I. STATEMENT OF THE POLICY:

This policy is issued to serve as a guide to all OR personnel to ensure the proper usage of the electro-surgical unit (ESU) in order to prevent injury to the patient.

II. POLICY GUIDELINES:

1. All OR Personnel shall ensure that the electro-surgical unit (ESU) should meet the performance and safety needs of the institution. These OR personnel shall be trained in handling, usage and care of ESU prior to operating the equipment by the manufacturer's trained personnel.

2. The Bio-medical Technician shall do regular inspection and preventive maintenance of the ESU prior to start of first cases. This shall be logged/documented with the Equipment Preventive Maintenance Logbook and Log Sheet, and countersigned/counterchecked by the OR Charge Nurse.

3. The OR Personnel shall be provided with the operating room manual and simple trouble shooting about ESU.

4. All OR Personnel shall ensure that the ESU shall be mounted on a stand that will not tip or accidentally fall off.

5. All OR Personnel shall ensure that the ESU shall always be kept clean and protected from spills. Infection Control.

6. All OR Personnel shall ensure that before each use of the unit, the electrical plug cord, foot switch cord and connections shall be inspected. The ESU electrical cord shall be of adequate length and flexibility to reach the outlet without stress or difficulty. The ESU foot switch cord must be long enough to reach the user without stretching.

7. Power settings for coagulation and/or cutting shall start as low as possible and gradually increases its settings as ordered by the Surgeon to avoid burning the patient's tissues.

8. The Circulating Nurse shall document identification numbers of ESU on the Perioperative Form for tracking of equipment problems.

9. All OR Personnel shall report problems encountered with the OR Charge Nurse/Head Nurse for immediate action.
STERNAL SAW

I. STATEMENT OF THE POLICY:

This policy is issued to serve as a guide to all OR personnel to ensure the proper usage of the sternal saw to ensure proper use and maintenance. This shall be done for patient’s safety.

II. POLICY GUIDELINES:

10. All OR Personnel shall ensure that the sternal saw should meet the performance and safety needs of the institution. These OR personnel shall be trained in handling, usage and care of sternal saw prior to operating the equipment by the manufacturer’s trained personnel.

11. The Bio-medical Technician shall do regular inspection and preventive maintenance of the sternal saw prior to start of first cases. This shall be logged/document with the Equipment Preventive Maintenance Logbook and Log Sheet, and countersigned/counterchecked by the OR Charge Nurse.

12. The OR Personnel shall be provided with the operating room manual and simple trouble shooting and repair of sternal saw.

13. All OR Personnel shall ensure that the sternal saw shall always be kept clean and protected from spills using HICO-approved disinfectant.

14. All OR Personnel shall ensure that before each use of the unit, the electrical plug cord, foot switch cord and connections shall be inspected. The sternal saw electrical cord shall be of adequate length and flexibility to reach the outlet without stress or difficulty. The sternal saw foot switch cord must be long enough to reach the user without stretching.

15. The Circulating Nurse shall document identification numbers of sternal saw on the Perioperative Form for tracking of equipment problems.

16. All OR Personnel shall report problems encountered with the OR Charge Nurse/Head Nurse for immediate action.
CARE OF STERNAL SAW:
The OR Personnel/Instrument Technician shall follow these guidelines:

1. It is important to clean the saw as soon as possible after each case. Allowing blood to dry on the surfaces makes it more difficult to adequately clean the saw.

2. Use a soft bristle brush to remove blood and debris from the saw. It is important to concentrate on interface areas between surfaces notable the slot in the chuck and the front of the chuck where the blade enters.

3. When cleaning the chuck make sure to rotate the chuck action to assist adequate cleaning.

4. Be sure to fully extend the chuck and scrub the chuck shaft, especially at the interface surfaces and on the bottom of the shaft.

5. The blade protector can be removed to better scrub the bottom of the chuck, the protector and the pocket. The protector can be removed by loosening the setscrew on the side of the saw with a 5/64 Allen Wrench.

6. The recommended sterilization exposure is 20 minutes at 270 degrees °F for routine sterilization.
SUCTION MACHINE

I. STATEMENT OF POLICY:
This policy is issued to guide all the staff nurses, aides and orderlies in the proper use, handling and care of suction machines.

II. POLICY GUIDELINES:

1. All OR Personnel shall be trained (by the manufacturer) in the proper use and care of the suction machine by the supplier.

2. The Bio-medical Technician shall check and inspect the suction machine equipment located in each room daily. Make sure they are functioning well before starting an operation/case. This shall be documented in the Equipment Preventive Maintenance Logbook and LogSheet. The OR Charge Nurse shall countercheck and countersign afterwards.

3. The OR Nursing Staff shall ensure that the following equipment accessories are present prior to patient use.
   3.1. Suction machine
   3.2. Connecting Tubing
   3.3. Collection Bottle
   3.4. Suction Catheters, Yankauer tip (For Scrub Nurses)

4. The OR Nursing Staff shall follow these procedure in operating this equipment:
   4.1. Place the suction machine on a sturdy surface that will support its weight. Plug the cord from the compressor into a properly grounded (three prong) electrical outlet.
   4.2. Connect the tubing to the outlet port on the lid of the collection bottle.
   4.3. Attach the sterile suction tubing to the extension tubing connected to the collection bottle.
   4.4. Turn on the suction machine and check for the negative pressure. Adjust the pressure, as necessary, by turning the adjustment knob on the suction machine.
   4.5. Turn machine off and wash hands after use.

5. The Nursing Aide/Orderly shall follow these instructions for cleaning the equipment:
   5.1. Wash your hands and put on your personal protective equipment (PPE)
       5.1.1. Cap and mask
       5.1.2. Gown
       5.1.3. Gloves
       5.1.4. Eyewear/Goggles
5.2. Remove the tubing from the port on the collection bottle and discard.

