Sepsis Sign-out: Communicating Sepsis Management in Interfacility Transport

Allison Schlegel, BSN, RN | Nancy Russell, DNP, FNP-BC

JOHNS HOPKINS SCHOOL *of* NURSING

Background

Sepsis is one of the leading causes of death across the lifespan in hospitals world-wide[1]
- Delayed recognition and treatment is associated with early and preventable death[2]
- Early detection is crucial to improving patient outcomes[2]

Healthcare miscommunications during transfer-of-care can result in delay in diagnosis, delay in or omission of treatment, and missed or repeated testing[3]
- Delays and misses that could significantly impact the patient with sepsis
- Standardized tools for hand-off during transitions-of-care may help reduce these miscommunications and improve nurse perception of and satisfaction with the process[3]

Collaborative partnerships with patient-transport teams has the potential to improve sepsis recognition during this vulnerable transition-of-care

Purpose & Aims

Purpose: communicate timely sepsis measures in the adult medical population at risk for sepsis being transferred between medical facilities through facilitating standardized "Sepsis Sign-out"

Aim I To adapt and implement a hand-off communication and documentation tool

Aim II To improve documentation of core sepsis treatment measures for each adult medicine patient being transferred with a positive sepsis screen at time of transfer

Aim III To increase satisfaction in the patient hand-off performed between interfacility transport nurses and receiving inpatient medicine nurses

Methods

Design: Quality Improvement preintervention-postintervention design

Setting: Medical transportation department within academic teaching hospital in a metropolitan area of the Mid-Atlantic U.S.

Sample:
- Transportation nurses performing interfacility transports for adult medical patients into participating units perform the intervention
- Pretest-posttest surveying with receiving inpatient nurses
  - *Excludes those who do not participate with a transfer over the study period*

Measures:
- Completion of tool adaptation and implementation
- Rate of compliance
- Changes in satisfaction in one question, 5-point Likert survey pre- and post-intervention

Intervention

Sepsis Sign-out Communication Tool

Physical paper communication tool utilized for adult medicine patients being transferred from outside facilities into one of the two participating study units (telemetry & ICU).

Figure 1. *Intervention Tool Example*

Sepsis screening criteria as written in the transport team's policies, based on Systemic Inflammatory Response Syndrome (SIRS) criteria and Maryland Institute for Emergency Medical Services Systems (MIEMSS) criteria[1,4]

Communication tool adapted from SSC timely sepsis bundles as reflected in the transport team's current sepsis policies[6]

Outside facility ("Pre-Transit") → During transport ("In-Transit") → Arrival at target institution

Transport nurse completes sepsis screen + "Pre-Transit" sepsis communication form (if positive screen)

*Document any implemented sepsis treatments "In-Transit," per current protocols*

Hand-off tool to receiving inpatient nurse on the participating unit for communication and documentation

Sample Characteristics

Inpatient nurses surveyed

Pre-test 44 nurses
Post-test 29 nurses
Sample for analysis 11 pairs

Table 1
Years of Experience

Mean	7
Median	7
Mode	2[a]
Minimum	2
Maximum	15
Standard Deviation	4
Total N	11

a. Multiple modes exist. The smallest value is shown

Table 2
Specialty Area and Experience

	Unit type				Experience			
	telemetry	ICU	Medical	Surgical	Telemetry	IMC	ICU	Other
Count	3	8	9	1	5	2	7	0
Row N %	27.3%	72.7%	81.8%	9.1%	45.5%	18.2%	63.6%	0.0%

Results

Compliance

Qualifying transfers: 32
Tools captured: 5 (15.63%)

