

Microbial Prevalence of commonly submitted samples



The Aga Khan University Hospital

Department of Pathology

ANTIBIOTIC SUSCEPTIBILITY REPORT 2020

FOR DATA FROM
OCTOBER 2019 - JUNE 2020

The organisms and resistance patterns have significant limitations, including: antibiotics before cultures, patients with recurrent infections, which patients have cultures ordered, and are of limited value for guiding empiric therapy.

For more information please contact
Department of Pathology
Tel: +254 20 366 2231/48
Email: pathology.department@aku.edu
Website: www.aku.edu/akuhn



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Sputum (2019-2020; n=58)

Organism	N	%
Klebsiella pneumoniae	18	31%
Staphylococcus aureus	12	21%
Pseudomonas aeruginosa	6	10%
Streptococcus pneumoniae	6	10%
Escherichia coli	5	9%

CSF 2019-2020 (n=48)

Organism	N	%
Crypto.neoformans	19	40%
Cons	11	23%
K.pneum.pneumoniae	5	10%
Esch.coli	4	8%
Ps.aeruginosa	3	6%
viridans strep	2	4%
Staph.aureus	2	4%

Urine OP 2019-2020 (n=1736)

Organism	N	%
Escherichia coli	1215	70%
Klebsiella pneumoniae	151	9%
Staphylococcus saprophyticus	84	5%
Enterococcus faecalis	58	3%
Proteus mirabilis	19	1%
Streptococcus agalactiae	19	1%
Enterobacter cloacae	16	1%
Pseudomonas aeruginosa	10	1%
Staphylococcus aureus	10	1%

Abscess aspirate (2019-2020; n=134)

Organism	N	%
Staphylococcus aureus	84	63%
Escherichia coli	26	19%

Stool (2019-2020; n=477)

Organism	N	%
Salmonella spp	255	53%
Shigella spp	121	25%
Vibrio cholerae	69	14%
EPEC	21	4%
Salmonella Typhi/Paratyphi	11	2%

Trach Asp Critical Care (2019-2020; n=231)

Organism	N	%
Pseudomonas aeruginosa	65	28%
Klebsiella pneumoniae ssp ozaenae	53	23%
Acinetobacter baumannii	30	13%
Staphylococcus aureus	19	8%
Escherichia coli	18	8%
Stenotrophomonas maltophilia	13	6%
Enterobacter cloacae complex	7	3%

Bloodstream infections (BSI) (2019-2020; n=485)

Organism	N	%
Esch.coli	129	27%
Candida species	69	14%
K.pneum.pneumoniae	64	13%
Staph.aureus	45	9%
Entero.faecalis	26	5%
Salm.Typhi	19	4%
Ps.aeruginosa	17	4%
Entero.faecium	16	3%
nontyphoidal Salmonella	11	2%
Str.pneumoniae	11	2%
Crypto.neoformans	9	2%
Str.mitis/oralis	8	2%
Aci.baumannii	7	1%
K.oxytoca	7	1%
Ent.cloacae complex	6	1%
Str.agalactiae	6	1%

Neonatal bloodstream infections (BSI) 2019-2020

Organism	<=3d (69)	4-7d (31)	8-30d (84)	All
Klebsiella pneumoniae	3	14	35	52
Enterococcus species	13	4	13	30
Streptococcus other	18	2	2	22
Streptococcus agalactiae	18	0	1	19
Escherichia coli	6	6	5	17
Staphylococcus aureus	4	0	6	10
Candida species	1	1	7	9
Enterobacter cloacae	1	2	6	9
Acinetobacter baumannii	1	0	3	4
Pseudomonas aeruginosa	0	1	2	3
Streptococcus pneumoniae	1	0	1	2
Serratia marcescens	0	0	2	2
Burkholderia cepacia	0	1	0	1
Clostridium bifermentans	1	0	0	1
Corynebacterium jeikeium	1	0	0	1
Listeria monocytogenes	1	0	0	1
Streptococcus pyogenes	0	0	1	1

Susceptibilities

GNR 2019-2020														
GNR	N	Amik	Amp	Amox/Clav (A/C)	Cefep	Cefotax	Ceftaz	Cefurox	Cipro	Gent	Mero	Ntfn	PipT/azo	TMP/SMX
Acinetobacter baumannii	77				31%		22%		35%	43%	35%			32%
Enterobacter cloacae	50	94%							88%	86%	96%		80%	80%
Escherichia coli	1058	93%	19%	71%		65%		62%	63%	84%	99%	90%	90%	27%
Klebsiella pneumoniae	226	92%		63%		57%		56%	74%	56%	93%		71%	47%
Proteus mirabilis	45	96%	38%	87%		91%		87%	87%	78%	96%		98%	31%
Pseudomonas aeruginosa	92	87%			78%		78%		85%	87%	85%		81%	
Serratia marcescens	34	97%				94%			100%	85%	97%			97%
Stenotrophomonas maltophilia	47													89%
OP Urine														
Escherichia coli	736	94%	21%	75%		73%		70%	71%	85%	100%	92%	93%	28%
Klebsiella pneumoniae	77	96%		71%		71%		70%	87%	88%	96%		78%	48%

