

The Impacts Of Hospital Acquired Infections On Patient Safety

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Patient Safety

Patient safety is a serious global health concern. According to Loveday et al. (2014), in today's healthcare system, there is a 1 in 300 chance of a patient being harmed during health in the current healthcare system. It is estimated that there are about 425 million hospitalizations worldwide every year and about 38.4 million adverse events during patient's stay in the hospital. According to data estimates from the National Center for Infectious Diseases, patient harm is the 14th leading cause of morbidity and mortality across the world (Loveday et al. 2014). One of the primary patient harm that compromises patient safety in a healthcare setting is hospital-acquired infections. This paper seeks to discuss the impacts of hospital-acquired infections on patient safety.

Hospital Acquired Infection

[Hospital-acquired infection](#) (HAI), also known as nosocomial infection, is a form of infection or toxin that affects a person in a given location, such as a hospital setting. HAIs present a major threat to patient safety. According to the Centers for Disease Control and Prevention (CDC), HAIs account for 10% of deaths in developing countries and 7% in developed countries. As nosocomial infections occur during hospital stays, they lead to prolonged stays and increased medical costs (Zingg, Holmes, & Pittet, 2015, p.212). The most common hospital-acquired infections include ventilator-associated pneumonia, surgical suite infections, catheter urinary tract infections, and central-associated bloodstream infections. Hospital-acquired pathogens include fungal parasites, bacteria and viruses.

According to World Health Organization (WHO) estimates, approximately 20% of all hospitalized patients suffer from nosocomial infections (Loveday et al. 2014). During hospital stays, patients are exposed to these pathogens by healthcare staff, different sources of environment, or other infected patients. One of the common places where nosocomial infections occur is the intensive care unit (ICU), where physicians treat serious infections. However, nosocomial [infections can be prevented](#) by practicing infection control programs such as adopting an antibiotic control policy, keeping antimicrobial use and its resistance, as well as observing high standards of hygiene (Zingg, Holmes, & Pittet, 2015, p.212).

Background

Hospital-acquired infections affect millions of people across the world. HAIs present a key global issue for patient safety. Understanding the potential risk factors for HAIs is important in the prevention of its prevalence. HAIs are associated with increased morbidity, increased length of hospital stay, and healthcare costs incurred by healthcare facilities and patients. HAIs are an emerging problem at every level within the healthcare system. The World Health Organization (WHO) projects that HAIs affect hundreds of millions of people and present a major global issue for patient safety (Zingg, Holmes, & Pittet, 2015, p.214).

Risk Factors Associated With HAIs

The risk factors associated with nosocomial infections are a complex and dynamic phenomenon in a healthcare setting. These risk factors are categorized into three main criteria which predispose patients to a healthcare setting. The categories include increased susceptibility, invasive devices, and medications or treatment.

Increased Susceptibility

Hospitalized patients have a weak state of health and this implies that they have lower immunity against pathogens. These populations of patients include premature babies, elderly, and immunodeficient patients because of irradiation therapy, illness or drug abuse. Also, patients with [Chronic Obstructive Pulmonary Disease](#) (COPD) are highly susceptible to respiratory tract infections a type of a nosocomial infection (Loveday et al. 2014).

Invasive Devices

Intubation tubes such as catheters, tracheotomy tubes, and surgical drains are major predisposing factors for HAIs as they already overcome the body's major defense line, such as the skin. Colonized patients on admission are exposed to pathogens when they undergo an invasive procedure (Loveday et al. 2014).

Medications Or Treatment

Treatments such as repeated blood transfusions may expose the patient to infections especially when not carried out in a hygiene environment. Also, antimicrobial therapy or antacid therapy, which is used to eliminate competitive flora, can allow the thriving of resistant organisms (Loveday et al., 2014).

Impacts Of HAIs

Effects Of HAIs

Nosocomial infections unquestionably have significant effects on mortality and mortality. However, quantifying the exact financial burden associated with nosocomial infections still presents a major problem in healthcare settings. HAIs are a major factor that may influence the length of patients' stay as well as healthcare utilization. Nosocomial infection is a time-varying exposure and influences medical costs when it infects hospitalized individuals. Thus, nosocomial infections have adverse effects on the life of a patient, including economic implications and increased length of hospital stay (Zingg, Holmes, & Pittet, 2015, p.214).

Economic Burden Of HAIs

HAIs cause additional burdens not only on the individual patient but also on the healthcare system. Nosocomial infections increase the costs of patient care from a number of economic aspects, including those of patients, third-party payers and hospital administrators. The presence of nosocomial infections does not necessarily reduce reimbursement revenue in healthcare systems depending on fixed per diem accounting systems. However, the introduction of a prospective payment mechanism has affected the cost of nosocomial infection is borne by the hospitals themselves. The Medicare and American Centers have made a recent decision to stop reimbursement for nosocomial infections, and this approach has increased the attention to address this healthcare issue and the need for careful interpretation of surveillance data.

Increased costs of HAI are associated with additional postdischarge complications, additional hospital days, and additional diagnostic tests and treatment costs, among others. However, quantifying the exact medical cost related to nosocomial infections remains a challenging issue. Prospective studies have attempted to estimate the economic burden related to HAI. According to the National Health System, it is estimated that the cost of an outbreak of methicillin-resistant *Staphylococcus aureus* (MRSA) is about \$1 billion dollars (Zingg, Holmes, & Pittet, 2015, p.214). The biggest cost drivers are those associated with the set-up of isolation wards for patients infected with these pathogens. Other costs are associated with replacement and cleaning materials.

