2016 Alaska State Antibiogram

The following tables show the proportion of isolates of various bacterial species that tested susceptible to various antibiotics during 2016. These data were aggregated from the antibiograms produced by Alaska hospitals in order to create aggregate regional resistance pattern summaries. These antibiograms can be helpful for health care providers in selecting appropriate "presumptive" antimicrobial therapy for their patients until specific individual laboratory test results are available. They can also be helpful for determining antibiotic stewardship priorities within hospitals and emerging resistance patterns in a broader service area.

- **Methodology:** Individual hospitals prepared their own facility antibiograms, which were shared with the Alaska Section of Epidemiology. Aggregated susceptibility percentages were calculated as the proportion of all tested isolates for the region that were susceptible. Values are only reported when more than one facility provided data for the given species-antibiotic combination. Intrinsic resistance is indicated with an "R", following the guidance of CLSI document M100-S24.
- **Multi-Drug Resistant Organisms of Note:**
  - Vancomycin-resistant *Staphylococcus aureus* (VRSA): no cases of VRSA have ever been reported in Alaska. VRSA is reportable to the Alaska Section of Epidemiology.
  - Carbapenem-resistant Enterobacteriaceae (CRE): there were 11 cases of CRE reported in Alaska in 2016.
- **Legend:**
  - The top value in each square is the percent of isolates of that species that tested susceptible to that antibiotic.
  - The lower value in each square indicates the number of tested isolates for that bacteria-antibiotic combination.
  - "R" indicates intrinsic resistance to that antibiotic, while "S" indicates definitional susceptibility.
  - "NED" indicates that there was Not Enough Data to report the value: either only one facility reported data for that drug-bug combination or <30 isolates were tested.
- **Limitations:** Individual facilities often use different methods to test for antimicrobial susceptibility, different methods to build their antibiograms, and different antibiotics in their pharmacies. These factors limit interpretation of these data. Additionally, antimicrobial susceptibility testing done in the laboratory does not always predict how effective that drug will be when used to treat a patient. Data are not stratified by infection site, which influences antibiotic choice and effectiveness.
- **Contributing Facilities:** Thanks to all the hospitals in Alaska for participating in this project to the extent of their ability. These statewide data include all the hospitals used in the Regional Antibiograms, plus Fairbanks Memorial Hospital.

For more information and the methods used for the analyses, please see the "Regional Antibiogram Project — Alaska, 2014–2015" Epidemiology *Bulletin*.

