**Evidence-Based Practice Project Format**

Use the following format and headings when constructing your final evidence-based practice project proposal paper.

1. Title page
2. Abstract (350-500 words)
   1. Contains project title, project director’s name, and affiliation.
   2. Presents a complete and concise overview of all phases of the proposed project.
3. Section A: Problem Description
4. Section B: Literature Support
5. Section C: Solution Description
6. Section D: Change Model
7. Section E: Implementation Plan
8. Section F: Evaluation
9. Appendices
   1. Critical Appraisal Checklists
   2. Evaluation Table
   3. Conceptual Models
   4. Timeline
   5. Resource List
   6. Proposal Instruments
   7. Data Collection Tool
   8. Budget
   9. Optional
      1. Approval Forms
      2. Handouts
      3. Evaluation Tools

**:Evidence-Based Practice Project Student Example**

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# Problem Statement

The development of pneumonia caused by mechanical ventilation is a significant problem in the intensive care units of hospital facilities.Ventilator-associated pneumonia (VAP) is the “most commonly reported healthcare-acquired infection” in patients requiring mechanical ventilation support (Garcia et al., 2009, p. 524).One of the most common reasons for an ICU admission is related to respiratory distress or failure.VAP is described as a form of nosocomial infection which occurs after the first 48 hours of receiving mechanical ventilation (Augustyn, 2007).The length of stay (LOS) for patients developing VAP is higher than those never requiring mechanical ventilation by an increase of approximately six days (Garcia et al. 2009).In intensive care units (ICUs) across the United States (US), ventilator-acquired pneumonia also results in prolonged periods of actual mechanical ventilation, the excess use of antimicrobial products, increased utilization of healthcare resources and costs, and significant increase in morbidity and mortality (Coffin et al., 2008).Garcia et al. (2009) found on average, estimated costs of an additional $11, 897 to $150,841 per individual case were spent.VAP has a significant economic impact on our society, costing hospitals money which potentially could have been saved.

Numerous risks factors contribute to the development of ventilator-acquired pneumonia as mechanical ventilation presents a unique set of challenges for the patient requiring intubation and ventilator support.Rigorous clinical studies show oral secretions pose an increased risk for developing VAP (Augustyn, 2007).Treatments, strategies and evidence-based interventions have been developed to decrease the risks and reduce the prevalence of VAP. There is evidence indicating the use of oral chlorhexidine and the removal of oral secretions before position changes may diminish the risks of developing ventilator-acquired pneumonia.By reducing the levels of bacteria in the oropharynx there would theoretically be a decrease in the prevalence of nosocomial pneumonia (Houston et al., 2002).Research demonstrates the use of 0.12% chlorhexidine gluconate oral rinse (CHX) pre and postoperatively reduces the incidence of VAP in patients who are intubated greater than 24 hours.

# Foreground Question

In adults supported with mechanical ventilation, what is the effect of oral chlorhexidine use and removal of oral secretions prior to position changing on the development of ventilator-acquired pneumonia?

**Review of Evidence and Synthesis of Literature**

This is a literature analysis of research reports and literature reviews which studied the effects of removal of oral secretions prior to position change on the occurrence of VAP.A summary of the articles can be found in Appendix C.The studies varied in design; from randomized to non-randomized, placebo, to longitudinal and a pilot study.Strength for each study is noted at Level II on the hierarchy as each one is a randomized or nonrandomized clinical study.The research supports our clinical question and was utilized with the development of additions to be incorporated into the already existing ICU VAP protocol.

The studies focused on in this review consisted of evidence evaluating oral secretion removal and the use of chlorhexidine gluconate oral rinse to prevent VAP.The cost effectiveness of these interventions was found to be significant.Studies showed oral secretions as being the medium to carry pathogens within the oropharyngeal site down into the respiratory track.The literature hypothesized removing oral secretions prior to the position change of a patient can prevent or minimize the movement of organisms into the respiratory tract which lead to VAP development.Some researchers also concluded the significance of chlorhexidine use for reducing nosocomial infections.The combination of both interventions creates a profound effect on reducing VAP occurrences its research importance, which this practice change aims to strongly support.

