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Topic: Infectious Disease  
Prevention  
Date: 05/24/2022  
Block: PTS

# Protocol for Prevention of Hospital-Acquired Infections



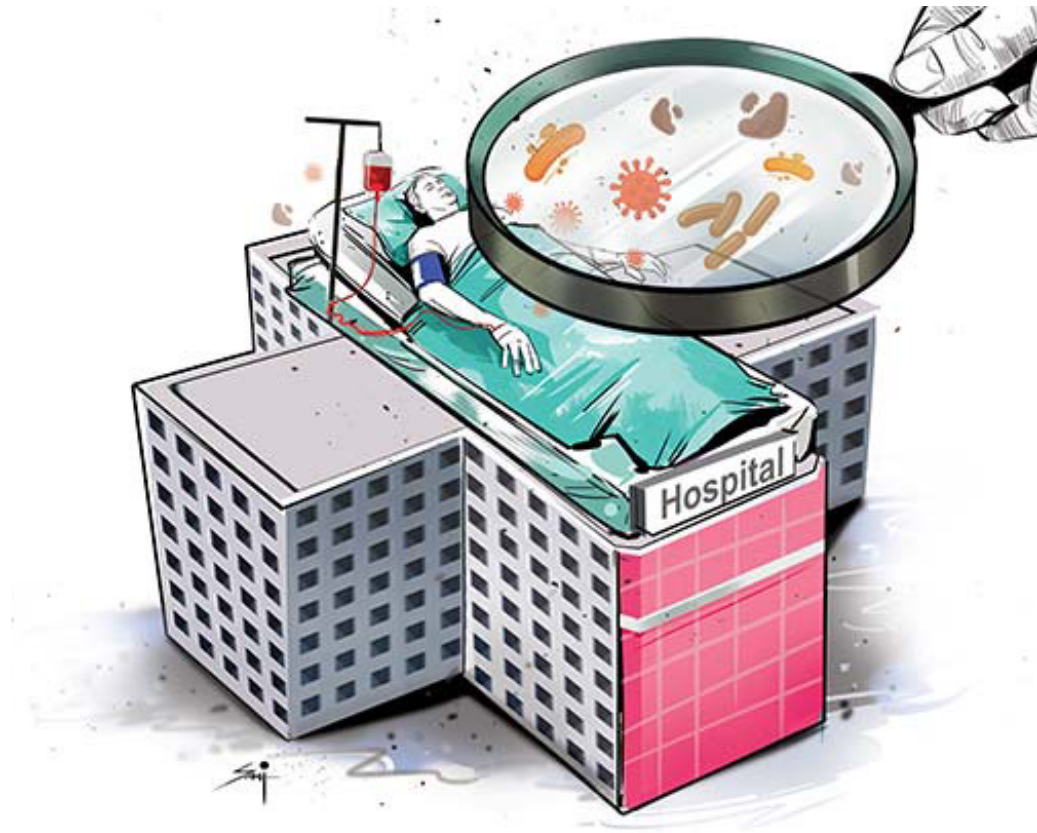


# Objectives

- Define hospital-acquired infections (HAI's)/nosocomial infections
- Outline the general strategies of infection prevention and control
- Identify the five most common HAI's and the pathogens responsible for each
- Describe the mode of transmission and the mechanisms of prevention of each type of HAI



