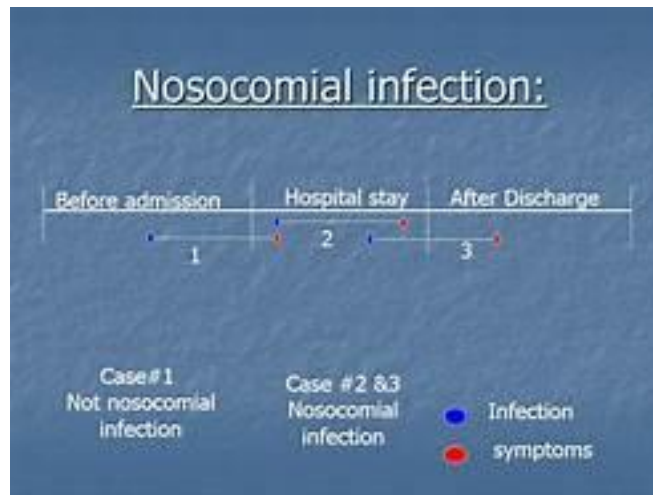


Nosocomial infection



KEY Facts:

- Infections acquired in the hospital.
- Infection was neither present nor incubating when admitted.
- 5-10% of patients admitted to acute care hospitals acquire infections.
- $\frac{1}{4}$ of nosocomial infections occur in ICUs.
- may range from mild to serious (including death).
- Although acquired in the hospital-may appear after discharge from hospital
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Types by origin

1. Endogenous: Caused by the organisms that are present as part of normal flora of the patient.
2. Exogenous: Caused by organisms acquiring by exposure to hospital personnel, medical devices or hospital environment.

Mechanism of transmission

Contact: direct (person-person), indirect (transmission through an intermediate object-- contaminated instrument

Airborne: organisms that have a true airborne phase as pattern of dissemination (TB, Varicella)

Common-vehicle: common animate vehicle as agent of transmission (ingested food or water, blood products, IV fluids)

Droplet: brief passage through the air when the source and patient are in close proximity.

Causes:

- Inadequate facilities and techniques for hand hygiene.
- Lack of isolation precautions and procedures.
- Use of advanced and complex treatments without adequate training and supporting infrastructure, including:
 - Invasive devices and procedures.
 - Complex surgical procedures.
 - Interventional obstetric practices
- Intravenous catheters, fluids, and medications.
 - Urinary catheters.
 - Mechanical ventilators

Inadequate sterilization and disinfection practices and inadequate cleaning of hospital.

Urinary tract infections 40% (UTI)

Surgical wound infections 17% (SWI)

Lower respiratory infections 20% (LRI)

Blood stream infections (IV) 8% (BSI)

Standard Precautions

Used for all patients

Must wear gloves when touching:

Blood

All body fluids

Non-intact skin

Mucous membranes

Wash hands immediately after glove removal and between patients

Masks, eye protection, face shield:

Wear during activities likely to generate splashes or sprays

Dress

Protect skin and soiling of clothing

Wear during activities likely to generate splashes or sprays

Sharps

Avoid recapping of needles

Avoid removing needles from syringes by hand

Air precautions

Designed to prevent airborne transmission of droplet nuclei or dust particles containing infectious agents

For patient with documented or suspected:

Measles

Tuberculosis (primary or laryngeal)

Varicella (airborne + contact)

Zoster (disseminated or immunocompromised patient;
(airborne and contact)

SARS (Contact+airborne)

Room:

Negative pressure

Private

Door kept closed

Mask

Orange 'duckbill' mask required to enter room

Airborne isolation

- Vesicular rash (*airborne+contact*)
- Maculopapular rash with coryza and fever
- Cough + fever + upper lobe pulmonary infiltrate
- Cough + fever + any infiltrate + HIV infection

Droplets precautions

Designed to prevent droplet (larger particle) transmission of infectious agents when the patient talks, coughs, or sneezes

For documented or suspected:

Adenovirus (droplet+contact)

Group A streptococcal pharyngitis, pneumonia, scarlet fever (in infants, young children)

H. Influenza meningitis, epiglottitis

Influenza, Mumps, Rubella

Meningococcal infections

Contact precautions

For suspected or documented:

Anbar Medical College
Family & Community Medicine Department
Epidemiology of Communicable Diseases
Dr. Ahmed Khalaf Al-Delaimy MBChB, MSc, PhD

Adenovirus (contact+droplet)

Infectious diarrhea in diapered/incontinent patients

Group A strep wound infections

Viral conjunctivitis

Lice, scabies

RSV infection (Respiratory Syncytial virus)

Varicella (Contact+airborne)

Zoster (disseminated or immunocompromised; contact+ airbrone

Acute diarrhea of lkely infectious etiology, patient
diapered/incontinent

Vesicular rash (contact+airborne)

History of infection or colonization with MDR organisms

Respiratory infections in infants/young children

Skin,wound, urinary tract infection in a patient with recent
hospital or nursing home stay where MDR organisms are
prevalent

Abscess or draining wound that cannot be covered

hand antiseptic agents of choice

based on strong experimental,clinical, epidemiologic and
microbiologic data

Antimicrobial superiority

Greater microbicidal effect

Prolonged residual effect

Ease of use and application