The review of literature consists of evidence dating from 1996 to 2008, indicating the need for continued research and close monitoring of clinical practice changes based on the best evidence at the moment.This problem was identified long ago and yet still needs further evidence for best practice.Three articlesdiscuss removing oral secretions prior to position changes of patients which are one of the two independent variables of interest for this review.In one of those studies, VAP was diagnosed in 24 of 159 patients in the control group, but only in five of 102 patientsin the study group within the study group receiving oral suctioning prior to all position changes (Chao, Chen, Wang, Lee, & Tsai, 2008).A similar study showed VAP occurrence at 2.6% in the study group and 11% in the control group with probability of < 0.001 (Tsai, Lin, Chang, 2008).

Studies by DeRiso et al. (1996) and Houston et al. (2002) each sought to evaluate the efficacy of oropharyngeal decontamination on nosocomial infections in patients undergoing heart surgery using CHX before and after surgery.Both DeRiso et al. and Houston et al. discovered an overall reduced rate of VAP (52% and 69% respectively for each study).The significance level for both studies was less than .01 (use the higher of the two) with the use of CHX with oral suctioning of subjects for these studies.

Another related intervention assessed in a similar randomized clinical study was the use of subglottal suctioning by Smulders et al. (2002) and its effect on VAP incidence.This intervention was appropriate for this review of literature; four percent of patients who underwent continuous suctioning developed VAP as compared to 16% in the control group.A common finding in the studies reviewed was the savings in spite of the costs of using CHX and equipment for oral and subglottal secretion removal.The majority of these studies revealed a significantly reduced duration of mechanical ventilation and LOS in the ICU.

All research studies in this literature review, with the exception of Tsai et al.’s study, consisted of study groups homogenous in patient samples, which suggest effective randomization.Tsai et al.’s study has patient heterogeneity (of both medical and surgical ICU patients) which may have confounded the results.Also, the results of Chao et al.’s study did yield a significant difference with the distribution of patients having a history of COPD, DM, use of antacids, and surgery.These variables were then evaluated with logistic regression for their relationship in VAP development, and the results of the logistic regression showed no significant impact on the direct development.Overall the reviews are well organized, use appropriate language, and use mostly all paraphrasing.This review summarizes key finding of evidence for clinical practice, and provides similar conclusions like our study regarding interventions to implement in practice.

This literature review consisted of all but one study which were experimental in nature and hold “a high degree of internal validity because of the use of manipulation and randomization” (Polit& Beck, 2008, p. 295).Tsai et al.’s study was a time-sequenced, non-randomized quasi-experimental study most vulnerable to threats to internal validity out of all the literature reviewed.But the remaining study participants in the rest of these experimental designs were all randomized after meeting inclusion criteria.Only two studies (by Houston et al. and Tsai et al.) may have had questionable internal validity.Houston et al.’s study group was large but possibly too broad with subjects intubated for too short of a period to have the intervention be significant.This provides evidence for the need to implement such an intervention and continue research.This may have led to potential Type I and II errors.Tsai et al.’s weakness was the limitation of a non-randomized control study and patient heterogeneity as previously mentioned.In addition, Chao et al. used a staff nurse of the ICU to conduct data collection; because it is her ICU she may want “her unit” to do well with compliance with the study, creating bias.Also, in both this and Smulders et al.’s studies suctioning pressure was discussed.Internal consistency was not documented and this lack of information affects the reliability of the measurement tools.Selection bias does not appear to be a concern in these studies, and there appears to be no threat of history and the groups were mainly homogenous.Overall the internal validity of the research in this literature review is rather strong taking into consideration these few discussed weaknesses.

# Regarding external validity, the research findings in these studies can easily be generalized to similar mechanically-ventilated ICU adult populations.The patient populations were representative of the typical ICU population and because of this, external validity is strong.Steps were taken to control characteristics which could impact the groups being compared, and any requirements for participants were taken into consideration when developing the sample.

