Utilization of a Workshop to Assist Frontline Leaders to Use High Reliability Science to Perform Apparent Cause Analysis

A QUALITY IMPROVEMENT INITIATIVE

TRACY DUNCAN DNP, RN

Introduction

DNP Essential VII: Clinical Prevention and Population Health
DNP Essential VIII: Advanced Nursing Practice

- To Err is Human: Building a Safer Health System 44,000-98,000 patients die in the US from medical errors (Makery & Daniel, 2016)
- Despite many efforts over the past 18 years patient safety remains a public health issue
- Hospital medical errors are the third leading cause of death in the United States (Swensen, 2017)
- The harm from medical errors results in significant mortality, morbidity, and quality of life implications for patients and their families
- 1 in 10 patients develops a Hospital acquired health condition (HAC) during hospitalization (NPSF, 2015)

Healthcare Significance

DNP Essential VIII: Advanced Nursing Practice

- Adverse patient safety events cause disruption for the patient, providers, and staff resulting in an increase in resources, time, cost, and negative publicity for healthcare facilities
- There is an opportunity to learn from adverse events by utilizing consistent methodology for review
- Organizations are held to financial performance standards for safety and may lose reimbursement for allowing certain HACs

Purpose

DNP Essential VIII: Advanced Nursing Practice

- Prepare front- line leaders to utilize high reliability science (HRS) to complete apparent cause analysis in a standard format.
- The goal is to develop a workshop that will assist frontline leaders to learn and identify safety trends from adverse events and over time reach zero patient harm.

Clinical Question

DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

- In hospitalized intensive care unit (ICU) patients how does utilization of a standardized, apparent cause analysis (ACA) process compared to non-utilization of a standard (ACA) process affect the ability to identify safety trends that will likely reduce reoccurrence of adverse events?

Setting/ Population

DNP Essential VI-Interprofessional Collaboration for Improving Patient and Population Health

- 605-bed licensed acute care facility.
- *n*=13 frontline leaders in the ICU's which includes nurse managers and assistant nurse managers
- Secondary population includes ICU patients that experience a preventable adverse event or near miss during the project implementation

Literature Review

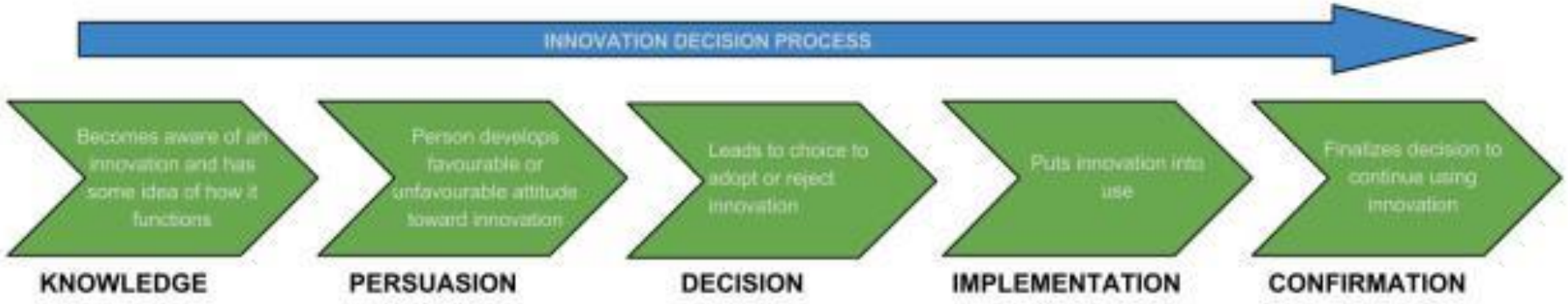
DNP Essential I: Scientific Underpinnings

- Several studies identified that many adverse medical events are preventable and there is opportunity to learn from medical errors by completing a standardized review (Hoppes et al., 2012; Bagian et al., 2015; Brady, 2013; Karl & Karl, 2012; Fletcher, 2012; Cerniglia-Lowensen, 2015)
- Six studies identified "5 Why's methodology" as important to determine underlying causes that dig deeper than the human error and focus on system causation (Hoppes et al., 2012; Bagian et al., 2015; Brady, 2013; Karl & Karl, 2012; Fletcher, 2012; Cerniglia-Lowensen, 2015)
- Two studies discussed the correlation between safety culture, patient experience, and patient outcomes (Lang et al, 2016; Abrahamson et al 2016).

