Conclusion. AXDX did not appear to have a significant impact on time to antibiotic de-escalation and time to oral antibiotic therapy. However, time to organism ID and AST results were significantly shorter in the AXDX cohort.

Disclosures. **All Authors**: No reported disclosures

71. Diagnostic Stewardship of *Clostridioides difficile* Testing

Zahra Qamar, MD[1]; Lisa A. Spacek, MD, PhD, FIDSA[2]; Dagan Coppock, MD[1]; Kaya Patel, MD[1]; Nathan L'Etoile, MD[1]; Jingwen Huang, MD[3]; Akanksha Arya, MD[1]; Phyllis Flomenberg, MD[1]; [1]Thomas Jefferson University Hospital, Jenkintown, Pennsylvania; [2]Thomas Jefferson University Hospital/Sidney Kimmel Medical College of Thomas Jefferson University, Philadelphia, Pennsylvania; [3]Thomas Jeffeson University Hospital, Atlanta, Georgia

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. *C. difficile* (CD) testing is frequently ordered inappropriately. Highly sensitive polymerase chain reaction (PCR) tests can detect CD colonization leading to misdiagnosis. Providers often overlook other causes of diarrhea, notably laxatives. To improve diagnostic stewardship, our hospital introduced an electronic medical record (EMR)-based order set (OS).

Methods. In a 926-bed, teaching hospital, we conducted a 3-step intervention to improve CD diagnostic stewardship. (1) A retrospective analysis of CD orders before and after OS implementation was done to assess its impact on inappropriate orders. The OS included two questions: (a) Did patient have ≥ 3 loose bowel movements in past 24 hours? and (b) No laxatives in past 24 hours? An appropriate order was defined if "yes" to both questions. It was still appropriate if "no" to either question but ≥ 2 unexplained following features: fever > 100.4 F, abdominal pain, megacolon, ileus or leukocytosis > 11,000 cells/mm^3 in prior day. (2) After implementation of OS, house staff compliance with OS was surveyed via email. (3) Rationale for inappropriate orders was discussed with providers.

Results. Of 238 patients in retrospective analysis, 44% were ≥ 65 years and 37% had other potential causes of diarrhea. Common clinical features were leukocytosis (40%) and fever (31%). There was no significant difference in inappropriate testing: pre-OS 27/99 (27%) vs post-OS 44/139 (32%) (p=0.47). Of 43 house officers who participated in the survey, 75% indicated they over rode the OS. When asked to provide rationale of inappropriate CD testing, providers acknowledged inappropriate ordering but did not want to miss a CD diagnosis and frequently overlooked other causes of diarrhea.

Conclusion. Appropriate CD testing relies on providers' appreciation of a clinical picture consistent with CD infection, confirmation of clinically significant diarrhea, and consideration of other causes of diarrhea. Providers order inappropriate tests, not due to lack of knowledge, but likely fear of missing diagnosis and overlooking other causes of diarrhea.

Disclosures. **All Authors**: No reported disclosures

72. Evaluation of Acclerate Pheno™ on Clinical and Antimicrobial Outcomes in Patients with Methicillin Susceptible *Staphylococcus aureus* Bloodstream Infections

Deanna Berg, PharmD Candidate[1]; William P. DePasquale, PharmD Candidate[2]; Mary L. Staicu, PharmD[3]; Sean Stainton, PharmD[3]; Mindee Hite, PharmD[3]; Maryrose R. Laguio-Vila, MD[4]; [1]Wegmans School of Pharmacy, Rochester Regional Hospital, Penfield, New York; [2]Wegmans School of Pharmacy, Rochester General Hospital, Victor, New York; [3]Rochester General Hospital, Rochester, New York; [4]Rochester Regional Health, Rochester, NY

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Anti-staphylococcal beta-lactams (BL) are treatment of choice for methicillin-susceptible *Staphylococcus aureus* (MSSA) bloodstream infections (BSI) as they have superior MSSA bacteremia clearance. Based on the hypothesis that earlier initiation of anti-staphylococcal BL may improve clinical outcomes, this study compared clinical and microbiologic features of patients with MSSA BSI pre- and post-implementation of Accelerate Pheno™ (AXDX).

