transmission. **Objective:** Assess ED exposure as a source of transmission using routine whole-genome sequencing (WGS) of bacteria from ED and inpatient specimens in a tertiary academic medical center. **Methods:** We performed a prospective cohort study of patients at a 450-bed academic medical center who had bacteria isolated from ED and inpatient specimens between April 1, 2022 and March 31, 2023. Each organism per patient specimen was routinely sent for WGS and genomic clusters were identified as two or more bacterial isolates cultured from different patients which were genomically related by WGS, generally, 25 or fewer single nucleotide polymorphisms apart. Retrospective chart review using a standardized assessment form was conducted for patients involved in hospital-onset genomic clusters to assess for epidemiologic links occurring in the ED versus other hospital areas (inpatient or outpatient). **Results:** During a 1-year period, 3614 isolates were sent for WGS with 44 genomic clusters identified. Thirty (68%) clusters were excluded because they consisted of community-onset cases, suggesting either transmission outside of our hospital or acquisition of a common community strain. Fourteen hospital-onset clusters were evaluated for possible ED transmission. Of the 14 clusters, median cluster size was 2 patients (range: 2-5). Most common pathogens were Enterococcus faecalis (N=4), Pseudomonas aeruginosa (N=3), and Staphylococcus aureus (N=2), with more Gram-positive (N=8) than Gram-negative (N=6) clusters. Nine (64%) clusters had evidence for ED transmission, which were categorized as probable (ED as sole opportunity for exposure, N=5), or possible (ED among multiple healthcare opportunities for exposure, N=4). Examples of ED exposures included (non-mutually exclusive): same ED unit (N=9, 100%), proximal time in ED (≤5 days apart), (N=6, 67%), common ED staff (N=5, 56%). Without WGS, identification of the ED as the probable source of transmission was hampered by the fact that 99% of cultures were taken on different units, with a median time between ED exposure and positive culture of 9 days (range: 0-163). **Conclusions:** Routine WGS of bacterial isolates in a 450-bed tertiary care center identified 14 hospital-associated transmission events in a year, two-thirds of which were probably or possibly associated with the ED. ED transmission is common but difficult to identify because infection prevention processes rely on positive cultures collected in the same unit close in time.

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S2):s125–s126
doi:10.1017/ash.2025.373

Presentation Type:
Poster Presentation
Subject Category: Outbreaks
Importance of a Comprehensive Infection Prevention Approach During an Outbreak Investigation of Burkholderia cepacia

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Background: Burkholderia cepacia (B. cepacia) is an aerobic, gram-negative bacilli commonly found in soil and water that has been linked to healthcare-related outbreaks. Between April 25 and September 6, 2024, four cases of B. cepacia were investigated at an acute tertiary healthcare facility. Three of the patients had undergone inpatient cardiac procedures, and the fourth patient had a tracheostomy procedure. All culture sources were collected from the respiratory tract and revealed the presence of B. cepacia. A 12-month hospital surveillance retrospective review had not previously identified this organism in our inpatient population. This investigation utilized a comprehensive approach to identify potential modes of transmission. **Method:** A multidisciplinary team comprised of nursing, respiratory therapy, anesthesia, and infection prevention was formed to enhance communication and identify potential gaps in infection prevention processes that may have contributed to recent cases. We concentrated on identifying potential reservoirs related to respiratory practice, with a specific focus on the use of ventilator equipment and supplies which included researching the manufacturer instructions for use (MIFU). Our investigation also included observations in the operating room and Intensive Care Unit (ICU), adenosine triphosphate (ATP) sampling of environmental surfaces, implementation of empiric contact isolation precautions in the ICU, ensuring access to alcohol-based hand sanitizer, and personal protective equipment (PPE). The four respiratory samples of B. cepacia were sent to an outside laboratory for genotyping. **Results:** High ATP readings in the operating rooms indicated a need for additional environmental cleaning. Issues were identified with improper use and storage of respiratory equipment which included transport ventilators, patient supplies, and anesthesia equipment. Incorrect use of PPE by perioperative and ICU staff was also observed. Genome analysis of the samples confirmed no microbiological correlation or epidemiological link (see Table 1). **Conclusion:** Although results indicate that internal transmission was unlikely, this investigation highlights the importance of conducting a comprehensive outbreak investigation to identify potential gaps in processes that could contribute to modes of transmission. This understanding allowed the implementation of targeted interventions to address the issues and prevent future cases.