Theoretical Framework

DNP Essential I: Scientific Underpinnings,
DNP Essential II-Organizational & Systems for Quality Improvement and Systems Thinking

- Theoretical Framework: Rogers Diffusion of Innovation (DOI)
- Rogers (2003) describes innovation as "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (p.12). Diffusion is defined by Rogers as "the process in which an innovation is communicated through certain channels over time among the members of a social system" (p.5).



Methods

DNP Essential I: Scientific Underpinnings,
DNP Essential II-Organizational & Systems for Quality Improvement and Systems Thinking

- Design: Plan-Do-Study-Act (PDSA) cycle to formulate and structure the HRS workshop
- Intervention and Tools: Administration of the Safety Attitude Questionnaire (SAQ) preintervention and postintervention
  - Rationale for utilization of the SAQ
  - SAQ utilized to customize the content for HRS workshop

Methods Continued

DNP Essential I: Scientific Underpinnings,
DNP Essential II-Organizational & Systems for Quality Improvement and Systems Thinking
DNP Essential V: Health Care Policy for Advocacy in Health Care

- Intervention: HRS workshop for frontline ICU leaders to introduce standard tools and methodology to complete ACA's
- Workshops held on March 8th and March 16th, 2018 (HRS concept identification, analysis, and change)

What Happened?

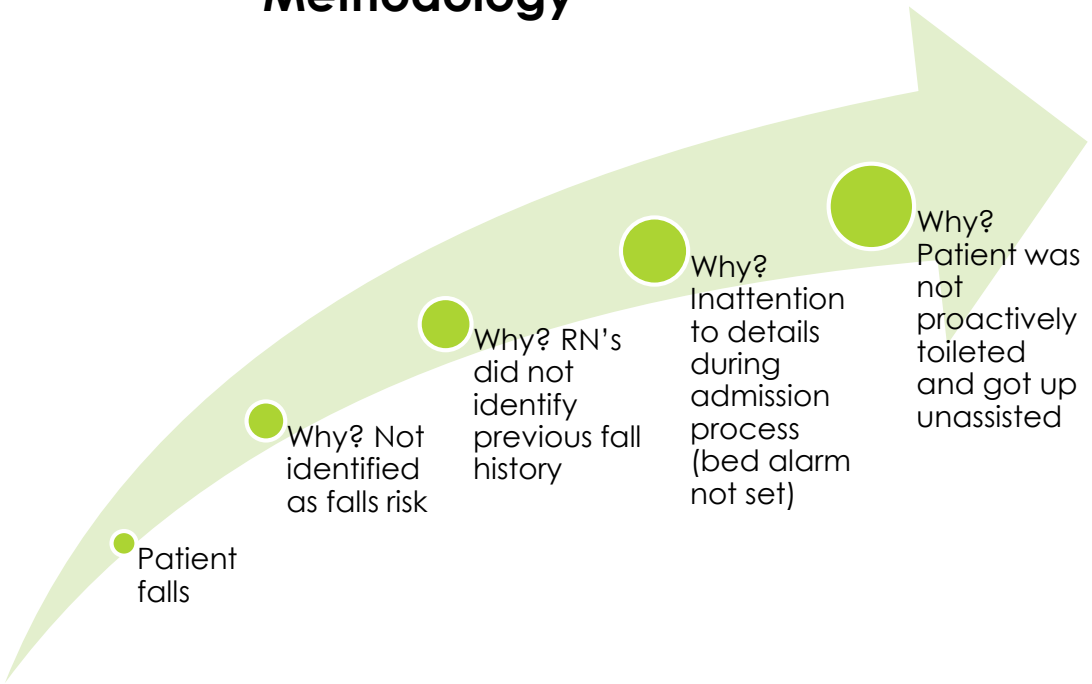
Why did it happen?

