chart review, we established that in fact 86 of these 163 cases (52.8%) had evidence of substance abuse.

Conclusion. Misclassification due to use of ICD codes is a well-established challenge to epidemiological research. However, the extent of misclassification in this analysis was greater than expected. If prior research on IDU and infective endocarditis has relied on medical record data alone without verification through manual chart review, the observed epidemiological trends may not be accurate.

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198. Chart Validation of an Algorithm for Identifying Patients with Intravenous Drug Use-Associated Endocarditis Using Administrative Code Data

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Background. Studies using administrative data have described increasing rates of intravenous drug use (IVDU)-associated infective endocarditis (IE) in the United States. These studies used International Classification of Disease (ICD) diagnosis codes to identify hospitalized patients with IE and any illicit drug use (i.e., opioid, amphetamine, cocaine or sedative), but were hindered by absence of specific ICD codes for IVDU. We reviewed charts to determine the positive predictive value (PPV) of ICD codes for identifying patients with IE and IVDU.

Methods. We examined national Veterans Affairs (VA) administrative data from January 2010 to December 2017 to identify patients hospitalized for a first episode of potential IVDU-associated IE based on inpatient ICD 9 and 10 codes for both IE and any illicit drug use, the algorithm used to identify IVDU-IE in most prior studies. We randomly selected 100 of these patients nationally and reviewed hospital charts to confirm clinical documentation of: (1) IE, (2) any illicit drug use, and (3) current or past IVDU.

Results. We identified 340 patients with concurrent ICD codes for IE and drug use, increasing from 28 in 2010 to 51 in 2017 (82% increase). In chart review of 100 randomly selected patients, the PPV of ICD codes was 93% (95% CI 88–98%) for a documented clinical diagnosis of IE; 96% (95% CI 92–100%) for documented drug use by any route; and 63% (95% CI 53–73%) for documented IVDU. Among the 37% of patients without clinically documented IVDU, 30% (i.e.,11% of total patients) had clinical documentation stating that drug use was only by non-IV routes, 59% (22% of total) had documented drug use without mention of route of use, and 11% (4% of total) had clinical documentation that patients denied any drug use.

Conclusion. The incidence of first hospitalization for IE among patients with ICD codes for drug use increased by 82% from 2010 to 2017 in VA care. Concurrent ICD codes for illicit drug use had moderate PPV for identifying IVDU in setting of IE, largely due to identification of patients using drugs without documented intravenous use. There is a need to develop more accurate case-finding algorithms for identifying patients with IVDU-associated endocarditis, for both epidemiologic surveillance and quality improvement applications.

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199. Infections in VADers: A True Villain of the Force

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Background. Ventricular assist devices (VADs) are increasingly used for the management of end-stage heart failure, but infection is a complication that has not been thoroughly studied. The purpose of our study was to compare patients who had surgical debridement vs. medical therapy alone for VAD-related/specific infections.

Methods. We performed a retrospective chart review on patients at Duke University Hospital (DUH) from 2015 to 2017. Patients with VAD-related/specific infections were included, per 2011 ISHLT definitions. We reviewed electronic medical records for demographics, VAD implantation data, infectious episodes, surgical debridements and mortality. Descriptive statistics compared patients with and without debridement and compared with and without relapse.

Results. We found 94 infections in 72 patients. Descriptive statistics of the cohort and comparisons with and without debridement can be seen in Table 1. Sixty-one cases (65%) included debridement and 5 (5%) required pump exchange. Notably, patients with fever or bacteremia were more likely to undergo debridement. Of the patients that had a preoperative CT, sensitivity for deep infection (pump, pocket, or deep to the muscle) was 38%, yet specificity was 95%. For superficial infections (involving the driveline or superficial to the muscle), preoperative CT sensitivity was 95%; specificity 65%. Table 2 shows intraoperative culture data. When the preoperative driveline culture grew Staphylococcus species or *Pseudomonas aeruginosa* there was strong correlation with intraoperative organism (matched in >75% of cases). Table 3 compares treatments among patients with and without infective relapse. Relapse rate appeared the same if patients received 2, 4, or ≥6 weeks of intravenous antibiotics.