The study by DeRiso et al. was double-blinded and placebo-controlled in design techniques, and Smulders et al.’s study reported blinding with the radiologists in regards to reading all X-ray reports. These techniques enhanced the internal validity.The studies were each performed in only one setting, but could very easily be replicated in another ICU environment.Tsai et al. and Chao et al.’s studies had a period during their research which was dedicated to educating staff on the protocol to be implemented to the experimental group.This enhanced intervention fidelity in both studies.Also, the individual collecting the data from Chao et al.’s study group was a trained staff member of the ICU floor, and such actions facilitated a strong reaction with the intervention and validated construct.No incentives were provided to staff members for compliance with Chao et al.’s study, but staff was aware of the fact that the clinical setting was being monitored and data collected based upon their performance.However, normally nurses are not monitored closely and corrected for actions.Education for new changes to protocols is usually brief, and like any change, will take some time for the staff to acclimate to.

There appears to be no apparent threat to construct validity with the discussed literature.However one could argue the researcher’s expectancies for desired outcomes playing an effect.For example, Tsai et al. and Chao et al.’s studies involved the staff received a thorough education and period of time to learn the protocol for the study’s intervention.Knowing the researcher’s expectations, this could “become part of the treatment construct that is being tested” (Polit and Beck, 2008, p. 301).Researchers appropriately balanced all concerns for validity in their study.

**Planning a Change**

After critically analyzing the evidence, the nurse develops a plan to apply the findings to a clinical practice.Developing a plan for change includes identifying strategies to gain cooperation and evaluating outcomes.**Once it is decided that evidence supports a practice change, the change agent or facilitators must develop and test the improvement.This step requires some preliminary planning and research.Is the innovation practical, the evidence transferable, is the organization ready for change, are outcomes measurable and will is it possible to implement the EBP within the organization** (Newhouse, Dearholt, Poe, Pugh & White, 2007)**?If the answers are agreeable, the innovation must be authorized through the appropriate organizational channels.**The implementation of an evidence-based practice is considered a quality improvement initiative and does not require the hospital Institutional Review Board approval.The Quality Care Committee, which oversees process improvement, protocol, and policy changes, will review and approve this proposed implementation of evidence-based practice, as part of the initial planning.The planning phase includes assessing the feasibility of change, defining the change, identifying resources, and defining the desired outcomes (Reavy& Tavernier, 2008).

The proposed EBP innovation is to complement the policy for oral care and suctioning of mechanically ventilated patients with a 10% chlorhexidine gluconate oral rinse and increase suctioning to every two hours prior to repositioning.These interventions can also be increased according to the patients’ needs.The expected outcomes of the change are improved patient care, reduced costs related to VAP infection and increased lengths of stay, and the reduction of the incidence of VAP in patients mechanically ventilated for more than 24 hours.The project feasibility is very good, due to the small scale of the intervention, the ease of implementation into protocol already in place, it’s compatibility with the practice environment, and it is simple to test in a small sample (Newhouse, Dearholt, Poe, Pugh & White, 2007).Other aspects contributing to the project’s potential for success is the availability of ample resources including the Quality Care Committee, Clinical Nurse Specialist, ICU Nurse Educator, Unit Preceptors, Clinical Managers, and Infection Control Nurse.

**Implementation and Evaluation of Change**

**Proposed Project**

The authors plan to implement changes in current policy of management of ventilated patients as a pilot project at Scottsdale Healthcare Shea ICU.The change will be to add chlorhexidine rinse for oral care every two hours and suctioning of oral secretions prior to repositioning the patient.The data will be collected on all ventilated patients during daily multidisciplinary team vent rounds by the infection control nurse. See Appendix A for pilot project with current changes in policy.We plan to implement the change at Scottsdale Healthcare Shea medical surgical ICU from June 1, 2010 to April 1, 2011.