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S2):s126
doi:10.1017/ash.2025.374

Table 1

Identification of *B. cepacia* Cases Through Genome Sequencing

Isolate	Subspecies and Corresponding Genomovar	Whole Genome Speciation by NCBI and PubMLST Databases	Results
1	*Burkholderia multivorans* (Genomovar II)	*Burkholderia pseudomultivoran* (Genomovar IX)	***Burkholderia pseudomultivoran* (Genomovar IX)**
2	*Burkholderia vietnamiensis* (Genomovar V)		***Burkholderia vietnamiensis* (Genomovar V)**
3	*Burkholderia multivorans* (Genomovar II)	*Burkholderia multivorans* (Genomovar II)	***Burkholderia multivorans* *(Genomovar II)***
4	*Burkholderia cenocepacia* (Genomovar III)		***Burkholderia cenocepacia* (Genomovar III)**

Presentation Type:
Poster Presentation
Subject Category: Outbreaks
All Hands on Deck - Lessons Learned from a Single Center's Response to a Measles Outbreak

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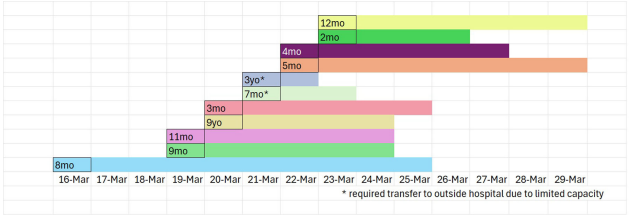
Background: A measles outbreak associated with a migrant shelter occurred in Chicago in early 2024. Given the high transmissibility of measles in combination with the congregate nature of the shelter, health care facilities were tasked with hospitalizing patients with confirmed measles throughout the duration of their contagious period. Comer Children's Hospital at the University of Chicago was able to hospitalize many of these patients, but numerous challenges were encountered in the initial response. **Method:** Communications were sent out to all providers to educate and increase awareness of measles presentations. Our infection prevention team helped coordinate timely collection of appropriate measles testing with the clinical team and helped facilitate timely processing with our microbiology lab for the test to be run by our state reference lab. Constant communication between the area hospitals and the city were instrumental in weathering the challenges our center faced in responding to the local outbreak. **Result:** Collaboration with the public health department allowed for optimizing turnaround times for diagnostic results, forecasting future patient volume, increasing advanced notice for patient arrival to the ED from the local shelter. Our hospital was faced with an inability to safely accommodate the influx of patients with airborne infection isolation rooms (AIIRs), and discussions with our facilities group led to the construction of multiple makeshift anterooms both in the ED and on

the pediatric floors with the necessary amount of air exchanges to safely isolate these patients. A total of 18 patients were tested for measles at Comer Children's Hospital in March 2024, including those from the community who did not reside in a shelter. Ten patients tested positive for measles, all of whom lived in the nearby shelter. Ages ranged from 2 months old to 9 years old. Patients returned back to the shelter after their infectious window was over. One patient suffered a complication of bacterial empyema requiring readmission. No exposures to patients or staff members occurred. **Conclusion:** Strong, efficient communication amongst hospital leaders allowed us to safely accommodate all the patients who presented with suspicion of measles. Working closely with the local public health department ensured optimal turnaround times of diagnostic results and increased our hospital's level of preparedness.

