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Nursing Handoffs: Ensuring Safe Passage for Patients

By Margo A. Halm, RN, PhD, ACNS-BC

Handoffs serve many functions, from social bonding, to coaching and teaching, to team building, but the most important function of handoffs is information processing: making sure that essential data are transferred for patient safety. Substandard or variable handoffs have contributed to errors, care omissions, treatment delays, inefficiencies from repeated work, inappropriate treatment, adverse events with minor or major harm, increased length of stay, avoidable readmissions, and increased costs.[1-3] The Institute of Medicine[4] reported that communication failures account for most adverse outcomes in hospitals. Indeed, communication breakdowns were the primary root cause of more than 60% of 2000 sentinel events analyzed by the Joint Commission.[2]

In 2006, the Joint Commission released a National Patient Safety Goal aimed at improving the effectiveness of communication among caregivers. Specifically, this goal required organizations to implement a standardized approach to communication during handoffs, incorporating an opportunity for staff to ask and respond to questions. A handoff is the "transfer and acceptance of responsibility for patient care that is achieved through effective communication. It is a real-time process of passing patient-specific information from one caregiver to another or from one team of caregivers to another to ensure the continuity and safety of that patient's care."[1] Recognized as points of vulnerability, handoffs occur within and across clinical settings and disciplinary boundaries—on units at change-of-shift and to accommodate breaks, as well as when patients transfer between units or are transported to or from other departments for tests or procedures. Let's take a hospital with an average daily census of 400, for example, where registered nurses work 12-hour shifts. In this practice environment alone, 2.9 million change-of-shift handoffs would occur each year (not to mention the numerous unit or interdepartmental handoffs!). As Haig et al[5] stated, the intent of this National Patient Safety Goal was to create a shared mental model about the condition of the patient, because without this collective understanding, caregivers lose situational awareness. Thus, handoffs are designed to ensure the safe passage of information to increase the effectiveness of the actions of the receiving nurse, thereby enhancing continuity of care.[6] The purpose of this review is to address the following PICO question: What effect do standardized nursing handoffs have on patients', clinicians', and financial outcomes?

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Method

A search in CINAHL and MEDLINE, limited to the 5 years from 2007 to 2012, was conducted by using these terms: *nursing handoff, interdepartmental handoff, change-of-shift,* and *shift report*.

Results

Formal research and quality improvement studies were retrieved: 4 quality improvement, 1 prospective observational, 1 interventional study, and 1 systematic review. Reviewed evidence was limited to handoffs involving nurses in acute/critical care settings. Table 1 summarizes findings from evaluations of nursing handovers at shift change and interdepartmental transfers.

Recommendations for Practice

Available evidence, albeit weak "level C" (Table 2), demonstrates that standardized change-of-shift and interdepartmental handoffs have a positive impact on many processes and outcomes:

- Clinician performance
  - Improved communication—Increased conciseness (written shift report), reduced

Table 1
Matrix of studies on handoff of patients

Reference	Population (N)	Design and interventions	Findings	Level of evidence
		Change-of-shift handoffs		
Jukkala et al[7]	Medical intensive care unit (N = 77)	Pre-post quality improvement evaluation: Standardized tool	Improved total/subscale shift report communication scores[a] after implementation	C
Thomas and Donohue-Porter[8]	7 hospitals within system	Pre-post quality improvement evaluation: I PASS the BATON intershift report process at bedside with patient participation	Improved satisfaction of nurses Report time Pertinent information Patient's condition matches report Good intershift relationships Questions answered Staff accountable for completing care Overall satisfaction Increased satisfaction of patients 3 indicators in 1 hospital improved from 4th-49th percentile (baseline) to 61st-92nd percentile (1 year after implementation)	C
Blouin[2]	10 hospitals	Pre-post quality improvement evaluation: Standardized SHARE tool	Reduced defective handoffs by 52%	C
Riesenberg et al[3]	Varied (small samples: 10-54 nurses)	Systematic review: 20 studies • 15 interventional • 4 cross-sectional • 1 qualitative	Fifty percent of studies identified effective handoff features: Face-to-face reports (vs taped) reduced omission of information Walking rounds (with nurse introductions/explanations of plan of care) reduced overtime, heightened positive response from patients Parent participation in bedside shift report reduced overtime, increased understanding of child's needs/condition Information binders outside room improved documentation Written shift reports (vs oral) increased conciseness of reports and perceptions of effective use of report time Nurses' access to medical resident's electronic sign-outs improved nurse-physician communication and nurse's knowledge and ability to identify anticipated changes Written emergency department transfer reports eliminated admission delays; improved documentation compliance/accuracy, patient satisfaction (speed of admission), staff satisfaction; saved nursing time	C

[a] $P < .05$.

