Northwestern Memorial Hospital (NMH) 2021 Antibiograms

NMH 2021 Facility-Wide Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program

	Isolates	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Cefiderocol [e]	Ceftazidime	Ceftazidime/Avibactam [e]	Ceftolozane/Tazobactam [e]	Ceftriaxone	Ciprofloxacin	Clindamycin	Daptomycin	Doxycycline	Fluconazole	Gentamicin	Levofloxacin	Linezolid	Meropenem [h]	Micafungin	Minocycline	Oxacillin	Penicillin G	Piperacillin/Tazobactam	Rifampin	Sulfamethoxazole/Trimethoprim	Tetracycline	Tobramycin	Vancomycin	Voriconazole
GRAM POSITIVES																																
Enterococcus faecalis	1103		100[a]												68[f]					100											98	
Enterococcus faecium	359		15[a]												99[g]					99											36	
Vancomycin-Resistant Enterococci	260		10[a]												99[g]					99									10			
Staphylococcus coagulase negative	447													53	100					100				30[i]			97	65	85[j]		100	
Staphylococcus aureus	1026													67	100					100				69[i]			100	93	90[j]		100	
Methicillin-resistant Staphylococcus aureus	315													52	100					100							99	86	78[j]		100	
Streptococcus pneumoniae (non-meningitis)	31											100							96		80				100			87			100	
Streptococcus pneumoniae (meningitis)	31											81							96		80				32			87			100	
Viridans streptococci	259											98		76					91						92						100	
GRAM NEGATIVES																																
Acinetobacter species	77	63		69					39				46			66		67	49		48		71			36		64	47	67		
Citrobacter species	299	100			86		99		88			85	93					96	90		100					90		91	90	97		
Enterobacter species	196	100			77		93		73			73	93					97	88		97					72		92	93	96		
Escherichia coli	3228	100	49[b]	58	91	78	90		92			87	69					89	65		100					95		72		89		
Klebsiella species	1398	99		71[c]	88	77[c]	90		90			87	83					94	80		97					91		82	78	91		
Morganella morganii	98	100			93				76				68					87	67		99					100		67		93		
Proteus species	648	100	78[b]	88	99	70	98		96			95	84					93	84		100					99		87		93		
Pseudomonas aeruginosa	923	98			74		94		87	99	98		84					92	77		87					88				96		
Serratia species	160	99			96		98		98			93	95					98	94		99							99	51	90		
Stenotrophomonas maltophilia	134																		87				100					97				
MULTI-DRUG RESISTENT GRAM NEGATIVES																																
Carbapenem Resistent Acinetobacter baumanii (CRAB)	41			32				79[d]								44							56									
Carbapenem Resistent Enterobacterales (CRE)	42	76								97			7					67	7		95							19		33		
Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E)	665	97								99	83		16					63	21		95					70		34		53		
Candida species																																
Candida albicans	77																96					92									96	
Candida glabrata	47																76					90									77	

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
See asp.nm.org for organ specific empiric prescribing guidance
See protocol for multi-drug resistant gram-negative agents for guidance
Page ADSP with questions: 55955

% Susceptibility
≥ 80%
70-79%
≤ 69%

[a] Results of ampicillin susceptibility tests should be used to predict the activity of amoxicillin.
Ampicillin may be used to predict susceptibiltiy to amoxicillin-clavulanate, ampicillin-sulbactam, and piperacillin-tazobactam among non-β-lactamase-producing enterococci in clinically stable/non-immunocompromised patients.
[b] Results of ampicillin can predict results for amoxicillin.
[c] Klebsiella (formerly Enterobacter) aerogenes is intrinsically resistant to ampicillin/sulbactam and cefazolin. If final culture results in Klebsiella aerogenes, empiric therapy with ampicillin/subactam or cefazolin should be changed to a susceptible definitive agent.
[d] %S out of 24 isolates
[e] Recommend infectious diseases consultation for ongoing use
[f] %S based on dosage regimen of 6 mg/kg every 24 hours.
[g] %SDD based on a dosage regimen of 8-12 mg/kg every 24 hours. Intended for serious infections due to E. faecium. Consultation with an infectious diseases specialist recommended.
[h] Should be reserved for patients who are intolerant to penicilins and cephalosporins or in patients who are suspected of having a drug-resistant bacteria.
[i] For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin-susceptble staphylococci can be considered susceptible to:1) β-lactam combination agents (amoxicillin-clavulante, ampicillin-sulbactam, piperacillin-tazobactam); 2) oral cephalosporins (cefaclor, cefdinir, cephalexin, cefpodoxime, cefprozil, cefuroxime); 3) IV cephalosporins (cefazolin, cefepime, ceftriaxone); and 4) carbapenems (ertapenem, imipenem, meropenem).
[j] Organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline. However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycyline, minocycline, or both.