**Implementation Plan**

To enhance the patient outcome during hospitalization, an evidence-based pilot project will be implemented.As mentioned earlier, the problem of VAP pertains to all ventilated patients in different ICUs, but it is easier to start the pilot project in one unit and expand it to the other ICUs of the Scottsdale Healthcare hospitals after assessing the effectiveness of the plan and making any necessary changes after the evaluation process.The authors propose to implement the pilot project initially in the ICU of Scottsdale Healthcare at Shea campus.The plan will be presented to the ICU nurse manager, supervisors, infection control nurse, and the clinical educator of the ICU to obtain permission and approval in order to implement the plan.The plan will also be presented to Quality Care Committee May 2010 meeting for their permission for the change.After obtaining permission for the plot project, evidence base education material containing prevalence of VAP rate, its complications, cost, recommended change with use of chlorhexidine gluconate in oral care, and oral secretion suctioning prior to position change will be presented to the staff during ICU Unit Base Committee (UBC).Four more teaching sessions will be provided, two in each day and night shift, so that staff can attend a session which is more convenient to them.All the registered nurses working in ICU will be required to attend one of the teaching sessions.The teaching session or in-service will be on May 20, 2010 from 8a.m. to 9a.m. and from 8p.m. to 9p.m.These times are chosen to make it convenient for nurses to attend the in-service before going home at the end of their shift.Two more teaching sessions will be provided on May 23, 2010 from 11a.m. to 12 noon and from 10 p.m. to 11p.m.Six brochures to notify staff of the in-service dates and times will be prepared and placed in the restrooms, break rooms and in hallways within the unit (Appendix D).

A power point presentation along with two poster boards containing evidence based information about VAP prevalence and its outcomes and changes in practice will be prepared and presented to staff during the in-service.One poster board will be placed in break room and the other poster will be placed in meeting room of ICU to enhance teaching.Time for answering any questions will be provided at the end of the teaching session.The teaching will be conducted in an informal way, and the research assistant will be available to re-educate and answer questions for staff as needed.One day shift nurse and one night shift nurse will be prepared by the nurse educator to do the teaching for the rest of the ICU staff.The physicians and respiratory therapists of ICU will also be notified of this evidence based plan so they will be knowledgeable about this VAP pilot project.

The resources needed for the implementation of this plan are two poster boards, a power point, and a jump drive to store the teaching material.Also required would be the chlorhexidine gluconate oral rinse, which would be ordered from pharmacy for each ventilated patient in the intervention group.The other resources needed are the staff education time for the RNs who are teaching the in-service and the staff who is attending the in-service.There are twenty-three day shift RNs and twenty night shift RNs in ICU who will need to attend these in-services, so one hour in-service for each RN will need forty-three hours of education time for registered nurses in addition to five hours of teaching time for the RNs who are teaching these in-services.Most of the cost of this project is the cost of education time for the staff nurses.The two poster boards will cost seven dollars each, a small jump drive for twenty dollars and the power point is free.The cost of chlorhexidine is also negligible when compared with the cost of VAP.This will be the money well spent and pay for itself with shorter length of stay of ventilated patients due to VAP prevention or reduction.This project will save money for the hospital by improving patient outcome and decreasing VAP rates and the hospital length of stay.

Having a theoretical framework enhances the worth of the study according to Polit and Beck (2008).This plan will be guided by the Kurt Lewin’s change theory to improve delivery of information to staff.Lewin’s change theory involves a three stage model of change, which are unfreezing, change, and re-freezing (Neil, 2004).The first stage of unfreezing involves the concept of becoming motivated to change or unfreeze from previous practices.In ICU, the staff will be prepared for the change by explaining them the magnitude of the problem, so that they feel the need for the change.They will be notified about the statistics of VAP prevalence and the magnitude of the complications of VAP.These measures will motivate the staff for a change in practice.

The second stage of Lewin’s change theory is implementation of the change.This stage is the actual stage of alteration and will be most essential in maintaining consistency with the use of chlorhexidine in oral care and suctioning the patients prior to position change.Support will be provided to staff during this stage by answering their questions and addressing any concerns they have.The registered nurses will implement the learned techniques of using chlorhexidine in oral care and suction patients prior to position change every two hours and as needed for the duration of plot project from June 1, 2010 to April 1, 2011.The multidisciplinary vent round will continue to enforce the change and collect data on ventilated patients. The physicians will also be supported and welcomed for their input in this process.

Lewin’s final stage of the change theory is the concept of re-freezing or making the change permanent.In this last stage of change theory, the newly learned changes become habitual for the staff (Neil, 2004).The staff will be reinforced and encouraged to continue to follow the recommended changes at each month’s staff meeting and daily multidisciplinary vent rounds for the duration of pilot project.The staff will also be encouraged for their feedback on this project.They will also be reinforced about this newly learned skill at the annual skills fair and have opportunity to get their questions answered.The future of the healthcare is moving towards pay for performance measures and this teaching plan will lead Scottsdale Healthcare towards delivering a better patient outcome.

