

Epidemiology

**Nosocomial infection = hospital
acquired infection**

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Nosocomial infection



Hospital acquired
infection

Out line:-

- **Why Everyone Concerned with Hospital Infections**
- **History: A Tribute to Ignaz Semmelweis (1818-1865)**
- **What is Hospital Acquired Infections**
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Why Everyone Concerned with Hospital Infections

- The Centers for Disease Control (CDC) estimates that 2 million U.S. patients a year acquire hospital-related infections. These infections cost an average of \$47,000 per patient to treat and cause 90,000 deaths each year. The added cost to hospitals is \$4.8 billion annually in extended care and treatment.



A Tribute to Ignaz Semmelweis (1818-1865)

Ignaz Semmelweis (1818-1865)

- Obstetrician, practised in Vienna
- Studied puerperal (childbed) fever
- Established that high maternal mortality was due to failure of doctors to wash hands after post-mortems
- Reduced maternal mortality by 90%
- Ignored and ridiculed by colleagues



What is Hospital Acquired Infections

- Any infection that is not present or incubating at the time the patient is admitted to the hospital



principale of infection

at least 35-50% of all healthcare-associated infections are associated with only 5 patient care practices:

- Use and care of urinary catheters
- Use and care of vascular access lines
- Therapy and support of pulmonary functions
- Surveillance of surgical procedures
- Hand hygiene and standard precautions

Healthcare-Associated Urinary Tract Infection

- Urinary tract infection (UTI) causes
~ 40% of hospital-acquired infections
- Most infections due to urinary catheters
- 25% of inpatients are catheterized

Leads to increased morbidity and costs

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Risk factors for Ventilator-Associated Pneumonia (VAP)



Patient

- Age
- Burns
- Coma
- Lung disease
- Immunosuppression
- Malnutrition
- Blunt trauma

Devices

- Invasive ventilation
- Duration of invasive ventilation
- Reintubation
- Medication
- Prior antibiotic treatment
- Sedation

General precautions

- Staff education, hand hygiene, isolation precautions (I)
- Surveillance of infection and resistance with timely feedback (II)
- Adequate staffing levels (II)



Infection Control Challenges of Healthcare in 2000

- Decreasing reimbursement
- Increasing emerging infections
- Increasing resistant organisms
- Increasing drug costs
- Institute of Medicine Report--healthcare-associated infections
- Nursing shortage
- OSHA safety legislation
- Multiple benchmark systems
- FDA legislation on reuse of single-use devices

GUIDELINES AND RECOMMENDATIONS

- Hand washing and Hospital Environmental Control
 - * Immunization
 - * Infectious Diseases Control
 - * Intravascular Device-Related Infections and its control
 - * Isolation Precautions



VAP Prevention

1. Hand hygiene before and after patient contact, preferably using alcohol-based handrubbing
2. Avoid endotracheal intubation if possible
3. Use of oral, rather than nasal, endotracheal tubes
4. Minimize the duration of mechanical ventilation
5. Promote tracheostomy when ventilation is needed for a longer term
6. Glove and gown use for endotracheal tube manip



VAP Prevention (con't)

7. Avoid non-essential tracheal suction
8. Oral hygiene with chlorhexidine
9. Backrest elevation 30-45°
10. Maintain tracheal tube cuff pressures (>20) to prevent regurgitation from the stomach
11. Avoid gastric overdistension
12. Promote enteral feeding
13. Careful blood sugar control in patients with diabetes
14. SDD in selected cases



**THANK
YOU**