Continued

omission (structured face-to-face), less need to reverify information (structured tool), better communication between nurses and physicians (electronic sign-outs)
- Greater knowledge—Of essential information (structured tool), anticipation of status changes (electronic sign-outs)
- Fewer technical errors (structured tool)

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Table 1
(Continued)

Reference	Population (N)	Design and interventions	Findings	Level of evidence
Interdepartmental handoffs				
Roberts et al[9]	Housewide (medical/surgical to progressive care units, or ancillary departments)	Pre-post quality improvement evaluation: Standardized interdepartmental ticket (SBAR-Q format)	Reduced fall rates: from 4.62-5.01 (before implementation) to 1.55-2.64 (1 year after implementation)	C
Agarwal et al[10]	Operating room to pediatric intensive care unit	Prospective observational: Verbal telephone handover (2 year evaluation) Structured face-to-face handover (1 year evaluation)	Enhanced communication quality Reduced loss of information for every clinical category (patient, preoperative, anesthesia, operative, postoperative, laboratory tests) with structured vs verbal process[a] Improved knowledge of operative/perioperative information[a] Reduced 3 of 4 major complications[a] (cardiopulmonary resuscitation, mediastinal reexploration, metabolic acidosis) Increased early extubations[a]	C
Catchpole et al[11]	Postsurgery handovers (N = 50, 23 before and 27 after intervention)	Pre-post interventional: Handover protocol	Reduced technical errors from mean 5.42 (95%CI, ±1.24) to 3.15 (95%CI, ±0.71) Reduced information omissions from mean 2.09 (95% CI, ±1.14) to 1.07 (95% CI, ±0.55) Before intervention, 39% of handover patients had >1 technical/information error vs 11.5% with new process Higher team performance correlated with fewer technical/information omission errors[a] Reduced handoff duration from 10.8 to 9.4 minutes	B

[a]$P < .05$.

Table 2
American Association of Critical-Care Nurses evidence-leveling system[a]

Level	Description
A	Meta-analysis of multiple controlled studies or metasynthesis of qualitative studies with results that consistently support a specific action, intervention, or treatment
B	Well-designed controlled studies, both randomized and nonrandomized, with results that consistently support a specific action, intervention, or treatment
C	Qualitative studies, descriptive or correlational studies, integrative reviews, systematic reviews, or randomized controlled trials with inconsistent results
D	Peer-reviewed professional organizational standards, with clinical studies to support recommendations
E	Theory-based evidence from expert opinion or multiple case reports
M	Manufacturer's recommendation only

[a]From Armola et al,[12] with permission.

- Better documentation—Compliance/accuracy (written emergency department reports; information binders)
- Higher satisfaction—Patient's condition matched information (structured tool), general satisfaction (written emergency department reports)

• Patients' outcomes
- Advanced along clinical pathway (structured face-to-face)
- Reduced complications—Falls (standardized interdepartmental tool), adverse outcomes (structured face-to-face)

• Patients' satisfaction
- Higher satisfaction (structured face-to-face, walking rounds)
- Eliminated admission delays (written emergency department reports)
- Improved understanding of health conditions (parent participation)

• Financial outcomes
- More effective use of time (written shift reports)
- Shorter handoff duration (structured tool)
- Less overtime (walking rounds, parent participation)

Overall, although these handoff practices are "promising," they are in need of rigorous evaluation to

examine handoff features that lead to the best performance by clinicians and the best outcomes for patients. Additional research is necessary to determine which type of protocols are most effective in varied settings and for different purposes.[3,6] For instance, results of 1 study[7] indicated that overall communication improved with structured change-of-shift handoff procedures, but openness and quality of information did not. Other authors reported that face-to-face structured handoffs produced less omission than taped handoffs but were more likely to lead to incongruent information.[3] These unexpected findings warrant more systematic investigation.