5.3. Remove the collection bottle from the suction machine and remove the lid from the collection bottle.

5.4. Wash the collection bottle, bottle lid in a solution of liquid detergent and warm water.

5.5. Rinse thoroughly and place back into suction machine letting it air dry

6. The Nursing staff shall always prepare an extra collection bottle and connecting tubing.

7. The OR Personnel shall make sure available units are on standby in cases of emergency.

8. For Pediatric cases, The Circulating Nurse shall ensure that there are 2 suction machines for orotracheal and surgical suctioning.

9. The Operating Room Staff shall report to the Charge Nurse/Head Nurse any defects in the Suction Machines.
STERRAD STERILIZATION SYSTEM

I. STATEMENT OF POLICY:

This policy serves as a guide for the OR Personnel to properly operate the sterilizing machine in order to achieve sterility of medical devices/items for the promotion of health and safety of patients undergoing surgery.

II. DEFINITION OF TERMS:

1. STERRAD™ 100S Sterilizer – developed by Advance Sterilization Products, a division of Johnson & Johnson Medical, Inc. to sterilize medical devices by diffusing hydrogen peroxide into the chamber and then “exciting” the hydrogen peroxide molecules into a plasma state. The combined use of hydrogen peroxide vapor and plasma safely and rapidly sterilizes medical instruments and materials without leaving toxic residues. It can be used for both metal and nonmetal devices, and can also sterilize instruments that have difficult-to-reach (diffusion-restricted) spaces, such as hinges on forceps, devices with lumen, and endoscopes. The STERRAD™ technology is a general purpose sterilizer for heat and moist sensitive surgical instruments.

2. Short Cycle – sterilizes the recommended devices except for flexible endoscopes in a little less than one hour.

3. Long Cycle – sterilizes one or two flexible endoscopes in a little over one hour, in addition to the other recommended devices.

III. POLICY GUIDELINES:

1. All OR Personnel responsible for handling the Sterrad Machine shall be trained by the manufacturer’s staff prior to usage. The Biomedical Technician shall be trained to perform preventive maintenance and repairs, also by the manufacturer’s staff. Certificates for training on High-Risk Equipment shall be awarded accordingly.

2. The Biomedical Technician shall inspect and check functionality of Sterrad Machine regularly, preferable every day prior to start of first cases. Assessment shall then be documented/logged in the Equipment Preventive Maintenance Logbook and Log Sheet. The ongoing OR Charge Nurse shall countercheck and countersign accordingly.
3. The Charge Orderly/Instrument Technician shall use a CycleSure 24 biological indicator (Bacillus stearothermophilus) every day, prior to first loading of items for sterilization. (Please see policy on Biological Indicators)

4. Results shall then be documented and shall serve as basis in cases of autoclave breakdown or recall.

5. The Charge Orderly/Instrument Technician shall clean the Sterrad machine, along with other sterilizing machines weekly, preferably on weekends.

6. All OR Personnel shall report any problems encountered with the OR Charge Nurse/Head Nurse for appropriate action and referral to the Engineering Department (EMD) or concerned supplier.
PROCEDURAL GUIDELINES:

A. HOW TO USE THE STERRAD

The OR Personnel/Instrument orderly/technician shall:

1. Ensure instruments must be clean and dry prior to loading in the sterilizer.
2. Use a Tyvek pouch for individual special instruments or instrument sets that can adequately be contained in any pouch size.
3. Use STERRAD™ trays or any instrument trays (with holes) to pack instruments for adequate sterilization. These trays must be placed flat on shelves. Avoid stacking of these instruments.
4. Double wrap trays with the disposable blue wrappers and secures it with chemical STERRAD™ tape outside.
5. Place a chemical indicator strip inside the pouch or tray to avoid accidental removal as this will indicate that it has undergone the sterilization cycle.
6. Note if the Chemical strip or tape turn from red to yellow when exposed to STERRAD™ process.
7. Place all packed devices/items in the STERRAD™ chamber. Make sure that there is ample space in between to allow easy diffusion of sterilant in the entire chamber. Provide at least 80mm (3 inches) of space between the ceiling of the sterilization chamber and the top of the load.
8. Always check the presence of Hydrogen Peroxide (Sterrad) cassette in the print out. Insert one cassette if empty.
9. Close the chamber by pressing “START” to close the door and start the cycle.
10. Note that the cycle will be completed in about 74 minutes. Time will depend on the cycle that was chosen.
11. Unload the chamber after the signal sound that “cycle is completed”.
12. Load the instruments/packs cool down to avoid any burns or injuries. Then, instruments are now ready for use and the machine is ready for the succeeding cycle.
13. Always remember that STERRAD™ sterilant is hydrogen Peroxide Gas Plasma. It leaves neither toxic residue nor emission hence it is a safe sterilizer for operators, health workers, patient and the environment.
14. Note that sterilized items have no expiry date. The sterility of instruments is event-related/depends on the integrity of the package.
15. Shall utilize a Biological Indicator (Bacillus subtilis) to monitor efficacy of STERRAD™.

B. GUIDELINES FOR SELECTION OF PACKAGING MATERIALS

The Instrument Technician/orderly shall:

1. Note that the packaging materials for all methods of sterilization must:
2. Permit penetration of the sterilizing agent to achieve sterilization of all items in the package.
3. Allow release of the sterilizing agents at the end of the exposure period.
4. Cover items completely and easily, and fasten securely with tape or a heat seal that cannot be resealed after opening.
   
