

for improvement in the formulation and administration of decolonizing agents. Although there has been considerable excitement about the possibility of long-acting agents that not only decolonize but provide long-acting protection against colonization, these results suggest that such protection would only result in markedly decreased acquisition rates only if that duration of protection was extremely long, or if the agent itself was also considerably more efficacious than CHG. These results may be used to help consider the necessary study size for clinical studies of these agents in the future, or to set research priorities and properly calibrate expectations.

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#### **Presentation Type:**

Poster Presentation

#### **Assessment of Knowledge and Implementation Practices of the Ventilator-Acquired Pneumonia Bundle in a Private Hospital**

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**Background:** Ventilator-acquired pneumonia (VAP) is estimated to occur in 9%–27% of patients intubated for >48 hours, and despite advances in antibiotic therapy, it remains a significant cause of morbidity and mortality. Several studies have shown that a VAP bundle significantly decreases VAP rates. In 2017, VAP rates in our institution peaked at 7.92 per 1,000 ventilator days despite perceived good adherence to the bundles of care. **Methods:** We performed a prospective, descriptive cross-sectional study using both quantitative (eg, validated questionnaires) and qualitative methods (eg, small group discussion and direct observation of practices) to assess the knowledge, attitudes and practices of infection control preventionists (ICPs) and intensive care unit (ICU) nurses regarding VAP prevention and the VAP bundle. **Results:** Of the 89 ICU nurses and 5 ICPs, we included 60 respondents, of whom 56 were ICU nurses, and 4 were ICPs. Median experience for nurses was 6 years (range, 0.67–16) and was 2 years (range, 2–4) for ICPs. Only 1 ICP had formal training on the VAP bundle, and only 1 ICU nurse had a master's degree in nursing. Only 23 of 56 nurses (41%) reported that they had had formal training regarding the VAP bundle. Mean knowledge score regarding evidence-based VAP guidelines was 5 of 10 points (range, 3–8). Questions regarding mechanical ventilator operations had the lowest scores. Self-reported adherence to the VAP bundle ranged from 38.5% to 100%, with perfect compliance to head of bed elevation and poorest compliance with readiness to extubate and DVT prophylaxis. Overall VAP bundle compliance was 84.6%. Direct observation of nurses validated self-adherence to the VAP bundle and the institution's compliance rates. Barriers to bundle adherence included lack of formal training, perceived lack of guidelines, inadequate resources, and fear of adverse events. **Conclusions:** Knowledge regarding specific components of VAP prevention is lacking. Compliance to the VAP bundle can be improved. Regular training, education, and direct feedback to assess the competency of both the medical and nursing staff are needed to improve adherence to the bundle, and ultimately decrease incidence of VAP in the ICU. Despite limitations, this is the first study

to determine baseline knowledge, adherence, and implementation practices of key personnel directly involved with implementation of the VAP bundle.

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#### **Assessment of Potential *Clostridioides difficile* Public Health Notification Thresholds in Acute-Care Hospitals**

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**Background:** *Clostridioides difficile* remains a pervasive issue throughout healthcare facilities in the United States. Currently, no national guidelines exist for healthcare facilities to notify public health about suspected *C. difficile* transmission. Identification of a threshold for public health notification is needed to improve efforts to target prevention in facilities and to contain the spread of *C. difficile*. **Methods:** We analyzed *C. difficile* data reported by acute-care hospitals (ACHs) during October 2017–September 2018 via the CDC NHSN in Colorado and Tennessee. Threshold levels of  $\geq 2$ ,  $\geq 3$ , and  $\geq 4$  *C. difficile* infections per calendar month per unit were assessed to identify ACH units that would trigger facility reporting to public health. Values meeting thresholds were defined as “alerts.” Facilities were further stratified by size and medical teaching status. Recurrent alerts were defined as meeting the threshold at least twice within 12 months. Presence and recurrence of facility alerts were compared to facility-specific standardized infection ratios (SIRs) and cumulative attributable differences (CADs). **Results:** Of 105 ACHs in Tennessee and 50 in Colorado, 46 in Tennessee (44%) and 28 in Colorado (56%) had alerts with a threshold of  $\geq 2$  cases per calendar month per unit; 20 in Tennessee (19%) and 19 in Colorado (38%) had  $\geq 3$  cases per calendar month per unit; and 7 in Tennessee (7%) and 10 in Colorado (20%) had  $\geq 4$  cases per calendar month per unit. Most alerts with each threshold were in facilities with  $\geq 400$  beds and in major teaching hospitals. Using a threshold of  $\geq 2$ , 64% of Tennessee and 79% of Colorado alerts were associated with recurrent alerting units. Using an alert threshold of  $\geq 3$ , 85% of Tennessee facilities (17 of 20) and 75% of Colorado facilities (15 of 20) with the highest CAD values had at least 1 alert. Using state-based CAD values, 79% of the CAD value for Tennessee (356 of 449) and 91% of the CAD value for Colorado (309 of 340) were attributable to facilities with at least 1 alert. Facilities above a threshold of  $\geq 3$  had a pooled SIR of 0.92 in Tennessee (range, 0.46–7.94) and 1.07 in Colorado (range, 0.74–1.74). **Conclusions:** Using alert threshold levels identified ACHs with higher levels of *C. difficile*. Recurrent alerts account for a substantial proportion of the total alerts in ACHs, even as thresholds increased. Alerts were strongly correlated with high CAD values. Because NHSN *C. difficile* data are not available to public health departments until several months after cases are identified, public health departments should consider working with ACHs to implement a threshold model for public health notification, enabling earlier intervention than those prompted by SIR and CAD calculations.

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