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DECREASING HOSPITAL ACQUIRED PNEUMONIA IN ADULT PATIENTS

**Decreasing Hospital Acquired Pneumonia in Adult Patients by Patient Care Technicians:
Education with a Focus on Oral Care and Tooth Brushing**

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Abstract

Hospital acquired pneumonia's (HAPs) are unfortunate and preventable events quality improvement efforts should focus on. At a Northern California Hospital, there was an unmet HAP rate goal of 2.3 (20 out of 8795 patients) against a target goal of 2. This increase in HAP rates, both non-ventilated and ventilated was a call to action to reduce HAP to the target goal. The quality improvement project specifically aimed to reduce HAP rates on medical-surgical units through an ultra-brief refresher on the hospital validated and endorsed ROUTE bundle. The education focused on oral care completed by the patient care technicians (PCT's). The second aim focused on pinpointing barriers PCT's face in completing oral care. This was collected through survey questions. Additional visual aids (e.g., color ROUTE flyers) were distributed to the PCT's and posted on each floor visited. We expect a decrease of HAP rates once data is collected in the quarterly report early next year 2023. This collected data will become available in the Crossing Quality Chasm (CQC) quarterly reports. Themes noted from the survey questions: addressing barriers to oral care included poor staff to patient ratio and patient refusal. Recommendations for future steps include focusing on how to motivate and educate patients on the negative ramifications of omitting oral care.

Keywords: hospital acquired pneumonia (HAP), non-ventilated hospital acquired pneumonia (NV-HAP), patient care technicians (PCTs), ROUTE, prevention, oral care, toothbrushing, adult patients

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Introduction

Healthcare associated infections occur at a rate of approximately 21 cases per 1,000 hospital admissions and about one in 31 hospital patients has at least one HAI in the United States on any given day (Giuliano et al., 2018 & *HAI Data / CDC*, 2021). The CDC has recognized HAI as a top 10 public health concern (Baker et al., 2019). Hospital acquired pneumonia's (HAPs) are one of the most common healthcare acquired infections (HAIs) worldwide (Giuliano et al., 2018).

Hospital acquired pneumonia is an infection of the lungs that occurs during a patient's hospital stay. It can be very severe and even fatal. There are two specific subgroups of HAPs: non-ventilator HAP (NV-HAP) and ventilator-associated pneumonia (VAP). A multistate point-prevalence survey suggests that NV-HAP and VAP accounted for 21.8% of all HAIs in the United States, around 157,500 infections, 60.9% considered NV-HAP (Giuliano et al., 2018). Consequently, HAPs have substantial clinical and economic burdens for the institution and their patients. These include longer length of stay, higher overall health care costs, and increased morbidity and mortality rates. Growing literature indicates simple and proper oral hygiene care is critical to reducing incidences of HAP (Patient Safety Monitor Journal, 2017 & Munro et al., 2018).

Literature Review

HAP and Oral Hygiene

Hospital acquired pneumonia happens when microorganisms enter the respiratory tract from direct colonization of pathogens from the mouth or oropharynx via aspiration or from sepsis (Saied et al., 2020). Patients in the hospital are at a greater risk of developing nosocomial infections due to their already weakened immune system. Germs in the mouth multiply rapidly

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and often spread down into the lung and cause pneumonia (Saied et al., 2020). Toothbrushing two to four times a day reduces oral bacterial load significantly, decreasing risk of NV-HAP by 40-60% (Munro et al., 2018). Removing biofilm/dental plaque from teeth with regular brushing and good oral hygiene can help prevent pneumonia (Patient Safety Monitor Journal, 2017).

The CDC states that there are several modifiable risk factors that cause pneumonia, the most modifiable being oral care. Poor oral hygiene is the one risk factor all pneumonia patients have in common and is the factor with the most literature proving its efficacy (Patient Safety Monitor Journal, 2017). A clinical trial done by McNally et al. (2019), studied the effectiveness of aggressive oral care in reducing HAP in non-intensive settings, a structured toothbrushing program was provided to an experimental cohort, and observed for a three-and-a-half-month period (McNally et al., 2019). The increase of toothbrushing rates showed potential to reduce pneumonia, with a needed nurse-led interdisciplinary collaboration, training, and a standardized documentation system (McNally et al., 2019).

Another pilot study was done to implement an oral care protocol and dissemination at the Salem VA Medical Center to reduce incidence rates of NV-HAP. The rate of NV-HAP decreased from 105 cases to 8.3 cases (92%) (Munro et al., 2018). They accomplished this through understanding their hospital system, obtaining organized supplies, customizing nursing documentation, and training (Munro et al., 2018). Oral care protocol includes, brushing at least twice a day, either by the patient or with assistance by a nurse or nursing assistant, as well as educating patients and their family members (Munro et al., 2018). There was careful consideration in supply procurement and access (e.g., labeling toothbrush with patient's name) (Munro et al., 2018). It will be important to do a microsystem analysis of the unit, when

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implementing oral care protocols, as well as feedback from nurses on the unit on how to tailor/customize documentation.

Potential Barriers

Many oral care studies have been done on VAPs while NV-HAPs continue to be understudied (Baker & Quinn, 2018). However, a multi-centered, nationwide study found NV-HAP occurred on every hospital unit included in their study, especially among younger, healthier patients, indicating all patients carry some NV-HAP risks (Baker & Quinn, 2018). They found that interventions such as oral care are often not provided for non-ventilated patients (Baker & Quinn, 2018). For most hospitals, there is no regulation that states they must have an oral care policy and protocol, nor are there standard protocols written for what oral care should look like for the patient. Baker and Quinn (2018) mention most acute care hospitals have decent protocols for VAPs (e.g., chlorhexidine required for VAPs); there are few guidelines for NV-HAP (Munro et al., 2018).