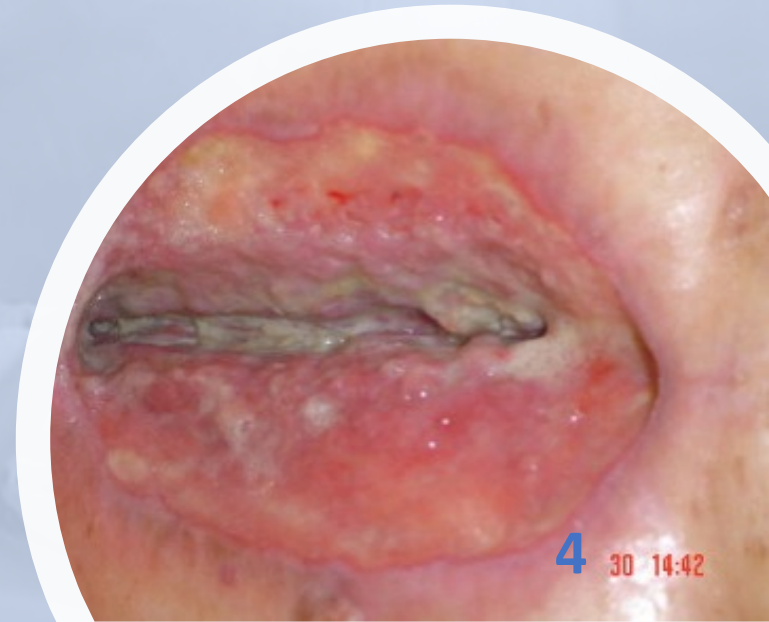
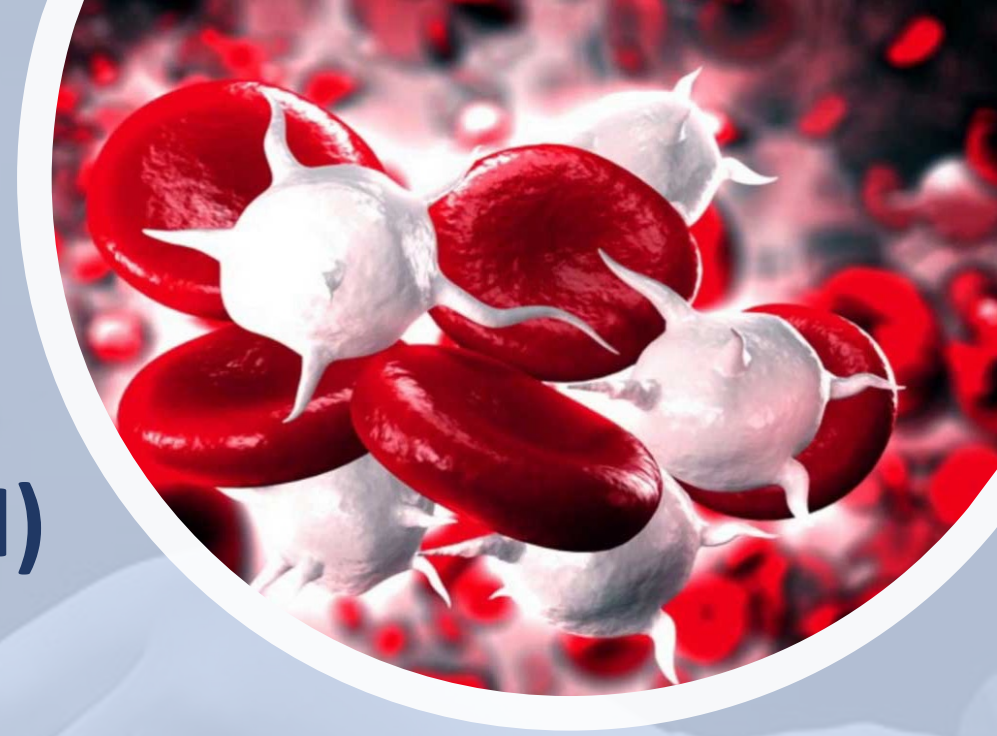
# Introduction: Hospital Acquired Infections





# Most Common HAI's

- 1) Respiratory tract infections (RTI)
- 2) Surgical site infections (SSI)
- 3) Bloodstream infections (BSI)
- 4) Clostridium difficile infections (CDI)
- 5) Catheter-associated urinary tract infections (CAUTI)