How can we prevent it from happening again?

Methods Continued

DNP Essential I: Scientific Underpinnings,
DNP Essential II-Organizational & Systems for Quality Improvement and Systems Thinking

Six Sigma's "5 Whys" Methodology



HRS Workshop Objectives:

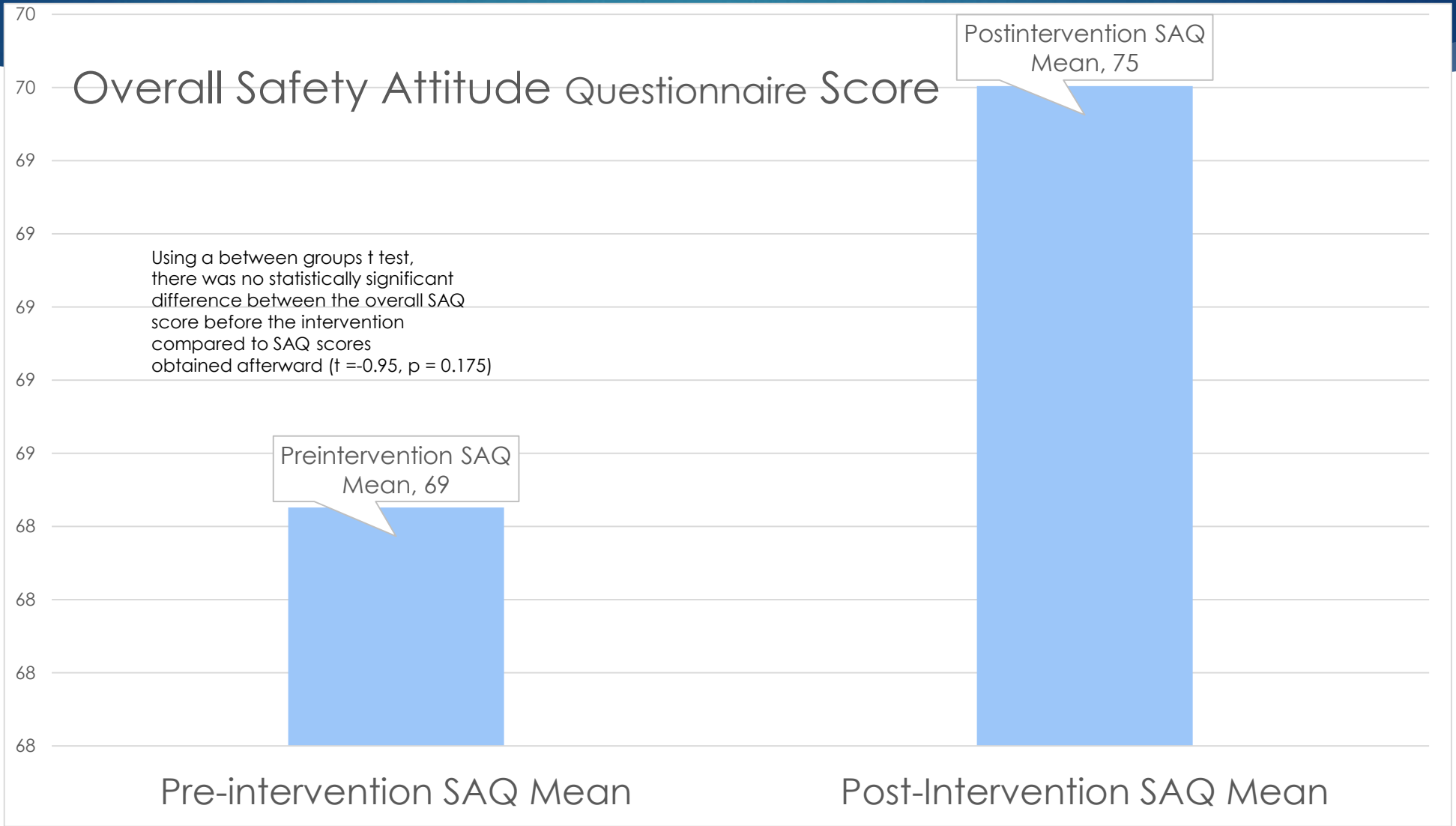
1) Differentiate between a patient safety event, serious safety event, and sentinel event
2) Differentiate an unsafe condition and near miss/good catch
3) Identify key organizational policies for patient safety event identifications and sentinel event
4) Classify safety events utilizing National Coordination Council for Medication Errors Reporting and Prevention (NCC MERP)
5) Conduct Apparent Cause Analysis utilizing standard processes and tools
6) Discuss and utilize High Reliability principles including: preoccupation with failure, sensitivity to operations, reluctance to simplify interpretations, commitment to resilience, deference to expertise

