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Improving Oral Care Practices and Aspiration Risk Assessment to Mitigate Risk of Hospital Acquired Pneumonia

Jeniffer Baker

University of San Francisco
Improving Oral Care Practices and Aspiration Risk Assessment to Mitigate Risk of Hospital Acquired Pneumonia

It’s estimated that 7 out of every 100-people admitted to hospitals world-wide will contract a nosocomial infection (World Health Organization [WHO], n.d.). In the United States, healthcare associated infections (HCAI) are responsible for approximately 99,000 deaths annually with a projected $6.5 billion in costs (WHO, n.d.). HCAI effect resource allocation, extend length of stay, increases antibiotic use, and can result in debilitating and sometimes fatal patient outcomes (WHO, n.d.). These alarming trends reflect the urgent need by healthcare professionals to find solutions to this growing problem.

Clinical Leadership Theme

Hospital acquired pneumonia (HAP) is one of several HCAI of concern world-wide. The actual incidence is elusive but thought to affect 1-8% of all hospitalized patients (McAuley et al., 2015). HAP is considered a complex phenomenon associated with up to 70% mortality and an average increased length of stay of 7-9 days (McAuley et al., 2015). Tedja and Gordon (2013) estimate the costs associated with HAP to be greater than $40,000 per case. Given the burden of HAP, the Clinical Nurse Leader (CNL) is in a unique position as risk anticipator to decrease prevalence and improve outcomes.

The role of risk anticipator is described by Jackson and A’Hearn (2016, p. 103)) as “the ability to critically evaluate and anticipate risk to client safety”. This can be accomplished by utilizing “risk analysis tools and quality improvement methodologies at the systems level,” fundamental elements of the role developed by the American Association of Colleges of Nurses (as cited in Jackson & A’Hearn, 2016, p. 103). The CNL, as risk anticipator, can mitigate risk
and prevent harm by leading process improvement projects designed to address HCAI in their designated microsystems.

**Statement of the Problem**

HAP is a class of bacterial pneumonia, identified after 48 hours of admission and associated with known risk factors including: stroke; altered level of consciousness; alcohol withdrawal; the ageing process; and chronic lung disease (File, 2017). These risk factors can contribute to aspiration, which is believed to be a primary component of HAP (File, 2016). According to File (2017), the most common pathogens associated with HAP are methicillin-susceptible Staphylococcus aureus (13%), methicillin-resistant Staphylococcus aureus (20%), and Pseudomonas aeruginosa (9%). In a study by Ewan et al. (2015) the tongue and throat were cultured in relatively healthy adults and found to contain these common pathogens. It was the conclusion of the authors that attention to oral care could help decrease HAP rates.

Unlike its cousin, ventilator associated pneumonia (VAP), identified cases of HAP are not required to be reported so accurate rates of infection are difficult to obtain (Quinn et al. 2014). Because of the complicated factors surrounding its pathology and lack of robust clinical study, prevention of HAP has been largely based on guidelines and bundles developed from the study of ventilator-associated pneumonia (Pássaro, Harbarth, & Landelle, 2016). Studies show that implementation of oral care protocols improve ventilator associated pneumonia (VAP) rates with limited, but encouraging data on HAP (El-Rabbany, Zaghlol, Bhandari, & Arapahos, 2015). Given the high rates of HAP reported in this microsystem, the purpose of this process improvement project is to mitigate the risk of HAP by implementing standardized oral care policy and improve aspiration identification through staff education.

**Project Overview**
The aim of *Improving Oral Care Practices and Aspiration Risk Assessment to Mitigate Risk of Hospital Acquired Pneumonia* is to address the high rate of HAP found on a Transitional Care Unit (TCU). The goal is to decrease HAP rates by 10% in 6 months through the introduction of a standardized oral care policy and aspiration risk assessment. Presently 14 cases of HAP have been reported from the previous 5 quarters (Appendix A). This process begins with writing a comprehensive policy and ends with successful implementation through staff education. Education on policy components and aspiration risk will be presented in a learner friendly format and during a time that maximizes staff participation. Practice sessions will be provided to allow for skill proficiency and culminate in return demonstration to increase retention. Knowledge assessments and audits will be utilized as indicators of learning and sustained improvement. This process change meets the evidence based project guidelines (as outlined in Appendix B) and has the support of the unit manager and nursing director.

The global aim statement is meant to set an overarching theme to a process improvement project while an aim statement offers guidance by defining the needed improvement (Nelson, Batalden & Godfrey, 2007). To be effective, an aim statement should contain the following: the goal of the process improvement; measurement of progress towards the goal; and what changes are implemented to reach the goal (Nelson, Batalden & Godfrey, 2007).

The global aim statement for this project is to decrease rates of hospital acquired pneumonia on the TCU. The process begins with identification of patients at risk for developing hospital acquired pneumonia and ends with patient discharge. By working on the process, a decreased incidence of hospital acquired pneumonia is expected through: (1) improved nurse competency in aspiration risk identification; (2) improved confidence in nurse administered bedside swallow screening; (3) increased interdisciplinary
collaboration and communication; and (4) the establishment of evidence based protocols to prevent infections. The reasons for implementation of this project are to decrease hospital costs through prevention and improve patient outcomes.

The aim of this project, is to decrease hospital acquired pneumonia (HAP) rates on TCU by 10% within 6 months of implementing a standardized oral care policy and improve aspiration risk identification. This aim encompasses two stated goals of the global aim statement, improved nurse competency in aspiration risk identification and the establishment of evidence based protocols to prevent infections. This is one of several components to be implemented as part of a HAP reduction bundle.

**Rationale**

The TCU is a busy sixteen bed step down unit in a 60 bed, urban hospital. Evaluation of the microsystem included identifying the unit’s purpose, patient population, professionals, processes, and patterns (5 Ps). Understanding the microsystem informs the project structure, goals and implementation. A brief survey and a gap analysis were performed to identify the barriers and understand the needs of the staff to enhance successful project implementation. A fishbone diagram helped to narrow the focus. Management provided the most current HAP data which was limited in scope to a single report of all inpatient complications rates by type recorded during the previous 5 quarters. A total of 14 cases (Appendix A) of HAP were identified which comprised 25% of total in-patient complications and 48% of the total in-patient complications reported for infection (Appendix C). A cost benefit analysis projected costs of treating 14 cases of HAP at approximately $560,000. A 10% decrease in HAP is anticipated after 6 months with an estimated cost savings of $53,695 (see Appendix D for more details).
Survey results (published in Appendix E) indicated 64% of nurses were extremely familiar with risk factors besides stroke associated with aspiration and 93% indicated their awareness of the evidence suggesting improved oral care can decrease incidence of HAP. A gap analysis revealed communication between NA and RN on actual oral care performed is inconsistent and completion often assumed. Presently, there is a Mosby’s procedure guiding oral care but no formal policy in place. The process of oral care is delegated by RNs to nursing assistants twice daily and as needed. When asked how might the oral care process be improved, nurse replies included: Routine practice; consistency; improving awareness; consistency and regular checks; and education. Data from patient surveys regarding oral care routines and oral health informed educational materials and staff resources developed for the project (refer to Appendix F for complete data).

Strengths, weaknesses, opportunities and threats (SWOT) were analyzed (outlined in Appendix G). Decreased costs and improved patient satisfaction were two important strengths identified while staff resistance to change was a weakness. Opportunities included decreased readmissions and standardized hospital oral care policy with cost of additional oral care supplies identified as a threat. A stake holder analysis (Appendix H) revealed support for project implementation from management and administration with high benefits to patients and families. Buy in from staff is crucial to project implementation but resistance to change may be a barrier to process improvement.

**Methodology**

Implementing a change in oral care practices requires application of change theory. The use of Lewin’s change theory unfreezing, moving and re-freezing and its application to nursing leadership is the subject of an article by Shirey (2013). The basis of Lewin’s theory is how
outside forces influence and change group behavior. The author describes how this theory has been embraced by the nursing profession on many levels to facilitate change because of its simplicity and ease of implementation.

The first phase, unfreezing, requires assessment and identification of the need for change by the leader. The second phase or moving, involves implementation of the change process. This phase requires plan development and execution along with staff support during the change process. The final stage is refreezing which ensures the change becomes permanent through mitigation of forces that could disrupt the process change. This requires maintenance through interventions such as audits and coaching. Successful utilization of Lewin’s theory is dependent on the size of the change, the timing and unit culture. Simple changes implemented in areas of stability can utilize this change theory effectively.

Although oral care practice is inconsistent, it’s not a new skill for the staff. The unit is small with a proactive culture and a genuine sense of teamwork. Introducing standardization of practice along with enhanced aspiration assessment are simple changes that can be introduced effectively using Lewin’s theory.

This oral care project begins with data collection on HAP incidence and assessment of oral care processes through staff and patient surveys and informal conversations. A standardized oral care policy will be authored. Online education pertaining to the policy, HAP physiology, incidence, treatment and prevention will be disseminated with a pre-assessment survey. Hands on practice sessions will be scheduled during work hours to accommodate staff schedules and will begins with a short video from the American Dental Association (ADA) on proper toothbrushing and oral care (ADA, 2014). Return demonstration and a post assessment will close out the learning sessions. Maintenance will be provided through confederate observations and
coaching at two-week, one month and six-month intervals. Quarterly monitoring of HAP data will be collated and presented to management at the six-month mark.

Data Source and Literature Review

The purpose of TCU is to provide care for patients who are stable but require telemetry monitoring and frequent nursing interventions or assessments every 2-4 hours. The typical patient is a 66- year old male with a diagnosis of heart failure, pneumonia, chest pain, dysrhythmia, and alcohol withdrawal. Many patients come as transfers from the ICU. The staff is comprised of 22 full time RNs who work combinations of 8 and 12-hour shifts. Three Per Diem nurses are also on staff. The TCU utilizes mixed staffing and employs 10 full time nursing assistants (NAs) with a staffing pattern of 5 RNs and 2 NAs per shift. The processes of patient personal care are done by the NAs under the direction and supervision of the RN. NA duties include bathing, oral care, transferring, incontinence care, turning, feeding, and toileting. Patterns included: average daily census of 12.92; length of stay (LOS) of 3.45 days; and increased HAP rates during the Fall, Winter and early Spring. Current institutional data reveals that 25% of all inpatient complications are attributed to infection with 48% of total infections attributed to HAP.