# General Strategies of Prevention and Control

1) Personal Protective Equipment

2) Administrative Control

3) Engineering Control

4) Substitution

5) Elimination



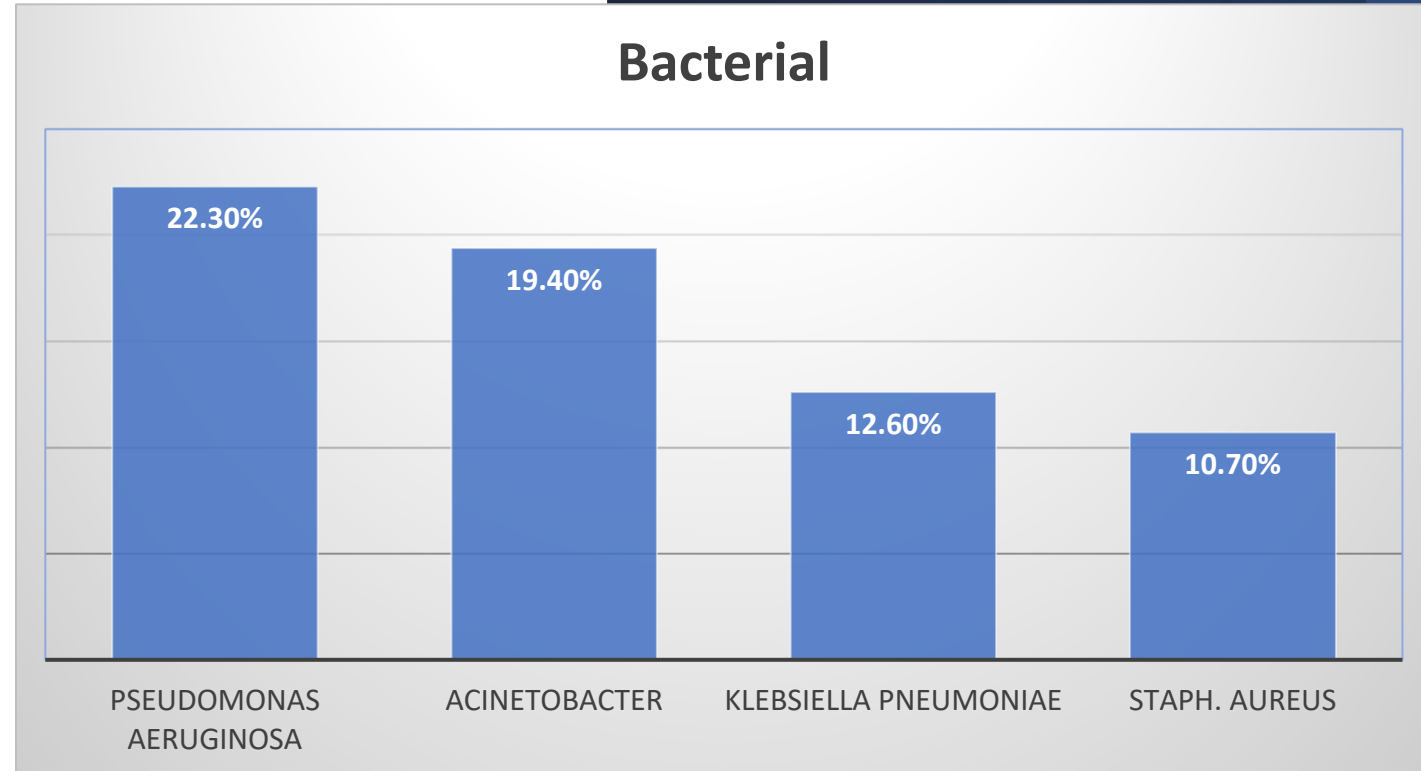
# Respiratory Tract Infections

## Mode of transmission

- Airborne droplets from sneezing or coughing
- Direct oral contact

## Causative Agents:

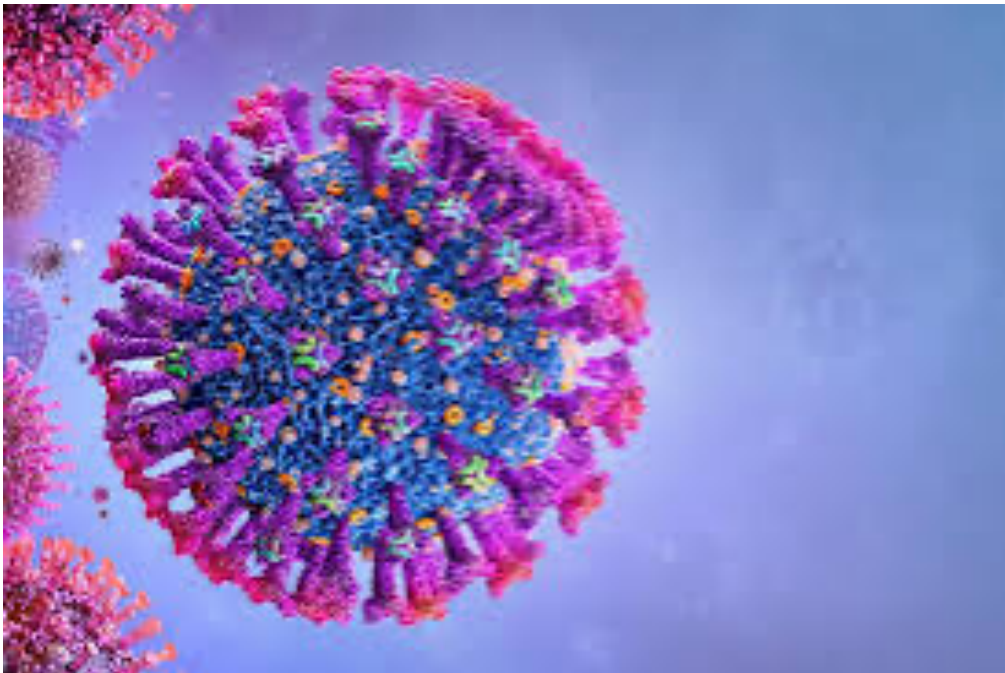
- Bacterial
  - 67% G-
  - 33% G+



# Viral Causes

- **Adult study:**

- **61% Rhinovirus, 11% RSV, 11% Adenovirus**



- **Pediatric studies:**