**Evaluation Plan**

The evaluation of this teaching plan is relatively simple. The infection control nurse keeps the data of VAP rate of all ventilated patients.The data including VAP rate obtained by infection control nurse from vent rounds during the pilot project will be compared with the VAP rate of ventilated ICU patients of this unit from the previous year.The VAP rate during pilot project for the months of June 1, 2010 to April 1, 2011 will be compared with the VAP rate of previous year for the months of June 1, 1009 to April 1, 2010 to promote validity.The types of patients vary by season, and by doing this we increase the likelihood of having a similar patient population which is representative of the months of June to April.These findings will be discussed among the ICU manager, supervisors, clinical educator and infection control nurse in May 2011upon completion of pilot project.A decision will be taken to adopt the change or reject the change depending on the findings if VAP rate was reduced or not.

**Dissemination Plan**

The staff will be will be notified of the project completion in monthly staff meeting in May 2011.The goal of this dissemination plan is to utilize this new research or evidence based information to improve patient outcome.If the finding suggests a decrease in VAP rate during pilot project, the change will need to be implemented to other ICUs of Scottsdale Healthcare.All the nurses at Scottsdale Healthcare ICUs will need to be reached to ensure that everyone can benefit from this information.Since the problem of VAP pertains to all the ICUs of Scottsdale Healthcare hospitals this information needs to be disseminated to the Scottsdale Healthcare Shea CVICU, and eventually to ICUs at Osborn and Thompson Peak campuses.With the permission from the PCC’s chair, the committee will be presented with recommended changes.The project will be presented in detail and the importance of the need for a change in practice for VAP reduction will be stressed with the supporting evidence.Again the goal will be to obtain permission to expand the changes to CVICU of Scottsdale Healthcare Shea.Two to four nurses from each floor can be prepared to teach the rest of the staff on CVICU.In-service time to prepare them will be arranged at a convenient time.

The power point presentation containing the teaching material will be made available to all the hospital employees on the Scottsdale Healthcare Shea campus’s Special Care Unit’s web site.This will promote access to the teaching contents for the staff.The other sources of information will be the RNs of ICU who performed the in-service for their staff.A copy of this plan will be made available to the staff through Scottsdale Healthcare Library also.

To include Osborn and Thompson Peak in the teaching plan, the Nursing Leadership Committee will be approached, where the nursing managers from all three campuses are available.They will also be approached the same way as mentioned above to disseminate the pilot project recommended changes plan to the two other campuses.The resources, the contents of the VAP teaching plan, and the medium will be made accessible to them as well.A dissemination plan as mentioned above will be carried out in a similar fashion for the other two campuses also.

**Integration and Maintenanceof Change**

Initiating the changes to the pre-existing protocol would first involve several steps as previously mentioned.There would be a decision on who would be collecting the research data.After the Quality Care Committee approves the change, we would select a research assistant experienced in infection control to collect data and monitor the process during the study.This study would also require a qualified personal to educate the staff on the protocol changes and be available to answer any questions which may arise.The pilot study (see Appendix A) would then take place.Prior to the study, daily rounds are completed on each ventilated patient to collect information for VAP.After implementing this study, this research assistant would accompany the ventilator rounds team and collect information applicable to the study.This would help facilitate monitoring the process and outcomes of the intervention.See Appendix B for examples of major questions included during ventilator rounds.Questions italicized would be additions made to the rounds during the study for data collection purposes.This information on VAP rates and patient length of stay after implementing the new interventions would be put together and submitted to the appropriate committees.

Integrating the new policy on the unit, staffwill be much more likely to accept and support the newprocess if they know what to expect ateach phase of the change.Additionally, staff members are able to contribute ideas drawn from theirvaried experience.Staff ideas often improve the process, save money, and avoidpotential obstacles (Gotsill& Natchez, 2007).Implementing this change of protocol would involve the cooperation of both the research and hospital staff.Communication between both groups is crucial, and a key concept of implementing a practice change.Providing updates to the Quality Care Committee, Infection Control Team, unit manager, and the staff throughout the study would be crucial.Quarterly feedback to the staff alone will help visually show their cooperation in this study and the beneficial outcomes yielded from the implementation change.

