

FIGURE 2. Quality Scoring System for Evaluation of Research Studies on Nursing Handoffs

Study quality indicator	Points	
Study type		
Single-group cross-sectional, or single-group posttest only, or qualitative study	1	
Single-group pre- and posttest, or cohort	1.5	
Nonrandomized trial (includes control or comparison group)	2	
Randomized, controlled trial	3	
Total sample size		
Unclear	0	
≤10	0.5	
11–50	1	
51–100	1.5	
101–150	2	
151–200	2.5	
≥201	3	
Reporting	Yes	No
Is the hypothesis/aim/objective/purpose of the study clearly described?	1	0
Are the participants clearly described? Number, rotation name (for example, pediatrics, surgery), and stage of training, if nursing students; number and specialty area or unit (for example, pediatrics, medicine, surgery), if nurses; number and unit or type (for example, pediatrics, medicine, surgery), if patients.	1	0
Are the main outcomes to be measured clearly described in the Introduction or Methods section? (If the main outcomes were first mentioned in the Results section, this question was answered no. If the article did not have clearly marked sections for Introduction, Methods, Results, this question was answered no.)	1	0
Are the methods described with enough details—for example, intervention, interview process, quality improvement process, measurement process, and instrument—given that you had the resources, training, etc., needed?	1	0
Are the main outcomes of the study clearly described in the Results section? (Simple outcome data—including denominators and numerators—should be reported for all major findings so that the reader can check the major analyses and conclusions.)	1	0
Internal validity		
Did the authors use a previously validated or published instrument, questionnaire, or interview script?	1	0
Did they conduct any validity assessment (for example, analyze reliability, validity, interrater reliability)?	1	0
Did they use any method designed to enhance the quality of measurement (for example, multiple observations; training of observers/interviewers; iterative process used to develop a tool or assessment instrument, or to conduct analysis for qualitative analysis or quality improvement process; pilot study; focus group; or Delphi process used to develop measurement tool)?	1	0
Did they report obtaining institutional review board approval?	1	0
Did the reported conclusions follow from the reported results?	1	0

TABLE 1. Research Studies of U.S. Nursing Handoffs Identified in the English-Language Literature, January 1, 1987, to August 4, 2008

Source	Design	Subjects	Results	Quality Score
Studies with an intervention				
Anderson CD, Mangino RR. <i>Nurs Adm Q</i> 2006;30(2):112-22	Implementation of bedside reporting on 1 unit. Researchers collected pre- and postimplementation patient- and staff-satisfaction data and financial data (measured as time over shift).	Nurses and patients on a 32-bed adult acute care unit at a 600-bed urban medical center; no counts were provided.	Observed a decrease in time over shift by more than 100 hours for 4 consecutive pay periods. Data on nurse and patient satisfaction were reported using bar graphs, which for the most part depict improvements. However, no actual numbers, percentages, or statistical comparisons were reported.	6.5
Baldwin L, McGinnis C. <i>Nurs Manage</i> 1994;25(9):61-4	A pilot study of change in shift report style from verbal to automated written. After in-service instruction, the written report process was pilot tested for 4 weeks. Then an 8-item questionnaire was used to assess satisfaction. The results were summed to create a total score.	Nurses on 1 medical and 1 surgical unit at Memorial Medical Center, Jacksonville, FL; no counts were provided.	High scores indicated staff acceptance. The mean score was 32 out of a possible 40 points. An informal survey of the pilot unit managers indicated that as much as 60% of incidental end-of-shift overtime had been eliminated. A second questionnaire was given after additional changes were implemented. Results indicated that 86% preferred the written to the verbal report. Self-reported compliance with use of the new system was 90%.	4
Barbera ML, et al. <i>Nurs Manage</i> 1998;29(6):66-7	6-month, 3-phase implementation of a new report system. Instead of taped report, all pertinent patient information was recorded in a binder located directly outside each patient's room. Researchers collected pre- and postimplementation data.	Nurses; no counts were provided.	Patients' medical histories were written on the Kardex 55% of the time before implementation and 100% of the time in phase 3. Required flow-sheet compliance went from 45% before implementation to 100% in phase 3. IV catheter insertion dates were recorded 75% of the time before implementation and 95% of the time in phase 3.	3.5
Bosek MS, Fugate K. <i>Med Surg Nurs</i> 1994;3(2):128-32	6-step quality improvement project: 1. identify intershift content 2. identify current practice 3. determine nurse satisfaction 4. identify issues 5. identify relevant and irrelevant data 6. implement specified changes Time spent reporting was measured before and after implementation. Satisfaction with report was measured before implementation only.	Nurses on a 36-bed acute medical unit; 24 RNs were surveyed before implementation; 8 reports were randomly selected for follow-up audit; no other counts were provided.	Baseline (step 2): length of time spent reporting on individual patients varied from 3–5 minutes, with 24–45 minutes used for reporting on 7–9 patients. Report consistently started 5–13 minutes after designated hour. Baseline (step 3): two hours after receiving report, 24 RNs on 2 consecutive days were asked to describe satisfaction with report, quality of information received, and timeliness of report process; 87.5% indicated they were satisfied with report. The satisfaction survey wasn't repeated after changes were implemented. After changes: reports were completed "in a timely fashion"; and included less irrelevant data; nurses stated that the nursing care plans were more useful. Eight reports were randomly selected for follow-up audit; these documented that nurses spent an average of 2.4 minutes per patient reporting at 7 AM; 2.9 minutes at 3 PM; and 3.1 minutes at 11 PM. These time differences were not statistically significant.	6.5

