



Sepsis Response: A Revision to the Current Emergency Response Team

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PURPOSE

- To evaluate effectiveness of an educational offering aimed at cultivating staff understanding of the Sepsis Response Team (SRT) process and its importance
 - Implement a team to improve care response time to patients suspected of sepsis
 - After completing the education module, registered nurse (RN) staff on a unit at Cincinnati Children's Hospital Medical Center (CCHMC) will understand responsibilities of each SRT member and the reasoning for the team's creation, as well as have access to quick references to aid in their knowledge retention.

OBJECTIVES/GOALS

- Review of the current Emergency Response Team on A7NS
- Review of the updated Emergency Response team including Sepsis Response Team
- Understanding of the need for Sepsis Response Team
- Review of the roles in the Seizure Response Team
- Understand what reference resources exist

METHODS

The Educational Offering

- Need identified, project implemented on Neuroscience/ Trauma unit at CCHMC via online learning module methodology
- Online self-directed learning module created regarding SRT; reviewed Emergency Response Team (ERT), institutional need for standardization of sepsis interventions, how to activate SRT, roles/responsibilities of members, and resources/quick references to aid knowledge retention
- Nursing educational concepts considered in creation and delivery of educational offering included staff readiness to learn, motivation, potential learning barriers, and workplace culture
- Education module included with monthly requirements through *Mosby*; 100% score on completion test with unlimited attempts required per CCHMC policy
- Prior to module completion, optional pre-test distributed to RN staff via email to assess knowledge on sepsis huddle, intervention times, and available resources
- After module completion, post-test distributed via email to assess effectiveness and learner satisfaction of education module
- Both pre-/post-tests consisted of the same five questions--four multiple-choice and one fill-in-the-blank; Post-test included an additional four questions regarding satisfaction with SRT education and practice implementation
- All 70 RNs completed education module via *Mosby*; however, only 25 responded to pre-test and 28 responded to post-test
- Data from both surveys analyzed and compared (Figure 4)
- Collaborated and communicated with key stakeholders (unit Education Specialist and managers, Center for Professional Excellence/Education, RN staff, Quality Improvement (QI) team) who also provided support for project

LITERATURE REVIEW

- Sepsis: leading cause of child mortality worldwide (Bulatova et al., 2020)
- As a leading pediatric facility, CCHMC has established two main goals:
 - 80% compliance with intravenous (IV) antibiotics administration within 60 minutes of sepsis recognition (*Currently at 59% compliance*)
 - 84% compliance with IV fluid push-pull bolus administration within 20 minutes of sepsis recognition (*Currently at 73% compliance*)
- Surviving Sepsis Campaign (SSC) guidelines: immediate fluid resuscitation, IV antibiotic administration within 1 hour of sepsis recognition, hospitals should develop a performance improvement program for sepsis (Rhodes et al., 2017); delays in treatment lead to increased mortality (Bulatova et al., 2020)
- Similar sepsis initiatives via specialty response teams have proven successful in decreasing patient mortality, improving patient prognosis/outcomes, decreasing ICU sepsis-related admissions, and decreasing hospital costs (Delawder & Hulton, 2020; Lane et al., 2016; Maclay, 2017)
- RN perception of online educational formats are generally positive, especially when creative/visually stimulating (San Martin, 2019); allows for self-directed learning and for communication of continual changes/updates in modern health care (Karaman, 2011; O'Shea, 2003)
- Institutional support for best-practice implementation, clear objective communication, and utilization of existing or new teams are ideal components for successful practice implementation (Ploeg et al., 2007)

EVALUATION

Pre-test questions:

- Where are the members of the Emergency Response Team posted?
- Once a patient is suspected for sepsis, how long until a sepsis huddle should occur?
- CCHMC's goal for treating sepsis is administration of IV fluids as described by which of the following?
- CCHMC's goal for treating sepsis is IV antibiotic administration within what time frame?
- Where can the sepsis algorithm be found?

Post-test questions: (same as above questions with addition of 1 multiple-choice, 2 subjective Likert Scale questions, and 1 open-ended question)

- Where can you look if you forget what the SRT roles are?
- On a scale of 1 to 5, 1 being very unsatisfied and 5 being very satisfied, how satisfied are you with the amount of educational support you have for sepsis management?
- On a scale of 1 to 5, how confident are you with your ability to enact and participate in the Sepsis Response Team?
- After completing the ERT update education module, do you have any other questions/concerns regarding the Sepsis Response Team addition?

