

Quick Guide, Chapter 3: Reprocessing

Expanded information, case studies, references and other important items related to reprocessing are available in Chapter 3 of this publication.

Areas in a hospital where sterilization and high-level disinfection are performed should be designed to permit effective workflow and maintain maximum cleanliness. Important issues to consider in the design of such spaces include the type of equipment used, the proximity to areas requiring the sterilized or disinfected equipment, the ability of surfaces to withstand copious amounts of water, and the flow of equipment and personnel.

The sterilization process involves five steps, the final four of which affect the design of the sterilization area. The first step is gross decontamination – the removal of visible debris – which happens frequently at the site of use and therefore doesn't affect the design of the sterilization area. The remaining four steps are decontamination, packaging for sterilization, sterilization, and storage, each of which affects space design.

The type of sterilizing equipment used affects design. For example, a table-top sterilizer does not require much infrastructure. Steam sterilizers require a certain quality of steam, separate access for maintenance and careful placement of air ducts. Hydrogen peroxide plasma sterilizers operate at lower temperatures than steam sterilizers, and thus demand less of the infrastructure. Ethylene oxide sterilizers demand more infrastructure because of safety issues and processing requirements unique to this modality.

The requirements for space used for high-level disinfection may differ from those of the space used for sterilization. Endoscopes and vaginal probes are examples of two items commonly reprocessed in high-level disinfection areas. Many hospitals use automated endoscope reprocessors, which have specific water pressure needs. The chemicals used in high-level disinfection must be disposed of properly, which may necessitate more infrastructure.

In both sterilization areas and high-level disinfection areas, the lighting in the sink areas must be bright to allow for effective removal of all visible debris. Staff in these areas must wear personal protective equipment, which can take up space and affect air temperature requirements. In addition, the spaces should be designed to minimize staff interruption and distraction.

The materials used in these areas must withstand copious amounts of water: wood or pressboard should not be used, and walls must not allow for fungal growth if saturated with water. Humidity and ventilation of these spaces also must be closely controlled.

Best practices in designing sterilization and high-level disinfection areas include:

- Flow through the space must be unidirectional from dirty to clean.
- Pipes, conduit or ductwork located above work areas should be enclosed to prevent dust accumulation, and ceilings should be made of materials that do not shed particulates.
- Sterilizers should be located in restricted areas to prevent accidental removal of unsterilized equipment.
- Hand-washing sinks should be readily available so staff can wash after handling items yet to be processed and before handling processed items.