Data Collection Methods

Expected Outcome	Assessment Method	Outcome Criteria Measure
1. There will be an increase in apparent cause analysis performed on near misses as categorized by the patient safety reporting system (NCC MERP)	Baseline data of patient event classification will be collected from the facility patient safety reporting system for the previous calendar year including event categories A-D as classified by the National Coordination Council for Medication Errors Reporting and Prevention (NCC MERP). The same data will be collected during the 8 weeks of the project. Data will be compared preintervention and post intervention.	There is an expected increase in ACA's that were completed on near misses or good catches.
2. All frontline leaders in the ICU will complete the Safety Attitude Questionnaire	Baseline culture of safety data will be collected and analyzed on teamwork, safety climate, morale, work environment, perceptions of management, job satisfaction, working conditions, and stress recognition	Ninety percent of all frontline leaders in the ICU will complete the SAQ
3. All frontline leaders will attend the Workshop focusing on use of High Reliability Science to complete apparent cause analysis	Attendance will be taken at the workshop by sign in sheet. The sign in sheet will be compared to actual number of frontline leaders that work in the ICU setting	One Hundred percent of the frontline leaders will attend the workshop

Results

DNP Essential IV: Information Systems and Technology
DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice



Data Analysis

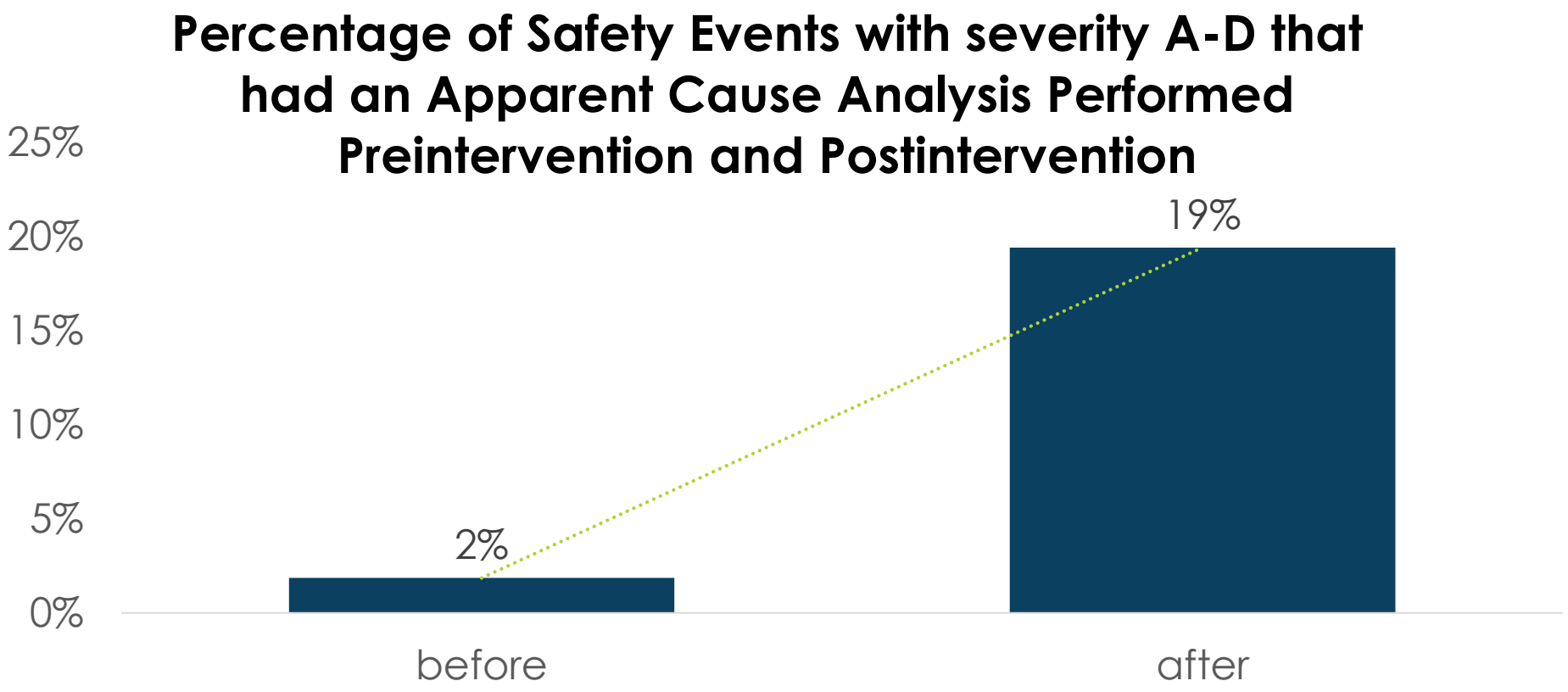
DNP Essential IV: Information Systems and Technology
DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

