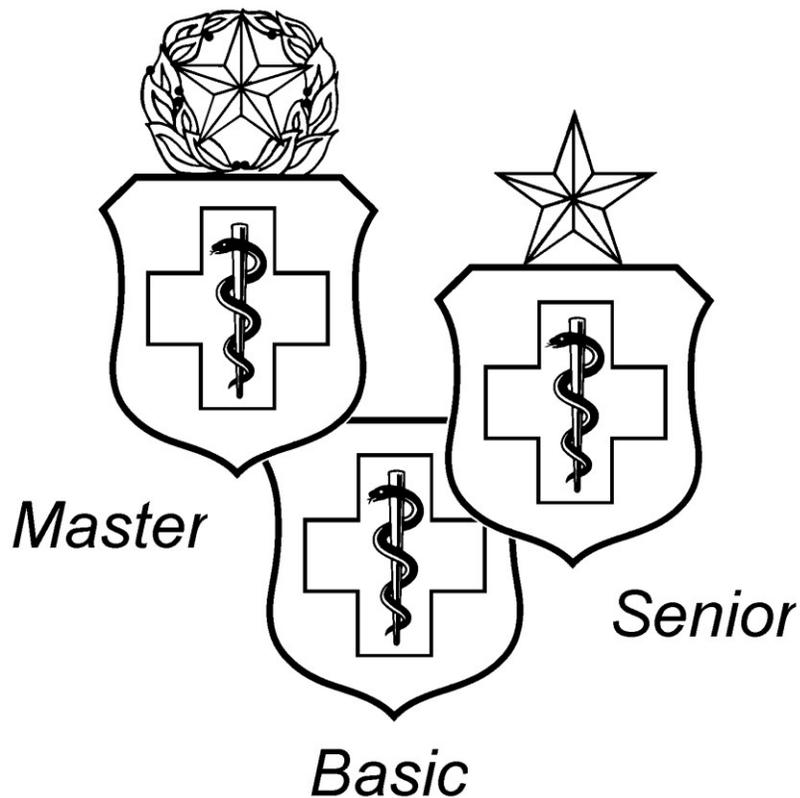


SURGICAL SERVICE SPECIALTY

Set Up and Safe Operation of Equipment



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QTP 4N1X1-05
SURGICAL SERVICE SPECIALTY
Volume 05: Set Up and Safe Operation of Equipment

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INTRODUCTION

1. This qualification training package (QTP) was developed to make available a training aid which will assist Surgical Service Technicians to develop technical skills essential to performing specialized tasks. The tasks are broken down into teachable elements, which help the trainer guide the trainee into becoming proficient with the tasks. The QTP will also aid the task certifier when evaluating trainees for task certification.
2. As a trainer, go through each module (lesson) and identify which QTP tasks are appropriate for the trainee's duty position (items identified in the CFETP as core tasks are mandatory), then determine the order in which you want the trainee to learn about each subject area. Direct the trainee to review the training references to better understand the objective of each module. Go through the steps in the task performance with the trainee and allow for enough time to learn each step; some objectives may take more time than others. Remember, the objective of the QTP is to ensure the trainee can perform each task thoroughly. When the trainee receives enough training and is ready to be evaluated on an objective, follow the evaluation instructions. Use the performance checklist as you evaluate each objective. If the trainee successfully accomplishes the objective, document appropriately in the individual's training record. If the trainee does not accomplish the objective, review the areas needing more training until the objective is met. Conduct a feedback with the trainee on each module. After the trainer has ensured and documented that the trainee is qualified to perform the task, the trainee should be evaluated by a certifier.
3. The goal of the developers of this QTP is to publish a useful document for trainers and trainees that will meet Air Force needs under the concepts outlined in the Career Field Education and Training Plan (CFETP). We value your expertise in meeting this goal. If you find discrepancies in this QTP, or have suggestions for its improvement, or if you have suggestions for other areas that may benefit from a QTP, please let us know about them by contacting the below individual.

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SET UP AND SAFE OPERATION OF EQUIPMENT