Role of Patient Care Technician (Scope of Practice)

The patient care technician (PCT) is an essential part of the team working in tandem with the registered nurses on the floor. They work together to meet the needs of patients to provide safe, quality care. The care they provide includes implementing profession mobility guidelines (e.g., sitting patients up for meals), ambulating, turning/repositioning, and transporting patients. Patient care technicians also assist with activities of daily living including feeding, bathing, providing hydration, toileting, and oral care. In coordination with the registered nurses and other medical staff, PCT's help maintain a safe and clean environment by providing newly admitted patients with supplies (e.g., incentive spirometry), ensuring clean and tidy beds, and neat linens. They are essential frontline workers in the healthcare industry, their time working with patients

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makes a positive daily impact to those who are in need. They work behind the scenes to take care of the technical details that make a huge difference in the lives of patients and their families.

Education

Adult learning theories are crucial in the design and implementation of any adult education. Mukhalalati and Taylor (2019) conducted a literature review with the goal to identify key learning theories applicable in the teaching and learning of professionals in the health field. They found key principles to aid healthcare educators on their various instructional strategies, objectives, and evaluation methods (Mukhalalati & Taylor, 2019). Effective learning theories we will utilize in this educational project include behavioral theories of positive reinforcement and consequences that show enhanced learning, cognitivism which implies verbal or written materials, and transformative learning/reflective practice (Mukhalalati & Taylor, 2019). Transformative practice involves three stages: 1) experiencing an issue and reflecting on previous perspectives about the event, 2) engaging in self-evaluation and reflection, and 3) acting based on the previous two steps, consequently leading to a meaningful longstanding learning/change (Mukhalalati & Taylor, 2019). This will be accomplished through looking at the agency profile (e.g., data, feedback from patient safety employees), exploring if and why tasks are not completed (e.g., oral care), and working together to review hospital protocols, and together, discover helpful sustainable methods to increase learning and change.

Agency Profile

Problem Identification

The quality improvement project took place in a Northern California Hospital. Parameters of HAPs across the region are defined by diagnosis and chest imaging results at least 48 hours after admissions per 1000 admission. Data reported measures from June 2021 to May

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2022. Our specific clinical location had a HAP rate of 2.3 (20 out of 8795 patients) against a target goal of 2 with a gap to goal of -3. Compared to the northern region, the site sits in the middle of the curve with the lowest value being 1 and highest value being 4. Oral care, more specifically teeth brushing performance metrics in the Medical Surgical Telemetry (MST) showed a 68.7% completion compared to the average region of 74.4%.

Intervention

ROUTE Bundle

Hospital acquired pneumonia is aligned with the hospital's mission to provide high quality care and improve the health and care of their patients. The Northern California Hospital has suggested the evidence-based ROUTE bundle to tackle HAP in their hospital. ROUTE stands for Respiratory Care/Reduction Sedation, Oral brushing, Up and About, Tube Care, and Education. Respiratory Care/Reduction and Sedation in the is through use of incentive spirometry (10 breaths every two hours while awake), and the sparing use of sedative medications (Kaiser, 2012). Oral care is supervised or assisted oral care twice a day with a soft toothbrush and a chlorhexidine rinse twice a day unless contraindicated. Up and walking takes place through maximizing patients' mobility and ambulation (e.g., 20 feet twice a day, sitting up in a chair for all meals, and head of bed at a minimum of 30 degrees at all times) (Kaiser, 2012). Tube care includes reassessing whether the tube is in the correct position for all tube feedings, frequently reassess tube necessity, and check tube patency (Kaiser, 2012). Lastly, educate patients and family on the importance of the bundle (Kaiser, 2012).

Change Theory

The nursing process (assessment, planning, implementation, and evaluation) will guide this quality improvement effort. Assessment was done through a needs assessment and data

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analysis of HAP metrics that was provided by the quality improvement department. The problems identified were that staff were not meticulously performing oral care when needed, many were unaware of the hospital's ROUTE bundle education. Lastly, oral care was not being documented, which may be a contributing factor in the lack of oral care provided. The planning phase included working with hospital staff on each floor to create a ROUTE refresher/education for PCT's. This was approved and informed by the hospital's HAP playbook and quality improvement nurse. During implementation, quick refresher education was provided to PCT's on each floor. A colorful and accessible flier was created on the ROUTE bundle, to be distributed to the PCT's as well as on each floor's bulletin board. The nutrition department was also contacted to work with each floor to provide toothbrushes on the meal tray at each mealtime. Lastly, in the evaluation stage, interventions will be assessed for successfulness by studying NV-HAP data three months out and auditing nurses with a quick three question survey a month after education.

PICOT/ Specific Aim

The specific aims of the quality improvement project are to decrease the number of HAPs in the Northern California Hospital through education of the ROUTE bundle, specifically focusing on performing oral care, as well as, understanding the PCT's barriers and gathering ideas to increase oral care in this system. Among patients on all floors of the clinical site who are bedbound ≥ 48 hours; does education of the ROUTE bundle to PCT's with an emphasis on oral care decrease rates of hospital acquired pneumonia compared to the current efforts by the next audit and can we address the barriers and concerns presented by the PCT's to enhance the ROUTE education.

Cost Benefit Analysis

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While decreasing HAP is an effort to reduce harm and suffering for patients and their families, the reduction and eventual elimination of HAP has a cost benefit for hospitals. Consequently, allocating money to prevent or address other efforts. Research has shown, after a 12-month basic inpatient oral care effort, hospitals in the United States showed a 37% decrease in NV-HAP cases (Quinn et al., 2014). This resulted in an estimated savings of \$1.74 million (Quinn et al., 2014). Our specific site has an average HAP rate of 2.3 patients per month compared to their target goal of 2 and their total estimated cost ranges from \$64,400 - \$92,000 in monthly expenditure specifically for treating HAP patients, accounting for an additional \$772,800 - \$1,104,000 in patient care costs annually (Giuliano, et al. 2018). We concluded that addressing HAP rate reductions through our quality improvement effort has the potential to lead to direct cost savings to the hospital, especially if these efforts are sustained.

