

## Handoffs: Implications for Nurses

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*The Agency for Healthcare Research and Quality (AHRQ) recently published a new book, Patient Safety and Quality: An Evidence-Based Handbook for Nurses. (AHRQ Publication No. 08-0043). This comprehensive 1400 page handbook for nurses provides valuable information for nurses on patient safety and quality, evidence-based practice, patient centered care, working conditions, and work environment for nurses. The following article is an excerpt from Chapter 34 of this handbook. The complete book is available online at [www.ahrq.gov/qual/nursesfdbk](http://www.ahrq.gov/qual/nursesfdbk).*

### Background

The transfer of essential information and the responsibility for care of the patient from one health care provider to another is an integral component of communication in health care. This critical transfer point is known as a handoff.<sup>1-3</sup> An effective handoff supports the transition of critical information and continuity of care and treatment. However, the literature continues to highlight the effects of ineffective handoffs: adverse events and patient safety risks.<sup>4-11</sup> The Institute of Medicine (IOM) reported that “it is in inadequate handoffs that safety often fails first”<sup>12</sup> (p. 45). This chapter presents an overview of handoffs, a summary of selected literature, gaps in the knowledge, and suggestions for quality improvement initiatives and recommendations for future research.

### What Is a Handoff?

First one needs to recognize the term “handoff” and synonymous terms that are used in a wide variety of contexts and clinical settings. There are a number of terms used to describe the handoff process, such as handover,<sup>1, 13, 14</sup> sign-out,<sup>15, 16</sup> signover,<sup>17</sup> cross-coverage,<sup>18, 19</sup> and shift report.<sup>20-22</sup> For the purpose of this discussion, the term

“handoff” will be used and defined as, “The transfer of information (along with authority and responsibility) during transitions in care across the continuum; to include an opportunity to ask questions, clarify and confirm”<sup>23</sup> (p. 31). The concept of a handoff is complex and “includes communication between the change of shift, communication between care providers about patient care, handoff, records, and information tools to assist in communication between care providers about patient care”<sup>1</sup> (p. 1). The handoff is also “a mechanism for transferring information, primary responsibility, and authority from one or a set of caregivers, to oncoming staff”<sup>17</sup> (p. 1). So, conceptually, the handoff must provide critical information about the patient, include communication methods between sender and receiver, transfer responsibility for care, and be performed within complex organizational systems and cultures that impact patient safety. The complexity and nuance of the type of information, communication methods, and various caregivers for each of these factors impact the effectiveness and efficiency of the handoff as well as patient safety.



## Table 2. Strategies to Improve Handoff Communication

	Strategy	Example
1	Use clear language and avoid use of abbreviations or terms that can be misinterpreted.	During the reconciliation process, the nurse noted a medication that is usually administered once daily being given every other day. The handwritten order for daily was written QD but read as QOD. QD and QOD are on the Joint Commission official “Do Not Use” list. <sup>51</sup> According to the list, “daily” should be written instead of QD and QOD should be written as “every other day.” <sup>51</sup>
2	Use effective communication techniques. Limit interruptions. Implement and utilize read-backs or check-back techniques.	In the middle of a shift handoff, the unit clerk interrupts the nurse to inform her that a patient needs assistance to go to the bathroom. The nurse must leave report to assist the patient or find a nurse’s aide to help the patient. During this interruption, the off-going nurse is in a rush to leave and get her son from child care. Due to the need to leave quickly, the offgoing nurse forgets to document and report to the oncoming nurse that a patient fell right before the shift change. Efforts need to be made to ensure adequate staffing during shift report to minimize interruptions.
3	Standardize reporting shift-to-shift and unit-to-unit.	The surgical unit standardized shift-to-shift handoff report with a one-page tool that is used for each patient, thereby providing a comprehensive, structured approach to providing the critical information on new and recovering postoperative patients.
4	Assure smooth handoffs between settings.	One of the busiest units in the hospital is the emergency department (ED). Patients must be discharged or moved quickly out of the ED to an inpatient unit. To ensure rapid patient flow, a new handoff process is established that includes a phone call to the receiving unit, the assignment of an admission nurse so that there are no delays on the receiving unit, telephone report so the receiving unit can prepare any special equipment, and then a final verbal handoff between the two nurses while viewing the patient to verify the condition of the patient and ensure no changes from one setting to another.
5	Use technology to enhance communication. Electronic records can support the timely and efficient transmission of patient information.	The hospital has an electronic record and utilizes portable computers. Walking rounds are made by the offgoing and oncoming nurse using the portable computer and visiting each patient for introductions and quick visual assessment. The use of this technology allows the nurse to view the patient’s plan of care, medications, and IVs at a glance to prepare for care during the next shift.

