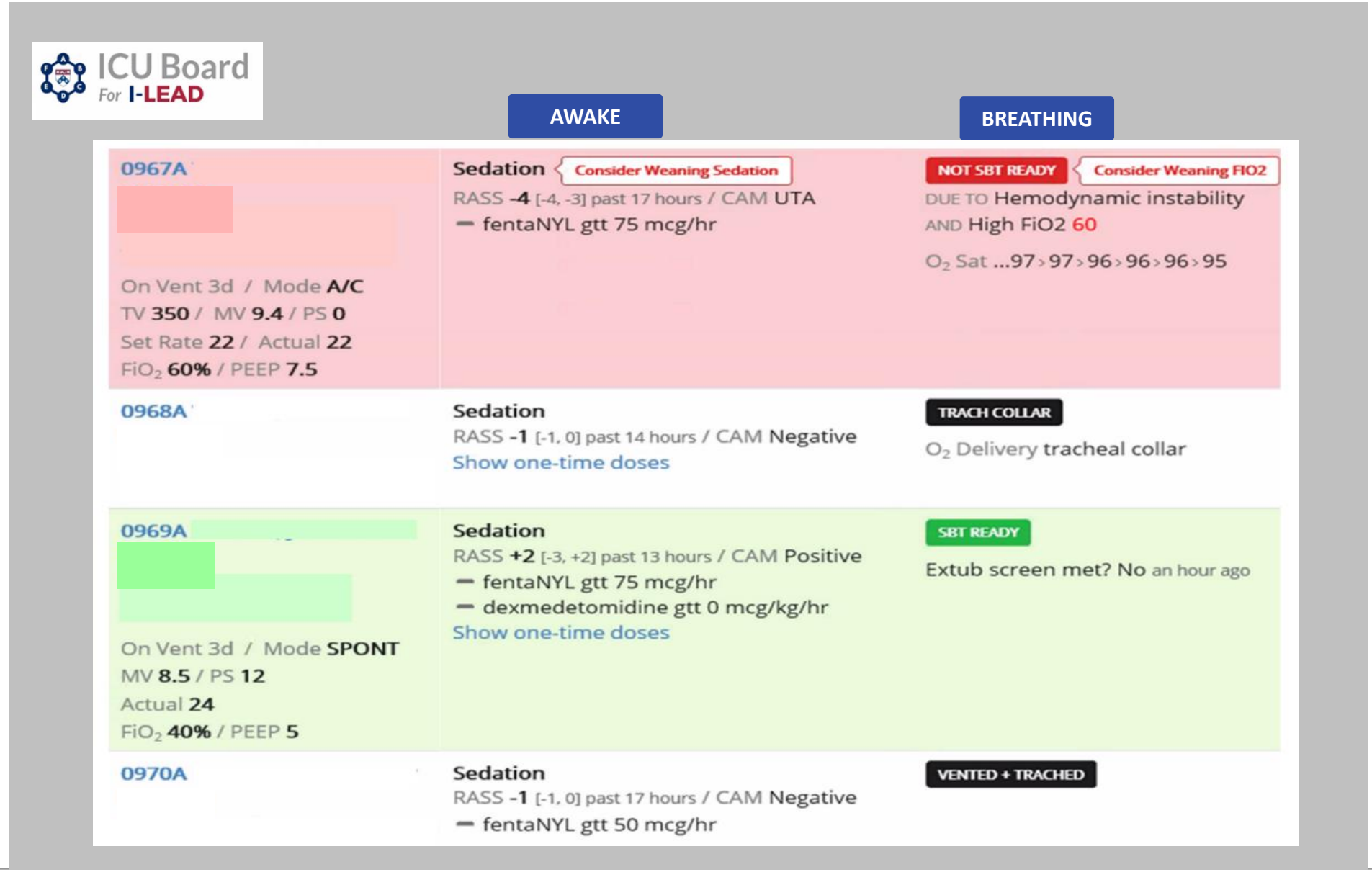
Confusion Assessment Method (Delirium)



Richmond Agitation Sedation Score (RASS)



