



Approved November 1, 2011
Revised February 23, 2015
Revised April 14, 2017

AST Guidelines for Best Practices for Transfer of Patient Care During Intraoperative Case Management by the Surgical Technologist

Introduction

The following Guidelines for Best Practices were researched and authored by the AST Education and Professional Standards Committee, and are AST approved.

AST developed the Guidelines to support healthcare delivery organization's (HDO) reinforce best practices in transferring patient care during the intraoperative phase of the surgical procedure as related to the role and duties of the Certified Surgical Technologist (CST®), the credential conferred by the National Board of Surgical Technology and Surgical Assisting. The purpose of the Guidelines is to provide information that OR supervisors, risk management, and surgical team members can use in the development and implementation of policies and procedures for the transfer of patient care during intraoperative case management in the surgery department. The Guidelines are presented with the understanding that it is the responsibility of the HDO to develop, approve, and establish policies and procedures for the surgery department regarding transfer of patient care during intraoperative case management per HDO protocols.

Rationale

The following Guidelines address the intraoperative transfer of patient care by CSTs. The goal is to provide an accurate and consistent transfer of patient care when a CST is being relieved by another CST, and the document provides recommendations to facilitate the transfer of the patient information. There are specific actions, such as counts, that must be completed by the two CSTs to expedite the transfer of patient care in an efficient manner that maintains the safety of the patient and surgical team. The development of standardized processes for transferring patient information and care prevents communication failures, improves the accuracy and efficiency of the communication, and improve patient outcomes and satisfaction.¹⁻⁶

Evidence-based Research and Key Terms

The research of articles, letters, nonrandomized trials and randomized prospective studies is conducted using the Cochrane Database of Systematic Reviews and MEDLINE®, the U.S. National Library of Medicine® database of indexed citations and abstracts to medical and healthcare journal articles.

The key terms used for the research of the Guidelines include: communication barriers; communication feedback loop; communication process; effective communication; handoff strategies; standardized documents; transfer of patient information. Key terms used in the Guidelines are italicized and included in the glossary.

Guideline I

Effective communication processes for transferring patient information and care should include direct, verbal communication and use of standardized documents.

1. Effective verbal communication relies on the *communication feedback loop* (see Figure 1) and the steps of the *communication process* to ensure successful transfer of patient care. The seven elements of the communication process are sender, idea(s), encoding, communication channel, receiver, decoding, and feedback.⁷ The communication process provides the ability for the effective exchange of information between the initial CST (sender) and relief CST (receiver), and for the relief CST to ask questions to clarify information.^{7,8} Thus, the communication process is a continuous, dynamic interaction that can be affected by variables present in the OR.⁷
 - A. Several *communication barriers* can occur in the OR that interfere with the effective process of transfer of patient care. The CST must be aware of these barriers of which noise and instances during a surgical procedure where the activity is at its highest, e.g., closing counts, key points during a surgical procedure, can distract both the initial and relief CSTs. This is later discussed in detail regarding the specific steps the CSTs should complete when transferring the care of the patient.

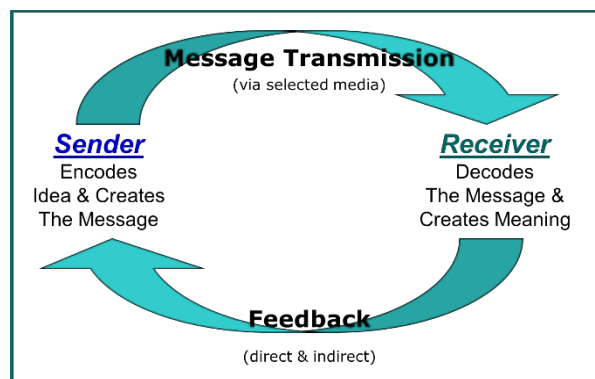


Figure 1: Communication Feedback Loop

2. The verbal exchange also involves non-verbal communication that can be just as important and provides clues to the sender if the receiver is understanding the information. Non-verbal communication includes body language, eye contact, and facial expressions.^{9,10} An observational study of the *transfer of patient information* revealed that face-to-face verbal exchange of information improved the effectiveness of communication.⁸ However, since CSTs are wearing hair cover and masks, the importance of verbally verifying the information and asking questions can't be over-emphasized.

