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Educating Nurses on Frequent Oral Care for Mechanically Ventilated Patients: An Evidence-Based Practice Project Proposal

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Abstract

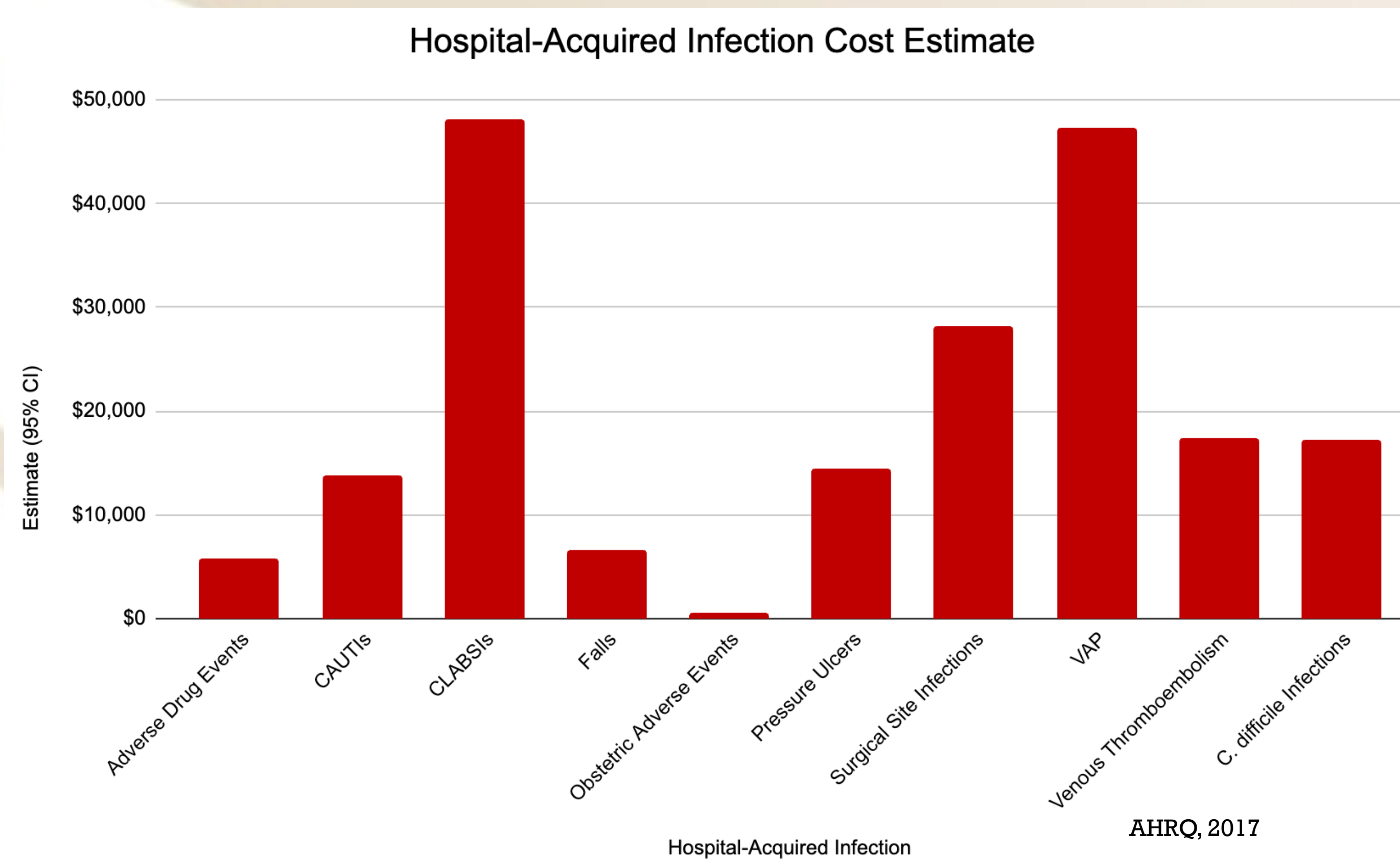
- Oral care education guideline for nurses (RNs) in an intensive care unit (ICU)
- Goals:
 - Reduce rates of ventilator-associated pneumonia (VAP) in mechanically ventilated patients
 - Increase rates of oral care charting

