

stewardship program in healthcare settings as well as regular feedback of antibiotic consumption data to the stakeholders to keep the antibiotic prescriptions in check, thereby ensuring their sustained effectiveness.

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Poster Presentation

Assessing Policies Versus Practices Utilizing the CDC Infection Control Assessment and Response Tool

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Background: The Infection Control Assessment and Response (ICAR) tool was developed by the CDC following the 2014 Ebola outbreak. Over a 3-year period, the CDC dispensed **Funding:** to all public health divisions in all 50 states to implement and promote the ICAR. The ICAR was developed as a self-assessment tool to evaluate policies, competencies, and practices across healthcare settings. The primary aim of the tool and associated **Funding:** was to guide quality improvement activities by addressing the identified gaps in infection prevention (IP). Independent of state funding, we sought to use the ICAR to evaluate whether there were differences in reported policies from observed practices related to hand hygiene (HH) and personal protective equipment (PPE) use in long-term care facilities (LTCFs), ambulatory surgical centers (ASCs), and outpatient pain clinics (OPCs). **Methods:** From November 2018 to August 2019, we conducted in-person ICAR assessments in 7 LTCFs in 3 states (Arizona, Utah, and Idaho), 2 ASCs in 2 states (Arizona, Indiana), and 5 OPCs in 1 state (Arizona). All on-site assessments were conducted with the ICAR tool by a board-certified infection preventionist. The paper form was converted to a mobile compatible digital audit tool utilizing Microsoft Forms on the Microsoft 365 platform. Once a survey was completed, it was sent to an Excel database and analyzed utilizing SPSS software. **Results:** All facilities (14 of 14, 100%) had a designated person responsible for coordinating and/or directing the IP program. Moreover, 4 of 7 LTCFs (57%), 2 of 2 ASCs (100%), and 5 of 5 OPCs (100%) reported having written IP policies that met evidence-based guidelines, regulations, or standards (eg, CDC/HICPAC). None of the 7 LTCFs (0%), 2 of 2 ASCs (100%), and none of the 5 OPCs (0%) reported active surveillance to monitor and document adherence to proper PPE selection and use. During direct observation of hand hygiene opportunities, compliance was 23% for LTCFs (7 of 31 opportunities), 37% for ASCs (7 of 19 opportunities), and (11 of 28 opportunities) 39% in OPCs. **Conclusions:** Our results indicate that the ICAR tool remains a useful resource for distinguishing between the reporting of IP policies from the actual implementation of evidence-based practices. Although all facilities had a designated role for IP and most had written evidence-based IP policies, this did not translate to the observation of recommended HH and PPE practices. By utilizing this tool, healthcare facilities can support their evidence-based IP policies and further promote patient safety by identifying and mitigating gaps in practices.

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Assessing the Potential Impact of a Long-Acting Skin Disinfectant in the Prevention of MRSA

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Background: Healthcare-associated transmission of methicillin-resistant *Staphylococcus aureus* (MRSA) remains a persistent problem despite advances in prevention. The use of chlorhexidine gluconate (CHG) as a means of decolonizing patients, either through targeted decolonization or daily bathing, is a frequently used measure to supplement other MRSA reduction interventions. However, there is room for new and innovative decolonizing agents. We explored the potential utility of a long-acting CHG-like disinfectant with a persistent protective effect as well as an immediate decolonizing action in the prevention of MRSA acquisition as well as the subsequent development of clinical illness and MRSA-related mortality. **Methods:** We modeled MRSA transmission throughout an 18-bed intensive care unit, based on previously published models. A baseline model with no daily decolonizing protocol was used as a baseline and was compared to a scenario assuming that patients were bathed with CHG, which decolonizes them but provides no ongoing protection, as well as a scenario involving a hypothetical treatment that both decolonizes and provides ongoing protection from subsequent colonization. We varied the duration and efficacy of this protection to fully explore the potential utility of such a treatment. **Results:** The results of the simulations are shown in Fig. 1, where duration and efficacy of protection varied. The number of MRSA acquisitions from each combination is depicted as a single point, with blue points indicating correspondingly fewer MRSA acquisitions. Overall, improved efficacy of the hypothetical disinfectant resulted in immediate improvements in MRSA acquisition rates when compared to the baseline. To see major improvements in the MRSA acquisition rate due to the duration of infection, that duration must be well above 10 hours in many scenarios. There is also little evidence of synergy between the two. **Conclusions:** Based on recent results suggesting CHG has a relatively modest per-use efficacy (<.20), there is room

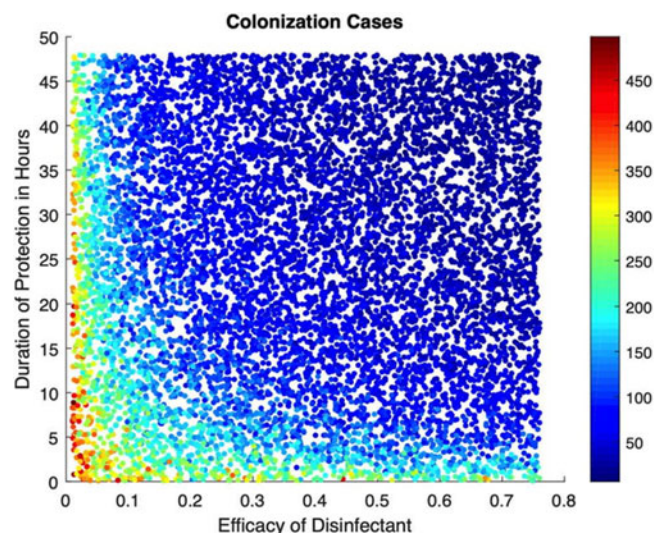


Fig. 1.

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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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 ≥ 2 , ≥ 3 , and ≥ 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 ≥ 2 cases per calendar month per unit; 20 in Tennessee (19%) and 19 in Colorado (38%) had ≥ 3 cases per calendar month per unit; and 7 in Tennessee (7%) and 10 in Colorado (20%) had ≥ 4 cases per calendar month per unit. Most alerts with each threshold were in facilities with ≥ 400 beds and in major teaching hospitals. Using a threshold of ≥ 2 , 64% of Tennessee and 79% of Colorado alerts were associated with recurrent alerting units. Using an alert threshold of ≥ 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 ≥ 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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