



**SASCM Laboratory Surveillance
Private Sector Jan-Dec 2014**

E. coli:URINE							
Percentage Susceptible							
	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	31857	22260	20230	17065	3303	1116	1808
Ampicillin	25	29	23	26	24	26	28
1st generation cephalosporins	50 (N=25918)	43 (N=11516)	67 (N=9996)	68 (N=1822)	25 (N=2491)	51 (N=427)	26 (N=272)
2nd generation cephalosporins	77	77	75	91	76	77	81
Parenteral 3rd generation cephalosporins	90	91	79	93 (N=2573)	95	88	92
gentamicin	89	90	86	93	93	90	91
amikacin	99	97 (N=16689)	98	98 (N=2573)	100	97	98 (N=1419)
Amox / clavulanate	74	71	67	83	97	67	75
Ciprofloxacin	72	74	63	74	76	75	74
Levofloxacin	73 (N=6148)	73 (N=16689)	64 (N=9996)	74	76	75	74
Cotrimoxazole	43	44	35	47 (N=2573)	47	39	43 (N=1695)
Ertapenem	100	99.99	100	100 (N=2569)	100 (N=927)	100 (N=1085)	100
%ESBL	10	10	12	6	5	12	8

E.coli: BLOODCULTURE**Percentage Susceptible**

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	949	585	494	571	59	45	57
Ampicillin	24	25	26	22	37	7	19
Cefuroxime	76	76	68	87	83	69	74
Ceftriaxone/cefotaxime	83	84	73	93	95	80	95
Cefepime	83	86	73	94	95	80	95
Amox / clavulanate	69	68	66	80	83	60	65
Piperacillin/tazobactam	78	80	83	92	88	76	88
gentamicin	76	85	78	92	93	78	88
amikacin	94	94	94	98	100	89	88
Ertapenem	99	100 (N=584)	100	100	100	100	100
Imipenem/meropenem/doripenem	99	100 (N=584)	100	100	100	100	100
Ciprofloxacin	72	72	55	79	86	73	75
Tigecycline	100 (N=920)	99 (N=566)	100	99 (N=83)	100 (N=54)	100 (N=20)	100 (N=30)
% ESBL	17	14	25	6	5	20	5

K.pneumo: BLOODCULTURES

Percentage Susceptible

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	970	545	290	234	34	47	82
Ampicillin	0	0	0	0	0	0	0
Cefuroxime	39	41	30	61	56	26	46
Ceftriaxone/cefotaxime	41	45	34	67	59	28	52
Cefepime	41	50	37	67	59	28	52
Amox / clavulanate	37	41	31	61	59	23	46
Piperacillin/tazobactam	38	46	60	64	59	26	51
Gentamicin	54	56	54	73	88	47	66
Amikacin	85	86	93	93	91	89	95
Ertapenem	91	94	98	99	97	100	90
Imipenem/meropenem/doripenem	93	96	98	99	100	100	90
Ciprofloxacin	62	60	55	68	71	74	77
Tigecycline	85 (N=962)	85 (N=530)	92	74 (N=39)	76 (N=33)	96 (N=27)	83 (N=38)
% ESBL	59	43	58	32	41	72	41

Enterobacter cloacae &SPP: BLOODCULTURES

Percentage Susceptible

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	285	158	108	67	15	13	25
ampicillin	0	0	0	0	0	0	0
Cefuroxime	10 (N=162)	25	24	0	0	31	0
Ceftriaxone/cefotaxime	69	67	70	85	60	54	48
Cefepime	78	85	81	90	67	54	76
Amox / clavulanate	0	0	0	0	0	0	0
Piperacillin/tazobactam	69	78	80	87	60	46	48
Amikacin	96	93	96	100	100	85	100
Gentamicin	88	90	83	91	87	62	76
Ertapenem	91	94	99	97	87	100 (N=11)	72
Imipenem/meropenem/doripenem	97	97	99	97	87	100	92
Ciprofloxacin	91	92	87	99	93	62	76
Tigecycline	91 (N=283)	92 (N=155)	99	93 (N=15)	89 (N=9)	100 (N=5)	53 (N=17)
% ESBL	23	23	22	8	20	46	16