Goal Setting and Performance Feedback



ABC Alert – Smartphone Text Alerts

SAT Alert

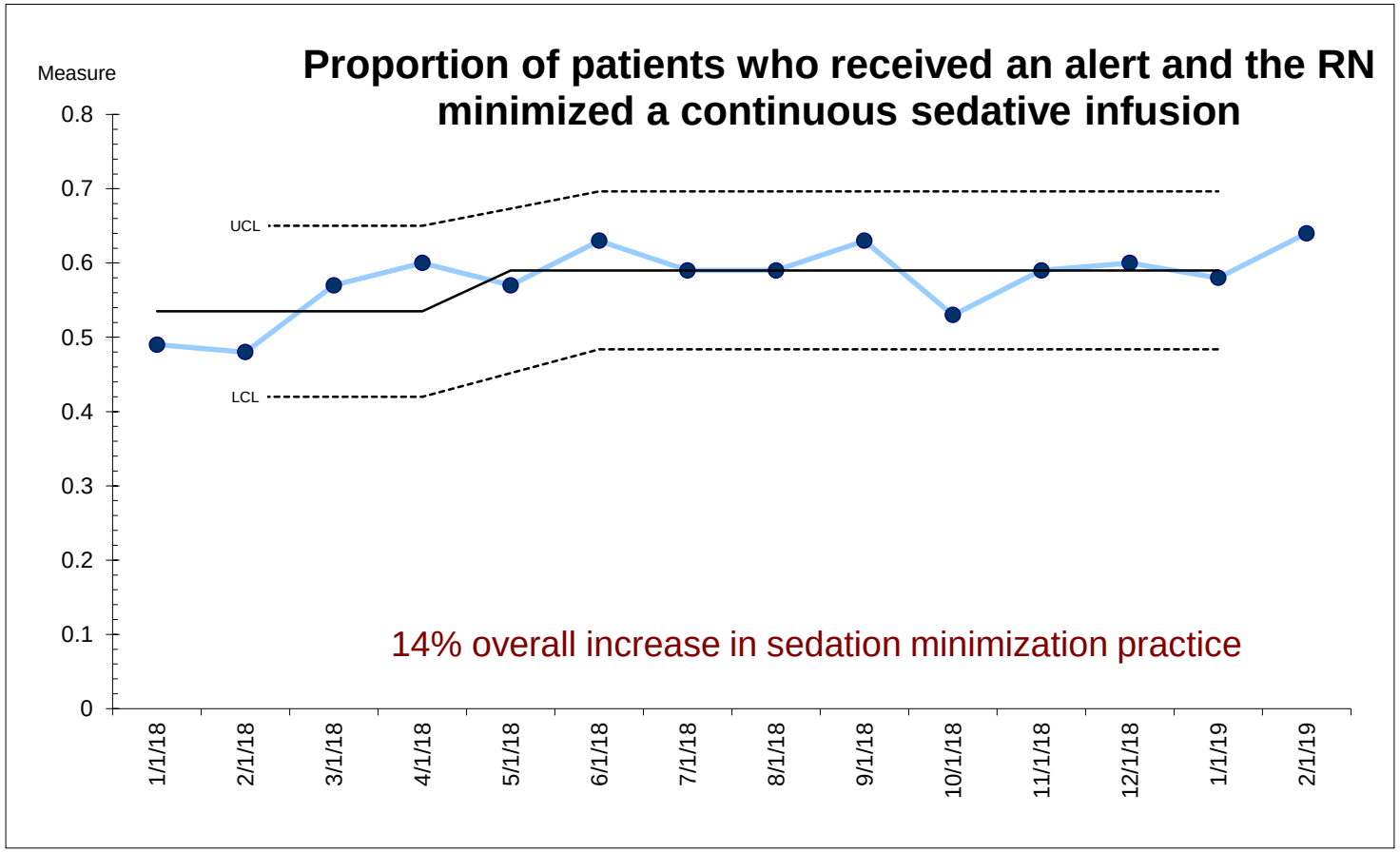
Patient DH (FP9, 0968A) is SBT ready, but appears over-sedated. Reassess need for sedation. View patient SBT and Sedation state (UPHS wifi required):

SBT Alert

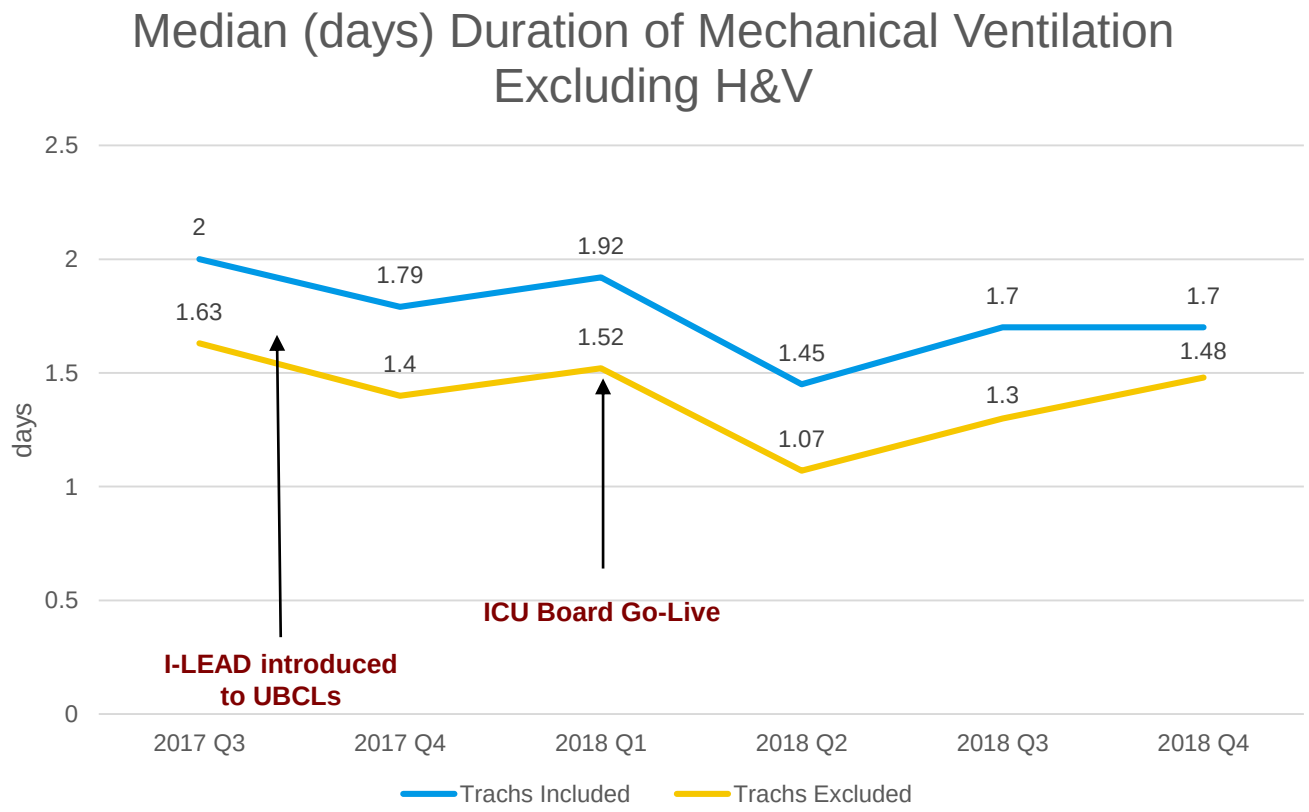
Patient DH (FP9, 0968A) is SBT ready. View patient SBT and Sedation state (UPHS wifi required):

Anderson et al. AJRCCM 2018;197:A7786 (peer review)

