

Part 4

OR department

Operating Room Environment

- Intraoperative UV radiation has **not** been shown to decrease overall SSI risk.



Laminar Airflow Ventilation in the OR

- Some controversy exists between engineers and clinicians over the need for laminar airflow ventilation in the OR to further minimize airborne infection.
- Careful mathematical analyses of airflow suggest laminar airflow is not necessary when the previously noted recommendations are met. Clinical studies are confirmatory.
- Similarly, the use of UV light to cleanse the room air is no longer recommended.

Operating Room Environment

Ventilation

- All ventilation or air conditioning systems in hospitals, including those in operating rooms, should have two filter beds in series, with the efficiency of the first filter bed being $>30\%$ and that of the second filter bed being $>90\%$.

Operating Room Standards & References

- Association of Surgical Technologists 2015
- FGI *Guidelines* Update: Operating Room Requirements for 2014 and Beyond & 2012
- CDC (Centers for Disease Control and Prevention) 1999, 2003, 2014
- AIA (American Institute of Architects)
- AORN 2014
- American Society of Anesthesiologists (ASA) 2012

Operating Room Standards & References

- NIOSH (National Institute of Occupational Safety and Health)
- ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)
- WHO 2009
- Design of the operating department, DR.EYAD ABOU ASALI slides (Ref.)
- Hospital Infection 2014

Operating Table

- Simple standard couch
- Height adjustment
- Operating on the head and neck
- It may be moved out during cleaning
- It can be fixed into the floor with removable top sections to permit the different positions of the patient

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"Nurse, has the staff been eating in pre-op again? There's mayonnaise on the scalpel."

Operating Table



Standard Equipment

- Operating table
- Instrument table ("back table")
- Mayo stand with tray
- Prep table
- Anesthesia machine
- IV stand

Standard Equipment, Table



Standard Equipment



Electrical System

- Must have multiple electrical outlets available from separate circuits.



This decreases the chances for a blown fuse and prevents loss of all power if a fuse is blown.

Lighting

- Good lighting
- Mobile lamps
- Operating lights
- Ring light



Lighting



Lighting



Lights

Two Types:

- General Room Lights- used for illumination of the OR. Must be recessed into the ceiling to avoid dust collection.
- Operating Spot Light- used for illumination of the operative site

Supply/Equipment Rooms

- Anesthesia supply -holds anesthesia supply items and extra equipment needed by anesthesiologists.



Supply/Equipment Rooms



Piped-in gas System

- For the delivery of compressed air, oxygen, nitrous oxide etc.... from a central source and **not from tanks in the individual ORs.**

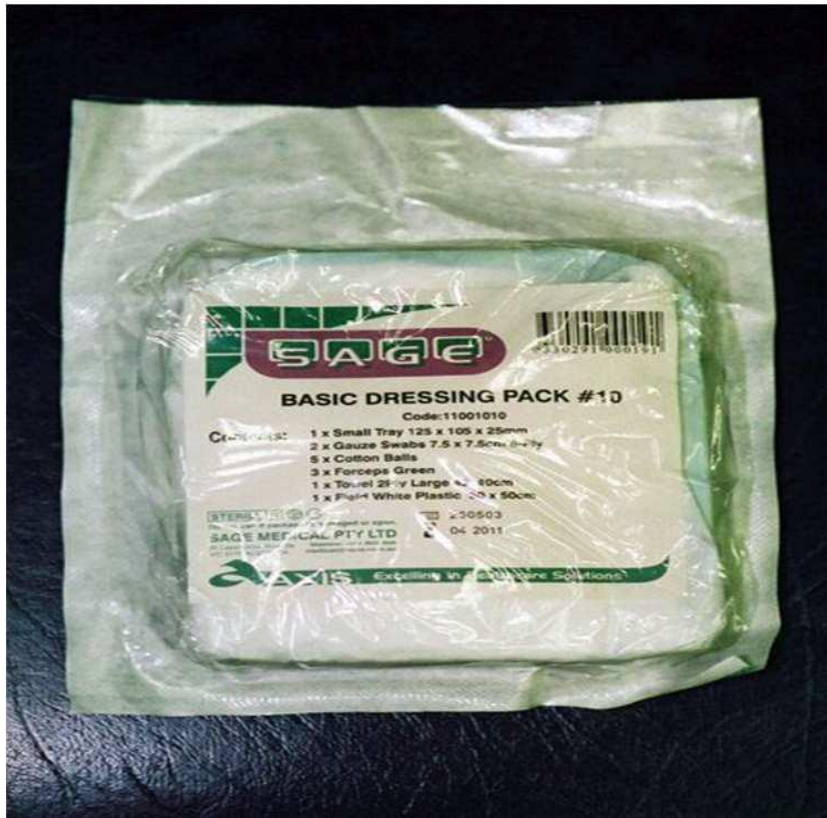
Vacuum System

- Provides suction used by anesthesia and surgical team members during surgical procedures.

Supply/Equipment Rooms

- ❑ Sterile supply :
 - Clean climate-controlled room
 - In a restricted area
 - Used to store sterile supplies such as sterile gowns, gloves, and sponges

Supply/Equipment Rooms



Clean Storage Room

- Where, equipments are stored:
 - Equipment for surgical procedures, such as x-ray equipment, stirrups
 - Monitoring equipment
- Cabinets may be built-in or free standing.

Support Areas in the OR

- Preoperative area- patient holding/receiving area : where patients wait for surgery.
- Dressing (locker) rooms- used by staff personnel to change into OR (surgical) attire and personal hygiene

Support Areas in the OR

- ❑ Central administrative area-“front desk”- control center for (OR) operations.
- ❑ Offices- used to conduct daily activities by the secretary, operating room supervisor, and his/her assistant.
- ❑ Scrub Room- enclosed area, adjacent to the OR suites in a restricted area.

Decontamination Room

❑ A room located between one or more OR suites that usually contains:

✓ washer sterilizers

✓ sinks

✓ all necessary cleaning aids

used for cleaning and decontamination of instruments following surgical procedures.



Decontamination Room

- Sterile Core- area adjacent to OR's where instruments may be sterilized if needed during OR procedures.
- Scrub Room- enclosed area, adjacent to the OR suites in a restricted area.

OR Communication Systems

- Voice intercommunication system (Intercom)-
Used for paging the surgeon for emergency assistance
- Computers - Standard in some OR's

Computers

- ❑ Computers- Used for:
 - Documentation of care
 - Scheduling
 - Retrieval of lab results
 - Storage of surgeons preference information
 - Tracking of supplies and equipment

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