

Table 1. Diagnostic assay results of study participants.

Diagnosis (Initial NAAT)	Patient Number	Bacterial Culture Result	enolase NAAT	tcdA NAAT (isolate)	tcdB NAAT (isolate)	cdtB NAAT	Clinical GeneXpert (NAAT) Result	Cytotoxicity Result	EIA Result	MSD Toxin A Results	MSD Toxin B Results
Positive	Patient 1	+	+	+	+	-	+	-	+	+	+
Positive	Patient 2	-	-	-	-	-	-	-	-	-	-
Positive	Patient 3	+	+	+	+	-	+	-	-	-	-
Positive	Patient 4	+	+	+	+	-	+	-	-	-	-
Positive	Patient 5	-	-	-	-	-	-	-	-	-	-
Positive	Patient 6	+	+	+	+	-	+	-	+	+	+
Positive	Patient 7	+	+	+	+	-	+	-	-	-	-
Positive	Patient 8	-	-	-	-	-	-	-	-	-	-
Positive	Patient 9	-	-	-	-	-	-	-	-	-	-
Positive	Patient 10	-	-	-	-	-	-	-	-	-	-
Positive	Patient 11	-	-	-	-	-	-	-	-	-	-
Positive	Patient 12	+	+	+	+	-	+	-	-	-	-
Positive	Patient 13	-	-	-	-	-	-	-	-	-	-
Positive	Patient 14	-	-	-	-	-	-	-	-	-	-
Positive	Patient 15	-	-	-	-	-	-	-	-	-	-
Positive	Patient 16	-	-	-	-	-	-	-	-	-	-
Positive	Patient 17	+	+	+	+	-	+	-	-	-	-
Positive	Patient 18	+	+	+	+	-	+	-	-	-	-
Positive	Patient 19	-	-	-	-	-	-	-	-	-	-
Positive	Patient 20	-	-	-	-	-	-	-	-	-	-
Positive	Patient 21	+	+	+	+	+	+	-	-	-	-
Positive	Patient 22	+	+	+	+	+	+	-	-	-	-
Positive	Patient 23	+	+	+	+	+	+	-	-	-	-
Negative	Patient 24	-	-	-	-	-	-	-	-	-	-
Negative	Patient 25	-	-	-	-	-	-	-	-	-	-
Negative	Patient 26	-	-	-	-	-	-	-	-	-	-
Negative	Patient 27	-	+	-	-	-	-	-	-	-	-
Negative	Patient 28	-	-	-	-	-	-	-	-	-	-
Negative	Patient 29	-	-	-	-	-	-	-	-	-	-
Negative	Patient 30	-	-	-	-	-	-	-	-	-	-
Negative	Patient 31	-	-	-	-	-	-	-	-	-	-
Negative	Patient 32	-	-	-	-	-	-	-	-	-	-
Negative	Patient 33	-	-	-	-	-	-	-	-	-	-
Negative	Patient 34	-	-	-	-	-	-	-	-	-	-
Negative	Patient 35	-	-	-	-	-	-	-	-	-	-
Negative	Patient 36	-	-	-	-	-	-	-	-	-	-
Negative	Patient 37	-	-	-	-	-	-	-	-	-	-
Negative	Patient 38	-	+	-	-	-	-	-	-	-	-
Negative	Patient 39	-	-	-	-	-	-	-	-	-	-
Negative	Patient 40	-	-	-	-	-	-	-	-	-	-
Negative	Patient 41	-	-	-	-	-	-	-	-	-	-
Negative	Patient 42	-	-	-	-	-	-	-	-	-	-
Negative	Patient 43	-	-	-	-	-	-	-	-	-	-
Negative	Patient 44	-	-	-	-	-	-	-	-	-	-

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2360. Impact of a Two-Step Antimicrobial Stewardship Intervention on *C. difficile* Infection Diagnosis at an Urban Veteran's Affairs Medical Center

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Background. *C. difficile* infection (CDI) is a common healthcare-associated infection and quality measure for hospitals. Diagnosis of CDI is challenging as testing modalities, i.e., nucleic acid amplification test (NAAT), are highly sensitive but cannot differentiate between colonization and infection. Therefore, judicious use of testing is critical to avoid unnecessary diagnosis and treatments.

Methods. This single-center, retrospective chart review evaluated the impact of a two-step diagnostic stewardship intervention on *C. difficile* diagnosis and use of oral vancomycin in the inpatient setting. For the first step of the intervention, providers were educated on appropriate diagnosis and treatment, and given access to an optional electronic CDI clinical decision support system (CDSS). For the second step of the intervention, the CDI NAAT stand-alone testing option was removed from the lab ordering menu and providers were required to use the CDSS to order testing. Clinical data including bed-days of care (BDOC), total number tests ordered, number of positive tests and use of oral vancomycin was collected for the pre-intervention period (1/1/16 - 3/31/17), post intervention period 1 (April 1, 2017–October 31/18) and post-intervention period 2 (November 1, 2018–March 31, 2019).