Methods. This was a case-control analysis of adult inpatients with MSSA BSI analyzed using AXDX compared to traditional laboratory methods. Cases were prospectively identified by the antimicrobial stewardship team between August and October 2020 post implementation of AXDX in July 2020. Patients were matched with historical controls (July 2018–July 2020) based on age (±4 years), gender, organism, and source of infection. The primary outcome was time to antibiotic (abx) deescalation to an anti-staphylococcal beta-lactam. Secondary outcomes included hospital length of stay (LOS), 30-day all-cause mortality and hospital readmission, and 60-day *C. difficile* infection.

Results. A total of 25 cases with MSSA BSI were identified, of which 18 (72%) were matched to historical controls. Of these patients, 12 (67%) were male with an average age of 67 years (SD ±12). Other demographics were similar between groups. The median time to species identification [21.3 hours in cases (IQR 14–31.9) vs 33.3 hours in controls (29–41.7), p=0.046] and abx susceptibilities [22.5 hours (18.8 – 42) vs 60.1 hours (46–61.9), p< 0.001] were significantly shorter in cases. The average time to abx deescalation from time to organism susceptibility was 1.7 days (±1.9) for cases compared to 2.7 days (±1.5) for controls (p = 0.129). There were no significant differences detected in hospital LOS, 30-day mortality or readmission, and 60-day *C.difficile* infection.

Conclusion. Although time to organism identification and abx susceptibilities was significantly shorter in cases, AXDX was not associated with a statistically significant reduction in time to anti-staphylococcal BL initiation nor a difference in associated clinical outcomes. A trend in shorter time to abx de-escalation was observed and warrants further investigation in a larger population.

Disclosures. **All Authors**: No reported disclosures

73. Identification of Novel Factors Associated with Inappropriate Treatment of Asymptomatic Bacteriuria Treatment in Acute and Long-term Care

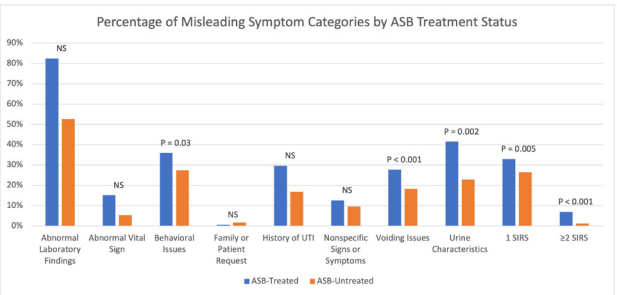
Marissa Valentine-King, PhD, MPH, BSN, RN[1]; John Van, BA[1]; Casey E. Hines-Munson, BS[2]; Laura Dillon, MS[1]; Christopher J. Graber, MD, MPH[3]; Payal K. Patel, MD, MPH[4]; Dimitri M. Drekonja, MD, MS[5]; Paola Lichtenberger, MD[6]; Bhavarth Shukla, MD, MPH[7]; Jennifer Kramer, MPH, PHD[1]; David J. Ramsey, PhD[1]; Barbara Trautner, MD, PhD[8]; Larissa Grigoryan, MD, PhD[1]; [1]Baylor College of Medicine, Houston, Texas; [2]Michael E. DeBakey VA Medical Center, Houston, Texas; [3]VA Greater Los Angeles Healthcare System/UCLA, Los Angeles, California; [4]University of Michigan and VA Ann Arbor Healthcare System, Ann Arbor, MI; [5]Minneapolis Veterans Affair Health Care System, Minneapolis, MN; [6]University of Miami Miller School of Medicine and the Miami VA Healthcare System and University of Miami, Miami, FL; [7]University of Miami, Miami, Florida; [8]Michael E DeBakey VA Medical Center, Houston, Texas

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Inappropriate treatment of asymptomatic bacteriuria (ASB) is a major driver of antibiotic overuse. Demographic and laboratory factors associated with inappropriate antibiotic treatment include older age, pyuria, leukocytosis and dementia. To gain a deeper understanding of inappropriate ASB treatment, we performed an in-depth review of provider documentation capturing a broader range of misleading factors associated with ASB treatment.

