

# The Alberta College of Paramedics



Alberta Occupational Competency Profile (AOCP)  
Upgrade "Gap" Training Program

Emergency Medical Technologist -  
Paramedic (EMT-P)

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## **Suturing and Hemostat Application Module**

Study Guide

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# Acknowledgements & General Information

## INTRODUCTION

The overall goal of this program is to provide standardized upgrade “gap” education to ensure that all regulated practitioners of the Alberta College of Paramedics (College) meet the *Health Professions Act*, Paramedic Regulation and the scope of practice as defined by the Alberta Occupational Competency Profiles (AOCP) for the profession.

The Alberta Occupational Competency Profiles (AOCP) were developed through the facilitation of Dr. Bill DuPerron of Alberta Health and Wellness. Many College regulated practitioners were involved in compiling and organizing information about the roles and functions of paramedics, emergency medical technicians and emergency medical responders into the Profile.

The completion of the AOCP for the College is an important milestone for the profession. The document is a result of a collaborative partnership with the College and Alberta Health and Wellness plus the work and effort of members of the College.

The Competency Profile describes the vast expanse of competencies in Alberta at the present time as well as additional changes in scope of practice, which are identified in the Upgrade “Gap” Training Program. Each module in the “Gap” Training Program covers the additional competencies for a specific Competency Cluster as identified in the AOCP for each of the three disciplines regulated by the College. The Profile includes the knowledge, skills, attitudes, and judgments related to a variety of roles held by registered practitioners of the College.

## BACKGROUND

The Health Professions Act (HPA) governs all regulated health professions in Alberta. The HPA was passed by the Alberta Legislature in May 1999 and in December 2001 the Order in Council proclaiming the Health Professions Act was signed by the Lieutenant Governor.

The HPA replaces a regulatory system (the *Health Disciplines Act*) that included multiple statutes that had different registration, continuing competence and investigation and disciplinary processes. Under the HPA, previous legislated exclusive scopes of practice will be eliminated and replaced with an “overlapping scope of practice” model based on restricted activities. Restricted activities are health services that only authorized persons may provide.

## STRUCTURE OF THE HPA

The HPA will deal with processes such as registration, continuing competence, professional conduct, restricted activities, investigation and discipline that apply to all the professions. Each of the 28 professions will have their own regulation that will address in detail, profession specific areas such as required qualifications for entry into the profession. The Paramedic profession is expecting to be governed by the HPA in the near future.

## **ABOUT THE AOCF**

Most of the competencies have been learned in basic education; other competencies have been acquired through advanced education, on the job training, and experience. All EMRs, EMTs and EMT-Ps have the basic competencies; however, competency on the job will vary depending on job requirements, and policy and procedure of the employing agency.

The Profile provides a cumulative view of the competencies within the Scope of Practice and within the general and specialized areas of that practice.

The College has developed the following educational module for upgrading the knowledge and skills of registered practitioners to meet the Alberta Occupational Competency Profiles (AOCF), the new Regulation and scope of practice.

## **HISTORY OF THE PROCESS**

On March 4, 2000, the Paramedic Association of Canada adopted the National Occupational Competency Profile (NOCP), which included both a new classification and generic competencies for four professional designation levels of Paramedicine.

On March 22, 2000, the Alberta College of Paramedics' Council made the commitment that the Alberta College of Paramedics AOCF would meet or exceed the NOCP.

## **ACKNOWLEDGEMENTS**

Alberta College of Paramedics  
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### **About the Authors (Portage College)**

Portage College (formerly Alberta Vocational Center, Lac La Biche) was established in 1968. The College currently offers over 30 certificate and diploma programs in six areas of study: Business, Human Services, Native Cultural Arts, Trades and Technical, Health and Wellness and Academic Upgrading. Over 1800 students are served annually through campuses in 13 northern Alberta communities, with another 1,300 taking short term or customized training programs each year.

Portage College has been offering prehospital care training program since the mid 1980s. Portage College is currently approved by the Alberta College of Paramedics for the following Paramedicine programs:

Emergency Medical Responder (EMR)

Emergency Medical Technician (EMT)

Emergency Medical Technologist-Paramedic (EMT-P)

### **Disclaimer**

Portage College and the Alberta College of Paramedics have attempted to ensure that the information is in context relevant to the practitioner and is as concise as possible. Portage College has used a variety of resource materials in order to provide a solid base of up-to-date information.

