

Nosocomial infections and septicemia essay



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NOSOCOMIAL INFECTIONS Nosocomial Infection is an infection that occurs in a hospital or hospital-like setting. Approximately 10% of American hospital patients contract this infection. There are three factors as to why nosocomial infection exists: 1.

A high prevalence of pathogens. 2. A high prevalence of compromised hosts. 3. Efficient mechanisms of transmission from patient to patient. These three factors alone lead not just to a higher chance of transmission of pathogens within hospitals, but potentially to an evolution of enhanced disease which causes potential among microorganisms present within the hospitals. There are seven places that nosocomial infections are common in: 1. Urinary Tract.

2. Surgical Wounds. 3.

Respiratory Tract. 4. Skin (especially burn areas). 5. Blood. 6.

Gastrointestinal Tract.

7. Central Nervous System. The organisms causing most nosocomial infections usually come from the patient's own body.

They also can come from contact with staff, contaminated instruments and needles, and the environment. Because patients are highly mobile and hospital stays are becoming shorter, patients often are discharged before the infection becomes apparent. Actually, a large number of nosocomial infections in hospital patients and most ambulatory care facilities become apparent only after the patients are discharged. As a result, it is often difficult to determine whether the source of the organism causing the infection is exogenous (produced outside the body).

Rates of nosocomial infections are marked higher in many developing countries, especially for infections that are largely preventable (those following surgical procedures such as cesarean section). In these countries nosocomial infection rates are high because a lack of supervision, poor infection prevention, inappropriate use of limited resources and overcrowding of hospitals. Nosocomial infections first appear 48 hours or more after hospital admission or within 30 days after discharge. Nosocomial infections are transmitted due to the fact that hospital officials become lazy and do not practice correct hygiene on a regular basis. Also, increased use of outpatient treatment means that people who are hospitalized are more ill and have more weakened immune systems than may have been true in the past.

Moreover some medical procedures bypass the body's natural protective barriers. Since the medical staff moves from patient to patient, the staffs themselves serve as a means for spreading pathogen. Hospitals have sanitation protocol regarding uniforms, equipment sterilization, washing and other preventative measures. Through hand washing or use of alcohol rubs by all medical personnel before and after each patient contact is one of the most effective ways to combat nosocomial infections.

More careful use of anti-microbial agents, such as antibiotics, is also considered vital. Despite sanitation protocol, patients cannot be entirely isolated from infectious agents. Patients are often prescribed antibiotics and other anti-microbial drugs to help treat illness. The most common nosocomial infections are of hospitalized patients with decreased immunity due to AIDS and/or multidrug-resistant tuberculosis. Most of these infections

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can be prevented with readily available, relatively inexpensive strategies by:

1. Adhering to recommended infection prevention practices (hand washing and wearing gloves). 2.

Paying attention to well-established process for decontamination and cleaning of soiled instruments and other items, followed by either sterilization or high-level disinfection. 3. Improving safety in operating rooms and other high-risk areas where the most serious and frequent injuries and exposures to infectious agents occur. Unfortunately, not all nosocomial infections are preventable. For example, some reflect the influence of advanced age, chronic diseases such as uncontrolled diabetes, end-stage kidney disease or advanced pulmonary emphysema. Nosocomial infections add to functional disability, emotional stress and may, in some cases, lead to disabling conditions that reduce the quality of life. The impact of nosocomial infections takes on even more significance in resource-poor countries, especially those affected most by HIV/AIDS, because recent findings strongly suggest that unsafe medical care may be an important factor in transmitting HIV. As a consequence, in resource poor countries, efforts to prevent nosocomial infections must assume even greater importance if progress is to be made in improving the quality of patient care in hospitals and other care facilities.

SEPTICEMIA Septicemia is the presence of bacteria in the blood and is often associated with severe infections and also the medical term referring to the presence of pathogenic organisms in the bloodstream leading to Sepsis.

Septicemia is a serious, life threatening infection that gets worse very quickly. It can arise from infections throughout the body, including infections

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in the lungs, abdomen, and urinary tract. It may come before or at the same time as infections of the bone, central nervous system, heart or other tissues.

The causes of septicemia are quite varied. Typically, the patient is vulnerable because of his or her age or condition, and bacteria simply takes advantage of the situation. Surgery, latent infections, and burns can all lead to septicemia, which is one very good reason to monitor any infections to ensure that they do not spread. A case of septicemia starts with bacteria or toxins that they produce entering the bloodstream, resulting in a coagulation of the blood as the body tries to fight the bacteria. A patient with septicemia tends to look very bad. The condition is marked by confusion, chills, sweating, a very high fever, weakness, a rash, and an elevated heart rate.

Respiration is also often rapid, and the patient may turn pale as well. If the condition progresses, the patient's blood pressure will drop, and the bacteria will start attacking major organs of the body, including the brain, rapidly causing severe damage which can be very difficult to treat. The condition is also known as " blood poisoning," in a reference to the fact that the patient's entire vascular system is compromised.

Some people also refer to it as sepsis (refers to any sort of inflammation response as a result of infection). One of the primary treatments for septicemia is antibiotics, which are administered to kill bacteria causing the condition. Transfusions of blood may also be utilized, along with dialysis and fluid replacement for patients suffering from diarrhea. Patients with severe septicemia may be put on life support to help them breath and to stabilize

their heart rates. Pathogenic organisms can cause septicemia and septic shock.

Unfortunately, with the spread of microorganisms, the tissue injury and the development of organ failure, septic shock has a mortality rate as high as 40 to 60 percent in patients with severe underlying disease. In patients with no underlying disease, the mortality rate is about 5%. Many organisms that are normal flora on the skin and in the intestines are beneficial and pose no threat. But when they spread throughout the body by way of the bloodstream, they can progress to overwhelming infection unless the body defenses destroy them. The entry of these organisms can be from another site of infection, a surgical procedure handling infected tissue, an invasive diagnostic procedures, intravenous lines, urinary catheters, and knife or bullet wounds. Any person with an impaired immunity, the newborn and the elderly are at the greatest risk. About two-thirds of septic shock cases occur in hospitalized patients, most of whom have underlying diseases.

Others at high risk include patients with burns, chronic cardiac, liver or kidney disorders, diabetes mellitus, malnutrition and excessive antibiotic use. Prevention of septicemia is preferable to treatment. Unfortunately, many cases are hard to prevent, as this condition can strike unpredictably. Maintaining good hygiene and general health is a good way to start, because it minimizes exposure to bacteria and ensures that your body and resist bacterial infections when it is exposed to harmful organisms. If you have had surgical procedures, you should keep an eye on the site where the procedure was performed, and do not be afraid to speak up about soreness, swelling and general discomfort.

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It is also important to receive medical treatment for deep cuts and puncture wounds so that these sites can be flushed and you can take prophylactic antibiotics to prevent sepsis and potential onset of septicemia.