

## **ASA Guidelines for Injection of Local Anesthetics**

### **Introduction**

The following Guidelines were researched and authored by the ASA Education and Professional Guidelines Committee and have been approved by the ASA Board of Directors. They are effective March 14, 2014.

The purpose of the Guidelines is to support healthcare facilities in the reinforcement of best practices related to the injection of local anesthetics in the perioperative setting. The Guidelines provide information that surgical assistants working in the perioperative setting can utilize to develop and implement policies and procedures in the workplace for the injection of local anesthetics. The Guidelines are presented with the understanding that it is the responsibility of the healthcare facility to develop, approve, and establish policies and procedures for injection of local anesthetics according to existing healthcare facility protocols.

### **Rationale**

The following Guidelines relate to properly performing the injection of local anesthetics in the perioperative setting as well as recognizing the signs and symptoms of systemic toxicity. Injection of local anesthetics can cause adverse patient effects that the surgical assistant must recognize, including allergic reactions, toxicity reactions, seizures, peripheral vascular effects and cardiac instability. Even though these adverse reactions are rare, the administration of local anesthetics allows for the medical error of intravascular injection that can lead to life-threatening toxicity of the central nervous and cardiovascular systems.<sup>3,4</sup> Additionally, it is important to avoid medication errors that can also lead to adverse patient reactions. Therefore, to decrease patient risk, standardized processes for confirming the type and concentration of the local anesthetic must be followed by the surgical team, as well as confirming and documenting the competency skills of the surgical assistant to inject local anesthetics.

### **Guideline I**

**Injection of local anesthetics should only be performed by surgical assistants with documented training in sterile technique, administration of local anesthetics, and monitoring techniques that will allow the surgical assistant to identify signs and symptoms of adverse reactions to the medication(s).**

1. Surgical assistants should possess a thorough knowledge of surgical anatomy to prevent errors and patient injury.
2. Surgical assistants should know and practice sterile technique related to the injection of local anesthetics.

3. Surgical assistants should perform local anesthetic injection techniques under the supervision of the surgeon.
  - A. Injection techniques to be performed under the surgeon's supervision include intradermal, subcutaneous, deep tissue and intra-articular.
    - (1) The surgical assistant should be able to demonstrate the ability to select the correct size of hypodermic needle for intradermal, subcutaneous, deep tissue and intra-articular injections.<sup>5</sup>
4. Surgical assistants should know and practice knowledge of the maximum doses with and without epinephrine of all local anesthetic drugs.
5. Surgical assistants should be knowledgeable of the surgical pharmacological
  - A. Surgical assistants should know and practice knowledge of the pharmacodynamics of all local anesthetic drugs.
  - B. Surgical assistants should know and practice knowledge of the pharmacokinetics of all local anesthetic drugs.
  - C. Surgical assistants should know and practice knowledge of the indications and contraindications of all local anesthetic drugs.
6. Surgical assistants should be knowledgeable of patient monitoring techniques in order to identify signs and symptoms of adverse local anesthetic reactions.
  - A. Surgical assistants should know the cardiovascular and neurologic signs and symptoms of adverse local anesthetic reactions, in order to assist the surgical team in treating the patient.
    - (1) Surgical assistants should know the patient treatment principles of recognition, immediate management, treatment, and follow-up.<sup>1</sup>
    - (2) The surgical assistant should have the necessary skills to perform specific duties including CPR; assist with airway maintenance and oxygen administration; establishing additional vascular access, eg intravenous.
    - (3) The surgical assistant should know treatment protocols in regard to the administration of drugs used to treat local anesthetic reactions including types, concentrations, and dosage of drugs, eg benzodiazepines and IV lipids.

## **Guideline II**

**The surgical assistant should be knowledgeable and have the training to determine the timing of the local anesthetics effects and identify when the localized area is numb.**

1. The surgical assistant should take the appropriate measures to determine when the localized area is numb.

## **Guideline III**

**The surgical assistant should practice the principles of sharps safety when handling hypodermic needles.**

1. The surgical assistant should be familiar with policies regarding establishment and use of the neutral zone; recapping of hypodermic needles; use of various types of sharps containers within the sterile field and off the field; use of mechanical devices to remove needles from syringes; and double gloving.

- A. It is recommended the surgical assistant become familiar with the *AST Guidelines of Practice for Sharps Safety and Use of the Neutral Zone* (2006).

