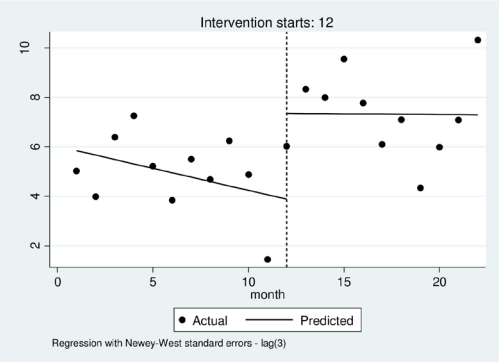

Figure 2: Nitrofurantoin utilization before and after suppression

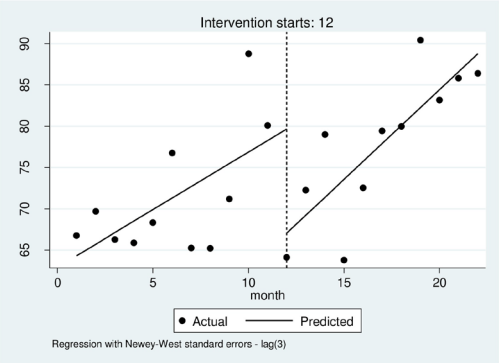

Figure 4: Ceftriaxone utilization before and after suppression

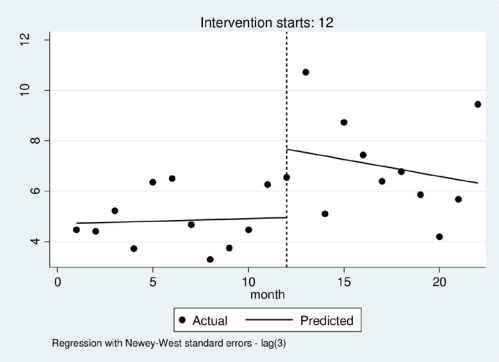

Figure 3: Cephalexin utilization before and after suppression

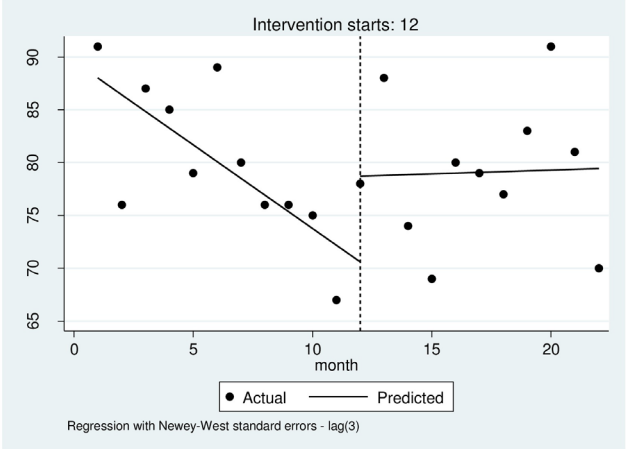

Figure 1: *P. aeruginosa* susceptibility to ciprofloxacin before and after suppression

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

1986. Impact of Two-Step Testing on the Diagnosis and Management of *Clostridium difficile* in a Multi-Hospital Healthcare System

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Session: 234. Antibiotic Stewardship: C. difficile
Saturday, October 5, 2019: 12:15 PM

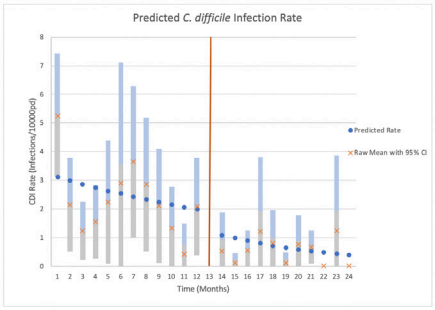
Background. Distinguishing active *C. difficile* infection (CDI) from asymptomatic colonization remains a significant challenge. A multi-step testing algorithm can improve the diagnostic accuracy of CDI and associated antibacterial prescribing. This study evaluated the impact of two-step testing on CDI rates and management in a multi-hospital community health system.

