Supplementary Table 1. Geographical distribution, species, clones, and resistance mechanisms of antibiotic-resistant Gram-positive bacteria isolated from humans in Africa from 2007-2019.

Country (n)[1]	Year	Organism/ Species (n)[2]	Specimen Sources (n)[3]	Sample size (Resistant isolates)	Clones (n)[4]	Resistance genes/ mechanisms (n)[5]	Antibiotic resistance phenotype (n)[6]	MGEs (n)[7]	Reference
Algeria	2018	S.aureus(39), CONs(6)	pus, sperm, urine, vaginal discharge, wounds, cathetertips and secretions (45)	45	ND	tetM(29), tetK(18),ermC(6),aacA-aphD(11),blaZ(23), mecA(42)	PEN (39),OXA(22),FOX(9),AMC(42), GEN(4),ERY(17),KAN(9),TET(22),RIF(4),SXT(3)	SCC mec(42)	1
	2016	E. faecalis (64),E. faecium(18), E.galinarum(2),E.casseliflavus(1)	Human(85)	85	E.faecium ST17(8),ST18(1), ST78(3)	VanC(3)	AMO(15),GEN(46),KAN(59),VAN(2),SXT(60),CIP(51)	ND	2
	2015	*S. agalactiae* (44)	Vaginal swab (44)	(44)	ST1(9), ST19(14), ST10(4), ST158, ST166, ST233, ST460, ST521, ST677	*tet*(M)(44), *erm*(B) (19), *mefA/E* (1), *erm*(A) (1)	TET (44) ERY (13)	ND	3
	2014	*S. aureus* (159)	Nasal swab (159)	159 (9)	ST80 (4), ST5 (2), ST22 (2), ST535 (1)	*mecA* (9)	GEN ((3), TET (3), TOB(6) SXT(2)	*SCC mec* (9)	4
	2013	*S.aureus (85)*	Wound (85)	85(73)	ST239(60), ST80(10)	*mecA(73),ermA(29),ermC(3),aacA-aphD(66),aphA(70), sat(70),tetM(63),fosB(72)*	PEN,ERY(13),TET, GEN(35),	SCC mec(73)	5

[1] Total number of studies per country

[2] Total number of isolates

[3] Total number of specimen source

[4] Total number of resistant clones

[5] Total number of resistant genes

[6] Number of different antibiotics any one isolate is resistant to

[7] Total number of MGEs

	2013	*S. aureus* (64)	Pus (47), venous catheters (7 tracheal aspirates (4), punction fluids (3), blood (2), urine (1)	(64)	ND	*mecA* (64)	MET (64), OXA (64), FOX (64)	*SCC mec (64)*	6
	2012	*E. faecium* (80), *E. faecalis* (39) *E. gallinarum* (4), *E. raffinosus* (1), and *E. durans*(1).	Urinary (85), cutaneous (24), blood (14), pus (2)	125 (108)	ST 317 (33), ST51(20), ST52(11), ST175 (8), ST78(25), ST578(4), ST81(2), ST16(2)	*erm*(B) (92), *vanC1*(4)	AMP (38), GEN (68), TET (103), ERY (106), CAM (18), LVX ((89), NIT (24), VAN (4).	ND	7
	2011	*S. aureus*(221)	Skin and soft tissue(158),bone and joint (infection(25),bacteraemia(20),pneumonia(12),eye infection(7),meningitis(3),UTI (2)	221(41)	ST80(13),ST241(9)	*mecA*(97)	KAN(29),TET(25),ERY(25),FUS (41)	*SCC mec(97)*	8
Angola (4)	2018	*S.aureus (38)*	Nasal swab (38)	38(37)	ST5(9), ST88(3), ST72(2),ST30(1),ST8(1)	*mecA(24)*	PEN (37),OXA(24),FOX(24),CLI(5),ERY(5),TET(15),FUS(8),CIP(15), GEN(12),SXT(20),CHL(7),	*SCC mec(24)*	9
	2016	S.aureus (4)	Human (4)	4	ST88(4)	mecA(4)	OXA(4)	SCC mec(4)	10
	2016	*S. aureus*(70)	Nasal swab(70)	70(61)	ST5(13),ST88(6),ST601(1)	*mecA*(20)	PEN(67),FOX(20),RIF(61),SXT(15),CHL(6),GEN(3),TET(7),FUS(1),CIP(1)	SCC *mec(20)*	11
	2015	*S. aureus* (164)	Nasal swab (164)	164 (9)	ST88(5), ST5(1), ST2629(1), ST8(1),ST30(1)	*mecA* (5)	FOX (29), SXT (26), TET (18), ERY (16), CIP (9) and CLI (8)	*SCC mec (5)*	12
	2015	*S. aureus* (203)	Nasal (203)	203(128)	ST8(16), ST5(83), (ST88(19), ST72(5), ST789(1), ST5/2629(2), ST30(2), ST22(1)	*mecA* (127)	SXT (136), FOX (128), TET (39), PEN (200), RIF (156), CLI (4), ERY (14), CIP (20), GEN (43), CHL (18)	*SCC mec (127)*	13

	2014	*S. aureus*	Nasal swab (117)	117(97)	ST8(57), ST88(9), ST8(5), ST72(3), ST789(1)	*mecA* (68)	PEN (97), FOX (77), SXT (80), GEN (24), RIF (97), CHL (11), CIP (10), TET (16), ERY (8)	*SCC mec (68)*	14
Cape verde (1)	2015	*S. aureus*	Nasal swab (113)	113(16)	ST88(2), ST8(1), ST5(3)	*mecA* (6)	FOX (5), TET (5), PEN (109), CIP (2), CLI (3), SXT (12), ERY (16), FUS (5), MUP (6)	*SCC mec (6)*	13
Democratic Republic of Congo (3)	2017	*S. aureus* (108)	blood(108)	108(27)	ST5(11) ,ST8(30),ST88(1),ST152(17)	*dfrG*(24),*aac(6')-aph(2")(25)*,*tet*(K)(23),*erm*(C)(*20)*	TET(61),LIN(20),CIP(20),PEN(87),CHL(5),SXT(4),	ND	15
	2016	*S. aureus* (100)	Nasal swab (100)	100 (97)	ST8 (9)	*dfrG*,(72),*tet*(K) (44), *fem*A (98), *mecA* (33)	TMP(72), PEN (97), TET(45),GEN(25),OXA(24),ERY(20),LUV(16),RIF(7),CHL(7),CLI(4)	SCC *mec*(33)	16
	2015	*S. aureus* (63)	Nasal swabs (63)	63(10)	ST8 (8), ST5 (1), ST88 (1)	*mecA* (10)	TET(21),ERY(12),CLI(8),PEN(60),CHL(9),KAN(12),GEN(12),TOB(12), SXT(6)	*SCC mec (10)*	17
Egypt (10)	2018	*Enterococcus spp.(67)*	Urine(44),pus/wound(12),blood(6),tissue (1),	67	ND	*VanA(11),vanB(3),vanC-2/3(3), tet(XI)(9)*	AMP(11),AMC(11),CIP(3),VAN(3)	*ND*	18
	2018	*E.faecalis (73),E. faecum (7)*	Urine(80)	(80)	ND	*aac(6')-Ie-aph(2')-Ia(53),ant(6)-Ia(53),aph(3) IIIa (54), aph(2)/d(4)*	PEN(80),AMP(80),TET(73),CIP(66),SXT(69),GEN(58),STR(53)	*ND*	19
	2017	*S. aureus* (20),*S. haemolyticus* (9), *S. schleifer*(3), *S. warneri* (2), *S. lugdunensis* (4) *	Urine(NS), Blood(NS)	58(38)	ND	*mecA* (19)	FOX(25),CIP(21),CLI(21), SXT(21),ERY(38),GEN(32),RIF(14),TET(27)	*SCC mec(19)*	20

