

Handoffs and Transitions in Critical Care – Understanding Scalability

Presenter: Sophie Sax
Principal Investigator/Mentor: Dr. Meghan Lane-Fall, MD, MSHP, FCCM
Perelman School of Medicine, Anesthesiology and Critical Care



Abstract

- Mixed-methods (qualitative & quantitative data) hybrid effectiveness-implementation trial
 - Measuring patient outcomes (effectiveness) and success of protocol implementation (implementation)
 - What are the barriers and facilitators to more successful protocol implementation?
- This study seeks to work with perioperative clinicians in order to form a handoff protocol that fits the needs of each specific ICU involved
 - Will this more specified approach to standardization result in high adherence to the protocol?
- Closing the gap between evidence and practice

Background

- Information lost as patients are transferred from OR to ICU due to varying expectations as to what needs to be communicated
 - Previous HATRICC sub-studies researched the impact of handoff choreography on the thoroughness of communication in the OR-to-ICU handoff
 - Need flexibility within standardization in order to avoid “checklist fatigue”¹
- Adherence to the HATRICC process was correlated with a decrease in information omissions²

Methodology and Aims

This study is a mixed-methods study, meaning that both qualitative and quantitative methods are used in order to establish breadth and depth of data.

There are 4 aims:³

1. Ascertain the barriers and facilitators (determinants) of protocol adoption and use within each ICU.

Quantitative method:

- Pre-implementation surveys inquiring about clinician perspectives & current workload (NASA-TLX)

Qualitative methods:

- Focus groups and interviews with C-suite executives, local leaders (i.e. nurse managers), & clinicians
- Observations of handoffs

2. Adapt handoff protocol to each ICU.

- Clinical care teams (made of surgical representative, anesthesia representative, ICU provider, primary ICU RN) work with HATRICC team to devise a version of the protocol that fits team members’ goals
- Using data from Aim #1 to address determinants
- Using implementation strategies specific to each ICU
- Core elements stay the same (Figure 1)

3. Test the effectiveness of implementation strategies.

- Adapted protocols will be implemented in each ICU with a stepped-wedge approach
 - At least 6 weeks before implementation; each ICU can serve as its own control
- Effectiveness measures will be put in place to determine the protocol’s influence on patients and clinicians (Figure 2)

Quantitative methods:

- Post-implementation perspectives survey & NASA-TLX survey³
- Acceptability of Intervention Measure (AIM), Intervention Appropriateness Measure (IAM), Feasibility of Intervention Measure (FIM)
- New-onset organ failure

Qualitative methods:

- Post-implementation interviews if there are concerns about implementation

Figure 1. 10 Steps of a Successful Handoff²



Figure 2. Adapted from *HATRICC-US outcome measures*³

| Outcome (type) | Rationale | Measurement |
|---|---|---|
| Fidelity (Imp) | Necessary precursor to effectiveness | 10 pt. scale + field notes |
| New-onset organ failure (Eff) | Protocol allows clinicians to follow care practices and avoid post-op deterioration | ICU-level; composite measure of AHRQ Patient Safety Indicators reflecting organ failure (quant) |
| Feasibility (Imp) + Acceptability (Imp) + Appropriateness (Imp) | Early implementation outcomes influence subsequent fidelity | AIM, FIM, IAM (quant) + site visit findings (qual) |
| Sustainment (Imp) | Ultimate goal of implementation | Handoff-level (quant) |
| Affordability (Imp) | Important for transferability | ICU-level; accounting-based |
| Teamwork (Eff) + Professionalism (Eff) | Strong teamwork and professionalism are expected results | Handoff-level; field notes from trained staff (qual) |
| Clinician satisfaction (Eff) | Early indicator of effectiveness | Clinician-level; surveys (quant) + site visit findings (qual) |
| Clinician workload (Eff) | If workload is lower, fidelity improves | NASA-TLX (quant) + site visit findings (qual) |
| Information omissions (Eff) | Protocol should decrease omissions | Handoff-level; observations (quant) |
| Adverse events (Eff) | Shared understanding of patient care | ICU-level; composite measure (AHRQ PSI 90) |

4. Create a digital toolkit for transferability.

- Making study findings usable by creating resources for other ICUs to take their own data and customize a protocol to best fit the unit

Acknowledgements

I would like to thank my PI and mentor, Dr. Meghan Lane-Fall, for her dedication to my learning throughout the summer. Thank you also to PURM for funding this opportunity.

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