Staff communication is achieved through huddles led by the charge nurse and or manager instead of staff meetings. The TCU utilizes unit based practice council as well to help determine unit goals and problem solve unit issues. Huddles may occur once or twice a shift depending on work flow and established needs with all staff in attendance.

Nursing researchers use the acronym PICO when constructing a question to help guide a more focused literature search: (P) stands for the problem or population affected, (I) refers to an intervention to be tested, (C) is for comparison of the intervention, if any and may not be relevant, and (O) relates to the outcome of the intervention (Polit & Tatano Beck, 2014). The
PICO statement for this project: *Can improved oral care practices and aspiration risk assessment decrease hospital acquired pneumonia?* elicited the following search terms: oral hygiene, oral care, hospital acquired pneumonia, prevention, pneumonia, and aspiration. A search of the Cumulative Index of Nursing and Allied Health Literature (CINAHL), DeepDyve and UpToDate databases resulted in nine articles of interest. Three articles speak specifically to the use of oral care as an evidence based process to decrease HAP.

Skill mix and its effect on oral care processes in a Toronto based hospital’s *neuromuscular* unit was the focus of this interventional study by Bruan-Wimmer and Ruiz-Skol. The authors explored two areas of interest: How does oral hygiene education affect the practices of unlicensed care providers and what are registered nurse (RN) perceptions of their accountability in delegating this task to an unlicensed provider? Their methods included pre-and post knowledge based questionnaires and three education sessions led by an RN and dental hygienist. The last session included practice of oral care techniques by participants on each other while the second session involved assessment of oral cavity for changes and common conditions. Post questionnaire results indicated improved confidence in knowledge and skill acquisition. Team work and dedication to collaborative oral care were also noted. This work emphasized the importance of professional collaboration and standardized protocols when providing consistent oral care on a unit with a skill mix.

Coker, Ploeg, Kaasalainen, and Carter (2017) used observation to study the oral care practices of nurses on elderly patients with differing levels of dependence during the evening shift. Twenty-five staff members were observed during 185 patient encounters. Results revealed that over 20% of patients declined oral care when offered and in 36% of cases where oral care was performed by staff, technique and quality of care varied. Oral care tasks that were
scrutinized included: denture care, brushing of natural teeth, application of oral and lip moisturizers, and care of the oral mucosa and tongue. The authors cited lack of generalization and incomplete knowledge of each patient’s barriers to performing oral care as two limitations. Although generalization was a limiting factor, the important content of this work was the differences observed in oral care technique which supports similar practices observed by staff on TCU. The authors went on to conclude that more studies are needed to provide better evidence in support of standardized oral hygiene protocols.

This meta-analysis reviewed 28 out of a potential 911 studies focused on the effectiveness of varying methods of oral care to HAP in at risk populations found in skilled nursing facilities and VAP in the intensive care unit (ICU). El-Rabbany, Zaghlol, Bhandari, and Azarpazhooh (2015) recommended regimented oral care, tooth brushing and chlorhexidine mouthwash to combat both HAP and VAP. Given the level of bias found in many of the studies, they encouraged more robust RCTs to guide future practice. The article stressed the need for increased education of nurses concerning their significant role in HAP prevention using vigilant oral care practices. Standardization of oral care practices through evidence based protocols was also addressed. This article confirms the importance of nursing education and oral care in the prevention of HAP.

In a prospective study by Ewan, Sails, Walls, Rushton, and Newton (2015) the effects of colonization of saliva with HAP associated pathogens and plaque distribution on incidence of Hap in individuals > 65 years of age who were hospitalized was studied. A cohort of 90 patients were sampled for oral colonization on hospital day 1, 3, 5, 7 and 14 days following admission. Dental exams were given on days 1, 7, and 14 of the study to describe plaque presence and dentation. Real-time assay testing was done on all saliva samples to evaluate the amount and
frequency of colonization by seven common respiratory pathogens. A correlation was then made between the colonization results, plaque presence and dentation with disease incidence. HAP was not associated with dentation or plaque presence but with the colonization of the saliva prior to admission. The incidence of HAP was 35% in individuals who had positive assays and 4% in those who tested negative. Limitations noted were sample size and the overall good health of the individuals in the study. The authors identified HAP as a multifactorial phenomenon and continued research of the oral microbiome should enhance further understanding. They recommended good oral care and careful aspiration risk assessment as sound preventative measures to decrease HAP incidence.

File (2016) discussed the incidence of and differences between hospital-acquired pneumonia (HAP) and ventilator associated pneumonia (VAP). The article identified risk factors associated with HAP besides mechanical ventilation which include: age, lung disease, decreased level of consciousness, altered gastric pH and thoracic or abdominal surgery. The importance of recognizing and preventing aspiration in preventing both VAP and HAP was also endorsed. This summary provides current understanding of risk factors associated with aspiration and its importance in HAP prevention.

In this quantitative cross-sectional study, Jansson, Ala-Kokko, Ylipalosaari, Syrjälä, and Kings (2013) explored nursing attitudes and obstacles surrounding the consistent implementation of evidence-based oral care standards for the prevention of VAP. Surveys were given to a random sample of 173 nurses from a 22-bed intensive care unit in a Finnish academic hospital. Two questionnaires were given out. The first measured level of knowledge in VAP prevention while the second looked at obstacles to implementation of, and personal compliance with 25 evidence based modalities of VAP prevention. Nurses with more than 5 years-experience scored
statistically higher on the knowledge questionnaire than their less experienced counterparts. Obstacles identified for implementation of evidence based guidelines included lack of resources and disagreement with the evidence. The authors concluded that ongoing nurse education is key to successful implementation of evidence based oral care procedures. This article explores the barriers to changes in oral care practices that can be applicable to similar projects.

In this article, the Medline data base was searched for current meta-analysis, random control trials (RCAs), and professional society guidelines for strategies in the prevention of non-ventilated HAP. Pássaro, Harbarth, and Landelle (2016) reviewed the following preventative measures: hand hygiene, oral care, patient positioning and mobility, aspiration prevention, dysphagia identification and others. Although few studies have been done on the prevention of HAP specifically, interventions associated with the prevention of VAP such as care bundles and oral care guidelines were felt to be applicable and transferrable to the non-ventilated population. Two interventions were recommended by this review to decrease the incidence of HAP: improved oral care and timely dysphagia identification.

In the fourth chapter of the American Association of Critical Care Nurses Procedure Manual for High Acuity, Progressive and Critical Care, Vollman, Sole and Quinn (2017) present evidence based oral care procedures that promote the maintenance of healthy oral mucosa in both the intubated and non-intubated patient. Current research suggests the need for consistent oral care and noted current trends in nursing practice. Each step of the oral care procedures was specifically outlined to include rationale and special considerations for each unique population including patients who are fully independent, those who are dependent on another for care, and those who wear dentures. This procedure offers a scaffold in building a comprehensive oral care policy.
Implementation of a house wide oral care protocol to reduce hospital wide incidence of non-ventilator associated pneumonia was the subject of a descriptive, quasi-experimental study by Quinn et al. (2014). Usual care and enhanced oral care were compared using retrospective data collection. The enhanced oral care arm provided classes taught by dental professionals and included hands on experiences to increase skill proficiency. The focus of the program was to standardize oral care practices and educate nurses on their vital role in HAP prevention. After the one-year study, HAP was reduced by 37% with a projected cost savings of $1.6 million. This study confirms the impact that standardization and robust education has on oral care practices in the prevention of HAP.

**Timeline**

The projected timeline for implementation through two-week evaluation is 14 weeks (outlined in Appendix I). Due to the novelty of this microsystem, the first 5 weeks were spent evaluating the microsystem. Modifying portions of the Dartmouth guide for microsystem assessments inpatient unit profile, a need was identified (Godfrey, Nelson and Batalden, 2007). Data was then collected using surveys and informal conversations with staff to shape a plan for change. During weeks 6-8 an education plan and materials were developed. An online dissemination date to staff is projected for week 9 and hands on education sessions to follow during week 11. Evaluation using confederate observation at 2-week and one month are projected for weeks 13 and 17 respectively.

**Expected Results**

Given the high rates of HAP on the TCU, projected rate reduction is modest for the first 6 months with an overall HAP case reduction of 1.4. After performing an extended cost benefit analysis (CBA), further cost savings based on 20% reduction in HAP over an additional 6
months would average $109,695 (found in Appendix J). Through hands on learning and coaching, staff will improve oral care consistency. Post-educational surveys will reflect improved confidence in identifying those at risk for aspiration. Confederate observations to audit process consistency and quarterly inpatient complication rates should reflect a decrease in HAP rates over time.

**Nursing Relevance**

Nursing is in a unique position to influence the trajectory of patient safety regarding HCAI prevention. Development of evidence based protocols that influence and improve patient outcomes and contain costs is a significant contribution that can only be led by those at the bedside. The nature of the work provides nurses with the raw data of what needs to be addressed and the size of the nursing workforce provides the leverage to influence and implement change at the bedside. *Improving Oral Care Practices and Aspiration Risk Assessment to Mitigate Risk of Hospital Acquired Pneumonia* exemplifies how attention to the most basic of nursing tasks can impact patient lives and improve quality of care in the microsystem.

**Summary Report**

The aim of *Improving Oral Care Practices and Aspiration Risk Assessment to Mitigate Risk of Hospital Acquired Pneumonia* is to decrease the high rate of HAP through oral care policy development and staff education. The focus of education is to improve risk factor identification and standardize oral care practices amongst a mixed staff.

The setting for this project is a 16 bed TCU located in a 60-bed urban hospital serving a distinct, predominately male population with an average length of stay of 3.42 days. The average age of patients is 66 years with primary diagnoses of heart failure, pneumonia, chest pain, dysrhythmias and alcohol withdrawal. The staff is comprised of predominately experienced
fulltime RNs and NAs. Team nursing is the model practiced on the unit where the primary physical care of patients is done by the NAs while RNs oversee and delegate care (refer to complete microsystem analysis in Appendix A).

