

# Improving Postoperative Handoffs in the Neuro-Intensive Care Unit

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## Introduction

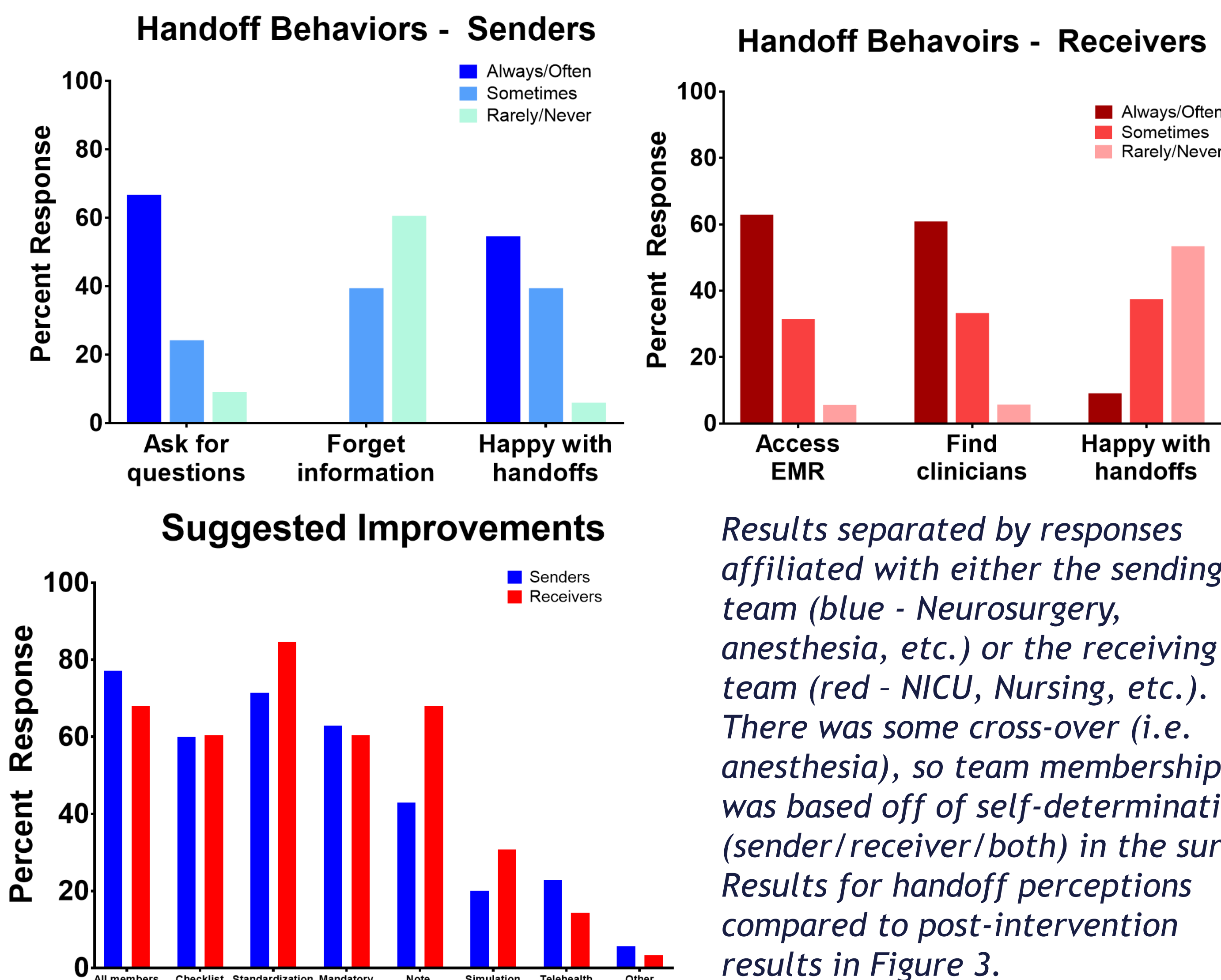
- Transitions of care represent a major source of medical errors, patient morbidity/mortality, and increased healthcare waste.
- 2018 CLER report indicated largely unfavorable responses toward handoffs and care transitions for perioperative services and neuro-intensive care.
- Use of the IPASS handoff tool is associated with up to 30% reduction in adverse events and 23% reduction in medical errors.
- Implementation of IPASS for postoperative handoffs in the SICU resulted in improved organization, safety, and communication.