If any of the information contained within this module contradicts the direction you have received from your employer/medical director, the policy of your employer should take precedence over the information in this module.

As a regulated practitioner of the Alberta College of Paramedics, while under the *Health Disciplines Act*, you may only deliver health services which fall within your scope of practice and is in accordance with the provisions of the *Health Disciplines Act* or the *Health Professions Act* when the HPA is implemented.

**Any content contained in this module that is beyond your scope or not within your current competence does not authorize you to deliver those health services. That is, if a given health service is not within your scope of practice and/or you have not yet attained the competency, you may not deliver that health service.**

# Alberta Occupational Competency Profile (AOCP)

## Training Program

### Learning Goal

This educational training is intended to review and upgrade the competencies of the Alberta College of Paramedics registered practitioners in order to meet the requirements of the new regulation under the Health Professions Act including the Alberta Occupational Competency Profile (AOCP) and scope of practice.

### Program Objective

To provide standardized education to registered practitioners to ensure that all regulated practitioners of the Alberta College of Paramedics meet the regulation and defined scope of practice for the profession.

### Program Format

The Alberta Occupational Competency Profile (AOCP) training program will combine independent study modules and scheduled lab skills assessment sessions. Certification will be granted on successful completion of all program requirements.

### Independent Study Modules

There are ten EMTP – AOCP continuing education modules to be completed.

1. Intraosseous
2. Transcutaneous Pacing
3. Blood Products
4. Urinary Catheterization
5. Monitoring Chest Tubes
6. Arterial Blood Gas Samples
7. Intrapartal Examination
8. Suturing and Hemostat Application
9. Femoral Venipuncture
10. Nasotracheal Intubation

### Lab Skill Assessment

All skills identified for each module will be assessed during the lab skills assessment for that module.

### Exam

Mastery of the each module's content will be assessed through multiple-choice exams during the lab sessions. These exams are open book and can be found in each module following the module summary.

## **EMT-P – Suturing and Hemostat Competencies**

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This module meets the following competencies of the Alberta Occupational Competency Profile (AOCP).

### **I-6 Perform External Hemorrhage Control**

I-6-2 Perform wound closure with sutures:

- List the indications for wound closure.
- Perform a simulation of wound closure with sutures.
- List and describe complications and contraindications of wound closure with sutures.

I-6-3 Perform hemostat application:

- List the indications for hemostat application.
- Perform a simulation of hemostat application.
- List and describe complications and contraindications of hemostat application.

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## **Suturing and Hemostat Module Overview**

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### **Introduction**

The purpose of this module is to review suturing and hemostat application for the purpose of hemorrhage control. What is important to remember is that regardless of these advanced techniques, nothing will replace our basic skills of direct pressure, elevation and the use of pressure points when it comes to controlling external hemorrhage.

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## **Learning Objectives**

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Upon completion of this module the Paramedic will be able to:

1. Demonstrate the knowledge and ability to perform simple suturing techniques.
2. Discuss the use of hemostats for the purpose of hemorrhage control.

# Learning Activities

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## **Recommended Resources**

Each module identifies specific content students must cover to meet the module learning objectives.

## **Key Terms**

Students are to define the *Key Terms* identified for each learning objective.

## **Exam**

Mastery of the module content will be assessed through a multiple-choice exam during the lab sessions. This exam is open book and can be found in this module following the module summary.

## **Lab Skills Practice**

Students are to review the skills identified in the *Lab Skills Checklist* provided in Appendix A. Review of these checklists is essential preparation for the lab skill assessments, which are mandatory for successful completion of this module.

## Objective 1

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### **Demonstrate the Knowledge and Ability to Perform Simple Suturing Techniques**

In order to perform suturing, a paramedic must have a good understanding of the anatomy and physiology of the skin. The skin has many important functions including, but not limited to, protection, thermoregulation, and sensory reception. Suturing aids the skin in the role of protection. The skin protects the body and underlying tissue from mechanical injury, infection and fluid loss.

The skin consists of two layers, the epidermis and dermis. The epidermis is the outermost layer and can be up to 0.5 mm thick. The epidermis has no vasculature and receives required nutrients by diffusion from vessels located in the dermis layer.

The dermis layer lies below the epidermis. The dermis is thicker than the epidermis and is supplied with nerves, arteries, blood and lymphatic vessels. Closure of the dermis with suturing helps prevent further blood loss and reduces the introduction of foreign materials.