The primary method for achieving the stated aim of this project was the standardization of oral care procedures through oral care policy development and staff education. This education also included improved aspiration risk identification by nursing staff. In-hospital complications rates reported from July 2016 through September 2017 indicated HAP comprised 25% of total complication rates and 48% of total in-patient acquired infections (Appendix C). Staff surveys indicated 64% of nurses were extremely familiar with other risk factors besides stroke associated with aspiration and 57% (Appendix E) of respondents could locate the oral hygiene procedure for unconscious or debilitated patient which is utilized in place of a policy. The gap analysis highlighted struggles with team communication with regards to actual completed oral care tasks. Many staff assume that care is done and document without confirming details. The complete gap analysis and oral care process flowcharts can be found in Appendices K and L respectively. A fishbone diagram assisted in simplifying the overall process, providing structure and direction (Appendix M). This was an important process to help narrow the project focus.

Developing an oral care policy was the first step in the process. The bulk of the written policy was borrowed from an affiliate hospital in the same system so only minor changes were made to reflect current needs and recent evidence. Patients were surveyed about their oral care practices and results revealed 74% of patients performed their own oral care and 56% of patients used mouthwash routinely. An assessment of oral care products that were available to the unit found some routine items missing due to backorder (Appendix N). Mouthwash and dental floss weren’t supplied to patients but sometimes were available through the volunteer services. Patient
comments included: *I can’t get my prescription saliva, gel, and mouthwash. They should have a record of it in the computer; No flossers; No oral care supplies offered for three days. No one asked me about brushing my teeth.* Patient survey data informed writing of policy and served as the basis for patient specific education that is discussed later (complete patient survey data and comments are contained in Appendix F).

Because of average patient age and the frequency of heart failure and pneumonia diagnoses, patients were asked if they experienced xerostomia. Of the respondents 33% indicated sometimes, 26% often and 7% always. Given the needs of this population, sub section E addressing xerostomia assessment and management was added to the oral care policy (additions and changes to policy can be viewed as red text in Appendix O). The results of this survey were shared with the manager in hopes of improving oral care supply type and quantity.

An education plan was developed combining didactic materials with hands on practice and return demonstration. Both options for presenting two didactic PowerPoints were included in the plan (the entire education plan can be found in Appendix P). It was decided that disseminating materials online 2 weeks prior to practice sessions was the most efficient use of everyone’s time. However, due to CNL student’s limited access to inhouse online education tools, the manager is presently in the process of uploading and formatting the PowerPoint content.

Relative information included HAP etiology and incidence, treatment and prevention as well as aspiration risk identification and current evidence. The policy overview contained important aspects of oral care as it pertains to the dependent and independent patient as well as the denture wearer (notes version of both PowerPoints is in Appendix Q). It also includes a focus
on team work and outlines communication expectations. The current draft of the oral care policy has yet to be approved so disseminating that information is also on hold.

However, a TCU Oral Care and HAP Resource Binder has been completed (contents can be found in Appendix R). The staff resources binder incorporates policies governing oral care (draft) and swallowing disorders with full color copies of the HAP and oral care policy PowerPoints. Summaries of skills and assessments based on Mosby’s online resources are also included: aspiration management and identification; denture care; incentive spirometry and acapella use; oral hygiene technique; and oropharyngeal suctioning. A section devoted to articles on oral care and HAP completes the binder. A Patient Oral Care Education Resource binder was also developed (materials can be viewed in Appendix S). Topics for patient education include brushing technique, denture care, mouth health, flossing instructions and therapeutic mouth wash recommendations.

Utilization of the huddle is critical to this process as it allows the staff time for education, presentation of materials and questions during work time. This process is the preferred method of communication on the floor and is attended by all staff during a given shift. The huddle facilitates productivity and maximizes staff on duty time. The resource binders will be presented in an upcoming unit huddle as outlined in the education plan to encourage their use.

Materials for return demonstration were purchased and included 3 sets of dental grade model teeth, 3 tongues, 3 Yankauers and 1 set of costume teeth as a substitute for dentures. These costs are included in the second part of the CBA (Appendix O). Without support of the didactic, the practice sessions have been pushed out until policy approval has been received and online education materials have been completed. The American Dental Association has a brief video that teaches proper brushing technique. The length and content were found appropriate and
the video is easy to access online. It would have been utilized during the practice session and its link is listed in the education plan (Appendix P).

Evaluation of knowledge and skill acquisition is important to sustain the change in this unit’s oral care process and aspiration risk identification. Acknowledging the differences in skill, experience and education level of mixed staff led to the development of 3 separate evaluation tools. A 10-question true/false assessment with a single 5-part Likert scale question was developed for the NAs. This should be given prior to completion of online education and then again after completion of online education and review of the oropharyngeal suctioning, aspiration and oral hygiene summaries discussed in unit huddles. The Likert style question asks the NA how familiar they are with different reporting oral care task completion to the RN. They include patient tolerance of procedure, what tasks were completed, and patient participation (a copy of the full assessment can be found in Appendix T).

A separate posttest was designed for the RNs to be administered after the practice sessions and return demonstrations are completed. This survey is comprised of 6 Likert style questions pertaining to skill acquisition, application of knowledge and perceived confidence (Appendix U). The final assessment involves the return demonstration of differing oral care skills and includes denture care, oral suctioning and toothbrushing technique. Both parties would be evaluated with the same tool and expected to show the same level of expertise once the sessions were completed (see checklist in Appendix V). At this time no data can be reported because of the before mentioned changes in timeline.

At this time there is no data to be reported due to unforeseen project delays. It was the goal of this project to decrease HAP rates by 10% 6 months after implementation. Only small
pieces of the project came to fruition. However, if the project had been completed as outlined the following describes how the maintenance phase was intended to roll out.

The use of confederate observation in maintaining skills provides an opportunity for real time coaching to further solidify new habits. Data collection post implementation is key to maintaining oral care technique and was recommended at 2-week, one-month and quarterly intervals following implementation. The data collection tool was based on a model by Ibo MacDonald (2016). It asks the observer to evaluate 4 rooms, 4 times a quarter for bedside oral care supplies and indication of aspiration precautions. The confederate will also observe staff technique during oral and/or denture care on 4 different patients during each observation period (tool located in Appendix W). Nurses will be assessed for documentation of completed oral care, presence of xerostomia and oral mucosa assessment. They will also be asked about improvement of communication during the 2-week and one-month audits (Appendix X). The CNL will compile all the data and report findings to the manager and discuss with staff during huddles. Changes to the process will be influenced by the results.

At the beginning of this project, the facility size and the ease at which project completion was observed early on in planning gave a sense of assurance for a successful implementation. Unfortunately, unforeseen workflow issues involving management and administration complicated the timeline and brought most of the project to a halt. All materials developed were forwarded to the manager, who is also a CNL, with the hope that the full project can still be implemented in the future.
References


Kubota, C., Kanazawa, M., Hama, Y., Komagamine, Y., & Minakuchi, S. (2016). Original article: Association between chewing-stimulated salivary flow under the effects of


### TCU Microsystem Assessment

#### A. Purpose: To provide comprehensive, intermediate level of care to its population. The level of care requires cardiac monitoring and/or nursing interventions every 2-4 hrs.

**Manager:** Joshua Nadherny RN, MSN, CNL  
**Nursing Director:** Jacob Nur RN

#### B. Patients

<table>
<thead>
<tr>
<th>Top 5 Diagnoses</th>
<th>Top 5 Patient Needs</th>
<th>Patient Type</th>
<th>LOS</th>
<th>Age/Gender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart Failure</td>
<td>Pain management</td>
<td>Medical</td>
<td>3.41</td>
<td>Average age 66</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>Wound management</td>
<td>Surgical</td>
<td>4.0</td>
<td>Predominately male</td>
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<tr>
<td>Chest Pain</td>
<td>Close observation for behavior or therapeutic needs</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Dysrhythmias</td>
<td>Chronic disease medication management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alcohol Withdrawal</td>
<td>Fall prevention</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### C. Professionals

**Current Staff FTEs**

<table>
<thead>
<tr>
<th>Day</th>
<th>NOC</th>
<th>Medical Services</th>
<th>Surgical Services</th>
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</thead>
<tbody>
<tr>
<td>Manager</td>
<td>1</td>
<td>Hem/Onc</td>
<td>ENT</td>
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<tr>
<td>RN **</td>
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<td>Urology</td>
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<td>NA/CNA *</td>
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<td>General</td>
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<tr>
<td>Tele Tech**</td>
<td>2.5</td>
<td>Vascular</td>
<td>Ophthalmology</td>
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<tr>
<td>Per Diems**</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
</tbody>
</table>

**Day Staffing Mix:** 1 Charge RN, 4 Staff RNs, 2 CNAs, 1 Tele Tech  
**NOC Staffing Mix:** 1 Charge RN, 4 Staff RNs, 2 CNAs, 1 Tele Tech

#### D. Processes

- Majority of patient personal care is done by the NA/CNA.  
- RNs oversee and delegate care.  
- Oral care supplies are stored and retrieved via OMNI Cell.  
- No formal oral care policy or standardized education/training, however, Mosby online procedure is available.  
- Nurses attend daily multidisciplinary rounding.

#### E. Patterns

- UBPC meetings monthly.  
- Huddles daily led by charge nurse and/or manager. Discuss safety issues, ongoing QI projects, changes to unit workflow and presentation of brief in-services. Primary source for staff information.  
- Whiteboard near nurse’s station lists QI information, unit projects and goals. Serves to facilitate unit huddles.