## Methods

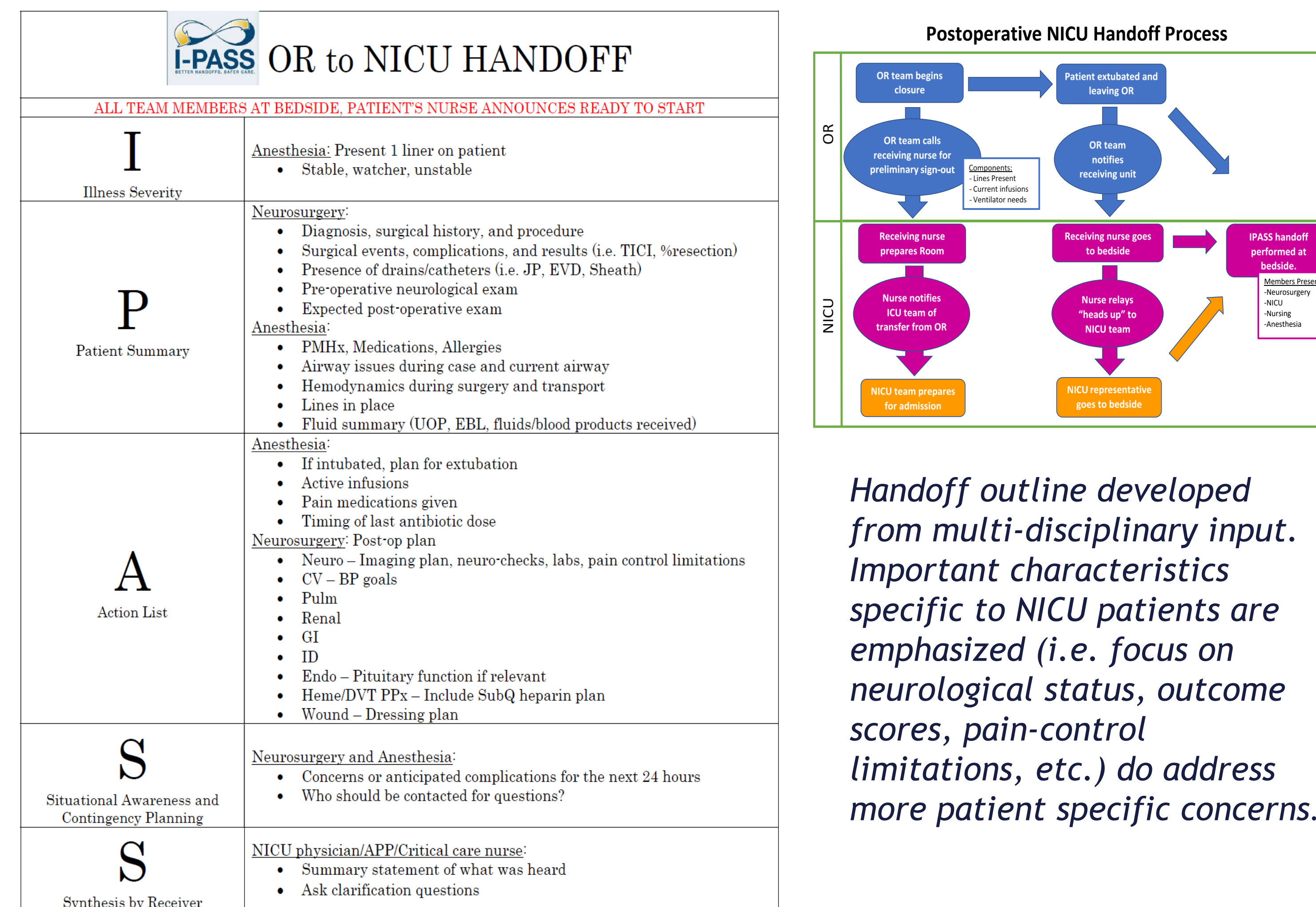
- A multi-disciplinary working group was created to assess the need for improved handoffs and guide future interventions.
- A preliminary survey was created using the RedCap database to assess existing staff perceptions and practices regarding postoperative handoff practices in the NICU.
- Serial observations of handoffs were conducted to observe existing practices in real time.
- A formalized handoff process – including both a postoperative process map and structured IPASS handoff – was created and implemented by the multi-disciplinary working group.
- Following an initial intervention phase of 4 months, a brief post-intervention survey as well as serial handoff observations were conducted to reassess the process and guide future interventions.

