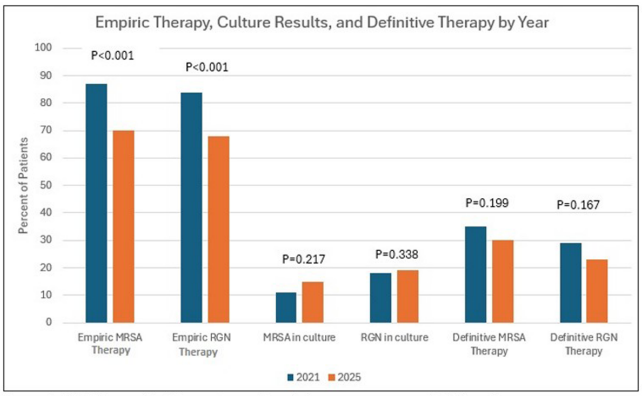


Figure 1. MRSA: methicillin-resistant *Staphylococcus aureus*. RGN: resistant gram-negatives.

Presentation Type:
Oral Presentation
Subject Category: C. difficile

Clostridioides difficile Whole Genome Sequencing Does Not Support Transmission from Environmental Contamination by Prior Room Occupants‡

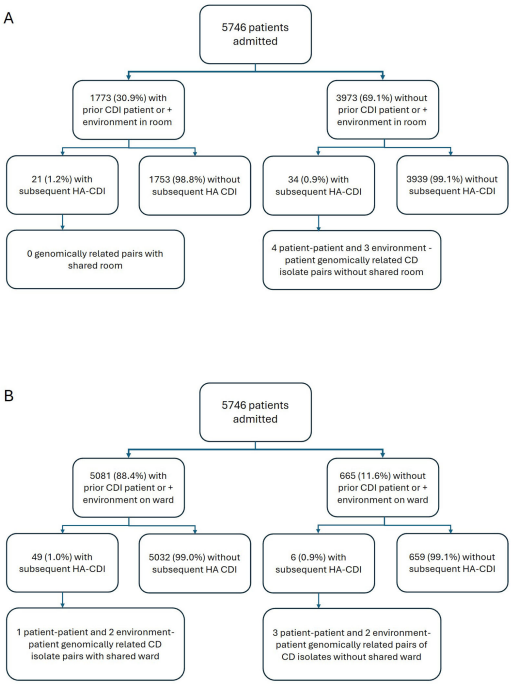
Sarah Redmond, Maria Torres-Teran[1], Jennifer Cadnum[1], Claire Kaple[2], Munok Hwang[3], Hosoon Choi[4], Piyali Chatterjee[4], Chetan Jinadatha[4] and Curtis Donskey[1]
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Background: Admission to a room previously occupied by a patient with Clostridioides difficile infection (CDI) has been identified as a risk for CDI. However, previous studies have not included molecular typing to definitively link healthcare-associated CDI (HA-CDI) cases to prior room occupants or to residual spore contamination on surfaces. **Methods:** In an acute care hospital, we conducted a 1-year cohort study to determine the proportion of HA-CDI cases linked to prior room occupants with CDI or to room surfaces remaining contaminated after post-discharge cleaning and disinfection. Cultures were collected from post-discharge CDI and non-CDI rooms. Whole genome sequencing was used to determine relatedness of isolates. We calculated the percentage of HA-CDI cases infected with isolates genomically related to prior room or ward-level exposures. **Results:** Of 5,746 patients admitted, 22 had community-associated CDI and 55 were diagnosed with HA-CDI. C. difficile was recovered from 79 of 327 (21%) post-discharge rooms, including 14 of 36 (39%) CDI rooms and 83 of 287 (29%) non-CDI rooms. Of 1,773 patients with room-level exposure to prior CDI patients or contaminated surfaces, 21 (1%) developed HA-CDI, but none were infected with genomically-related isolates (Figure 1.A). Of 49 patients developing HA-CDI after ward-level exposures, 3 were infected with isolates genomically related to prior CDI patients or contaminated surfaces on the ward (1.B). **Conclusion:** Despite frequent exposure to rooms previously occupied by patients with CDI or contaminated with C. difficile, no HA-CDI cases were linked to prior room exposures based on whole genome sequencing.

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Figure 1. Flow diagram for the new admissions during the study stratified based on room (A) or ward (B) level exposures to prior patients with *Clostridioides difficile* infection (CDI) and/or to prior environmental contamination. HA-CDI, healthcare-associated CDI.