Source	Design	Subjects	Results	Quality Score
Brown Lazzara PA, <i>Nurs Manage</i> 2004;35(8):48A-48B, 48D	Implemented an ED written report. Measured success and satisfaction after implementation.	ED nurses giving report to nurses on other units at Northwestern Memorial Hospital in Chicago; no counts were provided.	Use of the ED written report "yielded a 95% success rate in process completion and accuracy in 2002 and 97% in 2003. Delays related to telephone report [were] eliminated. In the 6 months following the initiative, a 20% improvement was noted on inpatient satisfaction surveys for the indicator 'speed of admission.'"	2
Fraser LE, et al. <i>J Pediatr Nurs</i> 1991;6(5):310-6	Implemented the use of nursing care plans as the basis for intershift report. Collected postimplementation data.	16 of 25 nurses on a 25-bed medical-surgical school-age unit in a 331-bed urban children's hospital in southern CA. Patients on the unit were 4–12 years of age and had various acute and chronic diseases.	Questionnaire was administered 3 weeks after implementation. 10 respondents felt they could obtain most of the needed information from the care plan during the report; 15 felt that nurses used the care plan "since viewing the video and attending the class"; 11 felt they were more careful in checking IV sites and solutions; 15 felt "there had been a significant improvement with the report, including the staff's attitudes." Two nurses felt that using the care plan was difficult when the RN was responsible for many patients. 6 months after implementation, a quality assurance evaluation was performed and, at this point, 10 nurses were questioned about their use of the care plan at intershift report. "Results showed there was 100% compliance" with the new system.	8
Haig KM, et al. <i>Jt Comm J Qual Patient Saf</i> 2006;32(3):167-75	Preimplementation phone survey, implementation, and postimplementation data collection. Pre- and postimplementation data were collected but not concerning the same things.	Staff members at OSF St. Joseph Medical Center in Bloomington, IL; preimplementation phone survey included 10 staff members; no counts were provided for postimplementation data.	Baseline (before implementation): respondents to the phone survey were able to correctly describe the use of the mnemonic SBAR (Situation, Background, Assessment, Recommendation) 60% of the time. Authors report that use of SBAR reached a mean of 96% in fiscal year 2005 but do not describe how that was assessed.	3.5
Hamilton P, et al. <i>Nurs Admin Q</i> 2006;30(3):295-9	4-hour classroom intervention to teach SBAR techniques. Pre- and posttest data were collected using the Agency for Healthcare Research and Quality survey on communication and patient safety, supplemented with 18 items on nurse-physician communication, 2 items measuring satisfaction with decision making, 7 items related to critical events, and additional single questions.	10 RN-to-baccalaureate nursing students and 13 labor and delivery nurses (total = 23) in a large metropolitan area in the Southwest participated in the intervention. Paired pretest and posttest data were available for 14 subjects.	None of the paired pretest-posttest differences was statistically significant.	10.5

