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The Often-Overlooked Applicant: The Medical Technologist as a Qualified Candidate for Novice Infection Prevention Positions

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Background: The current shortage of healthcare workers (HCW) across the country has been exacerbated by the COVID-19 pandemic, and the role of infection preventionist (IP) is no exception. As a result, a shift to broaden the scope of HCWs entering IP has gained attention. This study sought to compare competency expectations between medical technologists (MT) and IPs to better understand the bridge between the two professions, with the intent of highlighting MTs as qualified candidates for novice IP positions.

Methods: This study evaluated available competency guidelines for MTs and compared them to the 2019 Association for Professionals in Infection Control and Epidemiology (APIC) competency model for the IP. The primary source used for this study was the Competency Guidelines for Laboratory Professionals resource made available through the Centers for Disease Control and Prevention (CDC). Supplemental competency data was drawn from a research article focused on MTs with 3-5 years of experience. Domains within the CDC’s model were determined to either be completely, partially, or not addressed within APIC’s model. The 6 primary domains and 32 subdomains of the APIC model were then compared to the CDC model, both with and without the supplemental article data, and results evaluated.

Results: Results showed a 74% complete and partial match between the APIC 2019 competency model and domains within the CDC MT competency model, or 28 of 38 domains. When supplemental competency data was included for MTs with 3-5 years of experience with additional education, there was an 82% complete and partial match between sources, or 31 of 38 domains.

Conclusions: This study demonstrates that MTs, particularly with 3-5 years of experience with additional education, possess a strong foundational knowledge set for novice IP positions. Hiring managers should strongly consider MT applicants for open IP positions moving forward.

The Road to Excellence: Paving the Way to Construct a Successful Infection Prevention Program in a Complex Healthcare Network

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Background: Our healthcare system is a level I trauma center with 25 clinics and over 1 million patient encounters per year. The Infection Prevention team of 9 has oversight of all infection prevention activities. A mock survey was conducted to prepare the system for a Joint Commission survey. Results from the mock survey identified gaps within the infection prevention program and called attention to the need to implement best practices. During this time, the infection prevention team was experiencing challenges related to the COVID-19 pandemic and high staff turnover.

Methods: Mock survey findings were categorized into 8 buckets: Infection prevention program, dust and environmental cleaning, expiration dates, manufacturer’s instructions for use, low level disinfection, probes, scopes, and storage of supplies. Infection Preventionists were assigned to service lines and buckets to facilitate interdepartmental collaboration and create solutions to address findings. Routine tracers completed by the infection prevention team provided a means to measure compliance over time.

Results: The mock survey was conducted in November 2020 and the Joint Commission survey was completed in November 2021. In just 12 months, there was a 98% reduction in the number of findings attributed to the Infection Control chapter - 168 mock survey findings in 2020 was reduced to 2 survey findings in 2021. In 2020, 127 findings were considered high risk and 33 were considered an immediate threat to health and safety. There were 0 findings in 2021 that were considered high risk or an immediate threat to health and safety.

Conclusions: Implementation of a robust infection prevention program is essential to the success of the healthcare system. Key elements that contribute to a high-quality program include standardization of best practices, designating team members to become consultants for service lines, increasing interaction and visibility with staff members, and implementing committees to discuss opportunities for improvement and monitor initiatives.

Public Health and Health Policy

PHHP-73
An Outbreak of New Delhi Metallo-beta-lactamase Among Intensive Care Unit Patients in an Acute Care Hospital

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Background: The South Carolina Department of Health and Environmental Control (SCDHEC) was notified of a Klebsiella pneumoniae
NDM isolated from a respiratory specimen of a patient in a dedicated Coronavirus Disease 2019 (COVID-19) intensive care unit (ICU) at an acute care hospital (ACH). NDM is a Tier 2 multi-drug resistant organism (MDRO), specifically a carbapenem-resistant Enterobacterales (CRE) which can cause serious infection and requires intervention to prevent spread.

**Methods:** The Healthcare-Associated Infections staff from SCHEC collaborated with the hospital's infection preventionists (IP) to mitigate and prevent further transmission. CRE colonization screening and respiratory culture collection on the remaining eleven ICU patients was initiated. An onsite visit to the facility was conducted. This included a discussion of steps the facility had taken since initial notification of the NDM-positive patient and observation of infection control practices in the dedicated COVID-19 ICU. A modified assessment tool based on the Centers for Disease Control and Prevention's infection control assessment and response (ICAR) tool was used.

**Results:** CRE colonization screenings were all negative; however, respiratory cultures identified two additional patients positive with NDM. Upon investigation, an infection control breach was discovered, stemming from nonconventional use of personal protective equipment (PPE) during the COVID-19 pandemic. It was found that staff working with the positive NDM-patients were not re-educated on proper contact precautions and use of PPE. After the infection control assessment, a list identifying the unit's strengths, weaknesses, opportunities, and threats was shared with the IPs as a guide for practice improvement and transmission disruption.

**Conclusions:** The NDM outbreak was limited to the initial patient and the additional two discovered during active culture surveillance. The infection control assessment found that nonconventional infection prevention and control practices deployed during the COVID-19 pandemic led to unintentional spread of MDROs; however, early interventions in collaboration with public health can prevent further transmission.

**PHHP-75**

**Investigating an Increased Incidence of Burkholderia Cepacia Among Non-Cystic Fibrosis Pediatric Patients**

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**Background:** Burkholderia cepacia Complex (BCC), commonly identified in patients with Cystic Fibrosis (CF), has been associated with outbreaks from contaminated medications (Abdellatifah 2018) and devices (Lucero, 2011). An increase of BCC in cultures of non-CF patients prompted an investigation including an assessment of commonalities such as medications, procedures, staffing, equipment, and treatment locations. Our journey to identify a source and implement control measures led to a yearlong, multi-facility outbreak investigation with support and involvement of the Massachusetts Department of Public Health and the Centers for Disease Control.

**Methods:** Literature review of past outbreaks aided in narrowing our scope of potential sources. Chart reviews helped identify commonalities across patients, however, these commonalities did not elucidate a root cause. Through the Burkholderia cepacia Research Laboratory & Repository at the University of Michigan, whole-genome sequencing identified matching isolates. Over 20 patients and 50 environmental isolates from our facility were evaluated.

**Results:** Three distinct BCC clusters were identified: a larger cluster of 10 patients with Burkholderia cepacia recA subgroup and two smaller clusters of 2 patients each with a matching Burkholderia cepacia indeterminate species. Despite environmental sampling not identifying a source, our Respiratory program re-educated staff on not storing respiratory equipment within the splash zone of a sink and use of sterile water for all respiratory care items. Additionally, a policy was formalized for reprocessing of custom tracheostomyes, and we transitioned to single-use temperature probes for one of our ventilators. Ultimately, new information suggested the primary source was external to our facility.

**Conclusions:** Early identification of outbreaks in healthcare facilities and evaluation of all possible causes is central to Infection Prevention. Ongoing surveillance and analysis utilizing established epidemiologic methods are essential to successfully minimizing the adverse effects to patients.