**Barriers and Strategies of Change**

The work environment healthcare professionals face daily is demanding.Nurses manage heavy workloads and high acuity patients along with staffing shortages and cost cuts, which reduce all available resources.This creates challenges to implementing new policies, protocols, or evidence-based practice (EBP).**Some of the potential barriers to implementing EBP clinical changes can be categorized as individual, organizational, environmental, and communication based barriers** (Udod& Care, 2006)**.Although it appears to be an impossible task, there are many strategies to help gain cooperation from the individuals responsible for implementing change.A few strategies are managerial support, clearly written research, exposure to real-life case studies, role modeling, staff engagement opportunities, and psychosocial support (Udod& Care;** Thompson, Bell & Prevost, 1999)**.**

# ****Potential Barriers to Implementing EBP****

Healthcare professionals have reported a variety of barriers to implementing EBP.Nurses can be skeptical, especially if they have misperceptions, fears, or anxiety that prevents them from having a clear vision when implementing change (Melnyk&Fineout-Overholt, 2005).Individual barriers include a lack of competence of nurses and managers regarding the implementation of EBP strategies, a lack of academic skills, and an inability to apply research to practice as evidenced by the large research-practice gap that exists in the profession (Udod& Care, 2006).Overwhelming workloads may also leave nurses drained, lacking motivation, confidence, awareness, and time (Thompson, Bell & Prevost, 1999).Melnyk and Fineout-Overholt state that barriers to EBP implementation and adherence are oftentimes related to individual attitudes.A lack of confidence in the plan or its creator, an inability to visualize a positive outcome, or doubt in one’s own skills are a few examples (2005).

Some individual barriers can be associated with the organization.However, nurses must overcome other organizational barriers.Examples are administrative constraints such as a lack of funding for skill development, opposing managerial priorities, or a lack of support from management and administration (Udod& Care, 2006).Other workplace barriers are difficulty accessing journals and evidence to support EBP, peer pressure to continue traditional practices, patient demands for widely prescribed treatment, and heavy patient loads which prevent learning and EBP implementation (Melnyk&Fineout-Overholt, 2005).

Nursing professionals face environmental barriers, as well, in the implementation of EBP.EBP can be affected by government policy or may be controlled by laws and legislation.An example is the use of medical marijuana for nausea and anorexia in cancer patients, which is illegal in many states.Coworkers and managers with different agendas in the workplace can be considered an environmental barrier to change.Occasionally an organization has such a fast moving culture of change, it leaves nurses too overwhelmed to cope (Udod& Care, 2006).

Finally, there are communication barriers in every aspect of life.The implementation of EBP can be affected by a lack of appropriate collaboration and communication between every level of provider involved including researchers, nurses, educators, managers, and administrators (Thompson, Bell & Prevost, 1999).Communication errors and barriers can occur in the educational programs and training for EBP, the interpretation of research, and in publications and presentations (Melnyk&Fineout-Overholt, 2005).This issue can be further complicated with the addition of multidisciplinary involvement, which requires another level of communication to be successful.

**Strategies for Successful Implementation of EBP**

The implementation of EBP provides for safer, more cost-effective care with patient-specific interventions.In order to accomplish this, organizations must employ a plan to gain cooperation from the individuals who are responsible for implementing the EBP.Successful implementation requires organizational change and buy-in.The most important strategy for EBP implementation is ensuring the support of the organization and management.This will assist in eliminating constraints, allow for budgeting and possibly funding for education and incentives, and provide encouragement and persuasion as the organization forms its opinion about the EBP implementation (Newhouse, Dearholt, Poe, Pugh & White, 2007).

Nurses and physicians cite the desire for clearly written research reports and exposure to case studies where EBP resulted in improved outcomes.Providing appropriate education and tools for EBP implementation and ensuring access to evidence will reinforce and help providers understand the benefits (Melnyk&Fineout-Overholt, 2005).Psychosocial support is an important strategy, which simply means nurses are enabled and encouraged to perform the desired change.This is accomplished with good education, clear-cut expectations, reinforcement, acknowledgement, and rewards.Another similar strategy is role modeling nursing practice.This is done by demonstrating commitment and supporting the cause for advancing the EBP, while performing or educating staff about the desired change.