**Capacity**

<table>
<thead>
<tr>
<th>Beds: 16</th>
<th>Rooms: 9</th>
<th>ADC: 12.92</th>
<th>Metrics</th>
</tr>
</thead>
</table>

**14 cases of HAP last 5 quarters (HAP bundle in progress)**

---

**Adapted from:** Clinical Microsystems Workbook, 2nd ed. Godfrey, Batalden and Nelson, 2007.
Appendix B

EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

STUDENT NAME: Jeniffer Baker  
DATE: September 3, 2017  
SUPERVISING FACULTY: Carla Martin Rn, MSN, CNL CIC  
Instructions: Answer YES or NO to each of the following statements:

<table>
<thead>
<tr>
<th>Project Title:</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>The aim of the project is to improve the process or delivery of care with established/accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The specific aim is to improve performance on a specific service or program and is of usual care. ALL participants will receive standard of care.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project is NOT designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control. The project does NOT follow a protocol that overrides clinical decision-making.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does NOT develop paradigms or untested methods or new untested standards.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does NOT seek to test an intervention that is beyond current science and experience.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The project has NO funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., not a personal research project that is dependent upon the voluntary participation of colleagues, students and/or patients.</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: &quot;This project was undertaken as an Evidence based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board.&quot;</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee.
Appendix C

In-Hospital Complications July 2016-September 2017

- Other Complications: 41%
- Sepsis/Wound Infections: 34%
- HAP: 25%

Total In-Patient Acquired Infections by Source
July 2016-September 2017

- HAP n=14
- Sepsis n=4
- Wound n=11
Appendix D

Cost Benefit Analysis: Oral Care and Aspiration Risk Education

Average cost of HAP: $40,000* per case x 14 cases = $560,000 per year

(*Cost Source: Tedja, & Gordon, 2013)

Costs

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td>Literature review, policy formation, education plan and PowerPoint development, implementation, supplemental binder and patient education</td>
<td>30 hrs. x $50 = $1,500 *</td>
</tr>
<tr>
<td>Materials</td>
<td>Toothbrushes, model teeth and tongues, yankauers, binder and supplies</td>
<td>$65</td>
</tr>
<tr>
<td>Maintenance</td>
<td>Data collection, auditing, staff coaching</td>
<td>1.5 hrs. x 6 months x $50 = $350 *</td>
</tr>
<tr>
<td>Administrative</td>
<td>Manager and CNO policy/education review and approval</td>
<td>6 hrs. x $65 = $390 *</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>$2,305</strong></td>
</tr>
</tbody>
</table>

* Based on average hourly salaries

Appendix E

RN Survey Data

<table>
<thead>
<tr>
<th>Oral Care (N=14)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of staff surveyed who knew how to locate the oral hygiene procedure</td>
<td>57%</td>
</tr>
<tr>
<td>for the unconscious or debilitated patient</td>
<td></td>
</tr>
<tr>
<td>Percent of staff surveyed who were aware of evidence suggesting consistent</td>
<td>93%</td>
</tr>
<tr>
<td>oral care can decrease HAP rates</td>
<td></td>
</tr>
</tbody>
</table>

**In your opinion, who initiates oral care most often?**

<table>
<thead>
<tr>
<th>Initiation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Both</td>
<td>43%</td>
</tr>
<tr>
<td>CNA</td>
<td>21%</td>
</tr>
<tr>
<td>RN</td>
<td>36%</td>
</tr>
</tbody>
</table>

**Aspiration**

**Besides stroke, how familiar are you with the other risk factors associated with aspiration?**

<table>
<thead>
<tr>
<th>Familiarity</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extremely familiar</td>
<td>64%</td>
</tr>
<tr>
<td>Somewhat familiar</td>
<td>36%</td>
</tr>
</tbody>
</table>
Written Responses RN

Name one thing that can improve the oral care process.

“RN talking with patient.”

“Routine practice.”

“Consistency”

“Having scheduled “swish and spit” chlorhexidine mouthwash.”

“Improving awareness.”

“Consistency and regular checks”

“Education.”

“Make sure oral care supplies are well stocked. We have been out due to SAGE recall for over a month. We can use toothbrush and tooth paste but this isn’t safe for patients who have decreased LOC or aspiration risk.”

“Having supplies available.”

“Good oral care early AM.”

“Using a suction toothette every 1-2 hours.”

“Not sure.”
Appendix F

Patient Oral Care Survey

<table>
<thead>
<tr>
<th>Patient Oral Care Practices</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Routine use of mouth wash</td>
<td>56%</td>
</tr>
<tr>
<td>Independently performs oral care</td>
<td>74%</td>
</tr>
<tr>
<td>Denture wearers</td>
<td>30%</td>
</tr>
</tbody>
</table>

How often does your mouth feel dry?

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>15%</td>
</tr>
<tr>
<td>Rarely</td>
<td>19%</td>
</tr>
<tr>
<td>Sometimes</td>
<td>33%</td>
</tr>
<tr>
<td>Often</td>
<td>26%</td>
</tr>
<tr>
<td>Always</td>
<td>7%</td>
</tr>
</tbody>
</table>

What do you think caused your dry mouth?

- Oxygen
- Medications
- Diagnosis
- Don’t know
- Other

Other: salivary gland removed; bad teeth; decreased oral intake while in hospital.
Patient Comments

- I can’t get my prescription saliva, gel, and mouthwash. They should have a record of it in the computer.
- No flossers.
- No oral care supplies offered for three days. No one asked me about brushing my teeth.
- No mouthwash available.
- Mouthwash sometimes supplied by the volunteer cart.
Appendix G

SWOT Analysis

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Experienced staff</td>
<td>• Staff resistance to change</td>
</tr>
<tr>
<td>• Staff mix allows time to facilitate change process</td>
<td>• *NAs workflow may decrease ability to participate in change process</td>
</tr>
<tr>
<td>• Reduce *HAP rates/*LOS/cost</td>
<td>• Availability of OMNI cell storage for new or additional supplies</td>
</tr>
<tr>
<td>• Increase patient satisfaction and comfort</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increase interdisciplinary collaboration and communication</td>
<td>• Administrative barriers: vendor contracts</td>
</tr>
<tr>
<td>• Decrease readmissions</td>
<td>• Cost of new supplies</td>
</tr>
<tr>
<td>• Establish hospital wide oral care standards</td>
<td>• Process of changing oral care supplies/suppliers</td>
</tr>
</tbody>
</table>

Opportunities

Threats

*HAP: Hospital acquired pneumonia
*LOS: Length of stay
*NAs: Nursing assistants
Appendix H

Stake Holder Analysis

- Resist change
- Support change
- Benefit from change
## Appendix I

### Gantt Chart

<table>
<thead>
<tr>
<th>Activity</th>
<th>Start Date</th>
<th>End Date</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Action 1</td>
<td>1/1/2023</td>
<td>2/28/2023</td>
<td>4</td>
</tr>
<tr>
<td>Action 2</td>
<td>3/1/2023</td>
<td>4/30/2023</td>
<td>2</td>
</tr>
<tr>
<td>Action 3</td>
<td>5/1/2023</td>
<td>6/30/2023</td>
<td>2</td>
</tr>
</tbody>
</table>

- **Note:** This Gantt chart provides a visual representation of project milestones and timelines.
Appendix J

Cost Benefit Analysis

Benefits

<table>
<thead>
<tr>
<th>Benefits</th>
<th>Short Term: 10% over 6 months</th>
<th>Long Term: 20% over 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in HAP rates (cases*)</td>
<td>$1.4* \times $40,000 = $56,000</td>
<td>$2.8* \times $40,000 = $112,000</td>
</tr>
<tr>
<td>Indirect Benefits:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Reduction in future reimbursement risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Reputational: Improved ratings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Projected Cost Savings</td>
<td>$56,000 - $2,305 = $53,695</td>
<td>$112,000 - $2,305 = $109,695</td>
</tr>
</tbody>
</table>
## Prevention of HAP on TCU: Gap Analysis

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Current Situation</th>
<th>Actions/Proposals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve incidence of HAP on TCU.</td>
<td>Hap rates are 45% of total hospital acquired infections.</td>
<td>Decrease rates through unit based quality improvement processes.</td>
</tr>
<tr>
<td>Improve RN confidence with administration of the bedside swallow screen.</td>
<td>Of respondents surveyed, 50% reported feeling extremely comfortable with administering the bedside swallow screen.</td>
<td>Have all staff review process with SLP and perform return demonstration.</td>
</tr>
<tr>
<td>Author an oral care policy and submit for review.</td>
<td>No hospital policy for oral care but Mosby procedure is available.</td>
<td>Literature/outside agency policies/procedure review. Write policy based on best practice/evidence.</td>
</tr>
<tr>
<td>Increase patient satisfaction with oral care routine.</td>
<td>62% of patients surveyed said they use mouthwash at home but the unit doesn’t supply mouthwash.</td>
<td>Consult with purchasing to understand what is available and how to add a new product. Present findings to management. If necessary, contact Sage rep. to obtain product samples to try. Prepare a proposal with cost analysis to management.</td>
</tr>
<tr>
<td>Improve patient oral comfort and maintain mucosal health.</td>
<td>87% of patients surveyed complained of xerostomia and 62% listed a potential cause (disease, medications, O2 therapy).</td>
<td>Provide educational flyer for patients to address symptoms, causes, and relief measures. Assess unit accessibility to gum, artificial saliva and oral moisturizer. Provide staff education on resources and education for patients.</td>
</tr>
<tr>
<td>Staff will encourage and perform oral care consistently as outlined in new policy.</td>
<td>Absence of standardized oral care policy that addresses frequency and technique. Oral care techniques and practices vary between providers.</td>
<td>Provide education on new policy via short PowerPoint. Discuss expectations at huddle. Provide all patients with written information on the benefits of consistent oral care.</td>
</tr>
<tr>
<td>Objectives</td>
<td>Current Situation</td>
<td>Actions/Proposals</td>
</tr>
<tr>
<td>------------</td>
<td>------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Increase unit awareness of aspiration risk profile.</td>
<td>Of respondents surveyed, 63% indicated they were <em>extremely familiar</em> with risk factors other than stroke that are associated with aspiration.</td>
<td>Educate staff with a short PowerPoint presentation.</td>
</tr>
<tr>
<td>Improve team communication regarding completion of oral care by NA/CNA.</td>
<td>Reporting oral care completion by NA/CNA to RN is not standardized (charted but RN not always sure what was completed or if patient refused).</td>
<td>Include communication expectations in policy.</td>
</tr>
<tr>
<td>Improve confidence in oral care assessment.</td>
<td>Routine RN assessment of oral mucosa is not done on all patients.</td>
<td>Include oral inspection in policy. Educate on signs and symptoms to observe. Collaborate with IT for enhanced charting if needed.</td>
</tr>
<tr>
<td>Maintain new oral care process.</td>
<td>No unit based resources for patients or staff presently. No system in place to audit compliance.</td>
<td>Create resources (badge buddy, pt. education, resource binder, visual aids) to reinforce learned skills and provide resources to patients. Discuss/disseminate during huddles. Implement an audit tool for quarterly surveillance of oral care practices.</td>
</tr>
</tbody>
</table>
Appendix L

