



Improving Sepsis Mortality with Comprehensive Unit-based Safety Program (CUSP)

Theresa Trivette, DNP, RN, CSSBB / Catherine Durham, DNP, FNP-C
 Medical University Of South Carolina (MUSC) College of Nursing

BACKGROUND

- Sepsis remains among leading causes of death worldwide.
- Surviving Sepsis Campaign (SSC) developed guidelines for management of severe sepsis and septic shock, popularly known as Sepsis Bundles.
- Comprehensive Unit Based Safety Program (CUSP) is an evidence based framework to improve culture of safety and patient outcomes.
- Improvements in culture of safety lead to improved compliance with evidence-based care.
- At project site, hospital had higher mortality than national rate, and below average performance with the sepsis bundle.
- The purpose of this QI project was to evaluate the effectiveness of implementing the CUSP program to improve the culture of safety in the ICU and improve sepsis bundle delivery as a strategy to reduce mortality

CLINICAL QUESTION

Will implementation of the CUSP program improve the culture of safety in the ICU and compliance with sepsis bundles as a strategy to reduce severe sepsis and septic shock mortality?

METHODS

- **Framework:** IHI Model for Improvement
- **Setting:** 28 bed Adult ICU in Southeast acute care hospital
- **Population:** Adult ICU patients with severe sepsis or septic shock diagnosis
- **Data Collection:** *Culture of Safety Attitudes Questionnaire (SAQ): Safety & Teamwork Climates Questions*
SEP-1: % compliance - Sepsis Bundle; % observed mortality - Severe Sepsis & Septic Shock

Pre-QI: July-Sept 2015 (n= 93, patients; n=130, staff)
 Post-QI: July-Sept 201 (n=164, patients; n=67, staff)

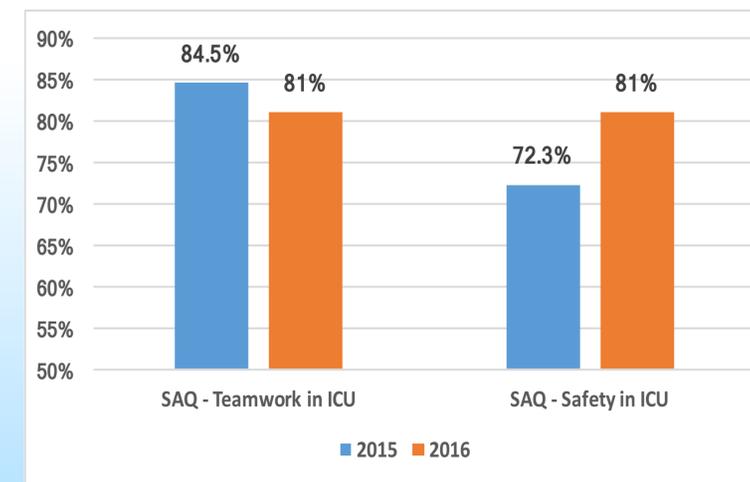
Intervention: Implement CUSP Program:

- Establish baseline performance
- Engage unit staff in safety and performance improvement activities
- Engage executive leadership
- Validate current evidence-based protocols
- Apply performance improvement tools to improve identified gaps
- Evaluate success of performance improvement activities

Data Analysis: Microsoft Excel; descriptive statistics and graphical display

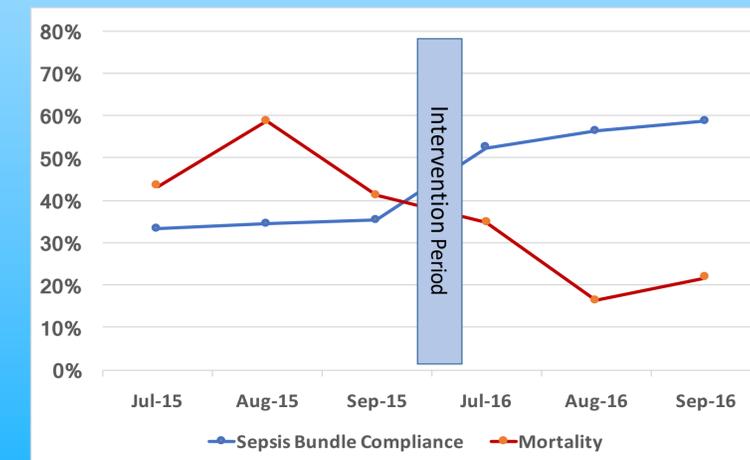
RESULTS

Figure 1. Culture of Safety Survey Results, pre/post intervention



- Safety Climate improved from 72.3% pre to 81% post
- Teamwork Climate declined from 84.5% to 81%

Figure 2. Sepsis Bundle Compliance with Mortality, pre/post Intervention



- Compliance improved - 34.4% pre; 55.5% post
- Mortality decreased - 47.3% pre; 25% post

CONCLUSION

- Implementation of CUSP Framework improved Culture of Safety Scores, improved utilization of sepsis bundle compliance and decreased patient mortality related to sepsis.
- **Strengths:** Engaging a multidisciplinary team allowed open dialogue and transparency regarding barriers to consistent delivery of care; improved overall communication and activities within the unit and across other units.
- **Limitations:** With 20% staff turnover rate from pre- to post- implementation periods, it is difficult to assume the aggregate improvement was specifically related to the actions of the CUSP implementation versus the relative change in staff.
- **Future Recommendations:** Further research is needed to evaluate the associated improvements in sepsis outcomes and culture of safety using CUSP as framework.

IMPLICATIONS FOR PRACTICE

CUSP is an effective method to engage frontline staff to work collaboratively together for process improvement. This collaborative approach improves the culture of safety and enables multidisciplinary teamwork to improve the delivery of evidence-based practices and results in improved patient outcomes.