- All staff required to complete education module with 100% on *Mosby* module test
- Continual evaluation can be done as SRT utilization increases
 - will include analyzation of the Sepsis Debrief Tool
 - will also include data collection of updated institutional data regarding intervention response times

THEORETICAL FRAMEWORKS

Social Learning Theory (SLT)

- 4 phases applied to educational delivery and process (Figure 1)
- Staff likely to adopt "modeled behavior" of SRT implementation since outcomes of increased intervention timeliness is projected to produce results they value: better patient outcomes (Culatta, 2020)

Figure 1. Social Learning Theory Phases

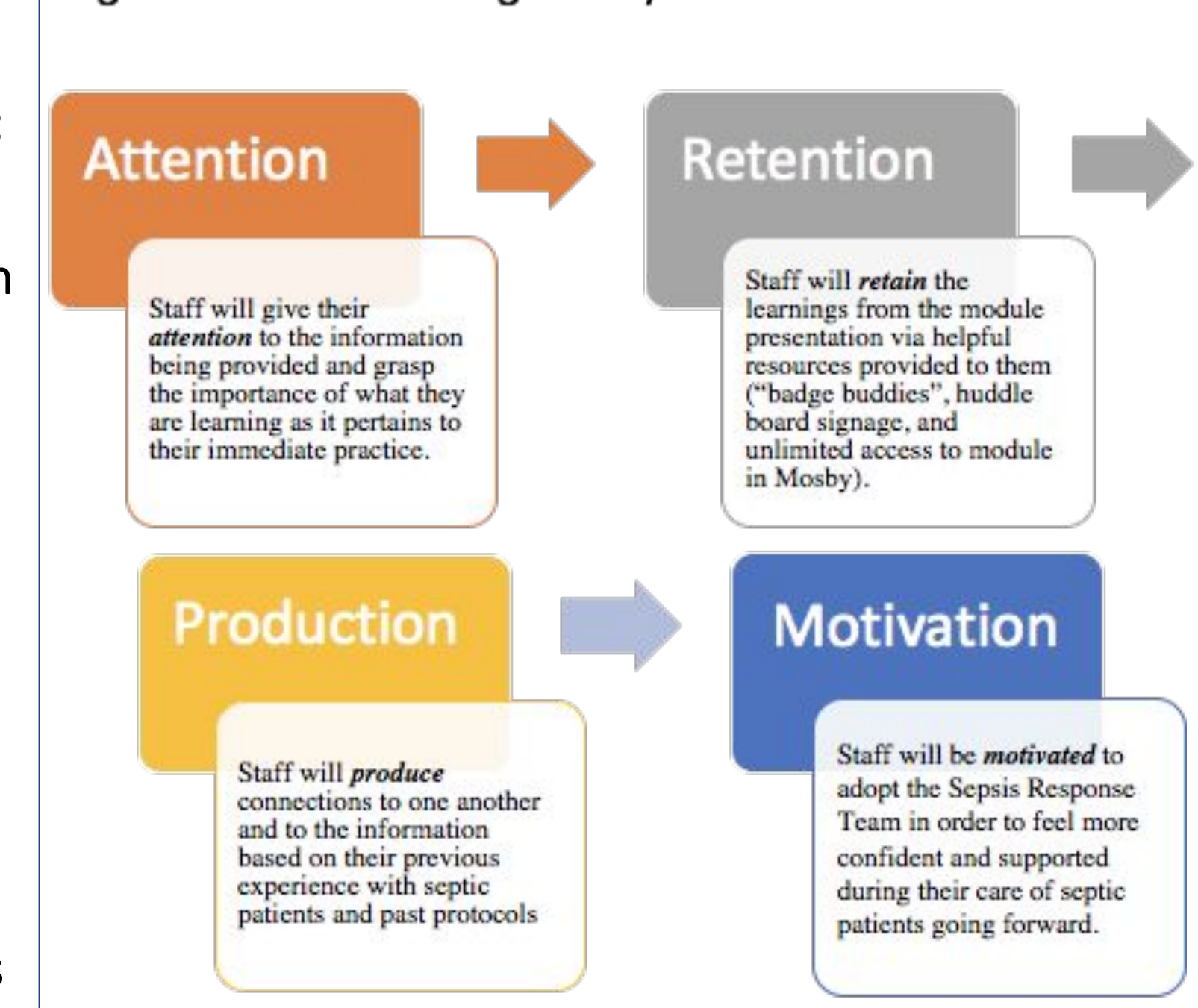
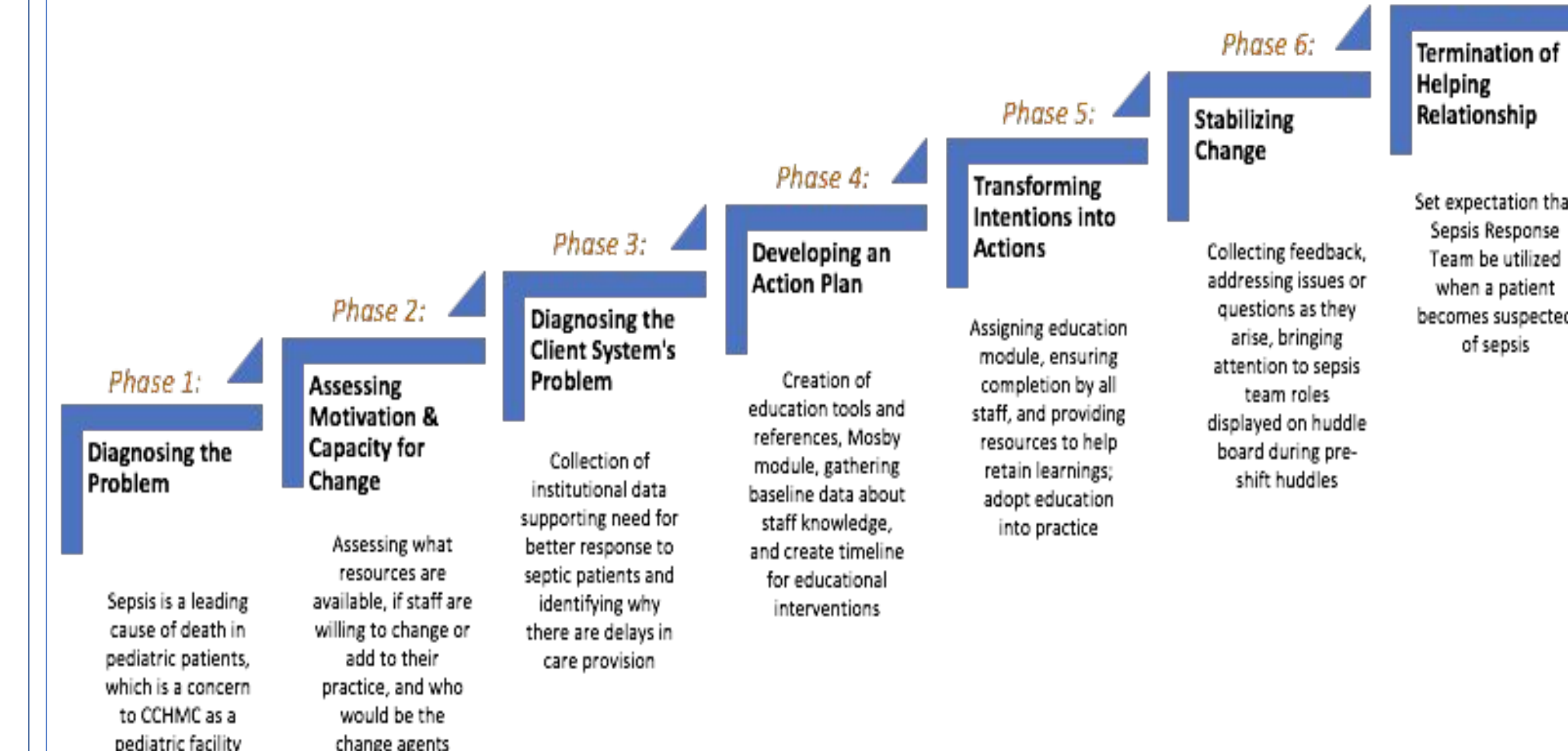
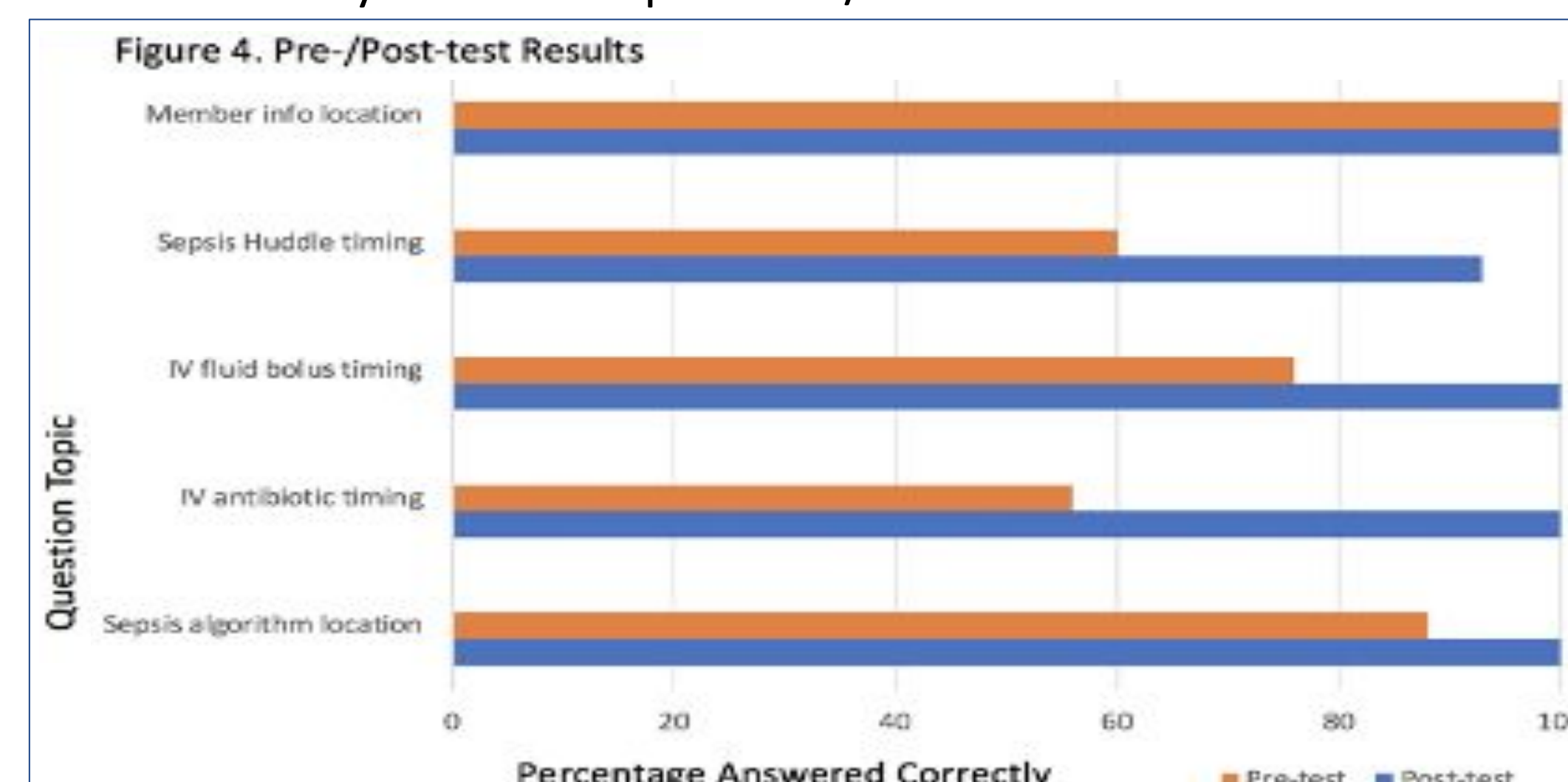