- **First study= 73% Rhinovirus**
- **Second study= 51% RSV, 19% Influenza Virus**

❖ **Incidence is 10 folds higher in pediatric patients**



# Prevention of RTI's

- **Influenza vaccine (4 types)**
  - **Inactivated influenza vaccine**
  - **Live attenuated influenza vaccine**
  - **Trivalent vaccines**
  - **Quadrivalent vaccines**





# RSV Vaccine

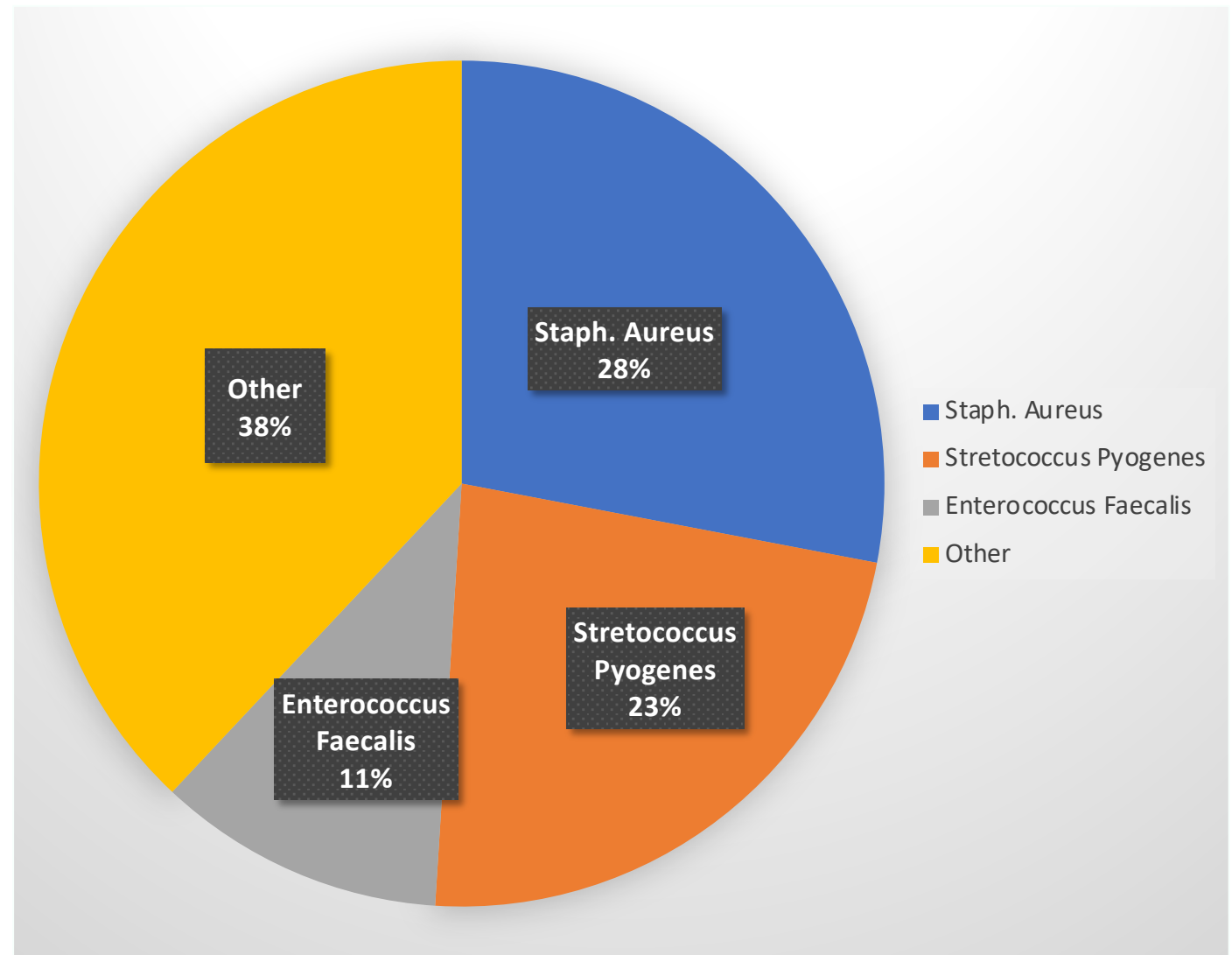
- Palivizumab (synagis) once a month for five months IM in thigh
- Not true vaccine (contains Ab's in it, passive immunization)



