with complete recovery in all cases. **Conclusions:** We concluded that timely detection of a norovirus outbreak in a healthcare facility is imperative for effective infection control, especially in a multibed-room setting, because of the extended viral shedding in children and the transmission route that included aerosolized viral particles in vomitus. Molecular methods offer a rapid and definitive way to establish etiology, but these tests may not be accessible. Direct contact with infected children and contaminated surfaces and patient-care items were relevant risk factors in this outbreak (which involved both patients and healthcare workers) and contributed with its length.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.1033

Presentation Type:
Poster Presentation

Successful Diagnostic Stewardship for *Clostridioides difficile* Testing in Pediatrics

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Background: As many as 40% of infants aged ≤12 months and 10%–28% of children aged 13–24 months are colonized by *Clostridioides difficile*. The IDSA and the SHEA recommend that testing should never be routinely recommended for infants ≤12 months of age and should not be routinely performed for children 1–2 years of age unless other causes are excluded. We report implementation of *C. difficile* diagnostic stewardship at 2 children's hospitals. **Methods:** We implemented age-based restrictions for *C. difficile* testing at hospital A (~200-bed, free-standing, children's hospital) and hospital B (~100-bed children's hospital within a larger hospital). Both sites are part of the same multicampus institution, and both used nucleic acid amplification testing to detect *C. difficile* throughout the study. In May 2018, we implemented an electronic order set for *C. difficile* that provided alerts to avoid testing young infants and patients with recent use of laxatives, stool softeners, or enemas, but providers could order *C. difficile* testing at their discretion. In October 2018, we implemented a more restrictive diagnostic stewardship algorithm for *C. difficile*. No testing was allowed for infants aged ≤12 months. Approval pediatric infectious diseases staff was required to test children aged 13–24 months. Pathology resident approval was required to test children aged ≥24 months who had received laxatives, stool softeners, or enemas within ≤24 hours. Clinical microbiology laboratory supervisors reinforced rejection of nondiarrheal stool specimens for testing. Providers at both campuses were informed about the new testing guidelines by e-mail. We compared the number of tests sent and positive cases of healthcare facility-onset *C. difficile* (HO-CDI) by age strata before and after the implementation of the restrictive testing algorithm. **Results:** After the intervention, the number of tests in infants significantly declined; 2 infants aged ≤12 months and 4 infants aged 13–24 months were tested for *C. difficile* (Table). After the intervention, the number of tests per month declined at hospital A, as did the number of HO-CDI cases at both hospitals. Rejections of nondiarrheal stools significantly increased after the intervention ($P < .001$). **Conclusions:** *C. difficile* diagnostic stewardship for children was successfully implemented using a rule-based alert system in the electronic health record. This intervention was associated with a reduced number of tests sent and cases of HO-CDI. This strategy was cost-saving and prevented misdiagnosis, unnecessary antibiotic therapy, and overestimation of HO-CDI rates.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.1034

Presentation Type:
Poster Presentation

Successful Response to a Measles Exposure in a Pediatric Clinic Utilizing Measles, Mumps, and Rubella (MMR) Vaccine Prophylaxis

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Background: To be effective, postexposure prophylaxis (PEP) must be administered promptly after measles exposure. MMR vaccine is recommended within 72 hours of exposure. Immunoglobulin (IG) is recommended for infants aged <6–12 months, susceptible individuals, and severely immunocompromised people within 6 days of exposure. MMR vaccine is readily available, less expensive, and more easily administered than IG, and it provides long-term immunity. However, due to delays in diagnosis of measles cases, it is often not possible to administer MMR PEP to contacts within 72 hours. We describe an unvaccinated infant with fever and rash after recent international travel who presented to a pediatric outpatient clinic. Measles was promptly suspected, and specimens were collected for measles polymerase chain reaction (PCR) testing at the California Department of Public Health (CDPH) laboratory. PCR results confirming measles were obtained within 24 hours of the patient visit. **Methods:** A multidisciplinary team of medical, employee health, nursing, pharmacy and infection prevention staff was assembled. Electronic health records (EHRs) were used to identify exposed patients based on registration times, as well as to determine their MMR vaccination status and to identify any immunocompromising conditions. Exposed patients were notified either by e-mail or phone. Adult caretakers were interviewed to determine who accompanied the child to the clinic. Caretakers were questioned regarding their MMR vaccination status and the high risk to accompanying persons. The use of EHRs with data integration from other healthcare system helped validate and supplement vaccine statuses and medical histories of exposed family members. **Results:** In total, 128 persons were exposed; 31 staff (24%), 46 patients (36%) and 51 family members (40$). All 128 patients (100%) and family members were notified within 24 hours of case confirmation, and 44 of 128 (34%) required PEP. All staff had documentation of measles immune status. However, 1 of 31 staff (3%) needed PEP due to immunosuppression. MMR vaccine was given to 35 of 36 eligible persons (97%), except for 1 sibling who received IG due to delay in exposure identification. An additional 8 of 44 persons (18%) required IG due to age or immunosuppression. There were no secondary cases. **Conclusions:** MMR vaccine was used as primary PEP due to prompt suspicion for measles, early laboratory confirmation, and swift coordinated response using a multidisciplinary team. Leveraging EHRs helped rapidly

identify exposed persons, validate measles immunity status and risk factors, order prophylaxis, and track outcomes.
Funding: None
Disclosures: None
Doi:10.1017/ice.2020.1035