Conclusion. We present a large single-center cohort [DCWM1] examining VAD-related/-specific infections. While patients chosen for debridement may be sicker, these patients had a longer hospital stay and relapsed more often. Preoperative CT should be used with caution as it underestimates the extent of disease. However, preoperative driveline cultures correlated strongly with intraoperative cultures for most common pathogens. There was no association between initial intravenous therapy duration and infection relapse.

Table 1. demographic characteristics of total cohort and comparisons among patients who underwent debridement for treatment of infection and patients who did not undergo debridement for treatment of infection

Characteristic	Debridement (N=61) N (%)	No debridement (N=33) N (%)	p-value
Age (mean, std)	58.2 (12.1)	56.0 (15.7)	0.48*
Female	18 (29.5)	10 (30.3)	0.94†
BMI (IQR 25-75)	31 (27-40)	33 (26-41.5)	0.45‡
Etiology			0.13†
Ischemic	22 (36.1)	18 (54.6)	
Non-ischemic	39 (72.2)	15 (45.4)	
Device Type			0.02†
Heartware	9 (14.75)	1 (3.03)	
HM2	49 (80.33)	31 (93.94)	
HM3	3 (4.92)	1 (3.03)	
Diabetes	27 (44.3)	16 (48.5)	0.69†
Hypertension	55 (90.2)	30 (90.9)	0.91†
COPD	18 (29.5)	6 (18.2)	0.32†
Prior sternotomy	25 (41.0)	14 (42.4)	0.89†
Prior valve replacement	19 (31.2)	9 (27.3)	0.81†
Days from LVAD until infection (median, Q25-Q75)	528 (245-903)	551 (300-1,082)	0.25‡
VAD-specific infections			
Pump	3 (5.4%)		
Pocket	2 (3.6%)		
Driveline	48 (85.7%)		
VAD-related infections	9 (14.8%)	4 (12.1%)	0.08*
Fever at diagnosis	21 (34.4)	3 (9.1)	0.007†
Mortality (only out of 72 unique patients)	25 (50%)	11 (42.3%)	0.31†
Hospital LOS (days)	11 (8-17)	4 (1-14)	0.0007‡
Number of admits within 6 months	0 (0-1)	0 (1-0)	0.41‡
Relapse	41 (67.2%)	15 (26.8%)	0.04†

*unpaired T-test, † Fisher's exact test, ‡ Wilcoxon rank-sum test

Table 2. Organisms found intraoperatively and the number of organisms found preoperatively that are the same as the intraoperative cultures

Intraoperative Culture Organism		Preoperative Cultures that identify the same Organism as Intraoperative Cultures
MSSA	22 (36%)	17 (77.3%)
MRSA	6 (10%)	6 (100%)
CoNS	4 (7%)	3 (75%)
Pseudomonas aeruginosa	6 (10%)	5 (83%)
Non-Pseudomonal GNR's	5 (8%)	
Other (fungi, mycobacterium)	4 (7%)	
Polymicrobial	6 (10%)	
No Culture Done	2 (3%)	
Negative	6 (10%)	

*A total of 38 preoperative cultures identified the same organism as the intraoperative cultures

Table 3. Comparing treatment and cultures in patients who suffered an infection relapse

Treatment	Relapse (N=56)	No Relapse (N=38)	p-value
Debrided	41 (73.2%)	20 (52.6%)	0.04*
Debrided + Pre-hospital antibiotics	18 (43.9%)	6 (30.0%)	0.4*
Debrided + IV antibiotics			0.23*
2 weeks	1 (2.4%)	3 (15.0%)	
4 weeks	8 (19.5%)	3 (15.0%)	
≥6 weeks	32 (78.1%)	14 (70%)	
Oral long-term suppressive antibiotics	32 (57.1%)	9 (23.7%)	0.001*
Intraoperative Culture			0.19*
MSSA	15 (26.8%)	7 (18.4%)	
MRSA	5 (8.9%)	1 (2.6%)	
Coagulase negative staphylococcus species	3 (5.4%)	1 (2.6%)	
Pseudomonas	3 (5.4%)	3 (7.9%)	

*Fisher's exact Test

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200. Real-World Experience with Dalbavancin for Complicated Gram-Positive Infections: A Multicenter Evaluation

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