



2012 Inpatient Cumulative Antibigram

Microbiology Section
Division of Laboratory Medicine, Marshfield Clinic
Marshfield Wisconsin

Contact Dr. Thomas Novicki or Dr. Thomas Fritsche at ext. 16300 (715-221-6300) for additional information regarding the incidence of pathogens and their susceptibility to antimicrobial agents. Contact the Saint Joseph's Hospital Pharmacy at ext. 77687 (715-387-7687) for dosing and other drug information.

| Gram Negative (% Susceptible) | Max # Tested | Beta-lactamase + | Amikacin | Ampicillin | Amp-Sulbact | Aztreonam | Cefazolin | Cefepime | Ceftazidime | Ceftriaxone | Cefuroxime | Ciprofloxacin | Gentamicin | Imipenem | Levofloxacin | Meropenem | Nitrofurantoin | Pip-Tazo | Tetracycline | Ticar-Clav | Tobramycin | Trim-Sulfa |
|----------------------------------|--------------|------------------|----------|------------|-------------|-----------|-----------|----------|-------------|-------------|------------|---------------|------------|----------|--------------|-----------|----------------|----------|--------------|------------|------------|------------|
| Citrobacter freundii | 18 | - | 100 | 0 | 0 | 83 | 0 | 100 | 83 | 83 | 0 | 83 | 83 | 100 | 89 | 100 | 89 | 72 | 83 | - | 83 | 83 |
| Enterobacter cloacae | 47 | - | 100 | 0 | 0 | 87 | 0 | 100 | 85 | 87 | 0 | 98 | 96 | 100 | 98 | 100 | 19 | 83 | 96 | - | 96 | 91 |
| Escherichia coli | 327 | - | 100 | 67 | 69 | 95 | 88 | 96 | 95 | 95 | 89 | 79 | 95 | 100 | 79 | 100 | 99 | 96 | 85 | - | 93 | 88 |
| Haemophilus influenzae (1,2) | 74 | 31 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Klebsiella oxytoca | 31 | - | 100 | 0 | 39 | 94 | 61 | 94 | 100 | 94 | 90 | 97 | 100 | 100 | 97 | 100 | 84 | 94 | 100 | - | 100 | 100 |
| Klebsiella pneumoniae | 98 | - | 99 | 0 | 83 | 96 | 89 | 96 | 96 | 96 | 88 | 93 | 95 | 99 | 94 | 100 | 44 | 96 | 86 | - | 96 | 90 |
| Morganella morganii | 20 | - | 100 | 0 | 5 | 95 | 0 | 100 | 95 | 100 | 0 | 70 | 85 | 90 | 75 | 100 | 0 | 80 | 40 | - | 85 | 70 |
| Proteus mirabilis | 45 | - | 100 | 84 | - | 96 | 80 | 100 | 100 | 100 | 96 | 73 | 82 | - | 73 | 100 | 0 | 89 | 0 | - | 80 | 80 |
| Pseudomonas aeruginosa | 102 | - | 99 | 0 | 0 | 76 | 0 | 91 | 92 | - | 0 | 72 | 92 | 85 | 73 | 96 | 0 | 96 | 0 | - | 97 | 0 |
| Serratia marcescens | 20 | - | 100 | 0 | 0 | 95 | 0 | 95 | 95 | 90 | 0 | 85 | 100 | 90 | 90 | 100 | 0 | 90 | 0 | - | 80 | - |
| Stenotrophomonas maltophilia (1) | 56 | - | - | - | - | - | - | - | 38 | - | - | - | - | - | 82 | - | - | - | - | 55 | - | 98 |

Footnotes

-, data not available.

(1) Marshfield Clinic and Ministry St. Joseph's Hospital (Marshfield WI) combined data.

(2) Beta-lactamase positive = resistant to amoxicillin and ampicillin.

