

INTRODUCTION

- *C. difficile* infection (CDI) is the leading hospital-associated infection (HAI) nationally¹
- *C. difficile* colonization is seen in up to 30% of inpatients²
- Highly sensitive PCR tests do not differentiate between CDI and colonization, making interpretation difficult³
- Inappropriate testing can lead to unnecessary antibiotic treatment and increased hospital costs & length of stay¹
- The goal of this quality improvement (QI) project was to decrease inappropriate *C. difficile* testing by implementing an intervention in the electronic medical record (EMR)

METHODS

- Hospital providers (medical and surgical) were educated on current *C. difficile* testing guidelines
- Prompts were introduced into the EMR upon ordering a *C. difficile* PCR test
- At order input, providers were prompted to answer “yes” or “no” in the following prompts (see Figure 1)
- The test order was completed regardless of responses
- Six-month post-intervention data was compared to the same timeframe during the prior year (Figure 2)

Test: C DIFF PCR Coll Sample: STOOL

Order Required Data:

Confirm with Y/N. N=testing likely not indicated.

No laxative/stool softener 48hrs prior to testing.

LOOSE BM >= 3 liquid stools over 24hr period.

Figure 1. EMR Prompt for *C. difficile* testing

RESULTS

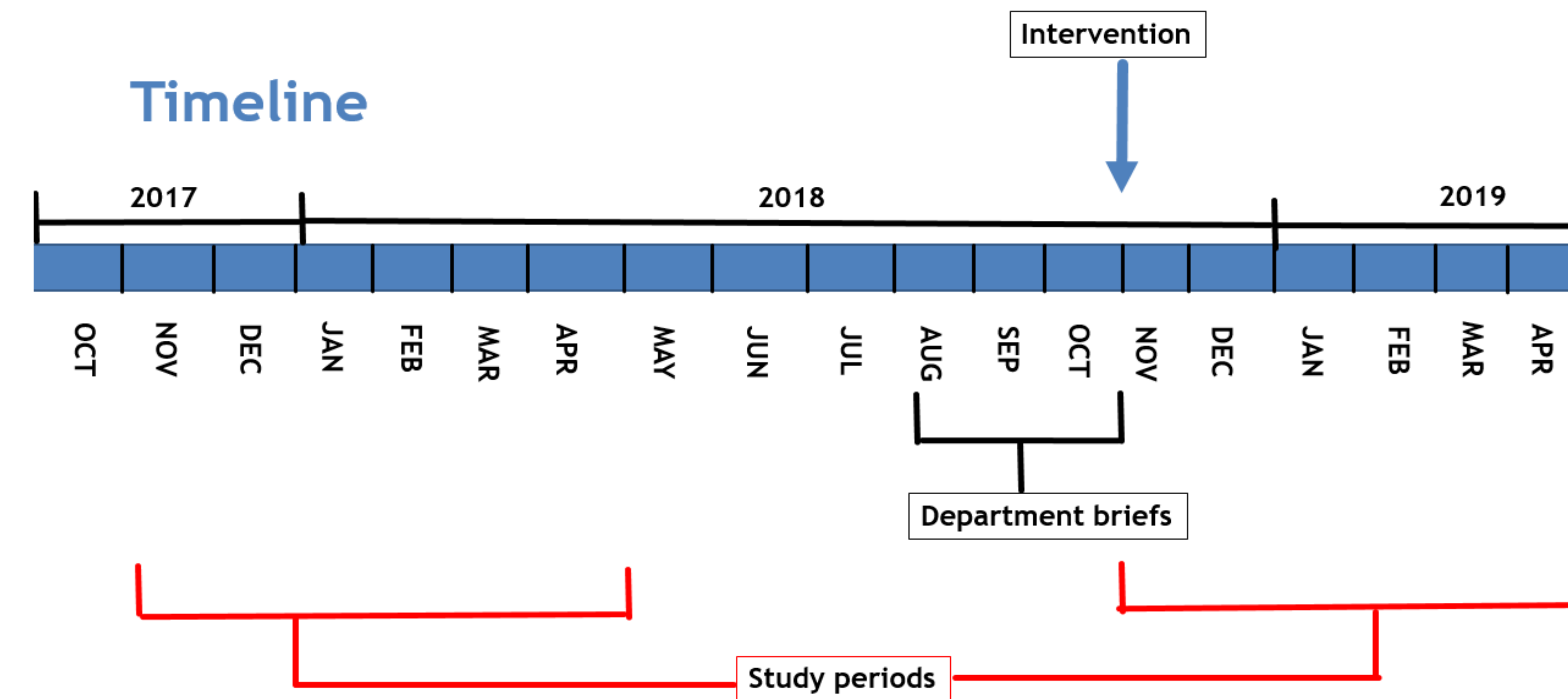
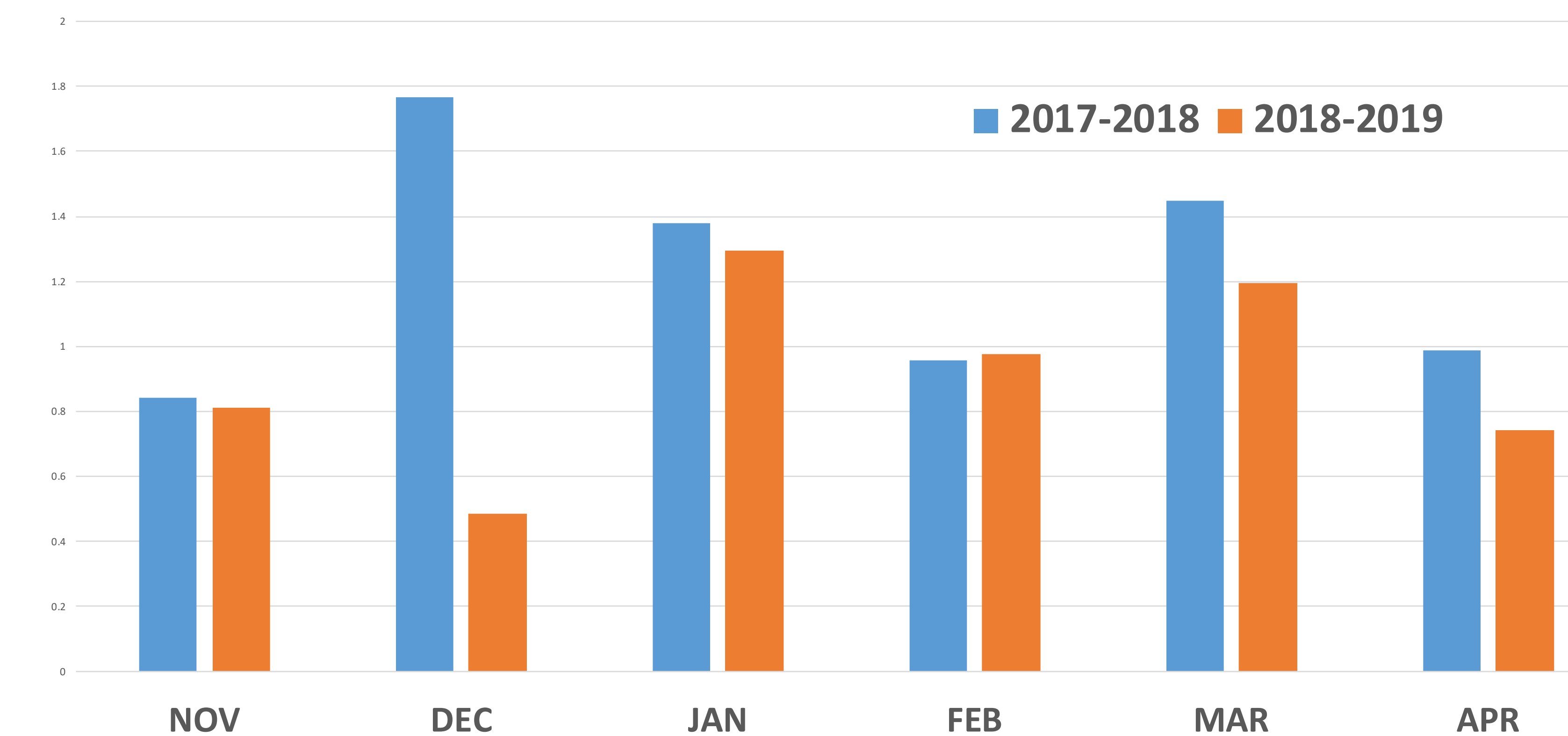