Introduction

- VAP is one of the most deadly and expensive hospital-acquired infections in the United States
- Ventilator bundles: frequent oral care, head of bed elevation, sedation restrictions, and stress ulcer prophylaxis
- A project team can implement the project in any hospital with an ICU

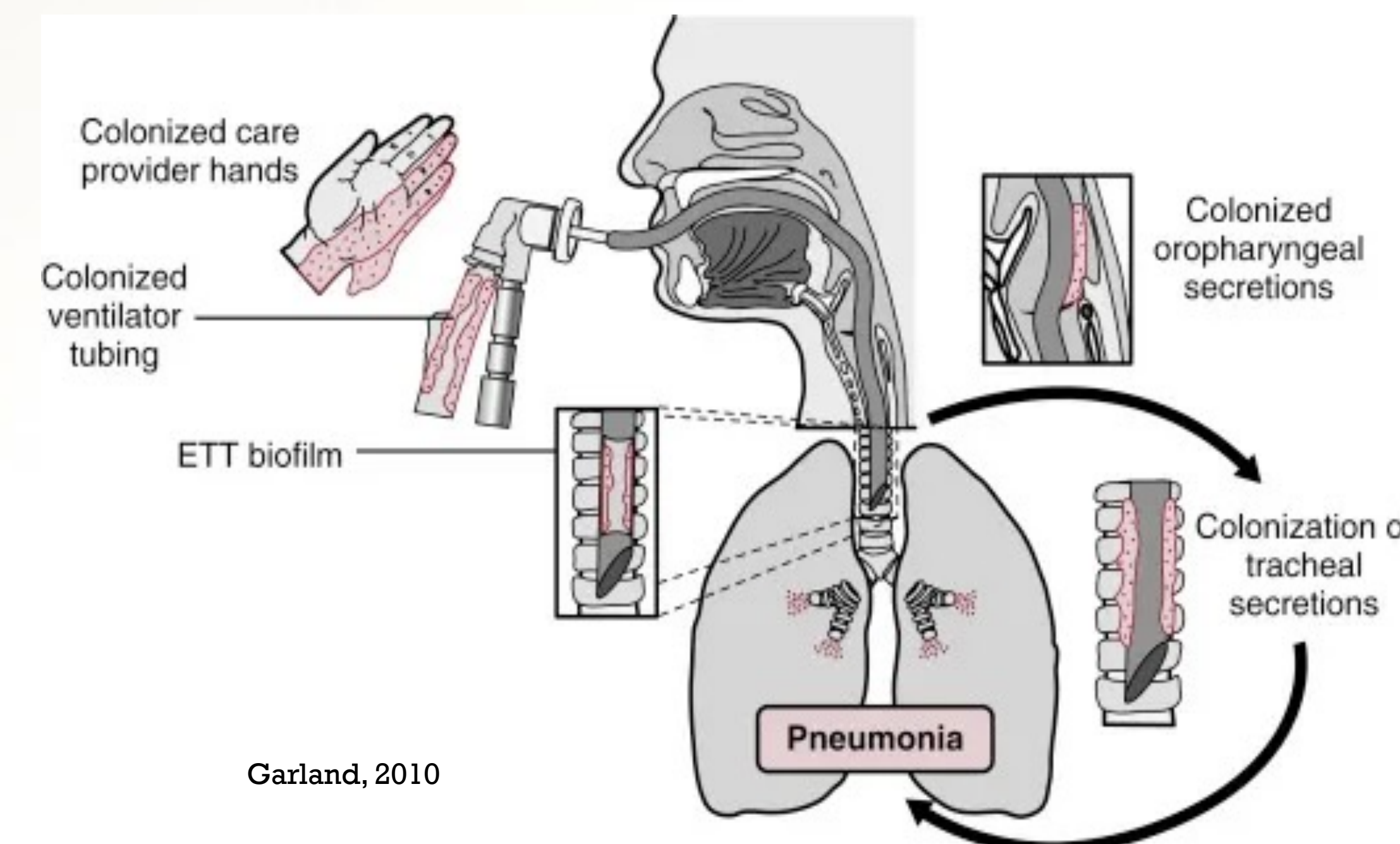
Background & Significance

- VAP is not paid for by Medicare or Medicaid
- A case of VAP can cost a hospital between \$21,890 and \$72,587
- 1 case of VAP a month is up to \$871,000 a year
- Guidance from the AACN manual: Oral care given every 2-4 hours appears to provide a greater improvement in oral health



