Figure. Performance of Screening Approaches to Detect Carbapenem-Resistant Organism (CRO) Colonization. The proportion of patients with CRO colonization (n=37) at time of medical intensive care unit admission as detected by each screening approach individually or in combination. The sensitivity is shown on the X-axis with 95% confidence intervals represented by capped black bars. The number needed to screen (NNS) to detect one CRO case is shown in text overlaying each green bar.

Table. Model Predictions of Carbapenem-Resistant Organism Colonization at Time of MICU Admission. Screening approaches and their corresponding number of true positives among screen positive, number needed to screen (NNS) to detect one case of CRO, odds ratios, 95% confidence intervals (CI), Chi-Square P-Value, and receiver operator curve (ROC) area under the curve (AUC) C-statistic are reported.

patient-staff interaction network map was developed using Python 3.12.8, using PyVis library version 0.3.2 for network visualization and Dash version 2.18.2 for web-based interactivity. **Results:** There are a total of 207 patients who tested positive for VRE in SGH in July 2024. 54 (26.1%) were HO. A snapshot of the map filtered for 10/07/24 to 11/07/24 can be seen in Figure 1. 14 (11.8%) were HO, 58 (48.7%) were CO, 44 (37.0%) were NO and 3 (2.5%) were XO. As seen in figure 1, there are 7 (5.9%) are in isolated singular clusters, 6 (5.0%) are in pair clusters and 3 (2.5%) are in a triple cluster. In total, the largest cluster consists of 103 (86.6%) patients. This cluster consists of HO,NO,CO and XO patients. This intermingling highlights potential routes for cross-transmission of VRE. **Conclusion:** The network map reveals notable intermingling of CO, HO, XO and NO contacts within the dominant cluster and suggests potential routes of transmission. This underscores the need for better understanding of transmission dynamics to allow enhancement of existing infection prevention policies to prevent this spread.
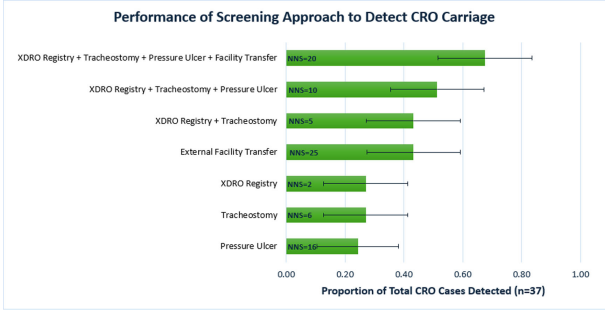
Presentation Type:
Poster Presentation
Subject Category: Surveillance
Comparison of Targeted Admission Screening Strategies for Carbapenem-Resistant Organisms (CROs)

Tanner Shull[1], Michael Schoeny[2], Mary Hayden[3], William Trick[4], Michael Lin[5] and Sarah Sansom[6]
[1]Rush University Medical Center; [2]Rush University Medical Center; [3]Rush University Medical Center; [4]Cook County Health; [5]Rush University Medical Center and [6]Rush University Medical Center

Background: Admission screening for CRO carriage may prevent transmission, but there is a lack of consensus on the best targeted approach. Using a well-characterized cohort of medical intensive care unit (MICU) patients prospectively screened for CRO carriage at time of admission (MAriMbA cohort), we compared the effectiveness of common targeted strategies (singly and in combination) available to hospitals in Illinois to identify MICU patients at risk for CRO carriage, including: (a) screening patients transferred from external facilities (e.g., short- and long-term acute care hospitals); (b) screening patients with a tracheostomy or pressure ulcer; or (c) querying the Illinois XDRO registry for prior CRO history. **Methods:** Results of rectal swab samples collected within 48 hours of MICU admission during 1/2017-1/2018 and cultured for CROs (carbapenem-resistant Enterobacterales [CRE], CR Pseudomonas aeruginosa [CRPA], and CR Acinetobacter baumannii [CRAB]) were used as the reference standard. Patients' status as direct transfer from an external healthcare facility and presence of tracheostomy or pressure ulcer were collected prospectively during the MAriMbA study. History of CRO colonization before MICU admission was queried retrospectively from the Illinois XDRO Registry (xdro.org), with the limitation that most reports available during the study period were restricted to CRE. We evaluated each predictors' independent association with admission CRO status and combined variables in a planned logistic regression modeling approach. **Results:** CRO colonization was detected in 37 (2.6%; including 26 CRE, 10 CRPA, and 1 patient co-colonized with CRE and CRAB) of 1,423 unique MICU admissions. For univariate analyses, presence of a tracheostomy (OR 9.32, 95% CI 4.29-20.27), presence of pressure ulcer (OR 3.07, 95% CI 1.42-6.64), transfer from an external facility (OR 1.97, 95% CI 1.02-3.82), and prior CRO history reported to the Illinois XDRO Registry (OR 72.96, 95% CI 25.83-206.07) were associated with higher odds of CRO colonization. A model combining these variables improved the predictive capability (AUC 0.73) (Table). Prior CRO history reported to the Illinois XDRO Registry identified 27% of CRO cases, with number needed to screen (NNS) of only 2 patients. Adding tracheostomy, pressure ulcer, and external facility transfer together improved detection of admission CRO cases to 68%, with NNS of 20 patients (Figure). **Conclusion:** In a region with well-established inter-facility communication of CRO history via the Illinois XDRO Registry, the addition of screening patients with a tracheostomy, transfer from an external facility, or pressure ulcer may improve early identification of CRO carriage at time of MICU admission.

Presentation Type:
Poster Presentation
Subject Category: Surveillance
Increasing Incidence of Proteus- Evaluating the 'Big Three' Carbapenem-Resistant Enterobacterales in Tennessee and the Southeast Region

Lauren Daniel[1], Priscilla Pineda[2], Darryl Nevels[3], Melphine Harriott[4], Erin Hitchingham[5] and Michael Norris[6]