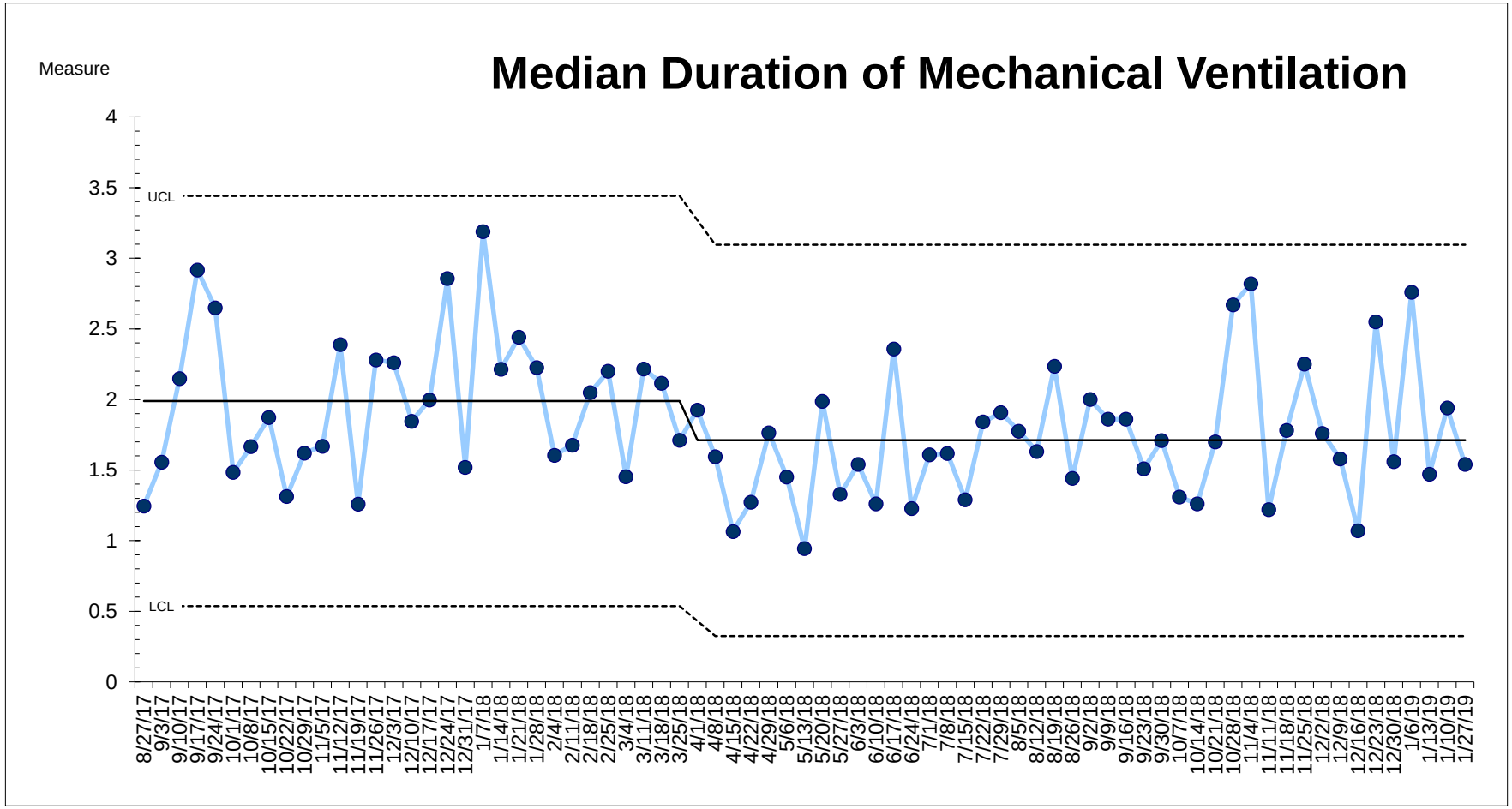
Sedation Minimization



Mechanical Ventilation



Duration of MV

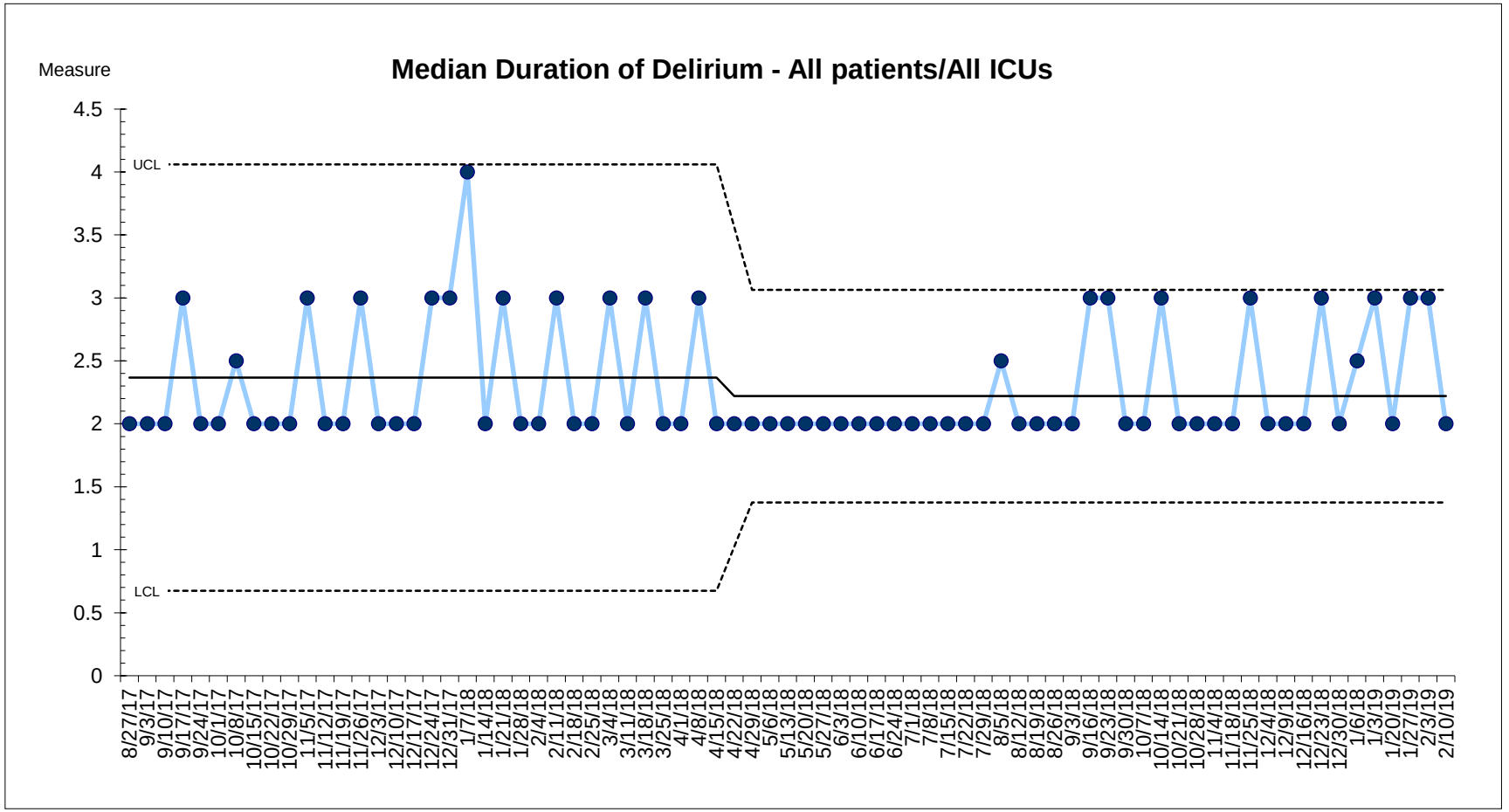


Overall 0.4 day (10 hour) reduction in median duration of mechanical ventilation

ICU LOS

Unit	Pre: Baseline (5/17-2/18) Median ICU LOS Vented Patients	Post: Current (3/18-1/19) Median ICU LOS Vented Patients	Reduction in hours
#1	4.8	4.46	-8
#2	4.8	4.58	-5
#3	4.7	3.02	-40