Statewide data

Species	Penicillin	Ampicillin	Oxacillin	Ampicillin-sulbactam	Amoxicillin	Cefazolin	Ceftriaxone	Cefotaxime	Ciprofloxacin	Levofloxacin	Moxifloxacin	Daptomycin	Clindamycin	Erythromycin	Vancomycin	Gentamicin	Gent Syn	Trimethoprim-sulfamethoxazole	Linezolid	Tetracycline	Nitrofurantoin	Quinupristin-dalfopristin	Rifampin
Total *Staphylococcus aureus*	**8%** (2580)	**3%** (376)	**60%** (6814)	**57%** (867)	**56%** (749)	**56%** (2470)	**59%** (1278)		**63%** (3129)	**64%** (3787)	**76%** (479)	**99%** (620)	**85%** (6743)	**46%** (3701)	**99%** (6772)	**99%** (3134)		**98%** (6772)	**99%** (4743)	**96%** (6314)	**99%** (4064)	**99%** (198)	**99%** (2884)
MSSA	**13%** (1695)	**3%** (293)	**S**	**98%** (572)	**99%** (572)	**100%** (1451)	**100%** (761)		**85%** (1586)	**85%** (1958)	**94%** (270)	**98%** (389)	**89%** (3764)	**68%** (2093)	**99%** (3788)	**99%** (1829)		**98%** (3788)	**99%** (2708)	**94%** (3325)	**99%** (2066)	**99%** (138)	**98%** (1454)
MRSA	**0%** (978)	**0%** (201)	**R**	**2%** (201)	**0%** (201)	**0%** (370)	**1%** (484)		**27%** (957)	**32%** (1276)	**52%** (207)	**99%** (231)	**81%** (2391)	**12%** (1248)	**99%** (2468)	**99%** (1062)		**98%** (2316)	**99%** (1687)	**95%** (2307)	**98%** (2002)	**98%** (50)	**99%** (951)
Staphylococcus lugdunensis	NED		**93%** (60)						**97%** (60)	**93%** (60)			**90%** (60)	**88%** (60)	**100%** (60)	**100%** (60)		NED	NED	**98%** (60)	**100%** (60)		
Coag-negative *Staphylococcus*	**15%** (631)	**0%** (190)	**51%** (1310)	**51%** (239)	**51%** (239)	**48%** (291)	**49%** (468)		**73%** (925)	**72%** (1032)	**82%** (82)	**98%** (242)	**61%** (1074)	**63%** (729)	**99%** (1310)	**90%** (831)		**69%** (1301)	**99%** (902)	**89%** (1270)	**99%** (866)	**98%** (104)	**98%** (516)
Enterococcus faecalis	**99%** (564)	**99%** (1019)				**R**	**R**	**R**	**88%** (839)	**92%** (881)		**100%** (233)	**R**	**12%** (295)	**99%** (1019)	**R**	**83%** (605)	**R**	**98%** (763)	**26%** (885)	**99%** (903)	**R**	**52%** (121)
Enterococcus faecium	NED	**29%** (55)				**R**	**R**	**R**	NED	NED			**R**		**97%** (30)	**R**	**80%** (55)	**R**	**98%** (55)	NED	NED		
Enterococcus spp.	**98%** (417)	**99%** (431)							**88%** (137)	**90%** (362)					**99%** (431)		NED		**100%** (294)		**99%** (376)		
Group B *Streptococcus*	**100%** (129)	**S**											**51%** (128)	NED	**100%** (129)				NED				
Streptococcus pneumoniae (all)	**92%** (103)						**96%** (84)	**96%** (89)		**98%** (141)			**92%** (191)	**74%** (134)	**100%** (242)			**93%** (82)		**93%** (88)			
S. pneumoniae - oral	**64%** (193)																						
S. pneumoniae - non-CSF	**74%** (387)						**97%** (365)	**88%** (387)															
S pneumoniae - meningitis	**65%** (387)						**95%** (365)	**86%** (387)															
Viridans-group *Streptococcus*	NED						**97%** (31)								**100%** (31)								

