

## Theatre safety – Dr. Abdulwahid

### Surgical Scrub

1. Remove all hand or arm **jewelry**.
2. Keep **nails short**.
3. Clean under each fingernail prior to performing the first scrub of the day
4. Scrub the hands and forearms up to the elbows (typically **2-5 minutes**).
5. After the scrub, keep the **hands up** and away from the body with the elbows flexed.
6. **Dry** hands with a sterile towel



### PATIENT SKIN ANTISEPSIS/SKIN PREP

1. Thoroughly wash and clean at and around the incision site to remove gross contamination.
2. Apply perioperative antiseptic skin preparation in concentric, enlarging circles, moving from the incision towards the periphery.
3. The prepared area must be large enough to incorporate any likely extension of the incision or creation of additional incisions or drain sites, if necessary.

### Masks

- Protects the health care workers face from **exposure**
- Some studies have raised questions about their **efficacy and cost-effectiveness** with regard to reducing ssis.
- Masks And Protective **Eye Wear** Be Worn Whenever **Splashes** Can Be Anticipated
- **All individuals** entering restricted areas of the operating room suite should wear a mask

### Hoods, caps

- Reduce contamination of the field by organisms shed from the hair and scalp.
- Personnel should cover their head and facial hair when in the semirestricted and restricted areas of the surgical suite.

## Shoe covers and footwear

- Are used to maintain **sanitation**
- When badly soiled, should be **removed** before leaving the operating room.
- **Not been shown to reduce ssi risk**

## Sterile gloves

- Worn when performing **all sterile procedures**, such as **open wound dressing** changes.
- **Non-sterile**, medical grade gloves can be used for **non-sterile activities**.

## Operating room, sterile gloves

- a) To minimize the **transmission** of microorganisms from the surgical **team's hands to the patient**
- b) To prevent exposure of the team members' hands to the patient's **body fluids and tissues**.

## Double-gloving

- Reduces the opportunities for **perforations of the inner** glove as well as cutaneous exposures of the hand
- Reducing the risk of surgical **cross-infection**
- **Should be used routinely in all surgical procedures**

## Gowns and a garment

- Create a **barrier** between the surgical field and potential sources of bacteria.
- Maintain An **Isothermic** Environment
- For Patients and Health Care Workers.
- Chosen Based On;
  1. Type Of The Operation,
  2. Impermeability
  3. Comfort
  4. Cost.

## Adhesive incise drapes

- Adhesive incise drapes have been **evaluated in several studies**
- Have **not** been shown to be superior in controlling wound infections when compared with **standard** skin preparation and draping.

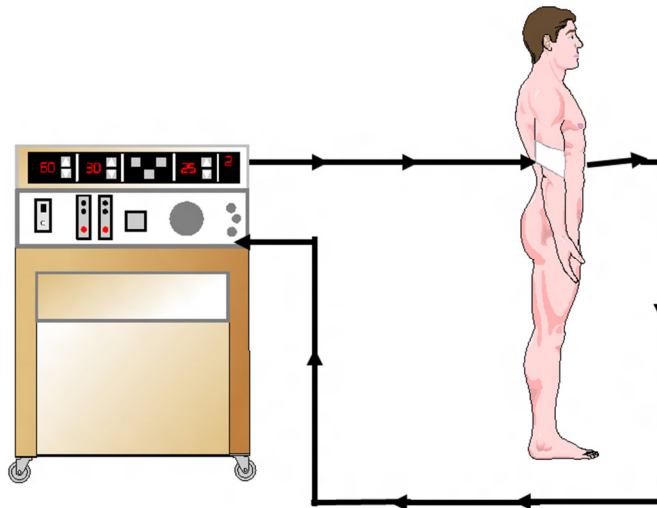
## Diathermy

- Generation of **heat in body** tissues by means of radiofrequency energy (passage of an **electric current** through the tissues).
- Two basic patient **circuits** are used
  1. Monopolar
  2. Bipolar

### MONOPOLAR

- **The patient forms part of the electrical circuit**, only one side of the generator output is connected to the active electrode.
- The other side is connected to a large **patient return plate**.

### Completed Circuit



### BIPOLAR

- The current flows between the **tips of the forceps**
- One tip acting as an **active electrode** and the other as a **return**.

