Original article

Mixed methods evaluation of a quality improvement and audit tool for nurse-to-nurse bedside clinical handover in ward settings

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ABSTRACT

Background: Nurse bedside handover quality is influenced by complex interactions related to the content, processes used and the work environment. Audit tools are seldom tested in 'real' settings.
Objective: Examine the reliability, validity and usability of a quality improvement tool for audit of nurse bedside handover.
Design: Naturalistic, descriptive, mixed-methods.
Setting: Six inpatient wards at a single large not-for-profit private health service in Victoria, Australia.
Participants: Five nurse experts and 104 nurses involved in 199 change-of-shift bedside handovers.
Methods: A focus group with experts and pilot test were used to examine content and face validity, and usability of the handover audit tool. The tool was examined for inter-rater reliability and usability using observation audits of handovers across six wards. Data were collected in 2013–2014.
Results: Two independent observers for 72 audits demonstrated acceptable inter-observer agreement for 27 (77%) items. Reliability was weak for items examining the handover environment. Seventeen items were not observed reflecting gaps in practices. Across 199 observation audits, gaps in nurse bedside handover practice most often related to process and environment, rather than content items. Usability was impacted by high observer burden, familiarity and non-specific illustrative behaviours.
Conclusion: The reliability and validity of most items to audit handover content was acceptable. Gaps in practices for process and environment items were identified. Context specific exemplars and reducing the items used at each handover audit can enhance usability. Further research is needed to develop context specific exemplars and undertake additional reliability testing using a wide range of handover settings.

What is already known about this topic:

- The quality of nurse bedside handover is influenced by complex interactions related to the content, processes used and the work environment.
- Standardised handover tools to guide training, coaching and audit provide a consistent framework of behaviours, content and processes in line with expectations of quality practice.
- Reliable and valid handover quality improvement tools are necessary to provide quality data to improve patient safety and quality of care, however these are seldom examined in the context of daily practice.

Contribution of the paper:

- High content and face validity of the handover audit tool provides guidance to standardise practices to improve the quality of nurse bedside handover related to content, process and environment across different clinical contexts.
- This research demonstrated nurse handover practices related to content were most frequently addressed, but gaps related to handover process and environmental safety emerged.
- Tool reliability was acceptable for frequently observed content items, however practice improvement is required before further reliability analysis can evaluate process and environment items.

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1. Introduction

Effective clinical communication is fundamental to the quality of patient care with clear links to adverse outcomes where information is misunderstood, inaccurate or omitted (Australian Commission on Safety and Quality in Health Care [ACSQHC], 2011a; World Health Organization et al., 2007). In nursing, the most prevalent form of formal clinical communication is the nurse-to-nurse change-of-shift clinical handover when there is transfer of professional responsibility and accountability for ongoing care of a patient (ACSQHC, 2012; Australian Medical Association [AMA], 2006). Highly variable and unreliable processes in clinical handovers pose a significant threat to patient safety in hospitals (ACSQHC, 2011a; Smeulers et al., 2016). The ACSQHC (2012) recommends that healthcare providers use structured processes and provision for regular quality auditing and evaluation of clinical handover (ACSQHC, 2009; ACSQHC, 2011a; ACSQHC, 2012).

While many Australian hospitals have locally developed handover quality improvement and audit tools, there is little published evidence about the reliability, validity and usability of these tools in clinical settings (Wainwright & Wright, 2016). This paper reports the findings of a study to evaluate the reliability, validity and usability of a nurse bedside handover tool to support audit and quality improvement of nurse-to-nurse bedside handover in a large metropolitan hospital in Melbourne, Australia.

1.1. Background

Key literature and existing handover models identify three domains of nurse-to-nurse bedside handover where standardisation of good practices can enhance handover quality (Botti et al., 2009, Clarke et al., 2012, Graan et al., 2015, Drach-Zahavy, Goldblatt, & Maizel, 2015, Chaboyer, McMurray, Wallis, & Chang, 2008, Catchpole, Sellers, Goldman, McCulloch, & Hignett, 2010, Catchpole et al., 2007, Hill & Nyce, 2010): 1) Content (information transferred at handover); 2) Process (steps used to transfer accountability and responsibility for ongoing care); and 3) Environment (physical and situational factors impacting safety during handover). These three domains provided the framework underpinning good practices captured by the nurse-to-nurse bedside handover audit tool in this study:

1.1.1. Handover content

Handover 'content', the information transferred between nurses to support safe ongoing patient care (Kitson, Muntlin Athlin, Elliott, & Cant, 2014; Meissner et al., 2007) has been a predominant focus in nurse handover research (Farhan, Brown, Woloshynowych, & Vincent, 2012; Jewell and Committee On Hospital Care, 2016; Johnson et al., 2014; Johnson, Jefferies, & Nicholls, 2012; Lamond, 2000). Handover content can include patient-specific information such as presenting diagnoses, medical history, treatment plans and patient preferences (Fenton, 2006; Johnson et al., 2012; Mayor, Bangerter, & Aribot, 2012) as well as general content such as an overview of all ward patients, organisational information or safety concerns (Chin, Warren, Kornman, & Cameron, 2011; Clarke et al., 2012).