#4	2.3	2.06	-6
#5	4.8	4.13	-16
#6	3.6	3.67	+1.7
#7	3.7	3.13	-14
#8	3.7	2.42	-30
#9	3.5	3.17	-8
#10	3.9	2.75	-28
#11	2.0	2.27	+6
#12	2.7	3.67	+24
#13	3.8	4.96	+27
#14	3.9	3.57	-8

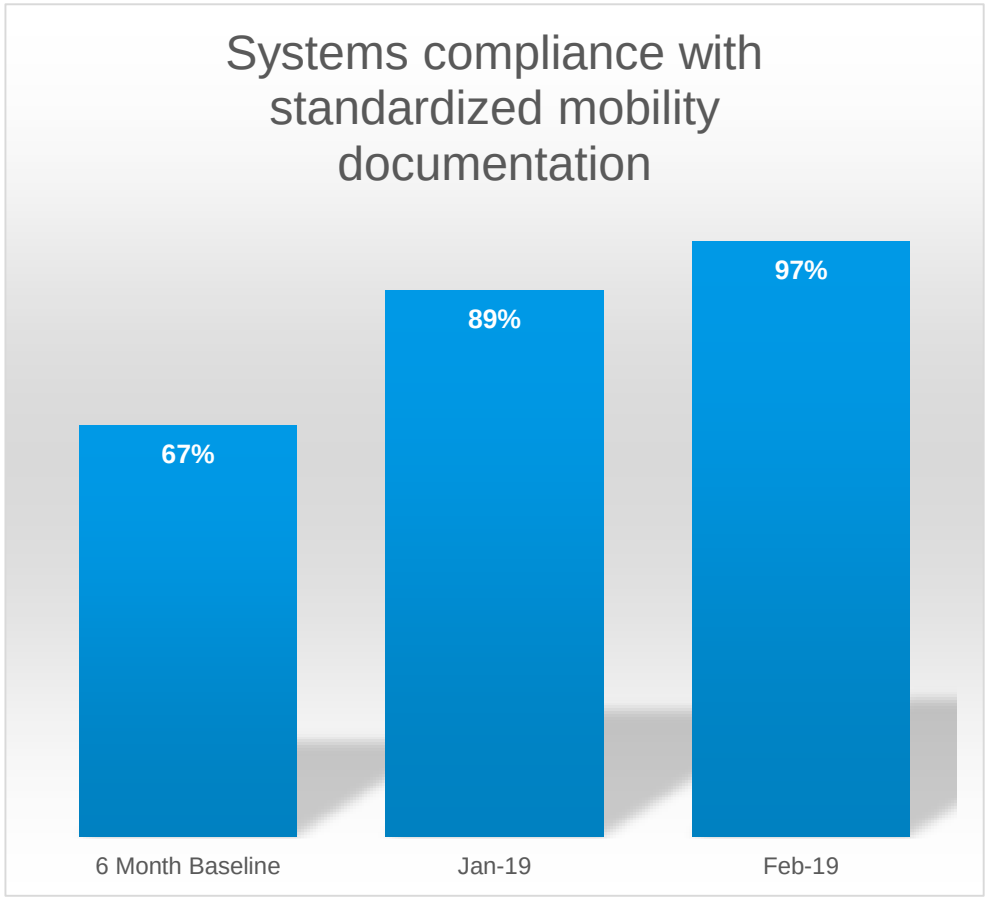
Delirium Duration



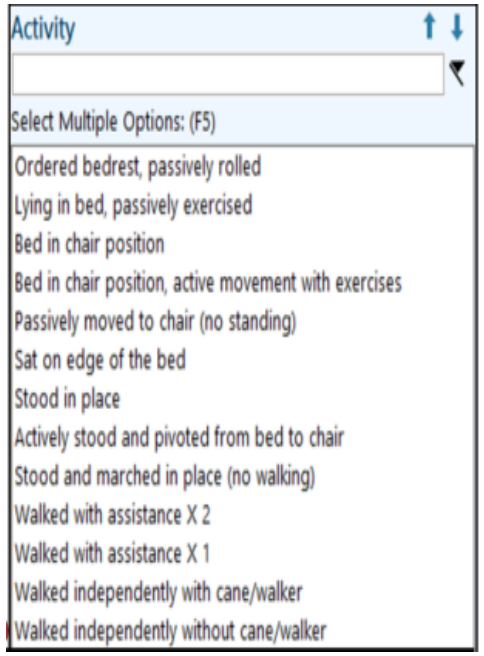
“E”- Early Exercise

- **Standardized daily mobility goal setting**
- **Performance Feedback**
- **Facilitator role and communication strategy**