	2017	*E. faecalis* (57)	Urine(57)	57(52)	ND	*acc(6)la-aph(2)la*(21), *erm*(B)(51),*mef(A/E)*(1)	AMX(14),VAN(2),FoF(36),GEN(20),AMK(52)	*ND*	21
	2017	*Staphylococcus spp*	Urine(3),blood(10),pus(7),sputum(4),bronchoalveolar lavage(2)	81(26)	ND	*fusB*(8),*fusC*(9)	GEN(14),RIF(5),AMP(17)	*ND*	22
	2016	*S. aureus*(60)	Human(60)	60(NS)	ST22(1),ST239(1)	*mec*A(14), *erm*(C)(14)	CLI(NS),CIP(NS),GEN(NS),SXT(NS),VAN(NS),OXA(NS),ERY(NS).	SCC *mec(14)*	23
	2016	*S.aureus (161)*	pus/wound swabs(161)	161(61)	ND	*mecA(161),mupA(6)*	Mupirocin	SCC mec(61)	24
	2016	*S. aureus(64)*	Sputum(18),pus(35),urine(10),CSF(1)	64(45)	ND	*mecA*(9)	CRO(45),ERY(38),OXA(38),SXT(31),GEN(22),CIP(19),CLI(17), VAN(3)	SCC *mec(9)*	25
	2015 H	*E. faecium* (26), *E. faecalis* (47)	Urine (100)	(73)	ND	*vanA* (2)	PEN(17), AMP(38), CIP(22), GEN(41), STR(73), CHL(12), TET(50), VAN(2)	ND	26
	2014	*S. agalactiae* (100)	Vaginal swab (100)	100 (98)	ND	*erm(*B) (9), *erm(*A) (1) ,*mef*A/E(1),*tet(*M) (99) ,*tet*(L)(12), *tet*(K)(1) , *tet*(O) (1)	ERY(17), CLI(14), AZI(16), TET(98) and CHL(1)	ND	27
	2014	*S. aureus* (127)	Diabetic foot ulcers (39), surgical site infection (48) and abscess infections (25), burn discharges (15).	127 (111)	ND	*mecA* (29)	AMP(111), AMX(104), OXA(31), LEX(83), CXM(67), CFP(43), FEP(56), CTX(32), SAM(37), AMC(41), AMK(3) CIP(32), NOR(37), OFX(31), LVX(11), GAT(5), ERY(59), Cli(34),	SCC mec (29)	28

							TET(66), VAN(2), CHL(44), RIF(35)		
	2013	*S. aureus* (94)	Blood and wound	94 (45)	ND	*gyrA* (C**2402**T, T**2409**C, T**2460**G) (60), *gyrB*(T1497C, A**1578**G) (5)	CIP(26), LUX(26), AMC(26), FEP(24), GEN(11), TET(17),CHL(5)	ND	[29]
	2008	*S. aureus* (60)	Sputum(13),throat swabs(11), nasal swabs(31), blood(9)	60(31)	ND	mecA(18)	MET(31)	SCC *mec*(18)	[30]
Gambia	2017	*S.aureus (23)*	Nasopharyngeal swabs(23)	23	ND	ermC(C), erM(T),blaZ(21),dfrG(7),tetM(1),tetK(2), norA(23)	ERY(12),PEN(21),SXT(7),TET(2)	ND	[31]
Gabon (2)	2016	*S. aureus* (103)	Throat swab(79),skin lesions(24)	103(61)	ND	*mec*A(3),*bla*Z(90),*mrs*(A)(8),*aph*A3(1),*dfr*A(2),*tet*(K)(56),*tet*(M)(6),*qac*C(4)	PEN(90),OXA(1), CXM(1),ERY(8),TET(61),SXT(51),CIP(3)	SCC *mec(3)*	[32]
	2016	*S.aureus (103)*	Throat swab(79), skin lesion(24)	103(90)	ND	*mecA(3),blaZ(90),msr(A)(8),mpbm(1),aphA3(1),dfrA(2),tet(K)(56),tetM(6),qac(4)*	PEN(80),TET(56)	SCC mec(3)	[32]
	2014	*S. aureus* (212)	Skin and soft tissue (100) and bloodstream (12)	212 (104)	ND	*dfr*A (1), *dfr*G (100), *dfr*K+G (1), *dfr*B (2) *mec*A(1)	TMP;(104), SXT(100), SMZ(6)	SCC *mec*(1)	[33]
Ghana (3)	2019	*S.aureus (73)*	Nasal swab(73)	(73)	ND	*mecA(7)*	PEN(74),SXT(50), TET(46),RIF(35),ERY(32),CLI(23),GEN(13),FUS(7)	SCC mec(7)	[34]
	2018	*S. aureus (12)*	Patients(12)	(12)	ST15,ST152(3),ST5(1),ST45,ST707,ST121,ST72,ST6,ST508	*blaZ(11), dfrG(2),aacA-aphD(1),tetK*	PEN(12)	ND	[35]
	2015	*S. aureus* (30)	Skin and Soft Tissue Infections (16) , bacteraemia (5), nasal swab (9)	(30)	ST88 (8),ST8 (5), ST247 (4)	*tet*(M) (13) , *tet*(K) (10), *aph*A3 (7), *aacA–aph*D (5), *erm*(C) (4).	TET(20), NOR(12), MXF(11), ERY(11), CLI(9), KAN(9),GEN(9) and CPT (6)	ND	[36]

	2014	*S. aureus* (308)	Blood (112), SST1(173), others (23)	308 (208)	ST88 (2), ST8 (1), ST789 (1), ST72 (1), ST2021 (1), ST250 (2), ST239 (1)	*mecA* (9)	PEN(208), TET(129), and ERY(18)	SCC mec(9)	37
	2013	*S. aureus* (105)	Nasal swab(105)	105(29)	ST88(4),ST8(1),ST72(1)	*mecA*(6)	PEN(98),FUS(13),TET(29),FOX(6),SXT(3),ERY(5),CLI(3),NOR(2),GEN(2),RIF(1),MUP(1)	SCC mec(6)	38
Kenya (2)	2016	*S. aureus* (93)	Blood(93)	93 (32)	ST22(4),ST88(1),ST789(1),ST5(1),ST8(2),ST241(12),ST239(2)	*mecA* (32)	CLI(10), ERY(9) and SXT(9),MXF(1) ,RIF(3), TET(6),LUX(5)	SCC mec (32)	39
	2013	*S.aureus(82)*	Skin and soft tissue infection(82)	82(69)	ND	*mecA(69)*	ERY(56),CLI(31),GEN(69),SXT(51),FUS(69),OXA(69),CIP(55), MET(69)	SCC mec(69)	40
Libya (5)	2017	*S. aureus (32)*	Wound(32)	32	ND	*blaZ(31),ermC(30), aph(3')-IIIa(3),aac6-aph(32),tetM(2),tetL(3),dfrG(28),fusc(32)*	FUS(32),PEN(32),AMP(32),CIP(32),GEN(32),KAN(32),SXT(32),ERY(30)	SCC mec(69)	41
	2015	*S.aureus (210)*	Wound and abscess(210)	210	ND	*mecA (210)*	MET(210)	SCC mec(210)	42
	2014	*S. aureus* (208)	Nasal swab (44)	208(70)	ND	*mecA* (35)	CIP(22), GEN(24), FUS(49)	SCC *mec*(35)	43
	2012	*S.aureus (109)*	Human (109)	(109)	ND	*mecA(109)*	OXA(84),CLI(33),CIP(84),SXT(55),VAN(13)	SCC mec(109)	44
Morocco (2)	2013	*S. aureus* (30)	Nasal swab (30)	30 (25)	ND	*mecA* (1)	PEN(25), GEN(1), TOB(1), KAN(1), PF(1), TET(1), ERY(1), SXT(1)	SCC *mec*(1)	45
	2012	*S. aureus* (79)	Human(79)	79(43)	ND	*mecA* (28)	PEN(74),KAN(29),TOB(27),GEN(27),ERY(21),FUS(25),PF(30), TET(43),MIC(34),RIF(25),SXT(19)	SCC *mec*(28)	46
Mozambique (1)	2013	*S. aureus* (24)	Wound (24)	24 (9)	ND	*mecA* (9)	FOX(9), OXA(8)	SCC *mec*(9)	47