Standardised delivery of handover content is recommended to reduce risk for communication errors (Botti et al., 2009, ACSQHC, 2011a, ACSQHC, 2012). Mnemonics and checklists such as SBAR (Situation, Background, Assessment and Recommendation) (Pope, Rodzen, & Spross, 2008; Thomas, Bertram, & Johnson, 2009; Woodhall, Vertacnik, & McLaughlin, 2008) and ISOBAR (Introduction, Situation, Observation, Background, Assessment and Recommendation) (ACSQHC, 2011b, Porteous, Stewart-Wynne, Connolly, & Crommelin, 2009, Redley et al., 2016) are commonly cited in nursing handover literature.

1.1.2. Handover processes

Details of good practices for five steps in the process of nurse clinical handover are described below: 1) preparation, 2) introducing the nurse and patient, 3) information exchange, 4) patient involvement and 5) environmental safety scan (Chaboyer et al., 2008).

1.1.2.1. Preparation. Preparatory steps can include a shift huddle, allocations of workload, and updating handover information such as care records (Chaboyer, McMurray, & Wallis, 2010; Freitag & Carroll, 2011; Glymph et al., 2015; Hardey, Payne, & Coleman, 2000; Holly & Poletick, 2014; Johnson et al., 2014; Johnson & Cowin, 2013).

1.1.2.2. Information exchange. Verbal face-to-face communication directly between caregivers increases accuracy and efficiency of handover information (Chaboyer et al., 2009; Evans, Grunawalt, McClish, Wood, & Friese, 2012; O'Connell, Macdonald, & Kelly, 2008), particularly when conducted at the bedside (Chaboyer et al., 2010; Kerr, Lu, & McKinlay, 2013; Maxson, Derby, Wrobleski, & Foss, 2012; McMurray, Chaboyer, Wallis, & Fetherston, 2010; Street et al., 2011; Tobiano, Chaboyer, & McMurray, 2012). Processes for checking the accuracy of key information both verbally and in written care documents, and clarifying gaps or uncertainty through questioning, further enhance the quality of handover communication (Bates et al., 2014; Cohen, Hilligoss, & Kajdacsy-Balla Amaral, 2012; Drach-Zahavy et al., 2015)(Chaboyer et al., 2010; Clarke et al., 2012; Hill & Nyce, 2010; Johnson et al., 2014).

1.1.2.3. Patient involvement. Meaningful involvement of patients and their families that considers their preferred level of participation improves the quality and accuracy of handover content, enhances patient autonomy, and results in patients feeling better informed about their care (Chaboyer et al., 2010; Flink et al., 2012; Flink, Ohlen, Hansagi, Barach, & Olsson, 2012; Ganz et al., 2015; Kerr et al., 2013; Maxson et al., 2012; O'Connell et al., 2008).

1.2. Environment and safety scan

Enhancing factors that improve human performance, such as work culture, the quality of interpersonal interactions, strong relationships and teamwork, as well as modifying the environment where handover occurs by minimising environmental noise, interruptions and distractions can promote safe nurse handover practices (Botti et al., 2009, Burton, Kashiwagi, Kirkland, Manning, & Varkey, 2010, Kowitlawakul et al., 2015, Hill & Nyce, 2010, Freitag & Carroll, 2011, Miller et al., 2009, Hardey et al., 2000). A 'Safety Scan' that includes visual checks of the patient's condition, safety and equipment (Drach-Zahavy et al., 2015; Kerr et al., 2013) as well as diligent hand hygiene (ACSQHC, 2010; ACSQHC, 2012), are also important components of bedside handover.

1.2.1. Handover quality improvement

Sustainable clinical handover improvement requires a multi-step process involving identification of gaps in practice; recognition and implementation of best practice standards through training, facilitation and policy; and monitoring the quality of change through evaluation, feedback and auditing (Clarke & Persaud, 2011, Redley et al., 2016). Standardised tools with built in checklists are useful to clarify expected standards and reduce omissions (Catchpole et al., 2010; Clarke & Persaud, 2011). Nurses respond well to standard tools that are usable and perceived to improve their practice (Fenton, 2006), flexible to the diversity and complexity of patients across diverse clinical settings (Mayor et al., 2012), and allow for nurse discretion and the individualisation of communication to meet specific unit or patient needs (Chaboyer et al., 2008; Clarke & Persaud, 2011; Smeulers, Lucas, & Vermeulen, 2014; Street et al., 2011). Standardised handover tools that guide training and coaching as well as audit can provide a consistent framework of expected handover behaviours, content and processes in line with local policy, and ensure handover tools are understood, adopted and sustained in practice (Clarke & Persaud, 2011; Drach-