Methods. Two-step *C. difficile* testing (PCR for initial screening followed by EIA for toxin detection) was implemented in 6 acute care community hospitals in April 2018. EIA testing was automatically performed on all stool samples with a positive *C. difficile* PCR result. Prior to implementation, PCR alone was used to identify CDI. Messaging attached to the PCR laboratory report alerted prescribers of discrepant results (PCR +/EIA -). Anti-*C. difficile* therapy was at the discretion of the prescriber. We performed a retrospective cohort analysis over a 2-year period to evaluate the effect of two-step testing on system-wide hospital-onset CDI (HO-CDI) per 10,000 patient-days (PD) and anti-CDI antimicrobial use (AU) in days of therapy (DOT) per 1,000 PD. Segmented negative binomial regression with hospital clustering was used to estimate predicted HO-CDI rate for the baseline period between April 1, 2017 through March 31, 2018 and the post-intervention between May 1, 2018 through March 31, 2019. The implementation date at all sites in April 2018 was unknown; therefore, this month was removed from the analysis. Anti-CDI agents included fidaxomicin, metronidazole, and oral vancomycin, but may have included non-CDI indications for metronidazole.

Results. A total of 115 HO-CDI cases were identified; 91 (79%) before and 24 (21%) after. Prior to implementation of two-step testing, CDI rates declined at 4% per month (P = NS). The rate immediately dropped by 36% (P = 0.004) after two-step testing was implemented, but the trend did not significantly change (P = 0.52, Figure 1). Community-onset CDI rates also decreased during this time period. Combined facility-wide anti-CDI agent use was 824.87 before and 838.21 DOT/1,000 PD after and did not significantly change.

Conclusion. Use of a two-step approach for CDI testing reduced HO-CDI rates, but did not have a significant impact on anti-CDI antibiotic use in a multi-hospital community health system.

Figure 1:



LABEL	MEAN ESTIMATE	CONFIDENCE LIMITS		P VALUE
TREND BEFORE INTERVENTION	0.96	0.8759	1.0522	0.3832
IMMEDIATE CHANGE IN APRIL 2018	0.6356	0.4673	0.8646	0.0039
CHANGE IN TREND AFTER INTERVENTION	0.9398	0.7763	1.1378	0.5245
TREND AFTER INTERVENTION	0.9023	0.8155	0.9983	0.0463

Table 1.
Monthly HO-CDI infections:

	BEFORE				AFTER			
Facility	Year	Month	HO-CDI Infection	Patient Days	Year	Month	HO-CDI Infection	Patient Days
Piedmont Hospital	2017	4	1	13561	2018	4	1	13561
Piedmont Hospital	2017	5	3	12670	2018	5	4	12660
Piedmont Hospital	2017	6	3	12672	2018	6	1	12656
Piedmont Hospital	2017	7	3	12252	2018	7	2	12307
Piedmont Hospital	2017	8	2	12790	2018	8	1	12570
Piedmont Hospital	2017	9	4	12174	2018	9	4	12402
Piedmont Hospital	2017	10	1	12310	2018	10	1	12470
Piedmont Hospital	2017	11	2	12183	2018	11	2	11390
Piedmont Hospital	2017	12	3	12148	2018	12	1	12251
Piedmont Hospital	2018	1	2	12417	2019	1	0	12868
Piedmont Hospital	2018	2	3	11978	2019	2	1	11910
Piedmont Hospital	2018	3	0	12702	2019	3	0	12907
Piedmont Fayette Hospital	2017	4	3	5161	2018	4	1	5086
Piedmont Fayette Hospital	2017	5	2	5017	2018	5	0	5085
Piedmont Fayette Hospital	2017	6	0	5061	2018	6	0	5056
Piedmont Fayette Hospital	2017	7	2	5170	2018	7	0	4137
Piedmont Fayette Hospital	2017	8	0	5072	2018	8	0	3995
Piedmont Fayette Hospital	2017	9	0	5135	2018	9	1	5030
Piedmont Fayette Hospital	2017	10	2	5417	2018	10	0	4317
Piedmont Fayette Hospital	2017	11	1	5485	2018	11	0	4564
Piedmont Fayette Hospital	2017	12	0	5443	2018	12	1	4558
Piedmont Fayette Hospital	2018	1	3	4408	2019	1	0	4457
Piedmont Fayette Hospital	2018	2	0	5713	2019	2	0	5799
Piedmont Fayette Hospital	2018	3	1	5391	2019	3	0	4409
Piedmont Henry Hospital	2017	4	3	5120	2018	4	2	5416
Piedmont Henry Hospital	2017	5	1	5488	2018	5	0	5088
Piedmont Henry Hospital	2017	6	0	5140	2018	6	0	5045
Piedmont Henry Hospital	2017	7	0	5298	2018	7	1	5298
Piedmont Henry Hospital	2017	8	0	5386	2018	8	0	5190
Piedmont Henry Hospital	2017	9	1	5742	2018	9	0	5105
Piedmont Henry Hospital	2017	10	0	5038	2018	10	0	5552
Piedmont Henry Hospital	2017	11	1	5085	2018	11	0	5558
Piedmont Henry Hospital	2017	12	7	6242	2018	12	1	6026
Piedmont Henry Hospital	2018	1	0	6182	2019	1	0	6033
Piedmont Henry Hospital	2018	2	0	5368	2019	2	0	5187