Namibia (1)	2014	*S. aureus* (116)	skin and soft tissue (31), urinary tract(19), respiratory tract (37), ear (7), eye (4) and bloodstream (3)	116 (34)	ND	*dfrA* (14), *dfrG* (20) *mecA* (11)	SXT(20), TMP(34) SMZ(20)	SCC *mec*(11)	[48]
Nigeria (9)	2018	*S.aureus (92)*	Nasal swab,wound,urine,blood,ear, pus(92)	92(63)	ND	*mecA(12)*	PEN (63),SXT(34),TET(48),ERY(20, FUS(11),OXA(12),GEN(4)	SCC mec(12)	[49]
	2018	*S.aureus (73)*	Wound,otitis media(73)	73	ND	*mecA(5)*	AMX(53),ERY(57),TET(41),GEN(16),SXT(43),CHL(33),FUS(35),VAN(1)	SCC mec(5)	[50]
	2017	*S. aureus(50), CONs (41)*	Human (91)	91	ND	*mecA(36)*	OXA(41),CLO(50),GEN(44),ERY(48)	SCC mec(36)	[51]
	2016	*E.faecium(3) ,E.gallinarum(9), E.casseliflavus(1)*	Rectal swab(13)			*VanA(1), vanB(2),vanC1(9), vanC2(1)*	VAN(13), AMP(3), CIP(6)	ND	[52]
	2015	*S. aureus* (38)	throat (40), nasal (23), wound (10)	38 (32)	ST8 (5), ST152 (1), ST772 (1), ST14(1)	*mecA (16)*	TET(32),LUX(7), GEN(5), ERY(5), PEN, SXT(29)	SCC *mec*(16)	[53]
	2015	*S. aureus* (290)	Skin and nasal swab (120), wounds, blood	290 (211)	ND	*mecA (7), blaZ (284))*	PEN(284), SXT(233), TET(51),OXA(7),GEN(11),TOB(11),LUX(23),MXF(21),TGC(51),	SCC mec (7)	[54]
	2015	*S.aureus (17), CONs(168))*	Nasal swab(185)	185(13)	ND	*mecA(1)*	AMP(3),PEN(13),ERY(1),FOX(1),SXT(9)	SCC mec(1)	[55]
	2014	*S. epidermidis* (20), *S. haemolyticus* (10), *S. saprophyticus* (5), *S.*	Stool (53)	(53)	ND	*mecA* (15), *aac(6')–aph(2")* (3),*erm(C)*(4), *msrA*(1), *tetK (6) ,tet*(M)(4)	PEN(53), OXA(15), GEN(3), ERY(5), TET(7), SXT(19), CHL(4),AMC (31),CIP(1)	SCC mec(15)	[56]

		capitis, (5), *S. lugdunensis* (2), *S. warneri* (4), *S. xylosus* (n4),*S. cohnii* (3).							
	2014	*S. aureus* (183)	Skin and soft tissue (32), urinary tract (9), ear (7), unknown site (4), oropharynx (3), eye (3) and bloodstream (1)	183 (154)	ND	*dfrA* (2), *dfrG* (152), *mecA*(16)	(TMP)(154), SXT(83),SMZ(85)	SCC *mec*(16)	[48]
	2013	*S. aureus* (61)	Human(61)	61(27)	ST39(1),ST5(2),ST241(1), ST250(1),ST88(2)	*mecA*(7)	PEN(45),TET(26),CLI(2),GEN(10),LVX(6), SXT(27)	SCC mec(7)	[57]
	2012	*S. aureus* (51) *S. haemolyticus* (21),*S. sciuri* (9), *S. saprophyticus* (5), *S. warneri* (3),*S. epidermidis* (1) and *S. hominis* (1),	wounds, (11) skin and soft tissues (12), osteomyelitis (5), burns (1), urinary tract infection (6), septicaemia (17), urinary tract infection (10), otitis media (2), bronchitis (2)	91 (36)	ST241 (1), ST8 (1),ST152 (1),ST37 (37),ST39,ST88	*mec*A (15), *dfr*A (3)	SXT(13), PEN(15),OXA(15), GEN(6), CIP(7), MXF(1),ERY(5),CLI(4),TET(13), SXT(13), RIF(2)	*SCC mec* (15)	[58]
	2011	*S. aureus*	Human(68)	68(49)	ND	*mecA*(11),*erm*(A)(6),*msr*A(2),*aacA-aph*D(10),*tet(*M)(11), *tet*(K)(27)	PEN(60),OXA(11),GEN(10),TET(38),CIP(20),MXF(7),SXT(49), ERY(8),CLI(6)	*SCC mec(11)*	[59]

	2009	*S. aureus* (96)	Human(96)	96(12)	ST241(12)	*mecA*(12)	PEN(12),OXA(12), FOX(12),GEN(12),ERY(12),CLI (9),SXT(12),CIP(12)	SCC *mec(12)*	60
	2009	*S. aureus* (346)	Human(346)	346(206)	ST5 (72), ST7 (44), ST121 (38),ST250(28), ST88 (33), ST30(26), ST8(18), ST1(20), ST15(8), ST80 (8), ST241 (7), ST25 (5), ST72 (3)	*mecA*(70)	PEN(316),SXT(206),TET(182), CIP(58),ERY(26),GEN(42)	*SCC mec(70)*	61
São Tomé and Príncipe (3)	2018	*S. aureus(65)*	Nasal swab(65)	(65)	ST8(7),ST88(2)	*mecA(9)*	PEN (65),OXA(9),FOX(9), RIF(5),CLI(17),ERY(24),TET(6), FUS(2),CIP(2),CIP(1),GEN(7),S XT(11)	*SCC mec (9)*	9
	2016	*S.aureus (5)*	Human(5)	5	ST88(3), ST8(2)	*mecA(5)*	OXA(5)	*SCC mec(5)*	10
	2015	*S. aureus* (114) *	Nasal swab (114)	114(29)	ST5(2),ST88(11), ST8(13),ST1(2),ST105(1)	*mecA*(29)	FOX(29),PEN(114),TET(30),CI P(28),RIF(6),GEN(20) ,CLIN(20),SXT(58),ERY(25),CH	SCC mec (29)	13
	2015	*S. aureus* (164)	Nasal swab (164)	164 (20)	ST88(10),ST8(9)	*mecA* (19)	FOX(29), SXT(26), TET(18), ERY(16), CIP (9) and CLI(8)	*SCC mec (19)*	62
	2014	*S. aureus* (52)	Nasal swab (52)	52(27)	ST8(3), ST88(2),ST5(1),S T105(1)	*mecA* (14)	SXT(27),ERY(11), CIP(11),TET(12),FOX(14),RIF(2)	SCC mec(1 4)	63

South Africa (11)	2018	*S. aureus (33)*	Sputum(9), nasal swab(5), throat(17),	33	ST20(2),ST152(5),ST30(3),ST8(1),ST508(1),ST45(4),ST1(3)	*mecA(13), icaA/B(14),qacA/B(3)*	MUP(2),STR(8)	IS256 (10)	64
	2018	*S. epidermidis (59)*	Blood(59)	(59)	ST2(4),ST54(2),ST28(1), ST59(1),ST490(1),ST596(1)	*mecA(59)*	PEN(59),ERY(51),GEN(49)	IS256 (49)	65
	2017	*S. aureus* (1914)	Blood (1914)	1914(557)	ST239(8),ST612(8),ST4121(1),ST36(4),ST5(4),ST33(3)	*mecA*(483)	β-lactams(557),TET(NS),aminoglycoside(NS),SXT(NS)	SCC mec (483)	66
	2017	*S. aureus* (97)	Human	97(96)	ND	*norA*(96), *norB* (96), *mepA*(95),*tet*(38)(96),*sepA*(94), *mdeA*(93), *imrs*(86), *sdrM*(83),*norC*(77), *qacA/B*(34),*smr*(42)	MET(15)	ND	67
	2017	*E. faecalis (1)*	Urine (1)	1	ST6(1)	*aph(3')-lll(1), ant(6)-la* (1), *aac(6')-aph(2")* (1), *isa*(A)(1),*mph*d(1), *tet*(M)(1)	GEN(1),STR(1),ERY(1),CLI(1), TET(1),CLI(1),TET(1),CIP(1)	ND	68
	2017	*E.faecium (1)*	Urine (1)	1	ST18(1)	*aph(3')-lll*(1), *ant(6)-la* (1),*tet*(M)(1),*erm*(B)(1),*msr*(C)(1), *tet(L)*	GEN(1),STR(1),ERY(1),CLI(1), TET(1),CLI(1),TET(1),CIP(1)	ND	69
	2016	*S. aureus* (27)	Blood (5), nasal (2), CVP(2), Endotracheal tube (2), pus (2), sputum (1), wound (20), Eye (1),humerus (1), bone (1), cheek (1), buttock (1), head (1)	(27)	ND	*mecA* (27) *and blaZ* (27),*aac (6')–aph (2"*) (25),*erm*(C) (13)	CIP(23), GEN(20), RIF(19), TET(18), ERY(17), CLI(3)	SCC *mec*(27)	70
	2016	*E. faecium* (120) *E. faecalis* (40)	Blood (160)	(160)	ST80 (1),ST203 (1),ST18 (1),ST817(1	*vanA* (3),*vanB* (1)	VAN (4)	ND	71