   *NOTE: Pins, staples, paper clips, or other penetrating objects must never be used to seal packages.*

5. Permit identification of the contents and evidence of exposure to a sterilizing agent.
   
   *NOTE: the indicator tapes or strips on the outside of packages change color during exposure to a sterilization process. They do not indicate sterility, only that the package has been sufficiently exposed to a given parameter to turn the color. Other factors that guarantee sterility must be fulfilled.*

6. Provide an impermeable barrier to microorganisms, dust, particles, and moisture. Items must remain sterile from the time removed from the sterilizer until used.

7. Resist tears and punctures in handling. If accidental tears and holes do occur, they must be visible.

8. Maintain integrity of the package at varying atmospheric and humidity levels.
   
   *NOTE: In geographic areas of high altitude or dry climates, some packaging materials are susceptible to rupture during sterilization or will dry out and crack in storage. It permits easy removal of the contents with transfer to the sterile field without contamination or delamination (separation of layers).*

9. Be economical.

10. Be free of toxic ingredients and non-fast dyes. *Wrapping of packages should be done in a room far enough from the sterile storage areas so that mixing of sterile and non-sterile packages in not possible. Non sterile cabinets should be labeled conspicuously.*
11. Recommended materials to be loaded into the STERRAD™:

1.1. Aluminum
1.2. Brass
1.3. Delrin
1.4. Ethyl vinyl acetate (EVA)
1.5. Glass
1.6. Kraton
1.7. Latex
1.8. Neoprene
1.9. Nylon
1.10. Monel
1.11. Polycarbonate
1.12. Polyethylene
1.13. Polymethyl methacrylate (PMMA)
1.14. Polypolyene
1.15. Polystyrene
1.16. Polyurethane
1.17. Polyvinyl chloride (PVC)
1.18. Silicone
1.19. Stainless steel & Teflon

2. Items NOT recommended for use:

2.1. Any item that is not completely dry.
2.2. Items or materials that absorb liquids.
2.3. Items made of materials that contain cellulose such as: COTTON, PAPER OR CARDBOARD, LINENS, HUCK TOWELS, GAUZE SPONGES, OR ANY ITEM CONTAINING WOOD PULP.
2.4. Paper instrument count sheets or date tags.
2.5. Single-use devices or items for which the manufacturer does not recommend re-sterilization
2.6. Implants for which the manufacturer has not specifically recommended sterilization in the STERRAD.
2.7. Instruments and devices that cannot withstand a vacuum and are labeled for gravity steam sterilization methods.
2.8. Items whose design permits the surfaces to collapse on each other unless some method is used to keep the surfaces separated.
2.9. Devices with internal parts, such as unsealed bearings, that cannot be immersed may present difficulties in cleaning and should not be processed in the STERRAD.
C. PREPARATION OF MEDICAL DEVICES BEFORE STERILIZATION

A. CLEANING AND RINSING

Remove all blood, tissue, and soil from items by scrubbing with hot water and a detergent. The process of cleaning is necessary to remove organic and inorganic soil and debris from equipments. In this process, many of the microorganisms are removed from the surface of the instrument. The process of sterilization inactivates all of the remaining living microorganisms.

B. DRYING

Dry all items thoroughly. It is necessary to remove moisture from all parts of the item. Only dry items should be loaded into the sterilization chamber.

C. WRAPPING AND PACKAGING

1. Use only STERRAD instrument trays and STERRAD accessories in the sterilization chamber. Trays are specifically designed to allow diffusion of hydrogen peroxide and the plasma around all the items in the load.
2. Bottoms of trays should only be padded with polypropylene sterilization wrap. DO NOT use linen materials.
3. DO NOT use foam pads in instrument trays; they may absorb the hydrogen peroxide.
4. Remove all items made of material that contain cellulose from the trays.
5. Place STERRAD chemical indicator strips inside each tray and peel pouch.

D. WARNINGS, CAUTIONS, AND IMPORTANT NOTES

A. WARNINGS

1. The Instrument Technician/Orderly shall take note that STERRAD 100S Cassettes contain concentrated hydrogen peroxide, which is a strong oxidizer. Concentrated hydrogen peroxide is corrosive to skin, eyes, nose, throat, lungs, and gastrointestinal tract.
2. The Instrument Technician/Orderly must not remove the plastic wrapper from the cassette package if the indicator is RED.
3. Only experienced technicians shall be allowed to repair or adjust the STERRAD sterilizer.
4. Other important notes for Sterrad100S
   4.1. Use of unauthorized parts may be dangerous.
   4.2. Do not remove used cassettes from the cassette collection box.
   4.3. Avoid handling used cassettes. If it is necessary to handle used cassette, wear later or vinyl gloves. Do not touch gloves to face or eyes.
4.4. If a cycle cancels and the items in the load appear wet, hydrogen peroxide may be present. Wear gloves while removing the items from the chamber.

B. CAUTIONS

1. The Instrument technician/orderly shall keep the Sterrad 100S door closed at all times to maintain the operating temperature.
2. The Instrument Technician/Orderly must not clean the chamber door area with abrasives.

C. NOTES

1. The Instrument Technician/Orderly shall always remember that all items must be dried thoroughly before loading into the sterilization chamber. Loads containing moisture may cause cycle cancellation.
2. The Instrument Technician/Orderly must NOT use the short cycle if the machine contains a flexible endoscope because sterility cannot be assured.
3. The Instrument Technician/Orderly must not let metal objects come in contact with the walls of the sterilization chamber or electrode. Contact with the walls or electrode could interrupt the plasma phase of the sterilization cycle.
4. The Instrument Technician/Orderly shall use a STERRAD Biological Indicator II should to monitor the sterilization cycle. Do not use indicators designed for other sterilization processes.
5. If the Instrument Technician/Orderly needs to stop the cycle at any time, press **Cancel**. The STERRAD will automatically cancel the cycle, no matter what stage the cycle is in. The door of the sterilization chamber will open automatically when the cancellation procedure is complete (in about 10 minutes or less).
STEAM AUTOCLAVE

I. STATEMENT OF POLICY:

This policy serves as a guide for Operating Room Personnel in the proper use of the steam autoclave to promote safety of the end users and to adequately sterilize instruments to be used during the procedure/surgery.

