

in 2023 (26%) versus 4 (8%); of which, *C. difficile* infection (CDI) was the greatest contributor. Vancomycin was initiated in 31 patients (62%), 22 having no identifiable indication. **Conclusions:** Rates of EAT de-escalation for neutropenic patients after 72 hours of apyrexia and clinical stability improved by 12% as compared to 2019. Mean days of overall EAT was 3 days less in 2023. With a notable increase in CDI rates in 2023, dedicated time for antimicrobial stewardship review, clinician education and guideline driven alerts for review will be explored to help further improve practice.

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Presentation Type:

Poster Presentation - Poster Presentation

Subject Category: Infections in Immunocompromised Patients

Nosocomial Transmission of Mycobacterium tuberculosis in an Oncological Setting

Sarah Murray, Memorial Sloan Kettering Cancer Center; Mery Mustafa, Memorial Sloan Kettering Cancer Center; Shauna Usiak, Memorial Sloan Kettering Cancer Center and Mini Kamboj, Memorial Sloan Kettering Cancer Center

Objective: Mycobacterium tuberculosis (MTB) is a contagious airborne disease that is spread from person to person via particles in the air which are expelled when speaking or coughing. This retrospective observational study aims to assess the nosocomial transmission of pulmonary MTB among inpatient roommates in a high-risk oncological population over a 14-year period. With limited studies on the transmissibility of MTB in such environments, the investigation focuses on evaluating the risk of nosocomial transmission and implementation of appropriate infection control measures. **Design:** A retrospective analysis from 2010 – April 2023 was conducted in an acute care, 500-bed oncological center. Following exposure workups performed by the Department of Infection Prevention and Control, 17 of 57 identified patients with active pulmonary MTB had inpatient stays with roommates. Source infectivity showed 7 AFB smear positive results, 4 MTB PCR positive results, and 14 MTB culture positive results. Some index patients had a combination of AFB, PCR and/or culture positivity. A high-risk exposure is defined as any patient who shared a room with an index patient for >4 cumulative hours during the infectious period. Infectious period was determined for each index patient based on the onset of symptoms and laboratory results. Workups identified 33 exposed roommates who were notified and advised to undergo testing, employing QuantifERON (QFT-GIT) serum test or Tuberculin skin (TST) PPD test at least 8 weeks following their last day of exposure. The overlap between inpatient roommates and index patients ranged from 1 to 4 days, averaging 1.5 days. **Results:** Of the 33 high-risk roommates, 14 (42%) patients were unable to provide follow-up testing for various reasons including: patient expiration prior to testing, patient transfer to hospice, and being lost to follow up. Nineteen (58%) patients completed post-exposure testing. 12 patients underwent PPD testing (63%) and 7 patients underwent QuantifERON testing (37%). Zero (0%) were found to have a positive QuantifERON or PPD following their exposure. 15.8% (N=3) of exposed patients had hematologic malignancies, and 84.2% (N=16) of exposed patients had solid tumor malignancies. **Conclusion:** The risk of active pulmonary MTB transmission in an oncological, inpatient setting was determined to be low. The absence of positive conversions among roommates of confirmed MTB patients underscores the effectiveness of infection control measures, emphasizing the importance of isolating confirmed or suspected cases promptly. Ongoing efforts should continue to focus on these preventive measures to mitigate the risk of MTB transmission in similar high-risk settings.

References: 1. How TB Spreads. CDC, 2023. <https://www.cdc.gov/tb/topic/basics/howtbspreads.htm>

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Presentation Type:

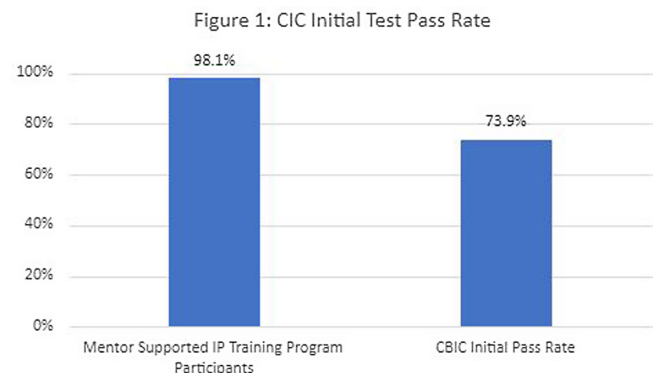
Poster Presentation - Poster Presentation

Subject Category: Leadership

Bridging the Gap: Specialized Training Programs for Infection Prevention Specialists Increase Certification Success

