



Lucile Packard Children's Hospital

Stanford Children's Health

Antibiogram Data from 2020 Isolates

Niaz Banaei, M.D., Director of Clinical Microbiology Laboratory

Nancy Watz, CLS, Laboratory Reference Technologist, Antibiotics

Farnaz Foroughi, CLS, Laboratory Reference Technologist, AFB

Laleh Ghafghaichi, CLS, Laboratory Reference Technologist, Mycology

Values expressed are % susceptible

Gram Negative Bacilli	No. of Isolates (a)	Penicillins		Cephalosporins and Lactams					Carbapenems		Aminoglyc's			Others		Urines Only	
		Ampicillin (\$)	Piper/tazobactam (\$\$)	Cefuroxime (IV) (\$)	Ceftriaxone (\$)	Ceftazidime (\$)	Cefepime (\$)	Aztreonam (\$\$\$)	Ertapenem (\$\$\$)	Meropenem (\$\$)	Amikacin (\$\$\$)	Gentamicin (\$\$\$)	Tobramycin (\$\$\$)	Ciprofloxacin (\$)	Co-trimoxazole (\$\$)	Cefazolin (\$)	Predicts 1st gen cephem
<i>Achromobacter xylosoxidans</i>	21(b,c)	-	81	-	-	62	0	0	-	86	0	0	0	14	86	-	-
<i>Acinetobacter baumannii</i>	13(b)	-	-	-	-	92	92	-	-	92	92	92	92	92	92	-	-
<i>Citrobacter freundii</i> complex	11(b)	0	100	0	100	100	-	-	100	100	100	100	100	82	82	0	-
<i>Enterobacter cloacae</i> complex	45	0	78	0	71	76	94	69	84	100	100	98	98	93	96	0	60
<i>Escherichia coli</i>	397	48	94	72	88	92	73	74	99	99	100	88	88	82	66	84	96
<i>Klebsiella aerogenes</i> (<i>Enterobacter aerogenes</i>)	11(b)	0	91	0	73	82	-	-	100	100	100	100	100	91	91	-	0
<i>Klebsiella oxytoca</i>	47	0	98	87	98	98	96	96	100	100	100	96	96	94	89	52	71
<i>Klebsiella pneumoniae</i>	86	0	93	-	88	91	89	94	97	99	100	95	92	87	83	90	20
<i>Morganella morganii</i>	18(b,c)	0	-	0	94	89	-	-	100	-	-	94	100	89	94	-	-
<i>Proteus mirabilis</i>	26(b)	81	100	-	100	100	-	-	100	100	100	89	89	96	89	100	0
<i>Pseudomonas aeruginosa</i>	93	-	95	C/T 100		96	96	82	-	99	99	91	100	90	-	-	-
<i>Pseudomonas aeruginosa</i> (CF-mucoid) (d)	19(b)	-	74	C/T 90		90	90	90	Imp 68	84	74	-	90	79	-	-	-
<i>Pseudomonas aeruginosa</i> (CF-non-mucoid) (d)	42	-	88	C/T 95		91	88	74	Imp 86	86	81	-	88	81	-	-	-
<i>Salmonella</i> spp.	29(b,c)	93	-	-	97	-	-	-	-	-	-	-	-	79	100	-	-
<i>Serratia marcescens</i>	21(b)	0	100	0	100	100	100	100	100	100	100	100	100	86	91	-	0
<i>Stenotrophomonas maltophilia</i>	47	-	-	-	-	-	-	-	-	-	-	-	Levo 94	98	-	-	-

