Module E

PRINCIPLES AND PRACTICES OF ASEPSIS

Statewide Program for Infection Control and Epidemiology (SPCE)

UNC School of Medicine

OBJECTIVES

- Describe the principles and practice of asepsis
- Understand the role of hand hygiene in asepsis
- Understand the role of the environment in disease transmission

DEFINING ASEPSIS

	Medical Asepsis	Surgical Asepsis
Definition	Clean Technique	Sterile Technique
Emphasis	Freedom from most pathogenic organisms	Freedom from all pathogenic organisms
Purpose	Reduce transmission of pathogenic organisms from one patient-to -another	Prevent introduction of any organism into an open wound or sterile body cavity

(Free from disease producing microorganisms)

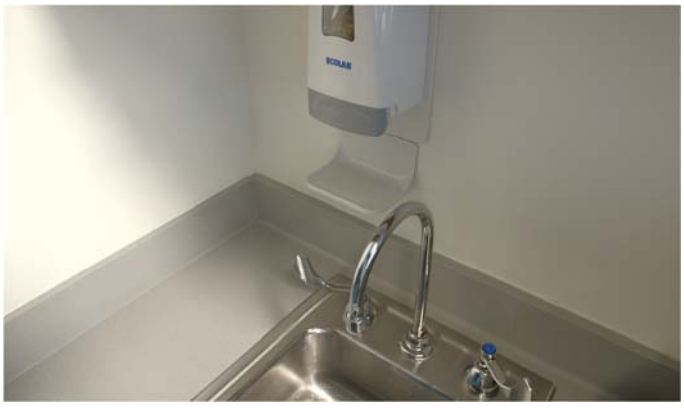
MEDICAL ASEPSIS

Medical asepsis, also known as "clean technique" is aimed at controlling the number of microorganisms and is used for all clinical patient care activities.

Necessary components of medical asepsis include:

- Knowing what is dirty versus clean versus sterile
- How to keep the first three conditions separate
- How to remedy contamination immediately

PRINCIPALS OF MEDICAL ASEPSIS



SURGICAL ASEPSIS

SURGICAL ASEPSIS

Surgical asepsis, also known as "sterile technique" is aimed at removing all microorganisms and is used for all surgical/sterile procedures.

Necessary components of surgical asepsis include:

- Knowing what is and what is not sterile
- How to keep the first two conditions separate
- How to remedy contamination immediately

PRINCIPLES OF SURGICAL ASEPSIS

- The patient should not be the source of contamination
- Healthcare personnel should not be the source of contamination
- The hand scrub should be done meticulously
- Recognize potential environmental contamination
  - Keep door closed
  - Keep traffic to a minimum

KNOWLEDGE CHECK

Which of the following is True?

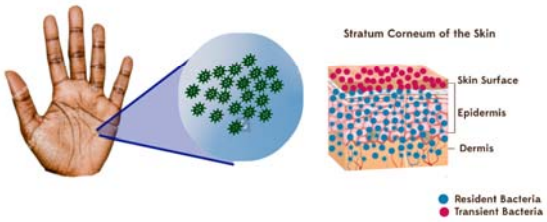
1. Surgical asepsis should be used for all patient care activities
2. ✓ "Clean technique" is used for all procedures done in ambulatory care
3. Clean and dirty equipment can be stored together as long as they are not touching
4. The goal for medical asepsis is freedom from all pathogenic organisms

ROLE OF HAND HYGIENE

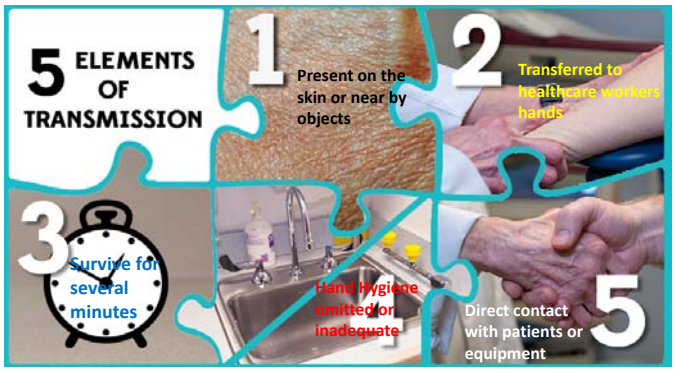
WHAT IS HAND HYGIENE?