Source: Adapted, in part, from Joint Commission International Center for Patient Safety. *Strategies To Improve Hand-Off Communication: Implementing a Process to Resolve Questions*. 2005.<sup>34</sup>

## Why Is There a Problem With Handoffs Today?

As health care has evolved and become more specialized, with greater numbers of clinicians involved in patient care, patients are likely to encounter more handoffs than in the simpler and less complex health care delivery system of a few generations ago.<sup>11</sup> Ineffective handoffs can contribute to gaps in patient care and breaches (i.e., failures) in patient safety, including medication errors,<sup>19, 24</sup> wrong-site surgery,<sup>9</sup> and patient deaths.<sup>4, 7</sup> Clinical environments are dynamic and complex, presenting many challenges for effective communication among health care providers, patients, and families.<sup>25-27</sup> Some nursing units may “transfer or discharge 40 percent to 70 percent of their patients every day”<sup>28</sup>, thereby illustrating the frequency of handoffs encountered daily and the number of possible breaches at each transition point.

What contributes to fumbled handoffs? An examination of how communication breakdown occurs among other disciplines may have implications for nurses. A study of incidents reported by surgeons found communication breakdowns were a contributing factor in 43 percent of incidents, and two-thirds of these communication issues were related to handoff issues.<sup>36</sup> The use of sign-out sheets for communication between physicians is a common practice, yet one study found errors in 67 percent of the sheets.<sup>15</sup> The errors included missing allergy and weight, and incorrect medication information.<sup>15</sup> In another study, focused on near misses and adverse events involving novice nurses, the nurses identified handoffs as a concern, particularly related to incomplete or missing information.<sup>37</sup>

## Where Do Handoffs Occur?

Handoffs occur across the entire health care continuum in all types of settings. There are different types of handoffs from one health care provider to another, such as in the transfer of a patient from one location to another within the hospital<sup>64</sup> or the transition of information and responsibility during the handoff between shifts on the same unit.<sup>1, 41, 43</sup> Interdisciplinary handoffs occur between nurses and physicians, and nurses and diagnostic personnel, while intradisciplinary handoffs occur between physicians<sup>3, 15, 31</sup> or between nurses.<sup>13, 14, 41, 42, 43</sup> Interfacility handoffs occur

between hospitals and among multiple organizations,<sup>68</sup> including home health agencies,<sup>69, 70</sup> hospices,<sup>71</sup> and extended-care facilities.<sup>72, 73</sup>

Handoffs may involve use of specialized technology (e.g., audio recorders, pagers, hand-held devices, and computerized records),<sup>2</sup> fax,<sup>73, 74</sup> written documents,<sup>54</sup> and oral communication.<sup>41, 75, 77</sup>

Each type and location of handoff presents similar as well as unique challenges. Given the variety of handoffs, the following discussion will focus on:

- Shift-to-shift handoff
- Nursing unit-to-nursing unit handoff
- Nursing unit to diagnostic area.
- Special settings (operating room, emergency department).
- Discharge and interfacility transfer handoff
- Handoffs and medications
- Physician-to-physician handoffs

## Shift-to-Shift Handoff

There are paradoxes in communication and handoffs, especially at shift changes.<sup>20</sup> Many human factors play a role. Human factors (ergonomics) focus on behavior and interaction between human beings and their environment. Human factors engineering focuses on “how humans interact with the world around them and the application of that knowledge to the design of systems that are safe, efficient, and comfortable”<sup>76</sup>. The handoff poses numerous human factors engineering implications. From the perspective of patient safety, the primary purpose of the shift report or shift handoff is to convey essential patient care information,<sup>14, 43, 55, 78, 79</sup> promote continuity of care<sup>13, 41, 77, 78, 80</sup> to meet therapeutic goals, and assure the safe transfer of care of the patient to a qualified and competent nurse. However, other reported purposes of shift report include education,<sup>41, 78, 81</sup> debriefing,<sup>14, 41</sup> socialization,<sup>78, 82</sup> planning and organization,<sup>78</sup> enhancement of teamwork,<sup>81</sup> and supportive functions.<sup>83</sup>

