

Surgical Technologist II

8352 36 weeks / 420 hours

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Course Description

Suggested Grade Level: 12 and 13

Prerequisites: 8351

This high-school-extended course offers classroom instruction and clinical training in selected approved health care facilities under the direction of an approved educator. Students practice surgical procedures and aseptic techniques, including patient preparation and handling of materials and surgical instruments at the surgical field. Upon successful completion of the program, students qualify to take the national certification exam for surgical technologists.

Note: Although this course is classified as a 36-week course, circumstances usually dictate that it be accomplished within a four-month period on a full-time basis.

NOTE: This course has specific state laws and regulations from a governing medical board or agency. Please contact the Virginia Department of Education, Office of Career and Technical Education prior to implementing this course. All inquiries may be sent to cte@doe.virginia.gov.

Task Essentials Table

- Tasks/competencies designated by plus icons (+) in the left-hand column(s) are essential
- Tasks/competencies designated by empty-circle icons (○) are optional
- Tasks/competencies designated by minus icons (−) are omitted
- Tasks marked with an asterisk (*) are sensitive.

8352	Tasks/Competencies
Displaying Initiative in Surgical Situations	
(+)	Demonstrate procedures of a surgical technologist from start to finish in a perioperative setting.
(+)	Display organizational skills.
Understanding Pharmacology in the Surgical Setting	
(+)	Explain the effects of a variety of medications on preoperative, intraoperative, and postoperative conditions.
(+)	Describe types of anesthesia.
Understanding Surgical Techniques	
(+)	Describe mechanical surgical techniques and related safety issues.
(+)	Describe thermal surgical techniques and related safety issues.
(+)	Describe laparoscopic surgical techniques and related safety issues.
(+)	Describe ultrasonic surgical techniques and related safety issues.
(+)	Describe radiologic surgical techniques and related safety issues.
(+)	Examine emerging surgical techniques.
(+)	Identify ramifications of surgical implants.
Demonstrating Preoperative Procedures	
(+)	Explain the importance of the patient's operative consent, the preoperative checklist, and other preoperative documentation, as appropriate.
(+)	Assist with patient transfer and positioning.
(+)	Simulate insertion, connection, and removal of an indwelling Foley catheter.
(+)	Perform skin-preparation procedures.

8352	Tasks/Competencies
+	Verify safe environment for the patient.
+	Create and maintain the sterile field.
+	Set up instrumentation and perform preoperative surgical count.
+	Measure and pour solutions.
+	Drape patient for surgery.
Demonstrating Intraoperative Procedures	
+	Perform intraoperative surgical counts.
+	Prepare and pass instruments.
+	Prepare and handle suture material.
+	Assemble electrosurgical unit (ESU) and other hemostatic equipment/drugs.
+	Prepare tissue/culture specimens for lab.
+	Assemble drains and equipment.
+	Demonstrate the safe handling of sharps.
+	Anticipate the needs of the team.
+	Protect the sterile field.
+	Perform closing and final surgical counts.
+	Apply sterile dressings.
Demonstrating Postoperative Procedures	
+	Transfer the patient to a stretcher.
+	Measure suction container contents.
+	Perform postoperative cleanup procedures.
+	Prepare instruments for decontamination/sterilization.
+	Demonstrate terminal disinfection.
+	Disassemble electrosurgical (ESU) unit and other hemostatic equipment.
Demonstrating Positive Interpersonal Relationships	
+	Display therapeutic communication skills.
+	Communicate with co-workers and patients about concerns related to surgery, sexuality, and death and dying.
Demonstrating Basic Surgical Techniques	
+	Apply basic surgical techniques in general surgery.
+	Apply basic surgical techniques in obstetric and gynecologic surgery.
+	Apply basic surgical techniques in otorhinolaryngology surgery.
+	Apply basic surgical techniques in orthopedic surgery.
+	Apply basic surgical techniques in genitourinary surgery.
+	Apply basic surgical techniques in other specialized medical areas.
Developing Employability Skills	
+	Demonstrate leadership qualities.
+	Develop a procedure log.
+	Develop a professional résumé.
+	Describe the application process.
+	Explain important factors in completing a job application.
+	Identify qualities evaluated during a job interview.
+	Demonstrate interview strategies.
+	Describe factors important for job retention.

8352	Tasks/Competencies
Describing the Opioid Crisis	
⊕	Describe the history and current state of the opioid crisis in the United States.
⊕	Describe the history and current state of the opioid crisis in Virginia.
⊕	Define the pharmacological components and common uses of opioids.
Examining the Key Factors of Drug Addiction	
⊕	Examine the science of addiction.
⊕	Explain prevention and early intervention strategies.
⊕	Identify addiction and its behavioral elements, as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).
⊕	Describe the treatment models of addiction therapy.
⊕	Describe the medication management antidote used to prevent fatal opioid overdoses.
Understanding Pain Management Protocols	
⊕	Explain the science of physiological and mental pain.
⊕	Describe the diagnostic tools used in developing pain management plans.
⊕	Describe pain treatment options available to various populations of patients.
⊕	Describe the effects of opioid dependency on the human body systems.
⊕	Explain the mechanism and physical effects of opioids on the human body.
⊕	Explain the use of opioids in practice settings, the role of opioids in pain management, and risk factors associated with the use of the medication.
⊕	Describe the withdrawal and tapering side effects of opioid use.
⊕	Describe storage and disposal options for opioids.
⊕	Explain community resources for education about opioid use.
Working with Patients and Caregivers	
⊕	Describe key communication topics involving opioids for patients.
⊕	Describe communication topics for caregivers and family members.

Legend: ⊕ Essential ○ Non-essential ⊖ Omitted

Curriculum Framework

Displaying Initiative in Surgical Situations

Task Number 39

Demonstrate procedures of a surgical technologist from start to finish in a perioperative setting.

Definition

Demonstration should reflect the ability to scrub with minimal help and assist throughout the perioperative setting, to include

- establishing and maintaining the sterile field
- transporting and moving the patient as needed
- ensuring the availability of necessary instruments and supplies
- ensuring the availability and maintenance of necessary equipment
- anticipating the needs of the surgical team
- passing instruments as needed
- counting supplies and equipment
- assuring correct needle and sponge counts with the surgeon and circulator
- performing clean-up and sterilization functions after the operation
- communicating effectively with the surgical team and other medical professionals
- communicating effectively with patients and their families
- following facility-specific protocol
- adhering to all safety rules and regulations
- adhering to ethical standards (e.g., surgical conscience, time-outs).

Process/Skill Questions

- How is the surgical technologist's role pivotal in the operating room?
- What skills does the surgical technologist need to simultaneously keep track of equipment, instruments, supplies (particularly needles and sponges), surgical team needs and movements, and the integrity of the sterile field throughout the perioperative process?
- Why does a surgical technologist need to have a strong understanding of human anatomy? Of surgical procedures?

Task Number 40

Display organizational skills.

Definition

Display of organizational skills should include

- setting priorities
- thinking critically
- managing time
- following facility-specific protocol
- keeping track of equipment, instruments, and supplies throughout the perioperative process.

Process/Skill Questions

- Why is the ability to set priorities essential for a surgical technologist?
- What time-management techniques can be helpful for a surgical technologist?
- How are organizational skills important when keeping count of instruments and supplies throughout the perioperative process?
- Why is following protocol considered an organizational skill?
- How can a surgical technology student improve his or her organizational skills in preparation for entering the healthcare environment?

Understanding Pharmacology in the Surgical Setting

Task Number 41

Explain the effects of a variety of medications on preoperative, intraoperative, and postoperative conditions.

Definition

Explanation should include the effects of the following types of medications on a patient's preoperative, intraoperative, and/or postoperative condition:

- Antibiotic
- Cardiac
- Respiratory
- Diabetic
- Anticoagulant

Process/Skill Questions

- What are the characteristics of chemical, generic, and brand names of commonly prescribed drugs?
- What laws and agencies regulate drug production, distribution, and use?
- What ethical and legal responsibilities govern the various surgical team members regarding administration of medication?
- Why is it important to review a surgical patient's medication history prior to surgery?

Task Number 42

Describe types of anesthesia.

Definition

Description should include the following types of anesthesia, their desired effects, and basic considerations in the administration and use of each:

- General, including phases and stages
- Locally monitored anesthesia care (LMAC)
- Local
- Topical
- Conscious/moderate sedation
- Blocks
- Regional (e.g., spinal, epidural)

Description should also include

- anesthesia equipment in case of airway emergency
- anesthesia complications and interventions
- the concept that choice of anesthesia is made on a case-by-case basis, considering the patient and the type of surgery.

Process/Skill Questions

- How might the type of surgery determine the type of anesthesia used?
- How might the patient's history determine the type of anesthesia used?
- Why must the surgical technologist be knowledgeable about the administration and effects of anesthesia?
- What does the surgical tracking board mean when it says "choice" under anesthesia?

Understanding Surgical Techniques

Task Number 43

Describe mechanical surgical techniques and related safety issues.

Definition

Description should include

- the concept that mechanical surgical techniques involve cutting with a sharp instrument and include the use of scalpels, saws, and scissors
- safety issues, such as the importance of avoiding lacerations, perforations, hemorrhaging, and infection.