Kelly Holmes, Infection Prevention & Management Associates; Jennifer McCarty, Infection Prevention & Management Associates; Sandi Steinfeld, Infection Prevention & Management Associates and Kelley Boston, Infection Prevention & Management Associates

Background: The role of the infection preventionist (IP) is complex and encompasses a range of responsibilities requiring extensive knowledge in infection control practices, data analysis, surveillance, performance improvement and collaboration with multidisciplinary teams. Infection prevention certification (CIC) by the certification Board of Infection Control (CBIC) is a standardized marker of knowledge and competencies required for practice in the field. In a 2020 survey of IPs, less than half were certified or planned to become certified. Of those that do take the certification exam, less than three quarters pass on their initial exam attempt. **Methods:** From 2017 to 2023, fifty-two new IPs were enrolled in a competency-based training program which combined didactic and applied learning on core IP job functions, and a structured mentoring program. The initial didactic phase consisted of evidence-based learning modules with validation of competency through post-training testing and practical demonstration. Education was provided by an advanced practice IP via remote webinars, which included discussion of questions, skills coaching, and review of post-tests. Novice IPs were partnered with at least two preceptors: one advanced practice lead preceptor guided the novice IPs through assigned education modules and oversaw program management and training benchmarks. A second, near-peer preceptor or mentor collaborated with the novice IP in the facility setting. Initial training focused on facility operations, surveillance, rounding and other facility specific activities. Facility mentors were responsible for combining education module topics with practical application of skills. Mentors guided novice IPs through National Healthcare Surveillance network (NHSN) surveillance training and validated surveillance and infection coding until the novice IP had an interrater reliability validation assessing surveillance competency. After the initial training phase, the novice IPs began preparation for certification. This phase included additional training modules aligned with the CBIC certification content outline and practice exams. **Results:** All 52 novice IPs completed the training program and attempted the CIC examination. The initial pass rate for the certification exam among IPs in the supervised training and mentorship program was 98.1% (n=51). This is 33% higher than the initial pass rate published by CBIC, which was 73.9% (Figure 1). **Conclusions:** Organizing evidence-based guidelines into topic-specific modules builds a foundation of infection prevention and control knowledge, which is enhanced through remote instruction and direct application of skills under a preceptor’s supervision.



This method allows IPs to be introduced to concepts covered in the board certification exam upon hire and support certification with improved outcome

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Subject Category: Leadership

System infection prevention in hospital networks – a SHEA research network survey

Michael Stevens, West Virginia University; Nkechi Emetuche, SHEA; Catherine Passaretti, Atrium Health; Graham Snyder, UPMC/University of Pittsburgh; Rachael Snyders, BJC HealthCare and Jonas Marschall, Washington University School of Medicine

Background: Hospitals are increasingly consolidating into networks and integrating infection prevention (IP) into system infection prevention programs (SIPP). Very little has been published about these programs. This survey sheds light on the current state of SIPPs. **Methods:** We used the survey generator Alchemer.com for setting up the questionnaire, and tested a beta version among peers. The final version was sent out to SHEA Research Network participants in August 2023. Raw data was compiled and analyzed. **Results:** Forty institutions responded (40/104, 38%), of which 25 (63%) had SIPPs. These SIPPs reported health systems with a median of 4.5 acute care hospitals (range, 1-33); 16 SIPPs reported a median of 2 critical access hospitals (range, 1-8); 4 SIPPs reported 1-3 LTACHs, and 6 SIPPs reported a median of 1.5 nursing homes. All except 3 (88%) contained an academic center; 48% (11/23) of the U.S. based programs operate in multiple states. Four programs have been in place >20 years, four < 2 years, and the remainder a median of 8 years (range, 2-18). Physician directors also have clinical (20/25, 80%), teaching (19/25, 76%), research (15/25, 60%), antimicrobial stewardship (8/25, 32%), quality (8/25, 32%), and/or patient safety (5/25, 20%) roles. Seventeen (68%) report having a written job description. Nineteen (76%) report having an infection preventionist in a system IP director role; only 7/25 (28%) have a dedicated system IP team that operates independent of individual hospitals. Sixteen (64%) report administrative support, 10/25 (40%) have a data manager/analyst, and 4/25 (16%) include IT expert or programmer support. 15/25 (60%) report having done a formal system-wide IP needs assessment. While 16/25 (64%) have some automation in HAI surveillance (predominantly using Buggy [Epic] or Theradoc [Premier]), while only 5/25 (20%) run fully automated surveillance. 10/25 (40%) have implemented centralized surveillance. 12/25 (48%) have “system IP policies” that are hierarchically above individual site policies. The biggest challenges appear to be gaps in 1) clear governing structure, 2) communication, 3) consistent staffing, 4) data management support, and 5) dedicated, empowered IP expert FTEs. **Conclusions:** To our knowledge, this is the first U.S. survey to explore present-day system infection prevention. In this sample of hospital networks, we found heterogeneity in the structure, staffing and resources for system IP with significant opportunities for improvement. In this era of healthcare consolidation, our findings highlight the urgent need to more clearly delineate and support system IP needs in order to enhance their functionality.