The intershift handoff is influenced by various factors, including the organizational culture. An organization that promotes open communication and allows all levels of personnel to ask questions and express concerns in a non-

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hierarchical fashion is congruent with an environment that promotes a culture of safety.<sup>58</sup> Interestingly, one study reported novice nurses seeking information approached those seen as “less authoritarian.”<sup>84</sup> The importance of facilitating communication is critical in promoting patient safety. The shift-to-shift handoff is a multifaceted activity.<sup>78, 85, 86</sup> A poor shift report may contribute to an adverse outcome for a patient.<sup>55</sup>

**Handoff intricacies.** A phenomenon well known to nurses is the use of nurse-developed notations, “cheat sheets” or “scraps” of information, while receiving or giving intershift reports. A study of such note taking found scraps are used for a variety of purposes, including creating to-do lists and recording specific information and perceptions about the patient and family.<sup>87</sup> This approach presents some challenges, as no one else has easy access to the information; therefore, continuity of care may be compromised during a meal break, for example, or if the scrap or cheat sheet is misplaced.

**Method of shift-to-shift handoff.** Handoffs are given using various methods:<sup>13, 41, 88, 89</sup> verbally,<sup>75, 77</sup> with handwritten notes,<sup>80, 87</sup> at the bedside,<sup>41, 52, 56, 57, 90, 92</sup> by telephone,<sup>91</sup> by audiotape,<sup>41, 53</sup> nonverbally,<sup>54</sup> using electronic reports,<sup>92</sup> computers printouts,<sup>14</sup> and memory.<sup>14</sup> The strength of the bedside report method is its effort to focus on and include the patient in the report. There have been concerns regarding patient confidentiality,<sup>41, 52, 56, 90</sup> which could be compromised if not carefully addressed. A qualitative study focused on describing the perceptions of patients who were present during a bedside report found some patients are in favor of bedside handoff, while others are not.<sup>52</sup> Patients also expressed concern regarding the jargon used by nurses.<sup>52</sup> One patient noted that including the patient in the handoff added another level of safety as erroneous data could be addressed and corrected.<sup>52</sup> Case studies indicate the bedside handoff may be implemented for a number of reasons, including addressing specific issues and improving care delivery.<sup>57, 92</sup> A summary of the strengths and weaknesses of verbal, bedside, written, and taped shift-to-shift reports is included in Table 3.

The challenge during handoffs across settings and times is to identify methods and implement strategies that protect against information decay and funneling,<sup>66</sup> contributing to the loss of important clinical information. It is a challenge to develop a handoff process that is efficient and comprehensive, as case studies illustrate.<sup>57, 88, 92, 93</sup> Observation of shift handoffs reveals that 84.6 percent of information presented in handoffs could be documented in

the medical record.<sup>42</sup> A concern that emerged in this study was some handoff reports actually “promote confusion,” and therefore the authors advocated improving the handoff process.<sup>42</sup>

Another concern with handoffs is the degree to which the report is actually congruent with the patient’s condition. One study found 70 percent congruence between the shift report and the patient’s actual condition, with an omission rate of 12 percent.<sup>22</sup> A synthesized case example of a psychiatric patient presents the adverse consequences for the patient if essential information is not communicated.<sup>94</sup> The importance of communicating objective descriptions of the patient condition is highlighted.

A study focusing on assessing the effects of manipulating information in a shift handoff on the receiving nurse’s care planning found in the different types of taped reports that the information recalled ranged from 20 percent to 34 percent.<sup>95</sup> Another study, by Pothier and colleagues,<sup>55</sup> examined different methods for transferring information during 5 consecutive simulated handoffs of 12 fictional patients. Three methods of handoffs were analyzed; the method demonstrating the greatest amount of information retention involved utilization of a preprinted sheet containing patient information with verbal report, followed by note taking and verbal report method, and lastly, only verbal report. The retained total data points for each style of handoff varied considerably during the five handoffs. Over 96 percent to 100 percent of information was retained using the preprinted sheet containing patient information and verbal report. Only 31 percent to 58 percent of the data were retained using the note taking style and verbal report.<sup>55</sup> The verbal-only style demonstrated the greatest amount of information loss, with retention ranging from 0 percent to 26 percent.<sup>55</sup> None of the data was retained using the verbal-only method for two handoff cycles. The insertion of incorrect information was observed in the verbal-only method. The generation of incorrect data did not occur at all during the handoff with the written or preprinted form style of report. This study<sup>55</sup> supports the use of a consistent preprinted form with relevant patient information during shift report, with less reliance on verbal-only reports, in order to optimize communication.

