

**Bronson Healthcare**

**2019-20 (Two-Year) Antibiotic Activity Summary**

Antibiogram

All Bronson Outpatient Locations

(Physician Practices, Outpatient Testing, Outpatient Surgery, Clinics and Emergency Departments)

Percent of strains susceptible:

| <b>Gram Negative Enteric Bacteria</b> | <b>No. Tested</b> | <b>Ampicillin/Sulbactam</b> | <b>Piperacillin/tazobactam</b> | <b>Aztreonam</b> | <b>Cefazolin</b> | <b>Cefoxitin</b> | <b>Ceftriaxone</b> | <b>Cefepime</b> | <b>Meropenem</b> | <b>Gentamicin</b> | <b>Tobramycin</b> | <b>Amikacin</b> | <b>Levofloxacin</b> | <b>Sulfa/Trimethoprim</b> | <b>Nitrofurantoin</b> | <b>Tetracycline</b> |
|---------------------------------------|-------------------|-----------------------------|--------------------------------|------------------|------------------|------------------|--------------------|-----------------|------------------|-------------------|-------------------|-----------------|---------------------|---------------------------|-----------------------|---------------------|
| <i>Citrobacter freundii</i>           | 513               | R                           | 85                             | 84               | R                | R                | 82                 | 99              | 100              | 94                | 96                | 100             | 94                  | 89                        | 94                    | 85                  |
| <i>Citrobacter koseri</i>             | 327               | R                           | 99                             | 99               | 99               | 96               | 99                 | 100             | 100              | 100               | 100               | 100             | 100                 | 99                        | 87                    | 100                 |
| <i>Enterobacter aerogenes</i>         | 391               | R                           | 85                             | 89               | R                | R                | 86                 | 100             | 99               | 100               | 100               | 100             | 99                  | 99                        | R                     | 98                  |
| <i>Enterobacter cloacae</i>           | 822               | 67                          | 84                             | 85               | R                | R                | 80                 | 95              | 96               | 99                | 98                | 100             | 97                  | 89                        | 37                    | 91                  |
| <i>Escherichia coli</i>               | 20579             | 66                          | 98                             | 96               | 94               | 94               | 96                 | 96              | 100              | 93                | 94                | 100             | 87                  | 80                        | 97                    | 82                  |
| <i>Klebsiella oxytoca</i>             | 700               | 64                          | 97                             | 96               | 80               | 97               | 96                 | 97              | 100              | 98                | 98                | 100             | 99                  | 94                        | 86                    | 92                  |
| <i>Klebsiella pneumoniae</i>          | 2955              | 86                          | 97                             | 96               | 95               | 97               | 95                 | 96              | 100              | 97                | 97                | 100             | 97                  | 92                        | 32                    | 87                  |
| <i>Klebsiella variicola</i>           | 335               | 97                          | 99                             | 99               | 82               | 97               | 100                | 100             | 100              | 100               | 100               | 100             | 99                  | 99                        | 61                    | 94                  |
| <i>Morganella morganii</i>            | 244               | R                           | 97                             | 95               | R                | 43               | 91                 | 97              | 98               | 88                | 93                | 100             | 82                  | 77                        | R                     | R                   |
| <i>Proteus mirabilis</i>              | 1506              | 89                          | 99                             | 97               | 96               | 95               | 97                 | 98              | 100              | 90                | 92                | 100             | 79                  | 79                        | R                     | R                   |
| <i>Proteus vulgaris</i>               | 102               | 46                          | 100                            | 100              | R                | 97               | 80                 | 96              | 100              | 100               | 100               | 100             | 98                  | 96                        | R                     | R                   |
| <i>Providencia rettgeri</i>           | 70                | 60                          | 99                             | 99               | R                | 99               | 99                 | 99              | 99               | 96                | 96                | 99              | 89                  | 94                        | R                     | R                   |
| <i>Serratia marcescens</i>            | 233               | R                           | 100                            | 99               | R                | R                | 98                 | 100             | 100              | 99                | 90                | 100             | 97                  | 98                        | R                     | 32                  |

| <b>Gram Negative Non-enteric Bacteria</b> | No. Tested | Piperacillin/tazobactam | Cefepime | Meropenem | Aztreonam | Gentamicin | Tobramycin | Amikacin | Levofloxacin | Sulfa/Trimethoprim | Tetracycline | Minocycline |
|---|------------|-------------------------|----------|-----------|-----------|------------|------------|----------|--------------|--------------------|--------------|-------------|
| <i>Acinetobacter baumannii</i>            | 43         | 79                      | 79       | 98        | R         | 86         | 93         |          | 91           | 86                 | 86           |             |
| <i>Pseudomonas aeruginosa</i>             | 1397       | 98                      | 93       | 97        | 67        | 93         | 98         | 97       | 84           | R                  |              |             |
| <i>Stenotrophomonas maltophilia</i>       | 99         |                         |          |           |           |            |            |          | 80           | 98                 |              | 99          |

