Conclusion. The study results showed that the enhanced screening program enabled us to identify the previously undetected CPE colonized patients and to decrease clinical CPE cultures.

Disclosures. All Authors: No reported disclosures

Table 1. Characteristics of patients infected with multidrug-resistant Pseudomonas aeruginosa (MDR Pa) in a Tertiary Healthcare System in Detroit

| Patient | Age | Gender | Duration | Comorbidity Index | Time to Isolation of MDR Pseudomonas aeruginosa | Outcome |
|---------|-----|--------|----------|-------------------|-----------------------------------------------|---------|
| 1       | 68  | Male   | 0        | 0                 | 484 days from admission                      | Hospital |
| 2       | 70  | Female | 0        | 0                 | 484 days from admission                      | Hospital |
| 3       | 75  | Male   | 0        | 0                 | 484 days from admission                      | Discharged |
| 4       | 79  | Male   | 0        | 0                 | 484 days from admission                      | Discharged |
| 5       | 67  | Male   | 0        | 0                 | 484 days from admission                      | Discharged |
| 6       | 74  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 7       | 78  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 8       | 73  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 9       | 69  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 10      | 78  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 11      | 71  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 12      | 70  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 13      | 66  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 14      | 71  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 15      | 74  | Female | 0        | 0                 | 484 days from admission                      | Discharged |

Session: P-39. HAI: Gram-negatives (MDR-GNR)

Conclusion. Since early 2017 studies show there is a growing prevalence worldwide in transferable resistance, particularly for β-lactamases and carbapenemases, MDR Pseudomonas. This study emphasizes an irony paralleled during a pandemic, the needed efforts to prevent unintentional lapses in patient safety.

Disclosures. All Authors: No reported disclosures

Figure 1. Epidemicological Curve of Cases of Multidrug-resistant Pseudomonas aeruginosa in the Detroit Medical Center from November 2020-February 2021

Results. Of the 16 cases of MDR Pa infections, seven died within five months (Table 1). Antimicrobial resistance gene profiling detected blaOXA and blaPAE beta-lactamase genes in all the samples. One sample contained an additional blavIM resistance gene, although this patient was colonized and not actively infected. The analysis suggests existence of two clusters demonstrating relatedness and possible horizontal transmission. Timing of this cluster of cases coincides with surge of COVID-19 cases. This highlights the importance of infection control measures and antimicrobial stewardship.

Table 1. Characteristics of patients infected with multidrug-resistant Pseudomonas aeruginosa (MDR Pa) at Detroit Medical Center, November 2020 to February 2021

| Patient | Age | Gender | Duration | Comorbidity Index | Time to Isolation of MDR Pseudomonas aeruginosa | Outcome |
|---------|-----|--------|----------|-------------------|-----------------------------------------------|---------|
| 1       | 68  | Male   | 0        | 0                 | 484 days from admission                      | Hospital |
| 2       | 70  | Female | 0        | 0                 | 484 days from admission                      | Hospital |
| 3       | 75  | Male   | 0        | 0                 | 484 days from admission                      | Discharged |
| 4       | 79  | Male   | 0        | 0                 | 484 days from admission                      | Discharged |
| 5       | 67  | Male   | 0        | 0                 | 484 days from admission                      | Discharged |
| 6       | 74  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 7       | 78  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 8       | 73  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 9       | 69  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 10      | 78  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 11      | 71  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 12      | 70  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 13      | 66  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 14      | 71  | Female | 0        | 0                 | 484 days from admission                      | Discharged |
| 15      | 74  | Female | 0        | 0                 | 484 days from admission                      | Discharged |

Session: P-40. HAI: Gram-positives (MRSA, MSSA, VRE)

Conclusion. Bacterial biofilm formation is of clinical concern among patients with staphylococcal infections involving prosthetic material. While rifampin has in-vitro, animal and clinical data to support its adjunctive role in these types of infections, its potent induction of multiple cytochrome P450 enzymes and P-glycoprotein transport system proteins can pose significant drug-drug interactions. Rifabutin has comparable in-vitro anti-staphylococcal activity but less drug-drug interaction potential than rifampin. However, minimal clinical data exists to support rifabutin use as adjunctive treatment of prosthetic infections.

Disclosures. All Authors: No reported disclosures

Methods. This case series describes 7 patients who received adjunctive rifabutin for staphylococcal prosthetic material infections between February 2018 and January 2021 at Massachusetts General Hospital, Medford, Massachusetts

Session: P-39. HAI: Gram-negatives (MDR-GNR)
**Results.** Most patients (6/7) had methicillin-sensitive *S. aureus* (MSSA) and one patient had *S. epidermidis* infection. Three patients had spinal fusion hardware infection, one patient had hardware-associated spinal osteomyelitis/diskitis with epidural abscess, two patients had prostatic joint infection, and one patient had MSSA bacteremia with left ventricular assistance device involvement. All patients except one underwent surgical management prior to starting rifabutin. Infection recurrence was noted in one of seven patients who required surgical washout. Adverse events were uncommon (n=1 treatment-related nausea, n=1 leukopenia).

**Conclusion.** This small case series suggests favorable outcomes with use of rifabutin instead of rifampin for staphylococcal infections with prosthetic material involvement.