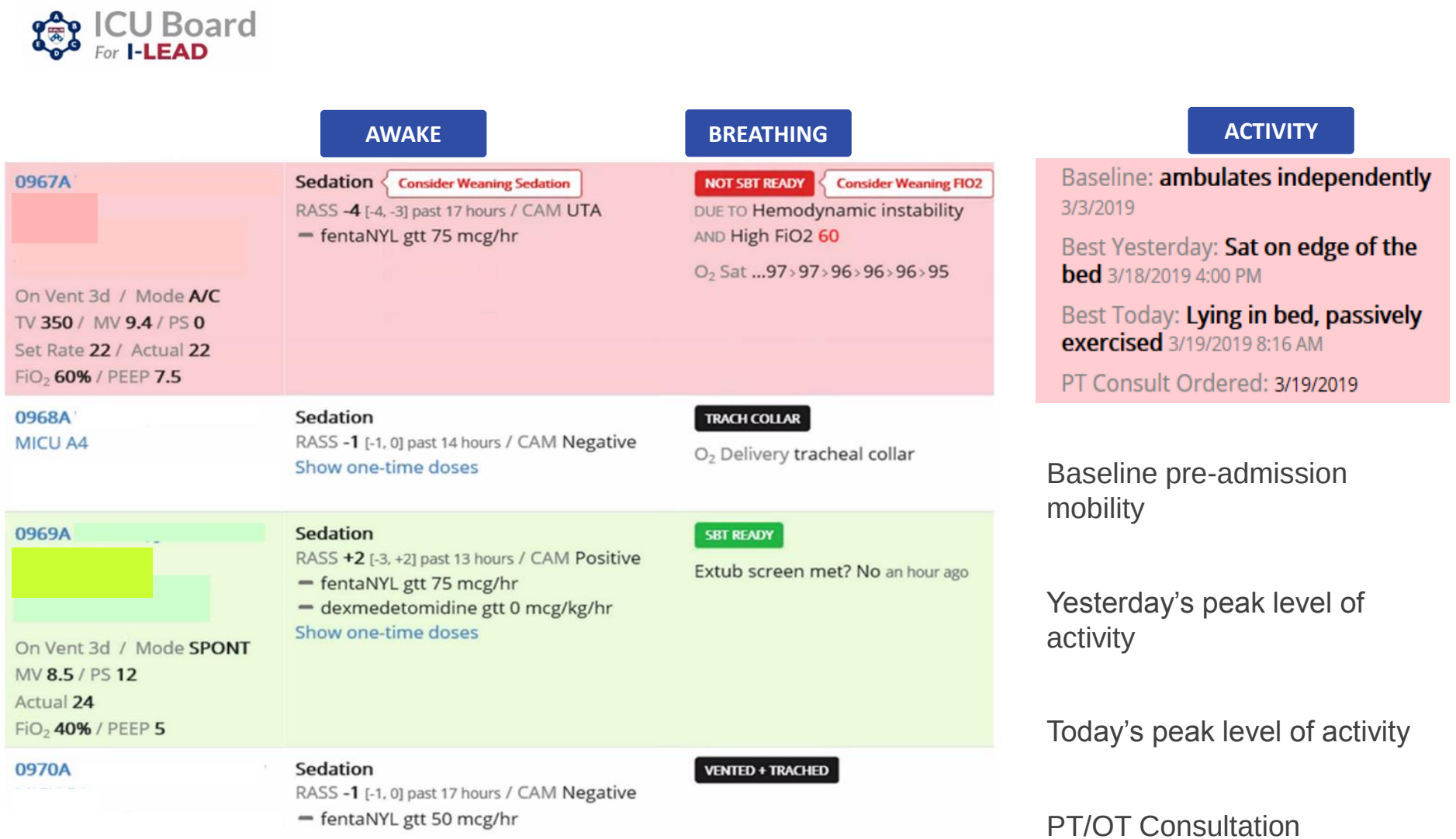
Standardized practice



PennChart



Goal Setting and Performance Feedback

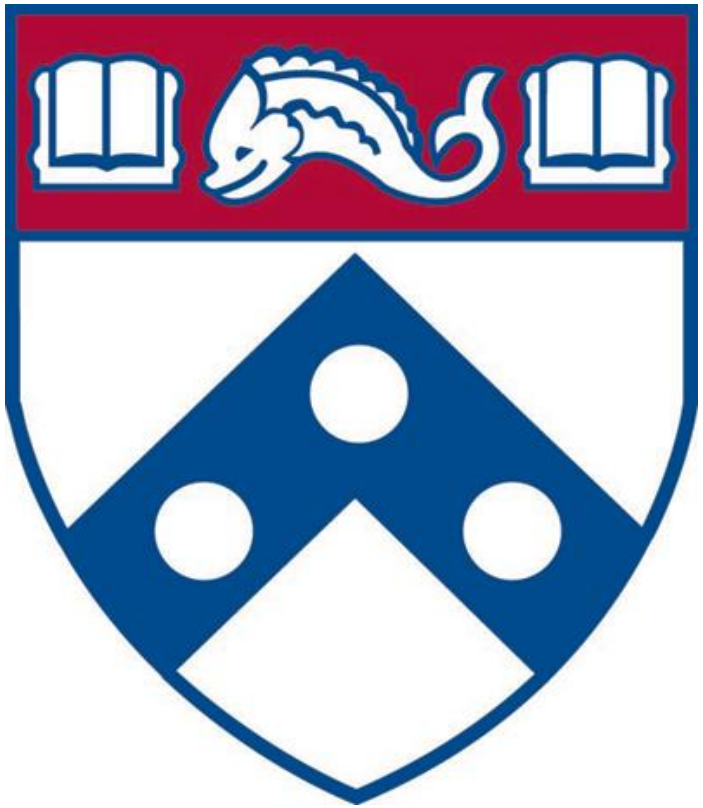


Baseline pre-admission mobility

Yesterday's peak level of activity

Today's peak level of activity

PT/OT Consultation



Preventing Opioid-Induced Respiratory Depression (OIRD) in Medical Surgical Patients: From Near Miss to a Technology-Enabled Interprofessional Process Leading to Improved Outcomes

Thomas P. Cleary, BSN, RN
Scott D. Alcott, MSN, RN

Einstein
MEDICAL CENTER MONTGOMERY

Why $etCO_2$ Monitoring

- Each year approximately 730,000 in-hospital cardiopulmonary arrests occur
  - ~ 50% received opioids prior to the arrest (Overdyk, 2011).