(a) First isolate from each patient was included

(b) Data from isolate totals <30 may be statistically unreliable

(c) Includes isolates from 2019

(d) Cystic fibrosis patient isolates tested by disk diffusion

C/T= Ceftolozane/ Tazobactam; Imp= Imipenem; Levo= Levofloxacin

Values expressed are % susceptible

Gram Positive Cocci

	Number of Isolates	Beta-Lactams								Others									
		Oxacillin/Nafcillin (\$\$)		Penicillin or Ampicillin (\$)			1st Generation cephem (\$)	Cefuroxime (\$)	Ceftriaxone (\$)	Meropenem (\$\$\$)	Gentamicin (\$\$\$)	Ciprofloxacin (\$)	Clindamycin (a) (\$)	Erythromycin (\$\$\$\$)	Nitrofurantoin - urine (\$\$\$)	Co-trimoxazole (\$)	Vancomycin (\$\$\$)	Tetracycline (\$\$)	Linezolid (\$\$\$\$)
		%S	%I	%R															
Staphylococcus aureus	424	86	(b)	-	-	86	-	-	-	95	-	73	62	-	100	100	-	-	
MRSA only	60	0	0	-	-	0	-	-	-	90	-	49	22	-	98	100	97	-	
Staphylococcus lugdunensis	13(c,d)	100	(b)	-	-	100	-	-	-	100	-	92	100	-	100	100	-	-	
Staphylococcus sp., Coagulase-negative	50	27	(b)	-	-	27	-	-	-	63	-	46	23	-	53	100	-	-	
Enterococcus faecium	12(c)	-	58	0	42	-	-	-	-	-	-	-	-	-	-	100	-	83	
Enterococcus faecalis	24(c)	-	100	0	0	-	-	-	-	-	-	-	-	-	-	100	-	-	
Enterococcus sp. (not identified to species)	164	-	95	0	5	-	-	-	-	-	87	-	-	96	-	98	-	-	
Streptococcus group B (vag/anal screen)	77	-	100	0	0	-	-	-	-	-	-	56	-	-	-	-	-	-	
viridans group streptococci	26(c)	-	58	34	8	-	-	-	92	-	-	81	46	-	-	100	-	-	
Streptococcus pneumoniae	27(c)	-	59(e)	-	41	-	73	93(f)	89	-	-	79	59	-	63	100	Doxycycline 67		

Drug cost: Please choose the appropriate antibiotic based on best spectrum of coverage and lowest cost. Costs are reflective of 1 day of therapy based on adult dosing and include drug levels and reformulations.

\$ = \$0-20
 \$\$ = \$20-50
 \$\$\$ = \$50-100
 \$\$\$\$ = >\$100

(a) Testing for inducible clindamycin resistance performed on all staphylococci, group B strep, and S. pneumoniae
 (b) Sensitivity confirmed by request. (c) Data from isolate totals <30 may be statistically unreliable.
 (d) Includes isolates from 2019. (e) Based on meningitis interpretive criteria (more conservative). Nonmeningitis interpretation is 93%. (f) Ceftriaxone uses the meningitis interpretive criteria (more conservative).

Candida

Percent Susceptible By Broth Microdilution (YeastOne, Trek Diagnostics)	No. Tested	Amphotericin B (a) (\$\$\$\$)	Fluconazole (b) (\$)	Voriconazole (\$\$\$\$)	Caspofungin (c) (\$\$\$)
Candida albicans	17(d,e)	100	100	100	100
Candida glabrata	6(d,e)	100	67	-	83
Candida parapsilosis	13(d,e)	100	77	85	100
Other Candida species	8(d,e)	100	(f)	43	100

(a) Suggested Ampho Resistant breakpoint MIC > or = 2 mcg/ml. (b) Susceptible dose-dependent breakpoint MIC was used.
 (c) Consult Peds ID if Caspofungin being considered for treatment. (d) Data from isolate totals <30 may be statistically unreliable.
 (e) Includes isolates from 2019. (f) Species other than C. krusei are 100% susceptible; C. krusei is intrinsically resistant to fluconazole.

Haemophilus influenzae

For infections with beta-lactamase producing H. influenzae: cefuroxime, ceftriaxone, trimethoprim/sulfamethoxazole, amoxicillin/clavulanate, or azithromycin is recommended.

Ceftriaxone is drug of choice for CNS infections.
 At LPCH, 72% (57/79) of H. influenzae are ampicillin susceptible based on 2019-20 data.