Methods

Participants

The participants of this study were 25 PCT's conveniently chosen from the Northern California Hospital. The goal was to reach as many PCT's on each floor of the hospital mainly focusing on medical surgical floors. Units and floors were visited and provided education seven times over the two-month time span students were allowed in on the floors. Convenience sampling was used due to the busy nature of the PCTs work. Education took place day, mid, night, and weekend shifts to cover as many PCTs as possible.

Needs Assessment

A needs assessment was done to better understand the hospital's goals pertaining to HAP measures as well as how they compared to the region. A smaller general microsystem assessment was done to understand the strengths and weakness of the units, informing how the education

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would be structured and implemented. Metrics were provided by the patient safety nurse. The PCT's viewpoint was collected and logged during the time of education. Survey questions asked included if they were familiar with ROUTE, if they complete oral care during their shift, how many times, for how many patients they are responsible for, what they believed barriers were to oral care, if they had any ideas to increase that care, and if they thought the idea of working with nutrition to place toothbrushes on the tray would increase oral care (See Appendix F).

The patient safety nurse took time to meet with nurse managers of each unit to assess their needs, introduce them to our team, and our project. Various methods were used to organize and inform the quality improvement project including a Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, fishbone diagram, five whys, and ultimately a Plan Do Study Act (PDSA) cycle (See Appendix A-G).

SWOT Analysis

The SWOT analysis was done to evaluate the projects feasibility, barriers to success, and sustainability. The biggest strength found was the ROUTE bundle, a hospital approved simplified bundle or tool that guides and standardizes preventative steps for HAP. An additional strength and opportunity included were the already available resources (e.g., toothbrushes) and the willingness of the nutritional department to work with patient safety to generate ideas (e.g., putting toothbrushes on meal trays) to increase performance of oral care. This gave an opportunity for interprofessional collaboration. A potential weakness identified was time PCT's could afford us to implement our education. A potential threat identified was their willingness to adhere to anything new we introduced. While the practice should be already implemented, PCT's already have many tasks to complete. Our solution was to offer a quick ultra-brief refresher and additional visual reminders (e.g., flyers) placed around the unit.

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PDSA

The iterative four stage PDSA model was used to carry out our quality improvement project. This is often used to healthcare settings to test a change by organizing it, trying it, and reevaluating and readjusting based on data gathered (*Science of Improvement*, n.d.). The PDSA is outlined in Appendix D and is informed by the Gantt Chart (Appendix E) to ensure all tasks are completed within the given timeframe. The first planning stage was achieved through a thorough literature review, a presentation of the hospital's metrics, and interview with the patient safety nurse, and a tour of the hospital. An environment assessment was done to evaluate what strategies were done in terms of NV-HAP prevention.

After stakeholders' approval and investment in the project, our team created an ultra-brief ROUTE refresher script for PCT's on each of the hospitals seven floors. Script included education on the ROUTE bundle and survey questions for the microsystem needs assessment. These questions addressed prior knowledge on the ROUTE bundle, how often they provide oral care, if there are any barriers, and as experts in their field, if they had any suggestions to increase oral care routine (Appendix F). The questions developed were content validated by the patient quality nurse, peer reviewed, and approved.

Procedure

The patient safety nurse notified nursing managers clinical students were coming to work with PCT's on the floor. Once on the floor, students greeted the nursing manager and handed a packet with the project proposal and the quality improvement tools to justify the purpose of the project (Appendix A-H). The ROUTE reminder flyer was included in the packet for the nurse manager to place on the informational bulletin board. Names and numbers of PCT's were written down and provided by nursing manager. PCT's were tracked down and approached when they

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had a few minutes to allot us. A ROUTE flyer was handed out to PCT's to follow along with. Once the refresher concluded, the PCT was provided a gift card, candy, pens, or sharpies, as a thank you for their time.

Measures

Methods of collecting data include percentage of PCT's who received education. Audits may be done in the future to see if the PCT's have retained information on ROUTE (See Appendix F). NV-HAP metrics will also be analyzed at the next data review to see if the target goal of 2 with a gap to goal of -3 was reached and how it compares to the region. Data gathered from the survey questions were plugged into a master data sheet and analyzed for common themes.

Results

The study had two aims: 1) decrease the number of HAPs in the Northern California Hospital through education of the ROUTE bundle, specifically focusing on performing oral care, and 2) understanding the PCT's barriers and gathering ideas to increase oral care in this system and to report back and see if any action can be taken to address them. Due to the brief nature of availability and project timeline, results from aim one will be gathered and analyzed during the next audit. Expected results will be mentioned below.

PCT Breakdown

A total of 25 PCT's participated in the ROUTE education and survey questionnaire. They were sampled from various floors of the hospital where PCTs worked (all medical surgical floors). Most of the PCT's permanent roles were on medical surgical floors, we had one PCT who was a floater from the intensive care unit (ICU). The breakdown of the number of PCT's reached, date, and their floors can be seen in Table 1.

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Table 1: PCT Breakdown.

MM/DD/YYYY	Shift (AM/PM/NOC)	Floor/Unit
10/04/2022	AM: 5 PM: 1 NOC: 0 Repeat PCT: 1	Floors 6, 7, & 4
10/25/2022	AM: 5 PM: 0 NOC: 2 Repeat PCT: 0	Floors 3 & 4
10/27/2022	AM: 3* PM: 1 NOC: 0 Repeat PCT: 2	Floor 3
11/06/2022	AM: 7 PM: 0 NOC: 5 Repeat PCT: 4	Floors 3, 4, 6, &7
11/08/2022	AM: 4* PM: 2 NOC: 0 Repeat PCT: 4	Floors 3, 4, 6, &7
*An ICU Original/ Floor Floater		
<i>Note:</i> No PCT's on Fifth Floor (Labor and Delivery Unit)		

Expected Results (Aim One)

