In total, 13 LRSH isolates were recovered from pus specimens. The 13 LRSH strains isolated had an linezolid MIC of ≥256 μg/mL. Sequencing results revealed G2576T mutations in 7 (53.8%), G2447U in 4 (30.7%) and C2534U in 1 (7.6%) isolate of *S. haemolyticus*. One isolate of *S. haemolyticus* showed 2 simultaneous mutations (G2576T and G2447U) in the domain V region of 23Sr RNA gene. PFGE of the LR-SH isolates revealed the presence of 11 clones. Of the 11 clones, clones I and II had 2 isolates each. Isolates of clone I exhibited a band pattern identical with the previous isolates of LRSH isolated from the orthopedic unit. Similarly, isolates of clone II also shared the same band pattern with the previous LRSH isolates from the dermatology unit of our center. **Conclusions:** This study highlights the importance of continuous monitoring of vigilance of linezolid resistance in staphylococci. Rationalizing the use of linezolid and implementing methods to control the spread of hospital clones is of paramount importance to prevent further dissemination of these strains.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.906

Presentation Type:
Poster Presentation

Machine-Learning Accurately Predicts Adverse Outcomes Following *Clostridioides difficile* Infection in Colorectal Surgery

Brett Tracy, Emory University School of Medicine; Rondi Gelbard, University of Alabama; Joel Zivot, Emory University School of Medicine; Andrew Morris, Emory University School of Medicine; Jason Sciarretta, Emory University School of Medicine; Benjamin Hazen, Emory University

Background: *Clostridioides difficile* infection (CDI) following colorectal surgery can lead to significant adverse outcomes. Although previous studies have identified risk factors for CDI, their relative importance for predicting complications remains unclear. **Objective:** We sought to use machine-learning algorithms to accurately determine which perioperative risk factors are most predictive of adverse outcomes after CDI. **Methods:** The National Surgical Quality Improvement Project (NSQIP) database was used to identify all patients who developed CDI after a colorectal operation in 2016 (N = 14,392). We excluded patients without CDI and patients <18 years of age. Any missing data were replaced with multivariate singular value decomposition imputation. We collected data on patient demographics, comorbidities, preoperative laboratory values, operative details, and outcomes, including infectious, cardiovascular, hematologic, renal, and pulmonary complications, unplanned returns to the operating room (RTOR), non–home discharge, readmission, and mortality. Data were univariably assessed for significant association with outcomes. If an input variable significantly correlated with ≥5 outcomes, it was included in our machine-learning models. We utilized bootstrap aggregation with random forests to improve prediction accuracy. We then calculated each input variable's importance to the model outcome (VIP). The VIPs of each variable were averaged to yield an overall impact. Each model's accuracy was determined by the area under the receiver operator curve (AUROC). **Results:** There were 841 patients in our cohort (median age 66 years (IQR, 55–75.8), 482 (57%) were women, and the mean American Society of Anesthesiologists [ASA] class score was 2.9 (SD, ±0.7). Of all colorectal surgeries, 172 (20.5%) were emergent. Overall mortality was 3.8% (n=32), and 371 patients (44.1%) experienced at least 1 postoperative complication, of which infectious complications (eg, septic shock, sepsis, wound infection, urinary tract infection) were most common (n=255, 30.3%). The RTOR rate was 10.3% (n = 87), the non–home discharge rate was 23.8% (n = 200), and the readmission rate was 30.9% (n = 260). The input variables most predictive of any adverse outcome were hematocrit (VIP, 24.9%), ASA class (VIP, 24.4%), creatinine (VIP, 17.4%), and prealbumin (VIP, 11.6%). The probability of any adverse outcome was 90.6% in the setting of hematocrit ≤27%, ASA class ≥3, creatinine ≥1.6 mg/dL, and prealbumin ≤3.1 mg/dL. All machine-learning models had an AUROC ≥0.99. **Conclusions:** Although nonpatient factors can contribute to unfavorable outcomes in patients with CDI following colorectal surgery, we identified 4 patient-specific variables that account for almost 80% of any adverse outcomes. Although further prospective study is needed, individuals with these preoperative risk factors could consider delaying their elective colorectal operations until they are medically optimized.

Funding: None
Disclosures: None
Doi:10.1017/ice.2020.907

Presentation Type:
Poster Presentation

Measuring the Cost of Overtesting and Overdiagnosis of *Clostridioides difficile* Infection

Gregory Madden, Infectious Diseases Fellowship Program; David Smith, UVA McIntire School of Commerce; Costi Sifri, University of Virginia Medical Center

Background: *C. difficile* is the leading healthcare-associated pathogen. The *C. difficile* real-time polymerase chain reaction (PCR) stool test, used by >70% of hospitals, is highly sensitive but cannot differentiate colonization from infection. Inappropriate *C. difficile* testing may result in overdiagnosis and unnecessary treatment. Healthcare costs attributed to *C. difficile* are substantial, but the economic burden associated with *C. difficile* false positives in colonized patients is poorly understood. *C. difficile* PCR cycle threshold (CT) is as an inverse proxy for organism burden; high CT (≥30.9) has a high (>98%) negative predictive value compared to the reference gold standard, thus is a marker of colonization. Conversely, a low CT (≤28.0) suggests high organism burden and high specificity for true infection. **Methods:** A propensity score matching model for cost per hospitalization was developed to determine the costs of a hospital stay associated with *C. difficile* and to isolate the financial impacts of both true *C. difficile* infection and false positives. Relevant predictors of *C. difficile* positivity used in the model were age, Charlson comorbidity index, white blood cell count, and creatinine. We used CT data to identify and compare 3 inpatient groups: (1) true CDI, (2) *C. difficile* colonization,

Propensity-Adjusted Hospital Costs According to *C. difficile* Diagnosis.

	Negative (n=4,410)	vs	Positive (n=*1,470*)	*P*	Negative (n=2,733)	vs	True (n=911)	*P*	Negative (n=1,077)	vs	Colonized (n=359)	*P*
Total Cost	$17,348		$17,465	.7929	$18,264		$16,148	.1220	$16,950		$21,950	.0061
Direct	$8,863		$8,682	.9917	$9,375		$8,101	.1065	$8,517		$11,435	.0134
Fixed	$9,762		$10,364	.3291	$10,311		$9,096	.3629	$9,463		$12,437	.0029
Length of Stay (IQR)	7 (2 - 16)		7 (3 - 17)	.0720	7 (2 - 16)		7 (2 - 16)	.7365	7 (2 - 15)		8 (3 - 18)	.0144
Total Cost Per Day	$2,144		$2,009	.0208	$2,150		$1,930	.0001	$2,077		$2,295	.0294
Inpatient Mortality	309 (7.0%)		87 (5.9%)	.1493	213 (7.8%)		56 (6.1%)	.0998	65 (6.0%)		22 (6.1%)	.9491
ICU Transfer	555 (12.6%)		190 (12.9%)	.7342	342 (12.5%)		119 (13.1%)	.6661	123 (11.4%)		50 (13.9%)	.2063

Data presented as US dollars ($) or n (%) unless unless otherwise specified. n values indicate the number of propensity-matched pairs with a 3:1 (Negative:Positive) ratio. *P* values for cost differences calculated using Mann-Whitney *U* test; *P* values for categorical variables using the Chi-squared test. True positive indicates *C. difficile* PCR cycle threshold ≤ 28.0; Colonized indicates cycle threshold ≥ 30.9. Abbreviations: ICU (Intensive Care Unit)

Table 1.

https://doi.org/10.1017/ice.2020.907 Published online by Cambridge University Press