# Northwest Region 2022 Antibiograms

# NM Northwest Region (Huntley/McHenry) 2022 Facility-Wide Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program
https://adsp.nm.org

| | Isolates | Ampicillin [a] | Ampicillin/Sulbactam | Cefazolin | Cefepime | Ceftazidime | Ceftazidime/Avibactam [c] | Ceftriaxone | Ciprofloxacin | Clindamycin | Daptomycin [c] | Levofloxacin | Linezolid [c] | Meropenem [c] | Penicillin G | Piperacillin/Tazobactam | Sulfamethoxazole/Trimethoprim | Tetracycline | Vancomycin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GRAM POSITIVES** | | | | | | | | | | | | | | | | | | | |
| Enterococcus species | 384 | 94 | | | | | | | | | 100 | | 96 | | 93 | | | | 97 |
| Staphylococcus coagulase negative | 38 | | | 31 | | | | | | 70 | 100 | | 100 | | | | 63 | 71 [d] | 100 |
| Staphylococcus aureus | 512 | | | 60 | | | | | | 65 | 100 | | 100 | | | | 96 | 82 [d] | 100 |
| Methicillin-resistant Staphylococcus aureus | 206 | | | | | | | | | 41 | 100 | | 100 | | | | 91 | 63 [d] | 100 |
| **GRAM NEGATIVES** | | | | | | | | | | | | | | | | | | | |
| Citrobacter freundii complex | 53 | | 50 | 2 | 100 | 73 | | 71 | 89 | | | 89 | | 100 | | 88 | 83 | | |
| Citrobacter koseri | 32 | | 100 | 97 | 100 | 100 | | 100 | 100 | | | 100 | | 100 | | 100 | 100 | | |
| Enterobacter cloacae complex | 120 | | 28 | 1 | 96 | 74 | | 63 | 95 | | | 95 | | 100 | | 77 | 90 | | |
| Escherichia coli | 1580 | 55 | 63 | 70 | 88 | 86 | | 86 | 72 | | | 76 | | 100 | | 98 | 77 | | |
| Klebsiella aerogenes | 38 | 15 | 73 [b] | 8 [b] | 100 | 81 | | 78 | 100 | | | 100 | | 100 | | 92 | 97 | | |
| Klebsiella oxytoca | 104 | 1 | 67 | 11 | 96 | 96 | | 92 | 95 | | | 98 | | 100 | | 94 | 91 | | |
| Klebsiella pneumoniae | 332 | 0 | 79 | 84 | 91 | 91 | | 91 | 88 | | | 93 | | 100 | | 97 | 86 | | |
| Proteus mirabilis | 203 | 66 | 80 | 60 | 92 | 92 | | 90 | 60 | | | 61 | | 100 | | 99 | 69 | | |
| Pseudomonas aeruginosa | 263 | | | | 92 | 93 | 98 | | 86 | | | 81 | | 95 | | 97 | | | |
| Serratia species | 41 | 9 | 17 | 0 | 97 | 80 | | 70 | 80 | | | 88 | | 97 | | 87 | | | |
| Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E) | 241 | | | | | | 99 | | 15 | | | 23 | | 100 | | | 43 | | |

% Susceptibility
≥ 80%
70-79%
≤ 69%

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.
See protocol for multi-drug resistant gram-negative agents for additional guidance

[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] 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] Requires infectious diseases consultation for ongoing use

[d] 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 mortality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed33)

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# NM Northwest Region 2022 Blood Antibiogram

https://adsp.nm.org

| | Isolates | Ampicillin [a] | Ampicillin/Sulbactam | Cefazolin | Cefepime | Ceftazidime | Ceftriaxone | Ciprofloxacin | Clindamycin | Daptomycin [c] | Levofloxacin | Linezolid [c] | Meropenem [c] | Oxacillin | Penicillin G | Piperacillin/Tazobactam | Sulfamethoxazole/Trimethoprim | Tetracycline | Vancomycin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GRAM POSITIVES** | | | | | | | | | | | | | | | | | | | |
| Enterococcus species | 36 | 100 | | | | | | | | 100 | | 100 | | | | | | | 97 |
| Staphylococcus aureus | 128 | | | 63 | | | | | 63 | 100 | | 100 | | 63 [b] | | | 96 | 83 [d] | 100 |
| Methicillin-resistant Staphylococcus aureus | 47 | | | | | | | | 42 | 100 | | 100 | | | | | 89 | 63 [d] | 100 |
| **GRAM NEGATIVES** | | | | | | | | | | | | | | | | | | | |
| Escherichia coli | 196 | 54 | 64 | 69 | 81 | 79 | 79 | 71 | | | 74 | | 100 | | | 97 | 70 | | |
| Klebsiella pneumoniae | 50 | | 86 [b] | 90 [b] | 96 | 96 | 96 | 88 | | | 92 | | 100 | | | 100 | 92 | | |
| Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E) | 41 | | | | | | | 12 | | | 17 | | 100 | | | | 34 | | |

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.

