

6 SURVEILLANCE FOR ANTIMICROBIAL RESISTANCE

a Carbapenemase-resistant Enterobacteriaceae—a monthly update

The Antimicrobial Resistance Laboratory and Culture Collection (AMRL-CC) of the Centre for Healthcare-associated infections, Antimicrobial Resistance and Mycoses (CHARM) at the NICD has been testing referred isolates of suspected carbapenemase-producing Enterobacteriaceae (CPE) for the presence of selected carbapenemases. CPE 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. We receive clinically-significant isolates from all specimen types based on antimicrobial susceptibility testing criteria for molecular confirmation. For July 2017, a total of 97 Enterobacteriaceae isolates was received. Eighty-five isolates were screened, 75 of which expressed the carbapenemases that were screened for. Two isolates expressed both NDM and OXA-48 and variants (Table 2). Majority of the screened isolates were *Klebsiella pneumoniae* (63) followed by *Enterobacter cloacae* (12).

It is important to note that these figures do not represent the current burden of CPEs in South

Africa. However, our data reveal the presence of carbapenemases in Enterobacteriaceae isolates from various specimen types, nationally. As a first step, CPE surveillance is required to determine the extent of the problem in order to restrain the emergence and spread of resistance. The AMRL-CC is currently running a surveillance programme at national sentinel sites for CPE infections in patients with bacteraemia which provides representative data. This significant data will inform public health policy and highlight priorities for action. Controlling the spread and limiting the impact of CPEs in South Africa requires 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 AMRL-CC, NICD/NHLS. Please telephone (011) 555 0342/44 or email: olgap@nicd.ac.za; for queries or further information.

Source: Centre for Healthcare-associated infections, Antimicrobial Resistance and Mycoses, NICD-NHLS; (olgap@nicd.ac.za)

Table 2. Enterobacteriaceae by CPE enzyme type for January-June 2017 and July 2017 at the AMRL-CC, CHARM, NICD.

Organism	OXA-48 & Variants		NDM		VIM	
	Jan-June 2017	July 2017	Jan-June 2017	July 2017	Jan-June 2017	July 2017
<i>Enterobacter cloacae</i>	55	2	9	2	-	-
<i>Klebsiella oxytoca</i>	3	2	3	-	-	-
<i>Klebsiella pneumoniae</i>	372	52	104	10	7	1
<i>Klebsiella species</i>	6	1	1	2	-	-
<i>Morganella morganii</i>	1	-	3	1	-	-
<i>Serratia marcescens</i>	7	3	-	1	-	-
<i>Providencia stuartii</i>	-	-	-	-	-	-
Total	444	60	120	16	7	1

NDM: New Delhi Metallo-beta-lactamase; **OXA:** Oxacillinase; **VIM:** Verona Intergron-encoded Metallo-beta-lactamase