29th ECCMID Amsterdam, Netherlands 13 – 16 April 2019

The congress of ESCMID

P0274 Surveillance for *Clostridioides difficile* infection: a diagnostic and epidemiologic challenge

Andrea Büchler*[1,1], Andreas F. Widmer[1], Reno Frei[1], Marc Dangel[1], Jacques Schrenzel[2], Sarah Tschudin-Sutter[3]

[1] Division of Infectious Diseases & Hospital Epidemiology, University Hospital Basel, Basel, Switzerland, [2] Bacteriology Laboratory, Service of Laboratory Medicine, University Hospital Geneva, Geneva, Switzerland, [3] University Hospital Basel, Switzerland, Basel, Switzerland

Background: Case definitions for CDI surveillance require (1) presence of diarrhea or evidence of megacolon or severe ileus and (2) a positive laboratory diagnostic test (LDT) result or evidence of pseudomembranes. However, LDTs are known for large differences in sensitivity and specificity and consensus regarding the best LDT is missing, hence influencing surveillance measures of CDI and thus comparability across institutions and countries. An increasing number of highly sensitive nucleic acid amplifications test (NAAT) kits are commercially available, which may detect not only patients suffering from CDI but also *C. difficile* carriers. We used a national survey to assess differences in testing algorithms currently being applied in Switzerland. We further aimed to estimate the proportion of stool samples positive for toxigenic *C. difficile* over a two-year period.

Materials/methods: We performed a questionnaire-based survey among all public and private microbiology laboratories participating in ANRESIS (www.anresis.ch), a national antibiotic resistance surveillance program. The selected laboratories are homogeneously distributed across Switzerland and represent at least 60% of all annual hospitalization days. The questionnaire referred to diagnostic algorithms in use for detection of toxigenic *C. difficile* and the number of stool samples collected in 2016 and 1017, as well as the proportion of specimens tested positive

Results: Among all laboratories contacted, 90.5% (19/21) completed the survey. Substantial variability of methods used to detect toxigenic *C. difficile* was reported with five unique algorithms being followed across all 19 laboratories. Over the two-year study period, 68,848 specimens were tested and 8.9% were reported as being positive for toxigenic *C. difficile*. While 26% of laboratories used a NAAT only, 74% (13/19) of laboratories applied a 2- or 3-step testing algorithm: glutamate dehydrogenase antigen screening followed by NAAT in 50% (7/14) and in 50% with inclusion of an enzyme immunoassay (EIA) for detection of toxins A/B to increase the specificity as recommended by the new ESCMID diagnostic guideline.

Conclusions: Given the wide range of different diagnostic algorithms and performance characteristics of tests to detect toxigenic *C. difficile*, any surveillance program for CDI needs to consider testing methodologies for representation of the true burden of disease.

[CHART]