

5 ANTIMICROBIAL RESISTANCE

Update on carbapenemase-producing enterobacteriaceae

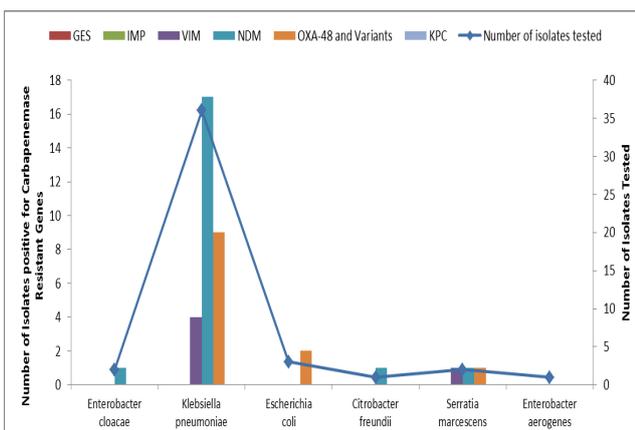
The Johannesburg Antimicrobial Resistance Laboratory-Culture Collection (AMRL-CC) of the Centre for Opportunistic, Tropical and Hospital Infections (CO THI) at the NICD/NHLS have been testing referred isolates of suspected carbapenemase-producing Enterobacteriaceae (CPE) for the presence of selected carbapenemase genes. CPEs have become a threat to healthcare and patient safety worldwide by compromising empiric antibiotic therapeutic choices and increasing morbidity, hospital costs and the risk of death. CPE surveillance is required to determine the extent of the problem as a first step in order to restrain the emergence and spread of CPE. For August 2015, a total of 49 Enterobacteriaceae isolates were received. Forty-five carbapenem-resistant isolates were screened, 35 of which were CPE isolates. The majority of the isolates were *Klebsiella pneumoniae* (36) followed by *E. coli* (3) (Figure 10).

Twenty *bla_{NDM}*-positive isolates were identified; 10 from private hospitals (all from KwaZulu-Natal) and 10 from public hospitals – four from Gauteng, four from KwaZulu-Natal (KZN), one from Eastern Cape and one from Free State. Twelve *bla_{OXA-48}*-positive isolates were identified; all twelve isolates were from public hospitals; four from Gauteng Province, seven from Eastern Cape and one from KZN. Five

bla_{VIM}-positive isolates were identified from public hospitals in Gauteng (3) and two from private hospitals in KZN. No other CPE enzyme types were identified in August (Figure 11).

It is important to note that these figures do not represent the current burden of CPEs in South Africa. Given that CPE infections are currently not reportable or notifiable in South Africa, there is no platform for appropriate surveillance reports and consequently no locally representative data is available. This is of major concern, since meaningful data can inform public health policy and highlight priorities for action. Controlling the spread and limiting the impact of CPEs in South Africa will require intensive efforts in both the public and private healthcare sectors going forward. NHLS and private laboratories are encouraged to submit suspected CPE isolates based on antimicrobial susceptibility testing (AST) criteria to the AMRL-CC, NICD/NHLS. Please telephone (011) 555 0342/44 or email: olgap@nicd.ac.za; for queries or further information.

Source: Centre for Opportunistic, Tropical, and Hospital Infections, NICD-NHLS



GES: Guiana extended-spectrum; IMP: imipenemase; VIM: verona integron-encoded metallo-beta-lactamase; NDM: New Delhi metallo-beta-lactamase; OXA: oxacillinase; KPC: Klebsiella pneumonia carbapenemase

Figure 10. Enterobacteriaceae isolates screened (n=45) and confirmed CPEs (n=35) at the Antimicrobial Resistance Laboratory-Culture Collection, CO THI (NICD-NHLS), August 2015

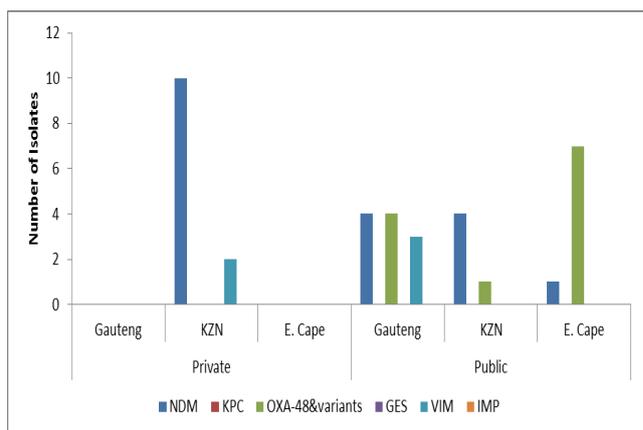


Figure 11. The total number of CPEs (n=35) in the public and private sectors from three provinces, August 2015