2016 State Antibiograms- SURVEILLANCE DATA ONLY

Statewide data

Species	Amoxicillin+ clavulanic acid	Ampicillin	Ampicillin+Sulbactam	Piperacillin+Tazobactam	Cefazolin	Cefuroxime	Ceftriaxone	Ceftazidime	Cefepime	Cefotaxime	Cefotetan	Cefoxitin	Aztreonam	Gentamicin	Tobramycin	Amikacin	Ertapenem	Imipenem	Meropenem	Ciprofloxacin	Levofloxacin	Trimeth+Sulfa	Tetracycline	Nitrofurantoin
Citrobacter freundii	**R**	**R**	**R**	**98%** (124)	**R**	**R**	**96%** (124)	**95%** (123)	**84%** (96)	NED	**R**	**R**	NED	**100%** (124)	**100%** (118)	**100%** (103)	NED	**100%** (34)	**100%** (77)	**97%** (124)	**97%** (124)	**92%** (124)	NED	**95%** (110)
Enterobacter aerogenes	**R**	**R**	**R**	**89%** (127)	**R**	**R**	**86%** (127)	**89%** (76)	**100%** (89)	**77%** (40)	**R**	**R**	**83%** (83)	**100%** (94)	**98%** (107)	**100%** (101)	NED	NED	**100%** (101)	**99%** (127)	**99%** (127)	**96%** (127)	**98%** (58)	**24%** (118)
Enterobacter cloacae	**R**	**R**	**R**	**88%** (377)	**R**	**R**	**85%** (377)	**86%** (288)	**98%** (307)	**78%** (166)	**R**	**R**	**84%** (223)	**98%** (377)	**97%** (344)	**100%** (258)	**97%** (32)	**99%** (67)	**98%** (312)	**98%** (377)	**96%** (377)	**92%** (377)	**91%** (193)	**38%** (351)
Escherichia coli	**87%** (7832)	**56%** (11582)	**58%** (10551)	**97%** (11493)	**91%** (12125)	**86%** (7827)	**97%** (12125)	**97%** (7608)	**92%** (8467)	**73%** (4258)	**98%** (543)	**94%** (3110)	**91%** (5716)	**93%** (12124)	**95%** (10835)	**99%** (5990)	**99%** (3601)	**99%** (3879)	**100%** (8001)	**85%** (12125)	**85%** (12125)	**77%** (12125)	**81%** (5558)	**98%** (11813)
ESBL E. coli	NED	**0%** (58)	**83%** (30)	**93%** (58)	**0%** (58)	NED	**0%** (58)	**0%** (30)						**76%** (58)				NED	**100%** (31)	**41%** (58)	**41%** (58)	**38%** (58)	**48%** (31)	**89%** (54)
Klebsiella oxytoca	**92%** (85)	**0%** (36)	**58%** (205)	**92%** (205)	**61%** (154)	**87%** (204)	**95%** (205)	**99%** (204)	**98%** (170)	NED		**99%** (85)	**86%** (169)	**99%** (205)	**98%** (205)	**100%** (185)		**100%** (36)	**100%** (150)	**96%** (205)	**96%** (205)	**93%** (205)	NED	**85%** (179)
Klebsiella pneumoniae	**98%** (837)	**R**	**89%** (1365)	**97%** (1365)	**94%** (1358)	**93%** (1091)	**98%** (1365)	**67%** (1130)	**97%** (1103)	**98%** (440)	**98%** (63)	**95%** (192)	**99%** (739)	**99%** (1365)	**98%** (1293)	**99%** (817)	**99%** (213)	**100%** (282)	**99%** (993)	**96%** (1365)	**97%** (1365)	**95%** (1355)	**88%** (512)	**50%** (1292)
Proteus mirabilis	**97%** (329)	**86%** (557)	**91%** (523)	**99%** (500)	**89%** (594)	**95%** (421)	**98%** (597)	**99%** (508)	**98%** (462)	**99%** (181)	NED	**93%** (243)	**99%** (303)	**84%** (588)	**94%** (541)	**99%** (309)	**60%** (249)	**55%** (161)	**99%** (407)	**89%** (583)	**88%** (597)	**90%** (597)	**R**	**R**
Pseudomonas aeruginosa	**R**	**R**	**R**	**94%** (858)	**R**	**R**	**R**	**91%** (835)	**87%** (837)	**R**	**R**	**R**	**60%** (162)	**91%** (870)	**98%** (874)	**94%** (526)	**R**	**75%** (263)	**93%** (569)	**87%** (895)	**82%** (895)	**R**	**R**	**R**
Serratia marcesens	**R**	**R**	**R**	**60%** (30)	**R**	**R**	**99%** (73)	**97%** (61)	**95%** (59)		**R**	**R**	**98%** (46)	**100%** (73)	**90%** (59)	**98%** (48)	NED	NED	**98%** (57)	**99%** (73)	**99%** (73)	**100%** (73)	**5%** (31)	**R**
Haemophilus influenzae		**57%** (78)					**100%** (78)														**100%** (87)	**68%** (78)		

2016 Alaska State Antibiogram: Anchorage-Mat-Su Region

The following tables show the proportion of isolates of various bacterial species that tested susceptible to various antibiotics during 2014 and 2015. These data were aggregated from the antibiograms produced by Alaska hospitals in order to create aggregate regional resistance pattern summaries. These antibiograms can be helpful for health care providers in selecting appropriate "presumptive" antimicrobial therapy for their patients until specific individual laboratory test results are available. They can also be helpful for determining antibiotic stewardship priorities within hospitals and emerging resistance patterns in a broader service area.