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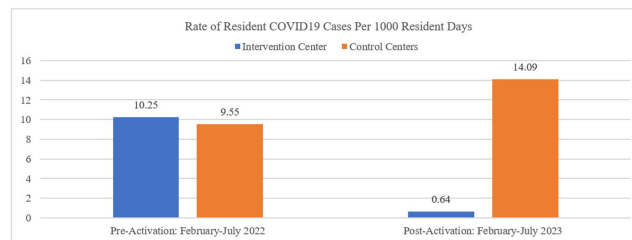
Poster Presentation - Poster Presentation

Subject Category: Long Term Care

Sustained Microbial Burden Reduction and Impact on Covid19 Cases in Long-Term Care Facility through Advanced Photocatalysis

Kim Trosch, ActivePure Technologies; Amy Carenza, Genesis HealthCare; Deborah Birx, Genesis HealthCare; Julie Britton, Genesis HealthCare and Charmarie Adkins, Genesis HealthCare

Figure 1



Background: COVID19 remains deadly to Americans over 75 years old despite vaccination and additional infection control practices in long term care (LTC). The evolution of more transmissible COVID19 variants and continued viral aerosols result in persistent COVID19 outbreaks in LTC during high community levels of COVID19. Despite the end of pandemic Federal support and the continued vulnerability of elderly to the virus, LTC facilities remain dedicated to protecting this vulnerable population. The study hypothesized that utilization of continuous, facility-wide, advanced photocatalysis (AP) disinfection technology will reduce microbial burden in air and on surfaces, demonstrating a decrease in infectious aerosols and subsequent COVID19 cases among residents and workers. **Methods:** A prospective facility controlled experimental study was performed in skilled nursing facilities in Pennsylvania and New Jersey from January 2023 to April 2023 to surveil aerobic bacterial and fungal colony forming units (CFUs) in air, and Methicillin-resistant Staphylococcus aureus (MRSA) and fungal CFUs on surfaces and floors prior to and post AP technology installation. Impacts on resident COVID19 cases were recorded and compared to the same extended observation period (February-July 2023) one year prior (2022) with similar year over year community COVID19 rates. In addition, two matched control centers in regional proximity to the intervention facility were also prospectively studied. A one-way analysis of variance (ANOVA) was used to analyze mean microbial burdens after each post activation period (significance $p < .05$). **Results:** From baseline to final testing, the intervention facility surface testing showed a 93% reduction in mean aerobic bacterial CFUs ($p=.002$); 96% reduction in mean fungal CFUs ($p<.001$); 97% reduction in mean MRSA CFUs ($p<.001$). Floor testing also showed reductions in mean CFUs for aerobic bacteria by 92% ($p<.001$); 96% for fungi ($p<.001$); 99% for MRSA ($p<.001$). Air testing showed reductions in mean CFUs for aerobic bacteria by 87% ($p=.005$); 36% for fungal ($p=.005$). The intervention facility observed a 94% reduction in resident COVID19 cases compared to the matched control facilities that increased 46% during the 2023 time period (Figure 1). **Conclusion:** This study is on the pioneering edge of demonstrating that continuous and persistent disinfection technology reduces contaminant reservoirs on surfaces, floors, and air and clearly decreases infectious aerosols and improves resident outcomes by dramatically reducing COVID19 transmission in LTC facilities.

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Subject Category: Long Term Care

Healthcare Personnel Interactions with Floors and Pathogen Transmission in Long-Term Care: A Qualitative Exploration

Emily Chasco, Institute for Clinical and Translational Science, University of Iowa / Iowa City VA Health Care System; Kimberly Dukes, Dept of Gen Int Med, Carver College of Medicine, University of Iowa; Loreen Herwaldt, University of Iowa Carver College of Medicine and Michaela Zimmer, University of Iowa Carver College of Medicine

Background: We know relatively little about how healthcare personnel (HCP) in long-term care facilities (LTCFs) integrate hand hygiene (HH) and personal protective equipment (PPE; e.g., gloves) use into their care