Results. Compared with the pre-intervention group, there were no significant differences in the number of total CDI NAATs ordered, positive CDI NAATs or vancomycin DOT/10,000 BDOC in post-intervention group 1. There was a reduction in the number of total CDI NAATs ordered (341 vs. 42 [87.7%]) and the number of positive CDI NAATs (56 vs. 7 [87.5%]) in post-intervention group 2, respectively. When this data were normalized based on bed days of care (BDOC), there were still significant reductions in NAATs ordered and number of positive CDI NAATs (64 vs. 27 [57.8%]; 11 vs. 5, respectively, [54.5%]) and with vancomycin oral DOT/10,000 BDOC (72 vs. 7 [90.3%]) (Table 1).

Conclusion. Provider education and an optional CDSS did not significantly impact CDI NAAT ordering or use of oral vancomycin for CDI. However, implementation

of a mandatory CDSS for CDI testing was shown to significantly decrease the number of tests ordered, the number of positive tests, and the use of oral vancomycin.

Table 1: CDI NAATs¹, Vancomycin DOT²/10,000 BDOC³: Pre-Intervention vs. Post Intervention Periods 1&2

Groups / Dates	BDOC (days)	Total NAATs	Positive NAATs	Total NAATs/10,000 BDOC	Positive NAATs/10,000 BDOC	Vancomycin Oral DOT/10,000 BDOC
Pre-Intervention Group: 1/1/16 to 3/31/17	53,015	341	56	64	11	72
Post Intervention Period 1: 4/1/17 - 10/31/18	61,048	362	70	59	11	62
Post Intervention Period 2: 11/1/18 - 3/31/19	15,445	42	7	27	5	7

1. *C. difficile* infection nucleic acid amplification test
2. Days of Therapy
3. Bed Days of Care

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2361. Evaluation of a 2-Step Testing Algorithm for *Clostridioides difficile* Infection

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Background. Clinical data describing use of a multistep algorithm for diagnosis of *Clostridioides difficile* infection (CDI) is limited. In June 2018 we implemented a 2-step testing algorithm in which PCR testing (Aries® assay) is performed for all specimens followed by EIA toxin testing (TOX A/B QUIK CHEK® assay) when PCR is positive. We sought to describe outcomes for patients with PCR+/EIA+ vs. PCR+/EIA- results. Outcomes evaluated included frequency of CDI treatment, retesting and retreatment within 3 months, and investigator determined categorization of *C. difficile* results by an investigator blinded to the EIA result.

Methods. A retrospective cohort study was performed on a random sample of 85 unique patients with a PCR+ stool sample from July 2018 through December 2018. Demographic and clinical data were abstracted from the medical record during the index encounter and for 3 months thereafter. Based on predetermined criteria, index encounter results were categorized as representing probable, possible, unlikely, or indeterminate cases of symptomatic CDI.

Results. For the 85 study patients, 42%, 27%, and 31% were tested in the inpatient, outpatient, and ED/urgent care settings. Twenty-seven patients (32%) were EIA+, all of whom received CDI treatment. Fifty-eight (68%) were EIA-, of which 79% received treatment. Of the 12 EIA- patient who did not receive treatment two had retesting within 3 months; one of whom subsequently tested EIA+ and was treated and the other tested PCR-. At least 1 *C. difficile* test was repeated within 3 months in 48% of EIA+ and 33% of EIA- patients. Based on repeat testing CDI treatment was prescribed for 12% of EIA+ subjects and for 11% of EIA- subjects. For the EIA+ patients, 70%, 19%, 7%, and 4% were classified as probable, possible, unlikely and indeterminate cases of symptomatic CDI when compared with 38%, 34%, 22%, and 5% for EIA- patients.

Conclusion. During the first 6 months of a 2-step testing algorithm, we found that patients with EIA- test results were frequently treated for CDI and that 72% of EIA-cases were classified as probably or possibly having symptomatic CDI. Further study is needed to determine whether patients with EIA- results categorized with probable or possible symptomatic CDI would improve without CDI treatment.

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2362. Back to the Future: The Impact of Multi-Step Algorithm *C. difficile* Testing at a Large Tertiary Medical Center

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Background. Antibiotic stewardship and infection control programs rely on *C. difficile* infection (CDI) test results to measure CDI incidence in the hospital setting. *C. difficile* carriage is common and distinguishing infection from colonization is difficult with the highly sensitive nucleic acid amplification testing (NAAT) commonly used. Current guidelines recommend a multi-step algorithm for testing. The impact on patient outcomes and CDI metrics are largely unknown.