Staff involvement is important when implementing change.Strategies can include encouraging nurse participation in a journal club or other collaborative opportunity to share evidence.Super users, trainers, champions or stakeholders, whatever title one chooses, can be trained to coach staff and provide collegial support and role modeling.Staff can also share in leadership and decision-making, give their feedback and opinions, and contribute new ideas regarding EBP implementation through Shared Leadership, focus groups, and surveys.This allows the organization to measure nursing staff knowledge, attitudes, and beliefs and identify implementation challenges (Melnyk&Fineout-Overholt, 2005).

**Conclusion**

The evidence in totality supports this practice change.This implemented change would include the variables of interest discussed previously in the literature review and pilot plan.The benefits of such an intervention change have thepotential to support EBP and nursing practice.**Contrary to the misperceptions many nurses have about EBP, it does not take away from the nurses’ clinical expertise.EBP integrates the best care with research evidence, patient’s individualized needs, preferences and circumstances (Polit& Beck, 2006).It also allows for exceptions in clinical setting and resource constraints.EBP can also be used as a problem-solving strategy in clinical care by taking away decisions based on custom, authority, opinion, or ritual (Polit& Beck).**

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Appendix A

Management of Mechanically Ventilated Patients: Pilot Project

**Goals/outcomes**

The patient will maintain adequate breathing pattern to provide appropriate oxygenation and acid*/*base balance while providing respiratory muscle rest.The incidence for VAP will be reduced due to EBP pilot project interventions.

**Definitions**

1. Acid/base balance = determined by pH values from arterial blood gas
2. VAP =Ventilator Associated Pneumonia
3. RCP = respiratory care practitioner
4. EBP = evidence based practice

**Assessment**

* Assess and document breath sounds every four (4) hours and as needed.
* Monitor and verify ventilator settings every two (2) hours and as needed.Assure that ventilator alarm volumes are audible at all times.
* Monitor arterial blood gases per physician order.Notify physician as needed.

**Interventions**

A. Wash hands with antiseptic soap and water or apply alcohol-based hand gel before and after performing interventions.

B.The patient will be assigned to a hospital bed allowing maximum visibility at all times.

C.Utilize oral airway if patient is obstructing oral endotracheal tube.

D. Suction as needed; document amount, color and character of tracheal secretions.(Utilize humidified oxygen set-up to maximize mobilization of secretions.)

E.Reposition every two hours and as needed (unless contraindicated), suction oral

Appendix A Continued

secretions prior to position change.Elevate head of bed to at least 30 degrees (unless contraindicated).

F.Use oral cleaning and suction system.

1. Brush teeth and tongue a minimum of once every 12 hour shift.

2. Provide oral care every 2 hours with chlorhexidine rinse.

3. Perform oral suctioning every two hours and prior to position change.

G.Document and report to physician significant changes in pulmonary status and secretions through collaboration of RCP and RN.

H.Culture tracheal secretions per physician's order.

I.Keep Ambu-bag mask and adapter with patient at all times for transport and/or emergency.

J.If the patient exhibits signs/symptoms of respiratory distress or ventilator alarm sounds and problem cannot be quickly identified, disconnect patient from the ventilator, manually ventilate, and call for appropriate assistance.

K.Reduce anxiety by:

1.Explaining all procedures to the patient.

2.Providing alternative methods of communication while intubated.

3.Re-assuring the patient that extraneous alarms are normal and do not usually indicate an emergency situation.Indicate appropriate medical personnel are always close by.

4.Placing the "nurse call" button within patient's reach.

5.Administering sedatives/analgesics as ordered.

L.Weaning - Follow specific weaning/extubation orders per respiratory protocol or as written by the physician.