## **Guideline IV**

**The surgical assistant should practice positive communication skills when coordinating the care of the local anesthetic patient with the surgical team.**

1. Miscommunication between physicians, pharmacists, and other healthcare providers including surgical technologists, surgical assistants and nurses is one of the most common causes of medication errors. It is essential the surgical team practices the principles of verifying drug information as well as positive communication skills that eliminate communication barriers (Institute for Safe Medication Practices, 2013).
2. Coordinating care of the local anesthetic patient begins during the preoperative phase; the surgical assistant should confirm the following with the surgical team:
  - Six rights of safe medication handling practices
    - Right patient
    - Right drug, including name, concentration, with or without epinephrine
    - Right dose
    - Right route of administration
    - Right time and frequency
    - Right labeling
  - Patient allergies, if present
3. Coordinating care of the local anesthetic patient continues during the intraoperative phase.
  - A. The surgical assistant should coordinate verification of the name of the drug, concentration, and with or without epinephrine, each time the local anesthetic is used intraoperatively.
4. Coordinating care of the local anesthetic patient continues during the postoperative phase.
  - A. The surgical assistant should communicate the name of the drug, whether or not it contains epinephrine, concentration of the drug, and the amount of the drug administered other healthcare providers who will be providing postoperative patient care.

## **Guideline V**

**Documentation of the competency of the surgical assistant in regard to injection of local anesthetics should be kept current.**

1. The surgical assistant should have completed training in the injection of localized anesthetics in a simulated environment under the instruction of a surgeon.
2. The surgical assistant should complete an annual competency assessment that is confirmed by the surgeon for the injection of local anesthetics.
  - A. The competency assessment should be conducted by a surgeon.
3. The surgical assistant should complete continuing education to remain current in his/her knowledge of the techniques for the injection of local anesthetics.

4. The surgical assistant should complete continuing education to remain current in his/her knowledge of new local anesthetic drugs.

Please note, surgical assisting is prohibited in a few states. Given the variation between surgical assistants' related state statutes, rules and regulations, it is essential that surgical assistants have a clear understanding of how their scope of practice is defined by their state's laws and regulations, as well as any opinions promulgated by the state regulatory agency. Local surgical assistant scope of practice is usually defined by the supervising surgeon, the hospital credentialing body, the state's board of medicine and applicable state statute and regulation.

### Competency Statements

| Competency Statements                                                                                                                                        | Measurable Criteria                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. The surgical assistant possesses the knowledge and skills to inject local anesthetics to include application of sterile technique and patient monitoring. | <ol style="list-style-type: none"><li>1. Educational Guidelines as established in the current edition of the <i>Core Curriculum for Surgical Assisting</i>.<sup>3</sup></li><li>2. The subject of local anesthetics to include types, indications, contraindications, patient reactions, and treatment protocols of adverse reactions is included in the didactic studies of the surgical assistant student.</li><li>3. The subject of sterile technique in regard to injecting local anesthetics is included in the didactic studies of the surgical assistant student.</li><li>4. Surgical assistant students demonstrate their knowledge of the use of sterile technique and injection of local anesthetics during simulated operating room practice and clinical rotation.</li><li>5. Surgical assistant practitioners implement proper sterile and injection techniques when injecting local anesthetics in the perioperative setting.</li><li>6. Surgical assistants complete continuing education to remain current in their knowledge of the injection of local</li></ol> |

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|  | anesthetics, including annual review of the healthcare facility's policies and procedures. |
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### References

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2. *Core Curriculum for Surgical Assisting*. 3<sup>rd</sup> ed. Littleton, CO: Association of Surgical Assistants; 2014.
3. Cox B, Durieux ME, Marcus MAE. (2003). Toxicity of local anaesthetics. *Best Practice & Research Clinical Anaesthesiology*, 17(1), 111-136.
4. Eggleston ST, Lush LW. (1996). Understanding allergic reactions to local anesthetics. *The Annals of Pharmacotherapy*, 30(7-8), 851-857.
5. Galen N. (2009). *How to select the correct needle size for an injection* <http://pcos.about.com/od/medication1/qt/needle-size.htm>. Accessed April 14, 2014.
6. Institute for Safe Medication Practices. (2013). *Frequently asked questions (FAQ)*. <http://www.ismp.org/faq.asp>. Accessed April 14, 2014.