## Results

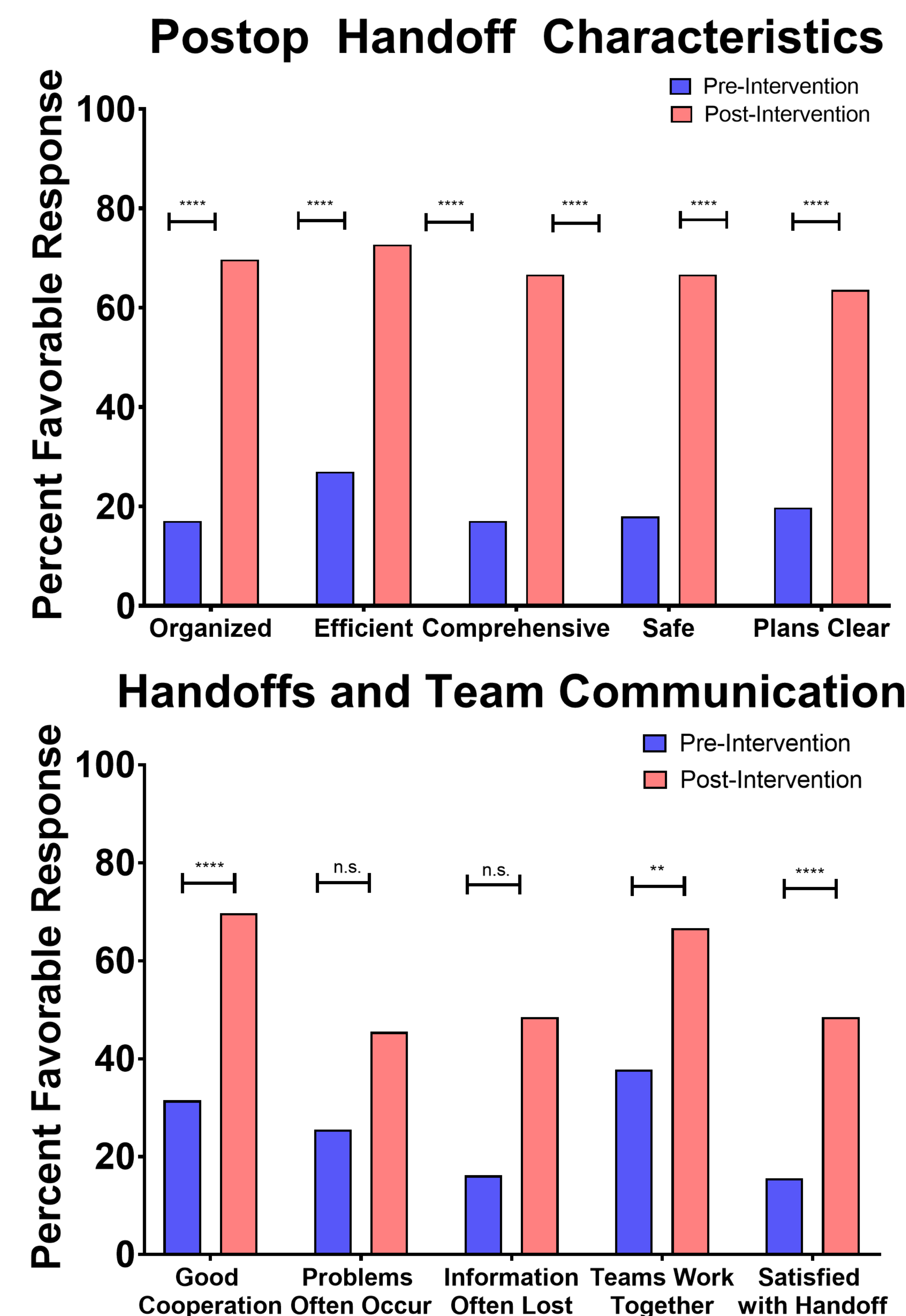
**FIGURE 1: Pre-intervention Survey - Behaviors and Suggestions**