Prolonged Length Of Hospital Stay

Nosocomial infections increase the length of hospital stay due to numerous comorbidities associated with these conditions. According to a study by the Centers for Disease Control and Prevention (CDC), with respect to the length of hospital stay for patients diagnosed with hospital-acquired infections spent approximately 2.0 times more in the hospital, which amounts to an excess length of hospital

stay of 11 days. This excess length of hospital stay leads to high hospital costs (Loveday et al. 2014).

Literature Review

According to research carried out by the National Center for Infectious Diseases in 2014 in the United States, it points out that persons with compromised immune systems, young children, and elders are more susceptible to HAIs (Zingg, Holmes, & Pittet, 2015, p.216). Use of indwelling catheters, failure of [healthcare workers](#) to wash hands, long hospital Stays and overuse of antibiotics are the major risk factors associated with nosocomial infections. Invasive procedures have been reported to expose patients to the possibility of infection. The research highlighted the percentages of various pathogens associated with urinary tract infections in hospital patients: *Proteus mirabilis* 11%, *Escherichia coli* 40%, other gram-negative bacteria 25%, other gram-positive bacteria 16%, and *Candida albicans* 5%. These statistics were compared with those of community-acquired urinary tract infections, which were as follows: *Proteus mirabilis* 6%, *Escherichia coli* 80%, other gram-negative bacteria 4%, and other gram-positive bacteria 3% (Zingg, Holmes, & Pittet, 2015, p.217). From this study, it was evident that nosocomial infection still remains a major problem in today's healthcare system.

Another study was carried out by Robert Weinstein, where he compared the prevalence of hospital-acquired infections now and in the past in the United States. According to Robert, although there seems to be a reduction in the prevalence of HAIs, the number of deaths resulting from these infections is still high (Loveday et al. 2014). The study estimated that in 1995, HAIs cost \$4.5 billion and accounted for over 87,000 deaths in the United States. Poor hygiene standards in most healthcare settings were attributed to these high figures. Prospective studies report cases of healthcare practitioners who do not adhere to basic hygienic measures such as proper washing of hands before and after attending to a patient (Loveday et al. 2014). Also there are cases where therapeutic devices such as injections are not administered inaccurately. This non-adherence is associated with poor medical expertise and qualifications, especially in small health centers.

Conversely, Robert reveals that there is a higher incidence rate of infections among patients in the intensive care units. This is evident in many healthcare settings today. In most cases, patients affected by these HAIs are those with compromised immune systems due to age, underlying diseases, or surgical or medical treatment. Weinstein's findings reveal that nosocomial infections remain a challenge despite numerous efforts to control this health issue (Loveday et al. 2014).

Project Plan

The Institute of Medicine (IOM) outlines several measures that need to be implemented in the healthcare system to prevent the spread of hospital-acquired infections. The most critical strategy is to prevent the risk of transmission of these pathogens from one patient through hand washing. The IOM recommends healthcare providers thoroughly wash their hands with water and soap after

attending to one patient (Zingg, Holmes, & Pittet, 2015, p.220). Since medical staff are likely to come into contact with blood, excretions, and body fluids or equipment with these fluids, washing hands with antiseptic soap is a very significant measure in the prevention of nosocomial infection control. The project aims to implement washing of hands in a hospital setting to control HAIs and promote patient safety.

The project will use Kurt Lewin's change management theory as a framework to introduce hand washing in a hospital setting. Lewin's theory can facilitate a better understanding of the effects of change in the organization, identify opposing forces that act on human behavior during change, and is useful in identifying barriers to the successful implementation of change (Manchester et al. 2014). Lewin's first 'unfreezing' stage creates awareness of the difficulties related to the identified issue. The initial process of implementing this project will be creating an understanding among the medical staff about the importance of hand washing before attending to a patient. This approach will strengthen the driving forces and weaken the restraining forces in the implementation of the change.

Lewin's second 'moving stage' involves where the actual change in practice takes place as a result of balancing the opposing forces, hence enabling the driving forces to support the change (Manchester et al. 2014). Implementation of a hand-washing approach to control nosocomial infection will take its full course in a hospital setting where all medical staff will be expected to wash their hand thoroughly before a patient. Finally, when the change has been fully implemented, the 'refreezing' stage can be used to assess the effectiveness and stability of the change within practice.

Method Of Evaluation

The outcome of this project will be evaluated on the basis of length of hospital stay and mortality rates associated with nosocomial infections. Good compliance with hand hygiene by medical staff is associated with reduced lengths of hospital stay and low mortality rates. These outcomes are relative to adherence to hand hygiene. The rate of adherence is dependent on the opportunities chosen to observe the project. Hand hygiene opportunities may vary based on patient from clinician to clinician, day to day, and unit to unit. High intensity of patient care has been characterized by lower hand hygiene compliance in several multivariate analyses. Lower hand hygiene adherence will result in poor outcomes of the project.

Conclusion

Patient safety is a serious global health concern. Hospital-acquired infections present a major threat to patient safety. As nosocomial infections occur during hospital stays, they lead to prolonged stays and increased medical costs. The most common hospital-acquired infections include ventilator-associated pneumonia, surgical site infections, catheter urinary tract infections, and central-associated bloodstream infections. The predisposing factors for HAIs are categorized into three

groups, including increased susceptibility, invasive devices, and medications or treatment. Various approaches can be used to prevent HAIs, such as hand washing with antiseptic soap among medical staff before they attend to a patient.

References

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