- Patients' pain management needs and satisfaction must be balanced with safety. (Milligan E., Zhang, Y., & Graver S., 2018, p.208).

Overdyk, F. (2011) Improving outcomes in med-surg patients with opioid induced respiratory depression. *American Nurse Today, 6*(11).

Milligan E., Zhang, Y., & Graver S. (2018). Continuous bedside capnography monitoring of high-risk patients receiving opioids. *Biomedical Instrumentation & Technology*, *52*(3), 208-217

Why $etCO_2$ Monitoring - Literature

- Pulse Oximetry has historically been the standard measure of oxygenation
  - Often a LATE indicator of hypoxia

(Felhofer, 2013; Hutchinson & Rodriguez, 2008; Overdyke, 2011; The Joint Commission, 2012).

- Post-orthopedic surgery patients
  - $etCO_2$ detected respiratory depression in 146 patients
  - Pulse oximetry detected respiratory depression in **only** 6 patients

(Hutchinson & Rodriguez, 2008).

- "The most severe adverse OIRD events were reduced when capnography was implemented on a high-risk group of patients receiving supplemental oxygen and having a concurrent order for a parenteral opioid"

(Milligan E., Zhang, Y., & Graver S., 2018, p.216).

Felhofer, K. (2013). Developing a respiratory depression scorecard for capnography monitoring. *Innovations in Pharmacy, 4*(3).

Hutchison R., & Rodriguez L. (2008). Capnography and respiratory depression. *American Journal of Nursing*, *108*(2), 35-39.

Milligan E., Zhang, Y., & Graver S. (2018). Continuous bedside capnography monitoring of high-risk patients receiving opioids. *Biomedical Instrumentation & Technology*, *52*(3), 208-217.

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The Joint Commission (2012). Sentinel Event Alert Issue 49. http://www.jointcommission.org/assets/1/18/SEA_49_opioids_8_2_12_final.pdf

Why $etCO_2$ Monitoring – Professional Standards & Guidelines

Professional Standards & Guidelines

"End-tidal carbon dioxide monitoring is more likely to detect hypercapnia and respiratory depression"
– American Society of Anesthesiologists

"Capnography is a superior way to evaluate ventilation…"
– American Society for Gastrointestinal Endoscopy

"Guidelines recommend quantitative waveform capnography for adults to confirm endotracheal tube placement, to monitor CPR quality and to detect ROSC "
- American Heart Association Guidelines for CPR and ECC.

"Continuously monitor oxygenation, ventilation, and circulation during procedures that may affect the patient's physiological status" … "Improve recognition and response to changes in a patient's condition"
– The Joint Commission

"Use capnography to detect respiratory changes caused by opiates…"
– Institute for Safe Medication Practice

"…non-anesthesiologist practitioner shall be familiar with the use and interpretation of capnographic waveforms to determine the adequacy of ventilation during deep sedation"
– California Society of Anesthesiologists (CSA) 2009, Guidelines for Deep Sedation by Non-anesthesiologists

Case Study – Near Miss
Why $etCO_2$ Monitoring

- A young patient was admitted to the general/medical surgical unit at EMCM.
- The patient was known to be opioid tolerant based on her H&P. Her symptoms required the administration of opioid analgesics.
- At the time of her admission to the floor she was placed on continuous pulse oximetry. A 4mg dose of IV dilaudid was given for pain.
- The patient was accompanied by her significant other. As anticipated, the patient was sleeping and resting comfortably. Her initial assessment and vitals were within normal limits.
- About 45 min later, the significant other noticed a change in the patient's complexion and cognition. He called for the nurse.
- The nurse arrived to find the patient unresponsive and cyanotic. Upon further assessment she was found to be asystolic and a code was called.
- It was determined by a RCA that this patient became hypercapnic due to respiratory depression secondary to the opioid analgesia.
- This patient ultimately was sent to the ICU and successfully resuscitated and recovered despite the event.

What are we trying to accomplish?

Outcome Objectives

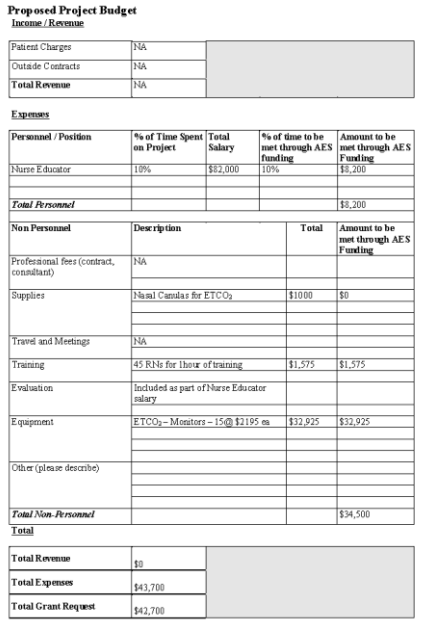
1. Reduce and/or eliminate unplanned administration of a reversal agents for OIRD

2. Reduction of Rapid Response Team (RRT) calls and/or Code Blues (cardiac arrest) related to OIRD

3. Reduction of patients needing to be transferred to the ICU related to OIRD.

How? - Show me the Money!

- One of the biggest challenges teams face when initiating a new pilot program is… Who is going to pay for this?
- Does your organization have a grant program to apply for funding?
  - In January 2016 we applied for an Albert Einstein Society Innovative Program Grant to fund our project.
  - Allowed us to purchase 10 Medtronic Cap 20i machines.
- Capital funding
- Training cost
- On-going operational expenses
- Bake Sale…?



