Conclusions: The transition from mainly 2- and 4-person rooms to 100% single-patient rooms resulted in a significant decrease in environmental contamination, even though the number of patients colonized with HRMO slightly increased. No molecular typing to determine transfer from environment to patients and vice versa has yet been performed. Future sampling is needed to determine whether the low environmental contamination is a long-term effect of the transition to single rooms.
Funding: None
Disclosures: None
Doi:10.1017/ice.2020.588

Presentation Type:
Poster Presentation

A Bundled Approach to Reduce Delayed Testing and Hospital-Acquired Cases of *Clostridioides difficile* Infection

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Background: *Clostridioides difficile* is a leading cause of nosocomial infectious diarrhea in developed countries, and it has a significant economic impact throughout the world. Early detection of the pathogen and its toxins is critical because early treatment significantly reduces infection-related morbidity, mortality, and medical cost. Surveillance of healthcare-associated infections (HAIs) is conducted using the NHSN standardized infection ratio (SIR). This metric allows comparison of a facility's observed infection rate to a national benchmark. The SIR can be elevated due to both a lack of institutional criteria for stool submission and the use of highly sensitive but poorly specific testing as a standalone test for diagnosis. The SIR can be artificially elevated by inclusion of *C difficile* carriers rather than infected patients due to inappropriate testing and overly sensitive methods. We aimed to determine the impact of an institutional nursing-driven protocol for stool submission as well as 2-step testing on the SIR. **Methods:** Starting from the fourth quarter of 2018, we instituted a nursing protocol for initiation of *C. difficile* testing. If the patient had ≥3 soft, loose, or liquid stools in 24 hours within the first 3 days of admission, they were placed on contact precautions and an unformed stool sample was submitted for *C. difficile* nucleic acid amplification testing (NAAT). A positive result prompted further evaluation with a stool enzyme immunoassay toxin test for confirmation of active infection. From hospital day 4 onward, stricter criteria were implemented for testing for *C. difficile* infection. Data were extrapolated for calculation of a quarterly SIR. This value was then compared to retrospective SIR data from the first quarter of 2016 to the third quarter of 2018. **Results:** The quarterly total of hospital-onset *C. difficile* infections from the first quarter of 2016 to the third quarter of 2018 ranged from 24 to 39 incidents per quarter. After implementing the nursing-driven protocol and 2-step testing, the quarterly total of hospital onset *C. difficile* infections decreased to 5–6 per quarter. The SIR prior to initiation ranged from 0.66 to 1.37 and decreased to 0.306–0.386 after the nursing-driven protocol and 2-step testing were implemented. **Conclusions:** Implementation of both an institutional nursing-driven protocol for stool submission and a 2-step testing protocol reduced the number of quarterly hospital-onset *C. difficile* events as well as our facility's quarterly SIR to below the national standard.

Funding: None
Disclosures: Ioana Chirca, University Hospital
Doi:10.1017/ice.2020.589

Presentation Type:
Poster Presentation

A Clinical Decision Support Intervention to Improve Inpatient Pediatric Influenza Vaccination

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Background: Pediatric influenza vaccination rates remain <50% in the United States. Children with chronic medical conditions are at higher risk of morbidity and mortality from influenza, yet most experience missed opportunities for immunization in outpatient settings. In an adult cohort study, 74% of patients who had not received the influenza vaccine before or during hospitalization remained unvaccinated through the rest of the season. Thus, inpatient settings represent another important opportunity for vaccinating an especially susceptible population. In addition, 4 published studies have shown promise in improving inpatient pediatric influenza vaccination. However, these studies had limited effect sizes and included interventions requiring ongoing maintenance with dedicated staff. In this study, we hypothesized that a clinical decision support (CDS) intervention designed with user-centered design principles would increase inpatient influenza vaccine administration rates in the 2019–2020 influenza season. **Methods:** We performed a workflow analysis of different care settings to determine optimal timing of influenza vaccine decision support. Through formative usability testing with frontline clinicians, we developed electronic health record (EHR) prototypes of an order set module containing a default influenza vaccine order. This module was dynamically incorporated into order sets for patients meeting the following criteria: ≥6 months old, no prior influenza vaccine in the current season in our medical system or the state immunization registry, and no prior anaphylaxis to the vaccine. We implemented the CDS into select order sets based on operational leader support. We compared the proportion of eligible hospitalized patients in which the influenza vaccine was administered between our intervention period and the 2018–2019 season (historical controls). To account for secular trends, we also compared the vaccination rates for hospitalized patients exposed to our CDS to those that were not exposed to the CDS during the intervention period (concurrent controls). **Results:** During the intervention period (September 5, 2019–November 1, 2019), influenza vaccine was administered to 762 of 3,242 (24%) of eligible patients, compared to 360 of 2,875 (13%) among historical controls ($P < .0001$). Among the 42% of patients exposed to the CDS, vaccination rates were 33% compared to 9% for concurrent controls ($p < .0001$). Our intervention was limited by end-user uptake, with some physicians or nurses discontinuing the default vaccine order. In addition, early in the intervention, some vaccines were ordered but not administered, leading to vaccine waste. **Conclusions:** CDS targeting eligible hospitalized patients for influenza vaccination incorporated early into the workflow of nurses and ordering

clinicians can substantially improve influenza vaccination rates among this susceptible and hard-to-reach population.
Funding: None
Disclosures: None
Doi:10.1017/ice.2020.590