Paramedics will use suturing for two main purposes. The first is for the control of bleeding and infection (most common) and the second is for definitive care in the hospital or clinical setting. Wounds sutured by paramedics will be superficial, requiring simple sutures for treatment. Wounds requiring deep or layered sutures require greater skill and expertise than superficial wounds and should not be attempted in the pre-hospital setting.

#### **Contraindications**

When suturing to control hemorrhage there are no absolute contraindications. This is an immediate and interim solution, as bleeding cannot be controlled by any other means.

However, for regular closure of wounds that are not life threatening there are some contraindications. Where scar tissue may be of concern for aesthetic or functional reasons, it is advised that paramedics avoid suturing these areas. The face and hands are two such areas. Other contraindications include:

- Wounds where debridement cannot be properly achieved.
- When sterility cannot be ensured and there is a possibility of infection.
- Bite wounds should not be sutured due to the high incidence of infection.
- Any unstable patient where rapid treatment and transport would be delayed.

## Equipment and Supplies

Depending on circumstances and conditions expected, it is suggested that Medical Direction be consulted in the use of local anesthetics. In order to perform suturing you will need the following equipment:

- Needle Driver
- Toothed Forceps
- Suture Scissors
- Sutures With Needle
- Local Anesthetic
- Syringe and Needle for Administration of Local Anesthetic

There is a wide variety of suture material available for use. It is generally classified using four criteria:

- Composition
- Characteristics and performance
- Absorption and reactivity
- Size and tensile strength

Sutures are composed of natural or synthetic materials, monofilament (single strand) or multifilament (braided) as well as absorbable or non-absorbable materials. The type of suture used will depend on the expected healing time of the area to be sutured and the tensile strength required. For example fine sutures are often used for suturing the face as it heals quickly, does not have a high stress load, and minimizing scar tissue is a consideration. On the other hand, suturing of the knee or other high stress area requires a stronger more durable suture material as will take longer to heal, and is under constant stress from movement.

The numbers associated with each various suture indicates the tensile strength and size of the suture material. The more zeros in the number, the smaller the strand and the less tensile strength it has. For example, a suture with a number of 3-0 (meaning 000) is smaller and weaker than a suture with a number of 2-0 (meaning 00).

There are also a variety of needles that can be used when suturing. Needles consist of three sections: the eye, body and point. The eye, as with most needles, is for threading the suture material through so it is attached to the needle. The body of the needle can be straight or curved. This is part of the needle that is held by the **needle driver**. The curved needles differ from each other not only in size but also in the amount of curve each one has. Some have a smooth finish and others can be found with a cutting edge along the entire length, to aid in its ability to cut through tissue. The tip or point of the needle is designed to be cutting, tapered or blunt. These are designed to penetrate all types of different tissue for suturing.

The gauge of needle and material will range in size as well. Again, smaller sizes are used for more delicate work such as suturing a face, and the larger sizes for situations where the needle and material must be stronger, such as suturing a knee where the skin is thicker and tougher.

Each material and needle combination has its own advantages and disadvantages. Typically a curved cutting needle (FS1) with medium gauge (3-0 or 4-0) synthetic, monofilament material (Ethilon), will be used in the pre-hospital setting. Depending on circumstances and conditions expected, it is suggested that Medical Direction be consulted in the choice of sutures used in individual service areas.

### **Freezing**

The use of freezing in cases where time permits, will ease the discomfort of the patient during the procedure. It is very important to maintain sterility while drawing up the anesthetic. The anesthetic should be drawn up using a large bore needle such as an 18g, and then infused using a small bore needle such as a 22 gauge or 25 gauge needle.

The pain of injection can be decreased by dripping small amounts of the anesthetic directly into the wound prior to injection. The anesthetic is then instilled subcutaneously by sliding the needle into the tissue from inside the open wound, parallel to the surface tissue. The medication is injected while withdrawing the needle. This procedure is repeated in a circular fashion around the exposed edge of the wound.

The standard local anesthetic is lidocaine in a 1% (10mg/ml) or 2% (20mg/ml) preparation. Some preparations will contain small amounts of epinephrine, usually in a 1:100,000 concentration, which is sufficient to decrease bleeding within the wound by causing, localized vasoconstriction. Fingers, toes, penis, nose, and ears are areas of the body with limited blood flow and are contraindicated for the use of local anesthetic containing epinephrine.

Lidocaine toxicity is always a concern so it is imperative to record the total amount of local anesthetic given. The maximum dose is 3 mg/kg before signs and symptoms of systemic toxicity may occur. Treatment of Lidocaine toxicity is supportive. The following are common signs of lidocaine toxicity.

