

## EPIDEMIOLOGY OF CLOSTRIDIODES DIFFICILE INFECTION IN PEDIATRIC PATIENTS: REAL EXPERIENCE IN A TEACHING HOSPITAL

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### Introduction

*Clostridioides difficile* (*C. difficile*) is an obligate anaerobic gram-positive spore-forming bacterium, normally present as an intestinal microbiota but in certain situations, such as excessive use of antibiotics, immunosuppression, it can cause diarrhea, especially in pediatric settings. The virulence of *C. difficile* is due to specific enzymes such as collagenase, hyaluronidase and toxins A and B which damage the tight junctions of epithelial cells and lead to loss of mucosal function. The aim of this study was to evaluate the onset of *C. difficile* among pediatric patients attending to a teaching hospital in southern Italy.

### Description of the case

This retrospective study was conducted from January 2022 to March 2024. Stool samples of 216 patients admitted to "Renato Dulbecco" University Hospital were evaluated during routinely microbiological diagnosis using a rapid immunochromatographic method (TECHLAB Inc.) for simultaneous detection of *C. difficile* glutamate dehydrogenase (GDH) antigen and toxin A/B. Preliminary results showed a positivity for *C. difficile* toxin A/B-producing strains of 3% in the first three months of 2024 compared to data for 2023 (1%). None positivity was achieved in 2022. For GDH antigen, 23% positivity peak was reached in 2023 compared to 2022 (1%) and the first three months of 2024 (3%). It should be considered that GDH only detects the presence of the microorganism but not the ability to develop the toxin.

### Discussion and Conclusions

The occurrence of *C. difficile*-associated diarrhea in pediatric hospitalized patients for various clinical conditions is linked to antibiotic treatment. Early targeted detection of these pathogens is crucial for effectively managing of diarrheal infections in pediatric patients, leading to improved clinical outcomes and reduced morbidity rates among hospitalized children.