Process/Skill Questions

- What types of surgery require mechanical surgical techniques? Why?
- In what types of perioperative situations would a surgeon make use of scalpels? Saws? Scissors?
- During mechanical surgery, how can the surgical team prevent harm to the patient in the form of perforations? Hemorrhaging? Infection?
- During mechanical surgery, how can the surgical team prevent harm (e.g., cuts, perforations, infections) to themselves?
- What is the neutral or hands-free zone, and why is it important?

Task Number 44

Describe thermal surgical techniques and related safety issues.

Definition

Description should include

- electrosurgery (use of electricity)
- laser surgery (use of a focused light beam)
- cryosurgery (use of cold).

Description should also address

- safety issues (i.e., the importance of preventing burns, electrocution, smoke damage, and frostbite)
- the need for special eye protection, a smoke evacuator, and/or other aids to avoid harm to the surgical team and the patient.

Process/Skill Questions

- What types of medical conditions require thermal surgical techniques? Why?
- During thermal surgery, what precautions should be taken with the patient and surgical team to prevent burns? Electrocution? Smoke damage? Frostbite?
- In what circumstances might a surgeon make use of electrosurgery? Laser surgery? Cryosurgery? Why?

Task Number 45

Describe laparoscopic surgical techniques and related safety issues.

Definition

Description should include

- instruments (e.g., bipolar forceps, needle drivers, probes, clamps, retractors, cannulas)
- equipment (e.g., telescopes, video towers, cameras, positioning equipment) to visualize and perform minimally invasive surgery
- safety considerations, including the importance of preventing burns, perforations, hemorrhaging, insufflation errors, and infection.

Process/Skill Questions

- In what types of situations is laparoscopy the chosen surgical technique? Why?
- How would a laparoscopic surgeon make use of equipment such as telescopes? Video towers? Cameras? Positioning equipment?
- What types of specialized instruments may be needed in laparoscopic surgery? What is the purpose of each?
- During laparoscopic surgery, how can the surgical team prevent harm to the patient in the form of burns? Perforations? Hemorrhaging? Insufflation errors? Infection?

Task Number 46

Describe ultrasonic surgical techniques and related safety issues.

Definition

Description should include

- ultrasonic techniques, such as the use of vibrating high-frequency waves, to facilitate cutting, coagulating, and aspirating during surgery (e.g., lithotripsy)
- ultrasonic surgical tools (e.g., harmonic scalpel and ultrasonic surgical aspirator/emulsifier)
- safety issues, such as burns, perforations, hemorrhaging, and infection, that can result from ultrasonic surgical techniques.

Process/Skill Questions

- In what types of surgical situations might ultrasonic techniques be used? Why?
- What is a harmonic scalpel? An ultrasonic surgical aspirator/emulsifier? What is the role of each in applying ultrasonic surgical techniques?
- When applying ultrasonic techniques, how can the surgical team prevent harm to the patient in the form of burns? Perforations? Hemorrhaging? Infection?

Task Number 47

Describe radiologic surgical techniques and related safety issues.

Definition

Description should include

- radiologic surgical techniques such as fluoroscopy, stereotactic mammographic biopsies, and cardiac catheterization
- safety issues related to radiation exposure
- technologies and strategies for the protection of the patient and surgical team from radiation hazards.

Process/Skill Questions

- Patients with what types of medical conditions benefit from radiologic surgical techniques? Why?
- What are the similarities between three-dimensional computed axial tomography (CT) modeling and traditional radiology? What are the differences? How does this distinction affect surgical decisions?
- During radiologic surgery, how can the surgical team prevent excessive radiation exposure in patients? How can the surgical team protect themselves from radiation exposure?
- What are the limits of time, distance, and dose?

Task Number 48

Examine emerging surgical techniques.

Definition

Examination should focus on emerging techniques, such as

- robotic surgery
- natural orifice surgery

- transluminal surgery
- endovascular surgery
- in utero surgery
- surgical applications of nanotechnology
- advances in minimally invasive surgery
- technologies such as magnetic resonance imaging (MRI)-based and three-dimensional modeling, used for surgical planning and rehearsal, followed by intraoperative MRI and navigational systems.

Sources of information on emerging surgical techniques should include

- local hospitals and surgical specialists
- websites (commercial and professional)
- medical journals
- professional conferences
- trade shows.

Process/Skill Questions

- How and why is magnetic resonance imaging (MRI) playing an increasingly important role in preoperative and intraoperative techniques?
- What emerging technologies are being developed? What other advances are occurring in the specialty of minimally invasive surgery? Why are advances in minimally invasive surgery of such interest in the medical field?
- What roles is nanotechnology playing in emerging surgical techniques?

Task Number 49

Identify ramifications of surgical implants.

Definition

Identification should include

- precautions, such as selecting the correct product for the patient, ensuring sterility, maintaining documentation logs, verifying expiration dates, and pre-testing of equipment prior to insertion
- legal implications of surgical implants, such as malfunction of the product, recalls, improper use, and patient rejection or reaction.

Process/Skill Questions

- How does the Food and Drug Administration (FDA) regulate medical devices?
- How have implants helped improve the quality of life for many patients?

- What are cochlear implants? What are the benefits and risks of cochlear implants for the patient?
- What are the most common reasons for breast implants? What surgical risks are involved in breast implants?
- What is the difference between a pacemaker and a defibrillator? What benefits can each bring to the cardiac patient? What risks are posed to the patient during the surgical implant of each device?

Demonstrating Preoperative Procedures

Task Number 50

Explain the importance of the patient's operative consent, the preoperative checklist, and other preoperative documentation, as appropriate.

Definition

Explanation should include identifying the patient and addressing legal, ethical, and safety issues associated with the preoperative checklist, pertinent laboratory results, and other documentation and the patient's operative consent.

Process/Skill Questions

- Why is a patient's signed operative consent form important prior to surgery? What options are available in cases in which the patient is not capable of giving written consent?
- What preoperative documentation is always essential? What other types of preoperative documentation may be important in certain situations?
- What ethical issues may arise with a surgical procedure? What legal issues may arise? Why must the surgical technologist stay current on ethical and legal issues related to surgery?
- What is informed consent?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Medical Law and Ethics

Task Number 51

Assist with patient transfer and positioning.

Definition

Assisting with patient transfer and positioning should include

- making sure the bed or stretcher is locked
- using a variety of transfer/positioning aids (e.g., rollers, sheets, lifts, stirrups, boards, padding)
- adhering to correct anatomical placement for the purpose of preventing excessive pressure on the body and possible nerve damage
- maintaining integrity of all lines (e.g., IV, Foley catheter, drains, colostomy bags) in the transfer of the patient to and from the surgical table.

Process/Skill Questions

- How can aids such as rollers, sheets, lifts, stirrups, boards, and padding help the surgical technologist protect the patient during the process of transferring and positioning?
 - How can the correct anatomical placement of the patient during transfer and positioning help prevent physical problems for the patient?
 - What types of surgery may require a special positioning of the patient on the operating table? Why is this positioning necessary?
 - How can a surgical technologist protect himself/herself while transferring and positioning a patient?
 - What basic safety measures should be observed prior to transferring a patient?
-

Task Number 52

Simulate insertion, connection, and removal of an indwelling Foley catheter.

Definition

Simulation should include

- verifying allergies
- obtaining equipment and supplies
- following procedures for insertion, connection, and removal of the Foley catheter, according to facility-specific policy

- using aseptic techniques throughout process.

Process/Skill Questions

- In what circumstances is Foley catheterization indicated in the perioperative setting?
- When inserting a Foley catheter, what precautions should the surgical technologist take to protect the patient from injury?
- How is infection prevented during urethral catheterization?

HOSA Competitive Events (High School)

Health Professions Events

- Clinical Nursing
-

Task Number 53

Perform skin-preparation procedures.

Definition

Performance should reflect procedures outlined in the facility-specific policy for skin preparation, to include

- hair removal/clipping
- surgical cleansing
- use of aseptic techniques throughout the process.

Process/Skill Questions

- Why is careful skin preparation necessary prior to surgery?
 - What types of equipment, cleansing products, and supplies are used for skin preparation? Why is each necessary?
 - What risks are posed for the patient during the skin preparation process? How can these risks be minimized?
 - What are the different types of skin preparations and when are they used?
-

Task Number 54

Verify safe environment for the patient.

Definition

Verification should include

- checking electrical equipment
- checking operating room (OR) equipment (e.g., safety straps/positioning devices)
- ensuring the patient is grounded
- checking sterility indicators
- monitoring atmospheric conditions and other factors related to the immediate environment
- adjusting as necessary.

Process/Skill Questions

- What principles of electricity should a surgical technologist understand and be able to apply?
- How is electrical equipment checked prior to surgery? How is sterility checked?
- What atmospheric conditions are appropriate for an operating room during surgery? How can they be achieved and maintained throughout the perioperative process?

Task Number 55

Create and maintain the sterile field.