3. The surgery department should develop and implement the use of standardized documentation formats, such as checklists, for consistent use in *handoff strategies*. Standardized documentation ensures the surgical team is using the same documents that promote the efficient, safe, smooth transfer of patient care that lends itself to continuity and reduction in communication failures.²
 - A. In a comprehensive study, 14,179 medical records from 28 Australian hospitals were reviewed. The study revealed that 16.6% (2,353) patients experiences an adverse event during their stay in the hospital.¹¹ The study concluded that one important preventative measure to prevent adverse events is the implementation and use of *standardized documents*.¹¹

Guideline II

The *transfer of patient information and care should be based upon a standardized process that promotes effective continuity of patient care.*

1. The initial and relief CST and circulator should use a standardized document for recording the process for the intraoperative transfer of care. It is recommended that a standardized checklist be developed and used for every instance in which an initial CST is being relieved during a surgical procedure.
 - A. Postoperatively, the initial and relief CST and circulator should date and sign the document, and it is maintained in the surgery department according to departmental policies and procedures (P&P).
 - B. The standardized checklist contributes to being able to track the intraoperative transfer of patient care by CSTs.
2. The intraoperative transfer of care involves the initial CST and the relief CST.
 - A. The intraoperative transfer of care should be performed as efficiently and quietly as possible to avoid interrupting or interfering with the performance of the surgical procedure.¹² The initial CST should maintain vigilance of the sterile field while performing the transfer of care to continue to meet the needs of the surgeon and patient.
 - 1) The two CSTs should be aware of when it is best to perform the transfer of patient care. Transfer of care should not occur during busy periods of surgical procedures, such as unexpected patient hemorrhaging; routine dissection of an organ (e.g., rapid clamp, clamp, cut, tie during an abdominal hysterectomy); closing counts; handling of a tissue specimen. Attempting to transfer patient care can be distracting during periods of the surgical procedure that demand the full attention of the initial CST leading to providing misinformation that could compromise patient care.^{13,14,15}
 - 2) Other barriers to effective communication to be addressed that could interfere with transfer of patient care include noise (music in the OR; external conversations; power equipment), and unnecessary interruptions of the two CSTs. Obviously, noise can make it difficult for the two CSTs to understand what is being communicated (interferes with the transmission and decoding of a message from the sender to the receiver).

In an analysis of observational data for evidence of use in 21 handoff strategies at three non-healthcare facilities and one ambulance dispatch center, limiting interruptions during handoff to prevent the possibility that information would fail to be communicated or forgotten was a primary strategy.⁸

B. The following are recommended items to include in the *CST Checklist: Intraoperative Transfer of Patient Information and Care* and what should be minimally completed by the initial and relief CSTs during the handoff. However, it is not all-inclusive and surgery departments may need to modify the list to reflect their case load. The circulator should assist the CSTs by verbally communicating to them the next item to be completed and mark his/her initials next to each item as it is completed. The initial CST and relief CST should complete the following:

- 1) confirm the correct patient, patient position including positioning devices, and surgical procedure including any incidental occurrences or variations that may affect the usual progression of the procedure;
- 2) confirm anesthesia, e.g., monitored anesthesia care (MAC) so the relief CST knows the patient is awake;
- 3) confirm patient allergies;
- 4) confirm name/type of tissue specimen, region/side of body it was obtained, and location of specimen(s) that are still on the sterile field or off the sterile field; communicate if waiting on results of frozen section from pathology;¹⁶
- 5) confirm if intraoperative x-rays have been taken and if waiting on results, e.g., cholangiography;
- 6) confirm specific patient precautions, e.g., patient has a bloodborne pathogen; pacemaker; total joint implants; sepsis is present (ruptured appendix) or, other disease processes such as osteoarthritis.
- 7) confirm if advanced directives are documented in the patient's medical record;
- 8) confirm amount of irrigation fluid that has been administered during the surgical procedure, e.g., use of Asepto® irrigating syringe or bulb syringe;
- 9) confirm if an indwelling catheter is present;¹⁷
- 10) confirm if thermal devices are being used, e.g., warming blanket;
- 11) confirm if DVT devices are being used, e.g., intermittent pneumatic compression device;
- 12) brief overview of location of surgical instrumentation, equipment, supplies, and implants including if there are two Mayo stand set-ups for bowel technique;
- 13) sponge, sharp, and instrument counts;
 - a) When performing the counts the initial CST should bring the following to the attention of the relief CST: instruments and sharps that are off the sterile field; location of sharps