	2015	*S. agalactiae* (128)	vaginal and rectal swabs (128)	128 (121)	ND	*erm(*B), (28),*linB*(48) *mefA* (48)	ERY(27), CLI(32), CHL(32),TET(111),CIP(24)	ND	[72]
	2015	*S. aureus* (2709)	Blood (2709)	2709 (1231)	ND	*mecA* (1160)	TET(NS), RIF (NS),MUP(NS), CIP(NS) and SXT(NS) MET(1231)	SCC mec (1160)	[73]
	2012	*S. aureus* (13746)	Human (13746)	13746(3298)	ST5 (1), ST612 (44),	*RpoB* (H**481**Y, H**481**N, I**527**M) (NS)	RIF(1760)	ND	[73]
	2009	*S. aureus* (17)	Human(17)	17(13)	ND	*mupA*(3)	ERY(12),CIP(10),RIF(4),CHL(4)	ND	[74]
	2007	*S. aureus(3),S. .lugdunensis (2)*	Wound(4),blood(1)	5(5)	ND	*mecA*(5)	PEN(5), OXA(5),GEN(5),ERY(4),TET(5), SXT(5),RIF(5)	SCC mec(5)	[75]
Sudan(1)	2015	*S. aureus(200)*	Wound(49),ear swab(57),urine(47),nasal swab(47)	200(197)	ND	*mecA(*111)	PEN(197), AMP(197),GEN(122),KAN(136), IPM(89),AMO(87),CIP(123),CLI (113),SXT(105)	SCC *mec(111)*	[76]
Tanzania (1)	2017	*E. faecium(88), E.faecalis(92), E.gallinarum ,E.avium(5)*	Human (193)	193(120)	ND	*VanA(11),vanB(8)*	AMP(12),CHL(22),GEN(120),ERY(112),RIF(179),SXT(24),tet(59),van(59)	ND	[77]
	2014	*S. aureus* (87)	Skin and soft tissue (39) and bloodstream (2)	87 (32)	ND	*dfrG* (32)	SMZ(5), TMP (32)	ND	[78]

Tunisia (18)	2019	*E. faecium (10)*	Blood(10)	(10)	ST80(2),ST1463(1),ST1464(7)	*VanA(10), tetM(2),aac(6')-Ie-aph(2")-Ia(10),aph(3')-IIa(9),ant(6)-Ia(8),ermB(6),tetL(6),tetM(2)*	VAN(10),ERY(10),TET(19),GEN(10),KAN(10)	IS16(10)	79
	2018	*S. pyogenes(289)*	human	289	ND	*ermB(5),mefA(2)*	ERY(15)	ND	80
	2015	*S. aureus* (99)	Human (99)	(99)	ST247 (12), ST239 (6), ST728 (2), ST241 (1), ST398 (1), ST5 (1) and ST641 (1)	*mecA* (24), *tet*(K) (6), *tet*(L) (1), *tet*(M)(18), *erm*(A), *aph(2')-acc(6')* (13)	TET(24), GEN(18), ERY(15), FOF(1), CLI(14), OFX(16), TOB(20), FUS(5)	SCC *mec*(24)	81
	2014	*E. faeciun* (13),*E. gallinarum* (3)	blood (8), pus (3), urine (2) and rectal swabs (3).	(16)	ST18 (1)and ST80 (2)	*vanA* (13),*vanC1*(3), *erm*(B) (16), *tet*(M)(15),*tet*(L)(1), *aac(6')-aph(2")(13) aph(3')-IIIa* (16),*ant*(6)(3)	VAN(16),TEC(13), AMP(16),CIP(16), ERY, TET(16), KAN(13), STR(13), SXT(16), GEN(8),	*IS16 (3)*	81
	2013	*S. aureus* (69)	Human (69)	(69)	ST80 (41), ST1440 (1), ST1 (2), ST5 (5), ST22 (1), ST97 (2), ST239 (4), ST241 (3), ST247 (3), ST1819 (3),ST153 (2),ST256 (1)	*mecA* (59)	KAN(62), AMK(62(18), TET(61), OFX(20) , CIP(31), ERY(38) , CLI(12), RIF(22)	*SCC mec* (59)	82

	2013	*S. aureus* (64	Pus(53)pus, blood culture (6), articular Puncture (4), venous catheter r(1).	(64)	ST80(64)	*mecA*(64)	PEN(64),OXA(64),FOX(64),AMK(64),KAN(63),ERY(13),TET(3),LIN(3)	*SCC mec(64)*	83
	2012	*S. agalactiae* (226)	Female genital (120), gastric fluid (106)	226 (220)	ND	*erm*(B) (79), *mef*(A) (2), *tet*(M) (205), *tet*(L)(10), *tet*(O) (5), *tet*(T)(1)	CHL(7), RIF(43), ERY(90) and TET(220), STR(7),GEN(7)	*Tn916*	84
	2012	*S. haemolyticus* (46)	Blood (19), intravascular catheters (14), others (13)	46 (36)	ND	*mecA* (28)	PEN(36), OXA(36), GEN(34), KAN(34), and TOB(34), ERY(33), SXT(32), OFX(32), CIP(32), STR(25), FUS(14), TET(11),RIF(9),LIN(6(,CHL(1),FOF(1)	*SCC mec* (28)	85
	2012	*E. faecalis (12)*	Human(12)	(12)	ND	*msrA(12),mefA(12),* blaTEM-1(12)	AMP(12),ERY(12)	*ND*	86
	2011	*S. aureus* (1463)	Skin (1463)	160 (5)	ND	*erm*(C)(3), *erm*(A) (1), *vat*(B) (5), *vga*(B) (5)	PEN(5),OXA(4), GEN(4), KAN(5), TOB(5) and RIF(5),LIN(5)	ND	87
	2010	*S. pyogenes* (103)	skin (43), respiratory tract (41), blood (12), fluids (4), endometrium (1), vagina (1), and urine (1).	103 (72)	*emm*18 (4), *emm*42 (9), *emm*76 (6), *emm*118(10)	*erm*(B) (5), *tet*(M) (63), tet(O)*(3)*	ERY(5), CLI (5), and TET(72),	*Tn916 (62)*	88
	2011	*S. epidermidis (34),S. haemolyticus*(10),*S. hominis*(1)	Blood(45)	45(42)	ND	*mecA*(43),*mrs*A(13),*erm*(C)(7),*erm*(B)(2),*erm*(A)(6),*aac(6')-le-aph*(2'')(35),*ant(4')-la(18),aph(3')-*	PEN(45),OXA(43),GEN(35),KAN(42),TOB(40),ERY(25),CLI(11),TET(5),CHL(3),RIF(15),SXT(31),CIP(25),FUS(27),FOF(18)	*SCCmec(43)*	89

						IIIa(4),*tet*(K)(6),*tet*(M)(1)			
	2010	*S. pyogenes* (193)	throat (63), pus (89), punctures (30), blood (4), other sources (7)	193 (13)	ND	*ermB* (6), *mefA* (2)	ERY(7) and TET(6)	ND	90
	2011	*S. aureus* (55)	*Nasal swab(55)*	55(19)	ST80(1)	*mecA*(1), *ant(6)-Ia*(3),*tet*(K)(7),*aph(3')-IIIa*(4),*dfr*A(1),*tet(M)(1)*,*tet*(L)(1)	PEN(54),OXA(19),FOX(1),TET(11),STR(5),KAN(3)CIP(8)	SCCmec(1)	91
	2010	*S. agalactiae* (160)	Urinary tract (160)	(160)	ND	*erm*(B) (132), *erm*(TR) (13), *mef* (A) (3)	ERY(160), LIN(135) and SB (135)	ND	90
	2009	*S. aureus* (72)	Pus (32), blood (16), catheter (12)	72(42)	ND	*mecA*(13)	PEN(65),STR(11),GEN(4),KAN(11),OXA(13),TOB(4),LIN(3),TET(42),ERY(11),RIF(6),CHL(2),CIP(5),FUS(8),FOF(1)	SCC*mec*(13)	92
	2011	*S. epidermidis* (77), *S. mitis* (50), *E. faecium* (45)	blood cultures (55), central venous catheters, (22), stool cultures (40), respiratory tract (2) and different sites (3), systematic nasopharyngeal specimens (42), upper respiratory tract(5)	172(95)	ND	*erm* (C) (18), *erm*(B) (6), *erm*(A)(11),*msr*A (5)	OXA(39), AMP(28),PEN(90),ERY(119),LIN(97), PRI (3),GEN(71),RIF(78), TEC(50),	ND	93
	2008	*S. aureus (35)*	Auricular infections (35)	35	ND	*mecA(21),ermA(8), ermB(16),erC(6),msrA(10)*	PEN(32),TET(17),KAN(15),ERY(14),SXT(10),OXA(9),RIF(4),GEN(4),FUS(3)	ND	94
	2007	*E. faecalis* (34), *E. faecium*(12)	Blood (10), pus (26), catheter (7),plural aspirate(2)	46(46)	ND	*aac(6')-aph*(2")(46)	GEN(46),KAN(46),PEN(12),ERY(45),CHL(25),TET(32),STR(26)	ND	95
	2007	*E.faecium*(2)	Urine(2)	2	ND	*vanA*(2)	STR(2), ERY(2),CIP(2),VAN(2)	ND	96

