Results. Most patients (67/7) 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 prosthetic joint infection, and one patient had MSSA bacteremia with left ventricular assistance device involvement. All patients except one underwent surgical management prior to starting rifampin. 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 rifampin instead of rifampin for staphylococcal infections with prosthetic material involvement.

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794. The Role of the Environment in Healthcare-associated Transmission of Vancomycin Resistant Enterococcus: A Proof of Concept Study
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Session: P-40. HAI: Gram-positives (MRSA, MSSA, VRE)

Background. 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 devices moving between floors.

Results. 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.

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. A Bayesian Spatial-temporal Modelling Approach for Prevalence Estimation of a VRE Outbreak in a Tertiary Care Hospital
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Session: P-40. HAI: Gram-positives (MRSA, 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 (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, 7.6], p< 0.001). There was no discernible 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. We applied a room centric approach that took into account spatial and temporal dependencies apparent in the nosocomial VRE outbreak. Despite additional complexity, Bayesian Hierarchical Models provide a more flexible platform for studying transmission dynamics and performing hypothesis testing, compared to more traditional methods.

Disclosures. All Authors: No reported disclosures