- **Central nervous system:** light-headedness, dizziness, nystagmus, sensory disturbances, restlessness, disorientation, and psychosis. Slurred speech, muscle twitching, and tremors will often precede seizures
- **Cardiovascular:** Signs and symptoms of cardiac toxicity include hypotension, bradycardia, and cardiac arrest.

### **Wound Preparation**

After determining the need to suture our patient, the first step is to clean the wound. In most cases of field suturing, the wound will be opened up on arrival at the hospital so intense debridement is not required. Instead the focus should be on

removal of large pieces of foreign material and general flushing. If the wound is to be closed permanently as in the case of clinic or ER visits, it is imperative to remove all foreign debris in a sterile manner prior to closing.

Prior to actual wound closure, the area should be cleansed with a povidone-iodine solution (or similar) and draped using sterile technique. This helps to prevent infections and also provides a clean area to work in and place sterile equipment. Sterile gloves should also be used and should be donned using sterile technique.

### **Skin Closure**

We need to be aware of two principles when closing superficial wounds. The first is to minimize any unnecessary trauma to the tissue (e.g. Tissue damage from misplaced needles or excessive force when using instruments). The second is the importance of properly aligning the skin edges by approximating landmarks within the wound.

Look for corners or obvious jagged edges along the wound and tack these areas first with individual stitches. This will align both edges of the wound and allow for better closure. Next, fill in-between these areas with evenly spaced stitches until the wound is closed. If adhered to, these principles will decrease the amount of scar tissue that will form at the site and allows for faster healing.

The skin (epidermis and superficial dermis) will be closed typically, using a non-absorbable material. The stitches should be the same distance from each other as they are from the edges of the wound, such that you should be able to see an imaginary square between any two stitches using the bite marks (entry and exit points of the needle) as the corners. The stitches should be slightly deeper than they are wide, with the curve of the needle being used as a guide as you proceed through the skin.

As the needle enters the skin the practitioner needs to flex his or her wrist while supinating the forearm. This action will cause the needle to progress on a curve identical to its own. By not using this process you risk further tissue damage as well as damage to the needle. Right-handed practitioners should begin on the right side of the wound and left-handed practitioners on the left.

The needle should be held by the needle driver and inserted into the skin using the above technique. As the needle approaches the skin on the opposite side of the wound, it should be positioned so it protrudes the same distance from the wound as the entry of the needle. As the needle pierces the skin it must be grabbed by the needle driver and pulled through followed by the thread. With approximately one inch of thread left on the entry side, the knot must be tied. Care in tying the knot must be taken to keep the edges of the skin flush. Rolling the edges into or out of the wound by pulling to tightly may cause tissue necrosis and large amounts of scar tissue if allowed to heal that way. It may also take longer to heal. It is best to have the edges slightly rolled out of the wound (eversion) without using too much tension. This allows the natural flattening of scar tissue over time without indentation.

These are things that can only be learned through practice and attention to detail while working with an experienced clinician.

### **The Square Knot**

The *square knot* is the knot of choice for simple suturing and tying it with the use of the needle driver will be discussed.

The square knot is a common knot that we are all familiar with. We perform half a square knot when we tie our shoes. To practice a complete square knot, take a piece of string several inches long and place it on a table. Place the ends across each other resulting in a circle. Adjust the circle so there is one long end and one short end of string with the short end passing over the long end.

Next, pass the short end under, then over the loop creating the first “*throw*”. To create the second “throw” of the knot, grasp the two ends and pass the short end over the long end. At this point you should have two circles touching each other. Continue to wrap the short end under, then over the long end. Pull snugly and you have created a square knot. To create a knot with the sutures that will hold the skin together, you will be required to “stack” two square knots on top of each other.

***Please Note:*** To see a visual representation of tying the square knot please refer to the following website:

<http://www.bumc.bu.edu/Dept/Content.aspx?departmentid=69&PageID=5260>

Tying the square knot with sutures is best understood by viewing the demonstration on the following web site:

<http://www.bumc.bu.edu/Dept/Content.aspx?departmentid=69&PageID=5263>

### **Interrupted Stitch**

The *interrupted stitch* is the most common we will see for final closure of a wound. It is a series of stitches along the length of the wound, each being tied individually. They should be equidistant from each other and from the edges of the wound. They should not put excessive tension on the skin causing blanching which may lead to necrosis. Once each knot is tied the thread is cut thus allowing a new stitch to begin.

