

Physicians Laboratory Services Cumulative Antimicrobial Susceptibility Report
All Clients, All Isolates | January 2020 - December 2020

% Susceptible Gram Positive	Total*	Penicillin(2)	Ampicillin	Oxacillin(1)	Amoxicillin/Clavulanate	Cefotaxime (2)	Ceftriaxone(2)	Meropenem	Gentamicin	Ciprofloxacin(7)	Levofloxacin(7)	Moxifloxacin	Trimethoprim/Sulfa	Clindamycin(5)	Daptomycin(6)	Erythromycin(5)	Nitrofurantoin(3)	Linezolid(4)	Vancomycin	Tetracycline(7)	Gentamicin Synergy(8)	Streptomycin Synergy(8)	Penicillin (non-CSF)(2)	Penicillin V (oral)(2)	Cefotaxime (non-CSF)(2)	Ceftriaxone (non-CSF)(2)
<i>Staph. aureus</i> (MSSA) 68%	689	--	--	100	--	--	--	--	98	86	89	97	100	79	100	66	99	100	100	95	--	--	--	--	--	--
<i>Staph. aureus</i> (MRSA) 32%	326	--	--	0	--	--	--	--	98	34	36	83	96	69	100	17	100	100	100	90	--	--	--	--	--	--
<i>Staph. spp.</i> (coagulase-negative)	656	--	--	56	--	--	--	--	94	70	71	92	77	70	100	53	99	100	100	85	--	--	--	--	--	--
<i>Strep. pneumoniae</i>	19	53	--	--	94	65	65	63	--	--	100	--	59	100	--	50	--	--	100	88	--	--	94	53	100	100
<i>Enterococcus faecalis</i>	948	100	100	--	--	R	R	--	--	78	82	--	R	R	100	--	100	99	98	27	100	100	--	--	--	--
<i>Enterococcus faecium</i>	71	39	42	--	--	R	R	--	--	24	34	--	R	R	83	--	46	99	66	34	--	--	--	--	--	--
<i>Enterococcus spp.</i>	30	93	93	--	--	R	R	--	--	70	67	--	R	R	97	--	75	100	83	40	100	100	--	--	--	--

The % susceptible for each organism/antimicrobial combination was generated by including the first isolate of that organism encountered on a given patient.

R Organism has intrinsic resistance to this antimicrobial.

-- Not tested/indicated for organism.

* Antibiograms created for organisms with less than 30 total isolates have questionable statistical significance. Interpret data with caution.

(1) Oxacillin predicts susceptibility to most cephalosporins, carbapenems, and beta-lactam/beta-lactamase inhibitors.

(2) For *S. pneumoniae*: cefotaxime, ceftriaxone, and penicillin % susceptible listed is based on parenteral CSF (meningitis), parenteral non-CSF, and oral MIC breakpoints.

(3) Nitrofurantoin is reported for isolates from urine only.

(4) Linezolid is reported for isolates from non-urine sources only.

(5) For *Staphylococcus spp.*: clindamycin and erythromycin are reported for isolates from non-urine sources only.

(6) For *Staphylococcus spp.*: daptomycin is reported for isolates from non-respiratory sources only.

(7) For all *Enterococcus spp.*: ciprofloxacin, levofloxacin, and tetracycline are reported for isolates from urine only.

(8) For *E. faecalis* and *E. faecium*: gentamicin and streptomycin high-level resistance testing is reported for isolates from blood cultures only.

Physicians Laboratory Services Cumulative Antimicrobial Susceptibility Report
All Clients, All Isolates | January 2020 - December 2020