See protocol for multi-drug resistant gram-negative agents for guidance

| % 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] 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)

[c] Requires infectious diseases consultation for ongoing use

[d] 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 mortality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed32)

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# NM Northwest Region 2022 ED Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program
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| | Isolates | Ampicillin [a] | Ampicillin/Sulbactam | Cefazolin | Cefepime | Ceftazidime | Ceftriaxone | Ciprofloxacin | Clindamycin | Daptomycin [c] | Levofloxacin | Linezolid [c] | Meropenem [c] | Oxacillin | Piperacillin/Tazobactam | Sulfamethoxazole/Trimethoprim | Tetracycline | Vancomycin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GRAM POSITIVES** | | | | | | | | | | | | | | | | | | |
| Enterococcus species | 271 | 94 | | | | | | | | 100 | | 96 | | | | | | 98 |
| Staphylococcus aureus | 262 | | | 56 | | | | | 70 | 100 | | 100 | | 57 [b] | | 96 | 82 [d] | 100 |
| Methicillin-resistant Staphylococcus aureus | 112 | | | | | | | | 48 | 100 | | 100 | | | | 92 | 66 [d] | 100 |
| **GRAM NEGATIVES** | | | | | | | | | | | | | | | | | | |
| Citrobacter species | 69 | | 68 | 32 | 98 | 82 | 79 | 93 | | | 93 | | 100 | | 92 | 92 | | |
| Citrobacter freundii complex | 40 | | 50 | 3 | 100 | 70 | 70 | 88 | | | 88 | | 100 | | 87 | 87 | | |
| Enterobacter cloacae complex | 73 | | 32 | 0 | 98 | 76 | 65 | 95 | | | 95 | | 100 | | 81 | 89 | | |
| Escherichia coli | 1301 | 55 | 63 | 70 | 88 | 87 | 86 | 72 | | | 75 | | 100 | | 98 | 77 | | |
| Klebsiella oxytoca | 72 | | 70 | 10 | 94 | 94 | 91 | 96 | | | 99 | | 100 | | 94 | 93 | | |
| Klebsiella pneumoniae | 260 | | 80 | 84 | 93 | 93 | 92 | 87 | | | 93 | | 100 | | 98 | 86 | | |
| Proteus mirabilis | 164 | 68 | 81 | 60 | 92 | 92 | 90 | 60 | | | 61 | | 100 | | 100 | 70 | | |
| Pseudomonas aeruginosa | 130 | | | | 94 | 95 | | 86 | | | 83 | | 96 | | 99 | | | |
| Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E) | 191 | | | | | | | 13 | | | 22 | | 100 | | | 41 | | |

% Susceptibility
≥ 80%
70-79%
≤ 69%

Antibiogram data helps guide clinicians to choose appropriate empiric antibiotics for many infectious syndromes.

[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.

[d] 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)

[c] Requires infectious diseases consultation for ongoing use

[d] 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 mortality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed33)

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# NM Northwest Region 2022 Urine Antibiogram

Northwestern Medicine Antimicrobial and Diagnostic Stewardship Program
https://adsp.nm.org

| | Isolates | Ampicillin [b] | Ampicillin/Sulbactam | Cefazolin | Cefepime | Ceftazidime | Ceftriaxone | Ciprofloxacin | Clindamycin | Daptomycin | Fosfomycin | Gentamicin [g] | Levofloxacin | Linezolid | Meropenem [d] | Nitrofurantoin | Oxacillin | Piperacillin/Tazobactam | Sulfamethoxazole/Trimethoprim | Tetracycline | Tobramycin [g] | Vancomycin |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **GRAM POSITIVES** | | | | | | | | | | | | | | | | | | | | | | |
| Enterococcus species | 296 | 92 | | | | | | | | 100 | | | | 96 | | 91 | | | | 24 | | 97 |
| Staphylococcus aureus | 70 | | | 37 | | | | | 63 | 100 | | | | 100 | | 100 | 37 | | 92 | 72 | | 100 |
| Methicillin-resistant Staphylococcus aureus | 44 | | | | | | | | 50 | 100 | | | | 100 | | 100 | | | 88 | 61 [f] | | 100 |
| **GRAM NEGATIVES** | | | | | | | | | | | | | | | | | | | | | | |
| Citrobacter species | 83 | | 67 | 33 | 96 | 81 | 78 | 92 | | | | 92 | 92 | | 100 | 79 | | 92 | 90 | | 93 | |
| Citrobacter freundii complex | 48 | | 47 | 2 | 100 | 70 | 69 | 88 | | | | 87 | 88 | | 100 | 87 | | 87 | 83 | | 89 | |
| Enterobacter cloacae complex | 63 | | | | 96 | 66 | 52 | 94 | | | | 98 | 94 | | 100 | 20 | | 73 | 85 | | 96 | |
| Escherichia coli | 1407 | 53 | 63 | 84 [a] | 88 | 86 | 87 | 72 | | | 94 | 89 | 75 | | 100 | 97 | | 98 | 77 | | 90 | |
| Klebsiella oxytoca | 74 | | 74 [c] | 12 | 94 | 94 | 92 | 96 | | | | 97 | 98 | | 100 | 89 | | 94 | 94 | | 95 | |
| Klebsiella pneumoniae | 276 | | 79 | 89 [a] | 90 | 90 | 91 | 78 | | | | 96 | 93 | | 100 | 48 | | 97 | 85 | | 94 | |
| Proteus mirabilis | 158 | 66 | 79 | 86 [a] | 93 | 93 | 94 | 59 | | | | 81 | 60 | | 100 | 0 | | 100 | 69 | | 81 | |
| Pseudomonas aeruginosa | 125 | | | | 94 | 95 | | 86 | | | | | 85 | | 95 | | | 99 | | | 98 | |
| Extended-Spectrum β-Lactamase Enterobacterales (ESBL-E) | 209 | | | | | | | 14 | | | 93 | 61 | 22 | | 100 | 82 | | 94 | 43 | | 55 | |

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 protocol for multi-drug resistant gram-negative agents for guidance

[a] %S using MIC breakpoint for urine sources (≤ 16 mcg/ml).
[b] 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.
[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] Requires infectious diseases consultation for ongoing use.
[e] 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)
[f] 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.
[g] Susceptibility based on lab breakpoint of 4 mcg/mL.

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 mortality within the next 24 to 48 hours (eg. uncomplicated UTIs or community-acquired infections), %S of 80-85% may be appropriate.
Antibiogram Guidance (CLSI M100-Ed33)

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