Abbreviations: %S, percent susceptible; SDD, susceptible-dose-dependent
30 isolate threshold unless indicated otherwise.
Blank boxes indicate organism has intrinsic resistance to corresponding antimicrobial or resistance testing is not applicable.
When risk for mortality or significant morbidity is high (eg. meningitis, sepsis, ICU patients), agents with %S at least 90-95% should be selected.
Less significant concerns for motality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), agents with %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed32)

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NMH 2021 Blood Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program

	Isolates	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Ceftazidime	Ceftazidime/Avibactam[d]	Ceftolozane/Tazobactam[d]	Ceftriaxone	Ciprofloxacin	Clindamycin	Daptomycin	Fluconazole	Gentamicin	Levofloxacin	Linezolid	Meropenem[g]	Micafungin	Oxacillin	Penicillin G	Piperacillin/Tazobactam	Rifampin	Sulfamethoxazole/Trimethoprim	Tetracycline	Tobramycin	Vancomycin
GRAM POSITIVES																												
Enterococcus faecalis	56		100[a]											60[e]				98										98
Enterococcus faecium	43		12[a]											90[f]				98										37
Staphylococcus coagulase negative	107												43	100				99			23[h]				47	92[i]		100
Staphylococcus aureus	121												65	100				99			73[h]			98	93	93[i]		100
Methicillin-resistant Staphylococcus aureus	31												61	100				100						100	84	81[i]		100
Viridans streptococci	42										97		86				64					80						100
GRAM NEGATIVES																												
Escherichia coli	184	98	36[b]	44	87	63	83	90			80	60				81	56		100				92		61		78	
Klebsiella species	86	98		73[c]	92	86[c]	92	92			92	82				93	75		98				92		80		85	
Pseudomonas aeruginosa	44	100			75		93	81	100	96		77				95	74		86				81				96	
MULTI-DRUG RESISTENT GRAM NEGATIVES																												
Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E)	45	91							95	84		5				44	5		95				77		25		35	

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
See asp.nm.org for organ specific empiric prescribing guidance
See protocol for multi-drug resistant gram-negative agents for guidance
Page ADSP with questions: 55955

% Susceptibility
≥ 80%
70-79%
≤ 69%

[a] Results of ampicillin susceptibility tests should be used to predict the activity of amoxicillin.
Ampicillin may be used to predict susceptibiltiy to amoxicillin-clavulanate, ampicillin-sulbactam, and piperacillin-tazobactam among non-β-lactamase-producing enterococci in clinically stable/non-immunocompromised patients.

[b] Results of ampicillin can predict results for amoxicillin.

[c] Klebsiella (formerly Enterobacter) aerogenes is intrinsically resistant to ampicillin/sulbactam and cefazolin.
If final culture results in Klebsiella aerogenes, empiric therapy with ampicillin/subactam or cefazolin should be changed to a susceptible definitive agent.

[d] Recommend infectious diseases consultation for ongoing use

[e] %S based on dosage regimen of 6 mg/kg every 24 hours.

[f] %SDD based on a dosage regimen of 8-12 mg/kg every 24 hours. Intended for serious infections due to E. faecium. Consultation with an infectious diseases specialist recommended.

[g] Should be reserved for patients who are intolerant to penicilins and cephalosporins or in patients who are suspected of having a drug-resistant bacteria.

[h] For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin-susceptble staphylococci can be considered susceptible to:
1) β-lactam combination agents (amoxicillin-clavulante, ampicillin-sulbactam, piperacillin-tazobactam); 2) oral cephalosporins (cefaclor, cefdinir, cephalexin, cefpodoxime, cefprozil, cefuroxime);
3) IV cephalosporins (cefazolin, cefepime, ceftriaxone); and 4) carbapenems (ertapenem, imipenem, meropenem).

[i] Organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline. However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycyline, minocycline, or both.