Carbapenem Resistant Enterobacteriaceae							
Percentage Susceptible							
	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	136	453	186	133	16	-	41
Species							
<i>Klebsiella pneumoniae</i>	76 (N=136)	57	41	35	31	-	56
<i>Serratia marcescens</i>	5 (N=136)	8	31	29	50	-	0
<i>Enterobacter cloacae</i>	6 (N=136)	19	15	8	13	-	32
<i>Citrobacter freundii</i>	1 (N=136)	1	6	6	0	-	10
<i>Escherichia coli</i>	7 (N=136)	1	1	2	0	-	24
<i>Morganella morganii</i>	0 (N=136)	1	2	0 (N=17)	0	-	0
<i>Others</i>	4 (N=136)	12	7	20	6	-	0
Genotype							
OXA-48	43	7 (N=257)	6 (N=102)	32	81	-	2
VIM	24	23 (N=257)	0 (N=102)	11	6	-	2
NDM	25	12 (N=257)	74 (N=102)	52	13	-	93
GES	8	4 (N=257)	2 (N=102)	5	6	-	7
KPC	0	2 (N=257)	0 (N=102)	0 (N=17)	0	-	0
IMP	0	0 (N=257)	0 (N=102)	0 (N=17)	0	-	0
Source							
Urine	35 (N=136)	25	45 (N=102)	18 (N=17)	50	-	12
SSTI	NT	10	4 (N=102)	0	-	-	6 (N=36)
Respiratory tract	18 (N=136)	29	16 (N=102)	35 (N=17)	25	-	24
Blood	15 (N=136)	9	13 (N=102)	6 (N=17)	6	-	7
Intra-abdominal	6 (N=136)	2	4 (N=102)	0 (N=17)	0	-	15
Other	26 (N=136)	9	19 (N=102)	41 (N=17)	19	-	7
Antibiotic % susceptible							
Imi/mero/dori	22 (N=136)	18 (N=257)	6 (N=102)	0 (N=17)	13	-	7
amikacin	64 (N=136)	40 (N=253)	32 (N=102)	53 (N=17)	56	-	79 (N=29)
Tigecycline	56 (N=64)	30 (N=220)	48 (N=102)	45 (N=11)	33 (N=9)	-	67 (N=29)
Colistin	94 (N=109)	96 (N=45)	68 (N=102)	100 (N=9)	100 (N=5)	-	100 (N=29)
Positive rectal screens							
PCR	-	39	37 (N=102)	-	-	-	0 (N=36)
Culture	-	39 (N=189)	2 (N=102)	-	-	-	33 (N=36)

P. aeruginosa: BLOODCULTURES

Percentage Susceptible

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
P. aeruginosa: BLOODCULTURES							
n = Total of isolates	444	261	166	106	13	11	40
Ceftazidime	61	53	71	87	77	55	80
Cefepime	59	49	66	88	69	64	78
Pip/tazobactam	58	40	58	89	77	55	83
Gentamicin	71	60	69	84	85	100	75
Amikacin	69	61	69	90	85	100	80
Tobramycin	68	59	65	83	85	100	78
Meropenem	55	46	61	71	85	91	53
Imipenem	53	46	55	63	69	73	50
Doripenem	56	52	63	90	91 (N=11)	91	63 (N=38)
Ciprofloxacin	61	54	55	82	77	100	63
Polymyxin (Colistin)	100 (N=443)	99 (N=252)	97	100	100 (N=12)	100 (N=10)	100 (N=18)
Aztreonam	0	-	-	-	-	-	73 (N=11)