100% of captured tools screened positive for sepsis
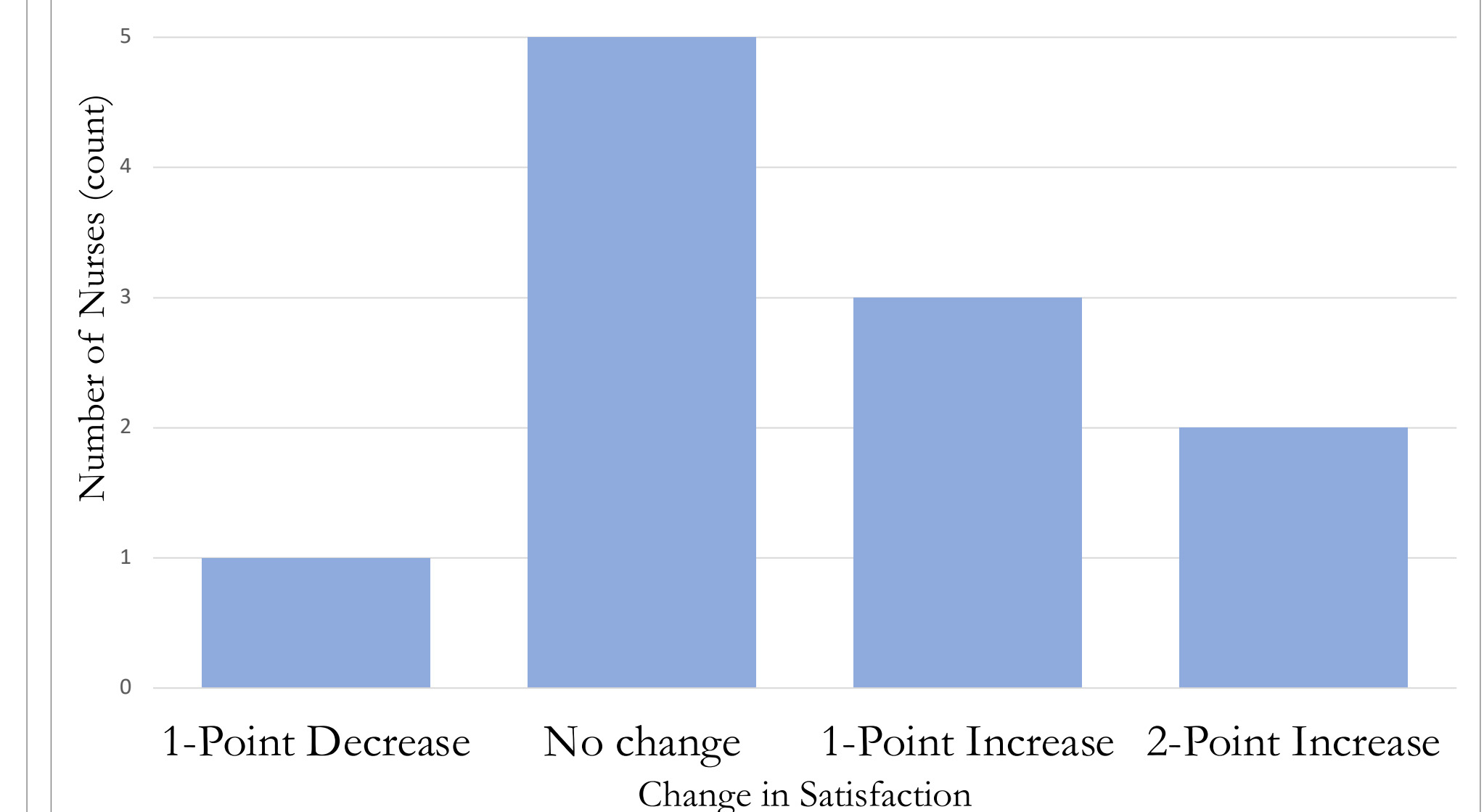*60% initiated treatments in-transit*