Abbreviations: %S, percent susceptible; SDD, susceptible-dose-dependent
30 isolate threshold
Blank boxes indicate organism has intrinsic resistance to corresponding antimicrobial or resistance testing is not applicable.
When risk for mortality or significant morbidity is high (eg. meningitis, sepsis, ICU patients), agents with %S at least 90-95% should be selected.
Less significant concerns for motality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), agents with %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed32)

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NMH 2021 Urinary Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program

	Isolates	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Ceftazidime	Ceftazidime/Avibactam [d]	Ceftolozane/Tazobactam [d]	Ceftriaxone	Ciprofloxacin	Clindamycin	Fosfomycin	Gentamicin	Levofloxacin	Linezolid	Meropenem [e]	Nitrofurantoin	Oxacillin	Piperacillin/Tazobactam	Sulfamethoxazole/Trimethoprim	Tetracycline	Tobramycin	Vancomycin
GRAM POSITIVES																									
Enterococcus faecalis	623		100[a]														100		100						97
Enterococcus faecium	152		7[a]														99		23						28
Vancomycin-Resistant Enterococci	123		12[a]														98		30				9		
Staphylococcus aureus	103												68				100			61[f]		85	85[g]		100
GRAM NEGATIVES																									
Citrobacter species	176	99			91		99	92			89	93			95	89		100	90		92	91		98	
Enterobacter species	48	100			75		93	70			70	94			96	88		96	14		97	94		97	
Escherichia coli	2579	100	51[b]	60	92	86	91	94			88	70		93	90	66		99	96		95	73		91	
Klebsiella species	924	99		73[c]	89	85[c]	91	91			88	83			94	80		98	36		89	82		92	
Proteus species	407	99	79[b]	88	99	91	98	97			96	84			93	84		100			99	88		94	
Pseudomonas aeruginosa	352	98			73		95	88	99	98		79			92	73		86			91			96	
MULTI-DRUG RESISTENT GRAM NEGATIVES																									
Carbapenem Resistent Enterobacterales (CRE)	30	77							100			7			73	7			4			20		20	
Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E)	434	97							99	85		15		24	59	11		96	62		71	38		54	

Several agents have the potential to concentrate in the urine with an intermediate MIC. Contact ADSP for appropriate indication and recommended dosing.

% Susceptibility
≥ 80%
70-79%
≤ 69%

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
See asp.nm.org for organ specific empiric prescribing guidance
See protocol for multi-drug resistant gram-negative agents for guidance
Page ADSP with questions: 55955

[a] Results of ampicillin susceptibility tests should be used to predict the activity of amoxicillin.
Ampicillin may be used to predict susceptibiltiy to amoxicillin-clavulanate, ampicillin-sulbactam, and piperacillin-tazobactam among non-β-lactamase-producing enterococci in clinically stable/non-immunocompromised patients.

[b] Results of ampicillin can predict results for amoxicillin.

[c] Klebsiella (formerly Enterobacter) aerogenes is intrinsically resistant to ampicillin/sulbactam and cefazolin.
If final culture results in Klebsiella aerogenes, empiric therapy with ampicillin/subactam or cefazolin should be changed to a susceptible definitive agent.

[d] Recommend infectious diseases consultation for ongoing use

[e] Should be reserved for patients who are intolerant to penicilins and cephalosporins or in patients who are suspected of having a drug-resistant bacteria.

[f] For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin-susceptble staphylococci can be considered susceptible to:
1) β-lactam combination agents (amoxicillin-clavulante, ampicillin-sulbactam, piperacillin-tazobactam); 2) oral cephalosporins (cefaclor, cefdinir, cephalexin, cefpodoxime, cefprozil, cefuroxime);
3) IV cephalosporins (cefazolin, cefepime, ceftriaxone); and 4) carbapenems (ertapenem, imipenem, meropenem).

[g] Organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline.
However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycyline, minocycline, or both.

30 isolate threshold
Blank boxes indicate organism has intrinsic resistance to corresponding antimicrobial or resistance testing is not applicable
When risk for mortality or significant morbidity is high (eg. meningitis, sepsis, ICU patients), agents with %S at least 90-95% should be selected.
Less significant concerns for motality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), agents with %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed32)

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NMH 2021 ED Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program