| <b>Enterococci</b>           | No. Tested | Penicillin/ampicillin | Levofloxacin | Vancomycin | Linezolid | Nitrofurantoin | Gentamicin Synergy | Streptomycin Synergy |
|------------------------------|------------|-----------------------|--------------|------------|-----------|----------------|--------------------|----------------------|
| <i>Enterococcus faecalis</i> | 2888       | 100                   | 87           | 98         | 100       | 99             | 83                 | 88                   |
| <i>Enterococcus faecium</i>  | 197        | R                     | R            | 53         | 100       | 32             | 93                 | 57                   |

| <b>Staphylococci</b> | No. Tested | Penicillin/ampicillin | Oxacillin/nafcillin | Erythromycin | Clindamycin | Gentamicin | Levofloxacin | Sulfa/Trimethoprim | Vancomycin | Rifampin* | Tetracycline | Minocycline | Linezolid | Nitrofurantoin |
|----------------------|------------|-----------------------|---------------------|--------------|-------------|------------|--------------|--------------------|------------|-----------|--------------|-------------|-----------|----------------|
|----------------------|------------|-----------------------|---------------------|--------------|-------------|------------|--------------|--------------------|------------|-----------|--------------|-------------|-----------|----------------|

|                                   |      |    |    |    |    |     |     |    |     |     |    |     |     |     |
|-----------------------------------|------|----|----|----|----|-----|-----|----|-----|-----|----|-----|-----|-----|
| <i>Staphylococcus aureus</i>      | 4020 | R  | 60 | 44 | 89 | 99  | 73  | 97 | 100 | 100 | 95 | 100 | 100 | 100 |
| <i>Staphylococcus epidermidis</i> | 737  | R  | 52 | 40 | 93 | 94  | 65  | 58 | 100 | 99  | 84 | 100 | 100 | 99  |
| <i>Staphylococcus lugdudensis</i> | 251  | 57 | 94 | 82 | 91 | 100 | 100 | 99 | 100 | 100 | 97 | 100 | 100 | 100 |

\*Rifampin should be used only in combination with another agent

|                                   | No. Tested | Penicillin/ampicillin | Erythromycin | Clindamycin | Levofloxacin | Vancomycin | Tetracycline | Linezolid |
|-----------------------------------|------------|-----------------------|--------------|-------------|--------------|------------|--------------|-----------|
| <b>Streptococci</b>               |            |                       |              |             |              |            |              |           |
| <i>Streptococcus agalactiae</i>   | 1780       | 100                   | R            | 90          | 98           | 100        | R            | 100       |
| <i>Streptococcus anginosus</i>    | 94         | 99                    | 48           | 68          | 98           | 100        | 31           | 100       |
| <i>Streptococcus dysgalactiae</i> | 86         | 100                   | 61           | 52          | 100          | 100        | 80           | 100       |
| <i>Streptococcus mitis/oralis</i> | 106        | 80                    | 31           | 73          | 94           | 100        | 69           | 100       |
| <i>Streptococcus pyogenes</i>     | 35         | 100                   | 86           | 94          | 94           | 100        | 94           | 100       |

|                                 | No. Tested | Penicillin non-meningitis | Penicillin meningitis | Ceftriaxone, non-meningitis | Ceftriaxone, meningitis | Erythromycin | Clindamycin | Levofloxacin | Sulfa/Trimethoprim | Vancomycin | Tetracycline | Linezolid |
|---------------------------------|------------|---------------------------|-----------------------|-----------------------------|-------------------------|--------------|-------------|--------------|--------------------|------------|--------------|-----------|
| <b>Streptococcus pneumoniae</b> |            |                           |                       |                             |                         |              |             |              |                    |            |              |           |
| <i>Streptococcus pneumoniae</i> | 146        | 98                        | 82                    | 97                          | 90                      | 61           | 85          | 99           | 84                 | 100        | 87           | 100       |

R denotes intrinsic resistance

Dosing recommendations are generalized; dosing should be optimized for each patient.

Adam Warner, PharmD  
Antimicrobial Stewardship Pharmacist  
(269) 341-6230  
[warnera@bronsonhg.org](mailto:warnera@bronsonhg.org)

Richard A. Van Enk, Ph.D.  
Epidemiologist  
(269) 341-6316  
[vanenkr@bronsonhg.org](mailto:vanenkr@bronsonhg.org)

Eric Parnell  
Laboratory Supervisor  
(269) 341-8845  
[parnelle@bronsonhg.org](mailto:parnelle@bronsonhg.org)