II. POLICY GUIDELINES:

1. All OR Personnel responsible for handling the Steam Autoclave shall be trained by the manufacturer’s staff prior to usage. The Biomedical Technician shall be trained to perform preventive maintenance and repairs, also by the manufacturer’s staff. Certificates for training on High-Risk Equipment shall be awarded accordingly.

2. The Biomedical Technician shall inspect and check functionality of Steam Autoclave regularly, preferable every day prior to start of first cases. Assessment shall then be documented/logged in the Equipment Preventive Maintenance Logbook and Log Sheet. The ongoing OR Charge Nurse shall countercheck and countersign accordingly.

3. The Charge Orderly/Instrument Technician shall use a biological spore test/biological indicator (3M Attest) everyday, prior to first loading of items for sterilization. This shall be read using the 3M Attest incubator. Results shall then be documented and shall serve as basis in cases of autoclave breakdown or recall.

4. The Charge Orderly/Instrument Technician shall clean the Steam autoclave machine, along with other sterilizing machines weekly, preferably on weekends.

5. All OR Personnel shall report any problems encountered with the OR Charge Nurse/Head Nurse for appropriate action and referral to the Engineering Department (EMD) or concerned supplier.
III. PROCEDURAL GUIDELINES:

1. The instrument technician/orderly shall pack/wrap items for sterilization to provide an effective barrier against contamination during storage, once the items have been sterilized.

2. The instrument technician/orderly shall ensure that Packing and wrapping materials should be approved for use in a steam sterilizer and permit the removal of air and penetration of the steam during the sterilization process.

3. The instrument technician/orderly shall ensure that Instruments for sterilization must be clean and free from any residual matter, such as debris, blood, pads or any other material. Such substances may cause damage to the instruments themselves or the sterilizer. The instrument technician/orderly follow these guidelines:
   3.1 Clean instruments immediately after use. It is recommended that instruments be ultrasonically cleaned using an enzymatic cleaning solution.
   3.2 After ultrasonic cleaning rinse under tap water for 30 seconds and pat dry to remove residual minerals. If your tap water has a high mineral content then rinse a second time in a bath of distilled water or alcohol to remove minerals.
   3.3 Launder textile wraps prior to reuse, do not use bleach.
   3.4 Follow the instrument manufacturer’s instructions for cleaning and lubricating instruments.
   3.5 Be sure that instruments of dissimilar metal (stainless steel, carbon steel, etc.) are separated. Carbon steel instruments should be bagged or placed on autoclavable towels and not directly on stainless steel trays. (Mixing will result in the oxidation of these metals).
   3.6 Do not place materials to be sterilized directly on the chamber’s wall. Place the material only on trays, rack, etc.
   3.7 Check the manufacturer’s instructions as to the proper procedure for sterilizing each item.
   3.8 Place a sterilization indicator in each tray or inside each wrapped pack.
   3.9 All instruments must be sterilized in an open position.
   3.10 Use single-use wraps once only and discards after use.
   3.11 Verify that the packaging method is in accordance with good practice approach and the packaging materials are in accordance with the applicable standards.
3.12 Place instruments with ratchets opened and unlocked or clipped on the first ratchet position.

3.13 Disassemble or sufficiently loosen multiple-part instruments prior to packaging to permit the sterilizing agent to come into contact with all parts of the instrument.

3.14 Tilt on edge items prone to entrap air and moisture, e.g. hollowware, so that only minimal resistance to air removal, the steam passage and condensate will be met.

3.15 Load items within the boundaries of the tray so that they do not touch the chamber walls, or fall off when the tray is inserted into the autoclave.

3.16 The operator may use racks to allow for adequate separation of packaged instruments.

3.17 Load trays loosely to capacity. Instruments should be loaded one level deep only.

3.18 Do not overload the sterilizer trays. Overloading will cause inadequate sterilization and poor drying.

3.19 Make sure that all instruments remain apart during the sterilization cycle.

3.20 Empty canisters should be placed upside-down, in order to prevent accumulation of water.

3.21 Allow a distance of approximately 2.5cm (1 inch) between trays or cassettes to permit steam circulation.

3.22 Wrapped instruments should be packed in material which will allow steam penetration and promote drying, such as autoclave bag, autoclave paper, or muslin towels.

3.23 Do not stack pouches.

4. The instrument technician/orderly must be guided by the following guidelines in sterilizing major packs and instrument sets.

4.1 Place packs upright on trays, side by side.

4.2 Packs should not touch the chamber walls.

4.3 Pack instrument set in a manner that prevents damage to delicate items.

4.4 Pack hollowware sets so that all openings face the same direction and so that the contents cannot move inside the pack.

4.5 Load packs of folded operating room drapes with layers vertical, allowing air to be removed from the packs rapidly.

4.6 Do not place packs of hollowware and trays of instruments above textile packs or soft goods in order to avoid wetting cause by condensation from items above.
4.7 Load items packed in flexible packaging materials on edge with paper to laminate, or flat with the plastic surface downwards.

4.8 Tubing—when placing in a tray, make sure that both ends are open, without sharp bends or twists.

4.9 Liquids—use only heat-proof glass, filled to 2/3 capacity. Ensure that the glass container is covered, but not sealed to prevent pressure build up.