Source	Design	Subjects	Results	Quality Score
Kalisch BJ, et al. <i>Nurs Manage</i> 2007;38(4):16, 18	Survey to determine what would constitute an effective shift report tool, followed by a 3-month period of using the new tool. A different survey designed to assess use and effectiveness was administered after the new tool had been used for 8 months.	All nurses on 3 medical-surgical units at Parrish Medical Center, Titusville, FL. The authors report a 50% return rate for the preimplementation survey, but do not report counts or return rate for the postimplementation survey.	In the postimplementation survey, 84% of the staff nurses felt that the tool "provides useful patient information" and 76% felt it "assists them in gaining a broad picture of the patient." Regarding the 3 communication problems the tool was designed to address, 66% to 73% of nurses "noted an improvement." Interviews "revealed that the tool resulted in more accuracy and less confusion," "was highly efficient and saved [the nurses] time," and made nurse-physician communication more effective. Nurses who felt the tool hadn't been helpful "noted that [it] contained too much information" and some "felt certain information was repetitive."	4
Mikos K. <i>Nurs Manage</i> 2007;38(12):16-20	Implementation of a customized telephone-based handoff system. Collected time per patient report, before and after implementation.	Nurses on a 55-bed unit at Provena Saint Joseph Medical Center, Mokena, IL; no counts were provided.	"The decrease in interruptions and distractions during handoffs reduced report time by nearly 70%, from an average of more than 6 minutes to less than 2 minutes per report. This has had a significant effect on incremental overtime, representing an annual savings of nearly \$120,000."	3.5
Monahan ML, et al. <i>Nurs Manage</i> 1988;19(2):80	Implemented walking rounds, with formal evaluation after 5 months.	Nurses and patients at the University Hospitals of Cleveland, OH; no counts were provided.	Questionnaires were returned by 95% of staff, "all overwhelmingly in favor of continuing the new system." Incidental overtime was reduced by about 50%. Interviewed patients were reportedly "very positive about the nurses coming to their rooms."	3
Reiley PJ, Stengrevics SS. <i>Nurs Manage</i> 1989;20(9):54-6	Implemented a new reporting system using a written, problem-oriented form. Conducted retrospective and concurrent chart audits after implementation, administered staff survey, and the head nurse conducted observations.	Nurses on a 37-bed general medical unit and a 44-bed general surgical unit at Beth Israel Hospital, Boston. 54 nurses completed the survey; 10 randomly selected charts from each unit were reviewed before implementation and 10 more from each unit were reviewed after implementation.	After implementation of the new written form, nurses were initially dissatisfied. Identified problems included the following: "1. nurses experienced less of a sense of what the patients' problems were; 2. writing was too time-consuming; 3. information was forgotten because it was read and not heard." After 3 weeks, positive feedback began to outweigh the negative. 10 randomly selected charts "were reviewed on each unit from discharges occurring 3 months before the reporting change," and 10 more were reviewed after the change. The authors observed "a significant increase in the number of problem-oriented notes," with this percentage rising from 37% to 71% on one unit and from 29% to 57% on the other. The percentage of narrative notes decreased to 3% on one unit and to 0 on the other. 4 months after implementation, 94% of staff felt that with the new system their reports were more concise; 91% felt it improved their ability to finish their work on time; 92% felt they were using time previously spent on report more effectively; 94% felt that call lights were answered more promptly; and 94% "declared themselves very pleased with the new system." Only 1 respondent wanted to return to the old system. Regarding a concern that the change in format "might lead to poor staff relations," 90% of staff didn't think this had occurred. Head nurse assessments were favorable.	6

