

IMPROVING PROTOCOL ADHERENCE IN THE INTENSIVE CARE UNIT

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INTRODUCTION

- Personal
 - Married with 2 children
 - Living in Minneapolis, MN
- Education
 - BSN in 2011
 - Current DNP candidate at Bradley University
- Professional
 - Bedside nurse since graduating
 - 1 year of med/surg, 5 years of spine and neurological step-down, 2 years of Intensive Care Unit experience

OBJECTIVES

- Discuss importance of protocols and protocol adherence
- Understand the research process behind project design
- Understand project design
- Discuss results and future implications of the project

PROTOCOL ADHERENCE

- Protocols
 - Evidence-based, best-practice guidelines
 - Often enforced by regulatory agencies
- Importance of adherence
 - Decreased length of stay
 - Decreased incidence of complications
 - Improved long-term outcomes

(Bounds et al., 2016; Schaller et al., 2016)

BACKGROUND AND SIGNIFICANCE

- A great deal of research has contributed to better understanding factors that improve patient outcomes
- This research has led to the development of protocol bundles
- Some of the common bundles in ICU care are focused on
 - Ventilator Associated Pneumonia (VAP) prevention
 - Delirium prevention
 - Pain control
 - Early mobility

ABCDE BUNDLE

- The Awakening and Breathing Coordination, Delirium monitoring and management, and Early mobility

VENTILATOR ASSOCIATED PNEUMONIA

- Approximately 33% of ICU patients are mechanically ventilated
- Most common nosocomial infection
- VAP contributes to nearly 60% of all nosocomial-related deaths

(Dakshinamoorthy, 2018; Bilodeau, Gallagher, & Tanguay, 2018; Wolfensberger, Meier, Clack, Schreiber, & Sax, 2018)

DELIRIUM PREVENTION

- Delirium contributes to increased LOS and poorer post-discharge outcomes
- Primarily achieved through
 - Sedation vacation or cessation
 - Sleep promotion
- Lack of sedation interruption contributes to increase risk of VAP
- Sleep deprivation contributes to hospital delirium

(Ackrivo et al., 2015; Bounds et al., 2016; Ding, Redeker, Pisani, Yaggi, & Knauert, 2017)

PAIN CONTROL

- Pain contributes to decreased early mobility
- Pain inhibits sleep
- Pain increases LOS

(Gruskay, Fu, Bohl, Webb, and Grauer, 2015; Rozycki, Jarrell, Krueer, Young, and Mendez-Tellez, 2017)

EARLY MOBILITY

- Contributes to decreased length of stay (LOS)
- Improves mobility after hospitalization
- Decreased risk of nosocomial infections

(Schaller et al., 2016; Oosterhuis et al., 2014; Piva et al., 2015)

NEEDS ASSESSMENT

- Interviews with ICU management and system educators
- Elements frequently below threshold at target hospital
 - Portions of VAP prevention
 - Mobility
 - Delirium prevention

NEEDS ASSESSMENT (CONT.)

- Research across multiple ICUs
 - VAP prevention adherence at 27% compliance
 - Sedation vacation at 14% compliance prior to interventions
 - Early mobilization is underutilized despite its significant benefits

(Bilodeau, Gallagher, & Tanguay, 2018; Schaller et al., 2016; Wolfensberger et al., 2018)

PROBLEM STATEMENT

- Despite the evidence-based protocols and guidelines that govern ICU care, adherence is required for patients to benefit from them
- There is no standardized method of charting the various protocols

PROJECT AIM

- Develop concise charting format that provides several benefits
 - Educates users on important aspects of protocols
 - Improves protocol adherence by at least 5%

CLINICAL QUESTION

- In ICU patients, can improved tracking of protocol adherence decrease length of stay in the ICU?

CONGRUENCE WITH ORGANIZATIONAL STRATEGIC PLAN

- Continued improvement through learning and innovation
- Improve care now to guide future care across the health care system
- Adhering to evidence-based protocol gives patients the best chance at positive outcomes

(Ackrivo et al., 2015; Bounds et al., 2016; Schaller et al., 2016; Fairview, 2019)

SYNTHESIS OF EVIDENCE

- 42 articles obtained for review using applicable search criteria
- 24 research articles used from the past five years
- Synthesis categories
 - Length of stay
 - Intensive Care Unit Protocol

SYNTHESIS OF EVIDENCE (CONT.)