Pathophysiology of VAP

- Colonization in lower airways 48 hours or more after intubation
- Bacteria, viruses, or fungi move down the trachea then into the lungs causing pneumonia
- The endotracheal tube maintains an open airway and obstructs ciliary action, therefore increases risk for pneumonia



Objectives

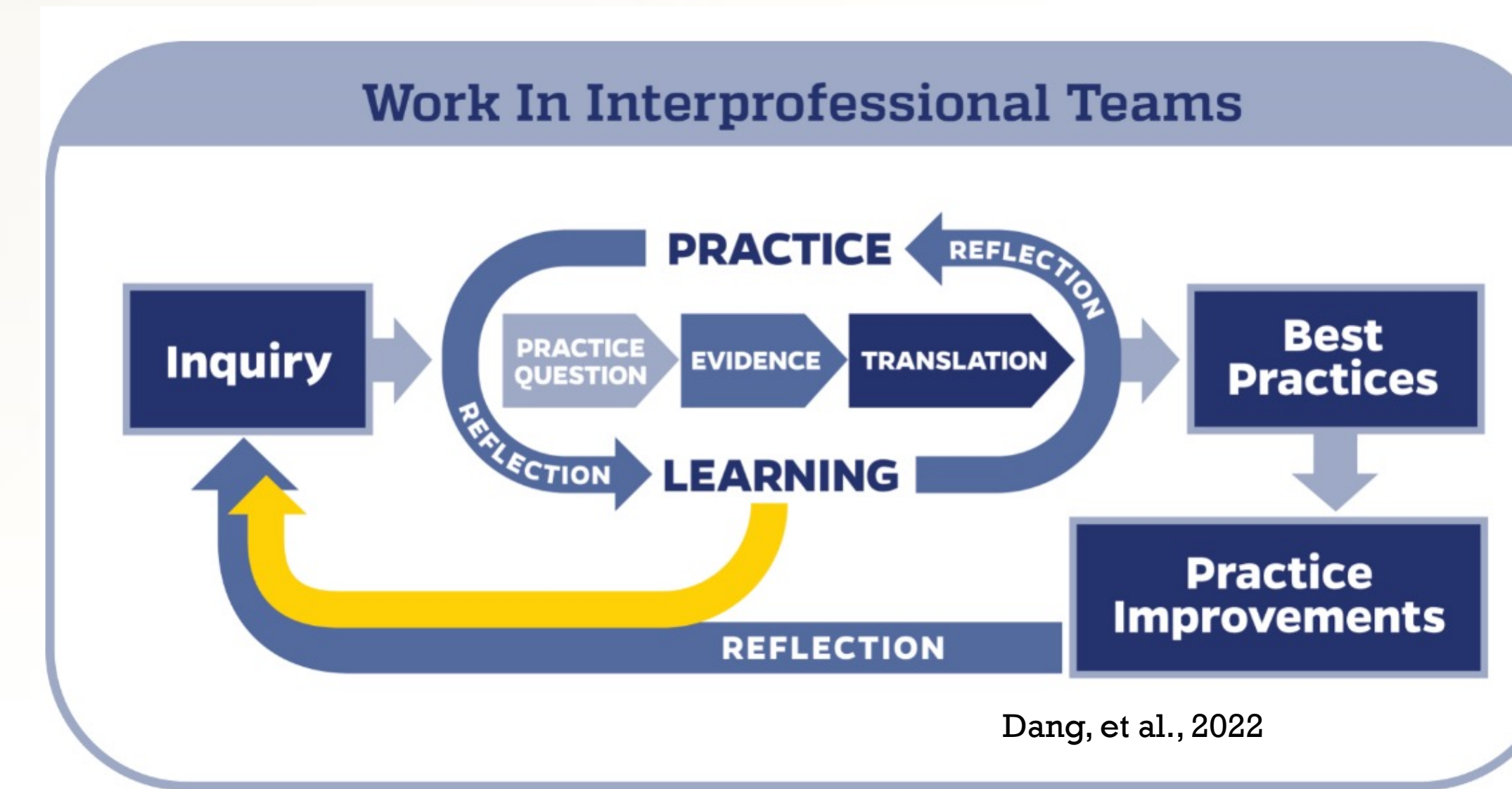
1. Obtain current VAP rates for the intended unit
2. Develop an education tip sheet to reinforce the hospital's policy on oral care and VAP, as well as pre-education and post-education surveys
3. Educate nurses on the importance of regular oral care
4. After two months, a chart review will be used to gather previous VAP rates and oral care charting rates, as well as VAP rates and charting frequency after the nurses' education.
5. Complete an analysis of the chart review to see if education decreased VAP rates and increased oral care rates

