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Systematic Review of Handoff Mnemonics Literature

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A systematic review of published English-language articles on handoffs is conducted (1987 to June 4, 2008). Forty-six articles describing 24 handoff mnemonics are identified by trained reviewers. The majority (82.6%) have been published in the last 3 years (2006-2008), and SBAR (Situation, Background, Assessment, Recommendation) is the most frequently cited mnemonic (69.6%). Of 7 handoff research articles, only 4 study mnemonics. All 4 of these studies have relatively small sample sizes (10-100) and lack validated instruments. Only 1 study has obtained IRB approval. Scientifically rigorous research studies are needed to assess the effectiveness of handoff mnemonics. These should be published in the peer-reviewed literature using the Standards for QUality Improvement Reporting Excellence (SQUIRE) guidelines. (Am J Med Qual 2009;24:196-204)

Keywords: handoff; handoffs; mnemonic; sign-out

Effective communication is central to safe and effective patient care. Handoffs or transfers of patient care from one health care provider to another are known to be vulnerable to communication failures.[1-4] As defined by the Joint Commission, handoff communication "refers to a real-time process of passing patient/client/resident-specific information from one caregiver to another or from one team of caregivers to another for the purpose of ensuring the continuity and safety of the patient/client/resident's care."[5]

The Joint Commission has reviewed data from 4977 sentinel events that occurred between 1995 and March 31, 2008.[6] In organizations accredited by the Joint Commission, communication problems have been identified as one of the contributing causes in more than 60% of the sentinel events reviewed. As a result, the Joint Commission created a new National Patient Safety Goal in 2006: 2E "Implement a standardized approach to 'hand off' communications, including an opportunity to ask and respond to questions."[7] This goal has remained unchanged and was repeated in 2007[8] and 2008.[9]

In 2005, the average length of stay for all hospitalized patients was 4.8 days.[10] Assuming that patient care transfers occur between physicians at least twice per day and between nurses at least 3 times per day, the average patient will be handed off a minimum of 24 times per admission. This represents 24 opportunities for inadequate communication, each of which could result in reduced patient safety and increased medical errors.

Mnemonics are commonly used to enhance memory. In the case of handoffs, mnemonics may increase memory of important steps and provide a structured process to follow. Our experiences lead us to believe that many hospitals have responded to the Joint Commission handoff requirement by adding a mnemonic to their handoff protocol. The purpose of the current study was to identify all handoff mnemonics, describe their use, and summarize outcomes data from studies using these mnemonics.

METHODS

We conducted a thorough and systematic literature search of English-language articles published on handoffs using Ovid MEDLINE, CINAHL, and HealthSTAR (1987 to June 4, 2008), followed by

reference section review of all included articles. The search terms used were (hand-off$ OR handoff$ OR signout$ OR sign out$ OR sign-out$ OR handover$ OR hand-over$ OR signover$ OR sign-over$). A total of 2590 articles were identified. All titles were reviewed for possible inclusion, and 401 articles were obtained for further review. Trained reviewers deemed only 46 articles to meet the inclusion criteria of focusing on handoffs and including a handoff mnemonic. Two reviewers (LR and JL) independently abstracted data.

RESULTS

Forty-six articles that focused on health care handoffs yielded 24 handoff mnemonics, with SBAR (Situation, Background, Assessment, Recommendation) cited most frequently (Table 1). Thirty-eight articles (82.6%) were published between 2006 and 2008 (Figure 1).

Thirty-nine articles presented anecdotal data,[11,14,19-22,24,26-33,36,41,44,47,50-52,55-56] with 15 of these providing a patient vignette[18,23,33] or case study example[12,17,25,35,37-38,42,45-46,48-49,53] depicting the use of the mnemonic, and 1 of those providing a brief literature review.[12] There were 7 research studies of handoffs,[15,40,54] with only 4 of these actually studying a mnemonic[13,16,39,43] (Table 2).

DISCUSSION

We identified 46 articles describing handoff mnemonics. Thirty-two articles (69.6%) included SBAR (Situation, Background, Assessment, Recommendation). The majority (82.6%) of articles were published in recent years, which is not surprising given that the Joint Commission's National Patient Safety Goal on handoffs was first issued in 2006. What is surprising is the lack of high-quality outcomes studies.