and sharps container on the back table; number and type of sponges inside a body cavity; number and type of clamps inside a body cavity or attached to ties; location of frequently used instruments.^{18,19}

- 14) confirm the location, type(s), and size(s) of ties;
- 15) if used, confirm the types of stapling devices that are on the sterile field, number of times each stapler has been fired, location and number of used stapling cartridges;
- 16) confirm the medication(s) and solution(s), including irrigating solution, that is/are on the sterile field. The exchange of information should include stating the strengths of the medications and solutions; amount that has been used; verifying the location of the medical labels on the containers and the correct information has been written or printed on the labels; and the size of hypodermic needles.²⁰
- 17) When the handoff/checklist is completed, prior to removing gown and gloves (breaking scrub) and leaving the OR, the initial CST should verbally communicate to the surgical team that the first scrub duties are now being performed by the relief CST and the counts are correct. Additionally, prior to leaving the room the initial CST should sign and date the completed checklist. At the end of the procedure the relief CST should also sign and date the checklist.

Guideline III

The surgery department should review the policies and procedures (P&P) regarding the transfer of patient information and care on an annual basis.

1. A surgery department team that includes allied health personnel (e.g., CSTs, Certified Clinical Perfusionists (CCP), Registered Technologist (RT-ARRT), Certified Pharmacy Technicians (CPhT), laboratory and blood bank technicians); surgeons; anesthesia providers; RNs; Registered Pharmacists; and risk management, should be formed and assigned the responsibility of developing policies and procedures (P&P) that establish standardized patient hand-off protocols, as well as develop the standardized documents.
 - A. A team representing various health professions ensures that all aspects of the care of the patient will be addressed through standardized methods for the safe transfer of patient information. The team members developing protocols will change per the perioperative phase being addressed, e.g., the CST and CCP may not be as involved in the postoperative phase as compared to the anesthesiologist and perianesthesia RN.

- B. Once the *CST Checklist: Intraoperative Transfer of Patient Information and Care* has been used for a defined evaluation period, the team should solicit formal and informal feedback from the CSTs to evaluate its ease of use, effectiveness, and identifying areas for improvement.²¹ The evaluation should be ongoing and periodically conducted.
- 1) Evaluation tools for measuring the effectiveness of the checklist can include surveys completed anonymously by CSTs, informal verbal feedback, and focus group discussions.²²
 - 2) Analyzing the results of the evaluations can prove to be helpful in identifying what is working and what is not working.²³ Improving the intraoperative transfer of patient information and care may result from the information gathered from the evaluations completed by CSTs.²⁴ The results of the evaluations should be shared with the CSTs to prompt additional suggestions and comments for improvement.¹
 - 3) Equally important, the HDO and surgery department administration should support the implementation of the processes for the intraoperative transfer of patient information and care. Support of administration creates a culture of patient safety and teamwork that will then be supported by all clinicians.²⁵⁻²⁷
- A 13-month prospective study of participants from the division of General Surgery at a Canadian academic hospital reported that OR administrators supported the use of checklists that improved communication and teamwork.²⁸
- C. The surgery department should document when the P&Ps were reviewed, revision completed (if necessary), and who participated in the review process.
- D. CSTs should be familiar with the P&Ps for transfer of patient information and care, particularly the use of the intraoperative *CST Checklist: Intraoperative Transfer of Patient Information and Care*. The orientation of new employees should include reviewing the P&Ps.

