

A novel electronic handoff tool in ICU-to-ward transitions of care: A pre-implementation exploration of barriers and facilitators

Elle M Fukui, BA; Patrick G Lyons, MD, MSc; Emily Harris, MD; Emma K McCune, BS; Juan C Rojas, MD; Lekshmi Santhosh, MD, MAEd

BACKGROUND

- The transition of a patient from the ICU to the inpatient ward is inherently high-risk due to diagnostic complexity, reduced monitoring, and changes in clinical care teams.
- Standardized handoffs reduce communication errors and adverse events in other clinical environments¹, but are understudied at the ICU-ward interface.
- We previously developed an electronic ICU-ward transfer tool (ICU-PAUSE) that embeds a diagnostic pause at the time of transfer². Between April and September 2022, 10 institutions were recruited to implement ICU-PAUSE.

AIM

To explore perceptions of ICU-PAUSE among intensivists at geographically diverse academic medical centers prior to implementation efforts.

METHODS

- Participants:** 10 intensivists from 10 academic medical centers. All participants are attendings in the medical ICU setting.
- Data:** 45-minute semi-structured interviews via videoconference.
- Qualitative analysis:** Thematic analysis of interview transcripts was performed using grounded theory methods. Theoretical framework was based on the Sittig-Singh sociotechnical theory.

RESULTS

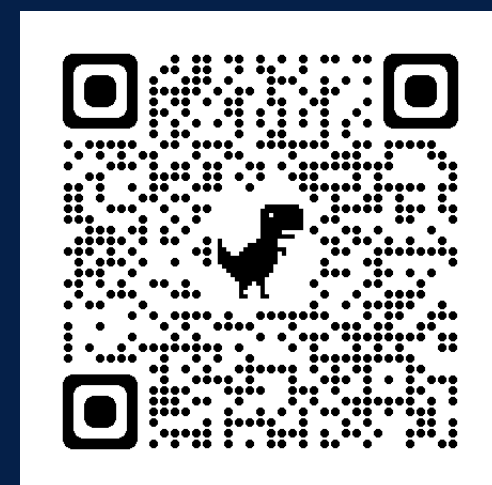
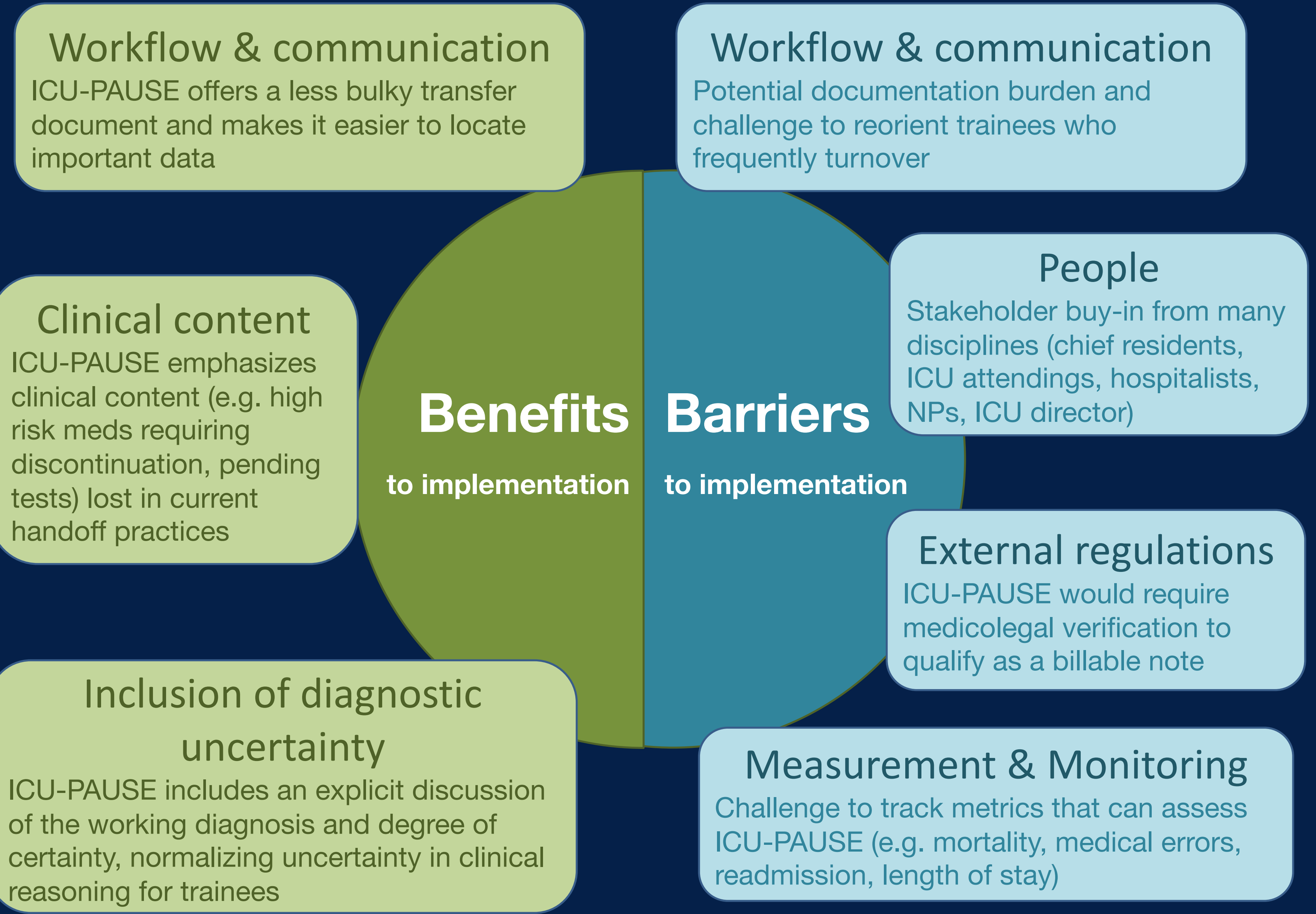
Two major themes were identified:

