

# Improving Electronic Medical Record (EMR) Usability: Critical Elements when Designing Perioperative Emergencies Template

MARY RACHEL ROMERO MSN, RN, CPAN, CAPA; ALLISON STAUB BSN, RN



## Background

- Adverse events occasionally occur in preoperative and postanesthesia care units (PACU)
- Resuscitations are often chaotic and stressful with decisions needing to be made quickly (Boehm 2010)
- Accuracy in documentation is crucial in order to expedite intervention and for analysis and review
- Current EMR software systems are limited and features are not cohesive in recording adverse events resulting in poor usability
- Users chart in multiple areas for their assessment and interventions which is time consuming during these critical period

## Literature Review

- Fundamental elements in documentation of adverse events consist of vital signs, patient manifestation, intervention and communication
- The presentation of information in terms of layout and structure is important because it can influence data retrieval, interpretation and clinical decision making in fundamental ways (Yoo et al, 2013)
- Templates can guide documentation so that elements essential to demonstrating appropriate care are not ignored (Bowman, 2013).

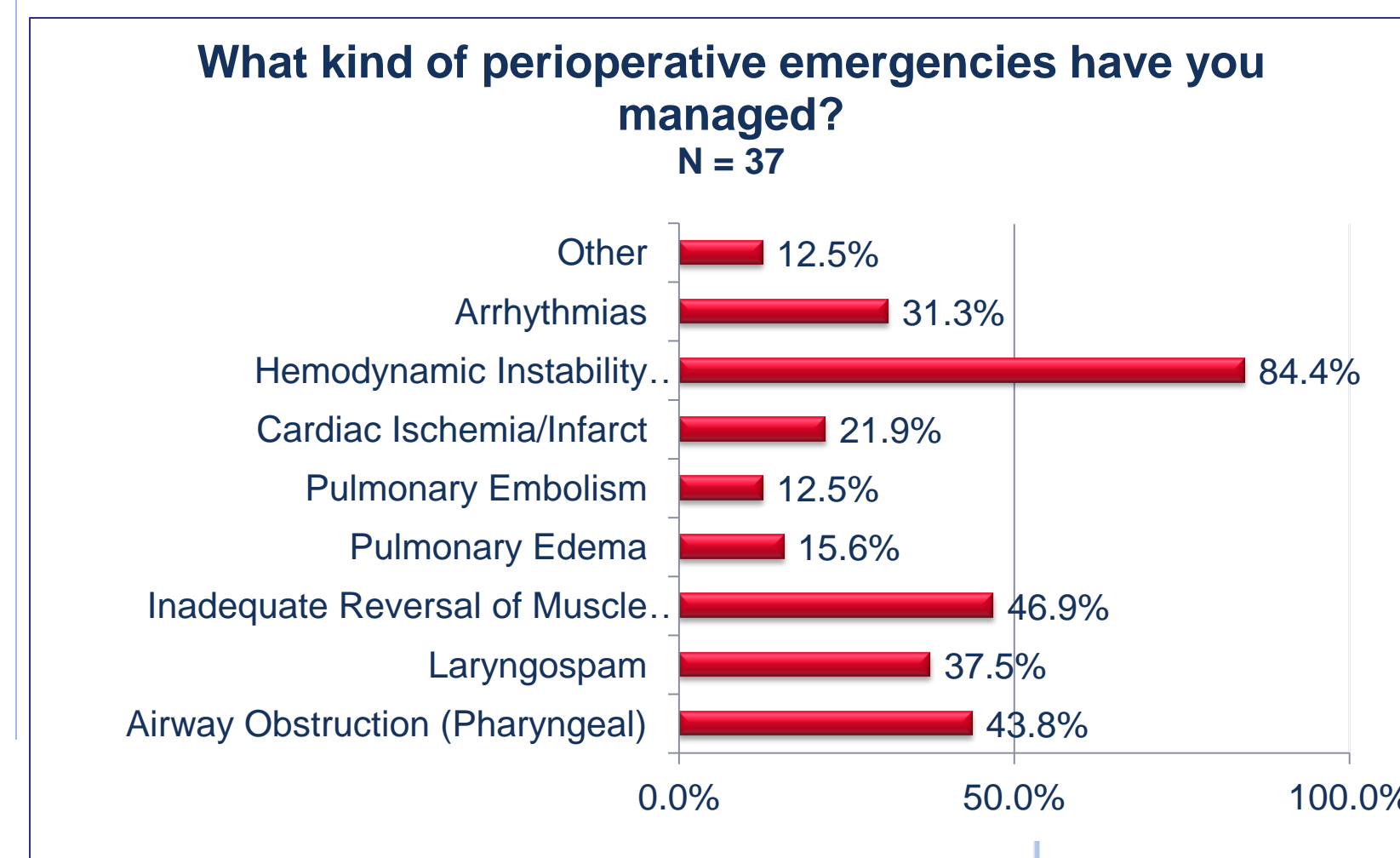
## Objectives

- Improve usability by creating documentation template that captures perioperative emergency conditions
- Improve quality of patient care documentation in the perioperative setting