Methods. We reviewed a random sample of 10 positive urine cultures per month per facility from acute or long-term care wards at eight Veteran's Administration (VA) facilities from 2017-2019 (n=960). Trained chart reviewers classified cultures as UTI or ASB and as treated or untreated. Charts were searched specifically for mention of 8 categories of potentially misleading symptoms that often lead to overtreatment of ASB (e.g. "prior history of UTI") (**Figure** legend). We also created a 'suspected systemic inflammatory response syndrome (SIRS)' category that included any mention of leukocytosis, tachycardia, tachypnea, subjective or low-grade fever, or hypothermia. Generalized estimating equations logistic regression was used for analysis.

Results. Our study included 575 cultures from patients that were primarily white (71%) males (94%) from acute medicine units (75.7%) with a mean age of 76. Twenty-eight percent (n=159) of ASB cases received antibiotics. In addition to the usual known predictors, multiple new misleading symptoms were found to be associated with ASB treatment (**Table**). Novel, independent predictors of ASB treatment included behavioral issues, such as falls or fatigue (odds ratio (OR): 1.8; 95% CI: 1.05-3.07), urine characteristics, such as cloudy or odorous urine (OR: 1.41; 95% CI: 1.13-1.75), voiding issues (OR: 1.86; 95% CI: 1.43-2.41), and a single, free text mention of a SIRS criteria (OR: 1.63; 95% CI: 1.16-2.3).



P-values extracted from multivariate regression model (ASB-asymptomatic bacteriuria; NS-not significant; SIRS- systemic inflammatory response syndrome). The following signs or symptoms compose each category: abnormal laboratory findings: acute kidney injury, abnormal creatinine, leukocytosis, pyuria/positive urinalysis, hyperglycemia; abnormal vital sign: bradycardia, tachycardia, atrial fibrillation, hypotension, hypertension, hypoxia, tachypnea, subjective fever or low-grade fever, syncope; behavior issues: falls, confusion lethargy, fatigue, weakness; nonspecific signs or symptoms: nonspecific gastrointestinal, genitourinary, neurological symptoms; voiding issues: decreased urine output, urinary retention, urinary incontinence; urine characteristics: change in color, foul smell, cloudy urine, sediment; SIRS: ordinal variable characterizing if 1 or ≥ 2 of the following were documented by the provider: leukocytosis, tachycardia, tachypnea, subjective or low-grade fever, hypothermia.

Table-Misleading symptoms associated with ASB treatment

	Univariate Associations		Multivariate Model	
	OR (95% CI)	P-value	aOR (95% CI)	P-value
Known Predictors[a]				
Age	1.00 (1-1.01)	0.31	--	--
Pyuria/positive urinalysis	5.46 (3.11-9.58)	< 0.001	4.08 (2.27-7.31)	< 0.001
Gram-negative organisms	3.72 (2.62-5.29)	< 0.001	3.30 (2.32-4.7)	< 0.001
Organism count > 10^5 CFU/ml	5.49 (3.77-8.01)	< 0.001	3.64 (2.17-6.11)	< 0.001
Urinary Catheter				
None	Ref.	Ref.	--	--
Condom or Intermittent	1.39 (1.02-1.89)	0.036	--	--
Transurethral or suprapubic	1.42 (1.08-1.87)	0.011	--	--
Disorganized thinking[b]	2.08 (1.41-3.06)	< 0.001	2.26 (1.65-3.08)	< 0.001
Misleading Symptoms Categories				
Abnormal laboratory findings	4.49 (2.23-9.02)	**< 0.001**	--	--
Abnormal vital signs	2.79 (1.50-5.18)	**< 0.001**	**--**	**--**
Behavioral issues	1.5 (1.02-2.21)	**0.04**	**1.80 (1.05-3.07)**	**0.033**
Family or patient request	0.36 (0.04-3.13)	0.36	--	--
History of UTI	1.81 (1.22-2.69)	**0.003**	--	--
Nonspecific signs or symptoms	1.35 (0.80-2.29)	0.26	--	--
Urine characteristics	2.27 (1.77-2.92)	**< 0.001**	**1.41 (1.13-1.75)**	**0.002**
Voiding issues	1.97 (1.51-2.57)	**< 0.001**	**1.86 (1.43-2.41)**	**< 0.001**
Suspicion for SIRS				
None	Ref.	Ref.		
1 SIRS	1.72 (1.30-2.27)	**< 0.001**	**1.63 (1.16-2.30)**	**0.005**
≥ 2 SIRS	5.44 (3.02-9.78)	**< 0.001**	**11.30 (8.19-15.60)**	**< 0.001**