Guideline IV

CSTs should complete continuing education to remain current in their knowledge of the transfer of patient information and care.²⁹

1. The continuing education should be based upon the concepts of adult learning, referred to as andragogy. Adults learn best when the information is relevant to their work experience; the information is practical, rather than academic; and the learner is actively involved in the learning process.³⁰
2. It is recommended surgery departments use various methods of instruction to facilitate the learning process.
 - A. Studies have shown that effective communication skills are essential to the provision of consistent patient care that produces positive patient outcomes.³¹ Competency assessment validates the CSTs communication skills in the processes for the transfer of patient information and care.

- B. If the education is primarily lecture, methods to engage learners include presentation of case studies for discussion, and audience discussion providing suggestions for reinforcing the transfer of patient information and care.
 - C. Other proven educational methods include interactive training videos, and computerized training modules and teleconferences. Simulated/mock training sessions in the OR are an effective method for practicing communication during the intraoperative transfer of patient care.²⁵ Reports on the use of simulated training in the OR have shown that it improves the communication and teamwork skills of the surgical team.³²⁻³⁴
 - D. The continuing education should be delivered over short periods of time such as modules, and not in a one-time lengthy educational session.
3. Continuing education programs should be periodically evaluated for effectiveness including receiving feedback from surgery department personnel.
 4. The surgery department should maintain the education records for a minimum of three years that include dates of continuing education; names and job titles of employees that completed the continuing education; synopsis of each continuing education session provided; names, credentials, and experience of instructors.

Competency Statements

Competency Statements	Measurable Criteria
<p>1. CSTs are knowledgeable of the processes and techniques for the intraoperative transfer of patient information and care.</p> <p>2. CSTs implement the techniques for intraoperative transfer of patient information and care in a manner that ensures the safety of the patient and surgical team.</p>	<p>1. Educational standards as established by the <i>Core Curriculum for Surgical Technology</i>. (CCST)</p> <p>2. The didactic subject of intraoperative transfer of patient information and care is included in a CAAHEP accredited surgical technology program.</p> <p>3. Students demonstrate knowledge of the processes of intraoperative transfer of patient information and care in the lab/mock OR and during clinical rotation.</p> <p>4. As practitioners, CSTs apply the processes of intraoperative transfer of patient information and care.</p> <p>5. CSTs complete continuing education to remain current in their knowledge of the procedures for the intraoperative transfer of patient information and care, as well as complete annual review of the policies and procedures of the surgery department.²⁹</p>

CST® is a registered trademark of the National Board of Surgical Technology & Surgical Assisting (NBSTSA).

Glossary

Communication barriers: Specific items or events, such as noise, that can prevent or disrupt the meaningful exchange of information.

Communication feedback loop: The route that communication occurs that involves a sender and a receiver.

Communication process: The process that provides the ability for the effective exchange of information between two people, or group of people; it consists of seven elements: sender, idea(s), encoding, communication channel, receiver, decoding, feedback.

Effective communication: A two-way information sharing process that involves the sender providing a message and the receiver understands the message.

Handoff strategies: The methods for transferring patient information and care from one healthcare provider to another.

Standardized documents: Documents that have consistent, uniform language that is agreed upon by all the parties that use the documents.

Transfer of patient information: The strategy for healthcare providers to utilize when care for a patient is assigned from one healthcare provider to another.

