

Oral Care for Pneumonia Prevention in Ventilated Patients: a CNS Student Translating Evidence into Practice

Katie Ingram BSN, RN, CCRN-CSC and Lynelle Baba MS, RN, CCRN, CCNS, FAAN

Introduction

- Critically ill mechanically ventilated (MV) patients are at increased risk of hospital-acquired pneumonia¹.
- Providing oral care to the MV patient reduces ventilator associated pneumonia (VAP)².
- Essential practice recommendations from the most recent VAP prevention guidelines include¹:
 - Removing chlorhexidine gluconate (CHG) as the oral care antiseptic agent as meta-analysis showed no benefit to preventing VAP and suggested an increase in mortality^{2,3,4}
 - Emphasizing toothbrushing for mechanical removal of plaque^{2,5}

Methods

- A project to translate new evidence into practice emerged through a mentoring partnership between a seasoned subject matter expert CNS and a next generation CNS student.
- Mentoring included use of a shared, structured project plan. Activities included delineating action items and timelines; coordination of pharmacy, supply chain, informatics and other departments; interdisciplinary collaboration; progressive transfer of responsibility from mentor to mentee and debriefing for continual growth and learning.
- Critical appraisal of the literature identified common barriers to providing evidence-based oral care, methods to reduce barriers, and interventions to improve outcomes.
- Assessment of current practice in 10 ICUs revealed inconsistencies in oral care delivery, equipment utilized, documentation, and staff ability to articulate the component steps and importance of oral care for the MV patient.
- Oral care product-line assessment revealed current product was insufficient to meet the new standard of care; therefore, product evaluation from selection to distribution was added to the project plan.
- Revised standards of care and practice recommendations were developed and released through a new video educational format in two phases about one month apart (Fig 1):
 - Phase I: Reduction of contamination of RT equipment
 - Phase II: Reduction in oral cavity contamination