Definition

Creating and maintaining the sterile field should include

- ensuring that all chemical indicators and seals indicate adequate sterilization
- ensuring that surgical team members are sterile and have correctly donned sterile clothing (e.g., gown, gloves, mask, cap)
- ensuring sterile technique and movement within the sterile field throughout the intraoperative process
- immediately alerting the surgical team of any break in the sterile field
- visually ensuring the instruments are clean.

Process/Skill Questions

- What is the distinction between medical and surgical aseptic techniques?
- What steps should be taken to open a sterile package and maintain sterility?
- What steps should be taken to don sterile gloves and maintain sterility?
- What is the procedure for handling sterile forceps (both wet and dry) and maintaining sterility?
- What steps should be taken to pour sterile liquids and maintain sterility?
- What are common infractions of accepted surgical aseptic practices?

- What is the significance of the expiration date on a sterile item?
 - Why should the surgical technologist assess containers/packages of sterile items for damage/wetness?
 - How should the surgical team handle contaminated disposable sharps? Why?
 - What action should a surgical technologist take if he or she suspects contamination of the sterile field? Why?
-

Task Number 56

Set up instrumentation and perform preoperative surgical count.

Definition

Setup should include selecting, inspecting, choosing, opening, and counting correct instruments, supplies, and equipment (e.g., robotics and scopes), as applicable, immediately prior to the operation.

Process/Skill Questions

- How does the surgical technologist know which instruments and supplies and how many of each are needed for a given procedure?
 - Why is an inspection of instruments and supplies essential before setting up for an operation? What steps are involved in this inspection?
 - What precautions are necessary when opening supplies?
 - How should instrument sets be placed on a procedural tray?
 - Why is a preoperative count of instruments and supplies mandatory?
-

Task Number 57

Measure and pour solutions.

Definition

Measuring and pouring solutions should include

- verifying solution and expiration dates
- labeling solutions
- measuring solutions according to orders

- avoiding splatters.

Process/Skill Questions

- What types of solutions are commonly needed for a surgical procedure?
 - Why is verification of the solution and expiration date essential for each solution?
 - How are solutions measured? Why is 100 percent accuracy critical?
 - Why are solutions labeled? How is this done?
 - What precautions must be taken when pouring solutions?
 - What needs to be on the label of a solution? (dosage, medication, expiration date)
-

Task Number 58

Drape patient for surgery.

Definition

Draping should include

- confirming the surgical site
- selecting from a variety of types of drapes (e.g., abdominal, extremity, head, face)
- covering the patient, as required for a given surgical procedure.

Process/Skill Questions

- How are drapes applied? Why are they needed?
 - When should draping occur? Why?
 - How does the surgical technologist know where to apply drapes and when to remove them?
 - What precautions are needed when preparing, handling, and removing drapes from the patient?
-

Demonstrating Intraoperative Procedures

Task Number 59

Perform intraoperative surgical counts.

Definition

Performing intraoperative surgical counts should involve counting instruments and supplies during the operation as they are added to the sterile field and at other points during the operation, as applicable.

Process/Skill Questions

- Why might the intraoperative surgical count be different from the preoperative surgical count?
 - Why is it important to track the number of instruments and supplies throughout the intraoperative phase?
-

Task Number 60

Prepare and pass instruments.

Definition

Preparing and passing instruments should include

- ensuring correct instrumentation
- passing instruments in a timely manner to the proper member of the surgical team
- anticipating the needs of the surgeon
- maintaining instrument sterility
- adhering to safety principles
- being aware of hand dominance among members of the surgical team.

Process/Skill Questions

- Why must instruments sometimes need to be prepared during the intraoperative stage of surgery?
 - How is the sterility of instruments maintained during the intraoperative stage of surgery?
 - What safety precautions must be taken when preparing and passing instruments during a surgical procedure?
 - What is the purpose of keeping instruments cleaned or wiped during a procedure?
-

Task Number 61

Prepare and handle suture material.

Definition

Preparation and handling of suture material should include

- ensuring the correct suture material
- loading and passing the suture material in a timely manner to the correct member of the surgical team
- maintaining sterility
- adhering to safety principles
- ensuring suture needles are accounted for.

Process/Skill Questions

- What are the physical differences between absorbable and nonabsorbable suture material? Between monofilament and multifilament suture material? What is the surgical function of each type of material?
 - What is meant by suture gauge? Why is it essential to select the appropriate gauge for a given surgical procedure?
 - What are the steps for maintaining the sterility of suture material?
 - Why is it important for a surgical technologist to be knowledgeable about surgical sutures and suturing techniques?
-

Task Number 62

Assemble electrosurgical unit (ESU) and other hemostatic equipment/drugs.

Definition

Assembly should include putting together the components of the electrosurgical unit (ESU) and staplers, as needed, by

- maintaining the sterility of the ESU
- keeping the ESU in its holster when not in use
- assembling other hemostatic equipment/drugs (e.g., cell saver, gelfoam, thrombin).

Process/Skill Questions

- What is the purpose of the ESU?
- What is the difference between the monopolar and the bipolar mode of the ESU?
- Why must the surgical technologist be skilled in the use of the ESU? In the safety hazards and precautions associated with ESU use? In troubleshooting the ESU?

- What is the surgical technologist's role in assembling other hemostatic equipment?
Preparing hemostatic drugs?
 - Why is it important to remove charred tissue from the cautery instrument?
-

Task Number 63

Prepare tissue/culture specimens for lab.

Definition

Preparation of specimens should include

- the use of an accurate label
- the use of an appropriate sterilized container for each tissue or culture
- consideration of the patient's condition and the test to be performed, according to facility-specific protocols.

Process/Skill Questions

- For what purposes are fluid and tissue specimens taken in surgical procedures?
 - What methods are used for fluid and tissue removal? How do the procedures differ?
 - How is the procedure for handling a specimen for a frozen section different from that for a permanent section?
 - Why is orientation of a tissue specimen sometimes important?
 - What precautions should be taken when the tissue specimen must be removed from the surgical field during the intraoperative phase?
-

Task Number 64

Assemble drains and equipment.

Definition

Assembly should include

- selecting drains and equipment (e.g., vacuum-assisted closure of a wound [wound VAC] and pleur-evac equipment) according to the physician's order
- assembling their components as needed
- maintaining sterility
- ensuring the functionality of each item.

Process/Skill Questions

- How is an active drain different from a passive drain? What are examples of each?
 - Why must surgical technologists keep current with new and evolving equipment technology?
-

Task Number 65

Demonstrate the safe handling of sharps.

Definition

Demonstration should include

- identifying the types of sharps (e.g., suturing needles, scalpels) that most often result in surgical injuries
- identifying the bloodborne illnesses most commonly resulting from surgical injuries (i.e., the human immunodeficiency virus [HIV] and hepatitis B [HBV])
- handling sharps safely (i.e., while positioning them, while passing them, and while placing them in a sharps container)
- ensuring a correct count of sharps
- using safety handles for sharps
- avoiding the recapping of needles
- introducing a safe no-sharp zone
- disposing of sharps into container(s), according to the Occupational Safety and Health Administration (OSHA) and facility-specific regulations.

Process/Skill Questions

- Why are sharps dangerous to the surgical team?
- What precautions can be taken to minimize injuries from sharps in the operating room?
- What can be the consequences of failure to follow OSHA regulations regarding the safe use and disposal of sharps?

Task Number 66

Anticipate the needs of the team.

Definition

Anticipation should include

- predicting the needs of all members of the surgical team through all phases of the operation
- locating and preparing supplies, instruments, equipment, or other items to be ready for immediate use
- standing ready to perform anticipated actions in a timely manner, according to the responsibilities of the surgical technologist
- using critical thinking skills to observe all steps of the surgical procedure, predict outcomes, and prepare to assist the surgical team in any way.

Process/Skill Questions

- Why is it necessary for the surgical technologist to keep alert, to follow the surgical procedure constantly, and to stay a step ahead throughout the intraoperative process?
- What types of critical thinking skills are needed by a surgical technologist during the intraoperative procedure?
- How can a surgical technologist anticipate the needs of other surgical team members? What are some examples of such needs and ways to meet them?

Task Number 67

Protect the sterile field.

Definition

Protection of the sterile field should include

- maintaining sterile conscience
- facing the sterile field at all times
- keeping the hands between the waist and mid-chest level
- keeping traffic to a minimum.

Process/Skill Questions

- What is meant by sterile conscience? Why is sterile conscience the responsibility of every surgical team member?
- Why must all surgical team members face the sterile field at all times?
- How can movement within and outside the sterile field cause contamination to the sterile field?

Task Number 68

Perform closing and final surgical counts.

Definition

Performing closing and final surgical counts should include counting and verifying the count of instruments and supplies, as applicable, at the conclusion of surgery, according to Association of periOperative Registered Nurses (AORN) recommendations and facility-specific protocol.

Process/Skill Questions

- Why are closing and final surgical counts essential at the conclusion of a surgery?
 - What procedures are required if a closing or final surgical count reveals a missing supply item or instrument?
 - If a surgical count reveals a discrepancy or produces inaccurate results, what are the potential consequences for the patient? For the surgical team?
-

Task Number 69

Apply sterile dressings.

Definition

Application should include positioning and securing a sterile dressing according to a physician's order (e.g., adhesive bandage, 4 by 4 inches; gauze sponge, non-stick dressing).