**NA Oral Care Process**
- Explain procedure to patient
- Gather supplies
- Assist patient as needed
- Report completed care to RN

**RN Oral Care Process**
- Assess oral cavity
- Delegate oral care
- Receive report
- Assess completion of oral care
- Document
Appendix M

Template: Institutes of Healthcare Improvement at IHI.org
Appendix N

TCU Oral Care Supplies Inventory

<table>
<thead>
<tr>
<th>Available in OMNI Cell</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft toothbrush &amp; paste</td>
<td>Bundled with other hygiene supplies</td>
</tr>
<tr>
<td>Pink toothettes</td>
<td>Routine storage</td>
</tr>
<tr>
<td>Lip balm (non-petroleum based)</td>
<td>Included in comfort kits</td>
</tr>
<tr>
<td>Yankauer</td>
<td>Routine storage</td>
</tr>
<tr>
<td>Lemon glycerin swabs</td>
<td>Routine storage</td>
</tr>
</tbody>
</table>

Missing

- Single tubes of toothpaste
- Covered Yankauer
- Mouthwash
- Dental floss/flossers
- Denture tablets
- Oral moisturizer
- Suction swab system with Perox-mint soln. (currently out of stock per manufacturer)
Appendix O

Oral Care Policy Edits

B. FOR DEPENDENT PATIENTS:
   a. Gather equipment
      1) Soft toothbrush
      2) Fluoride toothpaste
      3) Wall suction set-up with tubing
      4) Yankauer suction handle or suction catheter kit
      5) Oral care and suctioning system with sodium bicarbonate, oral rinse, and mouth moisturizer.
   b. Brush teeth a minimum of twice a day, once in the morning and once in the evening.
   c. Apply a pea size amount of toothpaste to toothbrush.
   d. Place bed in a helpful ergonomic position- to enable staff to access far-reaching areas in the patient’s mouth and prevent back and other injuries.
   e. Place paste-filled toothbrush at the patient’s gum line on the buccal or outer surfaces at a 45-degree angle to ensure complete contact with both gumline and teeth (bristles should be somewhat splayed outward over teeth).
   f. Slowly vibrate the brush in short, back and forth for motions and follow it by a gentle rolling motion to remove bacteria and plaque from both gum line and tooth surfaces. Note, the brush should be positioned to access 2-3 teeth at a time and move onward to the next 2-3 teeth.
   g. To properly brush the lingual or inside areas- the inside front teeth should be brushed with a vertical tilt, and flick the brush outward from the gum line, accompanying short up and down strokes with the tip of the brush.
   h. Biting Surfaces- don’t forget the occlusal or biting surfaces of the teeth- gentle back and forth scrubbing motions facilitate the removal of debris from the deep grooves of the teeth and around restorations and crowns (filling and caps).
   i. Brush the tongue to remove bacteria that easily sticks to the filliform papillae (taste buds).
   j. Have patient rinse to reduce remaining bacteria.
   k. Apply suction as you brush or if patient is capable- have he/she close their mouth around the Yankauer tip to remove saliva/paste.
   l. Notify RN or Provider if any changes in oral cavity such as lesions, ulcers, inflammation, or bleeding are noted.
   m. Apply mouth moisturizer with toothette applicators. Swab oral tissue and lips as needed.
   n. Report all oral care activities completed to RN and note issues of patient compliance or intolerance.
   o. An oral inspection should be completed and documented each shift by RN.

C. FOR DENTURE CARE:
   a. Gather equipment
      1) Denture brush or toothbrush
      2) Denture cleaning paste or toothpaste
3) 2x2 or 4x4 gauze
4) Oral care and swab system with antiseptic Oral Rinse

b. Clean dentures a minimum of daily (always prior to storage) and as needed.
c. Don clean gloves.
d. Gently insert gloved hand in patient’s mouth.
e. If upper denture: grasp the outer flange of the denture—thumb on one side, and two fingers—on the other side: gently rock the denture back and forth to loosen the grip of the denture and remove it from the mouth.
f. If partial upper and lower denture—denture will have metal clasps that help anchor it in the mandibular or maxillary arch—same as upper denture procedure above. Caution— the clasps may be anchored around compromised teeth with periodontal disease. Be careful as you remove denture to avoid avulsing teeth that may be loose due to disease.
g. Brush the denture carefully—either with a soft toothbrush or a denture brush using denture commercial cleaner (ADHA, 2014)—taking care to remove all food debris and follow with a thorough rinse with cool water.
h. Note, the following are not recommended on dentures (as they are too abrasive or toxic): de-sanitizing solutions/wipes or commercial cleaners.
i. If patient has a partial denture—take care to brush teeth after removing denture— to access all tooth surfaces.
j. Brush patient’s tongue (or have the patient brush if he/she is able); as well as taking care to avoid stimulating the gag reflex.
k. Take gauze pad, moisten with oral rinse and gently swab patient’s hard and soft palate, along with gum areas where dentures sit (or have patient clean the areas if he/she is capable and more independent).
l. If not in use, the denture should be placed in a labeled denture cup and covered with cool water or denture cleaning solution (ADA, 2017). Discard denture cup when soiled.
m. Notify RN or Provider if any changes in oral cavity such as lesions, ulcers, inflammation, or bleeding are noted.
n. To prevent gum breakdown and promote proper fit, dentures should not be worn overnight while sleeping (ADA, 2017).

D. FOR INDEPENDENT PATIENTS:

a. Independent patients should receive the same oral care regimen as non—ventilated, dependent patients. Staff are to educate and encourage this practice with their patients, as well as provide any necessary supplies.

E. XEROSTOMIA

a. Assess patients as needed for xerostomia.
b. Provide education and relief measures as appropriate (sugar-free gum, oral moisturizers, lip balm) to improve comfort and retain intact mucosal membranes (ADA, 2017 September).

VI. DOCUMENTATION:

Document all oral care, mucosal health and oral care education in the ADL Note or Nursing Assessment/Reassessment Note.

VII. REFERENCES:


Appendix P

Oral Care Policy Teaching Plan

1. IDENTIFICATION OF LEARNING NEEDS AND DATA EVALUATION

- At this facility, 42% of all hospital acquired infections are due to HAP.
- HAP accounts for 25% of total inpatient hospital complications.
- According to TCU staff, oral care practices and consistency of practices vary.
- Communication between NA and RN on actual oral care performed is inconsistent and completion often assumed.
- Presently, there is no hospital oral care policy, however an online procedure is available.
- Eighty eight percent of nurses surveyed indicated their awareness of the evidence suggesting improved oral care can decrease incidence of HAP.
- When surveyed, 64% of nurses were extremely familiar with risk factors besides stroke that are associated with aspiration.

2. LEARNING OBJECTIVES

Following completion of education, staff will be able to:

- Identify 3 risk factors associated with HAP.
- Demonstrate new oral care report process.
- Identify location of oral care policy and resource materials.
- Demonstrate the proper toothbrushing and oral care techniques outlined in policy for the non-ventilated patient including care of the patient with dentures.

3. EVIDENCE


4. TWO OPTIONS FOR IMPLEMENTATION

A. Three different education sessions will be held during shift huddle over three weeks. Skills review and return demonstrations (check off) can be completed during shift following 3rd presentation.

1. Provide staff with short PowerPoint presentations on Day 1 and 2.
   - Content Day 1: Brief written pre-assessment; HAP definition and incidence; pathophysiology; treatment and prevention.
   - Content Day 2: Review of new policy; outline communication expectations; review patient education materials and resource binder. Review oropharyngeal suctioning, oral hygiene and aspiration summaries in staff resource binder.

2. Review one-minute ADA video on proper toothbrushing on Day 3. Video: https://www.youtube.com/watch?v=xm9c5HAUBpY
   - Allow skill practice session on toothbrushing and oral care technique.
   - Return demonstration of skills.
   - Brief written post-assessment.

B. Have staff complete PowerPoint 1& 2 as on-line modules prior to skill practice and check off.

1. Upload education materials two week prior to skills checkoff date.
   - Expectations of completion timeline and process of skills check off to be discussed in huddle.
   - Brief written pre-assessment (CNAs only) survey during same huddle.
   - Review oropharyngeal suctioning, oral hygiene and aspiration summaries in staff resource binder during huddle.
   - Compliance tracked through education??

2. Skill practice and check off during shift.

3. Review one-minute ADA video.
   https://www.youtube.com/watch?v=xm9c5HAUBpY
   - Allow practice session on toothbrushing and oral care technique.
   - Return demonstration of skills.
   - Brief written post-assessment (RNs and CNAs).

**Both options are meant to ensure maximum staff participation while on duty. Materials will be provided by CNL student for check off: toothbrushes, adult model teeth and model tongues.**
5. EVALUATION

Skill maintenance:

- Survey RN satisfaction with communication at two-week, one month and 6-month intervals.
- Confederate observation of NA skills at two-week, one month and 6-month intervals then quarterly.
- Provide real time coaching as needed.
Hospital Acquired Pneumonia PowerPoint

Objectives
At the completions of this presentation, participants will be able to:

- Identify the risks associated with contraction of hospital acquired pneumonia.
- Describe the urgency surrounding risk identification.
- Identify three evidence based prevention methods.

Etiology

- Pneumonia: Inflammation of the alveoli or bronchioles
- Pneumonia results from the replication of pathogens in the lower pulmonary structures and classified as typical or atypical.
- Typical pneumonia is caused by common bacteria and is acquired through exposure in the community (CAP) or in a hospital (HAP).
- Atypical pneumonia affects those who are immunocompromised and is caused by mycoplasma bacteria or viruses.