Figure 2. *Hand-off Tool Compliance*

Missed transfer 85%
Captured transfer, no intervention 6%
Captured transfer, with intervention 9%
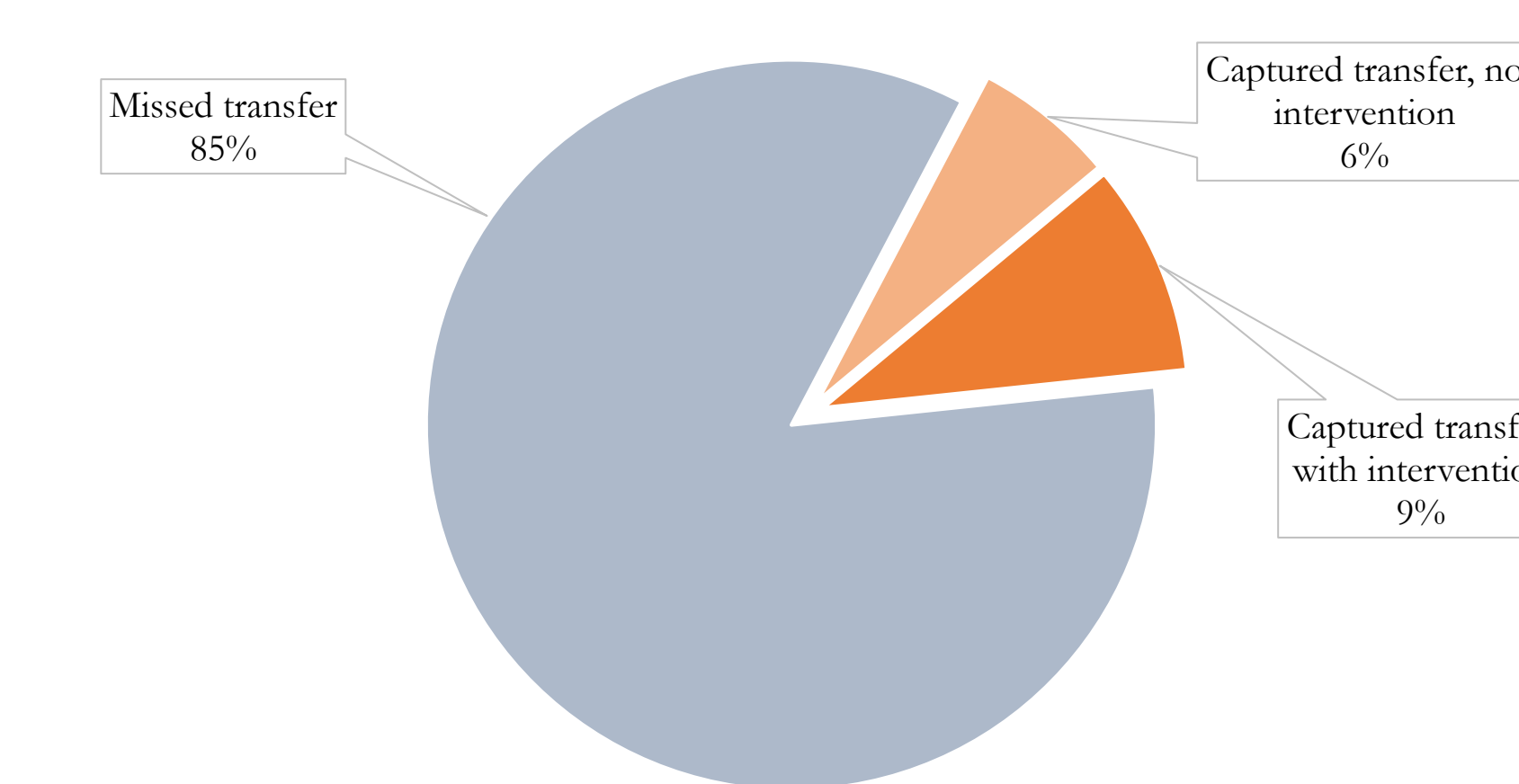
Satisfaction

No statistically significant difference
$\alpha = 0.05$ | *Wilcoxon-signed rank test p-value = 0.084*