- Length of stay (LOS)
 - Useful metric for analyzing intervention effectiveness
 - Increased LOS contributes to increased risks
 - Nosocomial infections
 - Hospital delirium
 - Decreased functional level after discharge

(Gonçalves-Bradley et al., 2016; Oosterhuis et al., 2014; Kanaan et al., 2014; Toptas et al., 2017; Schaller et al., 2016)

SYNTHESIS OF EVIDENCE (CONT.)

- Factors reducing LOS
 - Early mobility
 - Well-controlled electrolytes and creatinine
 - BMI<26
 - Care consultation
 - Fast-track programs
 - Step-down unit availability

(Almashrafi et al., 2016; Gonçalves-Bradley et al., 2016; Gruskay et al., 2015; Jeffery et al., 2018; Kanaan et al., 2014; Kyeremanteng et al., 2018; Oosterhuis et al., 2014; Schaller et al., 2016; Toptas et al., 2017)

SYNTHESIS OF EVIDENCE (CONT.)

- Intensive Care Unit protocol
 - ABCDE bundle implementation reduces delirium incidence
 - Adherence to VAP prevention protocol reduces complications
 - Nurse-managed interventions are effective in promoting protocol adherence
 - Staff education on specific guidelines increases protocol adherence

(Bounds et al., 2016; Ding et al., 2017; Mabasa et al., 2018; Rozycki et al., 2017; Saherwala et al., 2018; Wolfensberger et al., 2018)

THEORETICAL FRAMEWORK

- Donabedian model
 - Setting
 - Ventilated ICU patients
 - Impacted by nursing staff who are responsible for process change
 - Process
 - Altering ABCDE bundle charting
 - Easily tracking adherence
 - Making protocol parts obvious to nursing staff
 - Outcome
 - Improved protocol adherence
 - Measured through EMR retrospective audits

(Moran, 2017)

PROJECT DESIGN

- Involve critically ill patients
- Provide single-page charting format for elements of the ABCDE bundle
- Nursing documentation is central to the project
- Respiratory therapy and attending physician essential for interventions

DATA COLLECTION TOOLS

- Data collected initially on single-page questionnaire EMR will be utilized for ascertaining bundle compliance
 - Epic is used on-site
 - Audits are done through Epic and results are communicated to education and management

PROJECT PLAN

- Implementation
 - Educational meeting to explain project to management and education staff
 - Project will be discussed in pre-shift huddle to disseminate pertinent information to nursing staff
 - Single-page questionnaire distributed by team and unit coordinator
 - Continued supply of charting sheets distributed during huddle to nurses assigned to ventilated patients

PROJECT PLAN (CONT.)

- Outcomes to be measured
 - ABCDE bundle compliance
 - Audits will be done for the three month period of project implementation
- SMART objective
 - Increase bundle compliance by 10% by the end of the three month project duration

PROJECT PLAN (CONT.)

- Evaluation and sustainability plan
 - ICU management of project facility have agreed to audit charts using the EMR and report results
 - This will be overseen by ICU educator who is a member of the project team and who receives audit reports
 - Unit coordinator will maintain printed copies of charting material when project team is not at the facility
 - Unit coordinator will ensure charting materials are collected and placed in folders where project team will collect them

PROJECT PLAN (CONT.)

- Elements audited
 - Oral care
 - Pain assessment
 - Sedation vacation
 - Early mobility
 - Weaning trial

PROJECT PLAN (CONT.)

- No identifying information is recorded
- Secure Q drive has been obtained for data recording
 - Increases security
 - Only project lead, management, and educator have access

Was pain assessment charted every 2 hours?

Day shift: Yes [] No []

Night shift: Yes [] No []

Was oral care charted every 2 hours?

Day shift: Yes [] No []

Night shift: Yes [] No []

Is head of bed at 30 degrees?

Yes [] No []

Is this patient appropriate for pressure support trials?

Yes [] No []

Was a pressure support trial done in the last 24 hours?

Yes [] No []

Method of sedation

Propofol [] Versed [] Fentanyl []

Precedex [] Other: _____

Is the sedation within the ordered RASS parameters?

Yes [] No []

Was daily sedation interruption performed?

Yes [] No []

Was the CAM-ICU charted?

Yes [] No []

Is the patient restrained?

Yes [] No []

Is patient appropriate for therapies?

Yes [] No []

Is PT/OT ordered?

Yes [] No []

Was patient up to chair/chair position in the last 24 hours?

Yes [] No []

Active range of motion done in the last 24 hours?