Source	Design	Subjects	Results	Quality Score
Shendell-Falik N, et al. <i>J Nurs Adm</i> 2007;37(2):95-104	Appreciative inquiry used to engage staff in identifying and building on their most effective handoff experiences. Collected preimplementation data in February 2005 and postimplementation data in June 2005 and again in August 2005.	ED nurses and nurses on an inpatient telemetry unit at Newark Beth Israel Medical Center, a 673-bed hospital in Newark, NJ; no counts were provided.	Patient satisfaction scores increased 10.2% overall, 9% with regard to nursing, 6.6% with regard to "personal issues," and 23.3% with regard to ED nurses. The percentage of dialysis patients receiving nutritional assessment within 24 hours of arrival at the ED rose 11%. Completion of skin assessment in the ED went from 0 to 70%. Compliance with the cardiac enzyme regimen increased 9.2%, and medication administration—record compliance increased 81.8%. The percentage of telemetry patients who could be transported without a cardiac monitor went from 0 to 60%, saving "67.5 hours of nursing time in one month." Nurses' satisfaction and teamwork improved between 2.4% and 9.3%.	3.5
Sidlow R, Katz-Sidlow RJ. <i>Jt Comm J Qual Patient Saf</i> 2006;32(1):32-6	Nurses given electronic access to physicians' computerized sign-out program and surveyed 1 month later.	Nurses on a pilot general medical unit at Jacobi Medical Center, a 538-bed hospital in Bronx, NY; 19 of 20 nurses responded to a survey.	Nurses were asked to rate the impact of "having access to and use of the computerized housestaff sign-out reports" in several areas, using a 5-point Likert-like scale (1 = worsened, 2 = slightly worse, 3 = no impact, 4 = somewhat improved, and 5 = greatly improved). Average ratings were as follows: • [ability to] identify responsible physician, 3.8 • [ability to] identify patients' do-not-resuscitate and medication allergy status, 4.4 • [ability to] identify patients' reason for admission, 4.8 • [ability to] identify patients' active clinical problems, 4.6 • [ability to] identify anticipated changes in patients' clinical status, 4.4 • [ability to] develop an accurate daily nursing plan of care, 4.3 • general ability to care for patients, 4.5 • overall communication between physicians and nurses, 4.6 • overall nursing morale, 4.3	8
Wilson MJ. <i>Medsurg Nurs</i> 2007;16(3):201-6, 200	Implemented a handover template to be used with a telephone-based recording system (VoiceCare). 3 units were evaluated over a 5-month period beginning 1 month after forms were distributed, with no further intervention. The other 2 units received ongoing encouragement from the unit director, nursing educators, and the researchers. Data on report content were collected after implementation.	Nurses from 5 units at UPMC Shadyside Hospital, Pittsburgh, PA (262 shift reports).	Of 63 nurses informally surveyed, only 1 knew the written guidelines for report. The 262 shift reports, which came from all 5 units and from all shifts, were listened to by 4 volunteer nurses who recorded the presence of 13 predetermined items expected to be in each report. Results ranged from 10% presence to 100% presence. No statistical comparison by unit was conducted.	7

