**Nosocomial Infection (Hospitals- acquired infection)**

**Definition**

Is an infection that first appears between 48 hr.and four days after a patients is admitted to a hospital or other health- care facility.

**Description**

About 5-10% of a patients admitted to acute care hospitals and long term care facilities in the United status develop a hospital-acquired, or nosocomial infection, with an annual total more than one million people. Hospital acquired infection are usually related to a procedure or treatment used to a diagnose or treat the patient's initial illness or injury.

Hospital acquired infection can be caused by bacteria, viruses, fungi, or parasites, this microorganisms may already be present in the patient's body or many come from the environment, contaminating hospital equipment, health care workers, or other patient.

**Person at risk :** all hospitalized patientsare at risk of acquiring an infection from their treatment or surgery. The risk factors that increase the opportunity for hospitalized adult and children to acquire infections are..

* A prolong hospital stay
* severity of underlying illness
* compromised nutritional or immune status
* use of indwelling catheters
* failure of health care workers to wash their hands between patients or before procedures
* prevalence of antibiotic-resistant bacteria from the overuse of antibiotics.

Any type of invasive (enters the body) procedure can expose a patients to the possibility of infection. Some common procedures that increase the risk of hospital-acquired infections include:

1. Urinary bladder catherization
2. Respiratory procedures such as intubation or mechanical ventilation
3. Surgery and the dressing or drainage of surgical wounds
4. Gastric drainage tubes into the stomach through the nose or mouth
5. Intravenous (IV) procedures for delivery of medication, transfusion , or nutrition.

**Symptoms :**

Different according to local of infection, fever is often the first sign of infection. Other symptoms and signs of infection are rapid breathing, mental confusion, low blood pressure, reduced urine output, and a high white blood cell count (WBC) .patients with a (UTI) urinary tract infections may have pain when urinating and blood in the urine .symptoms of pneumonia may include difficulty breathing and inability to cough. A localized infection begins with swelling, redness, and tenderness on the skin or around surgical wound or other open wound, which can progress rapidly to the destruction of deeper layers of muscle tissue, and eventually sepsis.

**Diagnosis of a hospital acquired infection is determined by :**

* Evaluation of symptoms and signs of infection
* Examination of wounds and catheters entry sites for redness , swelling or the presence of pus or an abscess
* Laboratory test including complete blood count (CBC) especially to look for increase in infection fighting white cells; urinalysis, looking for white cells or evidence of blood in the urinary tract; cultures of the infected area , blood, sputum, urine, or other body fluids or tissue to find the causative organisms.
* Chest x ray may done when pneumonia is suspected to look for presence of white blood cells and other inflammatory substances in lung tissue.
* Review of all procedure performed that might have led to infection .

**Prevention** :

* Adopt an infection control program which include quality control of procedures known to lead to infection and a monitoring program .
* Employ an infection practitioner for every 200 beds
* Identify high risk procedures and other possible sources of infection
* Strict adherence to hand-washing rules by health care workers and visitors to avoid passing infectious microorganisms to or between hospitalized patients
* Strict attention to aseptic (sterile) technique in the performance of procedures including use of sterile gowns, gloves, masks, and barriers.
* Sterilization of all reusable equipment such as ventilators and any devices that come in contact with the respiratory tract.
* Remove nasogastric (nose to stomach)and endotracheal tubes (mouth to stomach) as soon as possible
* Prevent contact between respiratory secretion and health care workers by using barriers and mask as needed
* Limitation on the use and duration of high risk procedures such as urinary catheterization
* Sterilization of medical instruments and equipment to prevent contamination
* Reduction in the general use of antibiotics to encourage better immune response in patients