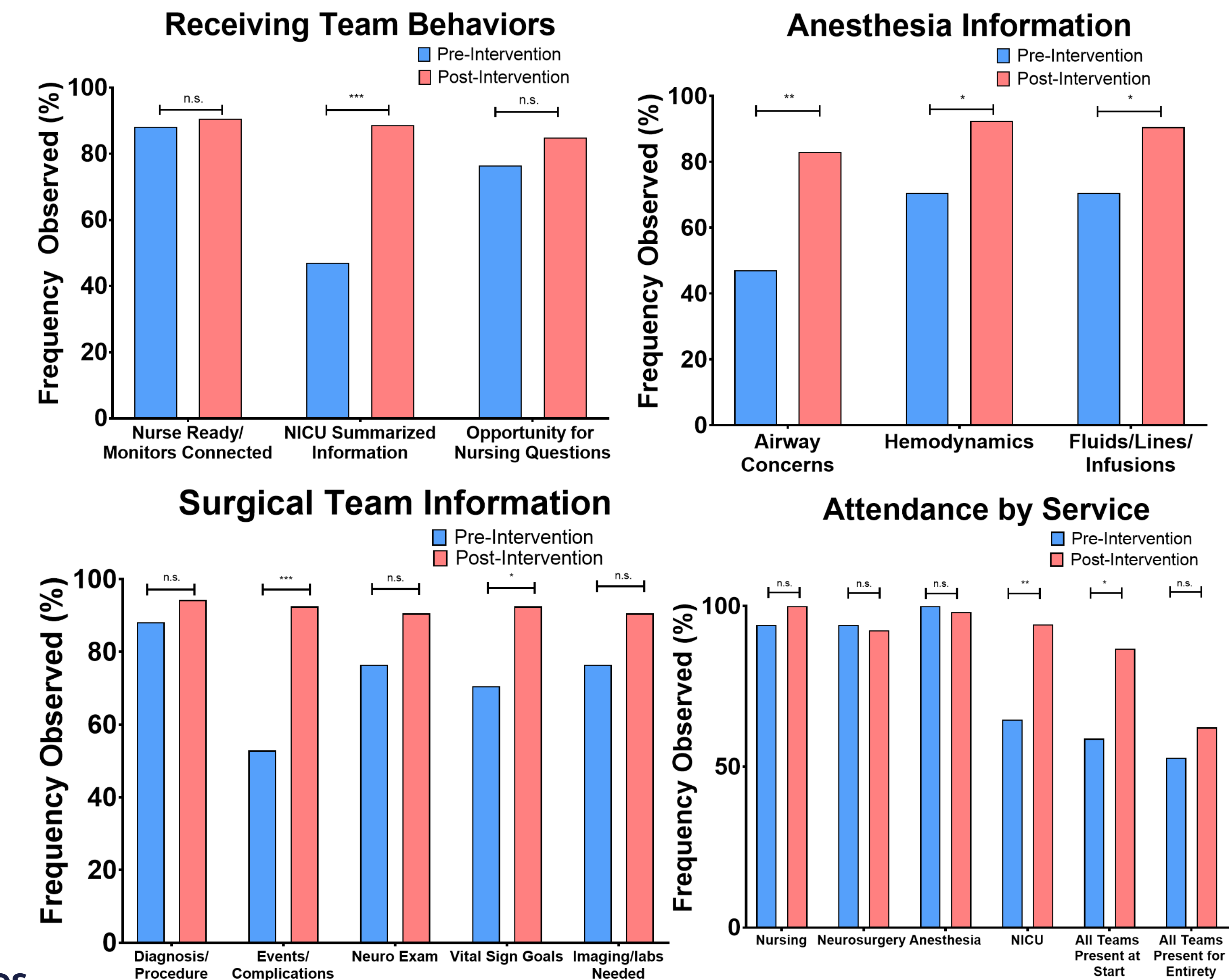
**FIGURE 2: Proposed Intervention: Structured IPASS Handoff and Postoperative Process Flowchart.**