Process/Skill Questions

- Why is a physician's order necessary for the application of a postoperative sterile dressing?
 - What precautions should be taken to avoid contamination of the surgical site when applying a postoperative dressing?
 - What types of sterile dressing are commonly used after surgery? What are the postoperative indications for each type of dressing?
-

Demonstrating Postoperative Procedures

Task Number 70

Transfer the patient to a stretcher.

Definition

Transfer of the patient to a stretcher should include

- using at least four people in the team—positioned at the head, foot, and both sides of the patient
- maintaining the integrity of drains and tubes
- securing the stretcher lock before moving the patient to the stretcher
- using aids to transfer the patient, as appropriate (e.g., rollers, sheets, lifts, stirrups, boards, padding)
- taking care to prevent shearing.

Process/Skill Questions

- When preparing to transport a postoperative patient from the operating room, what is the process for transporting essential drains and tubes that must remain attached to the patient?
- How should a patient on a gurney be positioned when entering and exiting an elevator? Why?^[SEP]
- What is the role of the anesthesia provider in the postoperative transport of a surgical patient? What is the role of the surgical technologist?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology

Task Number 71

Measure suction container contents.

Definition

Measuring suction container contents should include

- calculating both intake and output
- reporting the results to the circulating nurse
- accounting for quantity and color of contents.

Process/Skill Questions

- How is intake measured? How is output measured?

- Why is measurement of suction container contents an important postoperative procedure?
- How important is it to maintain sterility when measuring suction container contents postoperatively?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
-

Task Number 72

Perform postoperative cleanup procedures.

Definition

Performance of postoperative cleanup procedures should include

- the transfer of contaminated instruments to special containers
- the disposal of drapes and table cover in proper receptacle
- the return of unused equipment and supplies to proper place
- the cleaning of the operating room.

Process/Skill Questions

- What steps should be included in the wipe-down of the operating room? What products and equipment are necessary for the wipe-down?
- Who is responsible for postoperative cleanup? Why?
- What types of biohazardous materials may need to be disposed of separately from linens and other waste? What is the proper procedure for disposing of these biohazardous materials?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
-

Task Number 73

Prepare instruments for decontamination/sterilization.

Definition

Preparation should include following facility-specific protocol for

- cleaning
- decontaminating
- packaging
- sterilizing.

Process/Skill Questions

- What is the difference between decontaminating and sterilizing instruments? Why are both procedures important?
- How and why should instruments be inspected after decontamination and before sterilization?
- Why should some instruments be reassembled after decontamination and others reassembled after sterilization?
- What is a clean room? What role does it play in instrument sterilization?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
-

Task Number 74

Demonstrate terminal disinfection.

Definition

Demonstration should include

- terminal disinfection of ceilings, walls, floors, doors, and windows
- an explanation of why end-of-day disinfection must be a more complete cleaning than end-of-case disinfection.

Process/Skill Questions

- How are walls, ceilings, floors, doors, and windows disinfected? What equipment and products are needed?
- Why must end-of-day disinfection involve a more complete cleaning than end-of-case disinfection? What additional procedures must be followed for the end-of-day disinfection process?
- Who is responsible for terminal disinfection? Why?
- When is it appropriate to terminally disinfect between cases?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology

Task Number 75

Disassemble electrosurgical (ESU) unit and other hemostatic equipment.

Definition

Disassembly should include

- taking apart the components of the ESU and other hemostatic equipment
- cleaning and disinfecting all components of the equipment
- following facility-specific protocol.

Process/Skill Questions

- What postoperative safety precautions must be followed when handling the ESU?
- When and why must the electrosurgical grounding pad be disconnected from the patient after surgery?
- What is the procedure for cleaning an ESU? For disinfecting an ESU?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology

Demonstrating Positive Interpersonal Relationships

Task Number 76

Display therapeutic communication skills.

Definition

Display of therapeutic communication skills should include

- easing patient anxiety throughout the perioperative process
- exhibiting composure while interacting in a stressful environment
- showing sensitivity to cultural diversity in all interactions with coworkers, patients, and their families
- exhibiting professional and caring interpersonal skills, both verbal and nonverbal
- resolving oral, written, and social confrontations in a professional and ethical manner
- using medical terminology accurately and appropriately.

Process/Skill Questions

- What are some proven techniques for easing patient anxiety throughout the perioperative process?
- Why is nonverbal communication frequently used during the intraoperative phase of surgery?
- How can effective communication skills help to minimize stress among professionals throughout the perioperative process?
- Why is it essential to use medical terminology accurately when talking with patients and their families? With other members of the surgical team?
- How can nonverbal skills help to communicate a caring attitude?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
 - Knowledge Test: Medical Law and Ethics
 - Knowledge Test: Transcultural Health Care
-

Task Number 77

Communicate with co-workers and patients about concerns related to surgery, sexuality, and death and dying.

Definition

Communication about surgery, sexuality, and death and dying should

- include interviews and conversations with staff members, surgeons, peers, patients, and families of patients
- demonstrate a knowledge of the facts and emotional overtones surrounding the issue of concern
- reflect an understanding of and sensitivity to gender, age, and cultural diversity.

Process/Skill Questions

- Why is it difficult for many patients to communicate their concerns about surgery? About sexual ramifications of surgery? About death and dying?
- What are some techniques for communicating with patients about sexual ramifications of surgery? About death and dying?
- Why is it important to be able to talk professionally with other members of the surgical team about sexual ramifications of a surgical procedure? What approaches may be successful?
- How can a surgical technologist know when another professional needs to be consulted or called in about the patient's anxieties? What other types of professionals may be of assistance?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
- Knowledge Test: Transcultural Health Care

Demonstrating Basic Surgical Techniques

Task Number 78

Apply basic surgical techniques in general surgery.

Definition

Application should include a description of the types of procedures classified as general surgery; the selection and description of equipment and instruments needed in general surgery; and an explanation of the basic techniques performed by surgical technologists in general surgery procedures (e.g., an appendectomy):

- Techniques may include either traditional open-incision surgery or laparoscopic surgery.
- Equipment for general surgery typically includes lighting equipment, a suctioning apparatus, and hemostatic equipment, such as an ESU. Laparoscopic surgery also includes a camera.
- Depending on the surgery, instruments may include the major laparotomy set, the general surgery minor set, and other more specialized tools. Both the major laparotomy set and the minor set include one or more suction tips, a variety of scissors and forceps, a clamp, knife and needle holders, and retractors, among other instruments. Laparoscopic surgery requires more slender tools than those used in traditional open incision surgery.

Process/Skill Questions

- How is general surgery similar to and different from specialized surgery?
- How is open-incision surgery similar to and different from laparoscopic surgery?
- What are the shapes and purposes of the various types of scissors, forceps, and retractors used in general surgery? Laparoscopic surgery?
- How does the concept “form follows function” apply to basic surgical instruments?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
- Knowledge Test: Pathophysiology

Leadership Events

- Medical Photography

Teamwork Events

- HOSA Bowl

Task Number 79

Apply basic surgical techniques in obstetric and gynecologic surgery.

Definition

Application should include specialized equipment, instruments, and techniques needed for basic procedures in obstetric and gynecologic surgery (e.g., abdominal and vaginal hysterectomy):

- Along with the basic equipment used in general surgery, special equipment for obstetric and gynecologic surgery may include special beds, stirrups, leg holders, and other positioning aids, as well as a fetal monitor and warming bed for obstetric surgery. In some cases, obstetric and gynecologic surgery involves lasers and related equipment (e.g., goggles, a smoke evacuator). In addition, laparoscopic procedures require video equipment and insufflators.
- Depending on the type of surgery, specialized instruments may include those in the vaginal delivery set, basic vaginal set, cesarean section set, gynecologic abdominal set, dilation and curettage (D&C) set, and others. For example, beyond the basic laparoscopic set, an abdominal hysterectomy generally requires specialized clamps.
- Perioperative techniques and considerations vary widely among types of obstetric and gynecologic procedures.

Process/Skill Questions

- Why is positioning an important issue in obstetric surgery?
- Why is a different instrument set indicated for each type of obstetric and gynecologic surgery? How do the sets differ?
- When might laparoscopic surgery be appropriate in obstetrics and gynecology? When might laser technology be appropriate?
- What emerging technologies are associated with the specialty of obstetric and gynecologic surgery?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
- Knowledge Test: Pathophysiology

Leadership Events

- Medical Photography

Teamwork Events

- HOSA Bowl

Task Number 80

Apply basic surgical techniques in otorhinolaryngology surgery.

Definition

Application should include specialized equipment, instruments, and techniques needed for basic procedures in otorhinolaryngology surgery (e.g., myringotomy):

- Along with the basic equipment used in general surgery, special equipment for otorhinolaryngology surgery, such as myringotomy, may include an operating microscope and sterile microscope hand grips. Myringotomy also requires a stool for the surgeon to sit on. In addition, laparoscopic surgical equipment may include video equipment and insufflators.
- Depending on the type of surgery, specialized instruments are needed. For myringotomy, for example, these include ear specula, ear curettes, and an ear knife; the procedure also may require the insertion of polyethylene ventilation tubes or pressure-equalizing tubes.
- Perioperative techniques and considerations vary widely among types of otorhinolaryngology procedures.

