

5 SURVEILLANCE FOR ANTIMICROBIAL RESISTANCE

a Update on carbapenemase-producing Enterobacteriaceae

The Centre for Opportunistic, Tropical and Hospital Infections (COTHI) 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 August 2016, a total of 88 Enterobacteriaceae isolates was received. Sixty isolates were screened, 43 of which expressed carbapenemases. One isolate expressed two carbapenemases (Table 1). The majority of the screened isolates were *Klebsiella pneumoniae* (38) followed by *Enterobacter cloacae* (13).

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 all 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. These 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 Opportunistic, Tropical, and Hospital Infections, NICD-NHLS; (olgap@nicd.ac.za)

Table 1. Enterobacteriaceae by CPE enzyme type, AMRL-CC, COTHI, NICD, August 2016 and January-July 2016

Organism	NDM		OXA-48 & Variants		GES		VIM	
	Jan-Jul 2016	Aug 2016	Jan-Jul 2016	Aug 2016	Jan-Jul 2016	Aug 2016	Jan-Jul 2016	Aug 2016
<i>Enterobacter cloacae</i>	25	2	30	2	2	-	2	-
<i>Escherichia coli</i>	7	-	51	2	-	-	-	-
<i>Klebsiella pneumoniae</i>	196	14	279	12	8	5	13	1
<i>Serratia marcescens</i>	23	3	21	-	3	-	1	-
<i>Klebsiella oxytoca</i>	1	1	3	1	-	-	-	-
<i>Providencia rettgeri</i>	13	1	1	-	-	-	-	-
Total	265	21	385	17	13	5	16	1

NDM: New Delhi metallo-beta-lactamase; **OXA:** oxacillinase; **GES:** Guiana extended-spectrum beta-lactamase; **VIM:** Verona integron-encoded metallo-beta-lactamase.