



Lucile Packard Children's Hospital

Stanford Children's Health

Antibiogram Data from 2021 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 (b) (\$)	Aztreonam (\$\$\$)	Ertapenem (\$\$\$)	Meropenem (\$\$)	Amikacin (\$\$\$)	Gentamicin (\$\$\$)	Tobramycin (\$\$\$)	Ciprofloxacin (\$)	Co-trimoxazole (\$\$)	Cefazolin (\$)	Predicts 1st gen cephem
<i>Achromobacter xylosoxidans</i>	16(c,d)	-	90	-	-	89	8	0	-	88	0	0	0	19	75	-	-
<i>Acinetobacter baumannii</i>	25(c,d)	-	-	-	-	96	96	-	-	96	92	92	96	92	92	-	-
<i>Citrobacter freundii</i> complex	26(c,d)	0	81	0	77	77	-	-	100	100	100	96	100	89	89	0	100
<i>Enterobacter cloacae</i> complex	44	0	86	0	86	84	100	86	91	100	100	96	98	96	89	0	67
<i>Escherichia coli</i>	465	47	97	63	89	94	78	71	100	100	100	89	89	77	70	84	98
<i>Klebsiella aerogenes</i> (<i>Enterobacter aerogenes</i>)	25(c,d)	0	92	0	76	88	-	67	100	100	100	100	100	92	88	-	0
<i>Klebsiella oxytoca</i>	44	0	91	84	86	89	80	84	96	98	100	98	98	88	89	58	90
<i>Klebsiella pneumoniae</i>	85	0	93	75	94	95	89	90	100	100	100	97	94	93	85	90	21
<i>Morganella morganii</i>	15(c,d)	0	-	0	80	73	-	-	100	-	-	100	100	93	100	-	-
<i>Proteus mirabilis</i>	36	86	100	-	94	97	-	-	100	100	97	92	92	92	81	94	0
<i>Pseudomonas aeruginosa</i>	97	-	94	C/T 97		92	93	85	-	93	97	89	96	90	-	-	-
<i>Pseudomonas aeruginosa</i> (CF-mucoid) (e)	31(d)	-	77	C/T 100		90	84	81	Imp 83	81	77	-	90	74	-	-	-
<i>Pseudomonas aeruginosa</i> (CF-non-mucoid) (e)	39	-	97	C/T 100		97	100	87	Imp 90	90	85	-	100	90	-	-	-
<i>Salmonella</i> spp.	18(c,d)	83	-	-	94	-	-	-	-	-	-	-	-	83	94	-	-
<i>Serratia marcescens</i>	28(c)	0	100	0	100	100	100	100	100	100	100	100	96	96	100	-	0
<i>Stenotrophomonas maltophilia</i>	33	-	-	-	-	-	-	-	-	-	-	-	Levo 85	100	-	-	-

- (a) First isolate from each patient was included
- (b) Cefepime not routinely tested on non-CF urine and blood isolates.
- (c) Data from isolate totals <30 may be statistically unreliable
- (d) Includes isolates from 2020
- (e) 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	463	87	(b)	-	-	87	-	-	-	-	-	77	66	-	100	100	-	-	
MRSA only	58	0	0	-	-	0	-	-	-	-	-	60	23	-	100	100	98	-	
Staphylococcus lugdunensis	7(c,d)	100	(b)	-	-	100	-	-	-	-	-	71	86	-	100	100	-	-	
Staphylococcus sp., Coagulase-negative	35	49	(b)	-	-	49	-	-	-	-	-	54	34	-	69	100	-	-	
Enterococcus faecium	17(c,d)	-	59	0	41	-	-	-	-	-	-	-	-	-	88	-	88	-	
Enterococcus faecalis	14(c)	-	100	0	0	-	-	-	-	-	-	-	-	-	100	-	-	-	
Enterococcus sp. (not identified to species)	150	-	95	0	5	-	-	-	-	-	87	-	95	-	98	-	-	-	
Streptococcus group B (vag/anal screen)	99	-	100	0	0	-	-	-	-	-	-	59	-	-	-	-	-	-	
viridans group streptococci	21(c)	-	76	19	5	-	-	95	-	-	-	90	45	-	100	-	-	-	
Streptococcus pneumoniae	22(c)	-	59(e)	-	41	-	70	95(f)	73	-	-	72	55	-	73	100	Doxycycline 56	-	

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 2020. (e) Based on meningitis interpretive criteria (more conservative). Nonmeningitis interpretation is 100%. (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	16(d,e)	100	94	94	100
Candida glabrata	7(d,e)	100	86	-	100
Candida parapsilosis	13(d,e)	100	85	92	100
Other Candida species	6(d,e)	100	(f)	50	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 2020. (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, 75% (35/47) of H. influenzae are ampicillin susceptible.