**Supportive Data**

See Reference list

Appendix B

Questions for Patient Ventilator Rounds

|  |  |
| --- | --- |
| **Patient Care Question** | **Answer from Staff** |
| Hospital day number |  |
| Number of days ventilated |  |
| Oral care Q2 |  |
| *Use or Chlorhexidine with oral care\** |  |
| *Removal of secretions prior to position changes\** |  |
| Head of bed 30 degrees |  |
| Repositioning Every 2 hours |  |
| SUP prophylaxis |  |
| DVT prophylaxis |  |
| Sedation vacation |  |
| White Blood Cell Count |  |
| Temperature (max/low in 24 hours) |  |

*“\*” indicates interventions added to the current existing protocol*

Appendix C

Methodological Matrix and Evaluation Matrix

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author** | | **Pub**  **Yr** | **Country** | **Theory** | **Dependent**  **Variables** | **Independent**  **Variables** | **Study design** | **Sample size** | **Sampling**  **Method** | **How data**  **collected** |
| DeRiso, A. Ladowski, J.Dillon, T. Justice, J.Peterson, A. | 2002 | | USA | Quanti-tative | nosocomial infections | chlorhexidine gluconate oral rinse | Prospective  randomized placebo-controlled double-blind experiment | 353 | Randomized surgical patients undergoing heart surgery | data analyzed of patient  outcomes after interventions complete |
| Houston, S.  Hougland, P.  Anderson, J. LaRocco, M. Kennedy, V Gentry, L. | 1996 | | USA | Quanti-tative | nosocomial pneumonia | chlorhexidine gluconate oral rinse | Prospective  Randomized case-controlled | 561 | Randomized surgical patients undergoing heart surgery | Observation&Self report |

Appendix C

Methodological Matrix and Evaluation Matrix Continued

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Author** | **Pub Year** | **Country** | **Theory** | **Dependent Variables** | **Independent**  **Variables** | **Study Design** | **Sample**  **Size** | **Sampling Method** | **How data collected** | |
| Smulders, K., Hoeven, H., Pothoff, I. W., &Grauls, C. V. | | 2002 | Nether-  lands | None | Incidence of VAP; duration of mechanical ventilation; length of ICU stay; length of hospital stay; and mortality | Intermittent suctioning of subglottic secretion  with 100mg  Hg for 8 sec. duration and 20 sec. interval. | A randomized  clinical Trial | N = 150  Study group= 75  Control gp= 75 | Random assignment of patientsinto experimental or control group, who were admitted to ICU over 13 month period and were expected to receive mechanical ventilation >3 days | Observation&  Self report |
| Chao, Y. C.,  Chen, Y.,  Wang, K. K.,  Lee, R.,  & Tsai, H | | 2008 | Taipei, Taiwan | Not listed in Article but assumed by reader= Germ Theory of  Louis Pasteur | Pulmonary infection causing VAP | Removal of secretions prior to position change | 2-group comparison randomized study | Control group=159  Study group=102 | Random ICU patient admission.  Patients 18 yrs of age or older.  On a ventilator for more than 24 hours.  (Those with pneumonia before intubation or within 48 hours after intubation were excluded) | Observation&  Self report from staff | |

Appendix C

Methodological Matrix and Evaluation Matrix Continued

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Author** | **Pub Year** | **Country** | **Theory** | **Dependent Variables** | **Independent**  **Variables** | **Study Design** | **Sample**  **Size** | **Sampling Method** | **How data collected** |
| H-H Tsai,  F-C Lin,  S-C Chang | 2008 | Taiwan | None | VAP occurrence and incidence | Intermittent suction of Oral Secretions before each position change | Quasi-exp. Non-randomized  Pilot Study | Study group= 227  Control group= 237 | All patients admitted to ICU who did not have:  endotracheal intubation (EI) and mechanical ventilation  (MV) more than 3 days prior to ICU admission, presence of tracheostomy, pneumonia before ICU admission, non-ventilated, EI & MV < 48 Hours, ICU admission less than 48 Hours. | Self-report and observation by senior staff |

Appendix D

VAP Prevention In- Service Flyer

VAPPrevention In-service for

**New Interventions!**

Mandatory for All Nursing Staff in ICU.

Please attend one of the following:



# November 20, 2010

# 8 a.m.– 9a.m. and 8 p.m.– 9p.m.

# Or

# November 23, 2010

# 11 a.m. - 12 noon and 10p.m. - 11p.m.