## **Nursing Unit-to-Nursing Unit Handoff**

Patients may be transferred frequently during their hospital stays.<sup>28</sup> Yet, the patient transfer is fraught with potential problems and can have an adverse impact on

patients.<sup>96, 97</sup> Issues have been identified in the transfer handoff process, including incomplete medical records and omission of essential information during the handoff report.<sup>64</sup> A number of factors that contribute to inefficiency during patient transfers from one nursing unit to another have been identified,<sup>97</sup> including delay or wasted time caused by communication breakdowns, waiting for responses from other nurses or physicians or a response from patient placement management or bed control.<sup>97</sup> Bed control involves personnel who manage the bed assignments of new and transferring patients. Decreasing the number of transfers is a possible strategy to decrease risks associated with handoffs.<sup>58</sup>

## Nursing Unit to Diagnostic Area

Patients are frequently sent from a nursing unit to diagnostic areas during the normal course of a hospitalization. Transfers have been cited as a contributor to medication errors between nursing units and diagnostic areas (e.g., radiology, cardiac catheterization, nuclear medicine).<sup>19</sup> It is important when patients change nursing units, particularly to a different level of care, or go to a procedure in another department that there is clear, consistent communication and that the receiving area staff have the information they need to safely care for the patient.<sup>34</sup> Complexity of the patient's condition may require that the nurse caring for the patient actually accompanies the patient to the new setting.

## Special Settings

**Operating room and postanesthesia.** Several special handoff situations occur in certain hospital settings. The operating room (OR) is considered "one of the most complex work environments in health care"<sup>98</sup> (p. 159), with a reported mean of 4.8 handoffs per case. Nursing staff average 2.8 handoffs per case, with a range of one to seven handoffs.<sup>98</sup>

There have been at least 615 wrong-site surgeries reported to the Joint Commission between 1995 and 2007.<sup>99</sup> To help prevent wrong-site surgery, the Joint Commission developed the Universal Protocol for Preventing Wrong Site Surgery, Wrong Procedure, Wrong Person Surgery<sup>TM</sup>.<sup>100, 101</sup> It is based on the consensus of experts and endorsed by more than 50 professional organizations.<sup>100</sup> Effective interdisciplinary communication is critical. For example, a health care organization using a perioperative briefing process reported that no wrong-site surgeries have occurred since the adoption of the interdisciplinary briefings.<sup>44</sup>

Dierks suggests five categories for handoffs in the OR: (1) baseline metrics/benchmarks, (2) most recent phase of care, (3) current status, (4) expectations for the next phase of care, and (5) other issues such as "who is to be contacted for specific issues"<sup>102</sup> (p. 10). The use of a team checklist in the OR was pilot tested in another study and found to show "promise as a method for improving the quality and safety of patient care in the OR"<sup>103</sup> (p. 345).

A study focused on OR communication processes identified a number of patterns and found the most common reason for communication in 2,074 episodes was coordination of equipment, followed by "preparedness" for surgery.<sup>104</sup> The authors recommend increasing the use of automated processes to enhance process flow, especially related to "equipment management," thereby helping with transmission of information in a more efficient manner.<sup>104</sup>

Communication in handoffs is critical in all phases of care. However, a survey of 276 handoffs conducted in a postanesthesia care unit (PACU) revealed 20 percent of postoperative instructions were either not documented or written illegibly.<sup>105</sup> The nurses rated the handoffs from anesthesia staff as "good" in 48 percent of cases, "satisfactory" in 28 percent, and "bad" in 24 percent.<sup>105</sup> A number of suggestions for improving the quality of the postanesthesia care unit handoff protocol were presented including the need to communicate information verbally to the nurse.<sup>105</sup>

**Emergency department.** A study of five emergency departments (EDs) revealed that there were differences in the characteristics of handoffs among the EDs studied, but "nearly universal" attributes of handoffs were also noted.<sup>106</sup> The researchers developed a conceptual framework for addressing handoffs in the emergency setting. The handoffs were not one way communication processes as both the offgoing and oncoming providers were engaged in interactive handoffs.<sup>106</sup>

According to Behara and colleagues,<sup>106</sup> 8 of 21 handoff strategies used in other industries<sup>2</sup> were observed "consistently" in the ED setting, while four were used less often and nine were not or rarely used. The handoff in the ED setting is viewed as a "rich source for adverse events"<sup>17</sup> (p. 1). There are inherent risks in handoffs, but it was also noted that the handoff can provide the opportunity for two health care providers to assess the same situation and identify a "previously unrecognized problem"<sup>17</sup> (p. 2).