% of Agreement by Respondents with scores greater than 75 on Safety Attitudes Questionnaire

Scores greater than 75 on the SAQ indicate institutional alignment to Benchmarks for a Culture of Safety

Results

DNP Essential IV: Information Systems and Technology
DNP Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice



Discussion

DNP Essential VII: Clinical Prevention and Population Health
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- 92% of the frontline leaders completed the SAQ pre intervention
- 77% of the frontline leaders completed the SAQ post intervention
- Pre-intervention SAQ mean 69
- Post-intervention SAQ mean 75
- 100% of the frontline ICU leaders attended the HRS workshop
- ACAs performed on near miss (NCC MERP) scale A-D was 2% preintervention
- ACAs performed on near miss (NCC MERP) scale A-D was 19% postintervention (statistically significant P=0.000)

Limitations

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- Data had to be deidentified to meet the patient safety organization (PSO) regulations for the facility
  - some details were not permitted to be shared
- Unable to determine if the intervention had an impact in reduction of adverse safety events over time
- Time of intervention and measurement was short < 60 days
- SAQ needs to be measured again in 18months – 2 years

Recommendations

DNP Essential VII: Clinical Prevention and Population Health
DNP Essential VIII: Advanced Nursing Practice

- Expand the HRS ACA workshop to all frontline leaders within the facility (this includes ancillary support areas other than nursing).
- Continue to utilize case scenarios to allow leaders to practice new skills in a group setting.
- Continue to review and complete ACAs on near miss/good catch events
- Provide more opportunities for leaders to seek feedback on completed ACAs
  - Set up structured call in times so leaders may utilize ACA experts to assist in question and answer sessions
- Audit compliance of ACAs to ensure standard tools and methodology are utilized
- Provide quality just in time remediation as part of the ACA critique
- Require that the first ACA completed by a leader must be reviewed for compliance by a subject matter expert
- Monitor patient safety events and identify opportunities to utilize ACAs for trends
- Continue to monitor safety culture of the organization utilizing a tool with sound psychometric properties such as the SAQ
- Analyze patient safety data to track if there is a decrease in like safety events
  - Review previous ACA actions if repeat patient safety events occur

Conclusions

DNP Essential VII: Clinical Prevention and Population Health
DNP Essential VIII: Advanced Nursing Practice

- Understanding safety culture is an important step to building a high reliable organization
- Project suggest that a standardized process to complete ACAs may lead to an increase in near miss ACA reviews
- Short term outcome measures were achieved
- Long term measures will require further review and trending over time

Utilization of a Workshop to Assist Frontline Leaders to Use High Reliability Science to Perform Apparent Cause Analysis