5. All OR Personnel shall report problems encountered/defective equipment to the OR Charge Nurse/Head Nurse for appropriate action and referral.
HOW TO OPERATE CISA 4210 HB STEAM AUTOCLAVE MACHINE

**Note:** Make sure that the air pressure gate valve and water supply gate valve are open.

**START:**

1. Turn **ON** the 440 volts main breaker switch.
2. Press **ON/OFF** Switch in the control panel.
   
   **NOTE:** *CISA logo will appear in the screen and the vac pump run for about 40 seconds.*
3. Touch the display screen to display the main menu.
   
   **NOTE:** *Let the steam pressure build up to about 3 bars about 10-15 minutes.*
4. Load the item using the cart.
5. Close the door (simultaneously press the close button in the control panel and on the screen)
6. Press **CYCLE SELECTION**
7. Choose one:
   - Textile
   - Vacuum Test
   - Rubber
   - Liquid
   - Instruments
8. Press **START**
9. Press 1 and Enter
10. Choose One:
    - Container
    - Basket
    - Bags
11. Press Start
    
    **NOTE:** *The Cycle Process will start and it will take more or less 60 minutes to finish the process.*

**AFTER THE PROCESS:** The Cycle End appear on the screen and vac pump run for about 40 seconds.

12. Touch the screen to go to main menu.
13. Press OPEN, to open the door.
HOW TO SHUT DOWN THE MACHINE:
1. Press the ON/OFF switch.
2. Turn OFF the 440 volts main breaker

HOW TO SELECT SOURCE OF STEAM (Electric or Hospital Steam)

Electric Steam:
1. In the control panel, position the manual key switch to ELECTRIC STEAM.
2. In the Menu, Press the Arrow sign, then press the calibration EL-ST and press enter.
3. Press the ELECTRIC STEAM and press EXIT.
4. Press EXIT again then press arrow to go to Main Menu.

Hospital Steam:
1. Manually open the hospital steam gate valve (located at the back wall)
2. In the control panel, Position the manual key switch to HOSPITAL STEAM.
3. Follow the steps *2, *3, and *4 (select STEAM)
FLASH STERILIZATION

I. STATEMENT OF THE POLICY:

This policy is being issued to guide all OR personnel in the proper use of flash sterilization which includes monitoring results, preventing contamination and maintaining documentation,

II. DEFINITION:

Flash sterilization is a process designed for the steam sterilization of surgical items for immediate use.

III. POLICY GUIDELINES:

1. All OR Personnel shall have appropriate training in the proper use of the flash sterilization. The manufacturer’s instructions shall be read accordingly.

2. All OR Personnel shall ensure that the flash sterilization is utilized in the OR for urgently needed instruments ONLY.

3. The OR Personnel must ensure that Flash sterilization shall NOT be used in the following sets/items:
   3.1. Complete CV sets, PPI sets, Infected sets
   3.2. Implantable devices such as heart valves

4. The Instrument technician/orderly shall perform proper decontamination by thoroughly washing the instrument/s and placing the items in a closed container that is specifically designed for sterilization.

5. The Instrument technician/orderly shall utilize a logbook to keep a record of all sterilizations done using the flash sterilizer.
   5.1. The name of the patient
   5.2. The procedure and date
   5.3. The reason for flashing (i.e. item is contaminated or dropped)
   5.4. The physician and the practitioner, (e.g. surgeon and circulating nurse)
   5.5. The equipment/device flash sterilized

6. The Instrument Technician shall utilize the appropriate biological indicators (BIs) and chemical indicators (CIs) daily. The results shall be monitored closely and documented in the flash sterilization logbook.
7. The Head Nurse/Charge Nurse or Instrument technician/orderly shall ensure that the logbook is reviewed and analyzed on a regular basis to ensure that flash sterilization is working properly and not being overused.

8. The Instrument Technician/Orderly shall clean/disinfect the flash sterilizer every week (usually on a Sunday) along with the other sterilizer machines.

9. All OR Personnel shall ensure that problems encountered with the sterilizer are reported immediately to the OR Charge Nurse/Head Nurse.
HOW TO USE THE FLASH STERILIZATION:

TABLE AUTOCLAVE OPERATION INSTRUCTIONS

1. Verify that the autoclave is placed on a sturdy and leveled counter top.
2. Fill water reservoir with distilled water according to equipment's instructions.
3. Insert the plug into the electricity source.
4. Turn on the rocker switch mounted on the bottom part of the front panel to power ON the control circuit.
5. Set the clock for proper date and time. (This is only necessary if a printer is installed.)
6. Select Program as follows:
   6.1. Type A Models: By pressing button in the upper row. A LED will be lit under the selected program button.
   6.2. Type B Models: By pressing SEL CYCLE button. Program name appears on the display confirming program selection.

   NOTE: If required, it is possible to change the SteTemp, DryTime, SteTime parameters (See Operator’s manual for instructions.

1. Load the material to be sterilized into the chamber.
2. Close the door and tighten the door tightening bolt. Press the START key.
3. At the end of the cycle, a buzzer will sound for 5 seconds after which the signal.
4. START light switches off and “CYC FINISH” (On Type A Models) or “end” (on Type B Models) will be displayed.
5. Open the door and unload the sterilized material from the chamber.

WARNING: The sterility of instruments processed in unwrapped cycles cannot be determined if exposed to non-sterile environment.
PREVENTIVE MAINTENANCE OF EQUIPMENT

I. STATEMENT OF POLICY

This policy serves to guide the OR healthcare personnel to adopt and effectively implement a proactive instrument and equipment maintenance program. This shall then help avoid patient risks, delayed surgical cases and premature replacement of instruments.