Source	Design	Subjects	Results	Quality Score
Cross-sectional studies				
Bolanos R. <i>Nurs Spectr (Fla Ed)</i> 2008;18(2):22-3	Introduced bedside reporting. After 6 months, a 10-item questionnaire was given to parents of pediatric patients to determine how they felt about bedside reporting. To qualify, parents had to have participated in bedside reporting on at least 2 occasions.	50 sets of qualified parents of children on a pediatric medical-surgical unit at Miami Children's Hospital, Miami, FL, chosen at random.	Most (94%) parents "strongly agreed that bedside reporting was informative," in terms of their child's "condition and needs"; 98% of parents strongly disagreed that the presence of another patient in the room affected their participation in bedside reporting.	6
Hays MM. <i>South Online J Nurs Res</i> 2002;3(3):1-14	Observed verbal and nonverbal behaviors and patterns of 16 nurse leader-follower dyads during shift report to identify supportive behaviors.	4 charge RNs (leaders) and 13 staff RNs (followers) from the 12-hour evening shift in a medical-surgical ICU in an urban hospital in the Southeast.	16 shift reports were videotaped in 19 days. In the 162 interactions, no supportive behaviors were demonstrated by the charge RN leaders; 11 supportive behaviors (6.8%), all nonverbal head nods, were demonstrated by the followers. No verbal statements of praise, support, reassurance, or concern were observed.	12
Keenan G, et al. <i>Stud Health Technol Inform</i> 2006;122:580-4	3-phase cohort design; but because all the data reported here were collected at one point in time, this article is categorized as cross-sectional. Full design included the following: 1. baseline evaluation of the units; 2. training sessions; and 3. "go live" and continuous evaluation of the electronic care-planning method, Hands-on Automated Nursing Data System (HANDS). HANDS is an electronic database used to create dynamic nursing care plans that are updated at the end of each shift and used during shift report.	14 nurses.	After training sessions in the use of HANDS, 14 nurses were observed giving report in 3 of the 4 study units. All observed nurses continued to use the pre-"go live" report forms and none used HANDS.	8

Source	Design	Subjects	Results	Quality Score
Richard JA. <i>Image J Nurs Sch</i> 1988;20(1):4-6	Monitored intershift reports for congruence and omissions of predetermined pertinent items. The investigator listened to inter-shift report and then went to see each patient.	57 intershift reports were observed on 19 medical-surgical units in an 800-bed metropolitan hospital. 584 patients were visited, and 2,952 entries were obtained for analysis of congruence.	Overall congruence was 70%, with 70% congruence for the day, 72% for the evening, and 68% for the night shifts. Overall omission rate was 11.76%—9% for the day, 10% for the evening, and 16% for the night shifts. The number of omissions on night shift reports was significantly higher ($\chi^2 = 22.50$, $df = 2$, $P = 0.005$). The most common omission was in the category of intake and output. Overall incongruence was 12.36%—14% for the day, 12% for the evening, and 11% for the night shifts. The most common incongruence was in the category of IV sites. The rate of omissions resulting in incongruence was 5.99%, with 5% for the day, 7% for the evening, and 6% for the night shifts. "There was a significant relationship between the mode of report and lack of congruence ($\chi^2 = 9.24$, $df = 2$, $P = 0.01$). Taped reports were more likely than were the face-to-face reports to produce omissions, although taped reports were less likely to produce incongruence."	11
Qualitative study				
Hays MM, Weinert C. <i>Nurs Econ</i> 2006;24(5):253-62	Qualitative study of 12 videotaped shift reports, using a dramaturgical focus on emotions and social roles.	12 evening shift reports, with 4 charge nurses and 13 staff nurses on a medical-surgical ICU in an urban hospital in the Southeast.	All reports contained a ritualized opening and closing. The analysis revealed that during report, staff played roles "according to their personalities, the expectations of their roles, and the role patterning within the group." It also showed that the charge nurses controlled the report by "guiding the interactions and directing the length of time spent on individual patients, the duration of report, and the emotional ebb and flow."	5

TABLE 2. Handoff Mnemonics Identified in Articles Describing Nursing Handoffs, January 1, 1987, to August 4, 2008