Only 4 of 46 (8.7%) reviewed articles collected data on handoff mnemonics. These had relatively small sample sizes (10-100) and failed to use validated instruments or to conduct validation of the instruments used. One study used self-reported familiarity with 2 mnemonics.[13] Haig and colleagues[39] assessed knowledge of SBAR using a telephone survey of 10 nurses prior to their intervention. The authors reported achieving 96% use of SBAR post intervention but did not provide details on how this was measured.
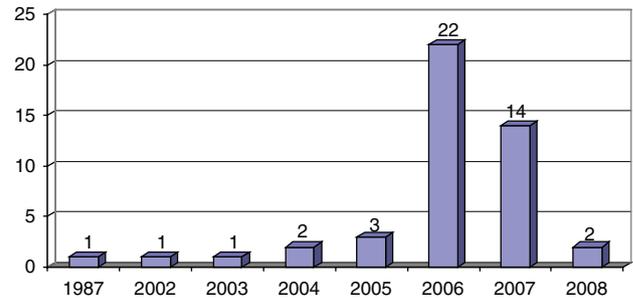
Figure 1.   Year of publication of 46 English-language articles focused on health care handoffs, including a handoff mnemonic, 1987 to June 2008.

Horwitz and colleagues[43] demonstrated a statistically significant increase ($P < .001$) in perceived comfort with providing sign-out after a 1-hour educational intervention with medical students and residents. Their intervention appears to be well designed, including a systematic development process. The educational intervention included discussion, modeling, and real-time practice, with feedback and evaluation for all learners. This was the only study reporting institutional review board (IRB) approval. However, the evaluation instrument appears to be modeled after the traditional course satisfaction form, with some items added about attitudes toward and comfort with sign-out. Although this is standard educational practice, it is not an ideal research practice, where use of a validated instrument or some attempt at validation is at least encouraged.

In the only study that examined practice behavior, there was a decrement in the accuracy of recall of handover information when a mnemonic (DeMIST) was used.[16] Accuracy of recall was higher (56.6%) without the mnemonic than with the mnemonic (49.2%). The authors are to be commended for the assessment of practice; however, this study has several shortcomings. The sample was quite small: 18 observed handovers without the mnemonic and 10 observed using DeMIST. The authors noted the small sample and explained that this sample size was used to obtain initial data without delaying patient care in busy emergency departments (EDs). The authors also acknowledged that they did not control for staff seniority or experience. The ambulance crews simply agreed to structure their handover using the mnemonic DeMIST. The authors did not report providing training or practice time using the new handover

Table 1

Handoff Mnemonics Identified in the English-Language
Literature, Including Type of Staff Reported Using the Mnemonic, 1987 to June 2008

Mnemonic	Disciplines or Departments		Description
AIDET[11]	Perioperative staff, including nurses, anesthesiologists, physicians, and surgical technologists	A	Acknowledge the patient
		I	Introduce yourself
		D	Duration of the procedure
		E	Explanation of process and what happens next
		T	Thank you for choosing our hospital (note: handoff done at bedside)
ANTICipate[12]	Physicians, residents	A	Administrative data
		N	New information (clinical update)
		T	Tasks (what needs to be done)
		I	Illness
		C	Contingency planning/code status
ASHICE[13]	Ambulance/emergency department	A	Age
		S	Sex
		H	History
		I	Injuries
		C	Condition
		E	Expected time of arrival
CUBAN[14,15]	Emergency department nurses, nurses, perioperative staff	C	Confidential
		U	Uninterrupted
		B	Brief
		A	Accurate
		N	Named personnel
DeMIST[16]	Ambulance/emergency department	De	Patient demographics
		M	Mechanism of injury
		I	Injuries sustained
		S	Symptoms and signs
		T	Treatments given
GRRRR[17]	Nurses, physicians	G	Greeting
		R	Respectful listening
		R	Review
		R	Recommend or request more information
		R	Reward
HANDOFFS[18]	Physicians, residents	H	Hospital location: wing, room number
		A	Allergies/adverse reactions/medications
		N	Name (age, gender)/number (medical record)
		D	Do not attempt resuscitation (DNAR)?/diet/deep-vein thrombosis (DVT) prophylaxis
		O	Ongoing medical/surgical problems
		F	Facts about this hospitalization
		F	Follow-up on . . .
		S	Scenarios
I PASS the BATON[19,20]	General nurses, perioperative nurses, physicians	I	Introduction: introduce yourself and your role
		P	Patient: name, identifiers, age, sex, location
		A	Assessment: presenting chief complaint, vital signs, symptoms, diagnosis
		S	Situation: current status and circumstances; including codes status, level of certainty, recent changes, and response to treatment
		S	Safety concerns: critical lab values and reports, socioeconomic factors, allergies, alerts (eg, falls, isolation)
		B	Background: comorbidities, previous episodes, current medications, family history
		A	Actions: which were taken or are required, providing brief rationale
		T	Timing: level of urgency, explicit timing, and prioritization of actions
		O	Ownership: who is responsible (eg, nurse, doctor, team), including patient or family responsibilities
		N	Next: what happens next (eg, any anticipated changes in condition or care, the plan, any contingency plans)