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S2):s126–s127
doi:10.1017/ash.2025.375



Presentation Type:
Poster Presentation
Subject Category: Patient Safety
Enhancing Patient Safety Through the Prevention of Healthcare Facility-Onset Methicillin-Resistant Staphylococcus aureus Bacteremia
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Background: Healthcare facility-onset (HO) Methicillin-Resistant Staphylococcus aureus (MRSA) bacteremia represents a critical patient safety issue due to its associated morbidity and mortality. This metric is reportable to the Centers for Medicare and Medicaid Services (CMS) and impacts Leapfrog scores. However, the primary motivation for this investigation was to enhance patient safety by addressing opportunities for improvement identified through reporting trends. This project sought to identify root causes and implement targeted quality improvement measures to strengthen HO MRSA bacteremia prevention efforts. **Method:** A standardized root cause analysis (RCA) template was developed and applied across a tri-county region with nine acute care hospitals. The template included 58 variables based on local and national MRSA prevention measures and National Healthcare Safety Network (NHSN) recommendations. Cases meeting NHSN HO MRSA criteria were included in the analysis. Infection preventionists reviewed electronic medical records and documented findings using the RCA template. Abstracted data were analyzed by the hospital epidemiologist using Excel QI macros. The RCA findings highlighted gaps in peripheral intravenous line (PIV) care and maintenance as potential contributors to bloodstream infection risk. Building on these findings, a targeted nursing survey was conducted to identify barriers, gaps, and opportunities for improvement in PIV care practices, further informing the development of actionable quality improvement interventions. **Result:** Thirty-two HO MRSA cases were reported in 2023, 38.9% of which involved blood cultures with no other identified source. Specimen collection dates clustered around line days 4-10 and 18-22. Eighteen cases documented catheter-related issues, primarily drainage and infiltration at PIV sites. The RCA findings prompted a nursing survey to investigate PIV care practices. Survey responses revealed inconsistencies in maintenance practice, variation in documentation and monitoring, and requests for increased training and refresher sessions. These insights validated the RCA findings and informed the design of targeted interventions aimed at improving PIV care. **Conclusion:** HO MRSA bacteremia prevention requires a comprehensive approach that prioritizes patient safety while leveraging RCA findings and frontline staff input. The RCA findings and nursing survey have provided critical insights into gaps in PIV care and maintenance, laying the foundation for actionable quality improvement measures. Planned interventions, including re-education on PIV best practices, addressing survey-identified barriers, and implementing a bloodstream infection prevention bundle, are set for implementation in the next calendar year. These efforts aim to strengthen HO MRSA bacteremia prevention and improve patient outcomes.

Antimicrobial Stewardship & Healthcare Epidemiology 2025;5(Suppl. S2):s127
doi:10.1017/ash.2025.376

Presentation Type:
Poster Presentation
Subject Category: Patient Safety
Infection Preventionist and Hospital Epidemiologist Staffing in Acute Care Hospitals: Results from the PITAS Study
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Background: Despite the crucial roles Infection Preventionists (IPs) and Hospital Epidemiologists (HEs) have in the implementation of patient safety strategies, there is paucity of data on what constitutes effective IP and HE staffing. Disparities in staffing and resource allocation in IPC and HE departments are currently underexplored. This study aims to evaluate staffing patterns, resource allocation, and collaboration among IPs and HEs comparing multi-facility organizations to free standing hospitals. **Methods:** All IPC departments in hospitals participating in the National Healthcare Safety Network were invited to participate in an electronic survey between August and December 2023. Data were collected on hospital and IPC department characteristics including organizational structure, IP staffing and resources, as well as HE staffing and time allocation. Descriptive statistics were used to summarize the data; Wilcoxon rank-sum tests and chi-square tests were used to compare variables between single, free-standing and multi-facility hospitals. **Results:** Responses were received from 901 IPC departments representing 2779 NHSN facilities. The majority of respondents were situated in multi-facility (61%) vs. free-standing hospitals (39%). Over half (57%) of the IPC