[a]Known predictors: these include factors identified by one or more prior studies as being associated with inappropriate ASB treatment.
[b]Variable used in lieu of dementia
OR-Odds ratio; aOR-adjusted odds ratio

Conclusion. Our in-depth chart review, with attention to misleading symptoms and any documentation of the provider thought process, highlights new factors associated with inappropriate ASB treatment. Patients with even a single SIRS criteria are at risk for unnecessary treatment of ASB; this finding can help design antibiotic stewardship interventions.

Disclosures. **Barbara Trautner, MD, PhD**, **Genentech** (Consultant, Scientific Research Study Investigator)

74. Evaluation of the Differences in Appropriateness of BioFire® FilmArray® Gastrointestinal Panel Testing between Emergency Department and Inpatient Services

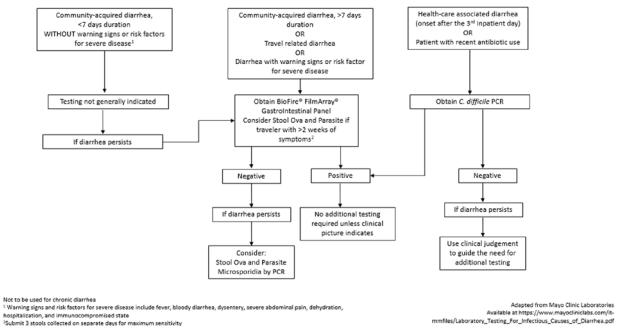
Brittani Weichman, PharmD Student[1]; Amanda Bushman, PharmD[2]; Rossana M. Rosa, MD[2]; [1]UnityPoint Des Moines Iowa Lutheran Hospital, Des Moines, IA; [2]UnityPoint Health, Des Moines, IA

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Use of rapid molecular diagnostic panels in the evaluation of diarrhea provides increased sensitivity for organism identification and decreased time to results. However, their inappropriate use can lead to unnecessary expenditures and antimicrobial exposures. We aimed to characterize the appropriateness of testing using the BioFire® FilmArray® Gastrointestinal Panel (SFA) in different clinical settings and to describe the impact of SFA results on patient care.

Methods. Retrospective study of adult patients presenting to hospitals part of an integrated health system in Des Moines, Iowa, between July 30 and September 30, 2019, and who had a SFA ordered and collected in the Emergency Department (ED) or an inpatient service. The appropriateness of SFA testing was determined according to adherence to a local algorithm available through the hospital's intranet (Figure 1). Reason for testing, appropriateness of SFA test, molecular targets identified, and antibiotic exposures were collected.

Figure 1. Clinical guidance for choosing laboratory testing for infectious causes of diarrhea in adults



Results. We identified 257 patients, 111 (43.2%) who had SFA done in the ED and 146 (56.8%) as inpatients. Testing was deemed inappropriate in 46 (41.4%) of ED patients compared to 100 (68.5%) of inpatients (p< 0.0001). Documented indications for SFA are presented in Table 1. Among ED patients testing was most frequently considered inappropriate due to absence of diarrhea on the day of test collection (41.3%), and among inpatients due to the use of SFA for assessment of hospital-onset diarrhea (47.0%) (Table 2). Overall, there were 94 (36.6%) positive SFA (Figure 2). Among ED patients, the percentage of positive SFA samples was 30.4% and 50.8% for inappropriate and appropriate testing respectively (p=0.03), while for inpatients it was 33.0% for inappropriate orders and 30.4% for appropriate orders (p=0.76). Antibiotics were prescribed to 28.2% and 28.1% of patients tested in the ED and inpatient service respectively.

