

Hospital Acquired Pneumonia Prevention: Literature Review

Bailey Pierce

Lakeview College of Nursing

Dr. Ariel Wright

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Quality improvement is an approach that provides data and research to improve the safety and quality of healthcare. The Quality and Safety Education for Nurses (QSEN) challenges student nurses by helping them develop the knowledge, skills, and attitudes necessary to provide quality and safe care in the future (QSEN Institute, 2020). This project enables the student to search for more effective and beneficial methods of patient care by utilizing research such as quality improvement. By staying up to date on current research and protocols, the nurse can ensure that the patient receives the best treatment possible. Lack of effort to keep up with current information can lead to severe complications for the patient. Quality improvement can help eliminate complications and help the healthcare team, and patients work together more efficiently. This paper will discuss hospital-acquired pneumonia (HAP) and the effectiveness of current recommended preventative measures. Much of the care a patient receives comes from the nurse, so understanding how patients develop HAP will assist the nurse in taking the proper precautions to protect the patient. HAP can lead to serious medical complications, so prevention is of utmost importance.

Article Summary

Introduction

HAP is pneumonia that develops at or after 48 hours of hospital admission (Pássaro et al., 2016). Between 5-20+ patients develop HAP per 1,000 patients admitted (Pássaro et al., 2016). Those at highest risk include the elderly, male gender, multiorgan failure, and lung disease (Pássaro et al., 2016). Little evidence is available about the direct prevention of HAP in patients

without mechanical ventilation. This article discusses some of the main preventative measures, including hand hygiene, oral health, patient positioning, mobilization, dysphagia, aspiration, viral infections, and stress-bleeding prophylaxis and their effectiveness (Pássaro et al., 2016). For many of these interventions, the nurse is the patient's front line of care, so being up to date on current protocols is essential.

Overview

This article uses data and outcomes to represent which prevention methods proved effective in reducing HAP. This study applies to the QSEN quality improvement. It presents the student with knowledge of effective preventative measures vs. those not so effective and evaluates the effectiveness of changes made and their role in improving patient health. Hand hygiene is one of the simplest ways to prevent the spread of infection. This study revealed that having hand sanitizer near the patient's bed increased overall hand hygiene overall nosocomial infections from 16.9 to 9.9% (Pássaro et al., 2016). More extensive studies are needed to prove the effectiveness in reducing HAP, but the potential exists. Preventative measures using oral care ranged from mouth rinse to toothbrushing. Rinses with 0.12 % chlorhexidine rinse, toothbrushing, and 1% povidone-iodine scrubbing of the pharynx decreased HAP incidences between 6.6-11.7% (Pássaro et al., 2016). The nurse can complete these rinses with morning hygiene. Dysphagia and aspiration are a significant concern for stroke patients as 37% are likely to develop pneumonia (Pássaro et al., 2016). The nurse can oversee dysphagia management through non-oral feedings, texture-modified diets, and swallowing therapy programs (Pássaro et al., 2016). A study of ventilated and non-ventilated patients in the semi-recumbent position reveals little change to a slight increase in complications related to microaspiration (Pássaro et al., 2016). Nurses should be aware of position changes by non-ventilated patients and the

increased risk for microaspiration. Passive mobilization and postural changes three times a day results in a 61% decrease in HAP (Pássaro et al., 2016). Encouraging the patient to move and assisting in postural changes are duties the nurse can implicate. The spread of viral infections decreased with the general use of masks and contact/droplet precautions (Pássaro et al., 2016). Ensuring proper signage indicating precautions and following through with these protocols will reduce the spread of viruses.

Quality Improvement

This quality improvement effort would be most beneficial in hospitals, emphasizing intensive care units, post-surgery, and medical-surgical. Implementation of this effort would be simple as few materials are needed. Staff training, educational materials, and materials such as chlorhexidine would need to be achieved before implementation and carried through during and after implementation.

By reducing HAP, the cost of treatment for both the patient and facility decreases. Reduction of hospital stay is beneficial as more beds are available and hospital and patient costs decrease. Patient safety also increases when proper safety measures take place. Hand washing is proven to be one of the simplest and most effective ways to prevent HAP and prevent the patient and nurse from being exposed to unnecessary microorganisms. The implementation of this protocol will help reduce the nurse's stress, as recommended guidelines can be available on how to reduce the incidences of HAP. Reduction in HAP leads to a decreased workload on the nurse and staffing, reducing stress amongst the health care team.

Application to Nursing

The prevention of HAP relies on proper hand hygiene, good oral care, proper patient positioning, and mobilization (Meehan & McKenna, 2021). More research is still needed to prevent the occurrence of HAP, but utilizing current guidelines will help decrease incidences. Prevention is a team effort. Ensuring that all team members understand current guidelines is the best practice for reducing HAP.

Practice

Hand hygiene is the most effective way to decrease the incidences of HAP (Pássaro et al., 2016). Having bedside antiseptic hand rubs available increased hand hygiene compliance and decreased incidences of HAP from 16.9% to 9.9% (Pássaro et al., 2016). Elevating the bed head to at least 30 degrees reduces the risk of microaspiration in patients on ventilators, altered mental status, and those receiving nasogastric tube feedings (Meehan & McKenna, 2021). Proper oral care, including gums and dentures, reduces the number of bacteria present in the oral cavity. HAP cases decreased in patients who reported brushing two times daily (Meehan & McKenna, 2021). Early mobilization is also significant as it decreases the risk of HAP. Patients with chronic disease and the elderly can experience difficulties within 72 hrs of being confined to a bed (Meehan & McKenna, 2021). Deep breathing exercises, including using an incentive spirometer, helps to reduce secretions and increase the expansion of the chest wall (Meehan & McKenna, 2021).

Education

Infection prevention is the basis for the prevention of HAP. Reading material and resources for proper hand hygiene, oral care, and ambulation should be accessible. Staff meetings and workshops should be incorporated to refresh interventions on reducing HAP

(Meehan & McKenna, 2021). It is also essential to understand that HAP is a team effort approach. All health care team members, including physical therapy, nutritionists, and respiratory therapy, should be educated on proper HAP prevention (Meehan & McKenna, 2021).

Research

More research is needed to assess the prevention of HAP in non-ventilated patients (Pássaro et al., 2016). Most cases occur in the ICU, with 90% ventilated patients (Pássaro et al., 2016). While there are many suggestive ways to prevent HAP, more definitive research and guidelines are needed to decrease the incidences of HAP, with 5-20 of every 1000 patients admitted to the hospital (Pássaro et al., 2016).

Conclusion

Quality improvement is essential in improving nursing. QSEN challenges students to gain more knowledge, skills and develop attitudes that will enhance their transition into nursing (QSEN Institute, 2020). It allows the student to think critically about patient care and develop a foundation for making improvements. Prevention of HAP is essential as it can create serious, even life-threatening, complications for the patient. Simple infection prevention protocols can make a significant impact on the patient's overall safety. It is up to the nurse to use their knowledge of infection prevention and skills within their scope of practice to reduce their patients' chances of developing HAP. 5-20 in every 1000 patients admitted to the hospital will develop HAP (Pássaro et al., 2016). With each of these patients, the nurse is the frontline in their care. Providing leadership to other staff members and holding themselves accountable for their actions can make all the difference in their patient's care.

References

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