	2007	*S. epidermidis* (346)	Human(346)	346(7)	ND	*erm*(A)(6),*erm*(C)(1),*vga(7)*	PRI(7),OXA(7),GEN(7),ERY(7),LIN(7),RIF(7),SXT(7)TEC(1)	ND	97
	2007	*S. epidermidis* (34)	Blood(55), urine(22)	(34)	ND	*icaA*(26), *erm*(C)(18),*erm*(A)(11),*mrs*A(5),*vga*(3),	ERY(34),OXA(28),GEN(34),LIN(33),OFX(33),RIF(28)	ND	98
Uganda (4)	2019	*S.aureus (28)*	Nasal swab(28)	28(26)	ND	*mecA(6)*	FUS(13)	SCCmec(6)	99
	2013	*S. aureus* (64)	Nasal swab (64)	64(24)	ND	*mec*A (24)	OXA(22), GEN(8), CIP(12), CHL(9)	*SCCmec (24)*	100
	2013	*S. aureus (300)*	Blood(164),CSF(3),Ear swab(6),HVS(29),nasal swab(11),pus(42),urine(33), wound(9)	300(143)	ND	*ermB(23),ermC(98),msr(A),*	SXT(187),ERY(143),OXA(98),IMI(43),VAN(22),CLI(9)	*ND*	101
	2012	*S.epidermidis*(50)	Nasal swab(20),catheter(14),blood(9),wound(3)	50(26)	ND	*aph(')-lla*(28),*blaZ*(2),*mecA*(3),*vanA*(3),*vanB*1(3),	ERY(20),GEN(26),PEN(32),TET(15),SXT(17),OXA(6)	IS256(33), SCC*mec*(3)	102
	2011	*S. aureus*(122)	pus	122(48)	ND	*mecA*(2)	AMP(48),CHL(42),CIP(1),ERY(5),TET(29),SXT(32)	ND	103
	2009	*S. aureus* (54)	Human(54)	54(15)	ND	*mec*A(17)	CIP(12),GEN(10),SXT(15),CHL(15),ERY(15)	SCC*mec*(17)	104
Zambia	2017	*S. aureus (32)*	Pus and blood(32)	32	ND	*mecA(32)*	FUS(32),OXA	SCCmec(32)	105

References

1. Achek R, Hotzel H, Cantekin Z, Nabi I, Hamdi TM, Neubauer H, E.-A. H. Emerging of antimicrobial resistance in staphylococci isolated from clinical and food samples in Algeria. *BMC Res. Notes* **11(1)**, 663. (2018).

2. Bourafa N, Abat C, Loucif L, Olaitan AO, Bentorki AA, Boutefnouchet N, R. J. Identification of vancomycin-susceptible major clones of clinical Enterococcus from Algeria. *J. Glob. Antimicrob. Resist.* **6**, 78-83. (2016).

3. Bergal, A., Loucif, L., Benouareth, D. E., Bentorki, A. A., Abat, C., & Rolain, J. M. Molecular epidemiology and distribution of serotypes, genotypes, and antibiotic resistance genes of Streptococcus agalactiae clinical isolates from Guelma, Algeria and Marseille, France. European Journal of Clinical Microbiology & Infectious Disea. *Eur. J. Clin. Microbiol. Infect. Dis.* **34**, no. **12**, 2339–2348 (2015).

4. Djoudi F, Benallaoua S, Aleo A, Touati A, Challal M, Bonura C, M. C. Descriptive Epidemiology of Nasal Carriage of Staphylococcus aureus and Methicillin-Resistant Staphylococcus aureus Among Patients Admitted at Two Healthcare Facilities in Algeria. *Microb Drug Resist* **21(2):**, 218–23 (2014).

5. Djahmi N, Messad N, Nedjai S, Moussaoui A, Mazouz D, Richard JL, Sotto A, L. J. Molecular epidemiology of Staphylococcus aureus strains isolated from inpatients with infected diabetic foot ulcers in an Algerian University Hospital. Microbiology and Infection. *Clinical* **19(9)**, E398-404. (2013).

6. Ouchenane Z, Agabou A, Smati F, Rolain JM, R. D. Staphylococcal cassette chromosome mec characterization of methicillin-resistant Staphylococcus aureus strains isolated at the military hospital of Constantine/Algeria. *Pathol. Biol.* **61(6)**, 280–1. (2013).

7. Djahmi, N., Boutet-Dubois, A., Nedjai, S., Dekhil, M., Sotto, A. and Lavigne, J. P. Molecular epidemiology of Enterococcus sp. isolated in a university hospital in Algeria. *Scand. J. Infect. Dis.* **44(9),.**, pp.656-662 (2012).

8. Antri K, Rouzic N, Dauwalder O, Boubekri I, Bes M, Lina G, Vandenesch F, Tazir M, Ramdani-Bouguessa N, E. J. High prevalence of methicillin-resistant Staphylococcus aureus clone ST80-IV in hospital and community settings in Algiers.. *Clin. Microbiol. Infect.* **17**, 526–32 (2011).

9. Rodrigues S, Conceição T, Silva IS, de Lencastre H, A.-S. M. Frequent MRSA nasal colonization among hospitalized children and their parents in Angola and São Tomé and Príncipe. *J. Hosp. Infect.* **100(3)**, 344–9. (2018).

10. Chung M, Kim CK, Conceição T, Aires-De-Sousa M, De Lencastre H, T. A. Heterogeneous oxacillin-resistant phenotypes and production of PBP2A by oxacillin-susceptible/mecA-positive MRSA strains from Africa. *J. Antimicrob. Chemother.* **71(10)**, 2804–9. (2016).

11. Conceiçao T, Coelho C, Santos Silva I, de Lencastre H, A.-S. M. Methicillin-resistant Staphylococcus aureus in the community in Luanda, Angola: blurred boundaries with the hospital setting. *Microb. Drug Resist.* **22**, 22–7. (2016).

12. Conceic, T. Frequent occurrence of oxacillin-susceptible mecA -positive Staphylococcus aureus (OS-MRSA) strains in two African countries ´. *J Antimicrob Chemother 2015;* **70**, 3200–3204 (2015).

13. Conceição T, Coelho C, Silva IS, de Lencastre H, A.-S. M. Staphylococcus aureus in former Portuguese colonies from Africa and the Far East: missing data to help fill the world map. *Clin. Microbiol. Infect.* **21(9)**, 842-e1. (2015).

14. Conceiçao T, Coelho C, Santos-Silva I, de Lencastre H, A.-S. M. Epidemiology of methicillin-resistant and-susceptible Staphylococcus aureus in Luanda, Angola: first description of the spread of the MRSA ST5-IVa clone in the African continent. *Microb. Drug Resist.* **20(5):**, 441–9. (2014).

15. Vandendriessche S, De Boeck H, Deplano A, Phoba MF, Lunguya O, Falay D, Dauly N, Verhaegen J, Denis O, J. J. Characterisation of Staphylococcus aureus isolates from bloodstream infections, Democratic Republic of the Congo. *Eur. J. Clin. Microbiol. Infect. Dis.* **36(7)**, 1163–71 (2017).

16. Phaku, P. *et al.* Unveiling the molecular basis of antimicrobial resistance in Staphylococcus aureus from the Democratic Republic of the Congo using whole genome sequencing. *Clin. Microbiol. Infect.* (2016). doi:10.1016/j.cmi.2016.04.009

17. Boeck, H. De, Vandendriessche, S., Hallin, M., Batoko, B. & Alworonga, J. Staphylococcus aureus nasal carriage among healthcare workers in Kisangani , the Democratic Republic of the Congo. *Eur. J. Clin. Microbiol. Infect. Dis.* **34(8)**, 1567–1572 (2015).

18. Hassan RM, Ghaith DM, Ismail DK, Z. M. Reduced susceptibility of Enterococcus spp. isolates from Cairo University Hospital to tigecycline: Highlight on the influence of proton pump inhibitors. . *J. Glob. Antimicrob. Resist.* **12**, 68–72 (2018).

19. El-Mahdy R, Mostafa A, E.-K. G. High level aminoglycoside resistant enterococci in hospital-acquired urinary tract infections in Mansoura, Egypt. *Germs.* **8(4)**, 186. (2018).

20. Hashem AA, El Fadeal NM, S. A. In vitro activities of vancomycin and linezolid against biofilm-producing methicillin-resistant staphylococci species isolated from catheter-related bloodstream infections from an Egyptian tertiary hospital. *J. Med. Microbiol.* **66(6)**, (2017).