(continued)

Table 1 (continued)

Mnemonic	Disciplines or Departments		Description
Just Go NUTS[21,22]	Nurses, physicians, transporters, and other clinical staff	N	Name of patient, diagnosis, room number
		U	Unusual or unique; variances identified on the individual care plan including critical lab values, pain management, etc
		T	Tubes such as IV, NG, catheters, drains, ostomies
		S	Safety concerns such as falls, medication reconciliation
MIST[13,16]	Ambulance/emergency department	M	Mechanism of injury
		I	Injuries sustained or suspected
		S	Signs—vital signs
		T	Treatment initiated (and timing)
PACE[23]	Nurses	P	Patient/problem
		A	Assessment/actions
		C	Continuing/changes
		E	Evaluation
PEDIATRIC[24]	Residents	P	Problem list
		E	Expected tasks to be done
		D	Diagnostic one-liner
		I	If/then
		A	Administrative data/advanced directives
		T	Therapeutics
		R	Results and other important facts
		I	IV access/invasive devices
		C	Custody and current issues
SBAR[14,17,19–22,25–51]	Anesthesiologists, mid-level practitioners, nurse assistants, nurses, nursing students, OR staff, PACU staff, perioperative staff, pharmacists, physical therapists, physicians, transporters, radiologists	S	Situation
		B	Background
		A	Assessment
		R	Recommendation
I-SBAR[19,29]	Nurses, physicians, transporters	I	Introduction
		S	Situation
		B	Background
		A	Assessment
		R	Recommendation
SBARR[38]	Nurses, physicians	S	Situation
		B	Background
		A	Assessment
		R	Recommendation
		R	Response or read back
SBAR-T[36]	Nurses	S	Situation
		B	Background
		A	Assessment
		R	Recommendation
		T	Thank patients for opportunity to work with them (note: handoff done at bedside)
SHARED[34,52]	Emergency department, surgery, PACU, and other nurses; pharmacists, physical therapists, physicians, respiratory therapists, and other staff	S	Situation
		H	History
		A	Assessment
		R	Request
		E	Evaluate
		D	Document
SHARQ[20]	Perioperative nurses	S	Situation: describe the situation
		H	History: medical history, allergies, home medications
		A	Assessment: current medications, intake, output, status
		R	Recommendations: results, discharge planning
		Q	Questions: opportunity to ask questions

(continued)

Table 1 (continued)

Mnemonic	Disciplines or Departments		Description
SIGNOUT[43]	Internal medicine residents, medical students	S	Sick or DNR? (highlight sick or unstable patients, identify DNR/DNI patients)
		I	Identifying data (name, age, gender, diagnosis)
		G	General hospital course
		N	New events of the day
		O	Overall health status/clinical condition
		U	Upcoming possibilities with plan, rationale
		T	Tasks to complete overnight with plan, rationale
SOAP[53]	Ambulance/emergency department, neuroscience nurses	S	Subjective information about the patient's concerns, sensations, and/or behavior related to the problem
		O	Objective information related to the problem (eg, level of consciousness, activity tolerance, effect of medication received, postprocedure signs, laboratory values)
		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/with the patient
STICC[17,54]	Nurses, physicians, residents	S	Situation
		T	Task
		I	Intent
		C	Concern
		C	Calibrate
4 P's[55]		P	Purpose: Why is the patient here? What priorities does she 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?
5P's v.1[20,56]	General nurses, perioperative nurses	P	Patient identity
		P	Plan of care
		P	Purpose of plan: clinical findings supporting plan of care
		P	Problems: abnormal findings, pain scale, vital signs
		P	Precaution: isolation, falls, etc
5P's v.2[20]	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
		P	Purpose: goals to be achieved