(Source: Mattson Porth, 2015)

Physiology

- Aspiration of small amounts of contaminated oral secretions is common however, the presence of protective mechanisms prevents potential pathogens from entering the lower structures.
- Protective mechanisms:
  - Cough
  - Endothelial cilia
  - Immune system

*When these mechanisms fail, pathogens can multiply causing infection.*

(Source: Mattson Porth, 2015)

Hospital Acquired Pneumonia (HAP)
Definition: Pneumonia diagnosed after 48 hours of hospitalization that is not present on admission.
Most common pathogens:

- methicillin resistant Staphylococcus aureus (MRSA) 20%
- methicillin susceptible Staphylococcus aureus (MSSA) 13%
- Pseudomonas aeruginosa 9%

Pathogens enter the respiratory system through aspiration of contaminated oral secretions.

**Burden**

- In the United States, 5-15 per 1,000 hospital admissions are affected by HAP.
- HAP accounts for 11% of hospital acquired infections outside the ICU.
- On average, it extends hospital stay by 7-9 days with costs exceeding $40,000 per patient.
- Associated mortality rates of 30-70% have been reported.

**Currently, 25% of total inpatient complications reported at this hospital are attributed to HAP. (July 2016- September 2017)**

**Diagnosis and Treatment**

Determined by symptoms and time of onset (> 48 hours from admission)

- Fever
- Lung infiltrates on x-ray
- \( \downarrow \) SpO2 and/or SaO2
- \( \uparrow \) WBCs
- Purulent sputum

(Source: Mattson Porth, 2015)

Treatment includes IV antibiotics, pulmonary hygiene and mobility.

**Risk Factors and Prevention**

**Swallow Mechanism**

Swallowing occurs in three phases:

- Phase 1 (*oral phase*) is voluntary and involves chewing and mastication of a food bolus that initiates the swallowing mechanism
- Phase 2 (*pharyngeal phase*) is involuntary and controlled by cranial nerves V (trigeminal), IX (glossopharyngeal) and XII (hypoglossal). This phase involves the movement of the bolus through the pharynx.
• During phase 2, the epiglottis prevents foreign substances from entering the upper airway by covering entrance to the larynx and respiration momentarily ceases. Muscle weakness or nerve damage can impair this mechanism and lead to aspiration (see image).

Phase 3 (esophageal phase) is movement of the bolus through the esophagus to the stomach and is also involuntary.

(Source: Mattson Porth, 2015)

Aspiration is the inhalation of a foreign substance into the respiratory system and a common mechanism of HAP.

Patients at high risk for aspiration include the following:

• Age > 70 years.
• Those with chronic lung disease (COPD, asthma).
• Those exhibiting altered level of consciousness (metabolic, drug overdose, alcohol withdrawal).

(Source: File, 2016)

Dysphagia is defined as difficulty swallowing and can lead to aspiration.

Patients at risk for dysphagia include:

• The elderly.
• Stroke victims.
• Those with esophageal obstruction.
• Anyone with a diagnosis of neurologic disorders including: Parkinson’s, Alzheimer’s disease, traumatic brain injury (TBI), ALS, and MS.

(Source: Takizawa, Gemmell, Kenworthy & Speyer, 2015; Goldsmith & Cohen, 2017)

Prevention
Because of its complexity, HAP is more difficult to eliminate. Implementing preventative measures can help mitigate risk:

- Standardize oral care procedures
- Optimize mobility and positioning
- Control oral secretions
- Aspiration risk assessment

**The Evidence**

In a meta-analysis by Pássaro, Harbarth, and Landelle (2016) oral care and risk identification were recommended for the prevention of non-ventilator associated pneumonia. Prevention measures were based on ventilator associated pneumonia research and guidelines.

Saliva, not dental plaque, was found to be the carrier of pathogens associated with HAP in 35% of patients > 65 years of age who developed HAP while hospitalized compared to 4% of those who’s saliva tested negative (Ewan, Sails, Walls, Rushton and Newton 2015).

Control of oral secretions, attention to oral care and optimizing elevation of the head of bed were recommended by File (2016). His analysis of best practices for HAP reduction comprised of similar studies and guidelines regarding ventilator associated pneumonia prevention critiqued by Pássaro, Harbarth, and Landelle.

**Recommendations**

Staff education.

Vigilant aspiration risk assessment and routine dysphagia screening per hospital policy: “Evaluation and Management of Swallowing and Feeding Disorders”.

Standardization of evidence based oral care practices.

Secretion management of those at risk for aspiration.

Maximize patient mobility.

**References**


Oral Care Policy Overview PowerPoint

Objectives
At the end of this presentation, staff will be able to

- State important aspects of the oral care policy
- Outline the communication expectations between the CNA and RN regarding oral care completion.
- Indicate where to locate staff resources and patient education materials on oral care.

Important Points: Dependent Patient
- Toothbrushing should be done twice daily including biting surfaces and tongue. Once in the AM and once in the PM.
- Utilize suction as needed to prevent aspiration.
- Apply moisturizers as needed
- Have patient positioned with HOB elevated or seated.
- Have patient rinse mouth with mouthwash.
- Assess need for more frequent oral care between brushing.
- For identified aspiration risk, please place Aspiration Precautions sign at entrance to room and above bed.

Important Points: Independent Patients
- Ensure patients have all the supplies they need.
- Encourage oral care independence.
- Provide education when needed.

Denture Care
- Handle with care!
- Brush daily (prior to storage) and as needed.
- Promote self-care.
- Store overnight in cool water, do not use hot water.
- Brush oral cavity, tongue, gums and roof of mouth prior to insertion.
- Do not allow patient to wear overnight while sleeping.

Communication: The CNA
Report the following to RN:

- What type of oral care was done
- Who performed the oral care
- Did the patient participate or refuse.
- Were there any changes in their mouth (sores, redness, pain).
- Did the patient tolerate the procedure?

**Communication: RN**

- Assess and document oral care procedures accurately.
- Collaborate with CNA about their findings.
- Assess oral mucosa each shift and document in the mucosal membrane section of flowsheet.
- Provide education to patients as needed.
- Assess patients as needed for xerostomia. Provide education and relief measures.

**Remember, oral care is a team sport!!**

- In order to reach our goals, team members must communicate with one another. This includes your patients and their families.

**Oral Care and HAP Resources**

- **Two binders** have been made to give staff quick and easy access to materials and resources surrounding oral care and hospital acquired pneumonia (HAP).
- Green contains nursing staff resources
- Pink contains patient education materials.
Patient Oral Care Education

• ADA Recommended Therapeutic Mouthwashes
• Denture Care
• How to Brush
• Keeping Your Mouth Healthy
• Proper Flossing

Nursing Resources (skills and assessments)

• Acapella
• Aspiration Precautions
• Denture Care
• Incentive Spirometry
• Oral Hygiene
• Oropharyngeal Suctioning
• Swallow Mechanism
• Xerostomia

Other Resources

• Oral Care Policy: Oral Care for Intubated and Non-Intubated, Dependent Patients in the Acute Care and Long-Term Care Settings

• Policy: Evaluation and Management of Swallowing and Feeding Disorders
• HAP (PowerPoint)
• Oral Care Policy Overview (PowerPoint)
• Patient Education (sample documents)
• Articles of Interest

References

Patient Care Policy developed September 2017. Oral Care for Intubated and Non-Intubated, Dependent Patients in the Acute Care and Long-Term Care Settings
Appendix R

**Oropharyngeal Suctioning**

A Yankauer is the primary method used for oral suctioning on patients with excessive oral secretions. Frequency of suctioning is patient specific and can be associated with the following risks:

- Hypoxemia
- Cardiac arrhythmias, especially vagal induced bradycardia
- Bleeding resulting from suction trauma

Use caution with patients on anticoagulation.

When applying suction use the lowest setting to remove secretions based on their consistency (thick vs. thin).

Test your suction with some water prior to use.

Hyperoxygenate as needed, may not be appropriate for most:

- Utilize if patient has a history of dysrhythmia or desaturation with procedure
- May be necessary with patients utilizing high flow oxygen or face mask
- Place mask near face while suctioning.
- You may keep nasal cannula in place during procedure.

**Do not** extend Yankauer beyond the oropharynx as this can stimulate gagging and promote aspiration.

[Image](https://drtamura.com/services/snoring-sleep-apnea/what-are-adenoids/)

**Do not** use lubricants during suctioning because of aspiration risks.

**Monitor** SpO2 and HR during procedure and stop if desaturates or HR changes.

**Suction only** when patient condition warrants. Excessive suctioning can be harmful.

Aspiration Precautions

Aspiration is the inhalation of a foreign substance into the respiratory system and a common mechanism of HAP.

Patients at high-risk for aspiration include the following:

- Individuals recently extubated.
- Age > 70 years.
- Those with chronic lung disease (COPD, asthma).
- Those exhibiting altered level of consciousness (metabolic, drug overdose, alcohol withdrawal).

(Source: File, 2016)

Dysphagia is defined as a difficulty swallowing and can lead to aspiration.

Patients at risk for dysphagia include:

- The elderly.
- Stroke victims.
- Those with esophageal obstruction.
- Anyone with a diagnosis of neurologic disorders including: Parkinson’s, Alzheimer’s disease, traumatic brain injury (TBI), ALS, and MS.

(Source: Takizawa, Gemmell, Kenworthy & Speyer, 2015; Goldsmith & Cohen, 2017)

Observe your patient for the following:

- Wet sounding voice
- Weak cough
- Coughing during meals
- Prolonged swallowing
- Inability to keep food in mouth
- Hoarseness or voice change after swallowing

If any above are present, get an order for speech consult and keep patient NPO.

Have patient sit up in chair for all meals.

If patient bed ridden, elevate HOB to 90° or as high as tolerated to improve ease of swallow.

No straws when drinking.


Takizawa, C., Gemmell, E., Kenworthy, J., Speyer, R., & Speyer, R. (2016). A systematic review of the prevalence of oropharyngeal dysphagia in...
Swallowing occurs in three phases:

- Phase 1 (oral phase) is voluntary and involves chewing and mastication of a food bolus that initiates the swallowing mechanism.
- Phase 2 (pharyngeal phase) is involuntary and controlled by cranial nerves V (trigeminal), IX (glossopharyngeal) and XII (hypoglossal). This phase involves the movement of the bolus through the pharynx.
- During phase 2, the epiglottis prevents foreign substances from entering the upper airway by covering entrance to the larynx and respiration momentarily ceases. Muscle weakness or nerve damage can impair this mechanism and lead to aspiration (see image).
- Phase 3 (esophageal phase) is movement of the bolus through the esophagus to the stomach and is also involuntary.