21. Abdelkareem MZ, Sayed M, Hassuna NA, Mahmoud MS, A. S. Multi-drug-resistant Enterococcus faecalis among Egyptian patients with urinary tract infection. *J. Chemother.* **29**, 74-82. (2017).

22. Abouelfetouh A, Kassem M, Naguib M, E.-N. M. Investigation and Treatment of Fusidic Acid Resistance Among Methicillin-Resistant Staphylococcal Isolates from Egypt. *Microb. Drug Resist.* **23**, 8–17 (2017).

23. Bendary MM, Solyman SM, Azab MM, Mahmoud NF, H. A. Genetic diversity of multidrug resistant Staphylococcus aureus isolated from clinical and non clinical samples in Egypt. *Cell Mol Biol* **62(10)**, 55-61. (2016).

24. Barakat GI, N. Y. Correlation of mupirocin resistance with biofilm production in methicillin-resistant Staphylococcus aureus from surgical site infections in a tertiary centre, Egypt. *J. Glob. Antimicrob. Resist.* **4**, 16-20. (2016).

25. Bendary MM, Solyman SM, Azab MM, Mahmoud NF, H. A. Characterization of Methicillin Resistant Staphylococcus aureus isolated from human and animal samples in Egypt. *Cell. Mol. Biol.* **62**, 94-100. (2016).

26. Hashem YA, Yassin AS, A. M. Molecular characterization of Enterococcus spp. clinical isolates from Cairo, Egypt. *Indian J. Med. Microbiol.* **33(5)**, p.80. (2015).

27. Shabayek, S. & Abdalla, S. Macrolide- and tetracycline-resistance determinants of colonizing group B streptococcus in women in Egypt. *J. Med. Microbiol.* **63**, 1324–1327 (2014).

28. Ahmed EF, Gad GF, Abdalla AM, Hasaneen AM, A. S. Prevalence of Methicillin Resistant Staphylococcus aureus among Egyptian Patients after Surgical interventions. *Surg. Infect. (Larchmt).* **15**, 404–411 (2014).

29. Hashem, R. A., Yassin, A. S., Zedan, H. H. & Amin, M. A. Fluoroquinolone resistant mechanisms in methicillin-resistant Staphylococcus aureus clinical isolates in Cairo , Egypt. *J. Infect. Dev. Ctries.* **7**, no. **11**, 796-803. (2013).

30. El-Sharif A, A. H. Community-acquired methicillin-resistant Staphylococcus aureus (CA-MRSA) colonization and infection in intravenous and inhalational opiate drug abusers. *Exp. Biol. Med.* **233**, 874–80. (2008).

31. Bojang E, Jafali J, Perreten V, Hart J, Harding-Esch EM, Sillah A, Mabey DC, Holland MJ, Bailey RL, Roca A, B. S. Short-term increase in prevalence of

nasopharyngeal carriage of macrolide-resistant Staphylococcus aureus following mass drug administration with azithromycin for trachoma control. *BMC Microbiol.* **17(1)**, 75 (2017).

32. Okuda KV, Toepfner N, Alabi AS, Arnold B, Bélard S, Falke U, Menschner L, Monecke S, Ruppelt-Lorz A, B. R. Molecular epidemiology of Staphylococcus aureus from Lambarene, Gabon. *Eur. J. Clin. Microbiol. Infect. Dis.* **35**, 1963–73. (2016).

33. Nurjadi, D. *et al.* Emergence of trimethoprim resistance gene dfrG in Staphylococcus aureus causing human infection and colonization in sub-Saharan Africa and its import to Europe. *J Antimicrob Chemother* **27**, 2361–2368 (2014).

34. Donkor ES, Kotey FC, Dayie NT, Duodu S, Tetteh-Quarcoo PB, Osei MM, T. E. Colonization of HIV-Infected Children with Methicillin-Resistant Staphylococcus aureus. *Pathogens.* **8(1):**, 35 (2019).

35. Donkor ES, Jamrozy D, Mills RO, Dankwah T, Amoo PK, Egyir B, Badoe EV, Twasam J, B. S. A genomic infection control study for Staphylococcus aureus in two Ghanaian hospitals. *Infect. Drug Resist.* **11**, 1757. (2018).

36. Egyir, B. *et al.* Resistance Methicillin-resistant Staphylococcus aureus strains from Ghana include USA300. *J. Glob. Antimicrob. Resist.* **3**, 26–30 (2015).

37. Egyir, B., Guardabassi, L., Sørum, M., Nielsen, S.S., Kolekang, A., Frimpong, E., Addo, K.K., Newman, M.J. and Larsen, A. R. Molecular epidemiology and antimicrobial susceptibility of clinical Staphylococcus aureus from healthcare institutions in Ghana. *PLoS One,* **9(2)**, p.e89716 (2014).

38. Egyir B, Guardabassi L, Nielsen SS, Larsen J, Addo KK, Newman MJ, L. A. Prevalence of nasal carriage and diversity of Staphylococcus aureus among inpatients and hospital staff at Korle Bu Teaching Hospital, Ghana. *J. Glob. Antimicrob. Resist.* **1**, 189–93. (2013).

39. Omuse, G. *et al.* Molecular characterization of Staphylococcus aureus isolates from various healthcare institutions in Nairobi , Kenya : a cross sectional study. *Ann. Clin. Microbiol. Antimicrob.* **15:51**, 1–9 (2016).

40. Maina EK, Kiiyukia C, Wamae CN, Waiyaki PG, K. S. Characterization of methicillin-resistant Staphylococcus aureus from skin and soft tissue infections in patients in Nairobi, Kenya. *Int. J. Infect. Dis.* **17**, e115-9. (2013).

41. Khemiri M, Alhusain AA, Abbassi MS, El Ghaieb H, Costa SS, Belas A, Pomba C, H. S. Clonal spread of methicillin-resistant Staphylococcus aureus-t6065-CC5-SCCmecV-agrII in a Libyan hospital. *J. Glob. Antimicrob. Resist.* **10**, 101–5 (2017).

42. Zorgani AA, Elahmer O, Abaid A, Elaref A, Elamri S, Aghila E, T. A. Vancomycin susceptibility trends of methicillin-resistant Staphylococcus aureus isolated from burn wounds: a time for action. *J. Infect. Dev. Countries.* **9(11)**, 1284–8. (2015).

43. Al-haddad OH, Zorgani A, G. K. Nasal Carriage of Multi-Drug Resistant Panton-Valentine Leucocidin-Positive Methicillin-Resistant Staphylococcus aureus in Children in Tripoli-Libya. *Am. J. Trop. Med. Hyg* **90**, 724–727 (2014).

44. Ahmed MO, Elramalli AK, Amri SG, Abuzweda AR, A. Y. Isolation and screening of methicillin-resistant Staphylococcus aureus from health care workers in Libyan hospitals. *East. Mediterr. Heal. J.* **Vol. 18**, (2012).

45. Oumokhtar B, Elazhari M, Timinouni M, Bendahhou K, Bennani B, Mahmoud M, El Ouali Lalami A, Berrada S, Arrayhani M, S. H. T. Staphylococcus aureus nasal carriage in a Moroccan dialysis center and isolates characterization. *Hemodial. Int.* **2**, 542–547 (2013).

46. Zriouil SB, Bekkali M, Z. K. Epidemiology of Staphylococcus aureus infections and nasal carriage at the Ibn Rochd University hospital center, Casablanca, Morocco. *Brazilian J. Infect. Dis. 2012 May 1;16(3)279-83.* **16**, 279–83. (2012).

47. Meeren BT, Millard PS, Scacchetti M, Hermans MH, Hilbink M, Concelho TB, Ferro JJ, W. P. Emergence of methicillin resistance and Panton-Valentine leukocidin positivity in hospital- and community-acquired Staphylococcus aureus infections in Beira , Mozambique. *Trop. Med. Int. Heal. Vol.* **00**, (2013).

48. Nurjadi D, Olalekan AO, Layer F, Shittu AO, Alabi A, Ghebremedhin B, Schaumburg F, Hofmann-Eifler J, Van Genderen PJ, Caumes E, F. R. Emergence of trimethoprim resistance gene dfrG in Staphylococcus aureus causing human infection and colonization in sub-Saharan Africa and its import to Europe. *J Antimicrob Chemother* **27**, 2361–2368 (2014).

49. Enwuru NV, Adesida SA, Enwuru CA, Ghebremedhin B, Mendie UE, C. A. Genetics of bi-component leukocidin and drug resistance in nasal and clinical Staphylococcus aureus in Lagos, Nigeria. *Microb. Pathog.* **115**, 1–7 (2018).

