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P0269 Detection of *Clostridium difficile* infection across whole healthcare economies in Europe: results from COMBACTE-CDI

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Background: The burden of *C. difficile* Infection (CDI) on healthcare facilities is well recognised. However, studies focussing on in-patient settings in addition to ascertainment bias in general have led to a paucity of data on the true burden of CDI across whole healthcare economies.

Materials/methods: Sites testing both in-patient and community samples were recruited from countries across Europe (1 site/3 million population). On two selected days, all diarrhoeal faecal samples (regardless of tests requested) were sent to the European coordinating laboratory (ECL) for cell-cytotoxin neutralisation testing and isolate PCR-ribotyping (RBT). Testing and CDI rates were compared between countries and regions of Europe. The CDI results/test not requested at each original submitting site were compared with the ECL results to determine the number of missed cases.

Results: To date, 2377 diarrhoeal faecal samples have been received from nine countries. The burden of CDI varied by country (positivity rate range 0-13.5%), and by European region, with the highest positivity rate in Eastern Europe (11.3%). The positivity rate in community samples was 1.6% vs 5.3% in hospital samples. The ratio of community to hospital samples was 0.93:1 overall, although this varied by country (range 0.03-2.32:1) and region (0.7-14.8 samples submitted/site/day).

Overall 54.9% of samples were tested for CDI at the submitting site; 76.2% for hospital samples and 32.1% for community samples; 17% of samples positive for CDI at ECL were not diagnosed in hospitals vs 59% of community CDI cases.

The highest prevalence of PCR-ribotype 027 was in Eastern Europe (34% of all Eastern European isolates), which was also the region with the lowest testing rate. For hospital samples, the proportion of RBT027 was inversely related to the testing rate (r=-0.94).

Conclusions: The diagnosed burden of CDI varies markedly across Europe in both hospital and community settings. Reduced sampling/testing in Eastern Europe is inversely related to the proportion of RBT027 strains identified, suggesting that lack of suspicion leads to under-diagnosis and outbreaks of infection. The proportion of missed cases in community versus hospital settings was almost 30-fold higher, indicating that CDI is under-recognised as a community-onset infection.

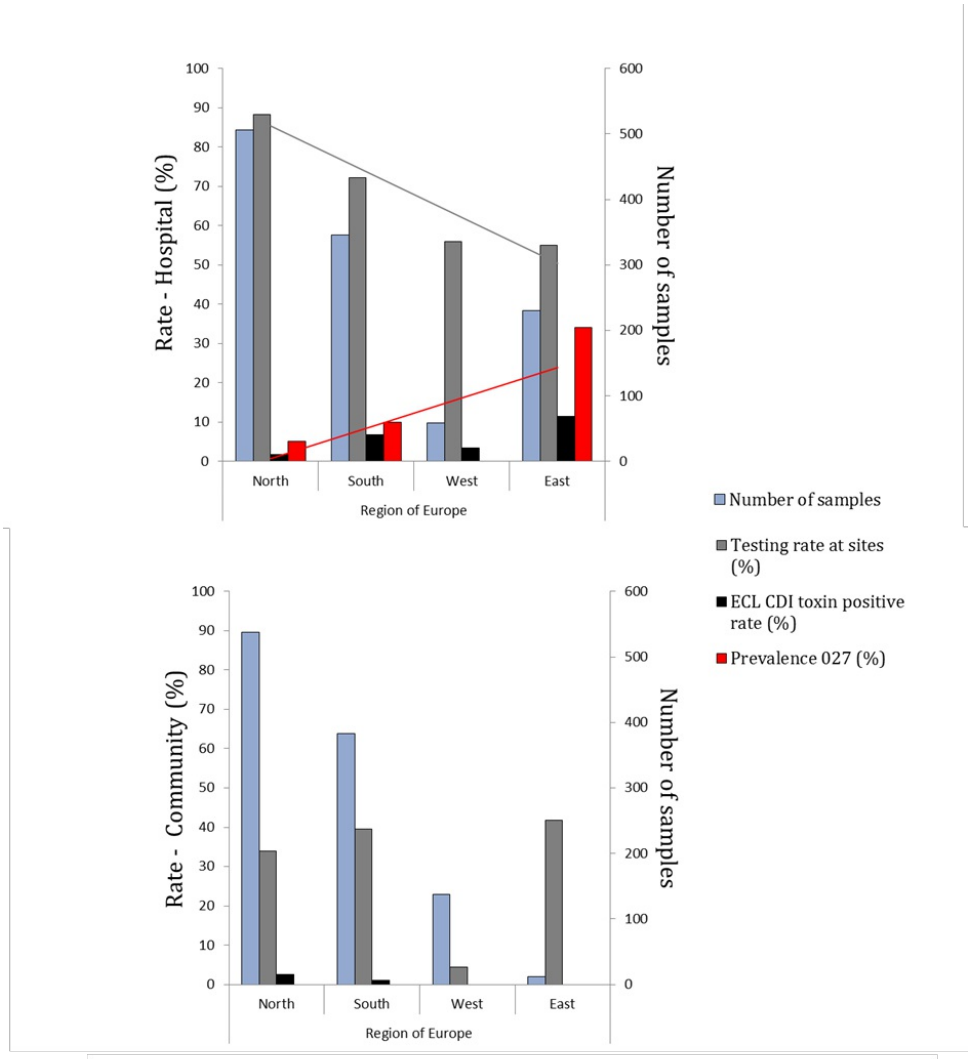

Figure 1. Testing rate, prevalence of 027 and CDI positivity rate in Hospital and Community locations. In Hospital setting, we observed an inverse correlation between testing rate at sites (grey trendline) and prevalence of ribotype 027 (red trendline) (r=-0.41), and between testing rate and CDI toxin positivity rate identified at the European coordinating laboratory (ECL) (r=-0.61). When omitting West Europe (currently comprised of a single country with only 5% of total samples submitted), the inverse correlation was r=-0.94 (testing rate/Prevalence027) and r=-0.99 (Testing rate/CDI positivity).