IV, intravenous; NG, nasogastric; OR, operating unit; PACU, post-anesthesia care unit; DNR, do not resuscitate; DNI, do not intubate.

mnemonic. The article provides an example transcript using an unstructured handover and a handover structured using DeMIST. Although the structured handover is obviously an example of a superior handover, it is possible that the ambulance crew's handovers suffered when using an unfamiliar tool. Also, ED staff may have been familiar with the ambulance crews and their idiosyncratic communication styles. This may have contributed to the decrement in recall when hearing a different presentation format.

In a small study of intensive care unit handoffs, the authors noted that handoffs are complex, take many forms, and need to focus on what was uncertain.[57] These authors concluded that formulaic approaches to handoffs will not adequately deal with critical care uncertainty and complexity.[57] Others have warned against the use of standardized handoffs for physicians, stating that this will tend to "exacerbate the common problems of handoffs being 'data transfers' rather than meaningful discussions about the patient's status and treatment."[58(p93)]

Limitations

The current study is limited by the Ovid search strategy used. Specifically, the selected search terms may not have included all relevant terms. We

Table 2

Research Studies of Handoff Mnemonics Identified in the English-Language Literature, 1987 to June 2008

First Author, Year Published	Type of Research Study	Subjects	Mnemonic Studied	Results
Budd, 2007[13]	Cross-sectional mailed questionnaire	100 randomly selected emergency departments and all ambulance services (32) in England and Wales. Questionnaires returned from 34 (34%) emergency departments and 15 (50%) ambulance services.	MIST[*] and ASHICE[†]	One of 10 questions on the emergency department questionnaire referred to handoff mnemonics: 27.4% reported being familiar with MIST and 45.5% reported being familiar with ASHICE. One in 7 questions on the ambulance service questionnaire referred to handoff mnemonics: 15.4% reported being familiar with MIST and 86.7% reported being familiar with ASHICE.
Haig, 2006[39]	Intervention with pre-intervention phone survey. Methods for collecting postintervention data not described. Intervention described as following the Plan, Do, Study, Act (PDSA) cycle and resulting in the creation of an SBAR trigger tool.	Nursing staff in Bloomington, Illinois. Total number of subjects was not reported.	SBAR[‡]	60% of 10 nurses contacted in 2004 by phone (pre-interventions) correctly described the use of SBAR and provided an example of its use. Authors reported that use of SBAR reached a mean of 96% in fiscal year 2005, but did not describe how this was assessed.
Horwitz, 2007[43]	One-hour educational intervention with retrospective pretest and posttest self-reported attitudes at the end of the 1-h session.	Internal medicine interns and medical students in Connecticut. Session included facilitated discussion, modeling, and observed individuals practice with feedback. Did not take attendance at the educational session; collected 34 completed evaluations.	SBAR and SIGNOUT[§]	Perceived comfort with providing sign-out increased from 3.27 ± 1.0 to 3.94 ± 0.90, $P < .001$. Sign-out was ranked as important or very important to patient care by all participants (mean score 4.88 ± 0.33). The mnemonic SIGNOUT was rated as useful or very useful (mean score 4.46 ± 0.78) by all participants and received a slightly higher rating than SBAR (mean score 4.18 ± 0.83).
Talbot, 2007[16]	Cross-sectional observational study	Observed 18 unmodified handovers from ambulance staff to emergency department staff. Then 10 consecutive ambulance crews were asked to structure their handover using the DeMIST format. Observed these handovers. All subjects were in Birmingham and London, United Kingdom.	DeMIST[¶]	Accuracy of emergency department staff recall was higher without the mnemonic: 56.6% accuracy without DeMIST and 49.2% accuracy with DeMIST.