Piedmont Henry Hospital	2018	3	1	5701	2018	3	0	5537
Piedmont Newnan Hospital	2017	4	3	3210	2018	4	0	3188
Piedmont Newnan Hospital	2017	5	3	3151	2018	5	0	3083
Piedmont Newnan Hospital	2017	6	1	3361	2018	6	0	3432
Piedmont Newnan Hospital	2017	7	1	3369	2018	7	0	3678
Piedmont Newnan Hospital	2017	8	2	3441	2018	8	0	3530
Piedmont Newnan Hospital	2017	9	0	3446	2018	9	0	3341
Piedmont Newnan Hospital	2017	10	1	3551	2018	10	0	3536
Piedmont Newnan Hospital	2017	11	1	3542	2018	11	1	3752
Piedmont Newnan Hospital	2017	12	1	3777	2018	12	0	4080
Piedmont Newnan Hospital	2018	1	0	3845	2019	1	0	4130
Piedmont Newnan Hospital	2018	2	0	3370	2019	2	0	3630
Piedmont Newnan Hospital	2018	3	1	3997	2019	3	0	4138
Piedmont Mountainside Hospital	2017	4	0	1214	2018	4	0	1236
Piedmont Mountainside Hospital	2017	5	0	1145	2018	5	0	1248
Piedmont Mountainside Hospital	2017	6	0	1091	2018	6	0	1196
Piedmont Mountainside Hospital	2017	7	0	1025	2018	7	0	1132
Piedmont Mountainside Hospital	2017	8	0	1014	2018	8	0	1123
Piedmont Mountainside Hospital	2017	9	0	1037	2018	9	0	1233
Piedmont Mountainside Hospital	2017	10	1	1055	2018	10	0	1155
Piedmont Mountainside Hospital	2017	11	1	1100	2018	11	0	1161
Piedmont Mountainside Hospital	2017	12	0	1152	2018	12	0	1182
Piedmont Mountainside Hospital	2018	1	0	1159	2019	1	0	1180
Piedmont Mountainside Hospital	2018	2	0	1092	2019	2	0	1137
Piedmont Mountainside Hospital	2018	3	0	1201	2019	3	0	1137
Piedmont Newnan Hospital	2017	4	1	1718	2018	4	0	1483
Piedmont Newnan Hospital	2017	5	1	1747	2018	5	0	1474
Piedmont Newnan Hospital	2017	6	0	1647	2018	6	0	1524
Piedmont Newnan Hospital	2017	7	0	1655	2018	7	0	1537
Piedmont Newnan Hospital	2017	8	1	1658	2018	8	0	1540
Piedmont Newnan Hospital	2017	9	2	1606	2018	9	0	1487
Piedmont Newnan Hospital	2017	10	0	1643	2018	10	0	1554
Piedmont Newnan Hospital	2017	11	0	1563	2018	11	0	1581
Piedmont Newnan Hospital	2017	12	0	1617	2018	12	0	1579
Piedmont Newnan Hospital	2018	1	1	1642	2019	1	0	1892
Piedmont Newnan Hospital	2018	2	1	1751	2019	2	1	1721
Piedmont Newnan Hospital	2018	3	0	1665	2019	3	0	1591
Total			91	840273			24	267628

Figure 2.

