Standard Operating Procedure (SOP)

Medical Equipment Inventory and Sterilization Procedures

This SOP details **medical equipment inventory and sterilization procedures**, focusing on accurate tracking, regular maintenance, and effective sterilization methods to ensure the safety and functionality of all medical devices. It includes systematic inventory management, cleaning protocols, sterilization techniques, equipment storage guidelines, and compliance with healthcare standards to prevent contamination and maintain patient safety.

1. Purpose

To establish standardized procedures for the inventory, maintenance, and sterilization of medical equipment to ensure operational efficiency, regulatory compliance, and patient safety.

2. Scope

This SOP applies to all clinical and support staff involved in the use, handling, cleaning, and management of medical equipment within the facility.

3. Responsibilities

- **Inventory Manager**: Oversees inventory records, ensures periodic audit, and updates documentation.
- **Clinical Staff**: Responsible for cleaning, reporting defects, and proper handling of equipment.
- **Sterilization Team**: Conducts cleaning, disinfection, and sterilization processes according to protocols.
- **Supervisors**: Ensure compliance with SOP and initiate corrective actions if necessary.

4. Equipment Inventory Management

1. Maintain a detailed inventory log using paper or approved electronic systems.
2. Include the following for each item:
    - Description and identification number
    - Serial and model numbers
    - Date of procurement and warranty details
    - Maintenance and service histories
    - Location within facility

3. Perform quarterly audits to verify equipment status, condition, and location.
4. Report missing, damaged, or non-functional equipment immediately for assessment and resolution.

Item Name	ID/Serial #	Location	Status	Last Maintenance Date
Autoclave	AUTO-3456	Sterile Processing Room	Functional	2024-04-15
Surgical Scissors	SCIS-1023	OR Cabinet	Functional	2024-05-10

5. Cleaning and Pre-Sterilization Procedures

1. Wear appropriate PPE (gloves, gown, mask, and eye protection) during cleaning.
2. Pre-clean equipment immediately after use to remove blood, tissue, and fluids.
3. Disassemble multi-part instruments as per manufacturer's instructions.
4. Clean surfaces with approved detergent solutions using brushes or wipes.
5. Rinse thoroughly with sterile or distilled water and inspect for residual matter.
6. Dry equipment using lint-free cloths or air-drying systems before sterilization.

6. Sterilization Methods

1. Select sterilization method based on equipment material and manufacturer guidance:
    - Steam Autoclaving: For most heat-resistant instruments (standard: 121Â°C for 30 min or 134Â°C for 4 min).
    - Ethylene Oxide Gas: For heat-/moisture-sensitive devices, following safety protocols.
    - Chemical Sterilants: For delicate items via immersion (glutaraldehyde, peracetic acid).

2. Follow the device and chemical Instructions for Use (IFU) at all times.
3. Monitor cycle parameters and document each sterilization run with date, operator, and results.
4. Use biological and chemical indicators as required to verify sterilization efficacy.

7. Equipment Storage

1. Store sterilized equipment in designated, clean, dry, and secured storage areas.
2. Ensure items remain in their packaging until point of use.
3. Regularly inspect storage environments for temperature, humidity, and integrity of packaging.
4. Practice First-In-First-Out (FIFO) to minimize expired sterile items.

8. Compliance and Documentation

1. Maintain accurate logs of inventory, cleaning, sterilization, and maintenance activities.
2. Adhere to local, national, and international healthcare standards (e.g., CDC, WHO, ISO 13485).
3. Train staff regularly on SOP updates and changes in regulations or technology.
4. Report and document any equipment failures, sterilization breaches, or potential contamination.

9. Review and Revision

1. Review this SOP annually or whenever significant new equipment or procedures are introduced.
2. Document all changes and obtain appropriate approvals.

10. References

- CDC Guidelines for Disinfection and Sterilization in Healthcare Facilities
- WHO Decontamination and Reprocessing of Medical Devices
- ISO 13485: Medical devices â€“ Quality management systems
- Manufacturer Instruction for Use (IFU) Documentation