Presentation Type:
Oral Presentation
Subject Category: CLABSI

Midlines for Outpatient Parenteral Antimicrobial Therapy: A Not-So-Safe Alternative to Peripherally Inserted Central Catheters?‡

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Background: The safety of midlines (MLs) versus peripherally inserted central catheters (PICCs) in the context of outpatient parenteral antimicrobial therapy (OPAT) is still debated. The Infectious Diseases Society of America guidelines currently offer a weak recommendation to consider MLs for antibiotic durations of <14 days. The purpose of this study was to quantify the ML complication rate compared to PICCs for OPAT. **Methods:** We performed a single-center, retrospective cohort study of MLs and PICCs placed by the bedside vascular access team for OPAT as recommended by the infectious diseases consult service at a 670-bed urban academic medical center. Between July 2019 and June 2022, 1351 catheters were placed in 1252 unique patients for OPAT. The primary exposure was the placement of a ML versus PICC, informed by selection guidelines from the Infusion Nurses Society. The primary outcome was any bloodstream infection (BSI) or superficial or deep venous thromboembolism (VTE) while the catheter was present. We estimated the hazard ratio (HR) of developing the outcome among MLs compared to PICCs using Cox proportional hazards models, accounting for multiple episodes of OPAT-related catheter placement over time in the same patient and adjusting for confounding by planned antibiotic duration of ≥14 days

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Table 1. Demographic and clinical characteristics

Covariate	Total, N=1351 n (%)	Midline, N=322 n (%)	PICC, N=1029 n (%)
Male	769 (57)	163 (51)	606 (59)
Age (years)[1]	62 (51-71)	60 (46-70)	63 (52-71)
Infection			
Prosthetic joint	358 (27)	6 (2)	352 (34)
Spine	175 (13)	13 (4)	162 (16)
Other orthopaedic	176 (13)	42 (13)	124 (12)
Cardiovascular	142 (11)	20 (6)	122 (12)
Central nervous system	98 (7)	35 (11)	63 (6)
Pulmonary	33 (2)	19 (6)	14 (1)
Gastrointestinal	44 (3)	21 (7)	23 (2)
Genitourinary	102 (8)	78 (24)	24 (2)
Skin and soft tissue	53 (4)	23 (7)	30 (3)
Bacteremia	104 (8)	38 (12)	66 (6)
Other	66 (5)	27 (8)	39 (3)
ICU admission	146 (11)	40 (12)	106 (10)
Single lumen	1311 (97)	322 (100)	990 (96)
Catheter diameter (Fr)[1]	3 (3-3)	3 (3-5.7)	3 (3-3)
Catheter to vein ratio (%)[1]	24 (21-29)	26 (22-30)	24 (21-28)
Tip location			
CAJ	966 (72)	0 (0)	966 (94)
RA	22 (2)	0 (0)	22 (2)
SVC	41 (3)	0 (0)	41 (4)
Axilla	322 (24)	322 (100)	0 (0)
Prescribed vancomycin	342 (25)	30 (9)	312 (30)
Planned duration (days)[1]	37 (21-40)	11 (8-19)	39 (35-40)
Planned duration ≤14 days	269 (20)	218 (67)	51 (5)
Bloodstream infection	14 (1)	3 (1)	11 (1)
Venous thromboembolism	53 (4)	23 (7)	30 (3)
Catheter occlusion	47 (3)	9 (3)	38 (4)
Completed therapy in hospital	47 (3)	18 (6)	29 (3)
Care transferred on discharge	123 (9)	16 (5)	107 (10)
Died or discharged to hospice	29 (2)	3 (1)	26 (3)
Lost to follow up	13 (1)	3 (1)	10 (1)

PICC=peripherally inserted central catheter, CAJ=cavoatrial junction, RA=right atrium, SVC=superior vena cava
[1]median (interquartile range) for continuous variables

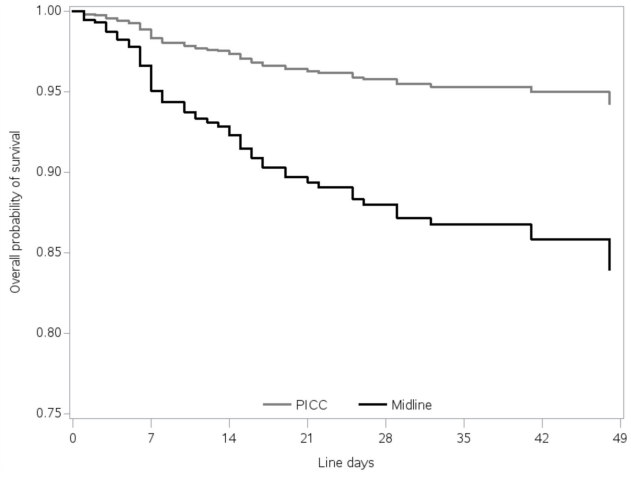


Figure 1. Cox survival plot showing the effect of catheter type on development of a bloodstream infection and/or venous thromboembolism. PICC=peripherally inserted central catheter.