### EFFECTS OF SURGICAL DIATHERMY

- a) Coagulation - haemostasis with a small amount of adjacent tissue damage
- b) Cutting - tissue cutting with minimal tissue damage
- c) Fulgaration - haemostasis with considerable tissue necrosis

## Potential hazards

- **Electrocution**
- Inadvertent **burn**; to the **patient** at a remote site and to the **surgeon**
- **Fire** associated With Pooled Alcohol-based Antiseptics,
- **Explosion** Of Flammable Anesthetic Gases,
- Interference with the function of cardiac **Pacemakers**.

## Operating room environment

- Plays an important role in **reducing the SSI**.
- **A number of activities** that occur in this environment are controlled by the surgical team.
- Standards for **airflow and ventilation**

## Airflow and ventilation

- **Clean air** under positive pressure is supplied
- **Positive pressure** prevents airflow from less clean areas into cleaner areas.
- **Heating, ventilation, and air conditioning** systems remove air contaminants
- **Disruptions** in the airflow patterns redirect contaminants into the sterile field, increasing the **risk of SSI**.
- The air should be sequentially filtered through two filters.
- The **first filter** should be rated as **30%** efficient
- The **second** should be **90%** efficient.
- Are intended to **protect patients** from SSIs
- And **health care workers** from acquiring infection from patients.
- Maintained with a minimum of 15 air exchanges per hour (**20 to 25 air exchanges per hour**).

## Operating room temperature

- **SSI rates increase** when a patient is hypothermic.
- Should be kept between (**20° C and 23° C**).
- Should be **increased** when large areas of body **surface are exposed** during surgery; open abdominal procedures, split thickness skin grafting.

## The relative humidity

- Maintained between **30% and 60%**.
- Low humidity;
  - increases the risk of electrostatic charges,
  - which pose a **fire hazard**,
  - increase the potential for **dust**,
  - and increase the rate of **evaporation**
  - Leading to **heat loss and hypothermia**.
- High humidity;
  - increases the risk of **microbial growth**
  - uncomfortable for the **fully gowned** surgical team.<sup>2</sup>

## Traffic patterns

- The **microbial level** in room air is directly **proportional to the number** of people moving about in the room.
- Operating room **doors should be closed**
- The **number** of personnel should be **limited**

## Cleaning

- Cleaning is the **removal of visible soil** from objects and surfaces,
- Using **water with detergents** or enzymatic products.
- **Thorough cleaning** is essential before high-level **disinfection and sterilization**.

## Disinfection

- A process that **eliminates many or all** pathogenic microorganisms,
- **Except bacterial spores,**
- **Reducing the number of pathogenic** microorganisms to the point where they no longer cause diseases.

## Disinfection

Disinfectant	Status	Use
Alcohols (70% or 90%) (intermediate-level)	bactericidal, tuberculocidal, fungicidal, and virucidal	to disinfect thermometers, medication vials, etc.
Glutaraldehyde (high-level)	broad antimicrobial range, fungicidal and virucidal	to disinfect endoscopes, thermometers, and rubber items
Chlorine Compounds (dilution of 1:50 is high-level)	concentrations of 1000 ppm inactivate bacterial spores	to disinfect countertops, floors, other surfaces
Orthophthalaldehyde (high-level)	bactericidal, virucidal, fungicidal, tuberculocidal in 12 minutes at room temperature	to clean and process endoscopes
Hydrogen Peroxide (low-level)	6% solutions effective against some bacteria, fungi, and viruses	may be used to clean work surfaces, not widely used in health care settings
Iodine and Iodophors (intermediate-level)	vegetative bactericidal, <i>M. tuberculosis</i> , most viruses and fungi, no sporicidal capability	may be used as disinfectant or antiseptic
Phenolics (intermediate- or low-level)	most formulations are tuberculocidal, bactericidal, virucidal, and fungicidal	have toxic effects, used as environmental not sporicidal disinfectants
Quaternary Ammonium Compounds	not recommended for high-, intermediate- or low-level disinfection	cleaning agents for noncritical surfaces

## Sterilization

- A Physical or Chemical Procedure
- Eliminate All Microbial Life, Including Highly Resistant Bacterial Endospores

## Q// Matching

<ul style="list-style-type: none"> <li>a) Infection</li> <li>b) SIRS</li> <li>c) Septic Shock</li> <li>d) Severe Sepsis</li> </ul>	<ul style="list-style-type: none"> <li>1. Inotropes</li> <li>2. Steroid Therapy</li> <li>3. Acute Tubular Necrosis</li> <li>4. Fever</li> </ul>
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