(Source: Mattson Porth, 2015)
Incentive Spirometry

Incentive spirometry (IS) enhances lung capacity and promotes gas exchange by preventing alveolar collapse through deep breathing. This exercise helps decrease risk of pneumonia.

The technique of IS takes the place of a yawn which occurs naturally to keep alveoli sacs open.

Benefits:

- Provides a visual reference and feedback to patient.
- Can help gauge pulmonary decline.

If patient is pre-op, establish baseline and use for goal setting post-op.

Technique

- Hold IS directly in front of patient.
- Instruct them to completely exhale and seal their lips around mouth piece.
- Ask them to slowly draw in a breath as if they were drinking a thick milkshake.
- When patient is unable to draw any more breath, have them hold for 5 seconds before exhaling.
- Repeat cycle 10 times each hour while awake.
- Note the level of rise of plunger or ball (depending on model) at maximum inhale and use number to set goals.
- Have patient return demonstrate technique.
- Encourage patient and family to use as directed.
- Keep IS within patient reach.

COPD patients may have difficulty with technique, especially holding their breath so coach them to do their best. They may need to rest in between attempts to prevent fatigue and/or hyperventilation.


Image: http://medicalsupplies.healthcaresupplypros.com/92719009
Utilizing a simple but unique technology, the acapella assists those with lung disease such as COPD, asthma and Cystic Fibrosis to improve secretion elimination and airway function. A metal ball inside the device increases positive expiratory pressure (PEP) through increased resistance during exhalation. This mechanism maximizes airway size. Vibrations created by airflow across the ball travel through the airways and loosen secretions. The combined results help propel mucus forward allowing for eventual expectoration. **Device selection, settings and initial education are done by respiratory therapy.**

**Advantages**

- Two colors that indicate different lung capacity.
- May be used in conjunction with a mask or nebulizer.
- Increases patient independence with secretion removal.
- Acapella is not patient position dependent. Patient can be in any position (lying, sitting, standing) to use effectively.
- Better tolerated than CPT (chest physical therapy).
- Easy upkeep. Can be cleaned and sterilized at home.
- Small, lightweight and portable. Can be used anywhere.

**Technique**

1. While sealing their lips around the mouth piece, the patient should breathe in and out 5 times at their normal pace.
2. Next, they should slow down their breathing, extending exhalation to about 3 times their inhalation.
3. They will alternate between normal and slow breathing patterns, holding their breath 2-3 seconds following exhalation.
4. Attempts to cough should be made after every 5-6 breaths to expel secretions.
5. The process takes about 10-20 minutes and is completed once cough becomes non-productive.


Oral Hygiene

Maintenance of oral hygiene is important for overall health and wellbeing. During hospitalization, evidence suggests that standardized oral care decreases the rate of hospital acquired pneumonia.  

(Source: Quinn et al., 2014)

Methods

- Brushing removes particulates that contributes to plaque formation and bacterial growth.
- Tartar at the gumline is removed by flossing.
- Mouthwashes can be therapeutic by eliminating bad breath, reducing plaque formation, gingivitis, and cavities.

Teeth should be brushed twice daily.

Elevate HOB to prevent aspiration.

Be sure to **brush the tongue** as it can harbor harmful bacteria.

Using a tongue depressor, examine the oral cavity for the following (see photos):

a. Tooth discoloration (dental caries).
b. Inflammation of the gumline (gingivitis)
c. Receding gumline, inflammation (periodontal disease).
d. Bad breath (halitosis).
e. Dry, cracking lips (cheilosis).
f. Inflammation of mucosa (stomatitis).
g. Chemotherapeutic or radiation induced inflammation of the oral mucosa (oral mucositis).
h. White or grey patches inside the cheek, on the tongue or floor or the mouth (leukoplakia).
i. Dry mouth (xerostomia)


Xerostomia

Known as dry mouth, xerostomia is caused by decreased salivation and has many causes:

- Ageing
- Medications
- Head and neck radiation
- Diabetes
- Autoimmune disorders
- Infections
- Hormonal disturbances

Saliva has several purposes:

- Aids in digestion and mastication.
- Maintains pH and cleanliness of oral tissues.
- Provides a barrier from injury or infection.
- Prevents tooth demineralization.
- Provides lubrication and comfort.

Recommendations

Toothbrushing twice daily using fluoride toothpaste.

Chewing gum or sucking on sugar free candies to promote salivation.

Artificial saliva or gels.

Consider what works for the patient.

Denture Care

Dentures can carry pathogens known to cause pneumonia and other illnesses. Consistent denture care is important for oral health.

Recommendations

- Routinely assess the mouth and gums for changes.
- Encourage patients to care for dentures independently.
- Discourage the wearing of dentures at night to prevent oral infections or pneumonia.

Assist with removal as needed by grasping upper ridge with thumb and fore finger and pulling downward. Lowers can be removed by grasping and lifting upwards.

Handle with care, they are fragile.

Cleansing

- Once dentures are brushed, rinse with warm water, do not use hot water.
- Assist with cleansing of gums and oral cavity daily as needed.

Soak cleansed dentures completely submerged in water to prevent damage and maintain fit. Use cleansing tablet if patient desires.

Rinse in cold water prior to insertion.

Label denture cup!

Nursing Text Order

Please Initiate Aspiration Precautions

1. Ensure Bedside Swallow Screen Completed
   If failed, physician order for speech consult/NPO status

2. Sit upright 90 degrees for meals/snacks, if able

3. HOB elevated 30 degrees or greater

4. Oral care Q shift

5. Incentive Spirometry (IS), Acapella (preferred) or PEP Therapy

6. Observe patient during meals

7. **NO STRAWS**

8. Ambulate/up in chair TID and prn

9. Place aspiration sign outside room
Appendix S

Keeping Your Mouth Healthy

Taking care of your mouth is important for your health. Brushing your teeth removes food and debris that can cause plaque (rhymes with black) to form. Overtime plaque, a white or pale-yellow substance, forms between your teeth and gums. It can serve as a home for bacteria (germs) to grow and multiply. If plaque is not removed through regular brushing, the bacteria living on the plaque can cause infections in the mouth or tooth decay (cavities). The bacteria in plaque can cause infections in other parts of the body as well like the heart.

Here at the VA we want to encourage routine mouth care to improve your overall well-being and prevent hospital complications like pneumonia while you’re here.

The American Dental Association recommends the following steps to keep your mouth healthy.

- Brush teeth with fluoride toothpaste twice a day for 1-2 minutes with a soft bristle brush.
- Include brushing your tongue because bacteria can be trapped on your tongue too.
- Use dental floss to remove debris and plaque between teeth.
- Avoid smoking or using other tobacco products as they can lead to cancers of the throat and mouth.
- Visit a dentist regularly.

Mouthwash

If you use mouthwash, use one that is therapeutic (helpful). They can be found at the drug store or prescribed by a dentist or doctor. These types of products contain ingredients that kill bacteria and improve the health of your mouth. They are often used for treating common conditions such as:

- Halitosis (hal ih toe sis) or bad breath.
- Dry mouth
- Dry socket a condition that occurs after tooth removal (extraction)
- Plaque and gingivitis (gin ja vie tis) or inflammation of the gums
- Cavities
- Relief of mouth pain

We provide a list of mouthwashes recommended by the American Dental Association so please ask a staff member for a copy if you or your family are interested. You may also ask your local pharmacist for recommendations. When purchasing a therapeutic mouthwash, you want to see the term antiseptic on the label.

Dry Mouth

Our mouths stay moist because of saliva (another term for spit) that is produced in glands near your tongue and lower jawbone. Saliva has many important jobs:

- Moistens food so we can chew and swallow.
• Protects the mouth from injury or infection.
• Helps clean the mouth.
• Protects the teeth from breaking down (demineralization).
• Keeps the mouth comfortable.

The medical term for dry mouth is xerostomia (zer-os-toe-me-ah) and it’s caused by decreased saliva production. The most common causes of xerostomia are:

• Ageing
• The removal of glands that produce saliva
• Certain types of medications
• Breathing through your mouth or prolonged oxygen use
• Chemotherapy or radiation for certain types of cancers

Chronic xerostomia is uncomfortable and can lead to complication with eating and be a source of infection. Brushing your teeth twice daily, sucking on sugar free candy, chewing sugar free gum, using artificial saliva, gels and special mouthwashes may help decrease dryness.

**What can you do?**

• Do as much of your oral care as you can. We will be happy to assist you if you need it.
• Ask staff for supplies to brush your teeth if you have none or have your family bring in supplies from home.
• Brush teeth twice a day and when asked!
• Tell your nurse if you use prescriptions to treat dry mouth, bad breath, or sores in your mouth.
• Let the nurse know if you suffer from dry mouth. If you use something at home that relieves or helps with symptoms, let us know.


Denture Care

If you wear dentures, either a full or partial set, it’s important to take care of your mouth as well as your dentures. Following these tips from the American Dental Association will keep your mouth healthy and comfortable and your dentures usable for a long time.

Dentures are made to replace lost teeth and assist a person with:

- Eating
- Speaking
- Maintaining the shape of their face
- Smiling

Just like regular teeth, food and debris on your dentures can build up causing bad breath, sores, or infections of the gums and mouth due to plaque. Cleaning your mouth and dentures daily will help prevent problems and make you feel more confident.

- After you remove your dentures, brush them with a soft bristle brush and non-abrasive toothpaste before storing them. You do not need to use special toothpastes.
- As you know, dentures are breakable. Place a washcloth in the bottom of the sink to prevent damage if they should fall while brushing.
- Once they are brushed, cover them completely with tepid or cool water to keep their shape and fit. **Do not use hot water.**
- Denture tablets may be used to kill the germs on your dentures while soaking but they are not a replacement for brushing.
- Every morning gently brush your gums, tongue, inside your cheeks and the roof of your mouth with a soft bristle brush and paste before putting in your clean dentures.
- Always rinse your dentures with cold water prior to inserting them.
- It’s important to allow your gums to rest so don’t wear your dentures at night while sleeping.