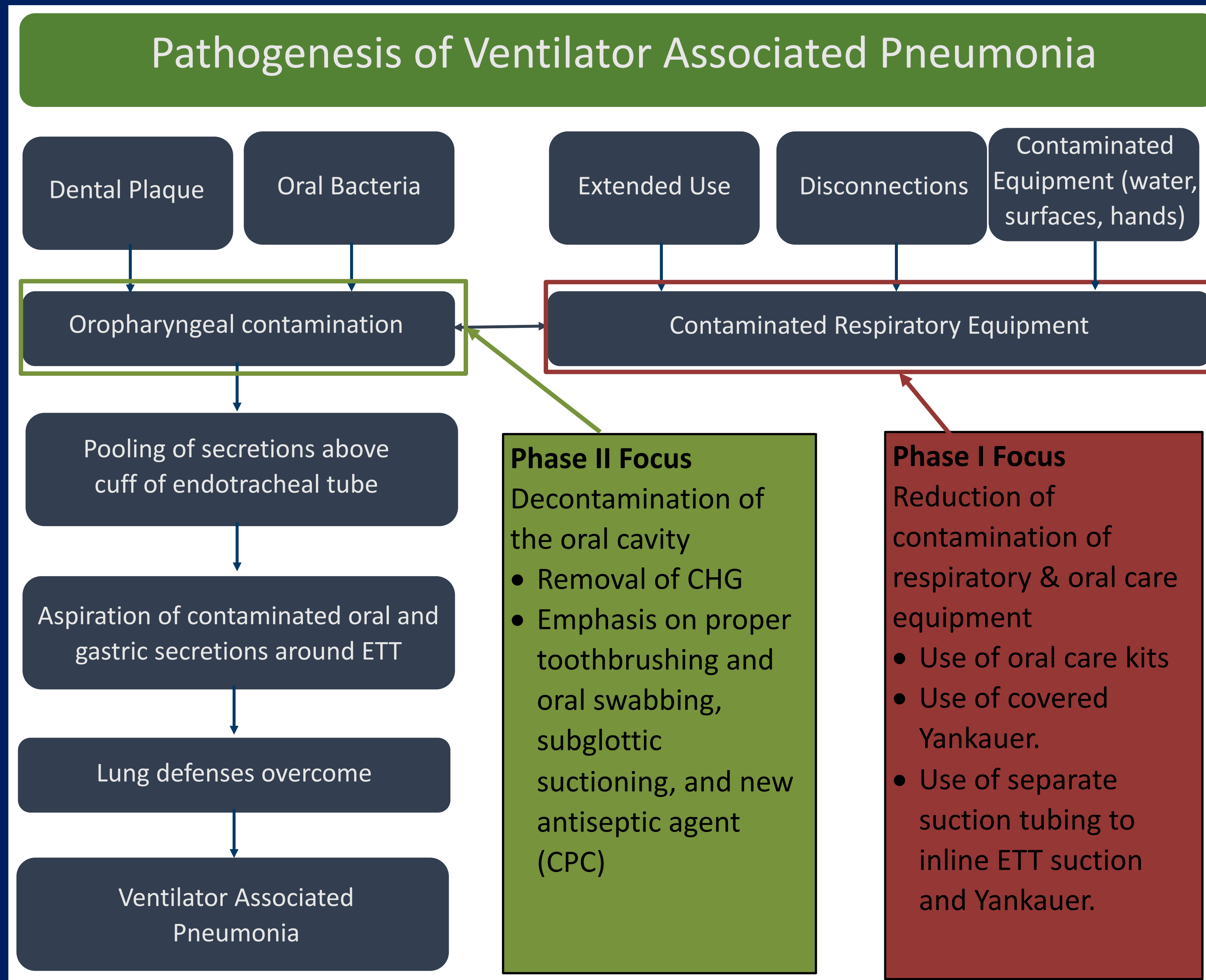


Figure 1: Phased Education Targeted to the Pathogenesis of VAP

A next generation CNS and seasoned CNS mentoring relationship facilitated translation of evidence into practice within a large and complex clinical setting

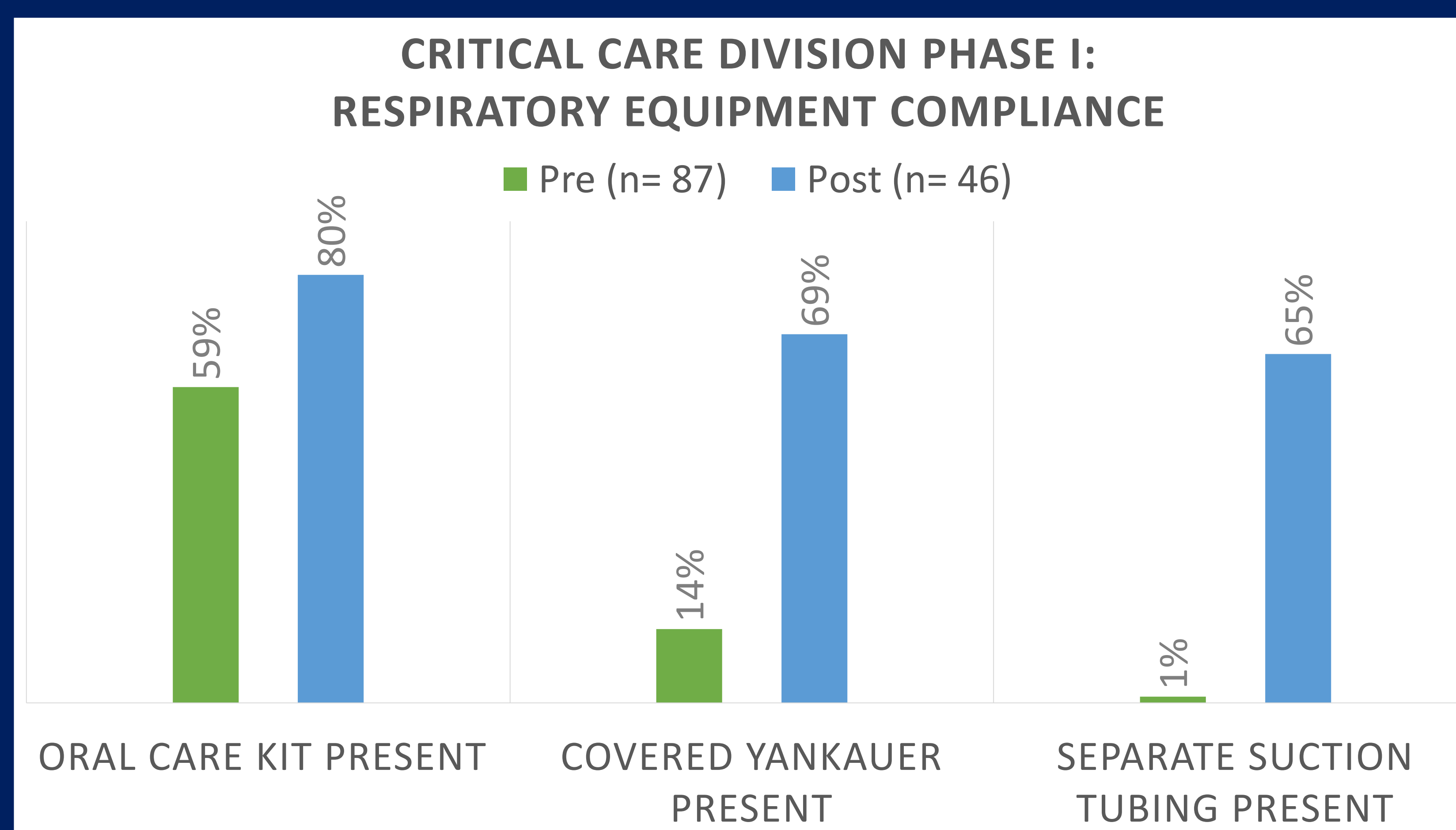


Figure 2: Critical Care Division Pre/Post Phase I: Reduction in Contamination of Respiratory Equipment

Figures (cont.)