II. DEFINITION OF TERMS:

Preventive Maintenance coupled with careful handling and proper use, is the best way to prevent deterioration and equipment failure, and extend the life of instruments and other devices. The facility may choose to send the item to the original manufacturer that will repair instruments on site. Time constraints put pressure on staff to transport and process devices quickly further ups the odds for damage, particularly with delicate items that may get mishandled along the way. Without proper care and handling by staff and surgeons, instrument damage is more likely to occur, as are increased expenses and shorter equipment life.

III. POLICY GUIDELINES:

1. The Operating Room Team in partnership with the Engineering Maintenance Department (EMD) shall be committed in having ongoing education and training on proper care and maintenance of OR equipment. This shall include proper protocols for cleaning, disinfection and sterilization. Moreover, this shall have a huge impact on patient safety and repair prevention.

2. All OR Personnel shall ensure that all equipment are placed and stored inside the OR Equipment Area. All anesthesia equipment/accessories shall be placed inside the Anesthesia Equipment Area.

3. All OR Personnel shall have a focused education program/training for proper care and designed to correct the identified ‘defects’ on care of equipment:

   3.1 Use of saline for rinsing and storing instruments, which damages devices.
   3.2 Improper use of Enzymatic detergents, can wreck instruments/equipment if used in excess. “More is not always better”.

Reviewed by: MARIA LINDA G. BUHAT, R.N., Ed.D
Assistant Director for Nursing Services

Approved by: MANUEL T. CHUA CHIACO JR., M.D.
Executive Director
3.3 Lack of solid documentation regarding repair history can lead to negative reactions and finger-pointing, instead of constructive problem-solving.

4. All OR Personnel shall report any problems encountered with the OR Charge Nurse/Head Nurse.

**Electrical Engineering**

1. The Electrical Engineering Department shall be responsible for daily monitoring of the following equipment in all Operating Room suites, Sterilizer Rooms and Other areas:
   
   1.1 Lightings  
   1.2 Diffusers  
   1.3 Switches  
   1.4 Wiring  
   1.5 Wall C.O.’s  
   1.6 Royal Cords  
   1.7 Male Plugs  
   1.8 Groundings  
   1.9 Isolation Transformer  
   1.10 Isolation Panels  
   1.11 Emergency Lightings

2. The Electrician shall do the necessary repair/replacement/adjustment and cleaning. Any repairs/replacements shall be reported and endorsed to the OR Charge Nurse.

3. The Electrician shall accomplish the Daily Preventive Maintenance Logsheet and Logbook, countersigned by the OR Charge Nurse/Head Nurse.
1. The Bio-Medical Department shall be responsible for daily monitoring (Preventive Maintenance) utilizing the Daily Preventive Maintenance LogSheet and Preventive Maintenance Logbook.

2. The Medical Equipment Technician shall check the following equipment in all Operating Room suites, Sterilizer Rooms and Other areas:
   2.1 Centerlight
   2.2 Suction Machine
   2.3 Maquet OR Table
   2.4 Midmark7100 OR Bed
   2.5 AMSCO OR Bed
   2.6 Sarn Saw Motor
   2.7 Light Source
   2.8 Mobile Light
   2.9 Sterilizer (CISA)
   2.10 Sterrad Machine
   2.11 Flash Sterilizer
   2.12 Negatoscope
   2.13 Bio-refrigerator
   2.14 Blood Refrigerator
   2.15 Cardiac Monitor
   2.16 Portable Defibrillator
   2.17 Syringe Pumps
   2.18 ECG Machine
   2.19 Buzzer units
DEFECTIVE OPERATING ROOM EQUIPMENT

I. POLICY STATEMENT:

This policy on Defective OR Equipment Referral shall serve as a guide for the OR Personnel in the proper way of reporting defective/malfunctioning equipment in the Operating Room for immediate action and intervention.

II. POLICY GUIDELINES:

1. All OR Personnel shall ensure that all OR equipment to be used by the patients is in good-working condition prior to start of the operation.

2. The OR Charge Nurse shall ensure that the Engineering and Maintenance Department (EMD) checks all the OR Equipment regularly (usually every morning) for safety of the patient as well as the OR Personnel. The EMD staff shall utilize a Preventive Maintenance checklist and records the data in the Preventive Maintenance Logbook.

3. The OR Charge Nurse shall ensure that the following equipment in the Operating Room are checked by the Engineering and Maintenance Department (EMD)

   3.1. Bio-Medical Engineering
       3.1.1. Centerlight
       3.1.2. Suction Machine
       3.1.3. Maquet OR Table
       3.1.4. Midmark7100 OR Bed
       3.1.5. AMSCO OR Bed
       3.1.6. Sarn Saw Motor
       3.1.7. Light Source
       3.1.8. Mobile Light
       3.1.9. Sterilizer (CISA)
       3.1.10. Sterrad Machine
       3.1.11. Negatoscope
       3.1.12. Bio-refrigerator
       3.1.13. Blood Refrigerator
       3.1.14. Cardiac Monitor
       3.1.15. Portable Defibrillator
3.1.16. Syringe Pumps
3.1.17. ECG Machine
3.1.18. Buzzer units

3.2. Electrical Engineering
   3.2.1. Lightings
   3.2.2. Diffusers
   3.2.3. Switches
   3.2.4. Wirings
   3.2.5. Wall C.O.’s
   3.2.6. Royal Cords
   3.2.7. Male Plugs
   3.2.8. Groundings
   3.2.9. Isolation Transformer
   3.2.10. Isolation Panels
   3.2.11. Emergency Lightings

4. The EMD staff shall do the necessary repair/replacement/adjustment and cleaning of the OR Equipment. Any repairs/replacements shall be reported and endorsed to the OR Charge Nurse.