- **Methodology:** Individual hospitals prepared their own facility antibiograms, which were shared with the Alaska Section of Epidemiology. Aggregated susceptibility percentages were calculated as the proportion of all tested isolates for the region that were susceptible. Values are only reported when more than one facility provided data for the given species-antibiotic combination. Intrinsic resistance is indicated with an "R", following the guidance of CLSI document M100-S24.
- **Multi-Drug Resistant Organisms of Note:**
    - Vancomycin-resistant *Staphylococcus aureus* (VRSA): no cases of VRSA have ever been reported in Alaska. VRSA is reportable to the Alaska Section of Epidemiology.
    - Carbapenem-resistant Enterobacteriaceae (CRE): there were 7 cases of CRE in Anchorage/Mat-Su residents in 2016.
- **Legend:**
    - The top value in each square is the percent of isolates of that species that tested susceptible to that antibiotic.
    - The lower value in each square indicates the number of tested isolates for that bacteria-antibiotic combination.
    - "R" indicates intrinsic resistance to that antibiotic, while "S" indicates definitional susceptibility.
    - "NED" indicates that there was Not Enough Data to report the value: either only one facility reported data for that drug-bug combination or <30 isolates were tested.
- **Limitations:** Individual facilities often use different methods to test for antimicrobial susceptibility, different methods to build their antibiograms, and different antibiotics in their pharmacies. These factors limit interpretation of these data. Additionally, antimicrobial susceptibility testing done in the laboratory does not always predict how effective that drug will be when used to treat a patient. Data are not stratified by infection site, which influences antibiotic choice and effectiveness.
- **Contributing Facilities:** Thanks to the following facilities for providing data in support of this project:
    - Alaska Native Medical Center
    - Alaska Regional Hospital
    - Providence Alaska Medical Center
    - Mat-Su Regional Medical Center

Anchorage+ Mat-Su Region data **Species**	Penicillin	Ampicillin	Oxacillin	Cefazolin	Ceftriaxone	Cefotaxime	Ciprofloxacin	Levofloxacin	Clindamycin	Erythromycin	Vancomycin	Gentamicin	Gent Syn	Trimethoprim-sulfamethoxazole	Linezolid	Tetracycline	Nitrofurantoin
Total *Staphylococcus aureus*	NED	NED	**59%** (3555)	**56%** (2128)			**63%** (788)	**63%** (788)	**85%** (3555)	**39%** (788)	**99%** (3555)	**98%** (1797)		**98%** (3555)	**100%** (2767)	**96%** (3137)	**99%** (2215)
MSSA	NED	NED	**S**	**100%** (1205)			**89%** (433)	**90%** (433)	**88%** (2104)	**63%** (433)	**100%** (2104)	**98%** (1108)		**98%** (2104)	**100%** (1671)	**96%** (1671)	**100%** (1205)
MRSA	NED	NED	**R**	NED			**31%** (355)	**31%** (355)	**81%** (1462)	**9%** (355)	**100%** (1462)	**99%** (689)		**98%** (1462)	**100%** (1107)	**96%** (1268)	**98%** (1462)
Coag-negative *Staphylococcus*	NED	NED	**46%** (264)	**37%** (74)			**55%** (74)	**55%** (74)	**53%** (264)	**35%** (74)	**100%** (264)	**83%** (220)		**58%** (264)	**100%** (190)	**92%** (224)	**100%** (127)
Enterococcus faecalis	**99%** (134)	**100%** (505)		**R**	**R**	**R**	**91%** (371)	**95%** (371)	**R**	NED	**100%** (505)	**R**	**83%** (437)	**R**	**99%** (319)	NED	**99%** (439)
Enterococcus faecium	NED	**29%** (55)		**R**	**R**	**R**	NED	NED	**R**		**53%** (55)	**R**	**80%** (55)	**R**	**98%** (55)	NED	NED
Streptococcus pneumoniae (all)								**98%** (44)	NED	**64%** (44)	**100%** (145)						
S. pneumoniae - non-CSF	**82%** (310)				**97%** (288)	**99%** (310)											
S pneumoniae - meningitis	**70%** (310)				**95%** (288)	**97%** (310)											