**Gram Positive
(% Susceptible)**

| | Max # Tested | Ampicillin | Cefazolin | Ceftriaxone | Clindamycin | Erythromycin | Gentamicin | Gent Synergy (1) | Levofloxacin | Linezolid | Nitrofurantoin | Oxacillin (2) | Penicillin G | Tetracycline | Trim-Sulfa | Vancomycin |
|----------------------------------|--------------|------------|-----------|-------------|-------------|--------------|------------|------------------|--------------|-----------|----------------|---------------|--------------|--------------|------------|------------|
| Enterococcus sp. | 250 | 82 | - | - | - | - | - | 82 | - | 97 | 87 | - | - | 4 | - | 88 |
| Staphylococcus aureus | 138 | - | 63 | - | 62 | 48 | 99 | - | 59 | 100 | 100 | 63 | 14 | 92 | 97 | 100 |
| Staphylococcus coagulase-negativ | 101 | - | 38 | - | 45 | 24 | 100 | - | 51 | 92 | 99 | 37 | 11 | 85 | - | 100 |
| Streptococcus pneumoniae (3) | 138 | - | - | 61 (4) | - | 62 | - | - | 97 | - | - | - | 53 (6) | - | 72 | - |

Footnotes

-, data not available.

(1) Predicts synergy with a cell wall-active agent (i.e. ampicillin or vancomycin) that is also susceptible.

(2) Oxacillin/methicillin susceptible=susceptible to anti-staphylococcal penicillins (e.g. cloxacillin, nafcillin), cephalosporins, beta lactam+beta lactamase inhibitor antimicrobials, and carbapenems.

(3) Marshfield Clinic and Ministry St. Joseph's Hospital (Marshfield WI) combined data.

(4) Based on **meningeal** breakpoint of ≤ 0.5 mcg/mL = susceptible. Primarily penicillin non-susceptible isolates tested.

(5) Based on **non-meningeal** breakpoint of ≤ 1 mcg/mL = susceptible. Primarily penicillin non-susceptible isolates tested.

(6) Based on **oral/meningeal** breakpoints of ≤ 0.06 mcg/mL = susceptible.

(7) Based on **non-meningeal** breakpoints of ≤ 2 mcg/mL = susceptible.



Marshfield Labs™

A division of Marshfield Clinic

2012 Outpatient Cumulative Antibigram

Microbiology Section
Division of Laboratory Medicine, Marshfield Clinic
Marshfield Wisconsin

Contact Dr. Thomas Novicki or Dr. Thomas Fritsche at ext. 16300 (715-221-6300) for additional information regarding the incidence of pathogens and their susceptibility to antimicrobial agents. Contact the Marshfield Clinic Pharmacy Drug Information Service at ext. 19800 (715-221-9800) for dosing and other drug information.