Table 1. Documented indication for testing with BioFire® FilmArray® Gastrointestinal Panel according to clinical setting

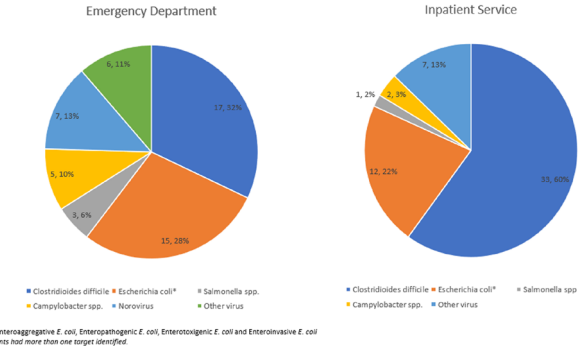
	Emergency Department N=111 (%)	Inpatient Service N=146 (%)
Acute gastroenteritis	80 (72.1)	57 (39.0)
Hospital-onset diarrhea	0	50 (34.2)
No indication specified	26 (23.4)	35 (24.0)
Other	5 (4.5)	4 (2.7)

Table 2. Reasons for considering testing with BioFire® FilmArray® Gastrointestinal Panel inappropriate according to clinical setting

	Emergency Department N=46 (%)	Inpatient Service N=100 (%)
Uncomplicated diarrhea	6 (13.4)	0
Hospital-onset diarrhea*	0	47(47)
Recent antibiotic use	6 (13.0)	12 (12)
Absence of diarrhea on day of test collection	19 (41.3)	27 (27)
Recent use of laxative agents	1 (2.2)	4 (4)
Chronic diarrhea	14 (30.4)	10 (10)

*Defined as diarrhea occurring after the third day of hospital admission

Figure 2. Distribution of molecular targets identified by the BioFire® FilmArray® Gastrointestinal Panel according to clinical setting



*Includes Enteroaggregative *E. coli*, Enteropathogenic *E. coli*, Enterotoxigenic *E. coli* and Enteroinvasive *E. coli*
Some patients had more than one target identified.

Conclusion. High proportions of inappropriate SFA testing were identified both in the ED and inpatient services, with distinct issues in each site. Characterization of the reasons underlying inappropriate use of SFA can aid in the design of diagnostic stewardship interventions tailored to each clinical setting.

Disclosures. **All Authors**: No reported disclosures

75. Utility of Fungal Blood Cultures in Portland, Oregon

Sujeet Govindan, MD[1]; Luke Strnad, MD[1]; [1]Oregon Health & Science University, Portland, Oregon

Session: P-05. Antimicrobial Stewardship: Diagnostics/Diagnostic Stewardship

Background. Fungal blood cultures (fungal isolators) should be used, if at all, primarily for identification of mold infections. At our institution we noted patients having fungal blood cultures drawn in many other situations, including when the primary team was concerned for candida bloodstream infection. We sought to describe the utility of this practice and of fungal blood cultures in general.

Methods. We retrospectively reviewed the results of fungal blood cultures for 2 years, from 3/1/2019-3/1/2021. We evaluated the number of episodes, culture results, whether there was a had prior bloodstream infection, and risk factors for fungal infection including renal replacement (RRT), ECMO, and immunosuppression (IS). Immunosuppression was defined as chronic systemic steroid use, recent receipt of high dose steroids within 2 weeks, history of organ transplantation, history of stem cell transplantation, hematologic malignancies, or receipt of a biologic agent.

Results. 187 fungal blood cultures were drawn in 143 patients - 80 cultures in 70 patients from 3/2019-3/2020 and 107 cultures in 73 patients from 3/2020-3/2021. Only 3 patients had positive fungal blood cultures:1 (*Candida krusei*) from 3/2019-3/2020 and 2 (*Candida albicans and Cyrptococcus neoformans)* from 3/2020-3/2021; in all 3 cases the organism also grew from standard blood culture isolators. From 3/2019-3/2020, 1/80 cultures were drawn from an individual on ECMO while 15/80