### Detection of Clostridium difficile Infection and Other Pathogens in Children with Diarrhea by FilmArray® GI Pouch

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**ABSTRACT**

BACKGROUND: Clostridium difficile infection (CDI) is a leading cause of diarrhea and is linked to >12,000 hospital deaths each year. In 2012, CDC estimated 294,000 cases occurred with 50% when CDI was not suspected. Treatment is costly, resulting in a lower melting temperature of the complex.

OBJECTIVES: To evaluate the clinical diagnostic utility of FilmArray GI Pouch (FAP) compared to Illumigene® CDI (IG). We hypothesized that the FAP would detect deletion in tcdC amplicon.

METHODS: From January 2012 to March 2013, 657 stool samples were tested for the presence of C. difficile pathogen by the FAP panel. Direct and indirect tests for clostridium were based on a stool extract. Samples were processed within 24 hours using the FilmArray platform. The FilmArray GI panel was evaluated in this study by comparison of the positivity yield for tcdA and/or tcdB genes which produce an enterotoxin (toxA) and a cytotoxin (toxB), respectively.

RESULTS: Of 657 stool samples, 380 were positive for C. difficile by FAP. A total of 380 samples were compared to 380 matched Illumigene results.

**Clinical implications:** This study confirms that physician ordering based on clinical presentation and patient history can result in a lower melting temperature of the complex. The overlapping clinical presentation of a broad range of diarrhea-causing pathogens makes multi-target testing extremely valuable in aiding to diagnose the causative agent(s).

**CONCLUSIONS:** The FilmArray GI Pouch is a promising technology for the detection of C. difficile and other diarrheal pathogens in children. The FilmArray platform is a multi-target test that can detect multiple pathogens in a single sample.

**REFERENCES:**


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