Mnemonic	Disciplines or departments using it	Description	
4 Ps ⁵⁹	Nurses	P	Purpose: why is the patient here? What priorities does she or he have?
		P	Picture: what results are we looking for, both short term and long term? How can we picture the patient's current condition?
		P	Plan: what did or didn't work?
		P	Part: what part can you play during the next shift?
5 Ps, version 1 ^{24, 74, 75}	General nurses, perioperative nurses	P	Patient: identify
		P	Plan: plan of care
		P	Purpose of plan: clinical findings supporting plan of care
		P	Problems: abnormal findings, pain scale, vital signs
		P	Precautions: isolation, falls, etc.
5 Ps, version 2 ⁷⁵	Perioperative nurses	P	Patient: identify
		P	Precautions: allergies, isolation, falls, specialty bed
		P	Plan of care: fluids, intake, output, iv access
		P	Problems: assessment, review of systems, pain scale, etc.
		P	Purpose: goals to be achieved
AIDET ⁶⁶	Preoperative and perioperative staff, including nurses, anesthesiologists, physicians, and surgical technologists	A	Acknowledge the patient
		I	Introduce yourself
		D	Duration of procedure (estimate it)
		E	Explanation (explain the process and what happens next)
		T	Thank you (say "thank you for choosing our hospital")
GRRRR ⁵¹	Nurses	G	Greeting
		R	Respectful listening
		R	Review
		R	Recommend or request more information
		R	Reward
I PASS the BATON ^{74, 75}	General nurses, perioperative nurses, physicians	I	Introduction: introduce yourself and state your role
		P	Patient: name, identifiers, age, sex, location
		A	Assessment: present chief complaint, vital signs, symptoms, diagnosis
		S	Situation: current status and circumstances, including code status, level of certainty or uncertainty, recent changes, response to treatment
		S	Safety concerns: critical lab values and reports, socioeconomic factors, allergies, alerts (such as risk for falls, need for isolation)
		(The)	
		B	Background: comorbidities, previous episodes, current medications, family history
		A	Actions: detail which were taken or are required and provide brief rationale
		T	Timing: level of urgency, explicit timing, prioritization of actions
		O	Ownership: who is responsible (nurse, physician, team)? Include patient or family responsibilities
		N	Next: what happens next? (Are there any anticipated changes in patient's condition or plan of care? What is the plan? Are there any contingency plans?)

I-SBAR-Q ⁷⁴	All	I	Introduction
		S	Situation
		B	Background
		A	Assessment
		R	Recommendations
		Q	Questions?
Just Go NUTS ³⁶ and Pass the NUTS ⁴⁷	Nurses, physicians, transporters, and other clinical staff	N	Name of patient, diagnosis, room number
		U	Unique: variances identified on the individual care plan (such as critical lab values, pain management)
		T	Tubes (ivs, nasogastric tubes, catheters, drains, ostomy tubes)
		S	Safety concerns (such as fall risks, medication reconciliation)
PACE ⁷⁶	Nurses	P	Patient and Problem
		A	Assessment and Actions
		C	Continuing care and Changes
		E	Evaluation
SBAR ^{29, 30, 33, 35, 37, 38, 45-48, 51, 56, 58, 60, 62, 71, 74, 75, 77, 86, 88, 90, 103, 104, 109}	Nurses, physical therapists, physicians, radiologists, residents, staff, transporters	S	Situation
		B	Background
		A	Assessment
		R	Recommendation
SHARED ⁶⁵	Surgical and ED nurses	S	Situation
		H	History
		A	Assessment
		R	Request
		E	Evaluate
		D	Document
SHARQ ⁷⁵	Perioperative nurses	S	Situation: describe the situation
		H	History: past medical history, allergies, home medications
		A	Assessment: current medications, intake, output, status
		R	Recommendations: recommendations, results, discharge planning
		Q	Questions: opportunity to ask questions
SOAP ^{63, 84}	Neuroscience nurses, ambulance or ED staff	S	Subjective information about the patient's concerns, sensations, and behaviors related to the problem
		O	Objective information related to the problem (such as level of consciousness, activity tolerance, effect of medication received, postprocedure signs, laboratory values, etc.)
		A	Assessment of the patient's condition as substantiated with the data from "S" (subjective) and "O" (objective) and an indication of the direction of change in the patient's condition
		P	Plan of what has or should be done for the patient
STICC ⁵¹	Nurses	S	Situation
		T	Task
		I	Intent
		C	Concern
		C	Calibrate