Process/Skill Questions

- Why is microscopic instrumentation important in otorhinolaryngology surgery?
- Pressure-equalizing tubes are classified as implants. What special precautions and documentation are required because they are considered implants?
- What special equipment and instruments may be required for rigid sinus endoscopy? For rhinoplasty? For surgical procedures designed to treat a patient with sleep apnea?
- What emerging technologies are associated with the specialty of otorhinolaryngology surgery?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
- Knowledge Test: Pathophysiology

Leadership Events

- Medical Photography

Teamwork Events

- HOSA Bowl
-

Task Number 81

Apply basic surgical techniques in orthopedic surgery.

Definition

Application should include specialized equipment, instruments, and techniques needed for basic procedures in orthopedic surgery (e.g., total hip replacement):

- Along with the basic equipment used in general surgery, special equipment for orthopedic surgery may include special fracture tables and special positioning devices.
- Depending on the type of surgery, instruments may include those in the basic orthopedic set, along with other instruments, such as specialized retractors, clamps, elevators, a mallet, a power saw and drill, pliers, and a bone hook.
- Preoperative X-rays or MRIs need to be available to the operating room surgeon, and intraoperative X-rays may also be required.
- Perioperative techniques and considerations vary widely among types of orthopedic procedures
- O-arm, specialized imaging equipment in the operating room used during neuro or spine surgery, may be used.

Process/Skill Questions

- What are the components of the total hip replacement prosthesis? What considerations are associated with selecting and fitting the total hip replacement prosthesis?
- How and when is cement needed in total hip replacement surgery?
- What precautions and considerations are needed when performing orthopedic surgery on a patient with osteoporosis?
- What basic equipment and instruments are needed when performing knee arthroscopy? Carpal tunnel release? Above-the-knee amputation?
- What emerging technologies are associated with the specialty of orthopedic surgery?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
- Knowledge Test: Pathophysiology

Leadership Events

- Medical Photography

Teamwork Events

- HOSA Bowl

Task Number 82

Apply basic surgical techniques in genitourinary surgery.

Definition

Application should include specialized equipment, instruments, and techniques needed for basic procedures in genitourinary surgery (e.g., cystoscopy):

- Along with the basic equipment used in general surgery, equipment for genitourinary surgery, especially transurethral procedures, may include specialized X-ray tables, gear for radiation protection, and other equipment related to X-ray procedures. Additional equipment may include special systems for supporting fluid bags or bottles and for draining irrigation and other fluids.
- Depending on the type of surgical procedure, instruments may include some additions to the general set. For example, cystoscopy (urinary tract endoscopy) procedures call for various types of viewing instruments (scopes). Supplies for genitourinary surgery may include a lubricant, a ureteral drainage bag, and a variety of specialized catheters.
- Perioperative techniques and considerations vary widely among types of genitourinary procedures.

Process/Skill Questions

- What types of genitourinary procedures can be performed endoscopically? What are the responsibilities of a surgical technologist during endoscopy?
- Why does X-ray technology play an important role in genitourinary surgery?
- What emerging technologies are associated with genitourinary surgery?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
- Knowledge Test: Pathophysiology

Leadership Events

- Medical Photography

Teamwork Events

- HOSA Bowl

Task Number 83

Apply basic surgical techniques in other specialized medical areas.

Definition

Application of basic surgical techniques in other specialized medical areas should include equipment, instruments, and techniques needed for surgical procedures such as

- plastic/reconstructive surgery (e.g., breast augmentation)
- ophthalmic surgery (e.g., cataract extraction)
- arthroscopic/laparoscopic surgery (e.g., joint vs. cavity)
- neurosurgery (e.g., brain tumor removal)
- cardio-thoracic surgery (e.g., aortic valve replacement)
- oral/maxillofacial surgery (e.g., cleft palate repair)
- peripheral vascular surgery (e.g., arteriovenous access graft).

Process/Skill Questions

- What do augmentation mammoplasty and reconstruction mammoplasty have in common? How are the two surgical procedures different? What concerns does each procedure raise for the patient? Why do surgical technologists need to know about these concerns?
- How are arthroscopic and laparoscopic surgical tools and techniques similar? How are they different? What are the typical responsibilities of the surgical technologist in each procedure?
- What types of procedures are within the scope of cardiothoracic surgery? ^[SEP]
- How does the age of the patient affect perioperative considerations related to ophthalmic surgery?
- How have recent advances in equipment and techniques improved surgical outcomes for patients undergoing neurological surgery? Peripheral vascular surgery? What new technologies are emerging in these fields?

HOSA Competitive Events (High School)

Health Science Events

- Medical Terminology
- Knowledge Test: Pathophysiology

Leadership Events

- Medical Photography

Teamwork Events

- HOSA Bowl

Developing Employability Skills

Task Number 84

Demonstrate leadership qualities.

Definition

Demonstration of leadership qualities should include

- practicing effective communication
- taking initiative
- showing independence
- modeling professional behavior
- using problem-solving skills
- using conflict-resolution skills
- anticipating team needs.

Process/Skill Questions

- How is it possible to demonstrate initiative and independence while still being an effective team player?
- Why do surgical technologists need to develop strong problem-solving skills? What types of problems may be encountered in the preoperative process? Intraoperative process? Postoperative process?
- When might a surgical technologist need to resolve conflicts on the job? What skills are important in conflict resolution?

- How can a surgical technology student improve his or her leadership skills? How can continuous improvement of personal leadership skills benefit a practicing surgical technologist?

HOSA Competitive Events (High School)

Teamwork Events

- Biomedical Debate
 - Community Awareness
 - Creative Problem Solving
-

Task Number 85

Develop a procedure log.

Definition

Development of a procedure log should be accomplished on a long-term basis, should demonstrate a variety of training/experience, and should be sufficiently comprehensive as to enhance marketability.

Process/Skill Questions

- What types of training and experience are appropriate for inclusion in a procedure log?
 - What are some important considerations when organizing and formatting a procedure log?
 - How can a procedure log be useful when applying for a position as a surgical technologist?
-

Task Number 86

Develop a professional résumé.

Definition

Development of a professional résumé should include

- defining terms related to résumés
- distinguishing among types of résumés

- selecting the most appropriate résumé type to use
- determining career goals and objectives
- gathering accurate information for all components of the résumé
- getting permission from references to be listed in the résumé
- proofreading the résumé
- asking another person to proofread the résumé
- revising the résumé as needed.

Process/Skill Questions

- What is the purpose of a résumé?
- Under what circumstances should a person submit his or her résumé?
- Typically, what are the primary parts of a résumé? Why is each important?
- How long should a résumé be? Why?
- How can a person best tailor his or her résumé to fit a particular career area or job?
- What are key issues one should consider before submitting an electronic résumé?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
- Job-Seeking Skills

Task Number 87

Describe the application process.

Definition

Description of the application process should include

- developing the résumé
- constructing a plan of action (e.g., self-assessment, goals, steps, time line, resources)
- writing correspondence (e.g., inquiry letter, cover letter, follow-up letter)
- completing an application
- completing the interview
- performing follow-up actions (e.g., phone call, e-mail, letter).

Process/Skill Questions

- Why is a plan of action an important part of the application process?

- What types of correspondence may be necessary when applying for a job? What is the basic content of each type of correspondence? What resources are available to assist job applicants with writing employment letters?
- What types of follow-up are expected from job applicants? Why is follow-up essential?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
- Job-Seeking Skills

Task Number 88

Explain important factors in completing a job application.

Definition

Explanation should include

- acceptable practices for completing a job application form (e.g., including accurate and relevant information about one's education, employment background, and other relevant experiences, such as honors, special training, related hobbies, and relevant professional memberships or projects; following instructions on the application form)
- unacceptable practices for completing a job application form (e.g., leaving blank spaces, including inaccurate information, presenting information in an untidy or disorganized manner, omitting relevant information, not following instructions)
- the importance of maintaining an up-to-date personal fact sheet containing the basic information required by most applications (e.g., list of positions held; dates of work and schooling; list of other relevant experiences, skills, credentials, and/or activities; names of references and contact information)
- the importance of accuracy, neatness, succinctness, and completeness in a job application form.

Process/Skill Questions

- How can the application form benefit the applicant? The employer?
- In what ways are applications judged by the employer?
- What considerations are important when completing a job application online?
- Why is it important not to leave spaces blank on the application form?
- Who are appropriate references to list on a job application? Why is it important to contact a person before using him or her as an employment reference?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
 - Job-Seeking Skills
-

Task Number 89

Identify qualities evaluated during a job interview.

Definition

Identification should include qualities such as

- professional/corporate dress and accessories
- acceptable hygiene
- punctuality
- courtesy
- effective verbal and nonverbal communication skills
- attentiveness
- erect posture, eye contact, a firm handshake, and other appropriate body language
- honesty
- reasonable knowledge about the employer/company
- acceptable responses to interview questions
- required documentation in hand.