- Handwashing with soap and water
- Antiseptic handwash
- Alcohol-based hand rub
- Surgical antisepsis

THE ROLE OF HAND HYGIENE



THE ROLE OF HAND HYGIENE



THE ROLE OF HAND HYGIENE

34 STUDIES: 1981-2000

- **Mean baseline rates: 5%-81%**
- **Overall average:**

< 40% Compliance

REASONS FOR NONCOMPLIANCE

- Inaccessible hand hygiene supplies
- Skin irritation
- Too busy
- Glove use
- Didn't think about it
- Lacked knowledge

POTENTIAL ADVANTAGES ALCOHOL-BASED HANDRUBS

- Requires less time than hand washing
- Acts quickly to kill microorganisms on hands
- More effective than hand washing with soap and water
- More accessible than sinks
- Less irritating to skin than soap and water and can even improve condition of skin

WHEN TO PERFORM HAND HYGIENE

World Health Organization	CDC
1. Before touching a patient	• Before and after touching the patient
2. Before clean / aseptic procedure	• Before donning sterile gloves for central venous catheter insertion; also for insertion of other invasive devices that do not require a surgical procedure using sterile gloves • If moving from a contaminated body site to another body site during care of the same patient
3. After body fluid exposure risk	• After contact with body fluids or excretions, mucous membrane, non-intact skin or wound dressing • If moving from a contaminated body site to another body site during care of the same patient • After removing gloves
4. After touching a patient	• Before and after touching the patient • After removing gloves
5. After touching patient surroundings	• After contact with inanimate surfaces and objects (including medical equipment) in the immediate vicinity of the patient • After removing gloves

HOW TO HAND RUB

HOW TO HAND WASH

HAND HYGIENE PROGRAM

ADDITIONAL ELEMENTS
CDC GUIDELINE FOR HAND HYGIENE IN HEALTHCARE SETTING

- Involve staff in evaluation and selection of hand hygiene products
- Provide employees with hand lotions/creams compatible with soap and/or ABHRs
- Do not wear artificial nails when providing direct clinical care
- Provide hand hygiene education to staff
- Monitor staff adherence to recommended HH practices

SUMMARY OF HAND HYGIENE

Hand hygiene must be performed exactly where **you** are delivering healthcare to patients (at the point-of-care).

During healthcare delivery, there are 5 moments (indications) when it is essential that **you** perform hand hygiene.

To clean your hands, **you** should prefer **hand rubbing** with an alcohol-based formulation, if available. Why? Because it makes hand hygiene possible right at the point-of-care, it is faster, more effective, and better tolerated.

You should wash your hands with soap and water when visibly soiled.

You must perform hand hygiene using the appropriate technique and time duration.

KNOWLEDGE CHECK

True or False:

Hand washing with soap and water is always the preferred method of hand hygiene

True

False

ROLE OF THE ENVIRONMENT

Spaulding Classification of Surfaces:

1. **Critical** – Objects which enter normally sterile tissue or the vascular system and require sterilization
2. **Semi-Critical** – Objects that contact mucous membranes or non-intact skin and require high-level disinfection
3. **Non-Critical** – Objects that contact intact skin but not mucous membranes, and require low or intermediate-level disinfection

ROLE OF THE ENVIRONMENT

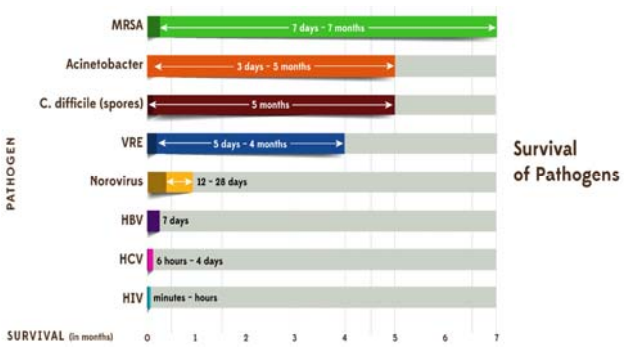
Clinical

- High potential for direct contamination
- Spray or splatter
- Frequent contact with healthcare personnel's hands

Housekeeping

- No direct contact with patients or devices
- Little risk of transmitting infections

ROLE OF THE ENVIRONMENT



ROLE OF THE ENVIRONMENT

SELECT, MIX, AND USE DISINFECTANTS CORRECTLY

Right product

Right preparation and dilution

Right application method

Right contact time

Wear appropriate PPE
(gloves, gown, mask, eye protection)

ROOM CLEANING

KNOWLEDGE CHECK

True or False:

Because of the increasing number of resistant organisms all environmental surfaces should be disinfected with bleach

True

False

KNOWLEDGE CHECK

- Which of the following is **NOT** a component of asepsis
  1. Hand hygiene
  2. Environmental cleaning
  3. Droplet Precautions
  4. Separation of clean, dirty and sterile items

QUESTIONS?