# Surgical Site Infections

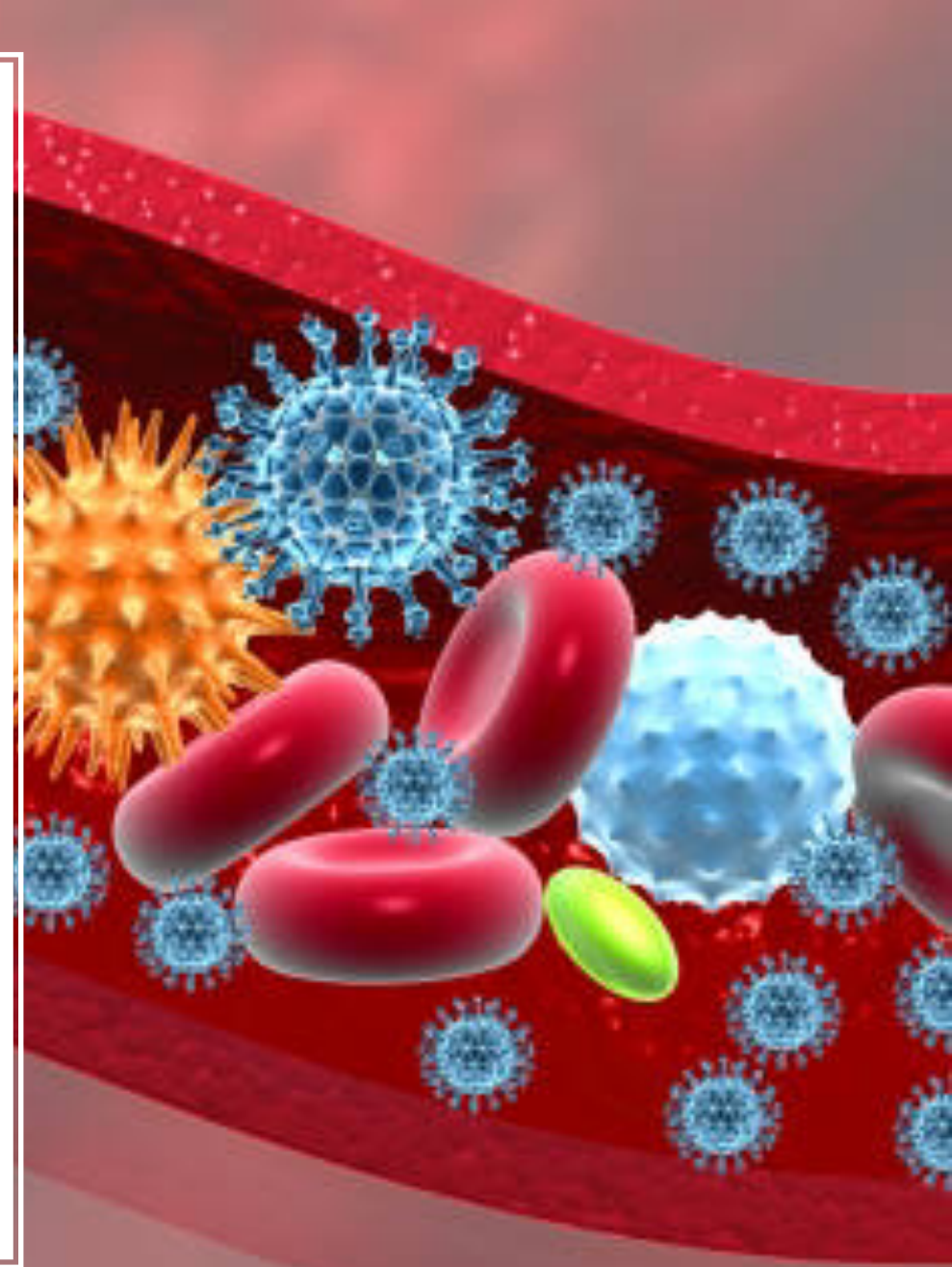
## Mode of transmission

- Transfer during surgery by respiratory droplets
- Direct contact with surgical team's skin
- Through contaminated surgical equipment
- Fungal: *Candida Albicans*