Tracy Duncan, MSN, RN

Spalding University

Introduction

- Hospital medical errors are the third leading cause of death in the United States (Swensen, 2017)
- 1 in 10 patients develops a Hospital acquired health condition (HAC) during hospitalization (NPSF, 2015)
- Second victims are created due to adverse events which include the staff involved

Significance to Healthcare

- Adverse patient safety events cause disruption for the patient, providers, and staff resulting in an increase in resources, time, cost, and negative publicity for healthcare facilities
- There is an opportunity to learn from adverse events by utilizing consistent methodology for review
- Organizations are held to financial performance standards for safety and may lose reimbursement for allowing certain HACs

Purpose

- Prepare front- line leaders to utilize high reliability science (HRS) to complete apparent cause analysis in a standard format.
- The goal is to develop a workshop that will assist frontline leaders to learn and identify safety trends from adverse events and over time reach zero patient harm.

Clinical Question

- In hospitalized intensive care unit (ICU) patients how does utilization of a standardized, apparent cause analysis (ACA) process compared to non-utilization of a standard (ACA) process affect the ability to identify safety trends that will likely reduce reoccurrence of adverse events?

Short & Long Term Goals

- Increase in ACA's performed on near miss events
- 90% of the frontline leaders will complete safety Attitude Questionnaire (SAQ)
- 100% participation of frontline leaders in HRS workshop
- Dissemination of HRS workshop hospital wide; then system wide
- Reduce adverse safety events over time

Setting Population & Participants

- 605-bed licensed acute care facility.
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Literature Review

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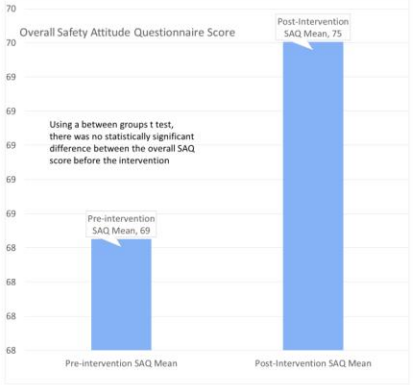
Theoretical Framework

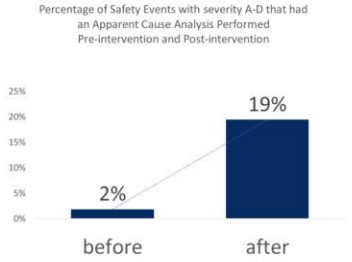
- Theoretical Framework: Rogers Diffusion of Innovation

Methods

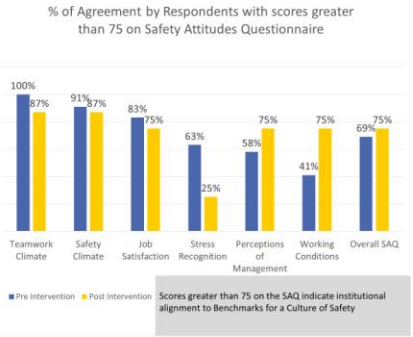
- Design: Plan-Do-Study-Act (PDSA) cycle to formulate and structure the HRS workshop
- Intervention and Tools: Administration of the Safety Attitude Questionnaire (SAQ) preintervention and postintervention; Analyze patient safety events with ACA preintervention and post intervention
- HRS workshop for frontline ICU leaders to introduce standard tools and methodology to complete ACA's on March 8th and March 16th, 2018 (focus on identification, analysis, and change)

Results





Data Analysis



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Limitations

- Unable to determine if the intervention had an impact in reduction of adverse safety events over time
- Time of intervention and measurement was short < 60 days
- SAQ needs to be measured again in 18months – 2 years

Recommendations

- Expand the HRS workshop to other frontline leaders within the facility
- Provide feedback and coaching on ACA's quality with the frontline leaders in real time
- Complete audits to ensure standard format and tools are utilized for ACA's

Conclusions

- Understanding safety culture is an important step to building a high reliable organization
- Project suggest that a standardized process to complete ACAs may lead to an increase in near miss ACA reviews
- Short term outcome measures were achieved
- Long term measures will require further study and trending over time

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Questions