Yes [] No []

Plan of care reviewed with family?

Yes [] No []

ETHICAL CONSIDERATIONS

- Low-risk
 - No patient data recorded
 - No alteration to current care, just altered charting
 - Utilizing pre-existing auditing standards for data analysis
 - Secure drive for storage, increasing security
 - Not human subjects research according to Bradley CUHSR
- Third-party chart audits
 - This prevents any patient information coming into contact with project team members

ORGANIZATIONAL ASSESSMENT

- Management
 - Supportive and engaged in project
 - Taking active role in data analysis
 - Assisted in organizing necessary staff to facilitate project
- Dedicated to process improvement wherever possible
 - Protocol adherence improvement would be beneficial system-wide

BARRIERS AND FACILITATORS TO SUCCESS

- Barriers
 - Staff buy-in
 - Lack of understanding
 - Must adequately educate on positive impact
- Facilitators
 - Project team composed of bedside nurses
 - Can take boots-on-the-ground approach to educating coworkers
 - EMR used on-site will hold the key to data analysis in the form of chart audits

BUDGET

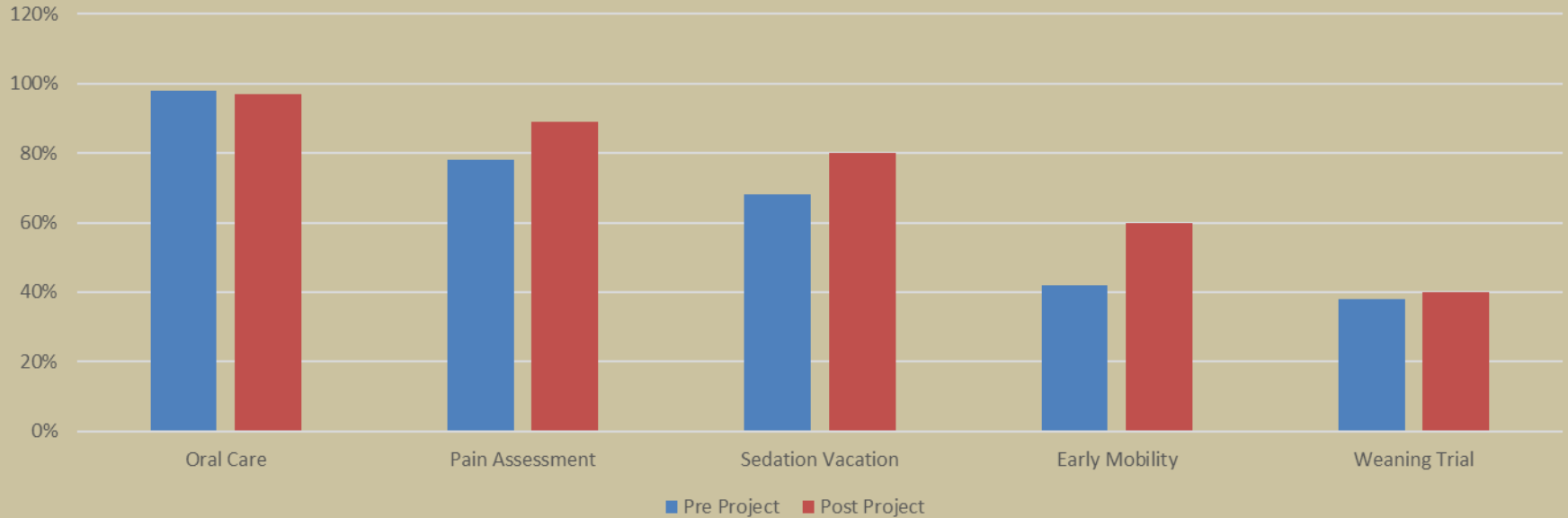
- Projected costs
 - Supplies will be largely provided by project facility
 - Printed materials
 - Time for education can be completed during scheduled shifts so no cost to the facility
 - Done during pre-shift huddle
 - Time to complete education is less than five minutes
 - Small amount of office supplies provided by team leader
 - Finished project under-budget of \$30.00

SUMMARY OF FINDINGS

- Findings represent changes of pre-project versus post-project auditing (Taken from 9/2019 and 3/2020)
- Pain assessment charting improved by 11%
- Sedation vacation charting improved by 12%
- Charting patient “up to chair” improved by 18%
 - This was the metric for early mobility
- Oral care and weaning trial charting remained unchanged

