

Quantifying Nursing Workflow and Handoff Practices to Investigate the Effect of a Multidisciplinary Handoff Program on Communication and Patient Safety

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Introduction

The handoff of clinical responsibility between providers is a known source of communication failure that leads to medical errors in the hospital setting. Despite the known potential of technological tools to reduce medical errors, very few handoff programs import medical information directly from the patient record. To address these concerns, we collected data on nursing workflow patterns and handoff procedures. This data will allow us to study the effects on provider workflow and provider experience of a Nursing Handoff Bundle (NHB) for nurses. The NHB will consist of a standardized written handoff tool for nurses in addition to teamwork and communication training for nurses to minimize verbal miscommunications.

Methods

We studied nursing workflow patterns using a time-motion study application and a validated nursing activity task list that was adapted for general pediatric inpatient use. Our research assistant conducted observation sessions with a single nurse and recorded his/her activities using a validated nursing activity task list. The activity task list includes, 1) specific direct/indirect patient care, administrative, and miscellaneous activities, 2) Handoff specific activities, 3) Length of verbal handoff, 4) Communication of key data elements, and 5) Number, type, and cause of interruptions.

Results

A total of 81 nursing sign-outs was observed. The mean time of the sign-out process was 18.6 minutes (SD± 10.3) per patient. With respect to patient identifiers, basic patient identifiers were included in the sign-out process at a rate of 52-68%. Also of note, the frequency with which clarifying questions were asked at the end of the sign-out session was 34%; contingency plans were discussed only 60.5% of the time. During the nursing sign-out processes, interruptions occurred 64.2% of the time of the observed sign-out sessions. The mean number of interruptions per sign-out session was 2.6 (SD±1.6). The mean interruption duration was 59.1(SD±113.7) seconds.

Discussion

From our preliminary observation study, current processes and contents of nursing handoffs were identified. In half of all the observed handoff sessions nurses failed to communicate patient identifiers which are an essential patient safety component in the handoff process. We found that nurses were more likely to omit the communication of a patient identifier if they were familiar with the patient or had previously cared for the patient. In these cases, only updated information or elements were communicated. Since key elements of patient information varied depending on nurses, it is important to provide a tool to help standardize the nursing handoff process. In addition, interruptions occurred frequently and often disrupted or distracted the nurse from the sign-out activity. Since over 60 % of these interruptions were medically related, it would be hard to completely mitigate their occurrence. Therefore, a process on how best to manage interruptions during the course of the nursing sign-out process needs to be considered as one develops nursing handoff tools and verbal sign-out practices. Based on these initial findings and information gleaned from additional observations, we will develop a strategy to improve the current nursing handoff process.