Process/Skill Questions

- How do dress and grooming affect first impressions?
- When deciding what to wear to an interview, why is it important to consider the company where one is applying? The job for which one is applying?
- How can body language make or break an interview?
- How can an interviewee exhibit professional courtesy?
- Why is it helpful to research the company prior to the interview? How can this be accomplished?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
- Job-Seeking Skills

Task Number 90

Demonstrate interview strategies.

Definition

Demonstration should include interview strategies such as

- researching the company and the specific job for which one is applying
- preparing answers to common interview questions
- preparing questions ahead of time to ask the interviewer
- ensuring that all required documents are brought to the interview
- going alone to the job interview
- turning off one's cellphone before entering the building
- being punctual
- being courteous and respectful to the receptionist and all other company representatives
- offering a professional greeting and handshake
- using accurate titles throughout the interview (Mr., Mrs., Dr., as appropriate)
- listening carefully to interviewer's questions
- responding to questions clearly, accurately, honestly, and succinctly
- using standard English, appropriate volume, and composed tone of voice throughout the interview
- asking prepared questions that seem appropriate and have not already been answered
- upon the employer's cue, bringing the interview to closure in a professional manner
- keeping all electronic communication devices put away until outside the building.

Process/Skill Questions

- Why is it important to go alone to a job interview?
- Why is it important to turn off one's cellphone and keep all electronic communication devices off and out of sight until outside the building?
- What are some questions an applicant should be prepared to answer? To ask?
- Why is listening essential throughout the interview?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
- Job-Seeking Skills

Task Number 91

Describe factors important for job retention.

Definition

Description should include

- competence
- positive attitude
- willingness to learn
- punctuality
- flexibility
- initiative
- independence
- stamina
- skill as a team player
- communication skills
- honesty
- earning continuing education credits toward certification renewal.

Process/Skill Questions

- In what ways might an entry-level surgical technologist exhibit flexibility on the job? A positive attitude?
- How might an entry-level surgical technologist communicate a willingness to learn on the job? What types of learning experiences may be available?
- How might an employee's personal life and habits affect his or her stamina on the job? His or her chances for job retention?
- Why is honesty a critical quality for a surgical technologist?

HOSA Competitive Events (High School)

Leadership Events

- Interviewing Skills
- Job-Seeking Skills

Describing the Opioid Crisis

Task Number 92

Describe the history and current state of the opioid crisis in the United States.

Definition

Description should include

- the relationship between opioid prescribing and illicit opioid use to overall opioid overdose deaths
- the prevalence of co-occurring mental health disorders
- the shift in attitudes in the 1990s toward pain management and use of opioids, including the role of pharmaceutical marketing
- the stigma associated with addiction and the changing view of addiction from a moral failing to a chronic, relapsing disease
- statistics, trends, and demographics surrounding the crisis
- population health and other public health aspects of the crisis, including its effects on family and neonates, as well as overall health costs.

Process/Skill Questions

- How are opioids created?
- Can opioids be safely prescribed to patients taking psychotropic drugs?
- How does society stereotype individuals with a history of drug addiction?
- What are the current trends that have contributed to the nationwide opioid crisis?
- How has the opioid epidemic affected emergency rooms and the first responder system?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- Creative Problem Solving
- Public Service Announcement

Task Number 93

Describe the history and current state of the opioid crisis in Virginia.

Definition

Description should include

- the relationship between opioid prescribing and illicit opioid use to overall opioid overdose deaths
- the prevalence of co-occurring mental health disorders
- the shift in attitudes in the 1990s toward pain management and use of opioids, including the role of pharmaceutical marketing
- the stigma associated with addiction and the changing view of addiction from a moral failing to a chronic, relapsing disease
- statistics, trends, and demographics surrounding the crisis
- population health and other public health aspects of the crisis, including its effects on family and neonates, as well as overall health costs
- the Virginia Department of Health's [Declaration of a Public Health Emergency](#) on November 21, 2016
- proposed legislation to address the crisis in Virginia (i.e., [House Bill 2161](#) and [Senate Bill 1179](#), which require the secretary of health and human resources to convene a workgroup to establish educational guidelines for training healthcare providers in the safe prescribing and appropriate use of opioids)
- the development of curricula and educational standards regarding opioid addiction.

Resource: [The Opioid Crisis Among Virginia Medicaid Beneficiaries](#)

Process/Skill Questions

- What agencies participated in the governor's task meeting on the opioid crisis?
- What educational organizations will be tasked with providing opioid training to their students?
- What is the benefit of educating future medical professionals about opioid addiction?
- What is the current attitude in society about opioid use and addiction?
- How is the local community affected by the opioid epidemic?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- Creative Problem Solving
 - Public Service Announcement
-

Task Number 87

Define the pharmacological components and common uses of opioids.

Definition

Definition should include

- plant-based opioids (e.g., opium from poppy seeds)
- names of legal and illegal opioids
- [heroin](#)
- names of the most common opioids
- [fentanyl](#)
- medical diagnoses and injuries associated with opioid prescriptions
- [commonly used terms](#).

Resource: [Prescription Pain Medications](#), National Institute on Drug Abuse for Teens

Process/Skill Questions

- For what illnesses are opioids commonly prescribed?
- What is the current medical protocol when opioids are prescribed?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology
- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing
-

Examining the Key Factors of Drug Addiction

Task Number 94

Examine the science of addiction.

Definition

Examination should include

- biopsychosocial aspects of addiction
- the role of endorphins and dopamine
- the role of religious beliefs
- behavioral aspects of addiction
- life cycle of addiction
- misuse of opioids.

Process/Skill Questions

- How will understanding the physiological absorption of opioids in the body provide a holistic assessment?
 - What spiritual characteristics might be observed in the science of addiction?
 - What are some genetic explanations for some family members being more prone to addiction?
-

Task Number 95

Explain prevention and early intervention strategies.

Definition

Explanation should include

- risk and protective factors in opioid addiction
- specific populations at risk of addiction
- motivational interviewing and other communication strategies
- naloxone co-prescribing

- roles of family and social institutions in prevention and early intervention.

Resources:

- [Prevention Tip Card](#), Office of the Attorney General of Virginia
- [Prescription Opioids: Even When Prescribed by a Doctor](#) (video), Centers for Disease Control and Prevention (CDC)

Process/Skill Questions

- What are the physiological characteristics of opioid addiction?
- What demographic is most affected by the opioid epidemic? What are some explanations for this?
- How can provision of naloxone and training in its use be sustained financially?
- What obligations do families and society as a whole have in preventing and providing early intervention related to drug addiction?

Task Number 96

Identify addiction and its behavioral elements, as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

Definition

Identification should include

- DSM-5 Criteria for Substance Use Disorders
- American Society of Addiction Medicine (ASAM) Criteria (i.e., The Six Dimensions of Multidimensional Assessment)
- CONTINUUM, The ASAM Criteria Decision Engine
- clinical and behavioral aspects of addiction
- practice-appropriate screening tools, including co-morbidity screening.

Process/Skill Questions

- What are DSM-5 and ASAM and what information do they provide to healthcare professionals?
- What are clinical and behavioral elements of addiction that should be recognized by healthcare professionals?
- Who is responsible for providing the necessary screening tools and training?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Behavioral Health
- Knowledge Test: Medical Law and Ethics

Health Professions Events

- Clinical Nursing
-

Task Number 97

Describe the treatment models of addiction therapy.

Definition

Description should include

- a recognition that addiction is a chronic disease
- evidence-based treatment models for addiction in general and opioid addiction in particular
- medication-assisted treatment
- the continuum of care in opioid addiction treatment
- how and when to make a referral for treatment
- the roles in an interdisciplinary addiction team
- the role of peers in the treatment of addiction
- the difference between a drug culture and recovery culture
- the management of patients in recovery, including factors contributing to relapse.

Process/Skill Questions

- How many treatment models exist for addiction therapy? Why is one model better than the other?
- What are the advantages of evidence-based treatments and models?
- What medication-assisted treatment programs are available? Who provides them?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Behavioral Health
- Knowledge Test: Medical Law and Ethics

Health Professions Events

- Clinical Nursing
-

Task Number 98

Describe the medication management antidote used to prevent fatal opioid overdoses.

Definition

Description should include

- availability and use of naloxone
- naloxone training (e.g., [REVIVE!](#))
- naloxone training agencies
- monitoring of concurrent prescriptions.

Resources:

- [Frequently Asked Questions about Naloxone](#), Virginia Department of Health
- [How to prepare naloxone for administration](#), Virginia Department of Behavioral Health and Developmental Services

Process/Skill Questions

- What is naloxone?
- How much does naloxone cost with health insurance? How much does naloxone cost without health insurance?
- Who should receive naloxone training?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
 - Medical Terminology
 - Knowledge Test: Pharmacology
-

Understanding Pain Management Protocols

Task Number 99

Explain the science of physiological and mental pain.

Definition

Explanation should include

- definition of pain from the International Association for the Study of Pain (IASP)
- neurobiological basis of pain
- biopsychosocial model of pain
- types of pain (e.g., neuropathic)
- acute, sub-acute, and chronic pain, including pain generation
- spinal and brain modulation, behavioral adaptation and maladaptation, and the continuum from acute to chronic disabling pain
- the underlying science of pain relief.

