PA-107 ANTIBIOTIC RESISTANCE PATTERNS OF POTENTIAL PATHOGENS ISOLATED FROM TWO MAJOR HOSPITALS IN LUSAKA AND NDOLA

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Background This study was conducted as part of an assessment of the effectiveness of existing hygiene and sanitation practices in two first-level hospitals in Lusaka and two central clinics in Ndola to determine the drug resistance patterns of potential pathogens in health care facilities in Zambia.

Methods In this cross-sectional study, the samples analysed were collected from health care workers' hands, touch surfaces, disinfectant buckets in delivery rooms, post-natal and paediatric wards, operation theatre, post-operation wards and outpatient departments. The swabs in Cary-Blair transport media were used for sample collection and inoculated to 3 (Blood-, Chocolate- and MacConkey agar) primary plates. For species identification and drug susceptibility testing BD Crystal ID System and disk diffusion method with panel of 20 antibiotics was used.

Results A total of 132 swabs were collected resulting in isolation of 275 Gram negative and positive bacteria. 65 bacterial isolates were successfully identified as the following species: *Acinetobacter, Enterobacter, Klebsiella, Pseudomonas, Staphylococcus, Streptococcus* spp. All identified bacteria were tested for drug resistance. Among the *Pseudomonas* spp, the highest level of resistance was detected to cephalosporins, amoxicillin and carbenicillin and was up to 70%, 90% and 60%, respectively. *Staphylococcus* spp had high resistance to penicillin, ampicillin, azithromycin and cephalosporins, up to 86%, 76%, 57% and 95%, respectively. Vancomycin resistance among *Staphylococcus* spp was 19%.

Conclusions High drug-resistance levels among potential pathogens isolated in health care facilities reflect the long-term empiric

use of antibiotics in Zambia. For better understanding of the scale of this problem a more comprehensive study including all central private and government health care facilities should be conducted. A large number of isolated bacteria (35%) remained unknown indicating that more than one identification method should be used in order to capture the full spectrum of potential pathogens colonising the health care facilities in Africa.