Aim one focused on decreasing the number of NV- HAPs in the Northern California Hospital through education of the ROUTE bundle, specifically focusing on performing oral care. The intervention is expected to reduce the incidence of HAP from a rate of 2.3 (20 out of 8795 patients) to a target goal of 2 with a gap to goal of -3. This collected data will become available in the Crossing Quality Chasm (CQC) quarterly reports happening next year early 2023. Having a validated bundle for NV-HAP or any HAP will be useful as the Joint Commission (JCO) call to action includes launching a national health care conversation about NV-HAP prevention (The Joint Commission, 2021). JCO will be working with hospitals to implement strategies to specifically address NVHAP (The Joint Commission, 2021). Seventy-two percent (72%) of PCT's had no prior knowledge on the ROUTE bundle. While our focus was oral care, the validated ROUTE bundle is a tool proven to decrease rates of HAP (nonventilated and ventilated) (Kaiser, 2012). Due to the busy nature and high patient load of PCT's, accomplishing

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a multimodal complex task can be difficult. Acronyms are known to support learning of different tasks and can increase execution speed of the different steps (Radović & Manzey, 2019). We predict that after exposure to the ROUTE bundle through our education and flyers around the unit, PCT's will be able to recall the acronym with accuracy.

Survey (Aim Two)

Barriers. Aim two focused on understanding the PCT's barriers and gathering ideas to increase oral care in this system. Now that there is an accessible ROUTE bundle in place and PCT's know about it, we needed to ask ourselves, what the barriers are for PCT's. The biggest themes found were unequal staff to patient ratio and patient refusal. Eighty-four percent (84%) of PCT's reported they needed better staff to patient ratio, sometimes they can have up to 22 patients for one PCT. The nurses are able to perform oral care and remind patients to do it, however, for their more total care patients, they are unable to complete care for their whole patient load if the ratio is 22 to one. PCT's report that nurses are very supportive and lend a helping hand, however, nurses are also busy and spread thin. The high PCT patient load is exacerbated when PCT's are required to be sitters for the shift. Another PCT shared with us how she handles high patient loads, she focuses her efforts on performing oral care for her total care patients (e.g., dementia) while she reminds the younger (e.g., 30-50 years of age) to perform oral care.

Patient refusal and lack of motivation was another primary barrier to oral care completion. Thirty-six percent (36%) of PCT's reported that there are a few reasons patients refuse oral care, 1) they do not feel well and refuse to do anything, 2) they usually do not perform oral care more than once a day, and 3) they understand that they should be performing oral care, but they just do not want to. One PCT reported the patient instructed her not to tell his

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daughter he does not brush his teeth. Sixteen percent (16%) of PCT's suggested more education upon admission would perhaps help increase oral care compliance.

Toothbrush on Meal Tray. PCT's did not feel working with nutrition would be effective (76% said no while 12% said yes). It is under the PCT's purview to provide oral kits to their patients, and they would like to keep it that way. Based on PCT reports, reasons include not wanting to increase nutrition's workload, wanting oral care resources to be given on admission and available on the floor for easy access, and lastly, not believing the intervention would increase oral care, since the patients are refusing, not forgetting.

Discussion

This quality improvement project was initiated to decrease the number of HAPs in the Northern California Hospital through education of the ROUTE bundle, specifically focusing on performing oral care, and to understand any barriers PCT's had to performing oral care on patients. The project was informed by the hospital's unmet HAP goals in their latest quarterly report. There were key findings discovered over the duration of the quality improvement project. Findings for aim one will be discussed in the future through quarterly data collection and reports in 2023. We expect a decrease in HAP rates for the Northern California Hospital. The validated ROUTE bundle is a guideline the hospital expects all members of the healthcare team to adopt. However, few knew what it was due to lack of exposure or education. Acronyms are known to support learning of different tasks and can increase execution speed of the different steps (Radović & Manzey, 2019). Through a brief education on ROUTE, and flyers posted around the unit, we are hoping and expecting PCT retention of the ROUTE bundle. When doing a walk-through of the unit, we noticed there was a lot of information on their bulletin board and informational wall. All the resources were black and white and blended together. The ROUTE

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flyer created was colorful and bright and had clear and succinct information with ample clear space and accompanying visuals (See Appendix G).

Barriers from each visit were analyzed for themes. As stated in the results section the major barriers to oral care are poor staffing ratio and patient refusal. One nurse stated that it is usually the alert and oriented younger patients (30-50 years of age) who refuse to perform oral care. They understand they should but refuse anyway. Possible reasons include the severity of the illness, consequently causing rejection of any tasks exerting energy and increase discomfort and/or patients do not have enough education on how serious HAP can be if they refuse care. Recommendations include exploring ideas on how to motivate patients to perform oral care or perform any of the tasks in ROUTE. This can be accomplished through taking the time to help patients understand the gravity of HAP, and the high risk involved when ROUTE as a whole is not followed. Perhaps a modified motivational interviewing can be used since this involves lack of motivation from the patient, and not something in a PCT's control.

Additionally, PCT's did not feel working with nutrition would be effective (76% said no while 12% said yes). Feedback included, it was already under the PCT's purview, nutrition may be too slow, or not on time, or know what type of tool they need (e.g., swab or toothbrush). This may be due to needing to control their own supplies for tasks they need to complete. After gathering feedback, it seems, involving nutrition would be an extra step in a process and be another time block or unknown for the PCT. PCT's already have a packed workload, having control over the supplies on what they need to do seems like the best solution.

All risk factors for HAP require active intervention to prevent harm to patients. It is a preventable illness. With PCT's at the center of nursing care, PCT's have the power to motivate patients to reach their treatment goals. However, there are certain factors out of the PCT's

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control. Future steps need to be taken to understand reasons for patient refusal and how to motivate them to be involved in their care. Through this quality improvement project, we hope to demonstrate PCT engagement of oral care precautions under ROUTE guidelines by cutting HAP rate to 2.0. The hope is to help PCT's and the nations efforts to increase patient safety and involve patients in participating in their care. Implementing this quality improvement project initiates an opportunity for hospital-wide support and engagement. It is expected that this project will create awareness to decrease HAP.