References

1. Arora V, Johnson J. A model for building a standardized hand-off protocol. *The Joint Commission Journal on Quality and Patient Safety*. 2006; 31(11): 646-655.
2. Greenburg CC, Regenbogen SE, Studdert DM, Lipsitz SR, Rogers SO, Zinner MJ, Gawande AA. Patterns of communication breakdowns resulting in injury to surgical patients. *Journal of the American College of Surgeons*. 2007; 204(4): 533-540.
3. Shamji H, Baier RR, Gravenstein S, Gardner RL. Improving the quality of care and communication during patient transitions: best practices for urgent care centers. *The Joint Commission Journal on Quality and Patient Safety*. 2014; 40(7): 319-324.
4. Coleman EA, Parry C, Chalmers S, Min SJ. The care transitions intervention: results of a randomized controlled trial. *Archives of Internal Medicine*. 2006; 166(17): 1822-1828.
5. Jack BW, Chetty VK, Anthony D, Greenwald JL, Sanchez GM, Johnson AE, Forsythe SR, O'Donnell JK, Paasche-Orlow MK, Manasseh C, Martin S, Culpepper L. A reengineered hospital discharge program to decrease rehospitalization: a randomized trial. *Annals of Internal Medicine*. 2009; 150(3): 178-187.
6. Naylor MD, Brooten DA, Campbell RL, Maislin G, McCauley KM, Schwartz JS. Transitional care of older adults hospitalized with heart failure: a randomized, controlled trial. *Journal of the American Geriatrics Society*. 2004; 52(5): 675-684.
7. Chand S. 7 major elements of communication process. 2016. <http://www.yourarticlelibrary.com/business-communication/7-major-elements-of-communication-process/25815>. Accessed December 1, 2016.
8. Patterson ES, Roth EM, Woods DD, Chow R, Gomes JO. Handoff strategies in settings with high consequences for failure: lessons for health care operations. *International Journal for Quality in Health Care*. 2004; 16(2): 125-132.
9. Solet DJ, Norvell JM, Rutan GH, Frankel RM. Lost in translation: challenges and opportunities in physician-to-physician communication during patient handoffs. *Academic Medicine*. 2005; 80(12): 1094-1099.
10. Montague E, Chen P, Xu J, Chewing B, Barrett B. Nonverbal interpersonal interactions in clinical encounters and patient perceptions of empathy. *Journal of Participatory Medicine*. 2013; 5: e33.

11. Wilson RM, Runciman WB, Gibberd RW, Harrison BT, Newby L, Hamilton JD. The Quality in Australian Health Care Study. *Medical Journal of Australia*. 1995; 163(9): 458-471.
12. Frey K. (ed.). *Surgical technology for the surgical technologist: a positive care approach*. 5th ed. Clifton Park, NY: Delmar Cengage Learning; 2017.
13. Christian CK, Gustafson ML, Roth EM, Sheridan TB, Gandhi TK, Dwyer K, Zinner MJ, Dierks MM. A prospective study of patient safety in the operating room. *Surgery*. 2006; 139(2): 159-173.
14. Roth EM, Christian CK, Gustafson M, Sheridan TB, Dwyer K, Gandhi TK, Zinner MJ, Dierks MM. Using field observations as a tool for discovery: analysing cognitive and collaborative demands in the operating room. *Cognition, Technology & Work*. 2004; 6(3): 148-157.
15. Committee on Patient Safety and Quality Improvement. Communication strategies for patient handoffs. Committee opinion No. 517. February 2012. <http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Patient-Safety-and-Quality-Improvement/Communication-Strategies-for-Patient-Handoffs>. Accessed December 1, 2016.
16. Association of Surgical Technologists. Guidelines for best practices in handling and care of surgical specimens. 2008. http://www.ast.org/uploadedFiles/Main_Site/Content/About_Us/Standard_Handling_Care_Surgical_Specimens.pdf. Accessed December 1, 2016.
17. Association of Surgical Technologists. Guidelines for best practices in urinary catheterization. 2008. Revised April 2017. http://www.ast.org/uploadedFiles/Main_Site/Content/About_Us/Standard_Urinary_Catheterization.pdf. Accessed December 1, 2016.
18. Association of Surgical Technologists. Guideline for best practices in counts. 2006. http://www.ast.org/uploadedFiles/Main_Site/Content/About_Us/Standard%20Counts.pdf. Accessed December 1, 2016.
19. Association of Surgical Technologists. Guideline for best practices in sharps safety and use of the neutral zone. 2006. Revised April 2017. http://www.ast.org/uploadedFiles/Main_Site/Content/About_Us/Standard_Sharps_Safety_Use_of_the_Neutral_Zone.pdf Accessed December 1, 2016.
20. Association of Surgical Technologists. Guidelines for safe medication practices in the perioperative area. 2005. Revised April 2017. http://www.ast.org/uploadedFiles/Main_Site/Content/About_Us/Guideline_Safe_Medication.pdf. Accessed December 1, 2016.
21. Joint Commission Resources. Sharing information at transfers: proven technique to aid handoff communications. *Joint Commission Perspectives on Patient Safety*. 2005; 5(12): 9-10.
22. HCPro. Measure understanding during handoffs: a naval hospital uses an evaluation tool to determine whether information is understood. 2006. <http://www.hcpro.com/content/63171.pdf>. Accessed December 1, 2016.
23. SBAR initiative to improve staff communication. *Healthcare Benchmarks and Quality Improvement*. 2005; 12(4): 40-41.