| Gram Negative (% Susceptible) | <i>Max # tested</i> | <i>Beta-lactamase +</i> | <i>Amikacin</i> | <i>Ampicillin</i> | <i>Amp-Sulbact</i> | <i>Aztreonam</i> | <i>Cefazolin</i> | <i>Cefepime</i> | <i>Ceftazidime</i> | <i>Ceftriaxone</i> | <i>Cefuroxime</i> | <i>Ciprofloxacin</i> | <i>Gentamicin</i> | <i>Imipenem</i> | <i>Levofloxacin</i> | <i>Meropenem</i> | <i>Nitrofurantoin</i> | <i>Pip-Tazo</i> | <i>Tetracycline</i> | <i>Ticar-Clav</i> | <i>Tobramycin</i> | <i>Trim-Sulfa</i> |
|------------------------------------------|---------------------|-------------------------|-----------------|-------------------|--------------------|------------------|------------------|-----------------|--------------------|--------------------|-------------------|----------------------|-------------------|-----------------|---------------------|------------------|-----------------------|-----------------|---------------------|-------------------|-------------------|-------------------|
| Citrobacter freundii | 49 | - | 100 | 0 | 0 | 92 | 0 | 100 | 92 | 90 | 0 | 94 | 94 | 100 | 94 | 100 | 98 | 92 | 84 | - | 94 | 86 |
| Citrobacter koseri | 28 | - | 100 | 0 | 86 | 100 | 79 | 100 | 96 | 93 | 71 | 96 | 93 | 100 | 100 | 100 | 43 | 100 | 93 | - | 93 | 100 |
| Enterobacter aerogenes | 46 | - | 100 | 0 | 0 | 96 | 0 | 100 | 96 | 93 | 0 | 98 | 100 | 100 | 100 | 100 | 15 | 96 | 91 | - | 100 | 98 |
| Enterobacter cloacae | 105 | - | 100 | 0 | 0 | 91 | 0 | 98 | 90 | 88 | 0 | 98 | 98 | 99 | 98 | 100 | 18 | 91 | 96 | - | 98 | 93 |
| Escherichia coli | 2074 | - | 100 | 68 | 70 | 98 | 92 | 98 | 97 | 97 | 94 | 90 | 96 | 100 | 90 | 100 | 99 | 98 | 84 | - | 96 | 86 |
| Haemophilus influenzae (1,2) | 74 | 31 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| Klebsiella oxytoca | 104 | - | 100 | 0 | 36 | 97 | 61 | 97 | 100 | 97 | 93 | 99 | 100 | 100 | 98 | 100 | 91 | 93 | 93 | - | 100 | 95 |
| Klebsiella pneumoniae | 382 | - | 100 | 0 | 84 | 100 | 91 | 100 | 99 | 99 | 92 | 98 | 99 | 100 | 99 | 100 | 44 | 96 | 85 | - | 99 | 92 |
| Morganella morganii | 31 | - | 100 | 0 | 13 | 90 | 0 | 100 | 90 | 97 | 0 | 74 | 87 | 83 | 90 | 100 | 0 | 94 | 52 | - | 90 | 74 |
| Proteus mirabilis | 113 | - | 99 | 87 | - | 100 | 86 | 100 | 100 | 98 | 96 | 81 | 88 | - | 82 | 100 | 0 | 89 | 0 | - | 84 | 81 |
| Pseudomonas aeruginosa | 223 | - | 99 | 0 | 0 | 89 | 0 | 97 | 97 | - | 0 | 91 | 96 | 92 | 90 | 99 | 0 | 99 | 0 | - | 97 | 0 |
| Serratia marcescens | 54 | - | 100 | 0 | 0 | 98 | 0 | 100 | 100 | 94 | 0 | 94 | 100 | 94 | 96 | 100 | 0 | 94 | 0 | - | 81 | - |
| Stenotrophomonas maltophilia (1) | 56 | - | - | - | - | - | - | - | 38 | - | - | - | - | - | 82 | - | - | - | - | 55 | - | 98 |

Footnotes

-, data not available.

(1) Marshfield Clinic and Ministry St. Joseph's Hospital (Marshfield WI) combined data.

| Gram Positive (% Susceptible) | Max # Tested | Ampicillin | Cefazolin | Ceftriaxone | Clindamycin | Erythromycin | Gentamicin | Levofloxacin | Linezolid | Nitrofurantoin | Oxacillin (1) | Penicillin G | Tetracycline | Trim-Sulfa | Vancomycin |
|-----------------------------------|--------------|------------|-----------|------------------|-------------|--------------|------------|--------------|-----------|----------------|---------------|------------------|--------------|------------|------------|
| Enterococcus Sp. | 215 | 96 | - | - | - | - | - | - | - | 95 | - | - | - | - | 97 |
| Staphylococcus aureus | 464 | - | 72 | - | 73 | 52 | 100 | 76 | 99 | 100 | 72 | 18 | 95 | 98 | 100 |
| Staphylococcus coagulase-negative | 299 | - | 39 | - | 44 | 32 | 100 | 59 | 91 | 99 | 40 | 16 | 85 | - | 100 |
| Streptococcus pneumoniae (2) | 138 | - | - | 61 (3) 70 (4) | - | 62 | - | 97 | - | - | - | 53 (5) 88 (6) | - | 72 | - |

Footnotes

-, data not available or clinically unproven/intrinsically resistant.

(1) Oxacillin/methicillin susceptible=susceptible to anti-staphylococcal penicillins (e.g. cloxacillin, nafcillin), cephalosporins, beta lactam+beta lactamase inhibitor antimicrobials, and carbapenems.

(2) Marshfield Clinic and Ministry St. Joseph's Hospital (Marshfield WI) combined data.

(3) Based on **meningeal** breakpoint of ≤ 0.5 mcg/mL = susceptible. Primarily penicillin non-susceptible isolates tested.

(4) Based on **non-meningeal** breakpoint of ≤ 1 mcg/mL = susceptible. Primarily penicillin non-susceptible isolates tested.

(5) Based on **oral/meningeal** breakpoints of ≤ 0.06 mcg/mL = susceptible.

(6) Based on **non-meningeal** breakpoint of ≤ 2 mcg/mL = susceptible.