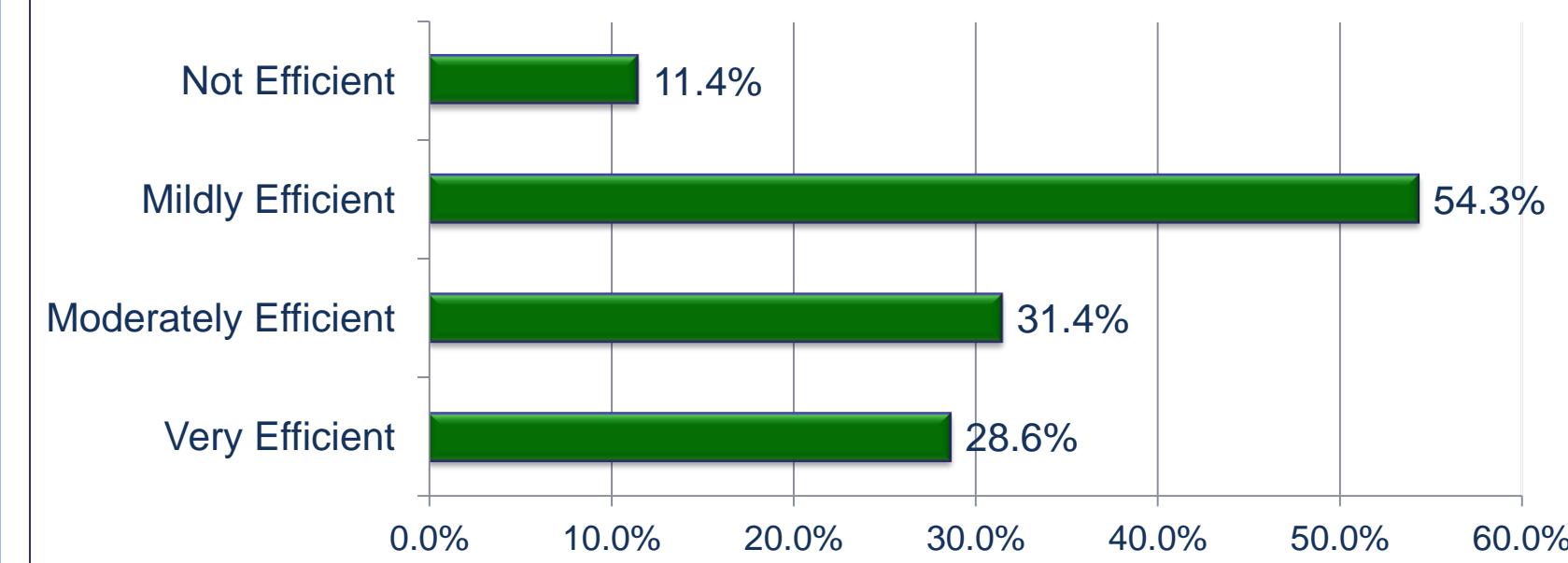
## Methodology

- Pre-implementation survey conducted to assess users' concerns
- Designed a template that focused on perioperative emergency conditions such as airway obstruction, altered breathing pattern and residual muscle blockade
- Created a focus group to test and provide feedback on newly designed Periop Emergency Template
- Post-implementation survey to determine ongoing improvement needs