% Susceptible Gram Negative	Total*	Ampicilin	Ampicillin/Sulbactam	Piperacillin/Tazobactam	Cefazolin	Cefotaxime	Ceftazidime	Ceftazidime/Avibactam	Ceftriaxone	Cefepime	Cefoxitin	Aztreonam	Ertapenem	Imipenem	Meropenem	Amikacin	Gentamicin	Tobramycin	Ciprofloxacin(3)	Levofloxacin(3)	Trimethoprim/Sulfa	Nitrofurantoin(1)	Tetracycline(2)	Tigecycline
<i>Escherichia coli</i>	5903	61	65	98	77	79	94	100	94	95	96	94	100	100	100	100	94	94	90	98	80	98	79	100
<i>Klebsiella pneumoniae</i>	1191	R	87	98	91	83	96	100	96	96	95	95	100	100	100	100	98	96	74	89	89	44	84	99
<i>Proteus mirabilis</i>	640	87	92	100	79	93	99	100	98	98	99	98	100	--	100	100	92	92	79	83	81	R	R	--
<i>Klebsiella (Enterobacter) aerogenes</i>	171	R	R	95	R	94	90	99	91	100	R	91	99	86	100	100	100	99	ND	ND	99	22	95	99
<i>Enterobacter cloacae</i> complex	256	R	R	86	R	71	79	100	69	94	R	77	93	94	99	100	99	98	92	100	90	24	87	97
<i>Serratia marcescens</i>	81	R	R	88	R	89	84	100	86	100	R	89	98	--	98	100	99	98	71	79	94	R	10	99
<i>Pseudomonas aeruginosa</i>	595	R	R	95	R	R	94	99	R	92	R	83	R	85	90	99	88	98	88	78	R	--	R	--
<i>Acinetobacter baumannii</i>	23	R	83	--	R	40	87	--	74	78	R	R	R	100	96	100	96	96	78	78	74	--	83	--
<i>Citrobacter freundii</i> complex	227	R	R	98	R	94	88	100	84	99	R	89	100	99	100	100	95	96	93	100	84	93	81	100
<i>Morganella morganii</i>	76	R	7	96	R	94	88	100	88	97	84	92	99	14	99	100	79	92	75	100	72	R	R	0
<i>Providencia</i> spp.	68	R	46	100	R	100	87	98	100	100	99	93	99	88	100	100	57	59	78	83	87	R	R	0
<i>Salmonella</i> spp.	3	100	--	--	--	--	100	--	--	--	--	--	--	--	--	--	--	--	100	100	100	--	--	--
<i>Shigella</i> spp.	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND	ND	0	--	--	--
<i>Stenotrophomonas</i>	39	R	R	R	R	R	56	--	R	--	R	R	R	R	R	R	R	R	--	92	97	--	R	--
<i>Klebsiella oxytoca</i>	264	R	70	96	19	77	95	100	92	95	98	93	100	99	100	99	96	94	92	97	91	92	91	100
<i>Haemophilus influenzae</i>	26	Beta-lactamase positive: 30%																						

The % susceptible for each organism/antimicrobial combination was generated by including the first isolate of that organism encountered on a given patient.

R Organism has intrinsic resistance to this antimicrobial.

ND No data.

-- Not tested/indicated for organism.

* Antibiograms created for organisms with less than 30 total isolates have questionable statistical significance. Interpret data with caution.

(1) Nitrofurantoin is reported for isolates from urine only.

(2) For *A. baumannii*: tetracycline is reported for isolates from urine only.

(3) Ciprofloxacin/Levofloxacin: Enterobacterales & *P. aeruginosa* see page 3

Physicians Laboratory Services Cumulative Antimicrobial Susceptibility Report
 All Clients, All Isolates | January 2020 - December 2020

NOTE: Ciprofloxacin and Levofloxacin, % Susceptible

In the January 2019 release of the M100 document "Performance Standards for Antimicrobial Susceptibility Testing," the Clinical and Laboratory Standards Institute (CLSI) revised the ciprofloxacin and levofloxacin interpretative criteria (breakpoints) for Enterbacterales and *Pseudomonas aeruginosa*. The revision was not compatible with the susceptibility panel utilized at Physicians Laboratory Services and many other laboratories using manufactured panels for susceptibility results. The new breakpoints included dilutions for "susceptible" and "intermediate" that were not present on the susceptibility panel. A new panel with the appropriate dilutions is now in the verification process for use in 2021.

Due to the revision, reporting ciprofloxacin and levofloxacin with the outdated breakpoints could lead to false-susceptible results. To accommodate this, ciprofloxacin and levofloxacin results that were not "resistant" using the outdated interpretative criteria were not reported (N/R). Ciprofloxacin and levofloxacin susceptibilities were performed selectively and upon request utilizing an alternative method (disk diffusion).

The % Susceptible provided in the Cumulative Antimicrobial Susceptibility Report utilizes the disk diffusion results. Due to the selective and low number of ciprofloxacin and levofloxacin results for 2020, interpret the antibiogram with caution and compare with the 2019 results.

The number of isolates tested by disk diffusion is listed below for reference. The percent of the total isolates tested by disk diffusion is also included. For example, only 11% of *E. coli* isolates were tested for ciprofloxacin and levofloxacin susceptibility (630 out of 5903 isolates).

Ciprofloxacin and Levofloxacin Disk Diffusion Testing	Isolates Tested by Disk Diffusion	% of Total Isolates Tested by Disk Diffusion
<i>Escherichia coli</i>	630	11%
<i>Klebsiella pneumoniae</i>	243	20%
<i>Proteus mirabilis</i>	61	10%
<i>Enterobacter cloacae</i> complex	38	15%
<i>Serratia marcescens</i>	24	30%
<i>Pseudomonas aeruginosa</i>	465	78%
<i>Citrobacter freundii</i> complex	46	20%
<i>Morganella morganii</i>	8	11%
<i>Providencia</i> spp.	9	13%
<i>Salmonella</i> spp.	1	33%
<i>Klebsiella oxytoca</i>	36	14%