

- The aim of this study was to assess the cost of *Clostridium difficile* polymerase chain reaction (PCR) and its impact on length of hospital stay (LOS) for patients with suspicion of *C. difficile* infection (CDI) in an acute hospital setting compared to cell culture cytotoxin neutralization assay (CCNA) as the conventional diagnostic reference method.
- Cost comparison was undertaken by comparing the effect of stool testing using Xpert® *C. difficile* PCR (Cepheid, Sunnyvale, CA, USA), compared to routine CCNA, on LOS and cost of laboratory testing.
- PCR-positive patients ( $n = 121$ ) were discharged 4.88 days (95% CI -19.39-9.62;  $P = 0.822$ ) earlier than CCNA-positive patients ( $n = 115$ ) while PCR-negative patients ( $n = 146$ ) were discharged a mean 7.03 days (95% CI -20.66-6.60;  $P = 0.545$ ) earlier than CCNA-negative patients ( $n = 124$ ).
- Based on micro-costing, testing cost per sample was £36.18 for PCR, £7.53 for CCNA-positive, and £8.78 for CCNA-negative samples and potential cost savings of up to £2,292.62 per patient could be achieved by using PCR instead of CCNA.
- Despite the lack of statistical significance in the LOS differences, based on the 95% CI between PCR and CCNA tested patients and changes to other key parameters, PCR testing resulted in cost savings for the health care service in most calculated scenarios.

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