**FIGURE 3: Postop Handoff Survey - Perceptions: Comparison of Pre- and Post-intervention Staff Responses**



**FIGURE 4: Postop Handoff Observations: Comparison of Pre- and Post-intervention Communication**

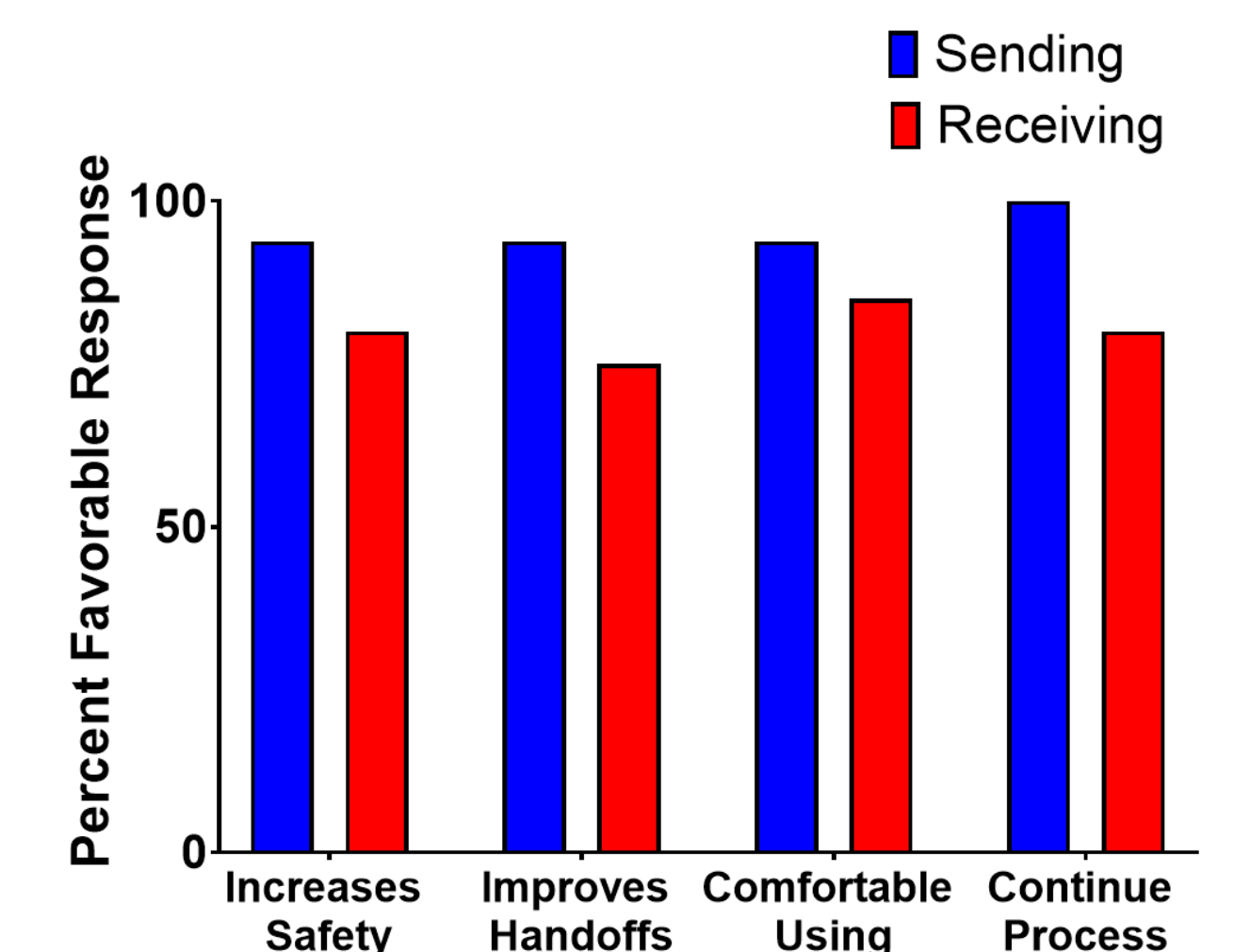


Observed handoff behaviors of staff during the pre-intervention (blue) and post-intervention (red) periods. Observations were performed by NICU nursing educators and charge nurses. Comparison performed with Chi-squared test. \*\*\* =  $p < 0.0005$ , \*\* =  $p < 0.005$ , \* =  $p < 0.05$ , n.s. = not significant

**FIGURE 5 (right): Staff Perceptions of IPASS for Postop Handoffs**

Graphs show percent favorable response to prompted questions regarding the IPASS handoff process. There was overwhelming support for the process and its continued use and improvement from both sending and receiving teams.

**Use of Postoperative IPASS in the NICU**



## Conclusions and Next Steps

- Postoperative NICU handoffs using IPASS improve:
  - Objective measures of handoff quality – including communication of critical patient centered content.
  - Subjective perception of handoff quality – Including perceptions of organization, efficiency, safety, comprehensiveness, and teamwork.
- There is strong support for the use IPASS format as a structured, standard format for postoperative NICU handoffs, and the vast majority want to continue its use.
- Barriers and next steps for further improvement:
  - Identifying and addressing “high-risk” times when it is difficult for all providers to be in attendance – i.e. evening signout, conferences
  - Streamlining the handoff process for improved efficiency and timeliness
    - There was no significant improvement (despite trend) in staff remaining for entirety of handoff
    - Consideration of other urgent clinical responsibilities.
  - Increasing data collection - Quantifying errors and outcomes