Proposed Project Budget

Income / Revenue

Patient Charges	NA
Outside Contracts	NA
Total Revenue	NA

Expenses

Personnel / Position	**% of Time Spent on Project**	**Total Salary**	**% of time to be met through AES funding**	**Amount to be met through AES Funding**
Nurse Educator	10%	$82,000	10%	$8,200
Total Personnel				$8,200

Non Personnel	**Description**	**Total**	**Amount to be met through AES Funding**
Professional fees (contract, consultant)	NA		
Supplies	Nasal Canulas for $ETCO_2$	$1000	$0
Travel and Meetings	NA		
Training	45 RNs for 1hour of training	$1,575	$1,575
Evaluation	Included as part of Nurse Educator salary		
Equipment	$ETCO_2$ – Monitors – 15@ $2195 ea.	$32,925	$32,925
Other (please describe)			
Total Non-Personnel			$34,500

Total

Total Revenue	$0
Total Expenses	$43,700
Total Grant Request	$42,700

How? – Protocol Development

- To Risk Stratify or Not?
- How to Risk Stratify
- How frequent is frequent enough for vital signs and assessment
- Role of Pulse Oximetry
- Role of Capnography
- Available tools

San Diego Patient Safety Council (2014). 2013 Respiratory monitoring of patients outside the ICU tool kit. San Diego Patient Safety Council

How? – Protocol Development

Inclusion Criteria for Protocol/ OIRD Assessment in Interactive IView

High Risk: Patients that meet 2 or more of six criteria-- **Monitor $etCO_2$**

Moderate Risk: Patients that meet at least 1 of the six criteria– **Consider $etCO_2$ Monitor**

Low Risk: Patients that do not meet any of the six criteria– **$etCO_2$ NOT indicated**

Criteria

1) Opioid Infusion Therapy—PCA (with and without Basal), CADD pump or Epidural infusion.
2) Recent Unplanned Administration of Reversal Agents.
3) Known or Suspected OSA/Sleep Disorder as assessed by STOP-BANG score ≥ 6
4) Opioids and/or Concomitant sedatives.
5) Stacking (i.e. multiple modalities used with overlapping half-life and potencies) repeat IV/IM opioids, addition of PRN benzodiazepine/sedative.
6) General Anesthesia in the past 1 to 24 hrs.

San Diego Patient Safety Council (2014). 2013 Respiratory monitoring of patients outside the ICU tool kit. San Diego Patient Safety Council

How? - Training

- Multifaceted Approach (Blended Learning)
- Included RNs and Respiratory Therapy
- Online HealthStream module created and to be completed prior to the hands-on class.
  - ANCC Course with CEs for Nursing (Basic & Advanced)
  - AARC Course with CEs from Respiratory Therapy (Basic and Advanced)
  - Product-specific training through vendor web link
- Two 1-hour hands-on training class led by Einstein Nursing Education and Medtronic's clinical team.
  - **Key** – Case Study Approach
- Providers – Memo written by Chair of Anesthesiology disseminated to all medical staff through Medical Staff affairs
  - Chairs discussed at Medical Staff Board and Divisional Meetings

How? – Patient Education

- Discuss with patient the purpose & procedure
- Provide card and review key points
- Show video on Get Well Network
- Reinforce as needed
- Remain patient-centered, remove if patient refuses & document education

How? - Implementation

- OIRD assessment – Every patient/every shift
- Medtronic's Clinical Product Specialist
  - Rounding on the floor for real-time clinical support and tracking
  - Continuing real-time education
  - Patient feedback
- Nurse Educators rounding on floor for first 24 hours and then daily for the 1st week
- Nursing and Respiratory leaders rounding
- Go-live support Job Aids
- Hard copies and electronic copies of the protocol
- Data Tracking tool

Challenges

Alarm Management

- Alarm Fatigue
- IPI – is it useful in this patient population?
- When to act?

Vendor Choice

- Partnership
- Dedication to success of the pilot/initiative
- Collaborative education
- Active Dashboard

Data Collection

- How long can data be stored
- Method by which data is downloaded
- Are the results of the data distinct

Outcome/Process Measures – Success!!

- 80-85% compliance with the OIRD screening in real-time (first 90 days)

- July 2017 - December 2017
  - 100% reduction in Narcan administration.
  - 100% reduction in unplanned intubations.
  - 37% reduction in transfers to the ICU from GMF.
  - 58% total reduction in measured adverse outcomes.
  - Estimated $144k in cost savings from the prevention of harm.

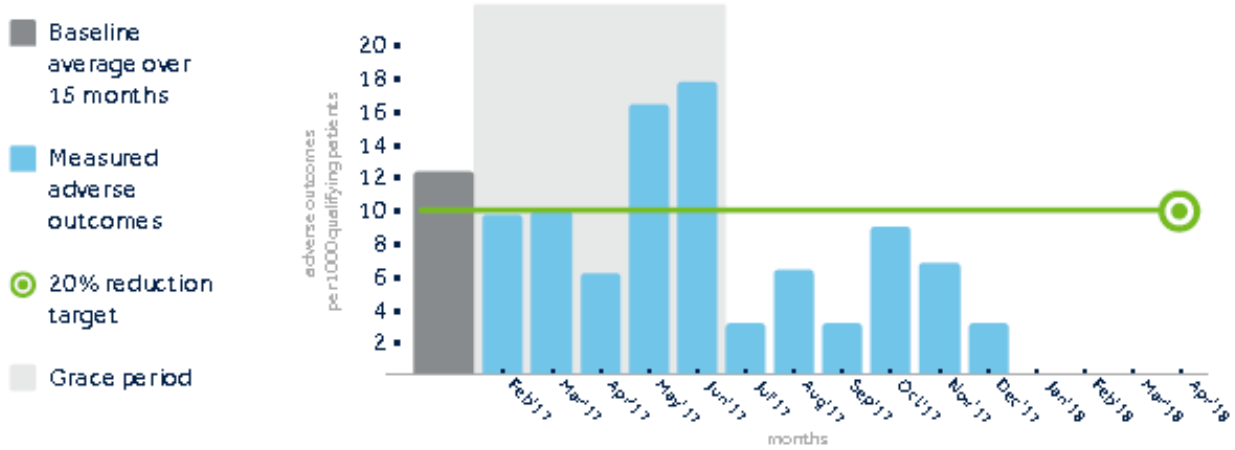
- Alarm fatigue was addressed by limiting or alleviating the High and Low false alarms that were being triggered by patients due to their mobility, independence and tolerance of opioids.