In order to achieve improved processes and outcomes, barriers that impede effective handoffs (Table 3) must be proactively addressed. These barriers include cultural aspects of our units/organizations, patient/staffing issues, human factors, time constraints, and educational issues. Deeply understanding that patients expect to be safe in our care, high-reliability organizations purposefully design human interactions that promote teamwork, structured communication, and situational awareness. Reliability refers to a failure-free operation over time from the viewpoint of the patient. In reference to handoffs, reliability means patient information flows consistently during transitions of care to enable safe, timely, and high-quality patient care.[14]

Preventing communication failures begins with structured communication. Standard protocols identify necessary information for reliable handoffs and thus reduce clinicians' use of their discretion, which often leads to variability and lower safety margins.[14] Highly reliable handoffs incorporate 3 key elements: (1) face-to-face, 2-way communication, (2) structured written forms, templates, or checklists that allow clinicians to agree on minimum essential data that create a shared mental model, and (3) content that "captures intention," meaning clinicians share problems and hypotheses with a predictive diagnosis of the patient's clinical situation (foresight), rather than listing events and completed tasks (hindsight), which has been associated with handoff errors.[13,15] Mnemonic devices such as SBAR (Situation, Background, Assessment, Recommendation) or "I PASS the BATON" (Introduction, Patient, Assessment, Situation, Safety concerns, Background, Actions, Timing, Ownership, Next) provide a format that can be tailored for different clinical areas and/or purposes. Such written tools introduce redundancy, helping nurses organize large amounts of information to convey complex issues related to patient care in a complete and meaningful way.[3,6,16,17] Consistently discussing information in a standardized sequence or order also aids pattern recognition for clinicians.[16] Other recommendations for standardization include interactive

Table 3
Barriers to effective nursing handoffs[a]

Barrier	Description
Communication sender	Little knowledge of patient Amount of information—too little, or too much Quality of information—incomplete, inaccurate, inconsistent
Both	Varied communication styles Interrupting one another, chatting Different tasks and expectations Failure to communicate or understand significance of data/events
Receiver	Asks for information to be repeated Lack of responsiveness/attention lapses Little knowledge about patient after handoff
Culture	Lack of teamwork/mutual respect, culture of blame
Time	Inadequate time allowed, misuse of available time Limited availability to ask questions Inability to follow up to share/obtain additional information
Staffing	Inadequate staffing at certain times of day (unavailable to provide or receive up-to-date information at time of handoff) Agency nurses or large number of nurses involved in patient's care (lack in-depth knowledge of patient) Competing priorities of receiving nurse (unable to focus on patient)
Patient-related factors	New admissions, emergent patient conditions around shift change Timing of physical transfer not in sync with handoff Complexity, high volume caseloads Exclusion of patient
Standardization	Disorganized (lack of structure/standardization) Lack of leadership, limited resources to implement processes Staff resistance to handoff process
Equipment	Limitations of communication methods (recorded, verbal, bedside, written/computer-based)
Human factors	Sex, culture, hierarchy/power distance Interruptions/distractions Multitasking Information overload, limited memory capacity Fatigue, sensory/information overload
Environmental	Background noise Chaotic environment at shift change
Education	Lack of handoff training

[a] Based on information from Patterson and Wears,[1] Blouin,[2] Riesenberg et al,[3] Haig et al,[5] and Welsh et al.[13]

questioning, as well as closed-loop verification to confirm that information has been received and understood.[1,3,18]

In addition to structured tools, bedside rounds at the end of change-of-shift handoffs serve many functions. Nurses can introduce the oncoming nurse and address patients' concerns, giving them an opportunity to be involved in their care,[16,17,19] and perform vital quality checks on equipment, alarms and settings, intravenous catheters and infusions, and so on. Receiving nurses can check for any missing information and ask final questions to create a shared baseline of the patient's condition.[3,16] Red flags on unexpected findings compared with the information relayed can be discussed and rectified in real time. Thus, handoff procedures create informed situational awareness.

The role of education in standardizing handoffs in practice cannot be overemphasized. During initial and refresher education, nurses can practice standardized handoff procedures by role-playing real-life scenarios, while at the same time honing the whole family of human factor skills—teamwork, structured communication, situational awareness, assertiveness, and critical language. Posters and pocket cards may be useful to reinforce expectations for practice. More research is needed to determine the effectiveness of various educational and implementation strategies in reliably embedding standardized handoff procedures in practice.[3]

FINANCIAL DISCLOSURES
None reported.

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