### **Continuous Stitch**

The *continuous or running stitch* is easiest for quick closure of wounds that will be opened later for surgery or debridement. It allows for faster suturing since it only has a knot tied at either end. It also allows for swelling to occur within the wound with less tissue damage since the pressure will be relieved as the whole suture line will flex and expand instead of each individual stitch tearing to relieve the pressure.

The continuous or running stitch begins just like the interrupted stitch. However, once the knot is tied do not cut the thread. Instead, move the needle to the site where you would like to make the next stitch and proceed through the skin. Once

you have exited the skin on the other side of the wound, do not tie off the thread, simply move along to the next insertion site for the needle.

Continue down the length of the wound pulling the stitch snug as you go. Once at the end of the wound, cross the wound from your last exit point to the entry point for that stitch and tie off the end of the thread using the last stitch as the “short end” for your knot.

Although this can be used as a temporary stitch in the pre-hospital setting, it is best to leave the wound open and protect it from further contamination by covering the wound with sterile dressings. “Temporarily” closing a wound that has not been properly cleansed can result in a serious infection.

### **Figure-Of-Eight Stitch**

This is the “stitch of choice” for any bleeding that cannot be controlled by the combination of direct pressure, elevation and the use of pressure points. To use this suturing technique the vessel that is bleeding must be superficial and easily isolated. This technique involves inserting a continuous stitch, which will form a figure-of-eight around the vessel. Then by tying the beginning tail of the suture to the end tail and applying tension, it will indirectly constrict the vessel by pulling the tissue around the vessel together until it can no longer bleed. This technique is not used for the regular closing of a wound.

Scalp wounds are the primary example of when this stitch could be used. Because some of the arteries that supply blood to the head lie between the skull and the thin layer of skin, which is our scalp, they are both superficial and easily isolated. Not to mention, bleeding in this area can be difficult to control due to the large blood supply provided by the *superficial temporal artery* and the *occipital artery*.

### **Objective 1: Key Terms**

- Throw
- Square knot
- Needle driver
- Interrupted stitch
- Continuous stitch
- Figure Eight Stitch
- Superficial temporal artery
- Occipital artery

## Objective 2

### Discuss the use of Hemostats for the Purpose of Hemorrhage Control

The use of hemostats as a skill for the control of bleeding has been around for many years. In spite of this, there is limited research available on the use of hemostats for this purpose. In fact, some of the only information found indicated it was not generally advisable, as it can cause necrosis of the vessel making it difficult to repair. There are always theoretical situations where hemostats could be of benefit to control bleeding in the prehospital setting, however, there is no evidence to substantiate them. The practitioner should bear in mind the potential for damage versus any benefit of using this skill when making a decision.

To begin we must we must reflect on BLS procedures to control bleeding. We should consider making use of the following prior to using hemostats in the case of bleeding:

- **Direct pressure** – pressure must be applied to the wound otherwise the bandage may simply act as a wick to draw more blood out.
- **Elevation** – above the level of the heart.
- **Pressure point** – applied proximal to the injury.
- **Suturing & Tourniquets**

Only after exhausting all preceding options should hemostat application be considered.

When considering hemostat application for the control of otherwise uncontrollable bleeding we must ascertain the viability of the skill in the situation as well as weigh the cost versus benefits.

- Is this a life over limb situation?
- Are the vessel ends accessible or have they retracted into the tissue?
- Can you visualize the vessel or are they accessible only by feel?
- Are we willing to risk nerve damage to the area since the nerves are in close proximity to the vessels and could be clamped by accident?

If after considering these questions you decide that clamping the vessel is the only option available to you and the patient, then you must proceed cautiously, and preferably under direct medical control.

When clamping with hemostats you must use enough pressure to occlude the vessel while being gentle enough to not crush it. You must clamp only vessels that can be visualized, as blind clamping is likely to cause damage to nervous tissue. It is suggested that a combination of direct pressure and suturing will lead to greater success with less risk than hemostat application.

As you can see, the use of hemostats is not a first line procedure for the control of hemorrhage. If you determine it is the only option, the situation is life over limb and medical control has seen fit to allow hemostat application in your service, proceed with care and patience making sure not to cause any more damage to the patient.

### **Objective 2: Key Terms**

- Direct pressure
- Elevation
- Pressure point
- Suturing
- Tourniquets

## Summary

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The goal of this module is to review the skills of suturing and hemostat application. As you have noted from the literature, hemostat application is quite controversial even in the hospital under the care of a physician. It should be used as a last resort, if at all.