[*]MIST refers to Mechanism of injury, Injuries sustained or suspected, Signs—vital signs, Treatment initiated (and timing).
[†]ASHICE refers to Age, Sex, History, Injuries, Condition, Expected time of arrival.
[‡]SBAR refers to Situation, Background, Assessment, Recommendation.
[§]SIGNOUT refers to Sick or DNR? (highlight sick or unstable patients, identify DNR [do not resuscitate]/DNI [do not intubate] patients), Identifying data (name, age, gender, diagnosis), General hospital course, New events of the day, Overall health status/clinical condition, Upcoming possibilities with plan/rationale, Tasks to complete overnight with plan/rationale.
[¶]DeMIST refers to Patient demographics, Mechanism of injury, Injuries sustained, Symptoms and signs, Treatments given.

strengthened the possibility of identifying all articles meeting inclusion criteria by reviewing the reference sections of the 401 reviewed articles. Although this strategy minimizes the risk of missing germane studies, it does not eliminate the possibility.

Another issue is publication bias. Here we refer to the possibility that high-quality studies with negative results may not have been published. Others have noted that many quality improvement (QI) projects are not published.[59] In addition, we have observed that some QI projects are published in newsletters, with the authors never submitting to peer-reviewed journals. Thus, there may be outcomes studies of handoff mnemonics that are not in the peer-reviewed literature.

Recommendations

Small studies and anecdotal reports will not yield the essential answers. Numerous authors have noted the lack of published research on structured handoffs[12,40,48,53,56] and the need to demonstrate the value of mnemonics. In addition, there are risks involved in implementing interventions without evidence to support their effectiveness.[60] We agree with Winters and colleagues that "national efforts to improve patient safety should be supported by sufficiently strong evidence to warrant such a commitment of resources."[60(p1647)]

Evidence-based practice is informed by high-quality research. Recently, publication guidelines for patient safety and quality initiatives have established a framework for reporting excellence.[61,62] We recommend that future handoffs studies use the Standards for QUality Improvement Reporting Excellence (SQUIRE) guidelines.[62]

It may be unreasonable to expect patient safety and quality studies to follow the design rigors of randomized controlled trials.[60] However, the Rand/UCLA Appropriateness Method (RAM) provides a structured, rigorous method to synthesize data from other clinical study types with expert opinion to provide the best available guidelines.[63] Unfortunately, the literature on handoff mnemonics identified here is not of sufficient quality and quantity to synthesize into evidence-based recommendations.

Across the United States, hospitals are implementing structured handoff protocols, many including the use of mnemonics. We call for rigorous outcomes studies designed to (1) assess the effectiveness of handoff mnemonics, (2) determine the elements of handoffs that lead to improved patient outcomes, (3) determine the best mnemonics for different settings and different practitioners, and (4) identify the best implementation strategies. These studies should be reported using the SQUIRE guidelines. Outcome studies designed and reported using the aforementioned recommendations are needed to implement a safe, efficient, and effective standardized handoff process as required by the Joint Commission. Without such studies, countless hospitals across the United States are doomed to waste time, resources, and effort on flawed handoff practices.

REFERENCES

1. Beach C, Croskerry P, Shapiro M. Profiles in patient safety: emergency care transitions. *Acad Emerg Med.* 2003;10:364-367.
2. Gandhi TK. Fumbled handoffs: one dropped ball after another. *Ann Intern Med.* 2005;142:352-358.
3. Mukherjee S. A precarious exchange. *N Engl J Med.* 2004;351:1822-1824.
4. Sorokin R, Riggio JM, Hwang C. Attitudes about patient safety: a survey of physicians-in-training. *Am J Med Qual.* 2005;20:70-77.
5. The Joint Commission. FAQ's for the Joint Commission's 2007 national patient safety goals. |FCO|Hyperlinkhttp://www.jointcommission.org/NR/rdonlyres/A6839682-0A43-4053-86FB-923257674F09/0/07_NPSG_FAQs_2.pdf.|FCC| Accessed May 16, 2008.
6. Joint Commission sentinel event statistics: as of March 31, 2008. http://www.jointcommission.org/NR/rdonlyres/241CD6F3-6EF0-4E9C-90AD-7FEAE5EDCEA5/0/SE_Stats_03_08.pdf. Accessed June 10, 2008.
7. The Joint Commission. National patient safety goals, 2006, critical access hospital and hospital national patient safety goals. http://www.jointcommission.org/PatientSafety/NationalPatientSafetyGoals/06_npsg_cah.htm. Accessed May 16, 2008.
8. The Joint Commission. National patient safety goals, 2007, national patient safety goals hospital version manual chapter, including implementation expectations. http://www.qualitycarenurses.com/Forms/2007%20Joint%20Commission%20Nat'l%20Patient%20Safety%20Goals.pdf. Accessed June 10, 2008.
9. The Joint Commission. National patient safety goals, 2008, national patient safety goals hospital manual chapter. http://www.jointcommission.org/NR/rdonlyres/82B717D8-B16A-4442-AD00-CE3188C2F00A/0/08_HAP_NPSGs_Master.pdf. Accessed May 16, 2008.