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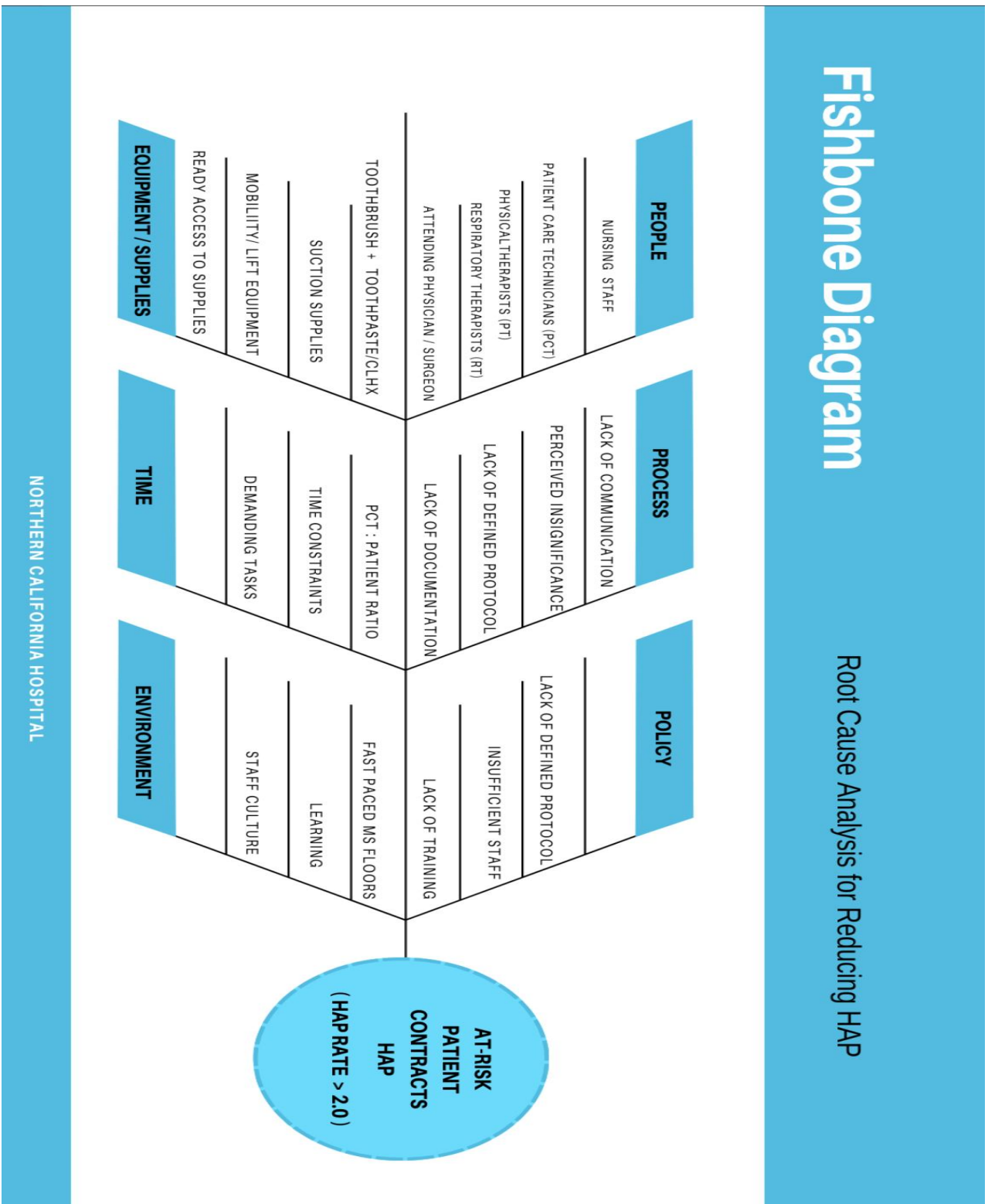
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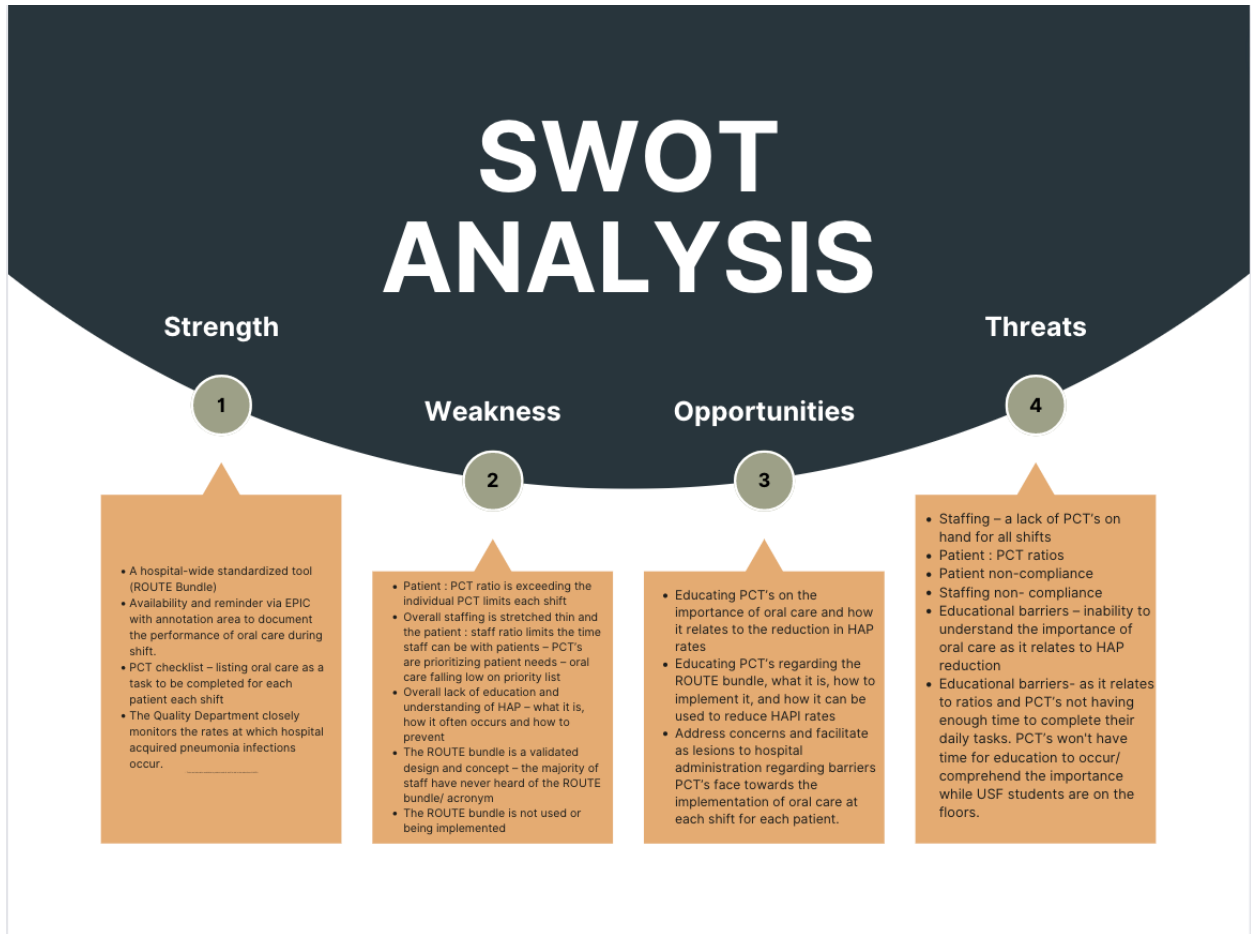
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Appendix A

