



## **Exploration of Handoffs during Transitions of Care Involving Intensive Care Unit Patients: An Integrative Review**

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**Problem Statement:** In intensive care units (ICU) specially trained health professionals provide care for patients with critical, complex health needs and conditions. As a patient's condition improves and care requirements change, patient's transition to different care units and patient status and plan of care are communicated from one healthcare professional to another. There is some evidence that during transitions, or handoffs, patients are at increased risk of harm due to miscommunication and information loss. A first step to understanding how informatics tools should support handoffs is to conduct an integrative review of the literature. **Aims:** Focusing on ICU to intermediate care transitions, conduct a literature review to describe: (1) handoff processes (protocols and tools), (2) facilitators and barriers to effective handoffs, and (3) the relationship between handoffs and outcomes. **Methods:** The search strategy included literature from 1998-2015 in peer-reviewed journals from PubMed, CINAHL, PsycINFO, Joanna Briggs, Scopus, and Cochrane databases. Shift-to-shift handoffs, sign out handoff, rounds, and non ICU transitions were excluded. **Results:** 117 potentially relevant sources of evidence were initially identified. An additional five records were identified using the ancestry approach to search reference lists of relevant sources. Twenty-six studies met all inclusion criteria and were included in this review. Studies examined transitions into the ICU (n=11) and out of the ICU (n=15). Thirteen explored the use of handoff protocols and tools during transitions. The majority of handoff tools were paper-based. The most commonly identified facilitators include the use of a standardized handoff process and/or tool and incorporating both written and verbal communication. The most common barriers were absence of a consistent method for conducting handoffs and distractions/disruptions during the handoff process. Outcomes included handoff process evaluation, staff satisfaction and perception of process effectiveness, compliance with handoff protocol, and patient care outcomes. Standardized protocols and tools improved patient clinical outcomes, while the lack of standardization of handoffs during transitions stand as a barrier. **Significance:** To date, research examining ICU handoffs during transitions from ICU to intermediate care units is largely exploratory. Strategies to improve handoffs remain paper-driven, although a 2014 report indicates that 97% of U.S. hospitals have adopted a certified Electronic Health Record (EHR). While there is little evidence to guide detailed design of EHR-based handoff tools, study results suggest that the standardization provided by EHRs may reduce miscommunication and information loss. Evidence as to the best method of conducting handoffs during ICU to intermediate care unit patient transitions remains inconclusive. Given that most of the research examining these types of handoffs has been exploratory; there is a need for handoff intervention studies that evaluate best methods for keeping patients safe during transitions out of the ICU. Further, future research should evaluate the facilitators, barriers, and effectiveness of EHR-embedded handoff tools.