Figure 3. *Change in Satisfaction Pre-test to Post-test (n=11)*

Supportive Findings | Utility & Feasibility

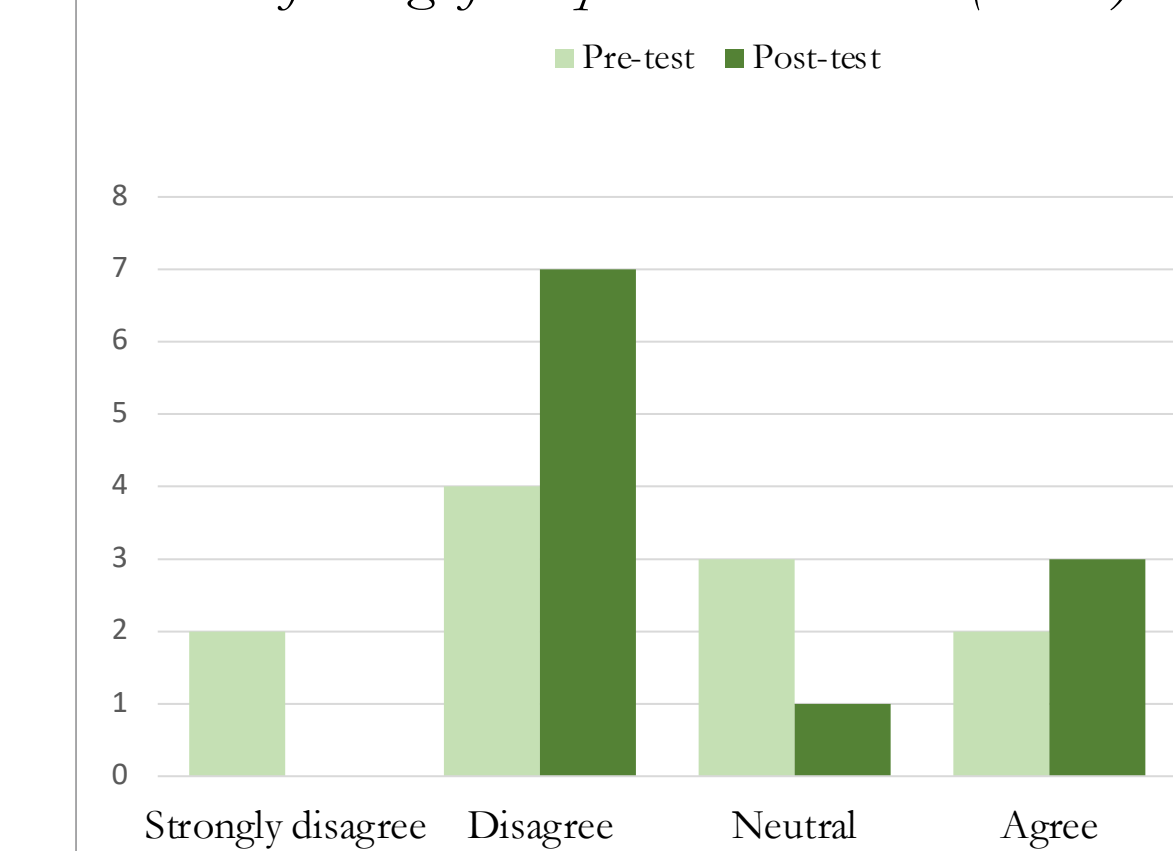**Figure 4.** *"Hand-off is Effective" survey findings from paired nurse data (n=11)*