Electrosurgical Devices

| | |
|---------------------------------|---|
| SUBJECT AREA: | Duties of Circulating Personnel |
| TASK(s): | Set up and safely operate electrosurgery devices |
| CFETP/STS REFERENCE(s): | 9.4. Set up/operate equipment 9.4.1. Electrosurgery devices 11.18. Assist Surgeon with hemostasis 11.18.4. Electrosurgical/electrocautery |
| TRAINING REFERENCE(s): | CDC 4N151A, Surgical Service Journeyman, Part I, Volume 1, Introduction to the Surgical Service Career Field, Unit 4 Volume 4, Patient Positioning, Draping, and Surgical Routines, Unit 1 Volume 5, Surgical Pharmacology, Surgical Wound Management, Unit 2 Surgical Technology for the Surgical Technologist; A Positive Care Approach Standards, Recommended Practices and Guidelines Manufacturers instructions for device |
| EQUIPMENT REQUIRED: | Electrosurgical unit Inactive/return electrode (patient ground) Active electrode hand piece |
| OBJECTIVE: | The trainee will, without error, properly and safely set up and operate an electrosurgical unit |
| REMARKS/NOTES: | Ensure that complete instruction manuals are readily available for operator reference and that basic operating and safety instructions are conspicuously displayed on or attached to the unit. Since this task involves high-energy equipment used directly in hands-on patient care, ensure the trainee understands the process, knows inherent risk factors, and is closely supervised during the evaluation. The evaluator will STOP the procedure immediately and correct the trainee if performance may compromise safety. Ensure the trainee dons all personal protective equipment (PPE) required by current standards/precautions. |
| EVALUATION INSTRUCTIONS: | <ol style="list-style-type: none"> 1. This QTP should be evaluated during actual performance of the tasks. 2. After the trainee has received instructions, allow sufficient practice on each part of the task. The trainee must satisfactorily perform all parts of the task <i>without assistance</i>. 3. Use the appropriate checklist when evaluating the task to ensure all steps of the task are accomplished. |

4. Document competency upon satisfactory completion of the evaluation. Initial evaluation should be documented in the Specialty Training Standard (STS). All recurring evaluation should be documented using AF Form 1098, *Special Task Certification and Recurring Training*, or using an approved substitute record.

SET UP AND SAFE OPERATION OF EQUIPMENT

PERFORMANCE CHECKLIST

| Set Up and Safely Operate Electrosurgery Devices | SAT | UNSAT |
|---|------------|--------------|
| <i>Prepare the Electrosurgery Unit (ESU)</i> | | |
| 1. Inspect the electrosurgical unit for cleanliness and damage | | |
| a. Inspect external housing for signs of damage or indications of internal contamination by liquids | | |
| b. Inspect all cables, connectors, power cord(s) and plug(s) for visible damage | | |
| c. Check wall receptacle for visible damage | | |
| 2. Inspect inactive "return" electrode (patient ground pad) | | |
| a. Ensure correct type for patient, machine, and surgical procedure | | |
| b. Inspect pad expiration date (if applicable) and condition of gel | | |
| c. Inspect connector and wire for frays, cracks, damage | | |
| 3. Plug unit directly into wall—not into extension cord | | |
| 4. Turn power on and perform self-test. As minimum, check: | | |
| a. All digital light segments on LED display | | |
| b. Mode, alert, and power indicators work properly | | |
| c. Output power set to lowest or default settings (local policy) | | |
| 5. Set all modes/power levels per surgeon's preference | | |
| a. Bipolar | | |
| b. Cut | | |
| c. Coagulation | | |
| d. Blend | | |
| 6. Set foot-switch to desired mode | | |
| 7. Place unit in stand-by mode (if possible) | | |
| 8. Explain disposition of defective equipment. | | |
| <i>Prepare the Patient</i> | | |
| 1. Obtain anesthesia provider's permission to touch patient | | |
| 2. Select site for placement of inactive (return) electrode | | |
| a. Close to surgical site | | |
| b. Broad, vascular, convex area | | |
| c. NOT scar tissue, bony protuberance, adipose tissue, or concave | | |
| 3. Shave/clip excessive hair from selected site (if necessary) | | |
| 4. Place return (inactive) electrode on patient | | |
| 5. Route cable so connector reaches location ESU will be during the procedure; ensure cord will not interfere with draping or procedure | | |
| 6. Explain disposition of defective equipment. | | |
| <i>Operation During Procedure</i> | | |
| 1. Connect inactive electrode cable to ESU after drapes are applied and unit is in position | | |
| 2. Connect active electrode cable to ESU when passed from sterile field but after inactive cable is connected | | |
| 3. Place foot control (if used) where it is readily accessible to surgeon | | |
| 4. Place ESU in "ready" mode (if applicable) or turn power switch on | | |
| 5. Check all warning lights/alarms; ensure unit is functioning properly | | |
| 6. Remain alert for alarms and be available to change modes/settings per surgeon | | |

| Set Up and Safely Operate Electrosurgery Devices | SAT | UNSAT |
|--|-----|-------|
| request throughout procedure | | |
| 7. Explain disposition of defective equipment. | | |
| <i>Post-Operative Tasks</i> | | |
| 1. Disconnect electrodes from ESU | | |
| a. Set modes/power settings to lowest or default values | | |
| b. Unplug active electrode cord, then unplug inactive electrode cord | | |
| c. Move foot-switch out of traffic area | | |
| d. Move ESU out of traffic area | | |
| 2. Remove inactive electrode pad from patient | | |
| a. Check area under the pad for burns or skin damage | | |
| b. Clean excess gel from area | | |
| c. Inspect other susceptible areas for burns | | |
| 3. Report any incidence of ESU burn/damage to professional staff | | |
| 4. Document per local policy | | |
| 5. Disinfect ESU, cables, and reusable accessories after use | | |
| 6. Explain disposition of defective equipment. | | |
| NOTE: If an ESU causes burn or damage, or if it does not function properly, the ESU, the active and inactive electrodes, all cables, and all accessories that were in use at the time should be inspected by biomedical equipment repair personnel (decontaminate all items before sending for inspection) | | |
| FINAL RESULTS/NOTES: | | |

