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Patient STRATEGIES TO ENHANCE ORAL HYGIENE OF THE VENTILATED

ADULT CRITICALLY ILL PATIENT Introduction For patients who are critically ill, particularly those requiring endo-tracheal intubation, they carry the greatest risk of all hospitalized patients in the acquisition of nosocomial pneumonia.

This form of pneumonia for critically ill patients produces an elevation in the rate of morbidity and mortality (Berry et al, 2009: p555). The causative pathway of nosocomial pneumonia oropharyngeal is the pathogen aspiration present in the dental plaque. Dental plaque build up has been increasingly associated with nosocomial respiratory infections. Therefore, the prevention of colonization of pathogens in the oropharyngeal cavity acts as an effective control measure for infection (Pruitt & Jacobs, 2011: p38). Oral care, for critically ill patients, is often an undervalued practice for intensive care health settings. However, a significant collection of evidence that associations the colonization by pathogens of the oropharyngeal cavity and dental plaque with VAP, or ventilator-associated pneumonia exists. In addition, provision of oral care for critically ill patients on a fixed basis is a vital part of giving comfort for patients in critical care (Judith et al, 2012: p125). The optimization of oral health care for patients who are intubated is made difficult because of the presence of orogastric tube and endo-tracheal tubes. Once dental plaque reaches its critical thickness, it serves as a reservoir for anaerobic and aerobic pathogens. If this plaque is not removed, it sets off a complex cascade of biological activity through which pathogens fix them to tooth and mucosal surfaces and what ensues is overgrowth of pathogens (Munro, 2010: p28). In addition, insufficient or neglected oral care

acts as the foremost predisposing factor for stomatitis, mucositis, gingivitis, and other oral conditions that supply pathogens with extra entry points. Just a handful of research studies compare the frequency and mode of oral hygiene that is needed to decrease or prevent oropharyngeal colonization (Coyer et al, 2011: p75). Comprehending the relationship that exists between the two will aid in coming up with strategies to prevent the above. This paper will discuss the various strategies, which healthcare professionals could use to ensure the maintenance of oral hygiene for critically ill patients who are prone to oropharyngeal colonization and infections. Background Dental plaque refers to a dynamic bio-film that could be defined in clinical terms as deposits of bacteria that are difficult to rinse off (Hixson et al, 2008: p49). Dental plaque harbors numerous different species of microbes with a one-mm³ plaque volume that contains approximately one hundred million bacteria. In patients who are critically ill and are mechanically ventilated, their mouths are propped open using endo-tracheal tubes that expose the oral cavity, in turn increasing the susceptibility of the oral cavity to desiccation (Cutler & Davis, 2010: p390). Oral intubation, in addition, acts to reduce the role of saliva in cleansing the mouth and impedes nursing staff in the provision of oral hygiene. The patient is also likely to suffer from; impaired cough reflexes, as well as the inability to clear out accumulated secretions. Because of a combination of the problems stated, intensivists are gaining more awareness on the important role played by dental plaque in the etiology of VAP, or ventilator-associated pneumonia (Grap et al, 2010: p114). Ventilator Associated pneumonia is a hospital acquired pneumonia, which is defined as parenchymal infection of the lungs occurring in people who are

intubated and ventilated mechanically for over 48 hours (Davidson & Berry, 2010: p320). This condition is associated with increased mortality, morbidity, increased cost, and long length of stay in the hospital and the ICU. In view of these clinical costs and major adverse effects associated with the management of ventilator-associated pneumonia, coming up with strategies that reduce or prevent its prevalence is appropriate. Documentation of the status of health care has principally focused on the recording of filled, missing, or decayed teeth, as well plaque scoring. The periodontal health, to date, of patients who are intubated has been continuously ignored (Dodek et al, 2012: p440). However, it is essential to study it further because periodontal disease presents as a bacterial disease that is predominantly caused by Gram-negative anaerobic bacteria. Similarly, ventilator associated pneumonia has led to various intensivists to suggest that the process of colonization by periodontal pathogens by endo-tracheal acts as a precursor to ventilator associated pneumonia development. It has also been suggested that the presentation of periodontal disease may lead to systemic endothelial dysfunction, as well as the impairment of glucose control. These two are very important in the management of critical illness. However, the exact link between systemic disease and periodontal disease is still a cause of major debate among clinical practitioners (Dodek et al, 2012: p443).

Problem Statement 1. The overarching question for the research study will be: What are the effective clinical practices in the maintenance of oral health for patients who are critically ill? 2. In addition, the specific questions in the study will be: a) What are the consequences of inadequate healthcare in patients who are critically ill? b) What strategies of assessment are effective

in the provision of optimal oral care? c) What are the effective solutions in optimal oral care provision? References Berry, Angela. Davidson, Patricia. Masters, Janet. & Rolls, Kaye. (2009). Systematic Literature Review of Oral Hygiene Practices for Intensive Care Patients Receiving Mechanical Ventilation. *American Journal of Critical-Care* , 552-562. Judith, Jacobi. Fraser, Gills. Coursin, Douglas. & Lumb, Phillip. (2012). Clinical practice guidelines for the sustained use of sedatives and analgesics in the critically ill adult. *Critical Care Medicine* , 119-141. Coyer, Fiona. Wheeler, M. Wetzig, Susan. & Couchman, Bronwyn. (2011). Nursing care of the mechanically ventilated patient: What does the evidence say? *Intensive and Critical Care Nursing* , 71-80. Cutler, Constance. & Davis, Nancy. (2010). Improving Oral Care in Patients Receiving Mechanical Ventilation. *American Journal of Critical-Care* , 389-394. Davidson, Patricia. & Berry, Angela. (2010). Canadian clinical practice Beyond comfort: Oral hygiene as a critical nursing activity in the intensive care unit. *Intensive and Critical Care Nursing* , 318-328. Dodek, Peter. Keenan, Sean. Cook, Deborah. Heyland, Daren. & Brun-Buisson, Christian (2012). Evidence-Based Clinical Practice Guideline for the Prevention of Ventilator-Associated Pneumonia. *Ann Intern Med* , 439-445. Grap, Mary. Munro, Cindy. & Ashtiani, Brooke. (2010). Oral Care Interventions in Critical Care: Frequency and Documentation. *American Journal of Critical-Care* , 113-118 . Hixson, Shelby. Lou-Sole, Mary. & King, Tracey. (2008). Nursing Strategies to Prevent Ventilator-Associated Pneumonia. *Advanced Practice in Acute & Critical Care* , 45-55. Munro, Cindy. (2010). Oral Health and Care in the Intensive Care Unit: State of the Science. *American Journal of Critical-Care* , 25-34. Pruitt, Bill. & Jacobs, Michael.

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