Process/Skill Questions

- What is the IASP definition of pain?
- How can a medical professional get a patient to describe physiological pain?
- What assessment tools can be used to help patients describe physiological pain? How do tools differ for describing mental pain?
- How are pain and levels of pain categorized?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Nutrition
- Knowledge Test: Transcultural Health Care

Teamwork Events

- Community Awareness
 - Creative Problem Solving
 - HOSA Bowl
-

Task Number 100

Describe the diagnostic tools used in developing pain management plans.

Definition

Description should include

- pain-related health history and examination
- understanding the role of family in supporting individuals in need of pain management
- practice-appropriate screening tools that include aspects such as mood and function
- the use and limitations of pain scales
- differential diagnosis of pain and its placement on the pain continuum.

Resource: [Promoting Safer and More Effective Pain Management](#), CDC

Process/Skill Questions

- What are the Wong-Baker, LEGO, and Hospice assessment tools?
- How do pain assessment tools vary across the life span?
- When completing an assessment, is pain considered subjective or objective?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Nutrition
- Knowledge Test: Transcultural Health Care

Teamwork Events

- Community Awareness
- Creative Problem Solving
- HOSA Bowl

Task Number 101

Describe pain treatment options available to various populations of patients.

Definition

Description should include

- special populations in pain management, such as palliative/end-of-life care patients, patients with cancer, pediatric patients, and geriatric populations
- non-pharmacologic treatment of pain, including active care and self-care, evidence- and non-evidence-based approaches, and multimodal pain management
- non-opioid pharmacologic management of pain
- the challenges in discussing the psychological aspects of pain and the role of the central nervous system
- adverse drug event prevention for all pain medications
- the roles in an interdisciplinary pain management team
- the significance of issues such as anxiety, depression, and sleep deprivation in pain management
- the placebo effect
- goals and expectations in the treatment of pain, based on diagnosis and pain continuum
- when to make a pain referral and to whom.

Resources:

- [CDC Fact Sheet for Prescribing Opioids for Chronic Pain](#)
- [CDC Guidelines for Prescribing Opioids for Chronic Pain](#)

Process/Skill Questions

- What pain management resources are available for special populations?
- What are alternative forms of pain management?
- What role does the mind play in pain management?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Nutrition
- Knowledge Test: Transcultural Health Care

Teamwork Events

- Community Awareness
- Creative Problem Solving
- HOSA Bowl

Task Number 102

Describe the effects of opioid dependency on the human body systems.

Definition

Description should include the short- and long-term effects of opioids on the following:

- Nervous system
- Respiratory system
- Circulatory system
- Digestive system
- Skeletal system

Resource: [Drugs and Your Body](#), Scholastic

Process/Skill Questions

- How does the misuse of opioids affect nutrition and weight loss?
- How might opioid misuse be evident in a person's vital signs?
- How do opioids affect the brain as the control center for homeostasis?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- HOSA Bowl

Task Number 103

Explain the mechanism and physical effects of opioids on the human body.

Definition

Explanation should include the following:

- Mechanism of action and metabolism of opioids
- Development of tolerance, dependence, and addiction
- Health consequences of drug misuse
 - HIV, hepatitis, and other infectious diseases
 - Cancer
 - Cardiovascular effects
 - Respiratory effects
 - Gastrointestinal effects
 - Musculoskeletal effects
 - Kidney damage
 - Liver damage
 - Neurological effects
 - Hormonal effects
 - Prenatal effects
 - Other health effects
 - Mental health effects
 - Death
- Withdrawal
 - Causes
 - Timeframe (i.e., peaks of withdrawal symptoms)
 - Physical signs (e.g., nausea, diarrhea, vomiting, cold flashes)

Process/Skill Questions

- What are the short- and long-term effects of withdrawal dependence symptoms?
- How long can the human body function while exhibiting the symptoms of withdrawal?
- What are other medical conditions that may arise because of the symptoms of physical dependence?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Teamwork Events

- HOSA Bowl

Task Number 104

Explain the use of opioids in practice settings, the role of opioids in pain management, and risk factors associated with the use of the medication.

Definition

Explanation should include

- appropriate use of different opioids in various practice settings
- the interactions, risks, and intolerance of prescription opioids
- the role and effectiveness of opioids in acute, sub-acute, and chronic pain
- a reassessment of opioid use based on stage of pain
- contemporary treatment guidelines, best practices, health policies, and government regulations related to opioid use
- use of opioids in pain management of patients with substance abuse disorders, in recovery, and in palliative/end-of-life care.

Process/Skill Questions

- When should risk factors regarding opioids be reviewed with the patient?
- What are the options when treating patients with a history of substance abuse?
- What government regulations and policies are in place to improve the safe administration of opioids?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology
- Knowledge Test: Pharmacology

Teamwork Events

- Creative Problem Solving
- HOSA Bowl

Task Number 105

Describe the withdrawal and tapering side effects of opioid use.

Definition

Description should include

- characteristics of acute and protracted withdrawal from opioid dependence or addiction
- tapering
- pain contracts or agreements.

Process/Skill Questions

- What are the stages of withdrawal in opioid abuse transition?
- What medications might be needed in the withdrawal stage?
- What information should be included in the pain management contract?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing

Task Number 106

Describe storage and disposal options for opioids.

Definition

Description should include

- medicine take-back options (e.g., [National Drug Take Back Day](#))
- disposal in the household trash and flushing certain potentially dangerous medicines down the toilet.

Resources:

- [Disposal of Unused Medicines: What You Should Know](#), Food and Drug Administration (FDA)
- [Prescription Drug Abuse and Tips for Proper Disposal](#), Office of the Attorney General of Virginia

Process/Skill Questions

- How should medications be stored in the house?
- What is National Prescription Drug Take Back Initiative?
- What is the *black box*?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing
-

Task Number 107

Explain community resources for education about opioid use.

Definition

Explanation should include key components of and resources for patient education in the use of opioids, including

- risks
- benefits
- side effects
- tolerance
- signs of sedation or overdose
- naloxone, including its storage and disposal.

Process/Skill Questions

- What resources for opioid education are available locally, statewide, and nationally?
- Where should the patient first be informed about the resources available?
- How does social media aid in patient education on opioid addiction?

HOSA Competitive Events (High School)

Health Science Events

- Knowledge Test: Pharmacology

Health Professions Events

- Clinical Nursing
-

Working with Patients and Caregivers

Task Number 108

Describe key communication topics involving opioids for patients.

Definition

Description should include

- benefits and risks of opioids
- opioid risk screening (i.e., taking a social, medical, and financial history)
- risk mitigation (e.g., naloxone, safe storage, pain contracts)
- medication tapers and/or discontinuation of therapy.

Process/Skill Questions

- What are the benefits of using opioids in medicine?
- What is the relationship between demographics and risk of opioid addiction?
- How does culture influence risk factors in opioid abuse?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Health Professions Events

- Clinical Nursing

Task Number 109

Describe communication topics for caregivers and family members.

Definition

Description should include

- basic knowledge about opioids
- signs of addiction
- treatment options for addiction
- naloxone training for caregivers
- legal issues related to misuse.

Process/Skill Questions

- What rights do caregivers have in regard to medical information of the abuser?
- What legal steps might the caregiver or family have to take for treatment?
- Where can the caregiver or family members receive naloxone training? Are children of opioid abusers eligible for training?

HOSA Competitive Events (High School)

Health Science Events

- Medical Spelling
- Medical Terminology

Health Professions Events

- Clinical Nursing

SOL Correlation by Task

Demonstrate procedures of a surgical technologist from start to finish in a perioperative setting.	English: 12.1
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	History and Social Science: GOVT.1, GOVT.16
Display organizational skills.	History and Social Science: GOVT.1
Explain the effects of a variety of medications on preoperative, intraoperative, and postoperative conditions.	English: 12.5 History and Social Science: WHIL.4
Describe types of anesthesia.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Describe mechanical surgical techniques and related safety issues.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Describe thermal surgical techniques and related safety issues.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Describe laparoscopic surgical techniques and related safety issues.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Describe ultrasonic surgical techniques and related safety issues.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Describe radiologic surgical techniques and related safety issues.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Examine emerging surgical techniques.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Identify ramifications of surgical implants.	English: 12.3

Explain the importance of the patient's operative consent, the preoperative checklist, and other preoperative documentation, as appropriate.	English: 12.5 History and Social Science: GOVT.1
Assist with patient transfer and positioning.	
Simulate insertion, connection, and removal of an indwelling Foley catheter.	
Perform skin-preparation procedures.	
Verify safe environment for the patient.	Science: CH.1
Create and maintain the sterile field.	
Set up instrumentation and perform preoperative surgical count.	
Measure and pour solutions.	
Drape patient for surgery.	
Perform intraoperative surgical counts.	
Prepare and pass instruments.	
Prepare and handle suture material.	
Assemble electrosurgical unit (ESU) and other hemostatic equipment/drugs.	
Prepare tissue/culture specimens for lab.	
Assemble drains and equipment.	
Demonstrate the safe handling of sharps.	English: 12.3 History and Social Science: VUS.14, WHIL.14
Anticipate the needs of the team.	History and Social Science: GOVT.16
Protect the sterile field.	
Perform closing and final surgical counts.	
Apply sterile dressings.	
Transfer the patient to a stretcher.	
Measure suction container contents.	
Perform postoperative cleanup procedures.	
Prepare instruments for decontamination/sterilization.	
Demonstrate terminal disinfection.	
Disassemble electrosurgical (ESU) unit and other hemostatic equipment.	
Display therapeutic communication skills.	History and Social Science: GOVT.16
Communicate with co-workers and patients about concerns related to surgery, sexuality, and death and dying.	English: 12.1 History and Social Science: GOVT.11, GOVT.16
Apply basic surgical techniques in general surgery.	English: 12.5