50. Bamigboye BT, Olowe OA, T. S. Phenotypic and molecular identification of vancomycin resistance in clinical Staphylococcus aureus isolates in Osogbo, Nigeria. *Eur. J. Microbiol. Immunol.* **8(1)**, 25-30. (2018).

51. Ibadin EE, Enabulele IO, M. F. Prevalence of mecA gene among staphylococci from clinical samples of a tertiary hospital in Benin City, Nigeria. *African Heal. Sci.* **17(4)**, 1000–10 (2017).

52. Ekuma AE, Oduyebo OO, Efunshile AM, K. B. Surveillance for vancomycin resistant enterococci in a tertiary institution in south western Nigeria. *African J. Infect. Dis.* **10(2)**, 121–6. (2016).

53. O'Malley SM, Emele FE, Nwaokorie FO, Idika N, Umeizudike AK, Emeka-Nwabunnia I, Hanson BM, Nair R, Wardyn SE, S. T. Molecular typing of antibiotic-resistant Staphylococcus aureus in Nigeria. *J. Infect. public Heal.* **8(2)**, 187–93. (2015).

54. Ayepola, O. O., Olasupo, N. A., Egwari, L. O. & Becker, K. Molecular Characterization and Antimicrobial Susceptibility of Staphylococcus aureus Isolates from Clinical Infection and Asymptomatic Carriers in Southwest Nigeria. *PLoS One* **2304**, 4–11 (2015).

55. Ayeni FA, Gbarabon T, Andersen C, N.-L. N. Comparison of identification and antimicrobial resistance pattern of Staphylococcus aureus isolated from Amassoma, Bayelsa state, Nigeria. *African Heal. Sci.* **15(4)**, 1282–8. (2015).

56. Vitali, L. A., Petrelli, D., Lamikanra, A., Prenna, M. & Akinkunmi, E. O. Diversity of antibiotic resistance genes and staphylococcal cassette chromosome mec elements in faecal isolates of coagulase-negative staphylococci from Nigeria. *BMC Microbiol.* **14:106**, (2014).

57. Kolawole DO, Adeyanju A, Schaumburg F, Akinyoola AL, Lawal OO, Amusa YB, Köck R, B. K. Characterization of colonizing Staphylococcus aureus isolated from surgical wards' patients in a Nigerian university hospital. *PLoS One.* **8(7)**, e68721. (2013).

58. Shittu, Adebayo, Omotayo Oyedara, Fadekemi Abegunrin, Kenneth Okon, Adeola Raji, Samuel Taiwo, Folasade Ogunsola, Kenneth Onyedibe, and G. E. 'Characterization of methicillin-susceptible and-resistant staphylococci in the clinical setting: a multicentre study in Nigeria.' *BMC Infect. Dis.* **12**, no. **1**, 286.

59. Shittu AO, Okon K, Adesida S, Oyedara O, Witte W, Strommenger B, Layer F, N. U. Antibiotic resistance and molecular epidemiology of Staphylococcus

aureus in Nigeria. *BMC Microbiol.* **11**, 92. (2011).

60. Okon KO, Basset P, Uba A, Lin J, Oyawoye B, Shittu AO, B. D. Cooccurrence of predominant Panton-Valentine leukocidin-positive sequence type (ST) 152 and multidrug-resistant ST 241 Staphylococcus aureus clones in Nigerian hospitals. *J. Clin. Microbiol.* **47**, 3000–3.

61. Ghebremedhin B, Olugbosi MO, Raji AM, Layer F, Bakare RA, König B, K. W. Emergence of a community-associated methicillin-resistant Staphylococcus aureus strain with a unique resistance profile in Southwest Nigeria. *J. Clin. Microbiol.* **47**, 2975–80. (2009).

62. Conceição T, Coelho C, de Lencastre H, A.-S. M. Frequent occurrence of oxacillin-susceptible mecA -positive Staphylococcus aureus (OS-MRSA) strains in two African countries ´. *J Antimicrob Chemother 2015;* **70**, 3200–3204 (2015).

63. Conceiçao T, Santos Silva I, de Lencastre H, A.-S. M. Staphylococcus aureus nasal carriage among patients and health care workers in Sao Tome and Principe. *Microb. Drug Resist.* **20(1)**, 57–66 (2014).

64. Mahomed TG, Kock MM, Masekela R, Hoosien E, E. M. Genetic relatedness of Staphylococcus aureus isolates obtained from cystic fibrosis patients at a tertiary academic hospital in Pretoria, South Africa. *Sci. reports. 2Scientific reports.* **8**, (2018).

65. Ehlers MM, Strasheim W, Lowe M, Ueckermann V, K. M. Molecular epidemiology of Staphylococcus epidermidis implicated in catheter-related bloodstream infections at an Academic Hospital in Pretoria, South Africa. *Front. Microbiol.* **9**, 417 (2018).

66. Perovic O, Singh-Moodley A, Govender NP, Kularatne R, Whitelaw A, Chibabhai V, Naicker P, Mbelle N, Lekalakala R, Quan V, S. C. A small proportion of community-associated methicillin-resistant Staphylococcus aureus bacteraemia, compared to healthcare-associated cases, in two South African provinces. *Eur. J. Clin. Microbiol. Infect. Dis.* **36(12)**, 2519–32 (2017).

67. Antiabong JF, Kock MM, Bellea NM, E. M. Diversity of Multidrug Efflux Genes and Phenotypic Evaluation of the In vitro Resistance Dynamics of Clinical Staphylococcus Aureus Isolates Using Methicillin; a Model β-lactam. *open Microbiol. journal.* **11:**, 132–41. (2017).

68. Mbelle, N. M. *et al.* First Report of a Whole-Genome Shotgun Sequence of a Clinical Enterococcus faecalis Sequence Type 6 Strain from South Africa. *Genome Announc.* **5**, e01382-17 (2017).

69. Mbelle, N. M. *et al.* Draft Genome Sequence of a Clinical Enterococcus faecium Sequence Type 18 Strain from South Africa. *Genome Announc.* **5**, e01381-17 (2017).

70. Kullin, B., T. Brock, N. Rajabally, F. Anwar, G. Vedantam, S. Reid, and V. Abratt. "Characterisation of Clostridium difficile strains isolated from Groote Schuur Hospital, Cape Town, S. A. ." European journal of clinical microbiology & infectious diseases: *Off. Publ. Eur. Soc. Clin. Microbiol.* **35**, no. **10**, 1709–1718 (2016).

71. Bolukaoto, J. Y. *et al.* Antibiotic resistance of Streptococcus agalactiae isolated from pregnant women in Garankuwa , South Africa. *BMC Res. Notes* 6–12 (2015). doi:10.1186/s13104-015-1328-0

72. Perovic, O., Iyaloo, S., Kularatne, R. & Lowman, W. Prevalence and Trends of Staphylococcus aureus Bacteraemia in Hospitalized Patients in South Africa , 2010 to 2012 : Laboratory- Based Surveillance Mapping of Antimicrobial Resistance and Molecular Epidemiology. *PLoS One* 1–14 (2015).

doi:10.1371/journal.pone.0145429

73. van Rensburg MJ, Whitelaw AC, E. B. Genetic basis of rifampicin resistance in methicillin-resistant Staphylococcus aureus suggests clonal expansion in hospitals in Cape. *BMC Microbiol.* **12**, 46 (2012).

74. Shittu AO, Udo EE, L. J. Phenotypic and molecular characterization of Staphylococcus aureus isolates expressing low-and high-level mupirocin resistance in Nigeria and South Africa. *BMC Infect. Dis.* **9**, 10. (2009).

75. Shittu A, Lin J, M. D. Molecular identification and characterization of mannitol-negative methicillin-resistant Staphylococcus aureus. *Diagnostic Microbiol. Infect. Dis.* **57(1)**, 93–5.

76. Elhassan MM, Ozbak HA, Hemeg HA, Elmekki MA, A. L. Absence of the mecA gene in methicillin resistant Staphylococcus aureus isolated from different clinical specimens in shendi city, Sudan. *BioMed Res. Int. .* 2015 (2015).

77. Madoshi BP, Mtambo MM, Muhairwa AP, Lupindu AM, O. J. Isolation of vancomycin-resistant Enterococcus from apparently healthy human animal attendants, cattle and cattle wastes in Tanzania. *J. Appl. Microbiol.* **124(5)**, 1303–10. (2018).