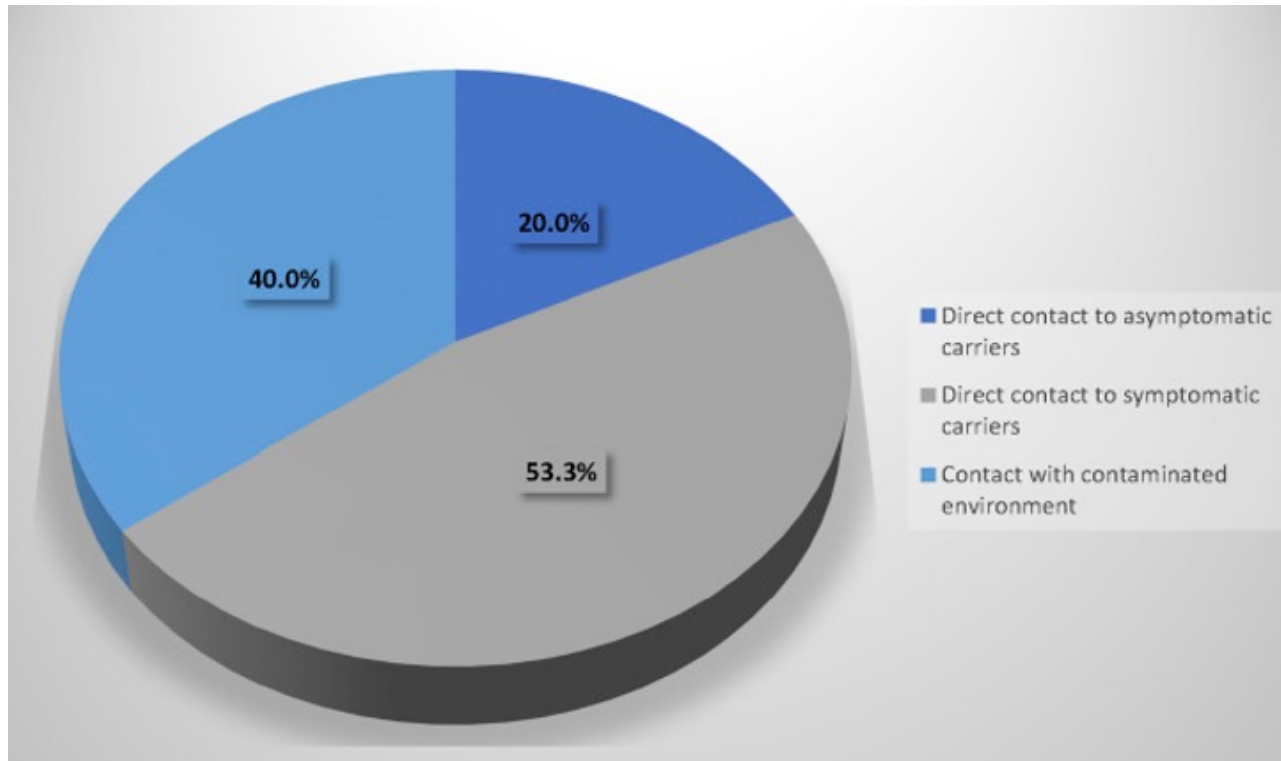
# Bloodstream Infections

- **Mode of transmission**
  - **Complication of an infection like pneumonia**
  - **During surgeries that involve mucous membranes (GIT)**
  - **Due to catheters or other foreign bodies**
  - **Most common: E.Coli**