Presentation Type:
Poster Presentation
Successfully Sustaining Infection Reductions: A Catheter–Associated Urinary Tract Infection (CAUTI) Prevention Initiative Five Years In
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Background: Infection prevention efforts are complex, and sustaining reductions is even more challenging. At the UNC Medical Center, multidisciplinary hospital-wide work groups implement quality improvement initiatives to prevent healthcare-associated infections. The first and most successful initiative has been our catheter-associated urinary tract infection (CAUTI) prevention effort, which started in 2014. The program led to initial dramatic reductions, with continued reductions in CAUTI rates each year since then. **Methods:** A multidisciplinary workgroup formed in 2014 developed an evidence-based CAUTI prevention bundle and partnered with the nursing staff in 2015–2016 to implement practice changes as part of our hospital's quality improvement "Spread of Innovations" model. These changes included (1) creation of a 2-person catheter-insertion checklist; (2) insertion skills validation for all nursing staff and nursing assistants; (3) standardization of a maintenance protocol and subsequent education and skills validation with nurses and nurse assistants; and (4) peer audits of urinary catheter maintenance. Additional initiatives implemented over the past 5 years include (1) routine resident education on CAUTI prevention; (2) annual nurse competencies to reinforce skills around CAUTI prevention; (3) introduction of products (eg, PureWick) as alternatives to indwelling catheters; (4) diagnostic stewardship efforts; (5) revisions to the electronic medical record; and (6) efforts to encourage removal of unnecessary catheters such as the "nurse-driven conversation" and Trial of Void. **Results:** Our CAUTI rates decreased 65% from 2.94 per 1,000 catheter days in the baseline period of 2014 to 1.02 in 2018. In our ICUs (excluding the neonatal ICU), the rate dropped 75% from 4.30 in 2014 to 1.08 per 1,000 catheter days in 2018. **Conclusions:** We attribute our continued reductions and successful sustainment of low CAUTI rates to several factors. First, the use of a multidisciplinary team was critical to obtaining buy-in from key stakeholders including nursing, nurse assistants, physicians, pharmacists, performance improvement specialists, and administration. Second, continuation of the maintenance peer audits outside the initial project year has provided an important framework for this project, giving regular opportunities for frontline staff to evaluate patients' catheter condition and to give feedback to colleagues or "just in time education." These activities potentially prevent infections in real time. Third, with the many competing priorities demanding clinicians' attention, it has been important for the CAUTI workgroup to continue to evaluate the problem, to determine where opportunities for improvement remain, and to tailor initiatives to meet those needs. In this way, new work can focus on priorities identified by staff, and CAUTI prevention initiatives remain relevant.
Funding: None
Disclosures: None
Doi:10.1017/ice.2020.1036

Presentation Type:
Poster Presentation
Supporting Healthcare-Associated Infection (HAI) Surveillance in Resource-Limited Settings: Lessons Learned, 2015–2019
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Background: Since 2015, the CDC has supported the development and implementation of healthcare-associated infection (HAI) surveillance in resource-limited settings through technical support of case definitions and methods that are feasible with existing surveillance capacity and integration with clinical care to maximize sustainability and data use for action. **Methods:** Surveillance initiatives included facility-level implementation programs in Kenya, Sierra Leone, Thailand, and Georgia; larger national or

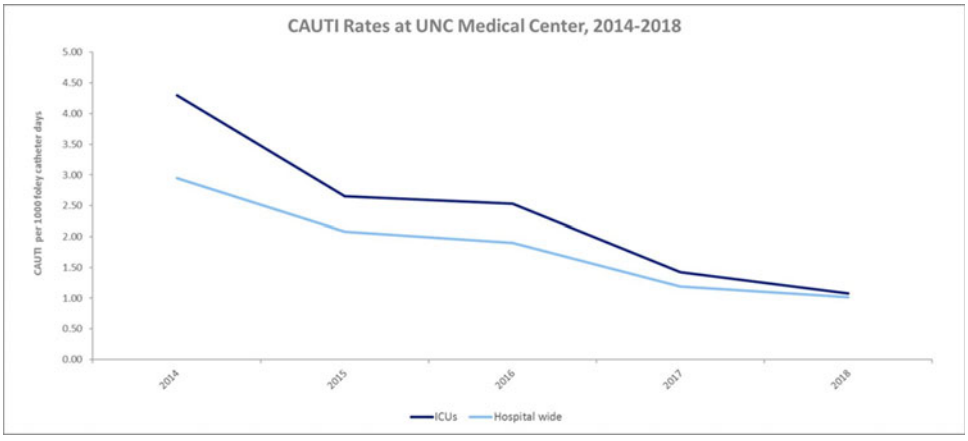

Fig. 1.