Presentation Type:
Poster Presentation
A Conceptual Framework for Understanding How and Why People Take Antibiotics Without a Prescription
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Background: The reported prevalence of nonprescription antibiotic use in the United States varies from 5% among socioeconomically and ethnically diverse primary care patients to 66% among Latino migrant workers. Reports indicate that people obtain and take antibiotics from stores or flea markets in the United States, friends or relatives, and leftover antibiotics from previous prescriptions. This unsafe practice may lead to unnecessary and inappropriate antibiotic use and increases the risk of antibiotic resistance. As groundwork to develop an intervention to decrease nonprescription antibiotic use, we mapped reported drivers of nonprescription use to the Kilbourne conceptual framework for advancing health disparities research. **Methods:** The Kilbourne framework consists of 3 phases: (1) detection of health disparities and identification of vulnerable populations, (2) understanding why disparities exist, and (3) reducing or eliminating disparities through interventions. We focused on the first 2 phases and mapped the identified drivers of nonprescription antibiotic use onto the key domains of the Kilbourne conceptual framework: patient, healthcare system, and clinical encounter factors. We also conducted brief field research to explore anecdotal reports regarding availability of nonprescription antibiotics in our community. **Results:** We found 8 studies addressing factors related to nonprescription antibiotic use in the United States. These studies were primarily qualitative and included Spanish-speaking Hispanic and Latino immigrants. Figure 1 shows the proposed factors that may directly or indirectly predict nonprescription antibiotic use. Key potential factors are individual factors, psychosocial factors, resources, healthcare system factors, and clinical-encounter factors. For example, patients with inadequate health literacy may have poor access to care because of difficulty finding providers and choosing or navigating insurance plans; thus, they may be at risk for nonprescription use. At the same time, patients with inadequate health literacy may be at risk for using nonprescription antibiotics for a viral infection because of difficulty understanding medication labels or package inserts. The relevance of resources (availability) to nonprescription antibiotic use was supported by our research team's purchase of amoxicillin, tetracycline, and metronidazole without prescriptions from a flea market in Houston, Texas. **Conclusions:** The Kilbourne conceptual framework provides a strong, comprehensive basis for research and intervention in the challenging problem of nonprescription antibiotic use. Ongoing research will test the proposed relationships between patient, healthcare system, and clinical-encounter factors and nonprescription antibiotic use outcomes. We are conducting a survey among both indigent and insured patient populations to identify the relative importance of these factors and to validate our proposed conceptual framework of nonprescription antibiotic use.
Funding: This project was supported by grant number R01HS026901 from the Agency.
Disclosures: None
Doi:10.1017/ice.2020.591

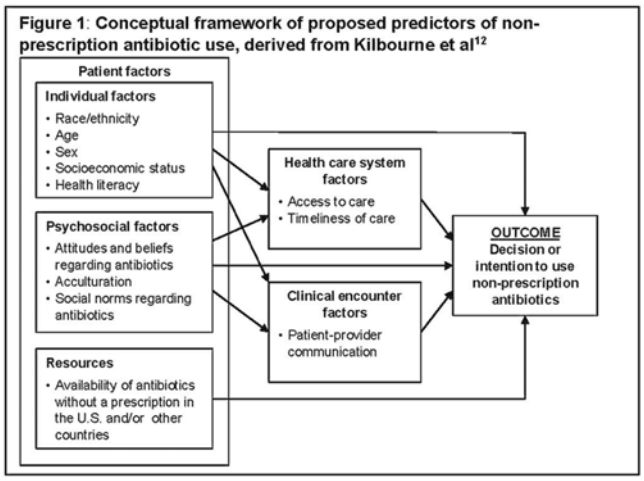

Fig. 1.

Presentation Type:
Poster Presentation
A Decade in Trying to Increase Hand Hygiene—Finally Success
Linda Huddleston, Floyd Medical Center; Sheila Bennett, Floyd Medical Center; Christopher Hermann, Clean Hands - Safe Hands

Background: Over the past 10 years, a rural health system has tried 10 different interventions to reduce hospital-associated infections (HAIs), and only 1 intervention has led to a reduction in HAIs. Reducing HAIs is a goal of nearly all hospitals, and improper hand hygiene is widely accepted as the main cause of HAIs. Even so, improving hand hygiene compliance is a challenge. **Methods:** Our facility implemented a two-phase longitudinal study to utilize an electronic hand hygiene reminder system to reduce HAIs. In the first phase, we implemented an intervention in 2 high-risk clinical units. The second phase of the study consisted of expanding the system to 3 additional clinical areas that had a lower incidence of HAIs. The hand hygiene baseline was established at 45% for these units prior to the voice reminder being turned on. **Results:** The system gathered baseline data prior to being turned on, and our average hand hygiene compliance rate was 49%. Once the voice reminder was turned on, hand hygiene improved nearly 35% within 6 months. During the first phase, there was a statistically significant 62% reduction in the average number of HAIs (catheter associated urinary tract infections (CAUTI), central-line–acquired bloodstream infections (CLABSIs), methicillin-resistant *Staphylococcus aureus* (MRSA), multidrug-resistant organisms (MDROs), and *Clostridiodes difficile* experienced in the preliminary units, comparing 12 months prior to 12 months after turning on the voice reminder. In the second phase, hand hygiene compliance increased to >65% in the following 6 months. During the second phase, all HAIs fell by a statistically significant 60%. This was determined by comparing the HAI rates 6 months