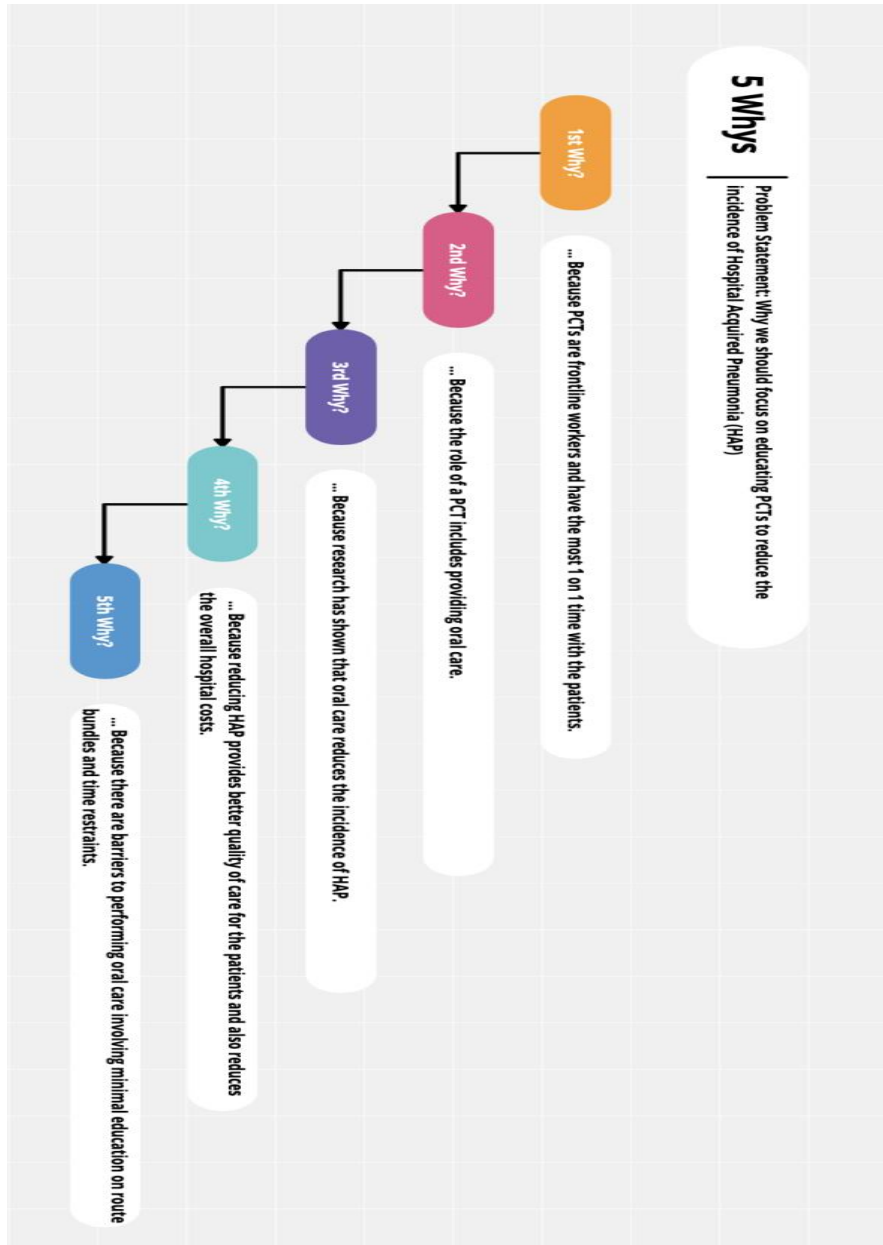


Appendix B

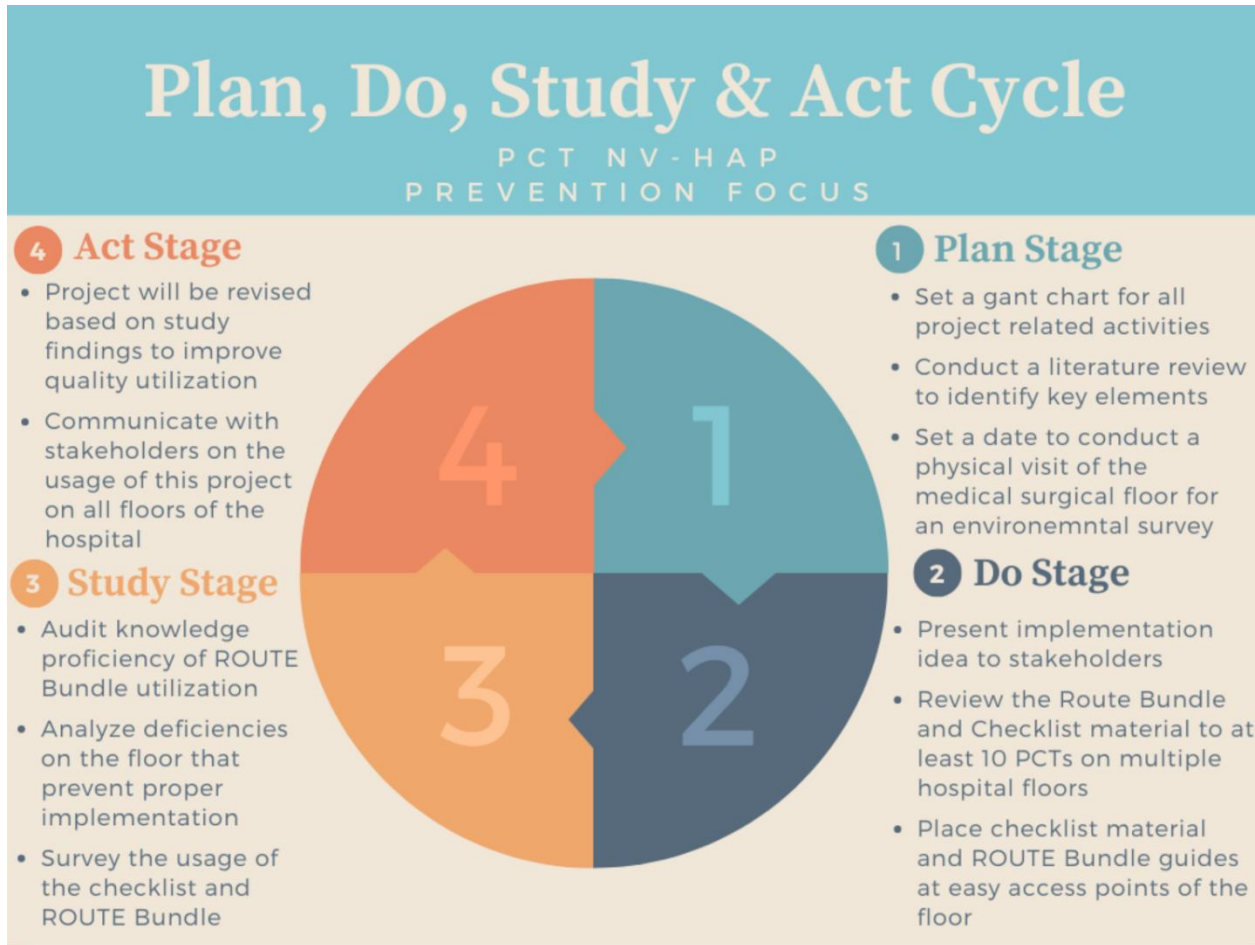


DECREASING HOSPITAL ACQUIRED PNEUMONIA IN ADULT PATIENTS

Appendix C

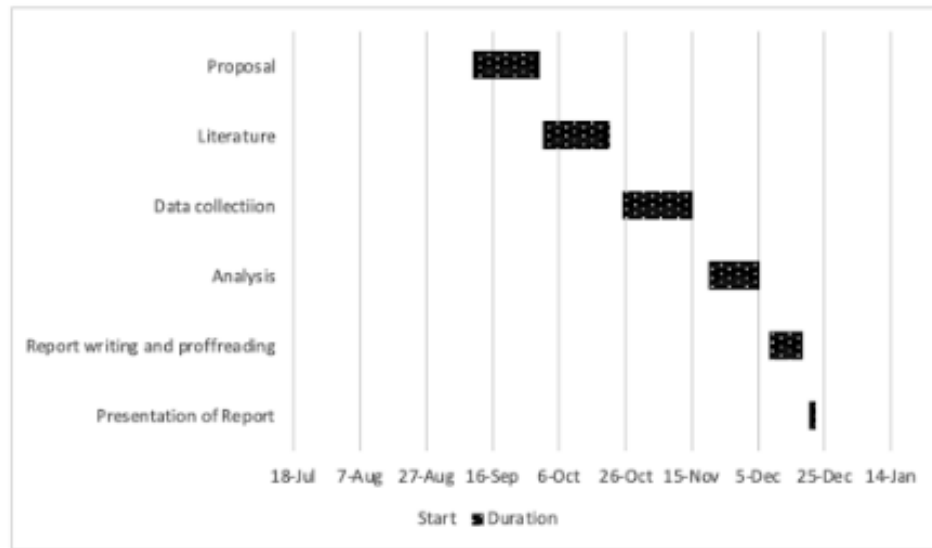


Appendix D



DECREASING HOSPITAL ACQUIRED PNEUMONIA IN ADULT PATIENTS

Appendix E



DECREASING HOSPITAL ACQUIRED PNEUMONIA IN ADULT PATIENTS

Appendix F



ROUTE Refresher
Script

Hi, my name is _____ I am a clinical nursing student from University of San Francisco (USF). We are implementing a quality improvement project to reduce the rates of Hospital Acquired Pneumonia that includes a short survey and education material. We have (coffee/ pastries/ Sharpies and multicolor pens) for your time. It should only take a few minutes.

The goal of our project is to provide an overview of information you have already received to help reduce the incidence of Hospital Acquired Pneumonia primarily focusing on oral care. We understand you are the experts in your area and are the ones who hold all the knowledge- so please feel free to add anything if you see fit. We have a couple of questions to start off with.

Name	Unit	PCT Y/N (if no- note which unit)
1.		
2.		
3.		
4.		
5.		
6.		
7.		

DECREASING HOSPITAL ACQUIRED PNEUMONIA IN ADULT PATIENTS

8.		
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Questions:

1. *During your shift, are you able to do oral care on your patient assignment?*

YES NO

If yes...

