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## INTRODUCTION

- Stool culture and stool polymerase chain reaction (PCR) panels are both used to evaluate patients with suspected infectious diarrhea.
- Stool PCR panels are especially advantageous due to their ability to detect a broad array of infectious pathogens in just a few hours.<sup>1</sup>

## OBJECTIVES

- Our study assessed how the use of stool PCR panels instead of stool culture impacted antibiotic days of therapy (DOT) and length of therapy (LOT) in hospitalized patients with suspected infectious diarrhea.

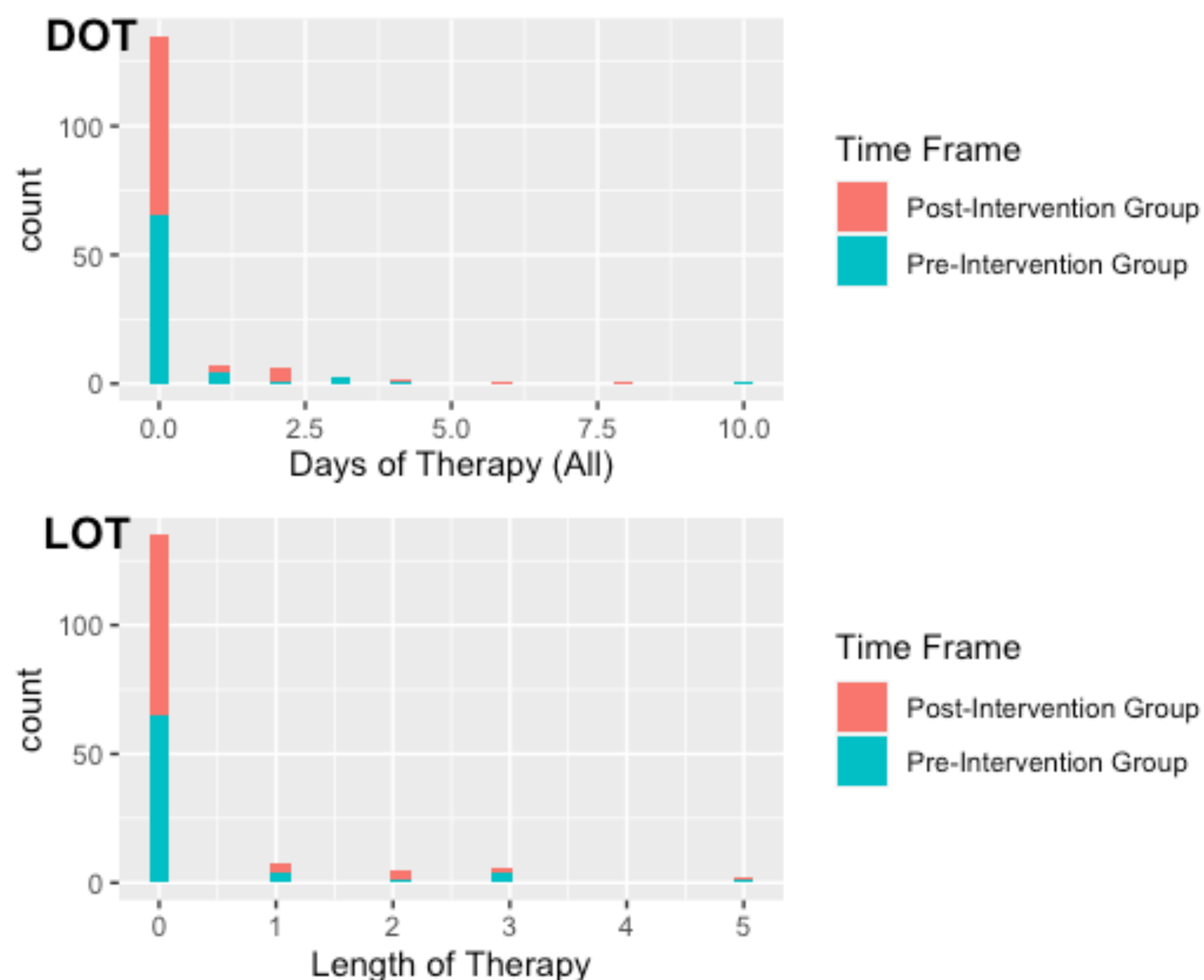
## METHODS

- In December 2021, an intervention was implemented in our hospital in which all electronic orders for stool cultures were automatically switched to stool PCR testing.
- The pre-intervention group was comprised of 75 hospitalized adult patients who had a stool culture obtained from September to November 2021.
- The post-intervention group was comprised of 81 adult patients who had a stool PCR obtained from December 2021 to February 2022.
- For each patient, the DOT and LOT for antibiotics prescribed for infectious diarrhea were determined.
  - **Days of Therapy (DOT):** the summation of days that a patient received each antibiotic for infectious diarrhea (e.g. a patient receives vancomycin and cefepime for a total of 5 days, DOT = 5 + 5 = 10)
  - **Length of Therapy (LOT):** the total number of days a patient received any antibiotic for infectious diarrhea (e.g. a patient receives vancomycin and cefepime for a total of 5 days, LOT = 5)
- DOT and LOT were compared between the pre- and post-intervention groups using Wilcoxon rank sum tests.

## RESULTS

- The median DOT in the pre- and post-intervention groups was 0 with a range of 0-10 and 0-8, respectively.
- The median LOT in the pre- and post-intervention groups was 0 (range 0-5 for both groups).
- No significant difference in the median DOT (Wilcoxon rank sum test,  $p$ -value = 0.967) or LOT (Wilcoxon rank sum test,  $p$ -value = 0.993) was found between the pre- and post-intervention groups (Figure 1).

**Figure 1. DOT and LOT Comparisons between Pre- and Post-Intervention Groups**  
Antibiotic days of therapy (DOT) stratified by study period (top) and antibiotic (LOT) stratified by study period (bottom).



## RESULTS

- After adjusting for patient days present, no significant change in DOT or LOT incidence rate was found between the pre- and post-intervention groups.
- The DOT incidence rate ratio (RR) was 0.71 (95% CI 0.42, 1.22), and the LOT incidence RR was 0.67 (95% CI 0.36, 1.24).

## DISCUSSION

- This intervention (which automatically changed stool culture testing to stool PCR testing in hospitalized adult patients with infectious diarrhea) did not result in a significant change in median DOT or LOT, nor did it result in a significant change in DOT or LOT incidence rate.
- These findings could be explained by an insufficient sample size ( $n = 156$ ), limiting the study's power.
- Additionally, most patients in the pre-intervention group received no antibiotics for infectious diarrhea, resulting in a short DOT and LOT at baseline.
- Future steps may consider a secondary pharmaceutical intervention or widespread education to promote stewardship at multiple levels.

## REFERENCES

1. Zhang H, Morrison S, Tang YW. Multiplex polymerase chain reaction tests for detection of pathogens associated with gastroenteritis. *Clin Lab Med.* 2015;35(2):461-486. doi:10.1016/j.cll.2015.02.006

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