Problem Statement & PICOT

- VAP is a potentially fatal consequence of intubation
- Impaired defense mechanisms increase a patient's risk of getting pneumonia
- Proper oral care decreases the risk of VAP significantly
- For mechanically ventilated patients (P), will reinforcement of nursing education on performing oral care every two hours (I) compared with no education (C) decrease rates of ventilator-associated pneumonia (O) within a two-month time period (T)?

Project Design

- The Johns Hopkins Evidence-Based Practice Model was used as a resource to help design the guideline
- **Practice Question:** A need for change was noticed in the author's practice
- **Project Planning:** Evidence review was conducted as well as a literature synthesis and analysis
- **Evidence:** Scholarly findings supported the proposed project
- **Translation:** Dissemination through a paper, poster, and submission to Digital Commons



Pre-Implementation Phase

- Form a project team
- Review hospital's oral care policy and latest research
- Collect pre-intervention VAP and charting data

Implementation Phase

- Execute education sessions with tip sheet and surveys

Post-Implementation Phase

- Obtain and analyze VAP and charting data
- Disseminate findings if successful
- If unsuccessful, look at other VAP bundle components to implement next

Budget and Timeline

- 5 months total: 2 weeks to educate the unit, 8 hours reviewing literature, & 4 hours reviewing charting and VAP data
- Oral care kits are common in hospitals
 - The project team can work with the hospital's supply chain to provide oral care kits to the unit, outside the budget
- Cost: \$1,380
 - If the project decreases VAP by one case a year, the hospital recoups the investment 15-53 times since VAP costs between \$21,890 to \$72,587

Outcomes and Analysis

- Analyze VAP and oral care charting rates using a t-score, p-value of ≤ 0.05 , and standard error
- Compare data to Centers for Disease Control's national benchmarks

Conclusion

Limitations

- Adherence
 - Reminder cards at nursing stations, re-education sessions
- Literature analyzed: research gathered did not include all the hundreds of articles written on oral care for a mechanically ventilated adult
 - Specific methods may not be mentioned
 - Remember evidence-based practice principled while implementing

Recommendations

- Can be liberalized to any intuition where nurses take care of ventilated patients
 - Long-term Acute Care Hospitals, step down ICUs
- Project leaders should continue reviewing oral care and VAP rates after implementation

Q2 ORAL CARE FOR VENTILATOR-ASSOCIATED PNEUMONIA
Grace Alford, MSN, RN

THE ROOT OF THE PROBLEM

- Biofilms that form in the oral cavity can be removed via friction and cleaning solutions
- Frequent oral care decreases biofilm production, ventilator-provided oxygen, ICU days, and increase patient comfort

POLICY

- Provide mouth care, lip care, and appropriate nose care every 2 hours and PRN
- Brush teeth every AM and PM

SAGE KITS

- Designed for 24-hour oral care
- Use one swab + cleanser every 2 hours
- Brush teeth every 12 hours

KEY FACTS

- VAP is the most common infectious complication in critically ill patients
- For every 1,000 VAP cases there are 140 excess deaths
- It is the second most costly and deadly healthcare-acquired condition

FY 2023 STATS

- 51 Ventilator-Associated Events
- 5rd best rates of VAE compared to the other ICUs
- 2 times the predicted number of infections than nationally predicted, about 87% worse than expected

VAP PATHOPHYSIOLOGY

- Pneumonia that develops >48 hours post intubation
- Bacteria, viruses, or fungi move down to the trachea from the oral cavity
- They move into the lungs causing pneumonia
- A ventilator tube maintains an open airway, obstructs ciliary action, and alters mucus secretion
- These impaired defense mechanisms increase the patient's risk of getting pneumonia

References

