Recommended Standards of Practice for Sharps Safety and Use of the Neutral Zone

Introduction

The following Recommended Standards of Practice were researched and written by the AST Education and Professional Standards Committee and have been approved by the AST Board of Directors. They are effective October 27, 2006.

AST developed the following Recommended Standards of Practice to provide support to health care facilities in the reinforcement of sharps safety and use of the neutral zone in the perioperative setting. The purpose of the Recommended Standards is to provide an outline that Certified Surgical Technologists (CSTs) and Certified First Assistants (CFAs) in the perioperative setting can use to develop and implement policies and procedures for sharps safety and use of the neutral zone during surgical procedures. The Recommended Standards are presented with the understanding that it is the responsibility of the health care facility to develop, approve and establish policies and procedures for sharps safety and use of the neutral zone according to established hospital protocols. Additionally there are several organizations that establish policies and procedures that health care facilities must be familiar and the AST Recommended Standards are based upon these protocols; they include

- The Joint Commission
- Centers for Disease Control and Prevention (CDC)
- Occupational Safety and Health Administration (OSHA)
- National Institute for Occupational Safety and Health (NIOSH)
- International Sharps Injury Prevention Society (ISIPS)

Rationale

The following are recommended practices related to sharps safety and use of the neutral zone in the operating room and recognizing the possible hazards in order to prevent injuries to the patient and surgical team members. The recommended practices aid in ensuring safe handling of all sharps in the operating room including implementing hands free techniques. The following results are from various recent studies to put sharps injuries in perspective for the surgical team members: [4, 10]

- Cuts or needle sticks may occur up in as many as 15% of surgical operations.
- Surgeons and surgical assistants are at the highest risk for injury, suffering up to 59% of injuries in the O.R.
- Individuals performing in the role of the first scrub sustain the second highest number of injuries at 19% in the O.R.
- Suture needles are involved in 77% of the injuries making them the most frequent source of injury.

- Up to 16% of injuries occur while passing sharp instruments on a hand-to-hand basis.
- The body part most commonly injured is the non-dominant hand.
- One-third of devices that cause injuries to health care workers (HCWs) come into contact with the patient after the injury, increasing the risk of disease transmission to the patient.
- Double gloving reduces the risk of exposure to patient blood by as much as 87% when the outer glove is punctured.[4]
- The volume of blood on a contaminated solid suture needle is reduced by as much as 95% if it passed through both gloves.[4]

These injury patterns and information concerning double gloving confirm the importance of preventing sharps injuries in the O.R. to protect the surgical team members and patient.

Standard of Practice I

A neutral zone should be utilized during all surgical procedures to prevent two individuals from simultaneously handling a contaminated sharp, including, but not limited to scalpel blades, suture needles, hypodermic needles, and sharp surgical instruments.

1. Utilization of the neutral zone will decrease accidents to patients.
2. Utilization of the neutral zone will decrease accidents to perioperative personnel.
3. Before the first incision is made, the surgeon and the CST should agree on a location on the sterile field where all sharps are placed in which the surgeon and surgical technologist can obtain the sharp and avoid hand-to-hand transfer of the sharps. [4]
4. It is recommended that the sharps be placed in the neutral zone, using an emesis basin, instrument mat or magnetic pad.
5. It is recommended that each time a sharp is placed in the neutral zone the CST, surgeon or CFA indicates this action verbally and completely withdraws his/her hand from the zone until the sharp is retrieved [3, 9]
    A. The person should announce the sharp by name when placing it in the neutral zone or indicate in some other manner such as “sharp” or “safety zone”.
6. Only one sharp should occupy the neutral zone at any time.[5]
7. The CST should orient the sharp in a manner in which the surgeon may pick it up without needing to turn or reposition, and positioned so when the surgeon picks it up their hand is behind the sharp end or point.
8. To accommodate the needs of the surgeon during the surgical procedure, the surgeon and CST should openly communicate in determining if the agreed upon space for the neutral zone should be moved due to the changing parameters of a surgical procedure. [5]

Standard of Practice II

If the procedure necessitates reuse of a hypodermic needle multiple times on the same patient, recap the hypodermic needle between uses, utilizing a one-handed approach or a safety device that enables one-handed recapping.

1. Utilization of one-handed recapping will decrease accidents to patients.
2. Utilization of one-handed recapping will decrease accidents to operating room personnel.
3. It is recommended that the CST use the "scoop" method (lay the needle cap toward the back of the Mayo stand and slide the needle within the cap).[7]
    A. The concept of not recapping needles has been driven by patient care situations that exist outside the O.R., ie nursing care units and clinics, when a needle is not used more than once. However, in the O.R. when a syringe with hypodermic needle has the potential for multiple uses on the same patient leaving the needle uncapped presents a greater threat of possible needlestick and therefore is dangerous to leave unprotected on the Mayo stand. AST recommends that the CST perform one-handed recapping of the hypodermic needle on a routine basis in the O.R.

Standard of Practice III

A sterile sharps container should be used on every case to store used sharps.

1. Utilization of the sharps container will decrease accidents to patients.
2. Utilization of the sharps container will decrease accidents to surgical team members.
3. It is recommended that the sterile sharps container can be closable, puncture-resistant, and leak-proof.
4. It is recommended the health-care facility annually review the type of sterile sharps container that is being used to determine its effectiveness.

Standard of Practice IV

When organizing the sharps in the work area, eg Mayo stand, back table, the sharps should be pointed away from the handler and receiving personnel.