GPC	N	Amp	Ceftriax	Clinda	Clinda for MRSA	Gentsyn	Strepsyn	Levoflox	Linez	Ox	Pen	Penmen	SMX/TMP	Teico	Tetra	Tige	Vanco
Enterococcus faecalis	81	99%				70%	80%										99%
Enterococcus faecium	52	8%				48%	42%		94%								81%
Staphylococcus aureus	265			88%	71%			92%	100%	82%	14%		42%	99%	83%	100%	100%
Streptococcus pneumoniae	35		91%	65%				91%			83%	20%	14%		34%		97%

Outpatient urine isolates												
Organism	Year	N	Amp	Amox/clav	Amikacin	Cipro	Cefotaxime	Cefuroxime	Gentamicin	Nitrofur	Meropenem	TMP/SMX
E. coli	2012-17	4442	22%	68%	100%	67%	80%	75%	85%	87%	100%	25%
	2012	1062	20%	66%	100%	68%	83%	78%	84%	86%	100%	24%
	2013	920	21%	68%	100%	66%	80%	68%	83%	86%	100%	25%
	2014	942	22%	68%	100%	66%	79%	74%	85%	86%	100%	23%
	2015	783	23%	66%	100%	66%	77%	73%	85%	86%	100%	25%
	2016	735	22%	73%	99%	68%	79%	74%	87%	93%	100%	29%
	2017	348	20%	69%	99%	65%	71%	71%	84%	95%	99%	25%
	2018-19	459	20%	65%	97%	70%	71%	68%	93%	93%	100%	28%
K. pneumo	All	5249	21%	68%	99%	67%	78%	73%	85%	88%	100%	25%
	2012-17	618		53%	98%	78%	63%	59%	74%	19%	97%	41%
	2012	139		56%	99%	85%	73%	70%	80%	12%	99%	40%
	2013	128		50%	99%	77%	62%	57%	68%	11%	98%	44%
	2014	109		53%	100%	78%	66%	63%	75%	22%	99%	45%
	2015	124		49%	93%	69%	52%	49%	68%	12%	92%	34%
2016	118			54%	98%	79%	63%	56%	78%	41%	97%	42%

Organism	Year	N	Amp	Amox/clav	Amikacin	Cipro	Cefotaxime	Cefuroxime	Gentamicin	Nitrofur	Meropenem	TMP/SMX
	2017	31		55%	97%	61%	42%		74%	29%	90%	55%
	2018-19	60		43%	95%	72%	52%	50%	70%	15%	95%	43%
	All	709		52%	97%	76%	61%	58%	73%	19%	97%	42%

Organism	Year	N	Penicillin	Cetotax	Levo	Tetra	TMP/SMX	Eryth
S. pneumoniae	2018-19	15*	40%	93%	93%	20%	13%	33%

Organism	Year	N	Penicillin	Vanco	Gent synergy	Strep synergy	Gent or Strep synergy
E. faecalis	2018-19	44	98%	100%	61%	75%	86%
E. faecium	2018-19	16*	13%	88%	50%	31%	63%

Staphylococcus aureus susceptibility 2011-2019										
Source	Years	N	Pen	Ox	Clinda	Levo	Vanco	Rif	Tetra	TM/SX
Blood	2011-16	136	11%	90%	83%	88%	99%	99%	83%	58%
	All	1645	11%	94%	88%	92%	99%	98%	85%	52%
All	2012	299	1%	96%	89%	92%	100%	99%	85%	59%
	2013	313	11%	95%	90%	94%	99%	99%	84%	59%
All	2014	309	11%	95%	89%	94%	99%	98%	83%	58%
	2015	359	14%	95%	86%	93%	99%	98%	86%	50%
All	2016	365	10%	92%	84%	90%	100%	96%	85%	38%
	2017	103	16%	88%	80%	100%	100%	100%	89%	52%
All	2018-19	209	14%	83%	84%	91%	100%	100%	87%	48%
	MRSA	2018-19	36	0%	0%	67%	67%	100%	100%	67%

- NOTES:**
- Trends in susceptibility rates: for organisms with large annual numbers, susceptibility can be tracked over time. Overall, there have been few trends since 2012. However, the MRSA rate for S. aureus may be increasing (17% of S. aureus for 2018-19 although only 5% of blood isolates were MRSA. For Klebsiella pneumoniae, resistance rates for cephalosporins and carbapenems appear to be increasing.
 - Trends in prevalence rates: The biggest recent trend is the appearance of Vibrio cholerae in 2017; since then, it has remained endemic in Nairobi.
 - The susceptibility rates for cetotaxime are the same as for other third generation cephalosporins (except pseudomonas).
 - The susceptibility rates for ceturoxime are the same as for other second generation cephalosporins.

*Accuracy is reduced for organisms with fewer than 30 samples.

Abbreviation	Meaning	Abbreviation	Meaning	The numbers are listed as % susceptible	
CO	community onset	HO	hospital onset		
Abbreviation	Drug	Abbreviation	Drug	Abbreviation	Drug
Amp	ampicillin	Ntfn	nitrofurantoin	Tetra	tetracycline
Amox/Clav (A/C)	amoxicillin/clavulanate	Gent	gentamicin	Eryth	erythromycin
Amik	amikacin	Mero	meropenem	Vanco	vancomycin
Cipro	ciprofloxacin	TMP/SMX	trimethoprim/sulfa	Gent syn	gentamicin synergy
Cefotax	cefotaxime	Cefep	cefepime	Strep synergy	streptomycin synergy
Cefurox	cefuroxime	Pip/Tazo	piperacillin/tazobactam		
Ceftaz	ceftazidime	Ox	oxacillin		