5. The OR Charge Nurse shall verify functionality of all OR equipment thru EMD staff’s Preventive Maintenance Checklist. Once confirmed to be accurate, the OR Charge Nurse shall countersign the checklist and Preventive Maintenance Logbook.

6. The OR Charge Nurse and other OR Personnel shall follow the process flow in referral for defective equipment.
### PROCESS FLOW

1. **Reporting of Defective Equipment or Machine**
   - Circulating Nurse
   - Checks the defective equipment or machine
   - Reports the incident to Charge Nurse or Head Nurse

2. **Referral to EMD**
   - Charge Nurse/Head Nurse
   - Calls/coordinates with EMD (Engineering and Maintenance Department) for repair of equipment.

3. **Inspection of Equipment**
   - EMD Staff
   - Assesses the functionality of equipment/machine.
   - Makes a service report regarding defective equipment/machine and determines if it can be repaired or not.

4. **Referral**
   - EMD Staff
   - Submits the report to the Charge Nurse.

5. **Can Be Repaired?**
   - **Yes (A)**
   - **No (B)**

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Reviewed by: MARIA LINDA G. BUHAT, R.N., Ed.D
Assistant Director for Nursing Services

Approved by: MANUEL T. CHUA CHIACO JR., M.D.
Executive Director
**PROCESS FLOW**

A

Job Order Request

Submission to ADNS

**LOCUS OF RESPONSIBILITY**

**EMD Staff**
- Requests the Charge Nurse to make a Job Order (J.O.) Request for the defective equipment/machine

**Charge Nurse**
- Reports the request to the Head Nurse/Division Chief

**Head Nurse/ Division Chief**
- Advises the Ward Clerk to make a Job Order (J.O.) Request.
- Approves and countersigns the Job Order (J.O.) Request

**Division Chief**
- Requests the approval of Job Order from ADNS
- Follows-up with the ADNS Secretary regarding approval of Job Order Request

**Division Chief/ Ward Clerk**
- Re-sends the Job Order Request to ADNS for approval

**KEY TASKS**

Yes → C

No → Repeat Job Order (If Needed)

Reviewed by: MARIA LINDA G. BUHAT, R.N., Ed.D
Assistant Director for Nursing Services

Approved by: MANUEL T. CHUA CHIACO JR., M.D.
Executive Director
### Operating Room Equipment Safety Standards

**Policy Title:** Operating Room Equipment Safety Standards  
**Policy Number:** NSG-SPE-OR-011  
**Effective Date:** January 2008  
**Date Reviewed:** March 2010  
**Date Revised:** 1 Sept 2010  
**Revision Number:** 1  
**Date of Next Review:** 2012

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**Process Flow**

1. **Equipment Repair**
2. **Referral to Company/Supplier**
3. **Inspection of Equipment**
4. **Repair of Equipment**

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**Locus of Responsibility**

- **EMD Staff**
  - Reports to Charge Nurse/Head Nurse or Division Chief that the reported equipment cannot be repaired anymore by their department.
  - Makes a service report including detailed explanation why the defective unit cannot be repaired anymore.
  - Calls/Refers the defective equipment to the company/supplier.

- **Company/Supplier Staff**
  - Manually inspects and examines the reported equipment for functionality.
  - Makes a service report indicating if the equipment is for repair or replacement and submits it to the Charge Nurse/Head Nurse and Division Chief.
  - Conducts the repair of equipment.
  - Periodically notifies the Charge Nurse regarding the status of repair/replacement.

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**Reviewed by:** MARIA LINDA G. BUHAT, R.N., Ed.D  
**Approved by:** MANUEL T. CHUA CHIACO JR., M.D.  
**Assistant Director for Nursing Services**  
**Executive Director**
PROCESS FLOW

Company/Supplier Staff

- Makes a service report after completion of repair/replacement and submits it to the Charge Nurse/Head Nurse.
  - If equipment is under warranty, no payment is required.
  - If equipment is no longer under warranty, quotation is forwarded to the Purchasing Department for approval.

Head Nurse/Charge Nurse

- Manually inspects the repaired/replaced equipment if working and functioning well.
- Approves and countersigns the service report.
- Notifies the Surgical Team that equipment is already functioning and ready for use.

Charge Nurse

Equipment ready for Use

Reviewed by: MARIA LINDA G. BUHAT, R.N., Ed.D
Assistant Director for Nursing Services

Approved by: MANUEL T. CHUA CHIACO JR., M.D.
Executive Director
OPERATING ROOM EQUIPMENT SAFETY SAFETY STANDARDS

I. STATEMENT OF POLICY

This policy serves as a guide to all OR Personnel minimize risks of injuries related to physical, electrical and thermal hazards related to OR instrument and equipment.

II. POLICY GUIDELINES

A. Safety on Physical Hazards

1. The Scrub Nurse shall always inspect the vascular clamps, forceps, needle holders, and other instruments for mal-alignment, missing teeth, burs and malfunction. Instruments must be replaced as necessary.

2. The Surgical Team shall use a minimal amount of nonirritating adhesive tape on skin, especially in patients with frail skin (e.g., very young or old patients)

3. In Surgical Procedures, The Scrub Nurse shall:
   3.1. Moisten surgeon’s or assistant’s hands when they are tying fine suture to prevent snagging of suture with knots, as per request.
   3.2. Visualize entire length of suture before handling to surgeon; discard suture with knots.
   3.3. Prevent snagging of suture and avoid clamping suture with unprotected metal jaws, use rubbershods.