10. DeFrances CJ, Hall MJ. 2005 national hospital discharge survey. *Advance Data*. 2007;385:1-19.

11. Mathias JM. "Passing the baton" for smooth handoffs. *OR Manager*. 2006;22:13.

12. Vidyarthi AR, Arora V, Schnipper JL, Wall SD, Wachter RM. Managing discontinuity in academic medical centers: strategies for a safe and effective resident sign-out. *J Hosp Med*. 2006;1:257-266.

13. Budd HR, Almond LM, Porter K. A survey of trauma alert criteria and handover practice in England and Wales. *Emerg Med J*. 2007;24:302-304.

14. What does JCAHO expect for handoffs? *OR Manager*. 2006;22:11.

15. Currie J. Improving the efficiency of patient handover. *Emerg Nurse*. 2002;10:24-27.

16. Talbot R, Bleetman A. Retention of information by emergency department staff at ambulance handover: do standardised approaches work? *Emerg Med J*. 2007;24:539-542.

17. Boynton B. Structured communication for hand offs: a shift toward collaboration with senders and receivers of critical information. *Nurse Leader*. 2007;5:18-520.

18. Brownstein A, Schleyer A. The art of HANDOFFS: a mnemonic for teaching the safe transfer of critical patient information. http://www.residentandstaff.com/issues/articles/2007-06_02.asp. Accessed June 13, 2008.

19. Improve handoffs with I PASS the BATON: technique offers more comprehensive communication between caregivers. *Brief Patient Saf*. 2006;7:9-10.

20. Sandlin D. Improving patient safety by implementing a standardized and consistent approach to hand-off communication. *J Perianesth Nurs*. 2007;22:289-292.

21. A nutty idea for patient handoffs. *Brief Patient Saf*. 2006;Nov:5-7.

22. Pass the baton or NUTS for safer handoff. *Healthc Risk Manage*. 2007;29:115-117.

23. Schroeder SJ. Picking up the PACE: a new template for shift report. *Nursing*. 2006;36:22-23.

24. Arora V, Johnson J. National patient safety goals: a model for building a standardized hand-off protocol. *Jt Comm J Qual Patient Saf*. 2006;32:646-655.

25. Ang R. SBAR: a communications framework and technique. *SCI Nurs*. 2006;23:3.

26. SBAR for students. *Nurs Edu Perspect*. 2007;28:306-307.

27. Frequently asked SBAR questions. *Brief Patient Saf*. 2006;7:1,4-5.

28. Improving handoff communications: meeting national patient safety goal 2E. *Joint Comm Perspect Patient Saf*. 2006;6:9-10,15.

29. Q&A: implementing the SBAR technique. *Joint Comm Perspect Patient Saf*. 2006;6:8,12.

30. SBAR checklist can cut risk at patient handoff. *Healthc Risk Manage*. 2006;28:102-104.

31. SBAR checklist outlines what to say at handoff. *Healthc Risk Manage*. 2006;28:104.

32. SBAR initiative to improve staff communication. *Healthcare Benchmarks Qual Improv*. 2005;12:40-41.

33. SBAR techniques help EDs comply with handoff regs. *ED Manag*. 2007;19(11 suppl):3-4.

34. Sharing information at transfers: proven technique to aid handoff communications. *Joint Comm Perspect Patient Saf*. 2005;5:9-10.

35. The SBAR technique: improves communication, enhances patient safety. *Joint Comm Perspect Patient Saf*. 2005;5:1-2,8.

