

TITLE: INTRALABORATORY QUALITY CONTROL IN THE DIAGNOSIS OF ENTEROPATHOGENS IN THE NETWORK OF PUBLIC HEALTH LABORATORIES IN BRAZIL

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ABSTRACT

Since 2010, the National Reference Laboratory for Enteric Diseases – NRLED/IOC/FIOCRUZ -RJ BRAZIL has been conducting the Intralaboratory quality control with the National Public Health Laboratories Network , aiming to strengthen the laboratorial diagnostic of Bacterial Enteropathogens important in Public Health. 28 Brazilian States are invited to participate in this program and receive every two years a panel with 10 strains belonging to the Enterobacteriaceae, Vibrionaceae and Aeromonadaceae families. The strains should be identified by the methods routinely used in the laboratory (classics and/or and automated methods) and evaluated for antimicrobial susceptibility (according CLSI) is using different representative classes: Beta-lactams, Phenicois, Tetracycline, Aminooglycosides, Quinolones/Fluoroquinolones and Sulfonamides. Between the strains resistant to cefotaxime, ceftazidime and/or ceftriaxone should be evaluated for ESBL production. Each laboratory participating have anonymity assured and receives an individual report of its results and participation certificate. In the last evaluate in 2018, the results appointed the percentage of correctness was 73% of 26 laboratories participate. For the bacterial genus characterization, 19 laboratories identified correctly the 10 strains, 4 labs - 9 strains, 1 lab – 7 strains, 1 lab - 6 strains and 1 lab - 3 strains. For the identification of bacterial species, the highest percentage of correct answers was for Enterobacteriaceae (90%), including *E.coli*, *Salmonella spp*, *E.tarda* and *P.shigelloides*, followed by *Vibrio sp*. However, all laboratories no identifying *Aeromonas dakensis*. To the antimicrobial resistance, 4 laboratories didn't present errors in the execution/interpretation of the test. Overall, 16 laboratories are low errors rates (0.7% to 2.3%) and others (6 laboratories) the rates ranged from 4% to 11.5%. The errors were more evidenced to Cephalosporins, Carbapenems and Fluoroquinolones and characterized for Minor Error (I/R, R/I, S/I, I/S) in 1.6% strains; Major Errors (R/S) in 0.7% and Very Major Errors (S/R) in 0.5%. 12 laboratories performed the beta-lactamases diagnostic. The results reaffirm the importance of the continuous implementation of the training programs offered by the National Reference Laboratory, which over the years has been contributing to improve the performance of the Public Health Laboratories in guaranteeing the quality of their analyzes.

Keywords: Intralaboratory Quality Control, National Public Health Laboratories Network, Diagnosis of Bacterial Enteropathogens