Results: A total of 1912 diarrhoeal stool samples were tested by a rapid test and 499 CDI cases were laboratory confirmed. Eight stool samples harbored untoxigenic C. difficile strain, while toxigenic strain without active toxin production was detected in 19 samples (Fig1). Testing rate was significantly higher than in previous studies: 8.1, 7.5, 6.2 and 1.4 times than in 2010, 2011, 2012 and 2015, (Fig 2). Three different PCR-ribotypes were identified for the first time: 176. 027 and 220, while in 2010-2011, the most prevalent PCR-ribotypes were 001 and 014/020.

Materials/methods: During the study period (January-December 2016), all faecal specimens received in Department of Clinical Microbiology, UHS, from patients with a clinical picture compatible with CDI, were tested for the presence of glutamate dehydrogenase (GDH) and free C. difficile toxins A/B, using combined rapid chromatographic immunassay card (CoproStrip C. difficile GDH + Toxin A/B, Savoy Diagnostics, Israel), according to the manufacturer’s instructions. According to ESCMID guidelines, GDH positive, Toxin A/B negative strains were further identified. The most common PCR-ribotypes were 001 and 014/020, while hypervirulent strains were not detected (4). However, in study performed in 2016, in another Croatian healthcare setting, outbreak caused by PCR-ribotype 176 was described (5). The aim of this study was to determine changes in CDI epidemiology in a University Hospital of Split (UHS), Croatia, in the light of improved diagnostic approach and increased clinical awareness.

Background: The epidemiology of Clostridium difficile infection (CDI) has been dramatically changed over the last two decades, mostly because the emergence of hypervirulent strains (PCR-ribotypes 027, 078, and more recently 176). Those ribotypes are associated with higher rate of severe CDI, recurrences and mortality (1, 2, 3). During the first Croatian CDI study, performed in 2010-2011 in University Hospital of Split, 16 different PCR-ribotypes were identified. The most common PCR-ribotypes were 001 and 014/020, while hypervirulent strains were not detected (4). However, in study performed in 2016, in another Croatian healthcare setting, outbreak caused by PCR-ribotype 176 was described (5). The aim of this study was to determine changes in CDI epidemiology in a University Hospital of Split (UHS), Croatia, in the light of improved diagnostic approach and increased clinical awareness.

Conclusions: The emergence of hypervirulent PCR-ribotypes 176 and 027, which are associated with severe CDI, higher rate of mortality and recurrences, highlights the need for continuous CDI surveillance on a local and national level. In order to determine the true evolution of C. difficile strains over the space and time, establishing of a national reference center for C. difficile ribotyping is strongly recommended. Continuous raising testing rate indicates better awareness among clinicians which implicate better healthcare practice and final outcome. Even though the rate of toxigenic strain without active toxin production was small, it’s still worth mentioning. CDI-related complications may occasionally occur among toxin-negative patients diagnosed by PCR. Therefore, careful clinical evaluation among them is strongly recommended (7).