4. In cases of reoperation, the Surgical Team must display lateral and anteroposterior chest x-ray films to:
   4.1. Note adherence of heart and great vessels to sternum,
   4.2. Count chest wires
   4.3. Note the presence of prosthesis

5. The Scrub and Circulating Nurse shall have special supplies and equipment as requested by surgeon (e.g., oscillating saw, topical hemostatic agents).

6. The Scrub and Circulating Nurses shall have backup supplies or alternative source of supplies available (e.g., grafts, valves, pledgets, or special sutures) for patient use to avoid any unnecessary delay. He/she shall list lot and serial numbers of all implants used.
4. The Scrub Nurse shall prepare additional sterile instruments, equipment, and supplies available in anticipation of emergency procedures.

5. When OR is not in use, the OR Personnel shall keep the OR suites prepared for any cardiac procedures. The sterile instrument sets must be in place, sternal saw power source ready for use, suction machine available and electrosurgical unit(s) in working order. In addition, the table parts must be attached to bed, defibrillator plugged in, temporary atrioventricular pacemaker available, and sterile supplies stocked.

B. Safety on Electrical Hazards

1. The Surgical Team shall ensure appropriate location of electrosurgical unit dispersive (cautery) pad on the patient by doing the following:
   1.1. Place pad on clean, dry skin over muscular area
   1.2. Avoid bony prominences
   1.3. Avoid scarred or excessively hairy areas
   1.4. Place pad as far from ECG electrodes as possible.

2. All OR Personnel shall take note that in patients with pacemaker or internal defibrillators, place dispersive pad away from generator site and minimize use of electro cautery.

3. The OR Nurses shall always check that defibrillator and external pacemaker are in proper working order. Scheduled regular preventive maintenance of equipment shall be accomplished by the Engineering and Maintenance Division (EMD). The OR Nurses shall report malfunctioning equipment and devices per institutional protocol.

4. In patients with/for Automated Internal Cardioverter/Defibrillator, The Scrub and Circulating Nurses shall ensure that the appropriate connector for the anteroposterior paddles/patches is available because some patient may arrive in the OR with disposable external defibrillator patches incompatible with the OR defibrillator.

5. The Scrub Nurses shall insulate the proximal tip of the electrosurgical pencil when using in deep cavities or in retrosternum (e.g., during IMA dissection). Verify this with your surgeon.

6. The Surgical Team shall check the epicardial pacing leads and wires for kinks or cracks; If pacing wires are not in use postoperatively, place insulating covers over distal tips of each wire. Always have an external pacemaker generator available.
7. All OR Personnel operating the defibrillator shall check the settings with the surgeon. The team must have the surgeon verbalize when defibrillator is to be discharged. Nurses must always have appropriate-size internal paddles and ensure that they fit into defibrillator.

8. In cases of re-operation, All OR Personnel shall have both sterile internal and external paddles ready. These guidelines must be followed.
   8.1. The team must verify setting with surgeon before discharging.
   8.2. In adults with extensive pericardial adhesions, consider using pediatric-size internal paddle(s) until sufficient space is dissected in pericardial cavity to allow insertion of regular-size paddle.
   8.3. Coordinate changing over to regular paddle(s) with surgeon.

9. All OR Personnel shall apply sufficient electrode paste to external paddles before placing paddles on patient’s chest, or use saline sponge (if sterile conducting medium is required for external defibrillation [e.g., intraoperative]).

C. Safety on Thermal Hazards
1. The Perfusionist shall check setting on thermia unit and maintain temperature per protocol
2. The Surgical Team shall turn the warming unit off when the patient is being cooled and turn the unit on when patient is being rewarmed.
3. All OR Personnel shall keep the patient comfortable by covering with thermia blanket roll with sheet or thin blanket. He/she must avoid direct skin contact to prevent burns.
4. The Surgical Team shall ensure integrity of the thermia blanket and avoid injuries from needles or other sharp objects.
5. The Scrub and Circulating Nurses shall request and prepare a radiant heater (per protocol), head covering, plastic blankets or wrappers, or warming beds with heater. Always avoid excessive heat.
6. The Anesthesiologist and Nurses shall only expose skin area required for operation. They shall be aware that both the very young and the very old are susceptible to temperature changes.
7. The Scrub nurses shall always ensure that temperature of topical solutions is appropriate for use (cold during induced arrest and warm before and after induced arrest). When profound hypothermia is used, the surgical team shall protect ears or nose, and other prominences with additional padding. The surgical team shall avoid direct contact of ice or ice chips with skin or tissue (ice chips in the pericardium may cause phrenic nerve injury.)

8. The Surgical Teams shall maintain cool temperature in room during period of induced arrest. Increase temperature during closing of incision. Verify with surgeon.

9. The Scrub and Circulating Nurses shall provide warm blankets preoperatively and postoperatively. The Surgical Team shall monitor patient temperature regularly. Always verify accuracy of the monitoring system, report malfunctions and adjust room temperature accordingly.
SURGICAL SMOKE SAFETY

Personnel in the Operating Rooms have been exposed to surgical smoke for many years, unaware that it may create certain health risks. If the smoke and aerosol are not evacuated, the small particles, gases and harmful contents of the smoke created are dispersed into the air and can be inhaled. Exposure has increased as surgical procedures have developed and the use of electro-surgery has increased. With this, guidelines and measures have been formulated to minimize this hazard.

GUIDELINES:

1. All OR Personnel shall be aware that surgical masks are used to minimize exposure to surgical smoke. High performance filtration masks (N95) shall be worn to correctly provide greater protection. Ultimately, a mask’s ability to provide protection depends on the security of its’ fit. Surgical masks must conform to the face and have a tight secure fit.

2. All OR Personnel shall have another common practice to remove surgical smoke is to use suction tubing and a Yankauer sucker attached to a suction machine.