2. *How many times per shift?*

_____ [Morning (AM) / Afternoon (PM) / Night (NOC)]

3. *What are some of the barriers to get this accomplished?*

4. *Do you know what the ROUTE bundle is?*

YES NO

This material was already created by Kaiser so today we will just have a quick refresher on the ROUTE bundle and get your feedback.

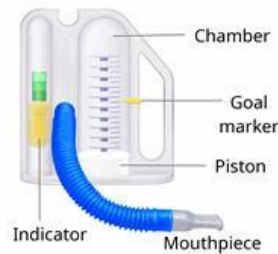
(Give handout to follow along with)

ROUTE stands for: (Relevance)

Respiratory Care/Reduction and Sedation:

- *Incentive spirometry (10 breaths every two hours while awake) (PCT)*

DECREASING HOSPITAL ACQUIRED PNEUMONIA IN ADULT PATIENTS



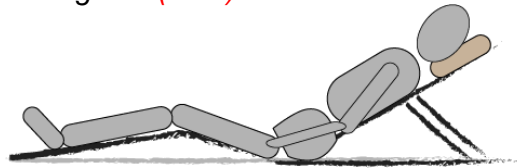
- Not using too many sedative medications like valium or ativan (Nurses and Physicians)

Oral care:

- Oral care twice a day with a soft toothbrush (PCT)
- Chlorhexidine rinses twice a day if its ordered by the doctor (PCT)

Up and walking:

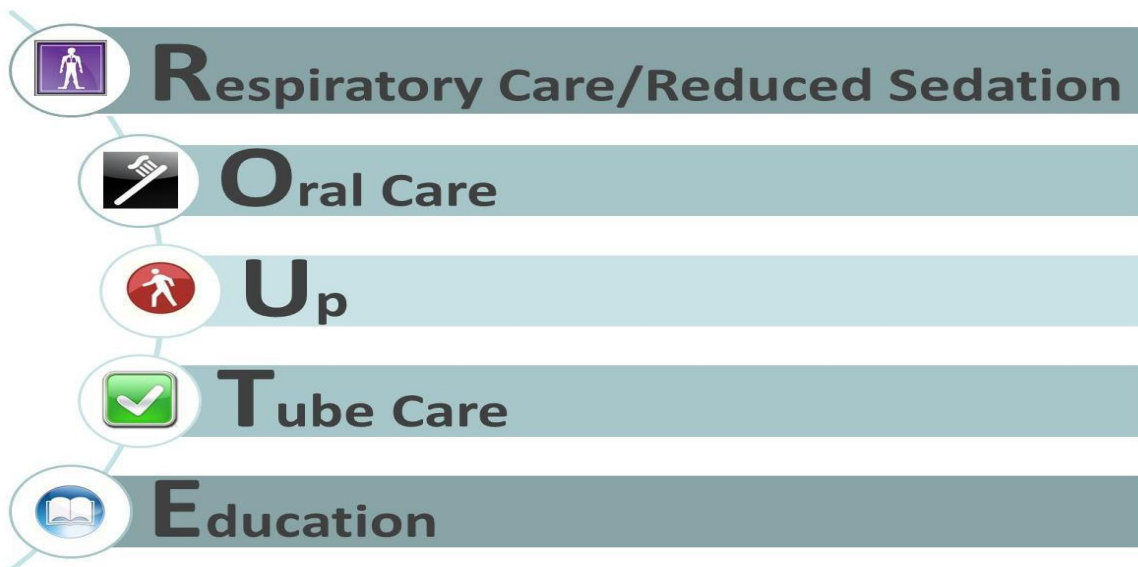
- Walking 20 feet two times a day (PCT)
- Sitting up in a chair when the patient is eating (PCT)
- Head of bed up at least 30 degrees (PCT)



Tube care:

- Checking if the tube is in the right position for feedings (Nurses)
- Seeing if the patient still needs the tube (Nurses)
- Check if it's still working properly (Nurses)

Education: Remind patients to use (PCT)



DECREASING HOSPITAL ACQUIRED PNEUMONIA IN ADULT PATIENTS

Our focus is on Oral care since our research shows that it is really important when trying to decrease hospital acquired pneumonia (HAP) because all the germs in the mouth multiply so quickly, and easily spread into the lungs making people sick.

We want to make sure that patients are getting their teeth brushed after every meal, which is around 3 times a day.

Questions:

5. We were thinking of some ways that could help motivate patients to brush their teeth more. Do you think working with nutrition to have a toothbrush on the meal tray is a good idea?

YES

NO

6. Do you have any ideas on how we can increase oral care and tooth brushing rates on your floor?

7. Where do you document oral care?

Thank you so much for taking the time to help us! Do you have any questions or feedback for us?

AUDIT IF THEY TOOK THE EDUCATION PORTION ALREADY

Questions:

1. *What does ROUTE stand for?*

Answer: Respiratory/Reduce Sedation, Oral Care, Up, Tube Care, & Education

2. *Where do you document oral care?*

Answer: Show documentation on EPIC

3. *Where is the PCT checklist located?*


Answer: With Nursing Manager

Appendix G


ROUTE BUNDLE

Together, Lets Decrease Hospital Acquired Pneumonia!


R: Respiratory Care/Reduced Sedation
Incentive Spirometry (10 breaths every 2 hours while awake)




O: Oral Care
Supervised or assisted oral care 2x a day with a soft toothbrush
Chlorhexidine rinse (2x a day unless restricted)



U: Up
Walking - minimum 20 feet 2x a day
Up for meals
Head of bed up 30 degrees



T: Tube Care
Check feeding tube position after each feeding
Reassess NGT need daily
Check tube patency



E: Education
Educate and engage patients and family on Inceptive spirometry use, oral care, and positioning

Fall 2022/USF Masters/Amanda Lee, Jessica Andrade, Melissa Ray, Munroop Thiara, & Samantha Flaherty /Professor Mostasisat

