

SOP Template: Sterilization of Instruments and Medical Equipment

This SOP details the **sterilization of instruments and medical equipment**, covering cleaning, disinfection, sterilization methods, and the proper handling and storage of sterilized items. The objective is to prevent infection and contamination by ensuring all medical tools and equipment are thoroughly sterilized and safe for patient use, adhering to healthcare standards and protocols.

1. Purpose

To provide standardized procedures for cleaning, disinfecting, sterilizing, and storing instruments and medical equipment to minimize the risk of infection and ensure patient safety.

2. Scope

This SOP applies to all staff involved in the cleaning, disinfection, and sterilization of reusable instruments and medical equipment.

3. Responsibilities

- **Healthcare Staff:** Perform pre-cleaning & transport contaminated items.
- **Sterilization Technicians:** Execute cleaning, disinfection, sterilization, and documentation.
- **Supervisors:** Ensure compliance and provide staff training.

4. Definitions

- **Cleaning:** Removal of visible soil, organic, and inorganic materials from items.
- **Disinfection:** Elimination of many/all pathogenic microorganisms, except bacterial spores.
- **Sterilization:** Complete destruction/removal of all forms of microbial life.

5. Procedure

5.1 Preparation

- Wear appropriate personal protective equipment (PPE): gloves, mask, gown, and eye protection.
- Ensure all items are handled safely to prevent injury or contamination.

5.2 Cleaning

1. Remove gross contaminants (blood, debris) at point of use.
2. Transport to decontamination area using closed, leak-proof containers.
3. Submerge items in enzymatic detergent solution; scrub all surfaces thoroughly.
4. Rinse items with clean water after cleaning.
5. Dry items using lint-free cloth or air dry.

5.3 Disinfection (If Applicable)

1. Apply high-level disinfectant according to manufacturer's instructions.
2. Soak items for the recommended contact time.
3. Rinse with sterile water if required.
4. Dry thoroughly before sterilization.

5.4 Sterilization

Method	Instructions	Items Suitable
Steam (Autoclave)	Load wrapped items; cycle at 121°C (15 psi) for 15-30 minutes or per device IFU. Allow cooling before removal.	Most heat and moisture-tolerant devices
Dry Heat	Place items in dry heat oven at 160°C for 2 hours.	Heat-tolerant, moisture-sensitive items (glass, metal tools)

Ethylene Oxide (ETO)	Use for heat/moisture-sensitive items; follow all safety protocols. Aerate items as recommended.	Plastic, rubber, electronic items
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5.5 Storage

- Allow sterilized items to cool and dry completely.
- Inspect packages for integrity and labeling.
- Store in a clean, dry, designated sterile area away from contaminants.
- Rotate stock using new-first-in/use-last-out principle.

5.6 Documentation

- Record sterilization date, method, batch number, and operator initials.
- Maintain sterilization logs for reference and audits.

6. Quality Control

- Perform biological and chemical indicator tests per sterilizer cycle.
- Review and inspect sterilization logs weekly.
- Report and investigate any incidents of instrument malfunction or process failure.

7. References

- CDC: Guidelines for Disinfection and Sterilization in Healthcare Facilities
- WHO: Decontamination and Reprocessing of Medical Devices
- Device manufacturer's instructions for use (IFU)

8. Revision History

Version	Date	Description	Approved by
1.0	2024-06-01	Initial release	_____