and the use of vancomycin. We tested whether planned antibiotic duration modified the association between catheter type and the outcome using an interaction term. Results Demographic and clinical characteristics are in Table 1. The ML complication rate was 6.1 per 1000 line-days (26 [3 BSI, 23 VTE] of 322 MLs) versus 1.2 per 1000 line-days for PICCs (40 [11 BSI, 30 VTE] of 1029 PICCs), with a higher complication rate for MLs (adjusted HR [aHR] 2.97, 95% confidence interval [CI] 1.32-6.70, p=0.01). Adjusted survival curves are given in Figure 1. The aHR was 0.97 (95% CI 0.30-3.11, p=0.96) among catheters with a planned antibiotic duration of ≤14 days and 4.11 (95% CI 2.08-8.16, p<0.01) for <14 days (p-interaction=0.03). Conclusion In this study of patients receiving OPAT, complications were uncommon but significantly more frequent for MLs than PICCs. This association appeared to differ by planned antibiotic durations of <14 days than ≤14 days. Our study calls into question the safety of MLs for OPAT, especially for prolonged durations of therapy.

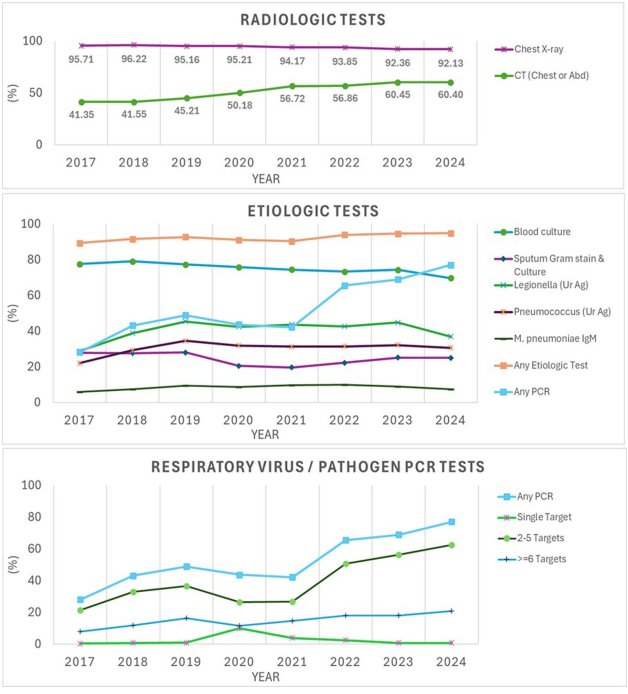
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Presentation Type:
Oral Presentation
Subject Category: Diagnostic Stewardship

Etiologic Agents of Non-COVID Community-Acquired Pneumonia Requiring Hospitalization – Analyzing Changes Over Time‡

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[1]Seoul National University Bundang Hospital; [2]University of Utah; [3]University of Michigan Medical School; [4]Michigan Medicine; [5]DIvision of Hospital Medicine, Michigan Medicine; [6]University of Michigan; [7]University of Michgian/VA Ann Arbor Healthcare System; [8]Trinity Health Livonia Hospital; [9]Trinity Health Michigan and [10]University of Utah School of Medicine

Background: Community-acquired pneumonia (CAP), a heterogeneous clinical entity with a wide range of inciting pathogens, remains a significant cause of morbidity and mortality worldwide. The recent COVID-19 pandemic and subsequent shifts in clinical and diagnostic practices necessitate an updated understanding of the contemporary epidemiologic and etiologic landscape for non-COVID CAP. **Method:** This retrospective cohort study included adult patients hospitalized with CAP between January 1, 2017, and December 31, 2024, across 68 hospitals participating in the Michigan Hospital Medicine Safety consortium. Eligible patients included hospitalized adults with a pneumonia discharge code, symptoms and imaging consistent with pneumonia, and receipt of antibiotic treatment on hospital day 1 or 2. Patients admitted to intensive care, those with concomitant infections, positive SARS-CoV-2 tests, or severe immunosuppression were excluded. Diagnostic testing methods and the pathogens detected were reviewed and summarized by year. **Result:** A total of 62,340 patients were included. Mean age was 69.0 ±15.9 years, and



‡The abstract titles in this supplement have been corrected since original publication. A notice detailing the changes has been published at https://doi.org/10.1017/ash.2026.10802.

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