FEEDBACK: Using this checklist as a source of information, discuss the trainee’s performance indicating strengths, weaknesses, suggested improvements, etc.

SET UP AND SAFE OPERATION OF EQUIPMENT

Set up and Safely Operating Cardiac Monitors

| | |
|---------------------------------|--|
| SUBJECT AREA: | Duties of Circulating Personnel |
| TASK(s): | Set up and safely operate cardiac monitors |
| CFETP/STS REFERENCE(s): | 9.4. Set up/operate equipment 9.4.2. Cardiac monitors 9.4.3. Defibrillators |
| TRAINING REFERENCE(s): | CDC 4N151A, Surgical Service Journeyman, Part I Volume 4, Patient Positioning, Draping, and Surgical Routines, Unit 1 Surgical Technology for the Surgical Technologist; A Positive Care Approach Standards, Recommended Practices and Guidelines Manufacturer instructions for monitor used |
| EQUIPMENT REQUIRED: | Cardiac monitor/defibrillator, leads, electrodes, isopropyl alcohol swabs Have available: Electric clipper |
| OBJECTIVE: | The trainee will, without error, set up and safely operate a cardiac monitor |
| REMARKS/NOTES: | Since this task involves equipment used in direct patient care, ensure the trainee understands the process, knows inherent risk factors, and is closely supervised during the evaluation. The evaluator will STOP the procedure immediately and correct the trainee if performance compromises safety. Ensure the trainee dons all personal protective equipment (PPE) required by current standards or precautions. |
| EVALUATION INSTRUCTIONS: | |
| | <ol style="list-style-type: none"> 1. This QTP should be evaluated during actual performance of the tasks. 2. After the trainee has received instructions, allow sufficient practice on each part of the task. The trainee must satisfactorily perform all parts of the task <i>without assistance</i>. 3. Use the appropriate checklist when evaluating the task to ensure all steps of the task are accomplished. 4. Document competency upon satisfactory completion of the evaluation. Initial evaluation should be documented in the Specialty Training Standard (STS). All recurring evaluation should be documented using AF Form 1098, <i>Special Task Certification and Recurring Training</i>, or using an approved substitute record. |

SET UP AND SAFE OPERATION OF EQUIPMENT

PERFORMANCE CHECKLIST

| Set Up and Safely Operate Cardiac Monitors (If Applicable) | SAT | UNSAT |
|--|------------|--------------|
| <i>Prepare the Monitor</i> | | |
| 1. Inspect the monitor for cleanliness, damage, and/or indications of internal contamination by liquids | | |
| a. Inspect external housing | | |
| b. Inspect, power cord(s), connector(s), and plug(s) | | |
| 2. Inspect electrodes, leads and cable(s) | | |
| a. Correct type for patient, machine, and procedure | | |
| b. Expiration date (if applicable) of pads | | |
| c. Connectors and wires for frays, cracks, damage | | |
| 3. Ensure recorder has paper and the "print" function works | | |
| 4. Connect: | | |
| a. Electrode cable to monitor | | |
| b. Leads to cable per manufacturer instructions/local policy | | |
| c. Pads to leads (unless preparing monitor for transporting a patient who already has pads in place) | | |
| 5. Unplug unit from wall outlet and perform battery test, plug cord back into outlet after test (unless preparing monitor for transport) | | |
| 6. Turn power on and perform self-test. As minimum, check: | | |
| a. All digital light segments (LED) display | | |
| b. Mode, alert, and power indicators work properly | | |
| c. Alarm and lead settings set as desired (local policy) | | |
| 7. Place monitor in stand-by mode (per local policy) | | |
| 8. Explain disposition of defective equipment. | | |
| <i>Prepare the Patient</i> | | |
| 1. Wash hands | | |
| 2. Identify patient/explain procedure (if awake) | | |
| 3. Assist patient to lying position (if necessary) | | |
| 4. Shave sites for electrode placement as needed | | |
| 5. Cleanse sites for electrode placement with alcohol pads | | |
| 6. Peel paper backing from electrode pads; check condition of gel (replace pads if gel is dry) | | |
| 7. Attach electrode pads/leads to patient per manufacturer instructions | | |
| <i>Operation</i> | | |
| 1. Turn cardiac monitor power on or remove from stand-by | | |
| 2. Adjust ECG/EKG size on monitor screen (if required) | | |
| 3. Verify monitor display appears operating properly—report problems | | |
| FINAL RESULTS/NOTES: | | |

FEEDBACK: Using this checklist as a source of information, discuss the trainee’s performance indicating strengths, weaknesses, suggested improvements, etc.