- Benefits of implementation:** Standardization of verbal and written handoff would decrease variation in communication. ICU-PAUSE contains elements frequently lost in current handoff practices and explicitly documents the degree of diagnostic uncertainty.
- Barriers to implementation:** Buy-in from key stakeholders (i.e. chief residents, ICU physicians, and hospitalists) to adopt changes to workflow and institutional culture.

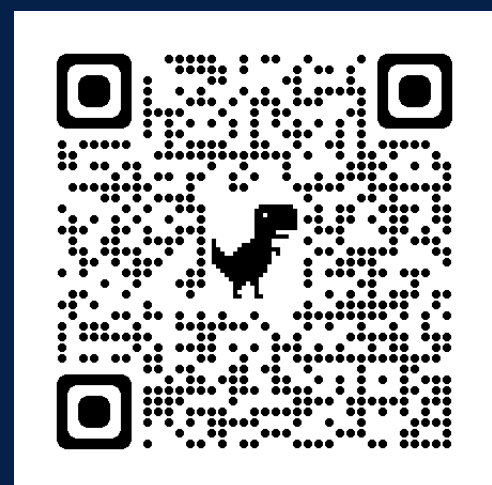
DISCUSSION

- This study emphasizes the need for a structured ICU-ward handoff using a novel application of the sociotechnical model.
- A unique feature of ICU-PAUSE is the explicit inclusion of diagnostic uncertainty, a practice that has been shown to reduce medical error and premature closure.
- Benefits and barriers of ICU-PAUSE and potential mitigation strategies identified in this study will inform ongoing national multi-site implementation efforts. As of March 2023, ICU-PAUSE has been adopted at 7 academic institutions.

ICU-PAUSE, a novel electronic ICU-to-ward handoff tool, would **normalize diagnostic uncertainty & standardize communication** at transitions of care.



Access our ICU-PAUSE protocol on PubMed



Want to implement ICU-PAUSE at your institution? See the ATS ICU-PAUSE Initiative!



UCSF

University of California San Francisco

ICU to Ward Transfer Summary: ICU-PAUSE Tool

I ICU Admission Reason & Brief ICU Course: ***

C Code Status/DPOA Info/Goals of Care/ACP Note {ACP Documentation:31370}

U Uncertainty Measure/Diagnostic Pause: Working diagnosis at the time of transfer ***, though ddx includes *** Select from the following:
1: High degree of certainty about the clinical diagnosis.
2. Some uncertainty about the clinical diagnosis.
3. Marked uncertainty about the clinical diagnosis.

P Pending Tests at the Time of Transfer ***

A Active consultants, including Rehab:
[] Subspecialty Consultants: ***
[] PT
[] OT
[] SLP
[] Wound Care

U Unprescribing & Pertinent High-Risk Medications
Changes to home meds: ***
Anticoagulation: ***
[] VTE Prophylaxis - *** dose
[] None - reason:
[] Therapeutic anticoagulation - ***
[] Antibiotics: ***
[] N/A - no current planned antimicrobials
[] *** indication *** start date *** planned duration ***

S Summary of Major Problems and To-Dos:
#***
#***
To-do list prior to transfer:
[] ***
[] ***

E Exam at the time of transfer, including Lines/Drains/Airways & Data Review:***
[] Difficult airway?
[] Lines/drains assessed for removal?

References

- Starmer AJ, Spector ND, Srivastava R, et al. Changes in medical errors after implementation of a handoff program. N Engl J Med 2014;371(19):1803-1812.
- Santhosh L, Rojas JC, Garcia B, Thomashow M, Lyons PG. Cocreating the ICU-PAUSE Tool for Intensive Care Unit-Ward Transitions. Sch. Published online April 5, 2022:ats-scholar.2021-0135IN.