1. Keeping sharps pointed away from the handler and receiving personnel will decrease the chances of an injury.

Standard of Practice V

Visually inspect the field and all waste material for the presence of sharps before disposal.

1. Confirming that sharps are not present will ensure that no injuries occur to HCWs or patients.

Standard of Practice VI

Utilize mechanical safety devices to remove or attach blades, needles or other sharps.

1. Utilization of mechanical devices will decrease the possibility of sharps accidents sustained by the surgical team members.[3]
    A. Mechanical devices or instruments, rather than the fingers, should be used to grasp hypodermic needles to load onto and take off of syringes, load and unload suture needles, and load and unload scalpel blades onto the knife handle.

Standard of Practice VII

The routine use of double gloving by all surgical sterile team members is recommended for all surgical procedures.

1. Double gloving is recommended for all surgical procedures, including endoscopic procedures in which trocars will be used.
2. Double gloving reduces the risks for the patient and surgical team members associated with exposure to bloodborne pathogens.

Standard of Practice VIII

A nonsterile sharps container must be used for the disposal of all needles and other sharps to decrease the risk of injury to HCWs and patients.

1. The decision on the type/style of non-sterile sharps container to be used should be based on four criteria: functionality, accessibility, visibility, and accommodation.[7]
    A. OSHA requires nonsterile sharps disposable containers to be closable, puncture-resistant, leak-proof on all sides and bottom, accessible, ability to be maintained in an upright position, and be labeled with the biohazard symbol.
2. The opening of the nonsterile sharps container should be large enough to accommodate the intended sharps devices and unobstructed.
3. The nonsterile sharps container should not be overfilled.
    A. It is recommended that the container be replaced and properly disposed when three-fourths full.
4. Surgical team members must never reach into a nonsterile sharps container with fingers or instruments. Once disposed, sharps must not be retrieved from the container.[5]
5. It is recommended that a person or persons be designated and responsible for changing and replacing full containers as a matter of consistency.

Standard of Practice IX

Reusable sharps should be transported to the central sterile processing department in a puncture-resistant closed container.

1. Keeping reusable sharps separate from other instruments will decrease the possibility of sharps accidents.
2. The non-perforating closed container should not be overfilled beyond manufacturer's recommendations.

3. The container should be marked or labeled as containing reusable sharps.

Standard of Practice X

Policies and procedures for the safe handling of sharps and use of hands-free techniques should be periodically reviewed and when necessary, revised to reflect current safe practices. Perioperative personnel should complete continuing education to remain current in their knowledge of safe practices in the O.R.

1. Health care facility annual employee education and training on bloodborne pathogens and sharps safety is essential to the success of a sharps injury prevention program [3]
2. The health care facility should assess and study the effectiveness of the sharps injury prevention program on an annual basis to identify areas where additional continuing education and training may be necessary.[11]
    A. Sharps injury data from studies is important to consider, however it is more important for health care facilities to gather their own data concerning sharps injuries and near-misses that occur, in particular in the perioperative setting. It is recommended this in-house data be used to evaluate the effectiveness of the sharps injury prevention program, compliance with the health care facility policies by the HCWs, types of sharps injuries that are occurring in order to evaluate the selection of sharps safety devices, and promote sharps safety, including double gloving to gain wider acceptance of the practices. [9, 11]
3. It is recommended, at the minimum, to comply with OSHA standards that the health care facility document the following: [9]
    A. Written exposure control plan (ECP)
    B. Review and revisions of the ECP on an annual basis
    C. Evaluation and implementation of the use of sharps safety devices
    D. Review of sharps safety devices on an annual basis and assessment of use of new devices
    E. Sharps injury log that includes near-misses
    F. Annual continuing education of HCWs

Competency Statements

Competency Statements	Measurable Criteria
1. The CST and CFA are knowledgeable of the standards for sharps safety and use of hands-free techniques in the handling of sharps in the perioperative setting.	1. Educational standards as established by the *Core Curriculum for Surgical Technology* and *Core Curriculum for Surgical Assisting*.[1, 2]
2. The CST and CFA are qualified to	2. The subject of sharps safety and proper

practice patient care concepts as related to sharps safety and use of hands-free techniques in the handling of sharps to contribute to the overall safety of the patient and health care personnel. 3. As individuals who are directly involved in the care of surgical patients, the CST and CFA are competent and knowledgeable individuals that can be relied upon to participate in evaluating a health care facilities policies and procedures for sharps safety, evaluating sharps safety products, and contributing to the efforts of implementing the sharps safety protocols.	handling of sharps preoperative, intraoperative, and postoperative, is included in the didactic studies as a surgical technology and surgical assistant student. 3. Students demonstrate the knowledge of sharps safety, use of hands-free techniques, and handling of sharps in the lab/mock O.R. setting and during clinical rotation. 4. As practitioners, CSTs and CFAs perform techniques, related to sharps safety and implement the safety policies for the proper handling of sharps. 5. CSTs and CFAs complete continuing education to remain current in their knowledge of sharps safety, revisions by the various organizations, such as OSHA and CDC in sharps protocols, including following the policies of the health care facility.

References

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9. Sharps injuries in the operating room – a new focus for OSHA. *Healthcare Hazard Management Monitor*, 18 (2); 1-5.
10. Stringer B, Infante-Rivard C, Hanley J. The effectiveness of the hands-free technique in reducing operating room injuries. *Occupational & Environmental Medicine, 59,* 703-707.
11. U.S. Department of Health and Human Services. Preventing needlestick injuries in health care settings. Cincinnati, Oh. National Institute for Occupational Safety and Health Administration. Publication 2000-108. Cincinnati, OH:

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