Figure 5. *"Important Sepsis Information is Rarely Lost in Transition-of-care" survey findings from paired nurse data (n=11)*
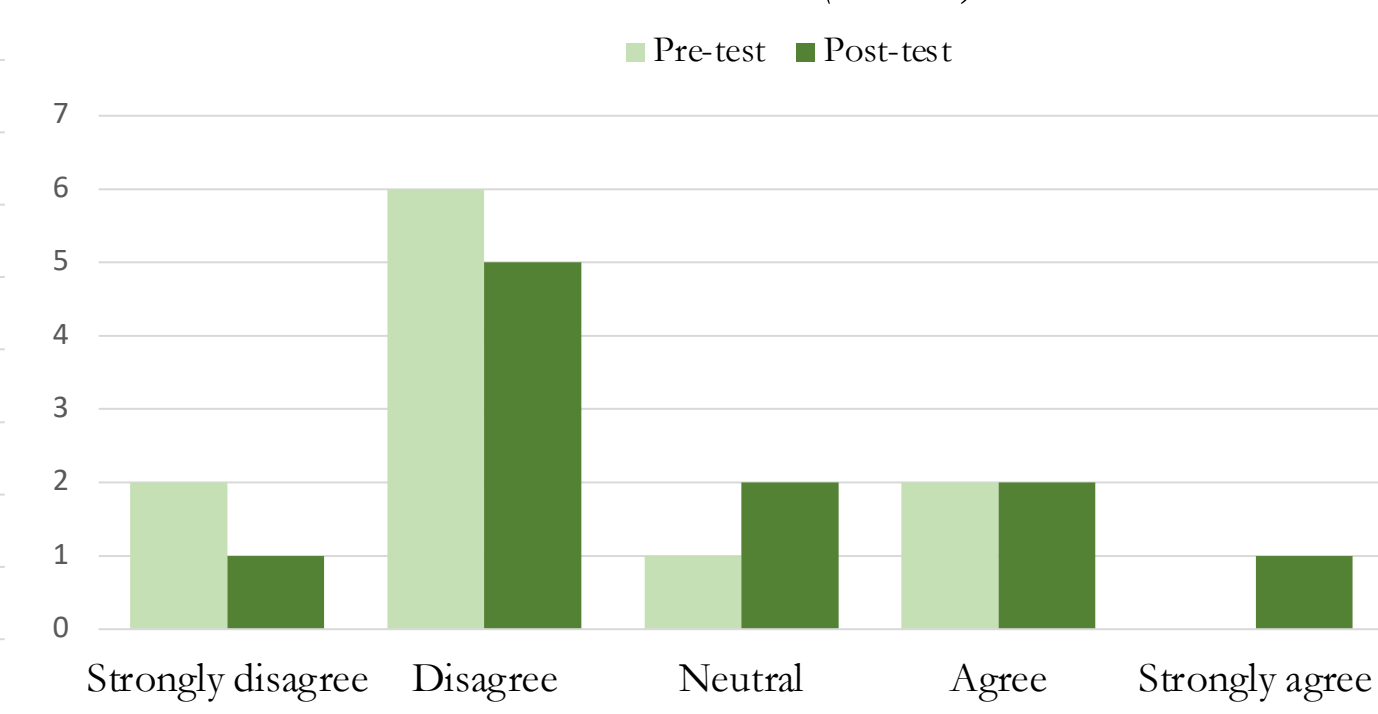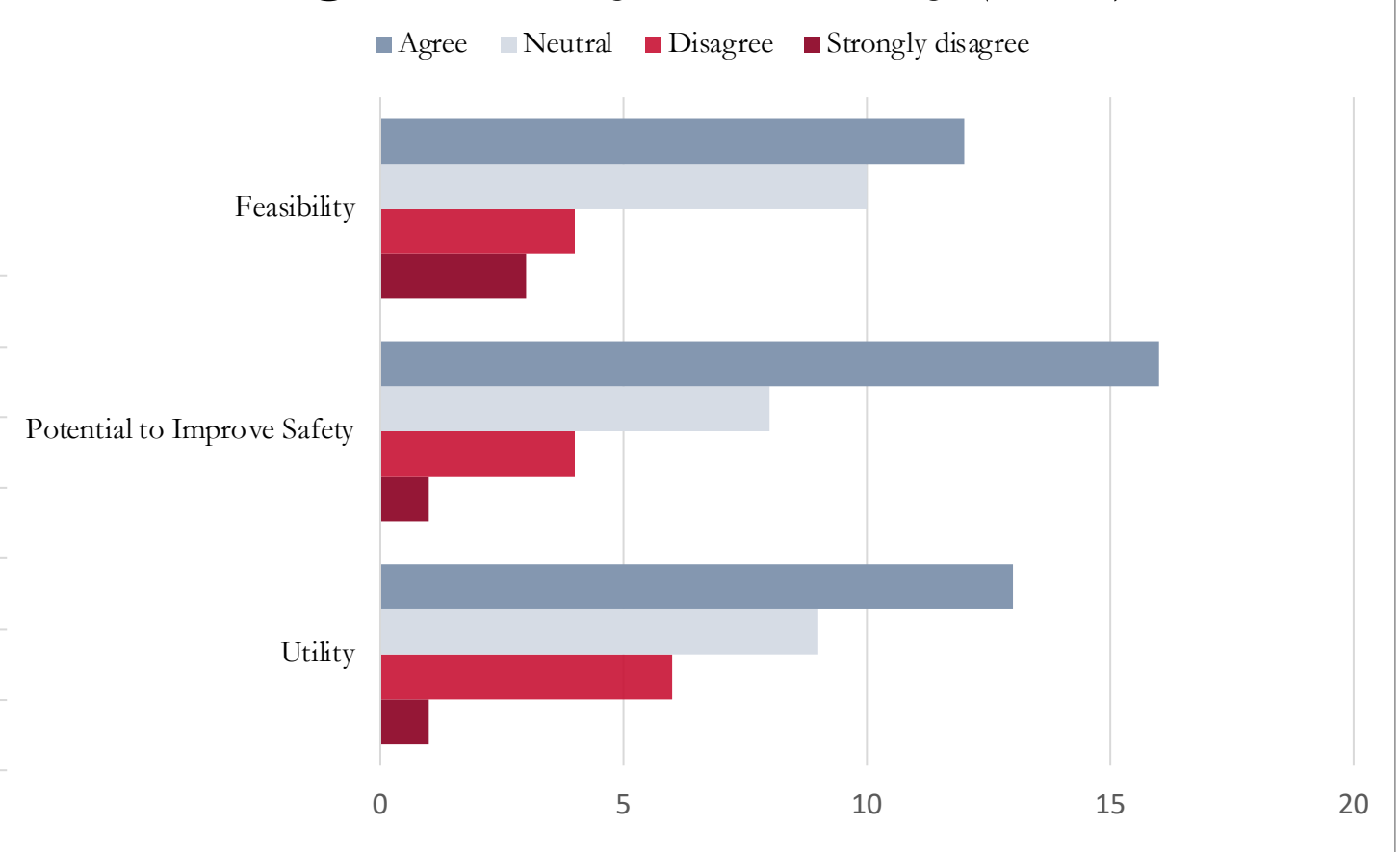

Note: No statistically significant differences from pre- to post-test

Figure 6. *Utility and Feasibility (n=29)*

Note: Mean findings indicate "neutral" value

Conclusions

- A hand-off communication and documentation tool was adapted and implemented—barriers were met with utilization
- Lack of tool utilization or compliance—difficult to deduce whether the tool has could yield clinically significant improvements
- Utility and feasibility questions utilized in post-test surveying—results did not provide persuading support for or against the hand-off tool
- Supportive data (pre- and post-test) suggest there is a clinical need for improvement in the hand-off of sepsis-pertinent information for patients being transferred from outside facilities
- Findings from this study can be used to help guide the discussion of improving communication of sepsis-related information during interfacility transfers in the adult medical population

References

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3. Galatzan, B. J., & Carrington, J. M. (2018). Exploring the state of the science of the nursing hand-off communication. *CIN: Computers, Informatics, Nursing, 36*(10). Doi: 10.1097/01.NCN.0000547460.32035.46
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