exposure on or prior to the MDRO culture collection date in cases or during the entire hospitalization in controls. The association between antibiotics and MDRO detection was assessed with χ^2 and multivariable logistic regression testing. Length of stay (LOS) was compared between groups.

Results. Of 1,181 advanced cancer patients started on palliative chemotherapy and subsequently admitted, we identified 45 cases and 135 controls (figure). Overall, median age was 75 years (range 65–95) and 48% (N = 87/180) were female. Antibiotic exposure was more likely in cases (91%, N = 41/45) vs. controls (75%, N = 101/135; P = 0.02). In regression testing adjusted for gender, LOS, and ICU stay, antibiotic use was associated with MDRO detection (OR = 3.23, 95% CI 1.1, 9.8; P = 0.04). Mean LOS was higher in those with (8.7 days, 95% CI 7.5, 10.0) vs. without (3.5 days, 95% CI 3.8, 6.1) MDRO detection (P = 0.002)

Conclusion. In older advanced cancer patients on palliative chemotherapy, antibiotic use is predictive of new MDRO detection, and patients with new MDRO detection have significantly longer LOS. These results suggest antibiotics should be used cautiously in palliative care patients in whom the burdens of MDRO detection, such as longer LOS and potential room isolation with contact precautions, may conflict with goals of care.

Table: Predictors of MDRO detection in advanced cancer patients ≥65 years on palliative chemotherapy

Predictor	OR (95% CI)	*P* value
Female gender	1.1 (0.6, 2.3)	0.71
LOS ≥ 3 days	3.5 (0.8, 16.0)	0.10
ICU stay	1.3 (0.5, 3.5)	0.63
Antibiotic use	3.2 (1.1, 9.8)	0.04

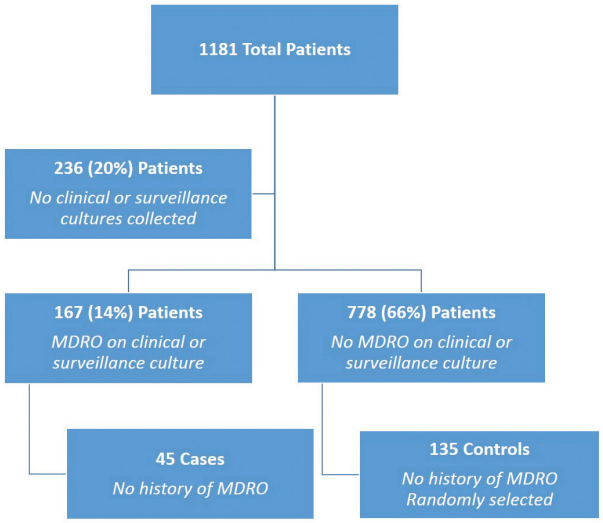

Figure 1. Study schematic of identification of cases and controls.

Disclosures. **M. Juthani-Mehta**, Iterum Therapeutics: Scientific Advisor, Consulting fee.

163. Development of an Electronic Flagging Tool for Identifying Cardiac Device Infections: Insights from the VA CART Program

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Session: 46. Healthcare Epidemiology: Special Populations
Thursday, October 4, 2018: 10:30 AM

Background. Surveillance is an essential aspect of infection prevention. Despite the high morbidity and mortality associated with procedure-related Cardiac Implantable Electronic Device (CIED) infections, methods for identifying them are limited. The objective of this study was to develop an algorithm with electronic flags to facilitate detection of CIED infections in a large, multi-center cohort.

Methods. A sample of patients who underwent CIED procedures entered into the VA Clinical Assessment Reporting and Tracking Electrophysiology (CART-EP) program from FY 2007 to 2015 were included in the nested case–control study. After cohort creation, data from this review process were combined with electronic variables (e.g., microbiology orders, ICD 9/10 codes) to develop a preliminary algorithm that categorized patients as high, intermediate, or low risk of CIED infection.

Results. A total of 1,014 unique patients out of a cohort of 5,955 procedures underwent manual review. Among these cases, 59 CIED infections and 955 controls were identified. Electronic variables predictive of CIED infection included ICD 9/10 infection codes and microbiology orders (table). ICD 9/10 codes had excellent PPV for flagging infections but sensitivity was limited (47.5%, see figure). Adding microbiology order flags increased sensitivity but lowered specificity. Specificity in patients without either flag was outstanding (99%).

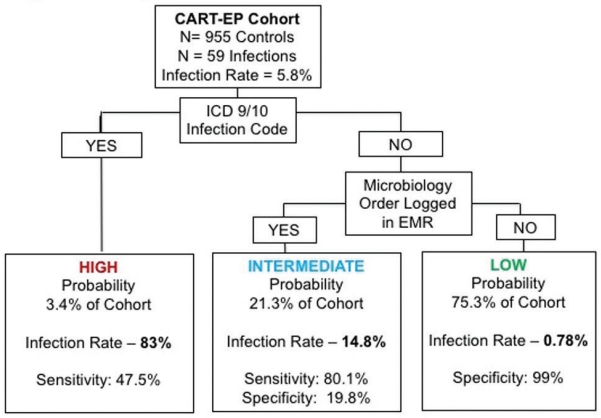
Conclusion. Absence of ICD 9/10 and microbiology orders is highly specific for ruling out CIED infections. The discriminatory abilities of the algorithm for intermediate probability flags (+microbiology/–ICD9/10) need improvement. In patients without ICD codes, at least microbiology orders should be used as a flag to streamline review of possible device infections. Refinement of this tool using other clinical flags may improve operating characteristics and clinical utility.

Table: Electronic flags for CIED infection

Infection flag	Infection (N = 59)	No infection (N = 955)	OR	*P*-value
CIED infection ICD 9/10	21/59 (35.6%)	1/955 (0.10%)	340	<0.001
Surgical site infection (SSI) ICD 9/10	7/59 (11.9%)	6/955 (0.63%)	18.9	<0.001
CIED infection or SSI ICD 9/10	28/59 (47.5%)	7/955 (0.73%)	64.7	<0.001
Micro order*	53/59 (89.8%)	198/955 (20.7%)	5.4	<0.001

*Blood, wound, and unclassified cultures.

Figure 1: Flow Diagram of CIED Infection Detection Tool



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164. Reporting the High-resolution Structure of the Enterococcal Ribosome: A New Template for Antibiotic Discovery

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Session: 47. Science Relevant to ID
Thursday, October 4, 2018: 10:30 AM

Background. The ribosome is a rich target for antibiotic design and its structural secrets have been described at the atomic level over the past 2 decades. However, most bacterial ribosome structures come from nonpathogenic species of Archaea or thermophilic bacteria. To aid in the development of modern antibiotics against the enterococcus, we report the structure of the ribosome from *Enterococcus faecalis* at 3.5 Å resolution using cryo-electron microscopy.

Methods. *E. faecalis* strain OG1 was grown in liquid culture, collected and lysed using a French press. 70S ribosomes were purified using centrifugation through a sucrose cushion followed by column chromatography and sucrose gradient centrifugation. 70S particles were diluted in buffer and applied to a holey carbon grid and using an FEI vitrobot were flash-frozen in liquid ethane. Data were collected on an FEI Titan Krios operating at 300 kV acceleration voltage. The particles classified into 6 distinct structures based on their composition. Completed maps were utilized for structure modelling using Coot and were then refined using real space refinement within Phenix.

Results. High-quality maps of the 70S ribosome were obtained at up to 3.5 Å resolution in several distinct conformations. The 23S, 16S, and 5S RNA structures were almost completely built into maps with clear density. All but 2 ribosome proteins L25