	Isolates	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Clindamycin	Daptomycin	Gentamicin	Levofloxacin	Linezolid	Meropenem [g]	Oxacillin	Piperacillin/Tazobactam	Sulfamethoxazole/Trimethoprim	Tetracycline	Tobramycin	Vancomycin
GRAM POSITIVES																						
Enterococcus faecalis	243		100[a]									73[d]			100							98
Enterococcus faecium	57		16[a]									100[e]			98							42
Vancomycin-Resistant Enterococci	38		16[a]									100[e]			97							
Staphylococcus coagulase negative	80										58				100		43[f]		70	54[h]		97
Staphylococcus aureus	251				-						72	100			99		68[f]		92	91[h]		100
Methicillin-resistant Staphylococcus aureus	77										64	100			100				83	83[h]		100
Viridans streptococci	59								100		77			93								100
GRAM NEGATIVES																						
Citrobacter species	74	100			93		100	94	91	93			95	90		100		94	91		100	
Enterobacter species	39	100			84		94	79	71	94			100	92		94		71	94		96	
Escherichia coli	1325	99	51[b]	60	92	80	91	94	88	72			90	67		100		96	75		91	
Klebsiella species	461	99		69[c]	88	79[c]	87	90	87	83			92	79		97		93	80	78	90	
Proteus species	212	99	76[b]	88	97	69	97	95	94	80			93	80		100		100	84		94	
Pseudomonas aeruginosa	165	98			73		93	86		77			93	71		84		92			96	
Serratia species	31	91			97		100	97	88	100			94	88		100		100	100	72	81	

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
See asp.nm.org for organ specific empiric prescribing guidance
Page ADSP with questions: 55955

% Susceptibility
≥ 80%
70-79%
≤ 69%

[a] Results of ampicillin susceptibility tests should be used to predict the activity of amoxicillin.
Ampicillin may be used to predict susceptibiltiy to amoxicillin-clavulanate, ampicillin-sulbactam, and piperacillin-tazobactam among non-β-lactamase-producing enterococci in clinically stable/non-immunocompromised patients.

[b] Results of ampicillin can predict results for amoxicillin.

[c] Klebsiella (formerly Enterobacter) aerogenes is intrinsically resistant to ampicillin/sulbactam and cefazolin.
If final culture results in Klebsiella aerogenes, empiric therapy with ampicillin/subactam or cefazolin should be changed to a susceptible definitive agent.

[d] %S based on dosage regimen of 6 mg/kg every 24 hours.

[e] %SDD based on a dosage regimen of 8-12 mg/kg every 24 hours. Intended for serious infections due to E. faecium. Consultation with an infectious diseases specialist recommended.

[f] For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin-susceptble staphylococci can be considered susceptible to:
1) β-lactam combination agents (amoxicillin-clavulante, ampicillin-sulbactam, piperacillin-tazobactam); 2) oral cephalosporins (cefaclor, cefdinir, cephalexin, cefpodoxime, cefprozil, cefuroxime);
3) IV cephalosporins (cefazolin, cefepime, ceftriaxone); and 4) carbapenems (ertapenem, imipenem, meropenem).

[g] Should be reserved for patients who are intolerant to penicilins and cephalosporins or in patients who are suspected of having a drug-resistant bacteria.

[h] Organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline.
However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycyline, minocycline, or both.

Abbreviations: %S, percent susceptible; SDD, susceptible-dose-dependent
30 isolate threshold
Blank boxes indicate organism has intrinsic resistance to corresponding antimicrobial or resistance testing is not applicable.
When risk for mortality or significant morbidity is high (eg. meningitis, sepsis, ICU patients), agents with %S at least 90-95% should be selected.
Less significant concerns for motality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), agents with %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed32)

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NMH 2021 Respiratory Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program

	Isolates	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Ceftazidime	Ceftriaxone	Ciprofloxacin	Clindamycin	Gentamicin	Levofloxacin	Linezolid	Meropenem [d]	Minocycline	Oxacillin	Piperacillin/Tazobactam	Sulfamethoxazole/Trimethoprim	Tetracycline	Tobramycin	Vancomycin
GRAM POSITIVES																						
Staphylococcus aureus	268										64			100			73[c]		98	93[e]		100
Methicillin-resistant Staphylococcus aureus	74										50			100					93	84[e]		100
GRAM NEGATIVES																						
Acinetobacter species	33	53		70				33		45		63	48		45	66		28	60	48	56	
Enterobacter species	57	98			70		93	68	71	92		98	88		95			68	92		100	
Escherichia coli	101	95	27[a]	30	72	42	67	76	66	55		81	51		99			78	57		83	
Klebsiella species	156	99		58[b]	82	68[b]	86	85	80	80		93	75		94			80	77		85	
Pseudomonas aeruginosa	249	97			67		92	83		81		88	70		80			82			92	
Serratia species	58	100			95		98	97	95	97		100	97		98			100	100		89	
Stenotrophomonas maltophilia	82												87			100			96			

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
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Page ADSP with questions: 55955

% Susceptibility
≥ 80%
70-79%
≤ 69%

[a] Results of ampicillin can predict results for amoxicillin.