Acinetobacter baumannii: BLOODCULTURES

Percentage Susceptible

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	152	57	95	14	2	5	13
Ceftazidime	30	23	46	43	100	60	8
Cefepime	34	28	49	64	50	80	15
Pip/tazobactam	29	16 (N=32)	37	43	50	40	15
Gentamicin	59	46	53	71	100	80	23
Amikacin	51	58	24	79	50	100	38
Tobramycin	72	67	73	100	100	80	46
Meropenem	39	28	46	50	50	100	15
Imipenem	39	28	44	57	50	100	15
Doripenem	39	28	45	57	100 (N=1)	100	27 (N=11)
Ciprofloxacin	40	30	46	50	100	80	15
Polymyxin (Colistin)	100 (N=151)	89 (N=54)	98	100	100	75 (N=4)	100 (N=12)
Cotrimoxazole	46 (N=140)	35 (N=51)	34	100 (N=3)	-	80	0 (N=5)
Tigecycline	85 (N=127)	93 (N=42)	98	100 (N=12)	100	67 (N=3)	73 (N=12)

S. aureus: BLOODCULTURES**Percentage Susceptible**

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	490	370	463	372	55	40	61
Cloxacillin	74	80	62	68	78	82 (N=39)	75
Cotrimoxazole	90	87	74	93	76	78	80
Erythromycin	70	73	77	65	78	73	74
Clindamycin	74	78	78	72	78	73	75
Fusidic acid	97	96 (N=357)	96 (N=189)	94 (N=359)	91	100	93 (N=60)
Rifampicin	96	96	81 (N=189)	94	89	85	90
Gentamicin	87	86	79	92	96	83	85
Teicoplanin	100 (N=491)	100	100	100 (N=332)	100	100	100 (N=58)
Vancomycin	100 (N=491)	100	100	100	100	100	100 (N=59)
Linezolid	100	100	100	100	100	100	100
Daptomycin	100 (N=18)	100 (N=58)	-	-	100 (N=37)	-	100 (N=38)

E. faecalis: BLOODCULTURES**Percentage Susceptible**

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	230	177	189	31	17	16	35
Ampicillin	92	93	93	100	94	93 (N=14)	94
Gentamicin	33	55	57	79 (N=28)	65	90 (N=10)	77
Teicoplanin	100	100 (N=176)	100	100 (N=21)	100	100	100
Vancomycin	100	100	100	100	100	100	100
Linezolid	90	84	100	100	100	100	89
Daptomycin	-	-	-	NT	-	-	NT

E. faecium: BLOODCULTURES**Percentage Susceptible**

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total of isolates	97	102	32	12	3	2	10
Ampicillin	6	5	6	17	0	50	0
Gentamicin	10	37 (N=76)	31	70 (N=10)	100 (N=1)	-	10
Teicoplanin	77	89	94	100 (N=10)	100	100 (N=1)	90
Vancomycin	77	89	94	100	100	100	90
Linezolid	94	75	94	100	100	100	100
Daptomycin	-	96 (N=26)	-	0	-	-	NT

C. albicans: BLOODCULTURES**Percentage Susceptible**

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
No of isolates	131	111	55	27	12	3	16
a Fluconazole	100	100	100	100	100	100	100
Voriconazole	100	100	100	100	92	100	100
Posaconazole	-	100 (N=37)	-	-	-	-	NT
Amphotericin B	100	100	100	100	100	100	100
*Caspofungin	100	100	100	100	100	100	100
Anidulafungin	-	100 (N=61)	100	-	-	-	100

a Candida albicans isolates that were fluconazole resistant may have had trailing end-points and not elevated MICs

*Caspofungin MIC's may not be reliable and resistance was not confirmed by testing another agent (e.g. anidulafungin) or by fks gene sequencing