Figure 2. Lippitt's Change Phases Applied to Sepsis Response Team Development



OUTCOMES

- 25 RN respondents to **pre-test**
 - 100% aware of ERT member information
 - 60% knew when sepsis huddle should occur
 - 76% answered correctly regarding IV fluid bolus intervention
 - 56% answered correctly regarding IV antibiotic intervention
 - 88% knew where to find sepsis resources
- 28 RN respondents to **post-test**
 - 100% aware of ERT/SRT member info
 - 93% knew when sepsis huddle should occur
 - 100% answered correctly regarding IV fluid bolus intervention
 - 100% answered correctly regarding IV antibiotic intervention
 - 100% knew where to find sepsis resources
- Additional post-test question responses:
 - 96.43% knew where their SRT knowledge aids were
 - 100% reported being "Very Satisfied" with educational offering
 - 82.14% rated confidence "Very High" while remaining 17.86% indicated confidence as "High" regarding ability to enact and take part in SRT
 - 100% responded with "none", "no", or "N/A" that they did not have any additional questions/concerns about SRT



CONCLUSIONS

- Institutional data showing lack of intervention responsiveness/ timeliness parallel to pre-survey results
- SRT education module resulted in increased knowledge base in A7NS RNs regarding sepsis intervention timing, specifically with sepsis huddle occurrence, IV fluid bolus and antibiotic administration parameters, and where sepsis resources can be found
- Higher post-test scores could be attributed to similarity between *Mosby* completion test and emailed post-test
- Even though only ~1/3 RN staff completed surveys, 100% of staff completed education module; therefore all RN staff received and addressed the education regardless if they participated in pre-/post-tests
- Mosby* online learning module was a successful teaching strategy in educating staff about SRT as reflected by RN high satisfaction responses
- As data is collected on septic patients going forward, the impact of an SRT on improving sepsis intervention timing will become more evident

IMPLICATIONS/RECOMMENDATIONS

- Though well-received and cost-efficient, further studies should be conducted to determine if this type of online learning module is effective for educating RN staff on a larger scale
- For increased validity of post-test results, initial *Mosby* completion test responses could be recorded, analyzed, and compared to pre-test
- Continue data collection/analysis about effects of SRT implementation
- Once data shows improvement in sepsis intervention responses as hypothesized, other units at CCHMC should adopt similar standardization practices of a sepsis response team