Ongoing practice and perfection of the skills covered in this module is necessary to obtain and maintain competence. As the Paramedic scope of practice increases, the onus is even greater to ensure your knowledge remains current and that you research the pros and cons of all procedures.

## Exam

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1. While suturing we need to maintain sterile technique.
  - a. True
  - b. False
2. By approximating the wound we are:
  - a. Aligning skin and tissue to its original position.
  - b. Recording approximately where it lies on the body.
  - c. Assessing approximate depth.
  - d. Determining approximately what size sutures to use.
3. For which reason would we consider suturing prehospitally?
  - a. Remote location.
  - b. Treat and release.
  - c. Uncontrolled hemorrhage.
  - d. No physician at receiving hospital.
4. Placement of the stitches should be:
  - a. Sporadic.
  - b. Equidistant from the end of the wound.
  - c. Equidistant from edge of the wound.
  - d. Equidistant from both the edge of the wound and each other.
5. What structures do we suture prehospitally?
  - a. Ligaments.
  - b. Muscle tissue.
  - c. Dermis.
  - d. Subcutaneous tissue.
6. Of the following, which should be used to control bleeding **prior** to the application of hemostats?
  - a. Direct pressure.
  - b. Elevation.
  - c. Tourniquets.
  - d. All of the above.
7. Using a combination of hemorrhage control techniques may be more advisable than hemostat application.
  - a. True
  - b. False

8. Complications of poor technique in placing hemostats include:
  - a. Tissue damage.
  - b. Nerve damage.
  - c. Vessel damage.
  - d. All of the above.
  
9. Blind clamping of vessels should be considered common practice prehospitally.
  - a. True
  - b. False
  
10. Which of the following statements is TRUE regarding hemostat application?
  - a. Hemostats are easy to use.
  - b. Hemostats are the first method used to control bleeding.
  - c. Current literature does not support widespread use of hemostats prehospitally for the control of bleeding.
  - d. Only good Paramedics are allowed to use them.

# Glossary of Terms

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## Objective 1: Key Terms

**Throw** – Crossing the ends of the suture to form a loop and then wrapping one end of the suture around the other.

**Needle driver** – A self-clamping hemostat that is utilized to grasp a suture needle.

**Square knot** - the knot of choice for simple suturing.

**Interrupted stitch** - A series of stitches along the length of the wound, each being tied individually.

**Continuous stitch** – A continuous stitch along the entire length of the wound. It has only two knots: one at the beginning and one at the end.

**Figure Eight Stitch** – This is the “stitch of choice” for uncontrolled bleeding.

**Superficial temporal artery** – is the main blood supply of the scalp. It is the continuation of the external carotid artery.

**Occipital artery** –supplies blood to the posterior region of the scalp.

## Objective 2: Key Terms

**Direct pressure** – Method of hemorrhage control that relies on the application of pressure to the actual site of the bleeding.

**Elevation** – Movement in which a body part moves superiorly.

**Pressure point** – Any of the various points on the body where pressure can be exerted to relieve pain or control the flow of arterial blood.

**Suturing** – A stitch or series of stitches made to secure apposition of the edges of a surgical or traumatic wound.

**Tourniquets** – A device for compression of an artery or vein.

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<http://www.bumc.bu.edu/Dept/Content.aspx?departmentid=69&PageID=5260>

<http://www.bumc.bu.edu/Dept/Content.aspx?departmentid=69&PageID=5263>

# Appendix A

## Lab Skills Checklist

### SUTURING

- Apply PPE precautions.
- Perform patient assessment.
- Obtain history and baseline vital signs.
- Determine treatment plan.
- List indications, contraindications and complications for this procedure.
- Explain procedure to patient/family and obtain consent.
- Assemble equipment/ supplies and prepare patient for procedure.
- Cleans/debride wound.
- Apply sterile gloves and set up sterile field.
- Approximate edges to be sutured and determine type of stitch or for hemorrhage control must use the figure-of eight stitch.
- Infiltrates with local anesthetic if required.
- Ensure sutures are equidistant from the edges of the wound and each other.
- Assess individual knots for tension and proper approximation of wound edges.
- Remove sterile field.
- Dress the wound.
- Reassess patient and note any complications.
- Document the procedure.

*Comments:*

*Instructor Name & Initials:* \_\_\_\_\_ *Date:* \_\_\_\_\_