# Clostridium Difficile Infections (CDI)



- **Mode of transmission**
  - **Person-to-person spread**
  - **Fecal-oral route**
  - **Contaminated hands of healthcare workers**

# Prevention of SSI, BSI & CDI's

- **Sterile clothes & drapes**
- **Careful use of antibiotics to prevent resistance**
- **Maintenance of neutrophil count above 500 neutrophils per mL**



# Prevention of SSI, BSI & CDI's

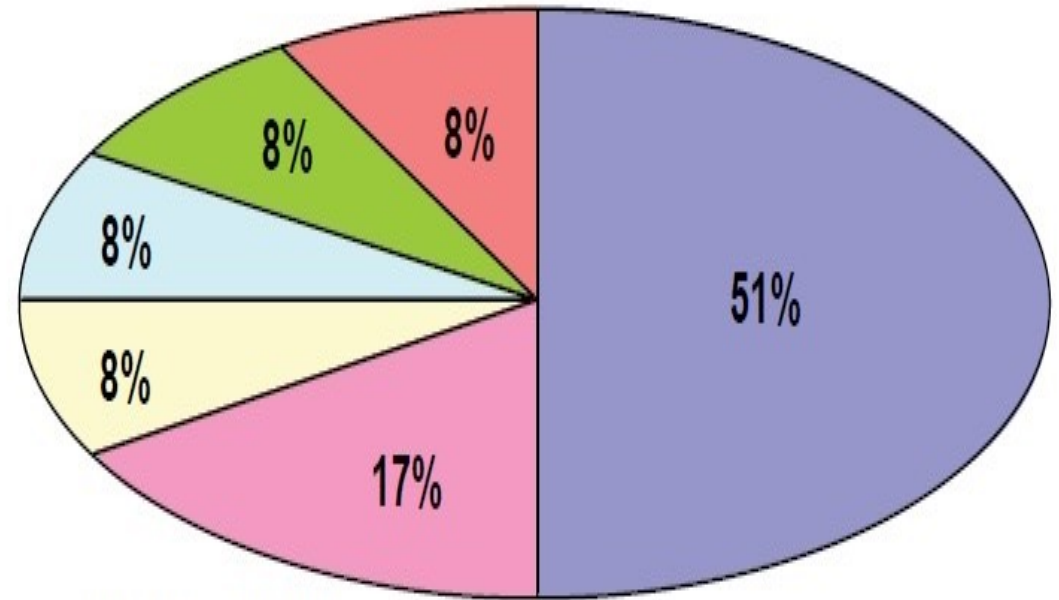
- **Controlled body temperature 98.6°F (37°C)**
- **Proper hair removal before surgery**
- **Wound care especially for burn patients**





# Catheter-Associated Urinary Tract Infections

- Mode of transmission
  - Direct inoculation of microorganisms into bladder
  - May occur during insertion or after removal of device



P value <0.001



Hand hygiene and standard precautions

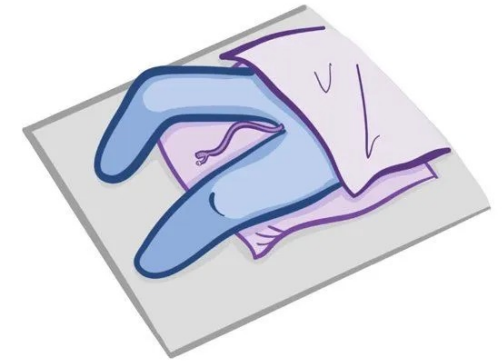
Insert using septic technique and sterile equipment

Insertion and maintenance by trained personal

Insert for appropriate indications & time

Maintain unobstructed air flow

# Prevention of CAUTI's





# Breaking the Chain of Infection

1. **Rapid and accurate identification of the organism**
  - Routine blood and urine cultures as well as skin and throat swabs
2. **Control or elimination of infectious agent**
  - High level disinfectants: 2% activated glutaraldehyde
  - Low level disinfectants: 70% methylated spirit



# Conclusion

Hospital acquired infections are an important topic that is often overlooked. Unfortunately, most of its causes are bacterial and as we know, there aren't any vaccines to prevent against bacteria. This makes it very crucial for us to follow proper hospital procedures in order to keep ourselves as well as the patients as far away from harm as possible because hospitals are a place for healing not a place to get even more sick.

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thank  
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