[b] Klebsiella (formerly Enterobacter) aerogenes is intrinsically resistant to ampicillin/sulbactam and cefazolin.
If final culture results in Klebsiella aerogenes, empiric therapy with ampicillin/subactam or cefazolin should be changed to a susceptible definitive agent.

[c] For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin-susceptble staphylococci can be considered susceptible to:
1) β-lactam combination agents (amoxicillin-clavulante, ampicillin-sulbactam, piperacillin-tazobactam); 2) oral cephalosporins (cefaclor, cefdinir, cephalexin, cefpodoxime, cefprozil, cefuroxime);
3) IV cephalosporins (cefazolin, cefepime, ceftriaxone); and 4) carbapenems (ertapenem, imipenem, meropenem).

[d] Should be reserved for patients who are intolerant to penicilins and cephalosporins or in patients who are suspected of having a drug-resistant bacteria.

[e] Organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline.
However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycyline, minocycline, or both.

30 isolate threshold
Blank boxes indicate organism has intrinsic resistance to corresponding antimicrobial or resistance testing is not applicable.
When risk for mortality or significant morbidity is high (eg. meningitis, sepsis, ICU patients), agents with %S at least 90-95% should be selected.
Less significant concerns for motality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), agents with %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed32)

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NMH 2021 MICU Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program

	Isolates	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Ceftazidime/Avibactam [d]	Ceftolozane/Tazobactam [d]	Ceftazidime	Ceftriaxone	Ciprofloxacin	Clindamycin	Daptomycin	Gentamicin	Levofloxacin	Linezolid	Meropenem [i]	Oxacillin	Piperacillin/Tazobactam	Sulfamethoxazole/Trimethoprim	Tetracycline	Tobramycin	Vancomycin
GRAM POSITIVES																								
Enterococcus faecalis	62		100[a]											64[h]			100							96
Enterococcus faecium	47		6[a]														97							34
Vancomycin-Resistant Enterococci (VRE)	33		6[a]														96							
Staphylococcus aureus	72												59	100			100		69[j]		100	97[k]		100
Methicillin-resistant Staphylococcus aureus (MRSA)	21												57				100							100
GRAM NEGATIVES																								
Escherichia coli	51	94	16[b]	20	69	40	63	98	96[e]	73	61	51			79	49		97		75	53		80	
Klebsiella species	57	98		53[c]	70	59[c]	72	98	82[f]	75	70	66			85	61		90		74	66		73	
Pseudomonas aeruginosa	70	97			67		94	95	97	81		70			81	68		69		80			91	
MULTI-DRUG RESISTENT GRAM NEGATIVES																								
Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E)	42	89						97	65[g]			12			58	10		86		53	23		46[l]	

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
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Page ADSP with questions: 55955

% Susceptibility
≥ 80%
70-79%
≤ 69%

[a] Results of ampicillin susceptibility tests should be used to predict the activity of amoxicillin.
Ampicillin may be used to predict susceptibiltiy to amoxicillin-clavulanate, ampicillin-sulbactam, and piperacillin-tazobactam among non-β-lactamase-producing enterococci in clinically stable/non-immunocompromised patients.

[b] Results of ampicillin can predict results for amoxicillin.

[c] Klebsiella (formerly Enterobacter) aerogenes is intrinsically resistant to ampicillin/sulbactam and cefazolin.
If final culture results in Klebsiella aerogenes, empiric therapy with ampicillin/subactam or cefazolin should be changed to a susceptible definitive agent.

[d] Recommend infectious diseases consultation for ongoing use.

[e] %S out to 25 isolates

[f] %S out of 29 isolates

[g] %S out of 20 isolates

[h] %S based on dosage regimen of 6 mg/kg every 24 hours.

[i] Should be reserved for patients who are intolerant to penicilins and cephalosporins or in patients who are suspected of having a drug-resistant bacteria.

[j] For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin-susceptble staphylococci can be considered susceptible to:
1) β-lactam combination agents (amoxicillin-clavulante, ampicillin-sulbactam, piperacillin-tazobactam); 2) oral cephalosporins (cefaclor, cefdinir, cephalexin, cefpodoxime, cefprozil, cefuroxime);
3) IV cephalosporins (cefazolin, cefepime, ceftriaxone); and 4) carbapenems (ertapenem, imipenem, meropenem).