24. Wayne JD, Tyagi R, Reinhardt G, Rooney D, Makoul G, Chopra S, Darosa DA. Simple standardized patient handoff system that increases accuracy and completeness. *Journal of Surgical Education*. 2008; 65(6): 476-485.
25. Leonard M, Graham S, Bonacum D. The human factor: the critical importance of effective teamwork and communication in providing safe care. *Quality & Safety in Health Care*. 2004; 13(Suppl1): i85-90.
26. Pronovost PJ, Goeschel CA, Marsteller JA, Sexton JB, Pham JC, Berenholtz SM. Framework for patient safety research and improvement. *Circulation*. 2009; 119(2): 330-337.
27. Pronovost PJ, Rosenstein BJ, Paine L, Miller MR, Haller K, Davis R, Demski R, Garrett MR. Paying the piper: investing in infrastructure for patient safety. *The Joint Commission Journal on Quality and Patient Safety*. 2008; 34(6): 342-348.
28. Lingard L, Regehr G, Orser B, Reznick R, Baker GR, Doran D, Espin S, Bohnen J, Whyte S. Evaluation of a preoperative checklist and team briefing among surgeons, nurses, and anesthesiologists to reduce failure in communication. *Archives of Surgery*. 2008; 143(1): 12-17.
29. Association of Surgical Technologists. AST continuing education policies for the CST and CSFA. 2005. Revised July 2016. <http://www.ast.org/webdocuments/CEpolicies/>. Accessed December 1, 2016.
30. Pappas C. The adult learning theory-andragogy-of Malcolm Knowles. May 2013. <https://elearningindustry.com/the-adult-learning-theory-andragogy-of-malcolm-knowles>. Accessed November 26, 2016.
31. Mazzocco K, Petitti DB, Fong KT, Bonacum D, Brookey J, Graham S, Lasky RE, Sexton JB, Thomas EJ. Surgical team behaviors and patient outcomes. *American Journal of Surgery*. 2009; 197(5): 678-685.
32. Gettman MT, Pereira CW, Lipsky K, Wilson T, Arnold JJ, Leibovich BC, Karnes RJ, Dong Y. Use of high fidelity operating room simulation to assess and teach communication, teamwork and laparoscopic skills: initial experience. *Journal of Urology*. 2009; 181(3): 1289-1296.
33. Paige JT, Kozmenko V, Yang T, Paraqu GR, Hilton CW, Cohn I Jr, Chauvin SW. High-fidelity, simulation-based, interdisciplinary operating room team training at the point of care. *Surgery*. 2009; 145(2): 138-146.
34. Powers KA, Rehrig ST, Irias N, Albano HA, Malinow A, Jones SB, Moorman DW, Pawlowski JB, Jones DB. Simulated laparoscopic operating room crisis: an approach to enhance the surgical team performance. *Surgical Endoscopy*. 2008; 22(4): 885-900.
35. Association of Surgical Technologists. Core curriculum for surgical technology. 2011. http://www.ast.org/uploadedFiles/Main_Site/Content/Educators/Core%20Curriculum%20v2.pdf. Accessed December 1, 2016.