36. Federwisch A. Passing the baton: bedside shift report ensures quality handoff. *NurseWeek California*. 2007;20:14.

37. Groah L. Tips for introducing SBAR in the OR. *OR Manager*. 2006;22:12.

38. Guise JM, Lowe NK. Do you speak SBAR? *J Obstet Gynecol Neonatal Nurs*. 2006;35:313-314.

39. Haig KM, Sutton S, Whittington J. SBAR: a shared mental model for improving communication between clinicians. *Jt Comm J Qual Patient Saf*. 2006;32:167-175.

40. Hamilton P, Gemeinhardt G, Mancuso P, Sahlin CL, Ivy L. SBAR and nurse-physician communication: pilot testing an educational intervention. *Nurs Adm Q*. 2006;30:295-299.

41. Hemmila D. Talking the talk: hospitals use SBAR to standardize communication. *Nurs Spectr (N Engl Ed)*. 2006;10:22-23.

42. Hohenhaus S, Powell S, Hohenhaus JT. Enhancing patient safety during the hands-off: standardized communication and teamwork using the "SBAR" method. *Am J Nurs*. 2006;106:72A-72C.

43. Horwitz LI, Moin T, Green ML. Development and implementation of an oral sign-out skills curriculum. *J Gen Intern Med*. 2007;22:1470-1474.

44. Knapp C. Bronson Methodist Hospital: journey to excellence in quality and safety. *Jt Comm J Qual Saf*. 2006;32:556-563.

45. Leonard M, Graham S, Bonacum D. The human factor: the critical importance of effective teamwork and communication in providing safe care. *Qual Saf Health Care*. 2004;13(supp 1):i85-i90.

46. Manning ML. Improving clinical communication through structured conversation. *Nurs Econ*. 2006;24:268-271.

47. Mikos K. Monitoring handoffs for standardization. *Nurs Manage*. 2007;38:16-20.

48. Pope BB, Rodzen L, Spross G. Raising the SBAR: how better communication improves patient outcomes. *Nursing*. 2008;3841-3843.

49. Powell SK. SBAR—it's not just another communication tool. *Prof Case Manag*. 2007;12:195-196.

50. Sibbald RG, Ayello EA. From the experts: SBAR for wound care communication: 20-second enablers for practice. *Adv Skin Wound Care*. 2007;20:135-136.

51. Sutker WL. The physician's role in patient safety: what's in it for me? *Baylor Univ Med Cent Proc*. 2008;21:9-14.

52. Mathias JM. A SHARED tool strengthens handoffs. *OR Manager*. 2006;22:15-16.

53. Kilpack V, Dobson-Brassard S. Intershift report: oral communication using the nursing process. *J Neurosci Nurs*. 1987;19:266-270.

54. Sutcliffe KM, Lewton E, Rosenthal MM. Communication failures: an insidious contributor to medical mishaps. *Acad Med*. 2004;79:186-194.

55. Hansten R. Streamline change-of-shift report. *Nurs Manage*. 2003;34:58-59.

56. Ellis D, Mullenhoff P, Ong F. Back to the bedside: patient safety and handoff report, 2007 NACNS national conference abstracts: February 28-March 3, 2007, Phoenix, Arizona. *Clin Nurse Spec*. 2007;21:109.

57. Kowalsky J, Nemeth C, Brandwijk M, et al. Understanding sign outs: conversation analysis reveals ICU handoff content and form [abstract]. *Crit Care Med*. 2005;32:A29.

58. Patient handoff must be more than a formality. *Healthc Risk Manage.* 2005;27:93-94.
59. Davidoff F, Batalden P. Toward stronger evidence on quality improvement: draft publication guidelines: the beginning of a consensus project. *Qual Saf Health Care.* 2005;14:319-325.
60. Winters BD, Pham J, Pronovost PJ. Rapid response teams—walk, don't run. *JAMA.* 2006;296:1645-1647.
61. Stevens DP. Why new guidelines for reporting improvement research? And why now? *Qual Saf Health Care.* 2005;14:314.
62. SQUIRE Guidelines. http://www.sgim.org/userfiles/file/AMHand outs/AM08/WD08%20Shojania.pdf. Accessed August 28, 2008.
63. Fitch K, Bernstein SJ, Aguilar MD, et al. *The RAND/UCLA Appropriateness Method User's Manual.* Santa Monica, Calif: RAND; 2001.