AUDITING RESULTS

Protocol Adherence Before and After Project

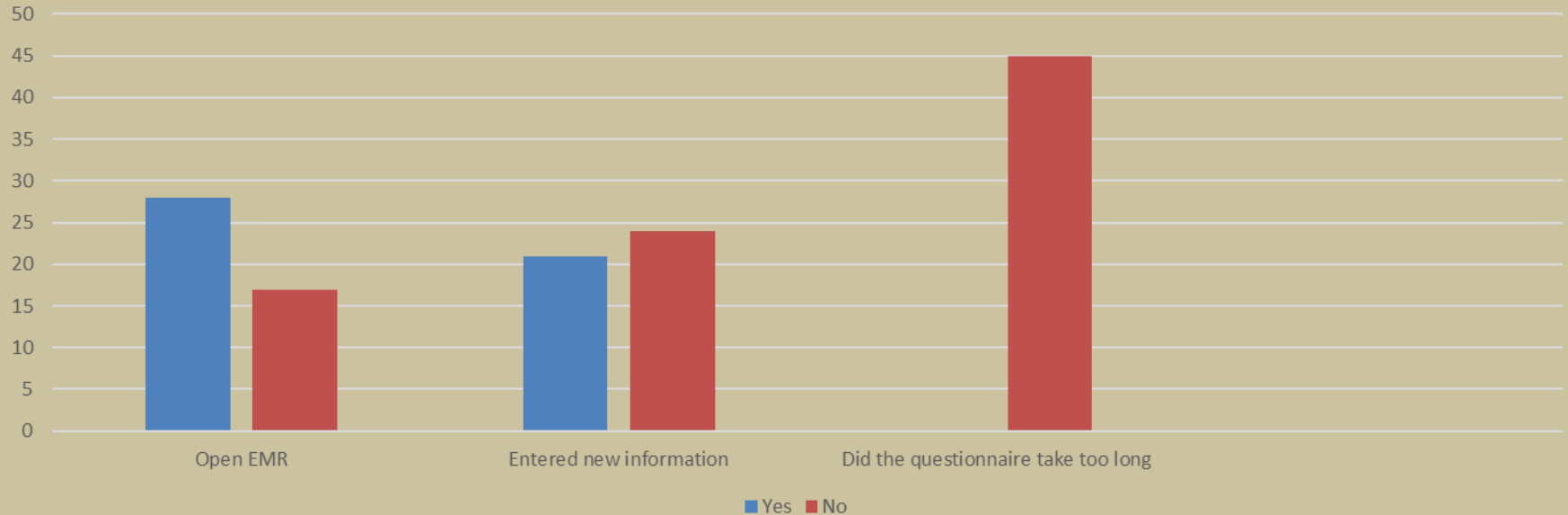


DEVIATION FROM PROJECT PLAN

- Added post-project survey
 - 45 nurses participated in the survey
 - Investigated project participants' activity during project
 - Asked three questions
 - Did you open EPIC while completing questionnaire?
 - Did you enter new information or change information in EPIC while completing questionnaire?
 - Did the questionnaire take too long to complete?

POST-PROJECT SURVEY

Post-Project Survey



LIMITATIONS

- Low census in second month of project
 - Patients on ventilators were abnormally low
 - Limited project data in this month
- Unit educator had to take leave-of-absence at the end of January
 - Was responsible for obtaining auditing data
 - Able to obtain data remotely

IMPLICATIONS OF RESULTS

- Those charting elements that are charted multiple times or on a schedule and those charted by multiple disciplines were unchanged during project
- Those elements that were charted by only nursing and only at the time of occurrence were improved by an end-of-shift questionnaire

IMPLICATIONS (CONT.)

- When implementing new practices that require charting
 - End-of-shift reminder may improve compliance
- If consistent problems in charting are seen, consider increasing frequency of charting or including more individuals responsible for the item

IMPLICATIONS TO NURSING

- Simple end-of-shift reminders or questionnaires exclusively given to nursing staff can improve bundle compliance
- Nursing-led interventions can improve charting compliance without increasing complexity

IMPLICATIONS TO RESEARCH

- Research involving end-of-shift reminders that could appear within the EMR and could be changed by administration to hit problem areas
- Could this be implemented cross-discipline

VALUE TO HEALTHCARE

- Improving protocol adherence improves patient outcomes
- Finding ways to innovate and improve health care strategies through research is a core principal of the *DNP Essentials*

(American Association of College of Nursing, 2006)

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