Figure 2. Intervention Timeline

- A total of 334 tests were ordered in the pre-intervention period and 236 in the post-intervention period
- Adjusting for inpatient bed days, the incidence rate ratio (IRR) was 0.75 (CI 0.63-0.89, $p < 0.001$)
- This corresponded to an estimated hospital cost-savings of \$12,250 based on testing costs alone
- Internal Medicine (IM) providers ordered most *C. difficile* tests and demonstrated the greatest reduction in testing
- After this intervention, significantly less positive *C. difficile* tests were ordered for patients with prior known *C. difficile* infection
- Among those with a positive test result, there was no significant difference in the proportion of patients who met criteria for appropriate testing
- Neither the recorded use of stool softeners nor documentation of ≥ 3 loose stools changed significantly between groups

RESULTS

Figure 3. Number of Tests per 100 Inpatient Bed Days



CONCLUSIONS

- Implementation of a systems-based EMR initiative led to a 25% reduction in *C. difficile* testing
- Estimated direct hospital cost-savings was \$12,250 (not accounting for potential associated cost savings)
- Educational EMR prompts can have meaningful impacts on *C. difficile* stewardship, however, efforts to optimize order appropriateness still need to be determined
- Trend towards a sustained effect seen at 6 months post-intervention, but need further evaluation

REFERENCES

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