Title:
A Frontline Approach to Investigating Nurses' Handover: A Focus on Content and Structure

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References:
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Abstract Summary:
Learn how clinical nurses used a phased approach to investigate nursing handover content and structure at shift change. This presentation will highlight the research journey to discover what nurses' handwrite on report sheets, use findings to design and implement an electronically-generated handover tool and evaluate the impact of handover structure.
Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE
Identify the method used to select the research topic.	Describe methods used to refine research focus including a Delphi technique and organizational findings.

Apply appropriate research design to address research aims.	Describe the multi-phase studies including purpose, design, methods and findings.
Appreciate the value of mentoring frontline staff in nursing research.	Describe the research mentoring program structure, process and outcomes.

Abstract Text:

Purpose:

The aims of these multi-phased studies was to describe the content of nurses' handwritten patient notes used during change of shift report, design an electronic medical record (EMR) generated handover tool and evaluate the impact of a handover structure.

Background: Miscommunication is a frequent root cause in safety errors particularly during handovers (World Health Organization, 2007). Nurses play an essential role in the transfer of patient information among and between providers and particularly at the change of shift. A standardized structure has been recommended to improve handover communication and patient safety (Agency for Healthcare Research and Quality, 2012). Electronic solutions (templates and summary screens) have been shown to be insufficient requiring handwritten notes. However, information technology such as electronic medical records can be leveraged to support the handover process and effectiveness (Smeulers, Lucas, & Vermeulen, 2014; Staggers & Blaz, 2012)).

Methods:

Born from an organizational Delphi study to identify nursing research priorities in a Southern California non-profit community hospital, novice investigators learned the research process to conduct multi-phased, IRB-approved research studies on a top priority result – patient safety at change of shift. Delphi qualitative results together with organizational quality report data were used to refine the research focus. Following an extensive literature review, the research team, comprised of frontline clinical nurses and research mentors, determined a multi-phase approach was needed to fully investigate the clinical issue. The first phase (Phase 1) was a descriptive, cross-sectional design using a convenience sample of bedside nurses who voluntarily submitted their patient assignment notes (aka report sheets) for content analysis. The second phase (Phase 2) was a quasi-experimental design using a convenience sample of bedside nurses working in the intervention and the control unit. The intervention was a newly developed and EMR-generated handover tool. Development of this tool was based on Phase 1 content analysis findings. The handover tool was generated from the EMR and included pre-populated patient information as well as "white space" for customized handwritten notes. Intervention unit nurses agreed to use the EMR-generated handover tool during the study period. Satisfaction with the handover tool and process was measured pre and post implementation of the handover tool in the intervention and control units using an investigator-developed satisfaction survey. The survey included 9 items on the handover tool and handover process with a 5-point Likert-like response set ranging from strongly agree to strongly disagree. Additionally, feedback was obtained from the intervention unit on the handover tool content and structure. Basic quantitative and qualitative methods were used to analyze Phase 1 and Phase 2 data. The third phase and final study is in progress which is an interrupted time-series design to evaluate the impact of a structured nursing handover process at change of shift on patient safety outcomes and is mentioned to illustrate the complexity of the clinical issue and the investigative strategy.

Results:

Phase 1. Findings from the Phase 1 study yielded patterns from clinical nurses on what was handwritten in their patient notes or report sheets. A convenience sample of 103 RNs from 11 patient care units submitted their report sheets over a 24-hour period. There were 26 different report sheets submitted

customized with more than one color or type of writing implement (41%), emphasis markings (87%), and symbols (100%). The majority of content included in the report sheets consisted of: patient identifiers (i.e., name 99%, room 85%) physician names (99%), diagnosis (84%), systems review (78% -92%), and task reminders (99%). Isolation status (48%), fall risk (38%), hospital-acquired pressure ulcer risk (8%), other risks (20%), and vaccination status (12%) had low percentages of handwritten presence on report sheets. These finding were congruent with subsequent analyses of 29 matched handover sheets (same patient, different RNs) where percent agreement between content were highest with patient identifiers (i.e., name 87%, account number 70%) and lowest with safety and risk information (i.e., fall risk 27%, pressure ulcer risk 17%, vaccination status 0%).

Phase 2. A convenience sample of 138 RNs assigned to either an intervention unit or a control unit participated in the study. Satisfaction: Although perceptions improved for all nine items on the handover satisfaction survey, the Mann-Whitney U test found no statistically significant difference in satisfaction levels within and between the intervention unit and control unit, pre (n=79) and post (n=59) implementation of the EMR-generated handover tool. Handover Tool Feedback: Content analysis of feedback obtained from nurses (n=28) in the intervention unit revealed themes related to content, structure and context. Nurses had positive comments on prepopulated information including patient identification, allergies, provider names, reason for visit, vital signs, last bowel movement and labs. The ability to trend patient data such as vital signs and labs were recommended. Added sections for plan of care priorities and pre-identified tasks were not seen as useful. Numerous recommendations were provided for font size, flow, and space allocation for certain sections and white space. Comments often referred to previous report sheet formats. One example was to add the anatomical figure and the lab values diagram. Suggestions to add patient population specific information were also provided.

Conclusion:

What is handwritten on report sheets can be interpreted as important to nurses in the care of patients and communicatation at shift change. Phase 1 analysis revealed report sheets and content were neither standardized across the organization nor within a unit. Content and structure favored the medical model. Although rich in patient specific medical and nursing care task information, notes often lacked common safety or risk related information. This finding may indicate a discrepancy between organizational and bedside nurse priorities for patient care. The sample of report sheets submitted show handwritten symbols, emphasis markings, tasks and activities which may indicate the sheets are used as a mnemonic device. This supports previous research on the need for nurses to interact with, and modify their report sheets (Hardey, Payne, & Coleman, 2000). While Phase 2 analysis had insignificant findings in nurses' satisfaction with the EMR-generated handover tool and process, perceptions on the survey items improved after using the tool and rich qualitative information was provided. The positive feedback on the EMR-generated, printable, pre-populated report sheet and designated white space supports previous research on the need for report sheets to be adaptable and contextual (Staggers & Blaz, 2012).

A standardized handover tool and a structured process have been recommended to improve handover communication. In order to standardize to one handover tool, it was important to determine what nurses write about on their report sheets. The patterns can then be used to design a user-friendly handover tool that meets nurses' needs for accurate and up-to-date information, personalization and portability (Hardey, Payne, & Coleman, 2000). The results of these multi-phased studies assist the investigators in further improving the handover content and structure. A modification to the EMR-generated tool will facilitate the goal of standardizing handover content and structure to improve nurses' satisfaction and more importantly, communication and patient safety. In a technologic age, a handover tool can be generated from the EMR and contain the information that nurses want as well as critical information to influence and promote transparency, quality and patient safety.