Candida Non-Albicans: BLOODCULTURES

Percentage Susceptible

Candida parapsilosis	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
Number of Isolates	379	288	123	72	19	2	5
Fluconazole	14	10	34	29	63	50	40
Voriconazole	25	26	61	42	63	50	40
Posaconazole	-	98 (N=108)	-	NT	-	-	NT
Amphotericin B	100	100	100	100	100	100	100
*Caspofungin	100	99 (N=282)	100	100	100	100	100
Anidulafungin	0	100 (N=175)	100	NT	-	-	NT
Candida glabrata							
Number of Isolates	35	64	28	16	1	1	3
Fluconazole	0	36 (N=44)	64	6	0	0	0
Voriconazole	52 (N=33)	0 (N=16)	100	100 (N=3)	-	-	NT
Posaconazole	-	75 (N=16)	-	NT	-	-	NT
Amphotericin B	100	100 (N=44)	100	100	100	100	100
*Caspofungin	100	98	100	100	100	100	100
Anidulafungin	0	97 (N=36)	100	NT	-	-	NT
Candida krusei							
Number of Isolates	8	5	4	2	-	2	-
Fluconazole	0	0	0	0	-	0	-
Voriconazole	100	80	100	100	-	100	-
Posaconazole	-	100 (N=3)	-	NT	-	-	-
Amphotericin B	100	100 (N=4)	100	100	-	100	-
*Caspofungin	63	100	100	100	-	100 (N=1)	-
Anidulafungin	-	100 (N=4)	100	NT	-	-	-

Candida Non-Albicans: BLOODCULTURES

Percentage Susceptible

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
Candida tropicalis							
Number of Isolates	11	18	7	13	3	-	-
Fluconazole	91	94	100	100	100	-	-
Voriconazole	91	83	100	100	100	-	-
Posaconazole	-	100 (N=4)	-	-	-	-	-
Amphotericin B	100	100 (N=10)	100	100	100	-	-
*Caspofungin	100	100	100	100	100	-	-
Anidulafungin	-	100 (N=12)	100	-	-	-	-
Candida species							
Number of Isolates	15	40	1	-	-	-	-
Fluconazole	0	0	100	-	-	-	-
Voriconazole	0	25	100	-	-	-	-
Posaconazole	-	88 (N=24)	-	-	-	-	-
Amphotericin B	87	100	100	-	-	-	-
*Caspofungin	73	83	100	-	-	-	-
Anidulafungin	-	88 (N=24)	100	-	-	-	-

*Caspofungin MIC's may not be reliable and resistance was not confirmed by testing another agent (e.g. anidulafungin) or by fks gene sequencing

S. pneumoniae: LRTI							
Percentage Susceptible							
	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
n = Total number of isolates	849	1414	304	944	95	17	104
Penicillin~	0	0	0	0	0	0	0
</=0.06	41 (N=352)	41	51 (N=63)	96	47	71	75 (N=64)
0.12-2	59 (N=352)	56	46 (N=63)	4	52	24	52
4	0 (N=352)	3 (N=1231)	3 (N=63)	0	1	6	1
8	0 (N=352)	0 (N=666)	0 (N=63)	0	0	0	1
Telithromycin - susceptible	100	100	100 (N=176)	100	100	100	100 (N=97)
Erythromycin – susceptible	49	65	49	59	61	71	75
3rd generation cephalosporins (parenteral)*							
Susceptible	97	99	100	99	95	94	100
IR	3	1 (N=1231)	0	1	5	0	0
HR	0 (N=352)	0 (N=1231)	0	0	0	6	0
Quinolones							
Levo	99	100 (N=1231)	100	100 (N=66)	100	100	100 (N=64)
Moxi	99	100	100	99	100	100	100

~Penicillin breakpoints (oral): CLSI S</=0.06 IR 0.12-1 HR >/=2

~ Penicillin breakpoints (parenteral non-meningitis): CLSI S</=2 IR 4 HR >/=8

* 3rd Cephalosporins (non-meningitis): CLSI S</=1 IR 2 HR >/=4

Haemophilus influenzae: RTI Upper Resp (ENT)%**Percentage Susceptible**

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
No of isolates	892	532	313	241	128	18	28
Ampicillin	89	89	89	86	88	94	79
B-lactamase positive	4	11	11	14	12	6	18

Haemophilus influenzae: RTI Lower resp (Sputums)%**Percentage Susceptible**

	JHB (3)	PTA (3)	DBN (2)	CPT (2)	PE (1)	EL (1)	BLOEM (2)
No of isolates	1641	2691	1068	1214	241	62	322
Ampicillin	90	69	91	86	89	87	89
B-lactamase positive	4	8	9	14	11	13	11