Abstract.

Introduction: Carbapenem resistant Uropathogens are an ongoing public-health problem globally. This is mediated by transferable Carbapenemase-encoding genes spreading rapidly causing serious outbreaks and dramatically limiting treatment options. Knowledge about the prevalence and factors associated with carbapenem resistant Uropathogens and common carbapenem resistance genes among refugees in Nakivale is limited.

Methods. This was a cross sectional study that involved 308 participants in Nakivale refugee settlement in south western Uganda. We isolated organisms on Cysteine Lactose Electrolyte Deficiency (CLED)agar (lot#2388276 Basingstoke Hampshire, England) and confirmed by conventional biochemical tests Triple Sugar Iron (TSI) SIM and Citrate agar. Modified Hodges test was used to screen for carbapenem resistant producers following CLSI 2020 guidelines for Etarpenem, Meropenem and Imipenem. DNA was extracted by boiling method and carbapenemases genes assayed by Gel Electrophoresis. Bivariate and multivariate logistic regression using STATA version14.0 was done to identify the factors associated with Carbapenem resistant producers . All variables with a $p<0.05$ were considered significant. Ethical clearance was obtained from MUST-REC. We aseptically carried out procedures and used Standard organisms with known ATCC

Results. Of the 308 participants, 89 showed bacterial growth of different gram-negative bacilli. The Phenotypic and genotypic prevalence of CPR was 55/308 (18%) and 20/308(6.9%) respectively. The commonest isolate from the urine sample was E. coli 32/89 (35.5%) while the most frequent carbapenemase resistant gene was *KPC* 13/89 (15 %). Factors independently associated with Carbapenem resistance determining genes among Uropathogens isolated from Refugees at Nakivale Settlement Isingiro District were; history of self-medication (OR=5.09, 95% CI: 1.04-24.77, $p<0.044$), antibiotic use before laboratory diagnosis (OR=6.07, 95% CI: 1.77-20.81, $p=0.004$), spent more than 5 months on antibiotics (OR=8.52, 95% CI: 1.47-49.36,$p=0.017$).

Conclusion. The Phenotypic and genotypic prevalence of carbapenem resistance determining genes among Uropathogens isolated from refugees at Nakivale settlement Isingiro District was high. The commonest isolate was *E. coli* and the bla*KPC* was the commonest gene. History of self-medication, antibiotic use before laboratory diagnosis and spent more than 5 months on antibiotics were associated with carbapenem resistant Uropathogens. Laboratory based surveillance programs to establish local antibiograms, antibiotic susceptibility tests and infection control is highly recommended. Laboratories in refugee camps should be upgraded and equipped with microbiology testing capabilities and technical staffs to help in containing the spread of antibiotic resistance.