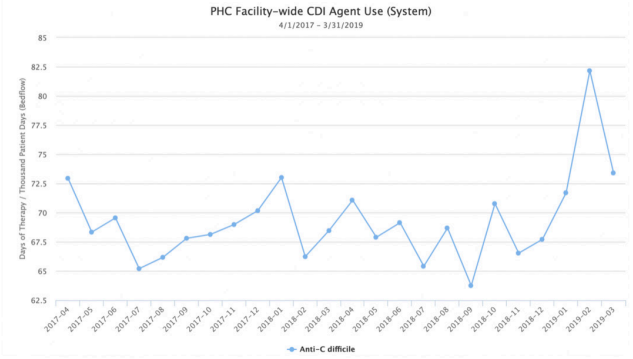


Table 2.
Monthly Anti-*C. difficile* Agent Use (System):

Date	Days of Therapy / Thousand Patient Days (Bedflow) - Anti-C difficile	Fidaxomicin	Metronidazole	Vancomycin (Digestive Tract)
Apr-17	72.94	0.7	62.57	9.67
May-17	68.33	0.6	72.94	9.33
Jun-17	69.55	0.48	57.59	11.49
Jul-17	65.2	0.78	56.66	7.77
Aug-17	66.17	0.33	54.87	10.97
Sep-17	67.8	0.49	55.92	11.38
Oct-17	68.13	0.37	57.76	10
Nov-17	68.98	0.26	58.50	10.22
Dec-17	70.17	0.1	58.46	11.61
Jan-18	73.01	0	60.82	12.18
Feb-18	66.23	0	54.77	11.46
Mar-18	68.46	0	56.63	11.83
Apr-18	71.07	0.52	57.52	13.03
May-18	67.89	0.04	53.39	14.47
Jun-18	69.14	0.44	52.43	16.27
Jul-18	65.41	0.72	53.93	10.76
Aug-18	68.68	0.07	55.82	12.79
Sep-18	63.75	0.22	52.09	11.44
Oct-18	70.77	0.4	55.80	14.57
Nov-18	66.53	0.15	54.91	11.48
Dec-18	67.71	0.23	54.72	12.75
Jan-19	71.7	0.13	57.65	13.92
Feb-19	82.16	0	66.83	15.33
Mar-19	73.4	0.47	58.69	14.24

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

1987. Impact of Updated IDSA *Clostridium difficile* Guidelines on the use of Fidaxomicin in a Large Health System

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Session: 234. Antibiotic Stewardship: C. difficile
Saturday, October 5, 2019: 12:15 PM

Background. Fidaxomicin (fidax) is approved for treatment of *Clostridioides difficile* infection. In February 2018 IDSA/SHEA released updated guidelines suggesting expanded use of fidax, recommending it or oral vancomycin (po vanc) in severe or non-severe initial episodes or for most recurrences. In April 2018, University of Pittsburgh Medical Center (UPMC) relaxed system-wide guidelines to allow for fidax use in the first recurrence of *C. difficile* or later, with earlier use allowed by ID or GI specialists or with local Pharmacy and Therapeutics Chair approval. Hospitals could continue to be more restrictive if desired. We reviewed changes in fidax, po vanc, and IV/PO metronidazole (metro) use at UPMC hospitals after guideline changes.

Methods. For the reviewed antibiotics, hospital-level usage was evaluated at 15 UPMC hospitals before/after system-level changes. Usage was measured as days of therapy per 1,000 patient-days (DOT/1,000 PD). Sites were further grouped by the level of restrictions: Standard (following new system guidelines) or more restrictive (additional restrictions remained in place locally). Hospitals were also grouped by type of local stewardship programs (ASP): Robust (included an Infectious Diseases trained clinical pharmacist or ID physician with specific time dedicated to antibiotic review) or Non-Robust.