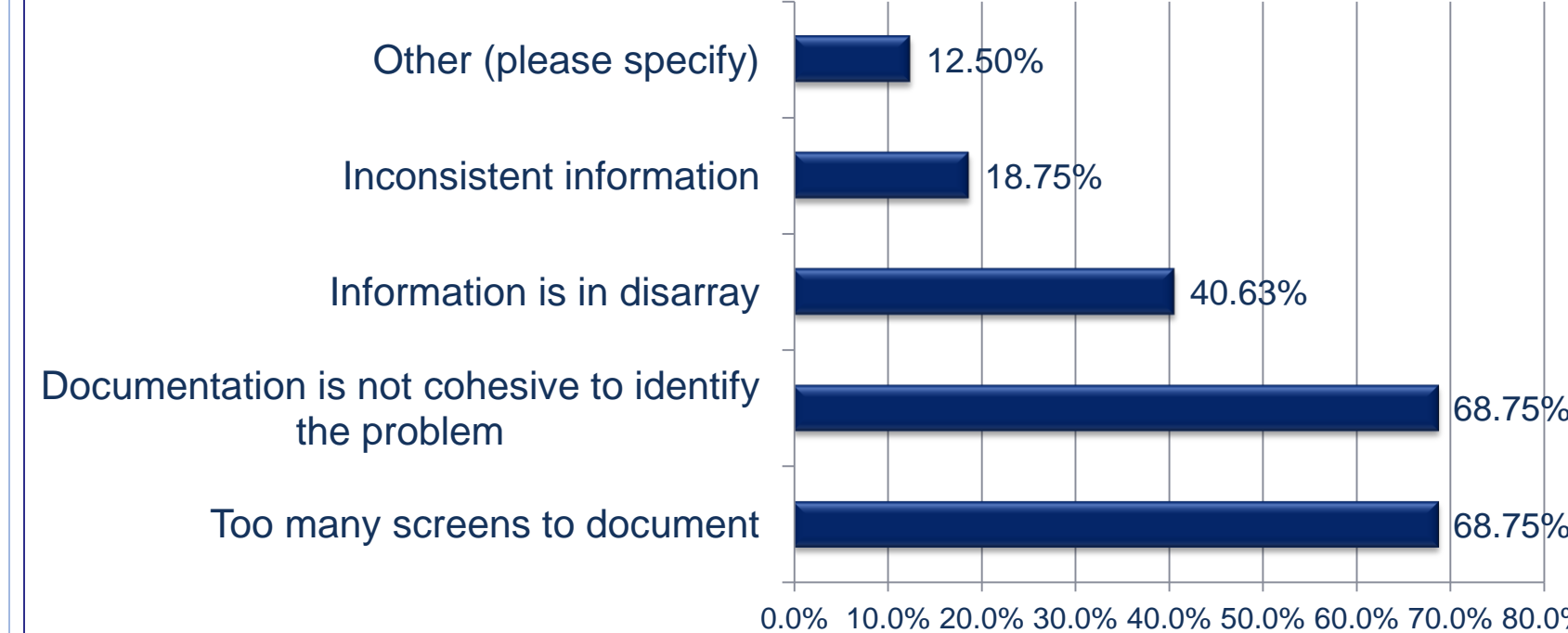
## Staff Survey



Rate the efficiency of current documentation process when recording emergencies.  
N = 37



What concerns do you have concerning current documentation of emergency events?  
N = 37



## Periop Emergencies Template

Type of Emergency	Residual Mus...
Team Members Present	Dr. Mar
Time of Event	1510
<b>Periop Emergency Assessment</b>	
Level of Consciousness	Somnolent
Patient Behaviors/emotions	Flat affect
Respiratory Pattern	Apneic
Respiratory Effort	Weak
Chest Assessment	Chest expansi...
Bilateral Breath Sounds	Absent
Upper Breath Sounds	
Lower Breath Sounds	
Obstruction?	Obstructed
Heart Sounds	
Cardiac Rhythm	SR
Suctioning Performed	
<b>Periop Emergency Management</b>	
Airway	Oral Airway
Airway Intervention	Chin Lift
Ventilation	
Head of Bed Elevated	HOB 30
Tests	ABG
Medications	
Interventions	Intubated
<b>Residual Muscular Blockade Emergency</b>	
Manifestations	Unable to open...
<b>Emergent Vitals</b>	
Temp	37.2 (99)
BP	90/50
Heart Rate	85
Resp	13
Emergent Pulse Check	Radial artery
<b>Oxygen Therapy</b>	
SpO2	96
SpO2- Pt at Rest or with	Rest

@2016 Epic Systems Corporation.  
Used with permission

AURORA, CO

## Results

- Focus group survey responses with new charting templates:
  - **Cohesiveness**-documentation of events is organized
  - **Comprehensive**-captures all the essential details when managing crisis events
  - **Convenient**-prompts users in entering essential information
  - **Accessibility**-data can be viewed by any department for review
  - **Reportable**- can be used for audit reporting versus using narrative entry

## Implications for Practice

- Templates to capture data during emergency situation can be created.
- Data elements when documenting emergencies must include real time recording of vital signs, assessment, intervention and communication
- Documentation screens must be concise and should reflect workflow to improve user compliance and usability
- Feedback from users is highly recommended to avoid design flaws.
- Template does not replace code documentation



University of Colorado Hospital

UNIVERSITY OF COLORADO HEALTH

