Presentation Type:
Poster Presentation
Subject Category: Outbreaks
Zero Healthcare-Associated COVID-19
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Background: The ongoing COVID-19 pandemic tests the healthcare system in many ways. The scarcity of resources poses challenges to infection prevention (IP) practices. We describe our experience in managing such scarcity in our care of COVID-19 patients in the hospital as well as community settings. **Methods:** The hospital pandemic plan traditionally included only plans for healthcare delivery management within the hospital. However, on March 25, 2020, a decision was made by the Ministry of Health to set up swab isolation (SIFs) and community care facilities (CCFs) to meet the growing demand for isolation beds for migrant workers infected by COVID-19. The CCFs were located in convention halls and resort centers and the SIFs were located in facilities previously functioning as hotels. Mobile medical teams were activated to run clinics at the dormitories housing 200,000 migrant workers. The IP team of an acute- and tertiary-care hospital in Singapore was activated to oversee IP measures at facilities managed by medical teams from the hospital, with the goal of zero healthcare-associated COVID-19 cases among staff. Two IP leaders were set up to oversee the IP program at 8 dormitories, 4 SIFs, and 2 CCFs. In total, 12 IP staff and 15 infection prevention liaison officers (IPLOs) were deployed from 2 acute-care hospitals and 3 specialty centers to conduct training in hand hygiene and the use of personal protective equipment, and to conduct daily audits of compliance to practice guidelines. Education on personal hygiene was also given to patients in these facilities in at least 7 languages. In the SIFs and dormitories, IPLOs were recruited to perform daily audits and feedback to the IP team on issues related to IP at the sites. **Results:** Since our first COVID-19 patient on January 23, 2020, there has been no report of healthcare-associated COVID-19 within the hospital nor among the medical, administrative, and support service staff working in the external operation facilities. Daily audits showed an average of 99.4% compliance to IP guidelines. **Conclusions:** IPLOs or IP champions play a significant role in ensuring compliance to IP guidelines. This compliance allows the IP professional to focus on the evaluation of the IP program, managing IP consultations, and planning and implementation of the IP program in nontraditional healthcare settings. The key success factors of the program included the ability to contextualize the planning and implementation of IP programs in various settings, strong leadership support, cohesive teamwork, and effective communication at various levels.
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***Klebsiella pneumoniae* Carbapenemase (KPC)–Producing *K. pneumoniae* Contamination of an In-Room Sink in a New Bed Tower**
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Group Name: Duke Center for Antimicrobial Stewardship and Infection Prevention
Background: Wastewater drains in hospital patient rooms have been identified as environmental reservoirs for multidrug-resistant organisms, and they have been linked to outbreaks of carbapenem-resistant Enterobacteriaceae (CRE). We studied the colonization of wastewater drains in a new hospital bed tower. **Methods:** A patient care unit in a new bed tower opened on July 18, 2020. In-room sinks were located in each hospital room opposite the patient head wall. Patients admitted to this unit underwent weekly rectal cultures to survey for carbapenemase-producing CRE. Additionally, infection preventionists performed routine surveillance of all clinical cultures for CRE. Cultures were performed from all patient room sinks in this unit monthly beginning September 14, 2020. Samples were obtained from the drain cover, handles, and top of bowl using sponges soaked in neutralizing buffer and processed using the stomacher technique. The tail-pipe was sampled using a flocked mini-tip swab soaked in neutralizing buffer; the P-trap water was sampled with sterile tubing attached to a 50-mL syringe. All samples were plated on HARDYCHROM-ESBL and KPC Colorex media and were incubated at 37° C for 24 hours. **Results:** The first identified CRE-positive patient was admitted to the new unit on December 4, 2020; urine culture obtained at the time of admission grew KPC–producing *Klebsiella pneumoniae* (KPC-KP). The sink in this patient's room had been sampled 3 prior times (most recently on November 9, 2020) and was negative for CRE. On December 7, 2020, KPC-KP was found on the drain cover (6,750 colony-forming units, CFU) and in the sink's P-trap (1,840 CFU) of the index patient's room during routine sink surveillance. Additional samples from other room surfaces were taken on December 9, 2020, and KPC-KP was recovered from the computer keyboard (452 CFU) and patient bedrails (880 CFU). The patient was discharged from this room December 13, 2020, and the room underwent enhanced terminal room cleaning including UV-C light. On the next routine sink sampling on January 4, 2021, KPC-KP was recovered again in the index room sink P-trap (9,800 CFU) but at no additional sites. MLST was performed, and all isolates were ST-258. **Conclusions:** In a new bed tower with no prior evidence of CRE-positive patients, the first identified case of a CRE (KPC-KP) in a patient resulted in widespread environmental contamination of the room after only 3 days of hospitalization and contamination of the in-room sink drain that persisted after 1 month. Given the ease with which CRE colonizes wastewater drains, new strategies are needed to mitigate drain colonization and to prevent CRE transmission to subsequent patients.
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Implementation of a Quality Improvement Role for Unlicensed Assistive Personnel and Effects on Infection Prevention
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Background: Care bundles comprise evidence-based practices and interventions that are easily and consistently implemented while improving patient outcomes. As patient acuity and task overload continue to increase, infection prevention bundle and process measure compliance and data collection may become a lower priority for registered nurses (RNs). In early 2019, a certified nursing assistant (CNA) began full-time quality liaison work on a 53-bed inpatient adult oncology unit at UNC Medical Center to provide targeted compliance data collection and to correct deficits in real time when possible and within the appropriate scope of practice. **Methods:** The quality liaison CNA is highly motivated, with a relevant clinical background and effective communication skills. After conducting a gap analysis, the unit developed specific responsibilities for several areas of quality improvement, including infection prevention. In addition to rounding on all patients daily, the quality liaison (1) performs direct patient care tasks like Foley catheter care, (2) conducts patient education on topics such as chlorhexidine gluconate treatments, (3) performs all relevant process measure audits, and (4) easily relays missed or needed care to RNs with a door sign created as part of this initiative. High-risk findings, such as a loose central-line dressing, prompt immediate communication to the RN, with follow-up and escalation when necessary. **Results:** Patients and staff received the quality liaison well, and the increased attention to care bundle components and auditing ensured consistent, evidence-based care along with accurate and reliable data collection. Compared to the previous calendar year, the number of central-line audits on the unit increased by >1,400 by the end of 2019. Patient outcomes improved, and during 1 fiscal year, the unit achieved rate reductions between 40% and 55% for central-line–associated bloodstream infections, catheter-associated urinary tract infections, and