**What can you do?**

- Do as much of your oral care as you can. We will be happy to assist you if you need it.
- Ask staff for supplies to brush your teeth or dentures if you have none or have your family bring in supplies from home.
- Tell your nurse if you use prescriptions to treat dry mouth, bad breath, or sores in your mouth.
- Let the nurse know if you suffer from dry mouth. If you use something at home that relieves or helps with symptoms, let us know.
- If you have remaining teeth, brush twice a day!


American Dental Association Recommended Therapeutic Mouthwashes

Brand Name:
Listerine Cool Mint
Listerine Fresh Burst
Listerine Soft Mint

Store Brand:
Being Well
Best Choice
Bi-Mart
CVS
Equaline
Equate (Walmart)
Good Sense
Kirkland (Costco)
Rite Aid
Signature Care
Swan
Topcare
Up & Up (Target)
Walgreens
Western Family
Winco

For Bad Breath (halitosis):
Brand name CloSYS found over the counter at Walmart, CVS, Walgreens, Albertsons and PHARMACA

**Look for the word antiseptic on the label. Ask a pharmacist if you are unsure.

Proper Flossing

Flossing is an essential part of the tooth-cleaning process because it removes plaque from between teeth and at the gumline, where periodontal disease often begins.

If you find using floss awkward or difficult, ask your dental hygienist about the variety of dental floss holders or interdental cleaning devices that are available.

Wind 18” of floss around middle fingers of each hand. Pinch floss between thumbs and index fingers, leaving a 1” - 2” length in between. Use thumbs to direct floss between upper teeth.

Keep a 1” - 2” length of floss taut between fingers. Use index fingers to guide floss between contacts of the lower teeth.

Gently guide floss between the teeth by using a zig-zag motion. Gently wrap floss around the side of the tooth.

Slide floss up and down against the tooth surface and under the gumline. Floss each tooth thoroughly with a clean section of floss.

---Illustrations adapted by and used courtesy of the John O. Butler Company---
How to Brush

- Place the toothbrush at a 45-degree angle to the gums.

- Move the brush back and forth gently in short strokes.

- Brush the outer surfaces, the inside surfaces and the chewing surfaces of all teeth.

- To clean the inside surface of the front teeth, tilt the brush vertically and make several up-and-down strokes.

- Brush your tongue to remove bacteria and keep your breath fresh.
Appendix T

**NA Pre-and Posttest**

1. True/False   Some patients require oral suctioning during oral care.

2. True/False   Once dentures are remove, gums may be brushed with a soft bristle toothbrush and toothpaste.

3. True/False   The tongue can trap bacteria.

4. True/False   Proper brushing technique includes brushing the inside or back surfaces of teeth.

5. True/False   Patients who are independent with oral care don’t need education.

6. True/False   Dentures should be removed prior to sleeping.

7. True/False   Documenting completed oral care is part of my job.

8. True/False   While brushing, the brush should be held at a 90° angle against the surface of the teeth.

9. True/False   Rinsing with mouth wash can decrease bacteria.

10. True/False  Relief from dry mouth (xerostomia) can be improved using sugar free gum or candy.

*How familiar are you with reporting the following to the RN?*

- What type of oral care was done
  
  Not at all familiar  Somewhat Familiar  Extremely familiar

- Who performed the oral care
  
  Not at all familiar  Somewhat Familiar  Extremely familiar

- Did the patient participate or refuse.
  
  Not at all familiar  Somewhat Familiar  Extremely familiar

- Were there any changes in their mouth (sores, redness, pain).
  
  Not at all familiar  Somewhat Familiar  Extremely familiar

- Did the patient tolerate the procedure?
  
  Not at all familiar  Somewhat Familiar  Extremely familiar
Appendix U

RN Post Assessment

I feel more confident with identifying patients at risk for aspiration.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

I will apply what I learned in my practice.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

The information presented was relevant.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

I feel more comfortable collaborating with the CNAs to ensure completeness of oral care tasks.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

The presentation increased my knowledge of oral care technique.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree

Information was presented in an understandable manner.
Strongly Agree  Agree  Neutral  Disagree  Strongly Disagree
## Appendix V

### Return Demonstration Check Off

<table>
<thead>
<tr>
<th>Skill</th>
<th>Completed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Patient</strong></td>
<td></td>
</tr>
<tr>
<td>Gather supplies: toothbrush, paste, mouth rinse, Yankauer</td>
<td></td>
</tr>
<tr>
<td>Position patient (verbalizes)</td>
<td></td>
</tr>
<tr>
<td><strong>Brushing Technique</strong></td>
<td></td>
</tr>
<tr>
<td>- Place brush at 45°</td>
<td></td>
</tr>
<tr>
<td>- Use back and forth motion over 2-3 teeth at a time</td>
<td></td>
</tr>
<tr>
<td>- Brush biting surfaces, inside surfaces and tongue.</td>
<td></td>
</tr>
<tr>
<td>- Verbalizes using mouth rinse as appropriate.</td>
<td></td>
</tr>
<tr>
<td>- Verbalizes how often brushing occurs and explains frequency and technique of prn oral care.</td>
<td></td>
</tr>
<tr>
<td><strong>Yankauer use</strong></td>
<td></td>
</tr>
<tr>
<td>- Verbalizes proper suction setting</td>
<td></td>
</tr>
<tr>
<td>- Demonstrates/verbalizes proper technique (avoids gaging patient)</td>
<td></td>
</tr>
<tr>
<td><strong>Denture Care</strong></td>
<td></td>
</tr>
<tr>
<td>Gather supplies: toothbrush, paste, mouth rinse, labeled denture cup</td>
<td></td>
</tr>
<tr>
<td>Encourages patient participation</td>
<td></td>
</tr>
<tr>
<td>- Demonstrates appropriate removal (grasp with thumb and forefinger, gently wiggles up and down)</td>
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<tr>
<td>- Brushes dentures.</td>
<td></td>
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<tr>
<td>- Verbalizes storage (placed in denture cup, covered in cool water).</td>
<td></td>
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<tr>
<td>- Verbalizes gum and mouth care (brush with soft bristle brush: gums, cheeks, tongue and roof of mouth or using gauze to wipe surfaces).</td>
<td></td>
</tr>
<tr>
<td>- Verbalizes that dentures should be taken out each night.</td>
<td></td>
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<tr>
<td><strong>Independent Patient (verbalize)</strong></td>
<td></td>
</tr>
<tr>
<td>- Ensure they have supplies: toothbrush, paste, mouth rinse, denture cup</td>
<td></td>
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<tr>
<td>- Provide educate as needed</td>
<td></td>
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<tr>
<td>- Encourage independence</td>
<td></td>
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<tr>
<td><strong>Communication: NA (verbalize)</strong></td>
<td></td>
</tr>
<tr>
<td>- What type of oral care was done</td>
<td></td>
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<tr>
<td>- Who performed the oral care</td>
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<tr>
<td>- Did the patient participate or refuse.</td>
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<td>- Were there any changes in their mouth (sores, redness, pain).</td>
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<tr>
<td>- Did the patient tolerate the procedure?</td>
<td></td>
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<tr>
<td><strong>Communication: RN (verbalize)</strong></td>
<td></td>
</tr>
<tr>
<td>- Assess and document oral care procedures accurately.</td>
<td></td>
</tr>
<tr>
<td>- Collaborate with CNA about their findings.</td>
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<tr>
<td>- Assess oral mucosa each shift and document in the mucosal membrane section of flowsheet.</td>
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<tr>
<td>- Provide education to patients as needed.</td>
<td></td>
</tr>
<tr>
<td>- Assess patients for xerostomia. Provide education and relief measures</td>
<td></td>
</tr>
</tbody>
</table>
### Oral Care Audit Tool NA

<table>
<thead>
<tr>
<th>Independent Patients (Supplies at bedside)</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Room 3</th>
<th>Room 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toothbrush</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tooth paste</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouthwash</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Floss</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Education</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promote selfcare</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Denture Wearers</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Room 3</th>
<th>Room 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labeled denture cup at bedside</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toothbrush</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toothpaste</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouthwash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denture tablets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dependent Patients (Supplies at bedside)</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Room 3</th>
<th>Room 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Labeled denture cup</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toothbrush</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Toothpaste</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mouthwash</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Denture tablets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Oral Care Technique Observation (Dependent)</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Room 3</th>
<th>Room 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Toothbrushing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>outside surfaces</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>biting surfaces</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>inside surfaces</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>tongue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Denture Wearers                           |        |        |        |        |       |
| Dentures removed                          |        |        |        |        |       |
| Dentures brushed                          |        |        |        |        |       |
| Dentures covered with cool water when stored |    |        |        |        |       |
| Denture tablets if preferred              |        |        |        |        |       |
| Rinse with cool water prior to insertion  |        |        |        |        |       |

<table>
<thead>
<tr>
<th>Aspiration Risk</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Room 3</th>
<th>Room 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suction set up with Yankauer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aspiration precautions sign above HOB &amp; at room entrance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Complete 4 audits quarterly (16 total patients) 8 on day shift and 8 on night shift. Return completed audits to CNL.

Based on Oral Care Auditing Tool by Ibo MacDonald, April 2016.
Appendix X

RN Audit Tool

<table>
<thead>
<tr>
<th>Documentation</th>
<th>Room 1</th>
<th>Room 2</th>
<th>Room 3</th>
<th>Room 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral care procedures documented accurately</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>Documented oral mucosa assessment each shift</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>Xerostomia identified (ask patients if they experience dry mouth sometimes, often or always)</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>Xerostomia properly identified in chart</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>Patient education provided (ask patients)</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>Documented in patient chart</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td></td>
</tr>
</tbody>
</table>

*Complete 16 chart audits quarterly, 8 on days and 8 on nights. Compare total of row three with row 4 and row 4 with 5.

RN Audit at 2 Weeks and One Month

<table>
<thead>
<tr>
<th>Communication</th>
<th>RN 1</th>
<th>RN 2</th>
<th>RN 3</th>
<th>RN 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Has communication concerning completed oral care improved between you and the NAs?</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td>Y/N</td>
<td></td>
</tr>
</tbody>
</table>

*Complete 8 audits at each interval, 4 on days and 4 on nights. Return completed audits to CNL.

Based on *Oral Care Auditing Tool* by Ibo MacDonald, April 2016.