Apply basic surgical techniques in obstetric and gynecologic surgery.	
Apply basic surgical techniques in otorhinolaryngology surgery.	
Apply basic surgical techniques in orthopedic surgery.	
Apply basic surgical techniques in genitourinary surgery.	
Apply basic surgical techniques in other specialized medical areas.	
Demonstrate leadership qualities.	History and Social Science: GOVT.1
Develop a procedure log.	
Develop a professional résumé.	English: 12.3, 12.5, 12.6, 12.7
Describe the application process.	English: 12.3, 12.5, 12.6, 12.7
Explain important factors in completing a job application.	English: 12.5
Identify qualities evaluated during a job interview.	English: 12.3 History and Social Science: GOVT.1, GOVT.16
Demonstrate interview strategies.	English: 12.5, 12.8 History and Social Science: VUS.14, WHIL.14
Describe factors important for job retention.	English: 12.3 History and Social Science: GOVT.1
Describe the history and current state of the opioid crisis in the United States.	English: 12.5 History and Social Science: VUS.14, WHIL.14
Describe the history and current state of the opioid crisis in Virginia.	English: 12.5, 12.8 History and Social Science: VUS.14, WHIL.14
Define the pharmacological components and common uses of opioids.	English: 12.3, 12.8 History and Social Science: VUS.14, WHIL.14
Examine the science of addiction.	English: 12.5, 12.8

	History and Social Science: VUS.14, WHIL.14
Explain prevention and early intervention strategies.	English: 12.5, 12.8 History and Social Science: VUS.14, WHIL.14
Identify addiction and its behavioral elements, as defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).	English: 12.3, 12.5 History and Social Science: VUS.14, WHIL.14
Describe the treatment models of addiction therapy.	English: 12.3, 12.5 History and Social Science: VUS.14, WHIL.14
Describe the medication management antidote used to prevent fatal opioid overdoses.	English: 12.3, 12.8 History and Social Science: VUS.14, WHIL.14
Explain the science of physiological and mental pain.	English: 12.3, 12.5
Describe the diagnostic tools used in developing pain management plans.	English: 12.4, 12.5 History and Social Science: GOVT.1
Describe pain treatment options available to various populations of patients.	English: 12.4, 12.5, 12.8
Describe the effects of opioid dependency on the human body systems.	English: 12.5 History and Social Science: WHIL.4
Explain the mechanism and physical effects of opioids on the human body.	English: 12.5 History and Social Science: VUS.14, WHIL.4, WHIL.14
Explain the use of opioids in practice settings, the role of opioids in pain management, and risk factors associated with the use of the medication.	English: 12.5
Describe the withdrawal and tapering side effects of opioid use.	English: 12.5
Describe storage and disposal options for opioids.	English: 12.5, 12.8
Explain community resources for education about opioid use.	English: 12.5
Describe key communication topics involving opioids for patients.	English: 12.5

Teaching Resources

- American Heart Association. http://www.heart.org/HEARTORG/CPRAndECC/FindaCourse/Find-a-Course_UCM_303220_SubHomePage.jsp. Offers information about the AHA certification in Basic Life Support (BLS) for Healthcare Providers.
- American Hospital Association. <http://www.aha.org/aha/issues/Communicating-With-Patients/pt-care-partnership.html>. Offers a downloadable version of "The Patient Care Partnership" (formerly "The Patient's Bill of Rights").
- American Red Cross. <http://www.redcross.org/services/hss/courses/>. Includes information about first aid and other certifications.
- Association of Surgical Technologists. <http://www.ast.org/>. Provides information about the organization, AST national certification, and salary comparisons for surgical technologists nationwide.
- Australian Broadcasting Corporation. *Open Heart Surgery Simulation*. <http://www.abc.net.au/science/lcs/heart.htm>. Allows the viewer to assume the role of surgeon in this simulation of coronary bypass surgery.
- *Cells Alive!* <http://www.cellsalive.com/>. Contains a variety of animated interactive cell models and processes with related information.
- Centers for Disease Control and Prevention. <http://www.cdc.gov/>. Provides extensive information on a variety of health and safety topics, including diseases and conditions, emergency preparedness and response, life stages and populations, and workplace safety and health.
- *Interactive Periodic Table of the Elements*. <http://www.chemicalelements.com/>. Includes interactive paths to the chemical elements through chemical name, atomic number, atomic mass, electron configuration, boiling point, and other access points.
- Joint Commission on the Accreditation of Healthcare Organizations. www.jointcommission.org/. Offers information and guidelines on accreditation, certification, standards, and patient safety (including the "Do Not Use" List for medical abbreviations).
- *Lesson Planet*. <http://www.lessonplanet.com/lesson-plans/health>. Contains numerous lesson plans related to health topics, such as anatomy, body systems, disease, medicine, safety, and others.
- *National HOSA Interactive Human Body*. <http://www.hosa.org/hosa102/Module2.htm>. Includes lots of links to teaching resources from many areas of medical science.
- National Library of Medicine. Medline Plus. "Surgery and Rehabilitation." <http://www.nlm.nih.gov/medlineplus/surgeryandrehabilitation.html>. Describes major types of surgery and indications for each.
- NOVA. *Map of the Human Heart*. <http://www.pbs.org/wgbh/nova/eheart/human.html>. Presents a simulation of blood circulation in the human heart and links to other heart resources.

- Occupational Safety and Health Administration. <http://www.osha.gov/>. Includes official U.S. government guidelines for safety practices related to biological agents, including bloodborne pathogens and needle-stick prevention.
- U.S. Department of Health and Human Services. <http://www.hhs.gov/ocr/hipaa>. Contains a copy of the *Health Insurance Portability and Accountability Act of 1996* (HIPAA) and other information related to national standards to protect the privacy of personal health information.
- U.S. Department of Justice. *Americans with Disabilities Act*. <http://www.ada.gov>. Provides a guide to the Americans with Disabilities Act, as well as other disability rights laws.
- The University of Texas Health Science Center at San Antonio. <http://teachhealthk-12.uthscsa.edu/>. Provides links to anatomy, diseases, disorders, nutrition, and other health-related resources, including teaching activities.
- *Virginia Career VIEW*. <http://www.vaview.vt.edu/careers/career/29-2055.00>. Provides Virginia-based information about the career of surgical technology, including duties; national, state, and regional earnings; education level; and other career topics.
- *The Visible Human Project*. http://www.nlm.nih.gov/research/visible/visible_human.html. Provides links to many medical images and simulations plus other related resources.

Opioid Abuse Prevention Education

This [Opioid Abuse Prevention](#) document includes resources for opioid abuse prevention education from kindergarten to 12th grade.

Other Opioid Resources

Virginia Department of Behavioral Health and Developmental Services. Revive! Opioid Overdose and Naloxone Education for Virginia. [Naloxone Fact Sheet](#) (PDF).

Virginia Department of Behavioral Health and Developmental Services. [Revive! Opioid Overdose and Naloxone Education for Virginia](#) (website).

Office of National Drug Control Policy, White House. [Fentanyl: Safety Recommendations for First Responders](#) (PDF).

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Alcohol](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Bath Salts](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Cocaine](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: E-Cigarette](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Heroin](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Marijuana](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: MDMA](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Meth](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Pain Medicine](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Spice \(K2\)](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Tobacco and Nicotine](#) (website; PDF available)

National Institute on Drug Abuse, National Institutes of Health. [Easy to Read Drug Facts: Other Drugs People Use and Misuse](#) (website; PDF available)

Appendix: Credentials, Course Sequences, and Career Cluster Information

Industry Credentials: Only apply to 36-week courses

- Certified Surgical Technologist (CST) Examination
- College and Work Readiness Assessment (CWRA+)
- National Career Readiness Certificate Assessment
- Nationally Registered Certified Surgical Technician (NRCST) Examination
- Tech in Surgery-Certified (TS-C) Examination
- Workplace Readiness Skills for the Commonwealth Examination

Concentration sequences: *A combination of this course and those below, equivalent to two 36-week courses, is a concentration sequence. Students wishing to complete a specialization may take additional courses based on their career pathways. A program completer is a student who has met the requirements for a CTE concentration sequence and all other requirements for high school graduation or an approved alternative education program.*

- Introduction to Health and Medical Sciences (8302/36 weeks)
- Surgical Technologist I (8351/36 weeks, 420 hours)

Career Cluster: Health Science	
Pathway	Occupations
Therapeutic Services	Surgical Technologist