Results. Figure 1 shows before/after changes in usage at all hospitals. Figure 2 shows changes in Standard vs. More Restrictive hospitals, and Figure 3 shows changes in Robust vs. Non-Robust hospitals.

Conclusion. Fidax use remained low, but an increase was seen after the release of the guidelines and relaxation of system restrictions, mainly in hospitals without additional restrictions in place. PO vanc also increased across the system, possibly indicating better adherence to updated guidelines regarding less metro use for *C. difficile* treatment. Although minimal decrease, if any, was seen with metro itself. This could have been compounded by the recent fluid shortage as well as other common uses for metro. Dissemination of new guidelines to providers should be a key function of ASPs as well as monitoring for changes in usage after implementation of local changes. Further studies are needed to define any differences in practice patterns and clinical outcomes related to changes in guidelines.

Figure 1: Antibiotic Use at 15 UPMC Hospitals

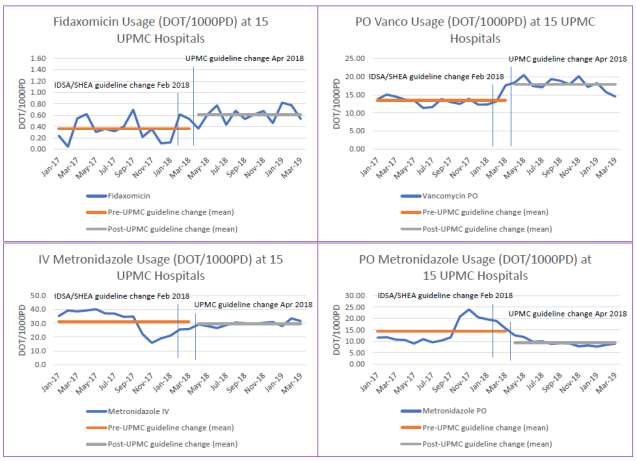


Figure 2: Antibiotic Usage by Level of Local Restriction

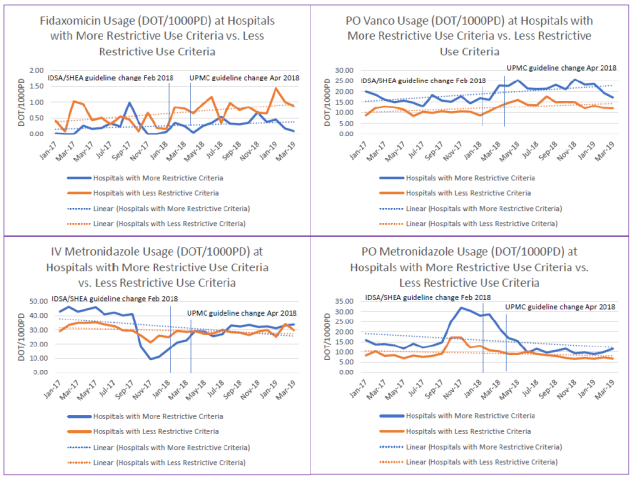
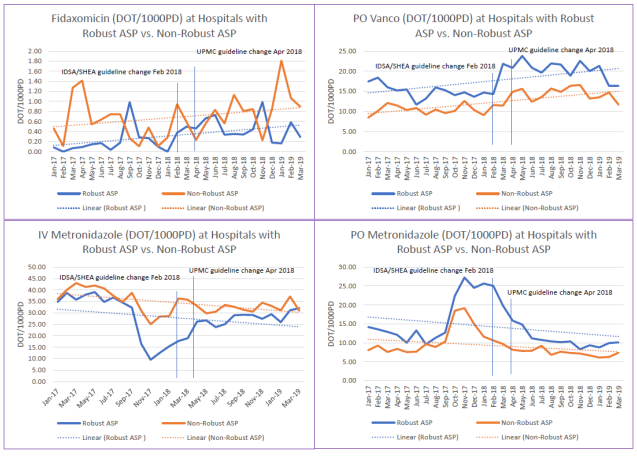


Figure 3: Antibiotic Use Based on Level of Local Stewardship Program



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

1988. Impact of a Novel Pharmacist Practice Model on Antimicrobial Usage and Hospital-acquired *Clostridium difficile* (HACDI) Rates

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