Capacity of laboratories as surveillance sites for Neisseria gonorrhoeae culture and antimicrobial resistance or susceptibility testing in public hospitals within Kisumu County, Kenya

Walter Agingu\textsuperscript{1} Supriya D. Mehta\textsuperscript{2} Kenneth Ngure\textsuperscript{3} Gideon Kikuvi\textsuperscript{3}

\textsuperscript{1}Nyanza Reproductive Health Society, Kenya,
\textsuperscript{2}University of Illinois Chicago, United States of America,
\textsuperscript{3}Jomo Kenyatta University of Agriculture and Technology, Kenya

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Background: Antimicrobial resistance to Neisseria gonorrhoeae (NG) is a global public health problem. Syndromic management employs dual antimicrobial treatment with two classes of drugs. Surveillance of NG infections is proposed to avoid misuse of the drugs. We assessed the capacity of laboratories as surveillance sites for NG culture and antimicrobial resistance/susceptibility (AMR/S) testing in selected public hospitals within Kisumu County, Kenya.

Methods: Cross-sectional data were collected from 48% of randomly selected public hospitals in Kisumu County (n=25). Results: KEPH level V hospital had 90.9% (n=11) and 43.8% (n=16) of essential equipment and consumables, respectively, and conducted 100% (n=6) of the tests required for NG culture and drug susceptibility testing. Urban hospitals had 36.4% of the essential equipment compared to rural hospitals with 18.2% (n=11). 56.3% of the essential consumables for diagnosing NG were not available in all the study sites (n=16). Discussion: All the 12 (100%) hospitals had qualified laboratory staff with the KEPH level V hospital having some capacity as NG antimicrobial resistance surveillance site in Kisumu County. In terms of tests for diagnosing NG; the KEPH level V hospital laboratory conducted 100% of the tests required (n=6), including phenotyping, but not genotyping. Conclusion: KEPH Level V hospital laboratory showed some capacity to perform bacterial culture and AMS testing (phenotyping), but not AMR testing (genotyping), in public hospitals within Kisumu County. However, the hospital could not isolate NG due to lack of some essential equipment and consumables. These results should enable the government to identify hospitals whose capacities can be built faster, with less capital for initiation of antimicrobial resistance surveillance, in order to help reduce emergence of multi-drug resistant NG strains for effective drug choices in Kenya. Recommendation: Laboratory staff still require continuous professional development (CPD) on AMR/S testing. At least one KEPH level V public hospital needs to have well equipped laboratory, in every county, to act as surveillance site for NG AMR/S testing in Kenya. All laboratories, situated at KEPH level IV public hospitals, should be fairly equipped to collect, process, store and transport samples to the surveillance sites for NG AMR/S testing.