Studies focused on emergency nursing handoffs highlight unique aspects of this process.<sup>107, 108</sup> Currie reported in a survey of 28 ED nurses that the top three concerns nurses had with handoffs were missing information, dis-

tractions, and lack of confidentiality.<sup>108</sup> Recommendations included the development of guidelines to improve the handoff process in the ED.

## Discharge and Interfacility Transfer Handoff

Handoffs from one facility to another occur frequently between many different settings.<sup>68–70, 71, 72, 73, 109–111</sup> Handoffs take place between hospitals when patients require a different level of care. The usual interfacility handoffs are between hospitals and long-term care facilities, rehabilitation centers, home health agencies, and hospice organizations. The factor that tends to make these handoffs challenging is gaps and barriers to communication among these agencies.<sup>68, 111, 112</sup> Handoffs between facilities are also impacted by the cultural differences between the types of facility.<sup>73</sup> Agencies are often geographically separate, requiring physical relocation of the patient, belongings, and paper records. Once the transfer has taken place, seeking additional information becomes a challenge.<sup>73</sup>

The continuity of patient care requires communication among various health care organizations.<sup>68, 71, 73, 110, 113–115</sup> One problem noted is nurses in different settings have different perceptions about what is important to be conveyed, such as different perceptions between the hospital and home health care.<sup>70, 116</sup> Another area of concern noted in transfers from hospitals to other health care organizations is incomplete documentation. More information was transmitted when a standard form to communicate information was utilized between a hospital and home health agency (HHA).<sup>69</sup> The usage of referral forms varies among health care institutions.<sup>109</sup> Rates of transmission of information differ from hospitals to HHAs<sup>69, 109, 113</sup> and to extended-care facilities.<sup>72</sup> It was found that HHAs affiliated with hospitals received more referral data than free-standing HHAs.<sup>113</sup>

Discharge planning forms address “the anticipation of a certain type of gap and also of an effort to create a bridge to permit care to flow smoothly over the gap”<sup>67</sup> (p. 793). One example of the development of such a form using “a consensus process” resulted in the implementation of a Patient Transition Information Checklist to help improve communication between hospitals and nursing homes.<sup>114</sup> Another type of form for communication of patient information among health care organizations was developed in Germany; however, followup revealed use of the form was not as widespread as anticipated because process barriers emerged, precluding users from easily completing and transmitting the forms.<sup>111</sup> Development of any type of “patient accompanying form”<sup>111</sup> requires numerous considerations and a balance between being comprehensive and not being cumbersome to use.<sup>111</sup> There also needs to

be adequate resources to allow health care providers to retrieve necessary data and transmit patient information between agencies.<sup>111</sup>

Inadequate discharge planning has been implicated in adverse outcomes of patients.<sup>117, 118, 119</sup> A study of 400 patients found 76 patients incurred an adverse outcome after discharge from the hospital. The researchers reported “ineffective communication contributed to many of the preventable and ameliorable adverse events”<sup>119</sup> (p. 166). The most frequent type of adverse event was related to medications. The implications of this study indicate the need to enhance communication in the handoff between the hospital and posthospital care. Suggested potential strategies to improve the handoff include discharge planning and education of patients related to medications prior to discharge.<sup>119</sup>

A number of contributors to a failed handoff in the discharge planning process have been identified, including, lack of knowledge about the discharge process,<sup>117</sup> lack of time,<sup>117</sup> lack of effective communication,<sup>119, 120</sup> patient and family issues,<sup>117, 120</sup> system issues,<sup>120</sup> and staffing issues.<sup>117, 120</sup> Communication issues have emerged as a potential contributor to readmissions.<sup>121</sup> An ineffective nursing handoff has been identified as a contributor to miscommunication within the discharge process.<sup>122</sup> The improvement of discharge planning requires that emphasis be placed on collaboration and interdisciplinary communication.<sup>112</sup> Well-orchestrated discharge planning is recommended to help improve patient safety<sup>123</sup> by controlling the risk of gaps occurring in the discharge process and its inherent handoffs.

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