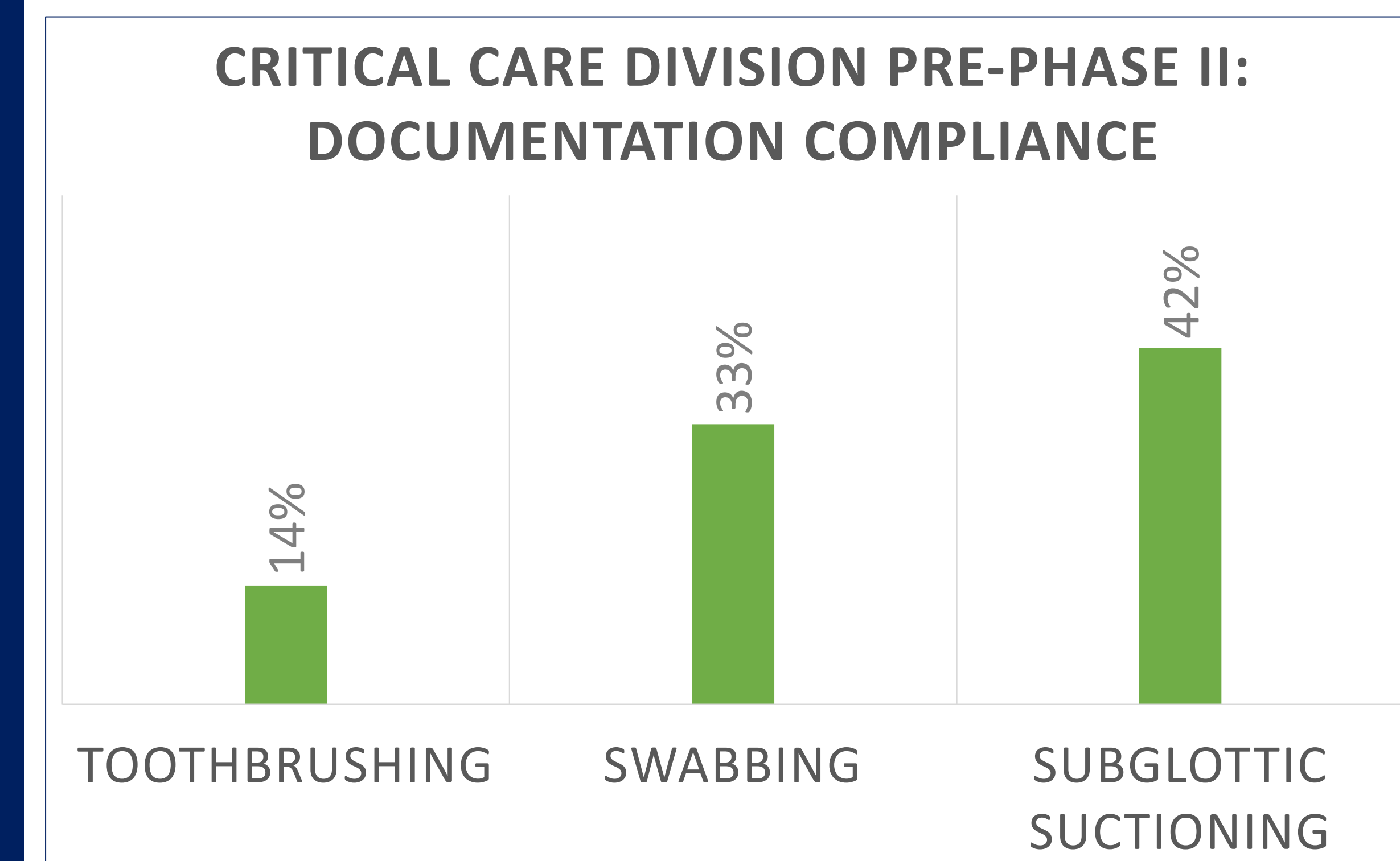


Figure 3: Critical Care Division Pre-Phase II: Reduction in oral cavity contamination

Results

- One-month post-Phase I implementation data shows initial adoption of the practice recommendations of utilizing a covered Yankauer and separate suction tubing (Fig 2).
- Pre-Phase II implementation data shows low documentation compliance for the three major components of oral care: toothbrushing, swabbing, and subglottic suctioning (Fig 3).
- Overall cost savings from removal of CHG and simplification of product line = \$43,947.
- During CNS rounds staff reported variable engagement to the new video educational format.
- The structured project plan was an effective tool for orchestrating complex system elements, resulting in all components coming together on the targeted go-live date.

Discussion

- Practice change requires multimodal educational approaches, continued assessment of organizational adoption, and ongoing engagement of the CNS to ensure sustainability, to meet the goal of 100% compliance.
- Practice change in complex environments requires the empowered CNS project leader to articulate goals and expectations clearly and extensively engage and problem solve with each discipline and department.
- Skill development in translating evidence, coordinating change, effective decision making, communicating, and leading teams was accelerated for the next generation CNS student through mentoring with a seasoned CNS on a complex change project.