SET UP AND SAFE OPERATION OF EQUIPMENT

Set up and Safely Operate Defibrillators

| | |
|--------------------------------|---|
| SUBJECT AREA: | Duties of Circulating Personnel |
| TASK(s): | Set up and safely operate defibrillators |
| CFETP/STS REFERENCE(s): | 9.4. Set up/operate equipment 9.4.2. Cardiac monitors 9.4.3. Defibrillators |
| TRAINING REFERENCE(s): | CDC 4N151A, Surgical Service Journeyman, Part I, Volume 4, Patient Positioning, Draping, and Surgical Routines, Unit 1 Surgical Technology for the Surgical Technologist; A Positive Care Approach Standards, Recommended Practices and Guidelines Manufacturer instructions for defibrillator used |
| EQUIPMENT REQUIRED: | Defibrillator, Patient electrodes, Conductive gel |
| OBJECTIVE: | The trainee will, without error, set up and safely operate a defibrillator |
| REMARKS/NOTES: | Technicians do not routinely operate defibrillators directly on patients. This QTP focuses on inspection and testing of defibrillators. Since this task involves high-energy equipment used in direct patient care, ensure the trainee understands the process, knows inherent risk factors, and is closely supervised during the evaluation. The evaluator will STOP the procedure immediately and correct the trainee if performance compromises safety. Ensure the trainee dons all personal protective equipment (PPE) required by current standards or precautions. |

EVALUATION INSTRUCTIONS:

1. This QTP should be evaluated during actual performance of the tasks.
2. After the trainee has received instructions, allow sufficient practice on each part of the task. The trainee must satisfactorily perform all parts of the task *without assistance*.
3. Use the appropriate checklist when evaluating the task to ensure all steps of the task are accomplished.
4. Document competency upon satisfactory completion of the evaluation. Initial evaluation should be documented in the Specialty Training Standard (STS). All recurring evaluation should be documented using AF Form 1098, *Special Task Certification and Recurring Training*, or using an approved substitute record.

SET UP AND SAFE OPERATION OF EQUIPMENT

PERFORMANCE CHECKLIST

| Set Up and Safely Operate Defibrillators | SAT | UNSAT |
|---|-----|-------|
| <i>Inspection Phase</i> | | |
| 1. Inspect the defibrillator for cleanliness and damage | | |
| a. Inspect external housing for signs of damage or indications of internal contamination by liquids | | |
| b. Inspect all paddles, paddle cables, connectors, power cord(s) and plug(s) for visible damage | | |
| 2. Inspect patient monitor electrodes, leads and cable(s) | | |
| a. Correct type for machine | | |
| b. Connectors and wires for frays, cracks, damage | | |
| 3. Connect: | | |
| a. Patient monitor/lead cable to monitor port | | |
| b. Defibrillator paddle cables to paddle port | | |
| 4. Check additional supplies: | | |
| a. Expiration date (if applicable) of pads, internal paddles, drugs | | |
| b. Inventory of defibrillator cart (local policy) | | |
| <i>Testing Phase</i> | | |
| <i>NOTE: This checklist outlines procedures for a typical test, ensure trainee follows local/manufacture instructions for specific device</i> | | |
| 1. Disconnect AC power cord from wall outlet | | |
| 2. Depress power "ON" button; battery self test indicators should briefly light, then message panel should display "Battery" | | |
| 3. Select energy output to recommended test setting (i.e. 360 joules) | | |
| 4. Press "Charge" button; selected setting (360) should display | | |
| 5. Ensure paddles are in test position | | |
| a. Press discharge button on left paddle; should NOT discharge | | |
| b. Press discharge button on right paddle; should NOT discharge | | |
| c. Press "Synch" button (it should illuminate), then simultaneously press discharge buttons on both paddles; should NOT discharge; | | |
| d. Press "Synch" button (it should no longer be illuminated) | | |
| e. Simultaneously press discharge buttons on both paddles; defibrillator should discharge and test display should read selected setting | | |
| 6. Test defibrillator's patient monitor per manufacturer instructions and local policy | | |
| 7. Plug AC cord into wall outlet | | |
| FINAL RESULTS/NOTES: | | |

FEEDBACK: Using this checklist as a source of information, discuss the trainee's performance indicating strengths, weaknesses, suggested improvements, etc.