**Disclosures.** Sandra B. Nelson, MD, UpToDate (Other Financial or Material Support, author)

---

**Figure 1.**

Figure 1 depicts the timeline and number of VRE cases before and after the unit switch. Following relocation of the VRE exposed cohort to the new unit, no further VRE transmission was detected (0/235 VRE screens; 0 VRE cases per 1000 patient days). Conversely, there were new VRE transmissions (3/99 VRE screens, 5 VRE cases per 1000 patient days) in the non-exposed cohort. When the units resumed their usual care, one additional case of VRE was identified in the exposed cohort upon readmission. Hand hygiene compliance rates on both units was measured using group electronic monitoring.

Transmission of Vancomycin Resistant Enterococcus (VRE) from environment to patient and patient to patient can both occur in healthcare settings. Due to the COVID-19 pandemic, a cohort of exposed patients on an inpatient unit with an extensive VRE outbreak needed to switch physical locations with a non-exposed patient population. By comparing outcomes of both cohorts, we aimed to determine the role of the physical environment (both direct and indirect contact) as compared to the patient population, in ongoing VRE transmission.

**Methods.** From 10 March to 21 April 2021, 41 new nosocomial acquisitions of VRE were detected as part of a VRE outbreak on a 34-bed acute care unit. Prior to the switch of units, extensive cleaning of the unit was conducted including electrostatic adjucnts to standard cleaning and environmental swabbing for VRE yielded no positive surfaces. The exposed cohort included 3 of 30 patients with VRE while the non-exposed cohort had 0 of 28 VRE positive patients based on prevalence testing on 21 April 2021. Following the physical relocation of both cohorts on 22 April, 2021, prospective VRE screening was performed on both units for one month including on admission, discharge and weekly prevalence screening. Hand hygiene compliance rates on both units were measured using group electronic monitoring.

**Results.** Figure 1 depicts the timeline and number of VRE cases before and after the unit switch. Following relocation of the VRE exposed cohort to the new unit, no further VRE transmission was detected (0/235 VRE screens; 0 VRE cases per 1000 patient days). Conversely, there were new VRE transmissions (3/99 VRE screens, 5 VRE cases per 1000 patient days) in the non-exposed cohort. When the units resumed their original location, one additional case of VRE was identified in the exposed cohort upon return to their original location. These transmissions occurred despite HH compliance of 94% (141,610/150,706) during the entire study period on the outbreak unit, which was consistently higher than on the non-outbreak unit (141,589/227,136, 62%).

**Conclusion.** The environmental reservoir for VRE may be more important in transmission than the patient reservoir. These findings underscore the importance of environmental cleaning to contain VRE outbreaks.

**Disclosures.** All Authors: No reported disclosures

---

795. The Role of the Environment in Healthcare-associated Transmission of Vancomycin Resistant Enterococcus: A Proof of Concept Study

Amber L. Linknadel-Struk, BA, MTS, CIC1; Victoria R. Williams, MPH, CIC2; Lorraine Maze DIT Mueseenem, RN, MN, CIC3; Natasha Salt, BSc BASc CIC4; Adrienne Chan, MD, MPH5; Jerome A. Leis, MD MSc FRCPG6; Sunnybrook Health Sciences Centre, Pickering, Ontario, Canada; Sunnybrook Health Sciences Centre, Toronto, ON, Toronto, ON, Canada

**Session:** P-40. HAi: Gram-positives (MSSA, MSSA, VRE)

**Background.** There was a nosocomial outbreak of vancomycin-resistant enterococci (VRE) in our hospital group from 2018-19. The goals of the study were to describe the prevalence trajectory and explore risk factors associated with putative room colonization during the outbreak.

**Methods.** We performed a room centric analysis of 12 floors (floors F to R, 264 rooms) of the main bed tower of the hospital, including data on 37 458 patients (23 050 person weeks) over the 104 week period. Patients were assumed to be colonized in the week prior to their first positive test, and thereafter throughout the remainder of their stay until discharge. Poisson Bayesian Hierarchical models were fitted to estimate prevalence per room, including both spatial (conditional autoregressive) and temporal (random walk) random effects terms. Model M1 estimated prevalence for each floor and then used meta-analysis to combine the estimates, whereas model M2 estimated prevalence for “all-floors” simultaneously.

**Results.** The oncology department, where the outbreak was thought to have started, experienced slightly higher prevalence (floors O and R; adjusted incidence rate ratio (aIRR) 4.8 [2.6, 8.9], p< 0.001; reference is general medicine; see Figure Panel A), as did both the cardiac surgery (floors G, N, O; aIRR 3.8 [2.0, 7.3], p< 0.001) and abdominal surgery departments (floors H and Q; 3.7 [1.8, 7.8], p< 0.001). There was no discernable difference in prevalence between floors with single and multiple department occupancy. Furthermore, departments spread across multiple floors had similar prevalence on all constituent floors – perhaps indicating transmission by people or devices moving between floors.

The “single floor meta-analysis” model (M1) more closely followed the estimated trajectory for the crude prevalence, whereas the “all-floors” model (M2) dampened the amplitude of the peaks somewhat, but better estimated periods of low prevalence (Figure Panel B).

**Conclusion.** This small case series suggests favorable outcomes with use of rifabutin instead of rifampin for staphylococcal infections with prosthetic material involvement.

**Disclosures.** Sandra B. Nelson, MD, UpToDate (Other Financial or Material Support, author)