78. Elhani, Dalèle, Haythem Gharsa, Dhia Kalai, Carmen Lozano, Paula Gómez, Jemli Boutheina, Mahjoub Aouni, Farouk Barguellil, Carmen Torres, and K. B. S. 'Clonal lineages detected amongst tetracycline-resistant meticillin-resistant Staphylococcus aureus isolates of a Tunisian hospital, with detection of lineage ST398.' *J. Med. Microbiol.* **64**, no. **6**, 623-629. (2015).

79. Dziri R, El Kara F, Barguellil F, Ouzari HI, El Asli MS, K. N. Vancomycin-Resistant Enterococcus faecium in Tunisia: Emergence of Novel Clones. *Microb. Drug Resist.* **25(4)**, 469–74 (2019).

80. Ksia S, Smaoui H, Hraoui M, Bouafsoun A, Boutiba-Ben Boubaker I, K. A. Molecular Characteristics of Erythromycin-Resistant Streptococcus pyogenes Strains Isolated from Children Patients in Tunis, Tunisia. *Microb. Drug Resist.* **23(5)**, 633–9. (2017).

81. Elhani D, Klibi N, Dziri R, Hassan MB, Mohamed SA, Said LB, Mahjoub A, Slama KB, Jemli B, Bellaj R, B. F. 'vanA-containing E. faecium isolates of clonal complex CC17 in clinical and environmental samples in a Tunisian hospital.' *Diagn. Microbiol. Infect. Dis.* **79**, no. **1**, 60-63. (2014).

82. Mariem BJ, Ito T, Zhang M, Jin J, Li S, Ilhem BB, Adnan H, Han X, H. K. Molecular characterization of methicillin-resistant Panton-valentine leukocidin positive staphylococcus aureus clones disseminating in Tunisian hospitals and in the community. *BMC Microbiol.* **13(1)**, 2. (2013).

83. Nejma MB, Mastouri M, Jrad BB, N. M. Characterization of ST80 Panton-Valentine leukocidin-positive community-acquired methicillin-resistant Staphylococcus aureus clone in Tunisia. *Diagnostic Microbiol. Infect. Dis.* **77**, 20–4. (2013).

84. Bouchami O, Hassen AB, De Lencastre H, M. M. High prevalence of mec complex C and ccrC is independent of SCCmec type V in Staphylococcus haemolyticus. *Eur. J. Clin. Microbiol. Infect. Dis.* **31(4)**, 605-614. (2012).

85. Maalej, S. M., Malbruny, B., Leclercq, R. & Hammami, A. Emergence of Staphylococcus aureus strains resistant to pristinamycin in Sfax (Tunisia) ´ mergence de la re ´ sistance a de Sfax (Tunisie). *Pathol. Biol.* **60**, e71–e74 (2012).

86. Chouchani C, El Salabi A, Marrakchi R, Ferchichi L, W. T. First report of mefA and msrA/msrB multidrug efflux pumps associated with blaTEM-1 β-

lactamase in Enterococcus faecalis. *Int. J. Infect. Dis.* **16(2)**, e104-9. (2012).

87. Hraoui M, Boubaker IB, Doloy A, Redjeb SB, B. A. 'Molecular mechanisms of tetracycline and macrolide resistance and emm characterization of Streptococcus pyogenes isolates in Tunisia.' *Microb. Drug Resist.* **17**, no. **3**, 377-382. (2011).

88. Ksia, S., Smaoui, H., Hariga, D. and Kechrid, A. Biotypes and antimicrobial susceptibility of Streptococcus pyogenes strains isolated in children in Tunis. *Bull. la Société Pathol. Exot.* **103(2)**, pp.69-74. (2010).

89. Bouchami O, Achour W, Mekni MA, Rolo J, H. A. Antibiotic resistance and molecular characterization of clinical isolates of methicillin-resistant coagulase-negative staphylococci isolated from bacteremic patients in oncohematology. *Folia Microbiol.* **56**, 122.

90. Rachdi, M., Boubaker, I.B.B., Hraoui, M. and Redjeb, S. B. High rates of macrolide resistance among clinical isolates of Streptococcus agalactiae in Tunisia. *Arch. Inst. Pasteur Tunis* **87(1/2)**, p.35. (2010).

91. Slama KB, Gharsa H, Klibi N, Jouini A, Lozano C, Gómez-Sanz E, Zarazaga M, Boudabous A, T. C. Nasal carriage of Staphylococcus aureus in healthy humans with different levels of contact with animals in Tunisia: genetic lineages, methicillin resistance, and virulence factors. *Eur. J. Clin. Microbiol. Infect. Dis.* **30**, 499-508. (2011).

92. Bouchami O, Achour W, H. A. Typing of staphylococcal cassette chromosome mec encoding methicillin resistance in Staphylococcus aureus strains isolated at the bone marrow transplant centre of Tunisia. *Curr. Microbiol.* **59**, 380–5. (2009).

93. Bouchami O, Achour W, H. A. 'Prevalence of resistance phenotypes and genotypes to macrolide, lincosamide and streptogramin antibiotics in Gram-positive cocci isolated in Tunisian Bone Marrow Transplant Center.' *Pathol. Biol.* **59**, no. **4**, 199–206 (2011).

94. Zmantar T, Chaieb K, Abdallah FB, Kahla-Nakbi AB, Hassen AB, Mahdouani K, B. A. Multiplex PCR detection of the antibiotic resistance genes in Staphylococcus aureus strains isolated from auricular infections. *Folia Microbiol.* **53(4)**, 357. (2008).

95. Klibi N, Ben Slama K, Sáenz Y, Masmoudi A, Zanetti S, Sechi LA, Boudabous A, T. C. Detection of virulence factors in high-level gentamicin-resistant Enterococcus faecalis and Enterococcus faecium isolates from a Tunisian hospital. *Can. J. Microbiol.* **53(3)**, (2007).

96. Abbassi MS, Znazen A, Mahjoubi F, Hammami A, B. A. Emergence of vancomycin-resistant Enterococcus faecium in Sfax: clinical features and molecular typing. *Med. Mal. Infect.* **37**, 240–1. (2007).

97. Achour W, Bouchami O, Galopin S, Leclercq R, B. H. A. Analysis of pristinamycin-resistant Staphylococcus epidermidis isolates in the Tunisian Bone Marrow Transplant Center. *Lett. Appl. Microbiol.* **46**, 358–63.

98. Bouchami O, Achour W, H. A. Prevalence and mechanisms of macrolide resistance among Staphylococcus epidermidis isolates from neutropenic patients in Tunisia. *Clin. Microbiol. Infect.* **13**, 103–6. (2007).

99. Abimana JB, Kato CD, B. J. Methicillin-Resistant Staphylococcus aureus Nasal Colonization among Healthcare Workers at Kampala International University Teaching Hospital, Southwestern Uganda. *Can. J. Infect. Dis. Med. Microbiol.* 2019. (2019).

100. Seni J, Bwanga F, Najjuka CF, Makobore P, Okee M, Mshana SE, Kidenya BR, Joloba ML, K. D. Molecular Characterization of Staphylococcus aureus from

Patients with Surgical Site Infections at Mulago Hospital in Kampala , Uganda. *PLoS One.* **8**, 1–7 (2013).

101. Mwambi B, Iramiot J, Bwanga F, Nakaye M, Itabangi H, B. J. Clindamycin Resistance among Staphylococcus Aureus Isolated at Mbarara Regional Referral Hospital, in South Western Uganda. *Br. Microbiol. Res. journal.* **4(12)**, 1335. (2014).

102. Okee MS, Joloba ML, Okello M, Najjuka FC, Katabazi FA, Bwanga F, Nanteza A, K. D. Prevalence of virulence determinants in Staphylococcus epidermidis from ICU patients in Kampala, Uganda. *J. Infect. Dev. Countries.* **6**, 242–50 (2011).

103. Kitara LD, Anywar AD, Acullu D, Odongo-Aginya E, Aloyo J, F. M. Antibiotic susceptibility of Staphylococcus aureus in suppurative lesions in Lacor Hospital, Uganda. *African Heal. Sci.* **11**, 34–9.

104. Ojulong J, Mwambu TP, Joloba M, Bwanga F, K.-M. D. Relative prevalence of methicilline resistant Staphylococcus aureus and its susceptibility pattern in Mulago Hospital, Kampala, Uganda. *Tanzania J. Heal. Res.* **11**, (2009).

105. Samutela MT, Kalonda A, Mwansa J, Lukwesa-Musyani C, Mwaba J, Mumbula EM, Mwenya D, Simulundu E, K. G. Molecular characterisation of methicillin-resistant Staphylococcus aureus (MRSA) isolated at a large referral hospital in Zambia. *Pan African Med. journal.* **26.**, (2017).