Outcome/Process Measures – Success!!

NALOXONE ADMINISTRATIONS	UNPLANNED INTUBATIONS	CODE BLUES	GCF TRANSFERS TO ICU
▼100 %	▼100 %	NA	▼37 %

ADVERSE OUTCOMES TREND

6 months of participation since start of the measurement period



Financial Outcomes

$36, 994.80

GRANT DOLLARS SPENT ON 10 MEDTRONIC CAP20p MONITORS

$2k

TOTAL SPEND ON GCF CAPNOGRAPHY CONSUMABLES

total spend includes any spend on GCF Capnography consumables since the start of the measurement period

$ 144k

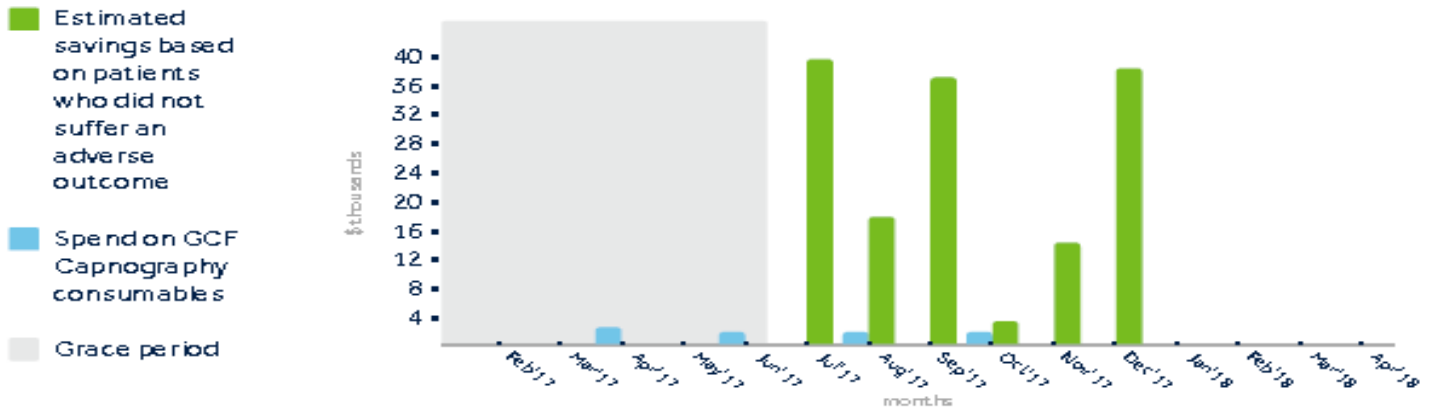
ESTIMATED SAVINGS BASED ON PATIENTS WHO DID NOT SUFFER AN ADVERSE OUTCOME

$ 18k

Cost per patient to your hospital (default is $18k[1,2])

FINANCIAL SAVINGS TREND

6 months of participation since start of the measurement period



Our Why…

June 2018 - Case Study

- Patient was brought to the floor at change of shift from an uneventful recovery in PACU.
- Reported from PACU nurse that the patient did require IV narcotics in PACU for comfort, which she received before coming to the floor.
- After report was given, the day shift nurse and night shift nurse on the floor proceeded to do a bedside handover.
  - Upon entering the room, the night shift nurse assessed that the patient was very somnolent and difficult to arouse.
  - Based on our current OIRD assessment process for all patients admitted to 3 East (and now 3 West) the patient ruled-in for etCO_2 monitoring via capnography which was initiated.
  - The initial reading on the monitor showed a CO_2 level of 72 (which is critical).
  - A rapid response was called and when the rapid response team arrived, with just the results from the capnography monitor the team was able to intervene with Narcan and BiPAP.
  - The patient slowly became arousable and her CO_2 dropped back down to a more normal level, allowing the patient to remain on the med/surg floor to continue her recovery and was eventually discharged in the expected time.

Our Why…

- Without capnography, this story could have had a much different outcome.
  - The patient could have needed difficult and painful needle sticks, additional labs, possibly a CT scan to rule out a stroke, intubation and a transfer to the ICU.
  - These interventions would have caused a great deal of stress to the patient and her family, a longer stay, and an extreme increase in the cost of her care.
- The bedside handover process utilized by our highly-skilled team led to immediate assessment using the OIRD protocol, and initiation of this essential intervention, **capnography monitoring**, saving this woman's life!

Awards and Presentations

- First Place Winner – Delaware Valley Quality and Patient Safety Award – November 2018
- HAP-HIIN - Pennsylvania Patient Safety Authority Statewide Webinar Presenter in collaboration with Institute for Safe Medication Practices (ISMP), September 19, 2018. http://collab.hapquality.org/HAP/media/Archive/HIIN/ADE/Webinars/09.18.18%20ADE%20Preventing%20OIRD%20in%20Med.%20Surg.%20Patient/9-18-18_ADE_Preventing-Opioid-Induced-Respiratory-Depression-(OIRD)-in-Medical-Surgical-Patients_recording.mp4
- IHI National Forum December 2018 – Orlando, FL – Poster presentation
- IHI Patient Safety Congress 2019 – Houston, TX – Poster presentation
- Invited Panel Discussion –Vizient (PSO), Dallas, TX, April 2019
- Pennsylvania Patient Safety Summit – Seven Springs, PA – Poster Presentation, May 2019
- Invited Presentation - Premier Breakthrough Conference, June 2019
- Podium Presentation – AACN Trends in Critical Care, October 2019, Atlantic City, NJ

Questions