[k] Organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline.
However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycyline, minocycline, or both.

[l] %S out of 26 isolates

Abbreviations: %S, percent susceptible
30 isolate threshold unless indicated otherwise.
Blank boxes indicate organism has intrinsic resistance to corresponding antimicrobial or resistance testing is not applicable.
When risk for mortality or significant morbidity is high (eg. meningitis, sepsis, ICU patients), agents with %S at least 90-95% should be selected.
Less significant concerns for motality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), agents with %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed32)

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NMH 2021 ICUs (Non-MICU) Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program

	Isolates	Amikacin	Ampicillin	Ampicillin/Sulbactam	Aztreonam	Cefazolin	Cefepime	Ceftazidime	Ceftazidime/Avibactam [d]	Ceftolozane/Tazobacatam [d]	Ceftriaxone	Ciprofloxacin	Clindamycin	Daptomycin	Gentamicin	Levofloxacin	Linezolid	Meropenem [g]	Minocycline	Oxacillin	Piperacillin/Tazobactam	Sulfamethoxazole/Trimethoprim	Tetracycline	Tobramycin	Vancomycin
GRAM POSITIVES																									
Enterococcus faecalis	78		100[a]											66[f]			100								98
Enterococcus faecium	48		6[a]														100								18
Vancomycin-Resistant Enterococci (VRE)	43		2[a]														100						6		
Staphylococcus aureus	118												72	100			100			68[h]		98	94[i]		100
Methicillin-resistant Staphylococcus aureus (MRSA)	37												56	100			100					94	86[i]		100
GRAM NEGATIVES																									
Enterobacter species	37	100			67		94	62				94			100	92		100			62	97		100	
Escherichia coli	83	100	35[b]	44	85	58	83	86			78	65			90	61		100			81	65		92	
Klebsiella species	97	98		60[c]	82	68[c]	88	87			78	83			95	77		100			81	80		87	
Pseudomonas aeruginosa	95	95			65		92	77	97	98		83			89	72		75			81			91	
Stenotrophomonas maltophilia	38															94			100			100			
MULTI-DRUG RESISTENT GRAM NEGATIVES																									
Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E)	44	97							97	64[e]		16			75	11		81			53	25		56[j]	

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
See asp.nm.org for organ specific empiric prescribing guidance
See protocol for multi-drug resistant gram-negative agents for guidance
Page ADSP with questions: 55955

% Susceptibility
≥ 80%
70-79%
≤ 69%

[a] Results of ampicillin susceptibility tests should be used to predict the activity of amoxicillin.
Ampicillin may be used to predict susceptibiltiy to amoxicillin-clavulanate, ampicillin-sulbactam, and piperacillin-tazobactam among non-β-lactamase-producing enterococci in clinically stable/non-immunocompromised patients.
[b] Results of ampicillin can predict results for amoxicillin.
[c] Klebsiella (formerly Enterobacter) aerogenes is intrinsically resistant to ampicillin/sulbactam and cefazolin.
If final culture results in Klebsiella aerogenes, empiric therapy with ampicillin/subactam or cefazolin should be changed to a susceptible definitive agent.
[d] Recommend infectious diseases consultation for ongoing use.
[e] %S out of 25 isolates
[f] %S based on dosage regimen of 6 mg/kg every 24 hours.
[g] Should be reserved for patients who are intolerant to penicilins and cephalosporins or in patients who are suspected of having a drug-resistant bacteria.
[h] For agents with established clinical efficacy and considering site of infection and appropriate dosing, oxacillin-susceptble staphylococci can be considered susceptible to:
1) β-lactam combination agents (amoxicillin-clavulante, ampicillin-sulbactam, piperacillin-tazobactam); 2) oral cephalosporins (cefaclor, cefdinir, cephalexin, cefpodoxime, cefprozil, cefuroxime);
3) IV cephalosporins (cefazolin, cefepime, ceftriaxone); and 4) carbapenems (ertapenem, imipenem, meropenem).
i Organisms that are susceptible to tetracycline are also considered susceptible to doxycycline and minocycline.
However, some organisms that are intermediate or resistant to tetracycline may be susceptible to doxycyline, minocycline, or both.
[j] %S out of 25 isolates

Abbreviations: %S, percent susceptible
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When risk for mortality or significant morbidity is high (eg. meningitis, sepsis, ICU patients), agents with %S at least 90-95% should be selected.
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