Anchorage+ Mat-Su Region data **Species**	Amoxicillin+ clavulanic acid	Ampicillin	Ampicillin+Sulbactam	Piperacillin+Tazobactam	Cefazolin	Cefuroxime	Ceftriaxone	Ceftazidime	Cefepime	Cefotaxime	Aztreonam	Gentamicin	Tobramycin	Amikacin	Meropenem	Ciprofloxacin	Levofloxacin	Trimeth+Sulfa	Tetracycline	Nitrofurantoin
Citrobacter freundii	**R**	**R**	**R**	**98%** (85)	**R**	**R**	**98%** (85)	**98%** (85)	**82%** (85)	NED	NED	**100%** (85)	**100%** (85)	NED	NED	**99%** (85)	**99%** (85)	**92%** (85)	NED	**97%** (77)
Enterobacter aerogenes	**R**	**R**	**R**	**87%** (78)	**R**	**R**	**87%** (78)	NED	**100%** (78)	NED	**85%** (78)	NED	**100%** (78)	**100%** (78)	**100%** (78)	**100%** (78)	**100%** (78)	**100%** (78)	NED	**22%** (78)
Enterobacter cloacae	**R**	**R**	**R**	**87%** (277)	**R**	**R**	**85%** (277)	**86%** (215)	**98%** (277)	**78%** (152)	**84%** (215)	**99%** (277)	**98%** (277)	**100%** (215)	**97%** (277)	**97%** (277)	**97%** (277)	**94%** (277)	**91%** (152)	**38%** (277)
Escherichia coli	**87%** (3349)	**55%** (5462)	**53%** (6005)	**97%** (6005)	**91%** (6005)	**83%** (6005)	**96%** (6005)	**96%** (2656)	**90%** (6005)	**68%** (3349)	**91%** (5163)	**93%** (6005)	**94%** (6005)	**100%** (4620)	**100%** (5462)	**84%** (6005)	**84%** (6005)	**82%** (6005)	**82%** (3349)	**98%** (5958)
Klebsiella oxytoca	NED		**54%** (169)	**91%** (169)	**61%** (119)	**84%** (169)	**95%** (169)	**98%** (169)	**98%** (169)	NED	**86%** (169)	**98%** (169)	**97%** (169)	NED	**100%** (150)	**96%** (169)	**96%** (169)	**92%** (169)	NED	**88%** (155)
Klebsiella pneumoniae	**98%** (349)	**R**	**89%** (823)	**97%** (823)	**93%** (823)	**91%** (823)	**98%** (823)	**49%** (698)	**97%** (803)	**98%** (349)	**99%** (699)	**99%** (823)	**98%** (823)	**99%** (603)	**99%** (717)	**96%** (823)	**96%** (823)	**94%** (823)	**87%** (349)	**49%** (791)
Proteus mirabilis	**98%** (133)	**82%** (271)	**89%** (311)	**99%** (214)	**91%** (311)	**94%** (311)	**98%** (311)	**98%** (275)	**98%** (311)	**99%** (133)	**99%** (275)	**95%** (311)	**95%** (311)	**100%** (235)	**100%** (271)	**89%** (311)	**89%** (311)	**89%** (311)	**R**	**R**
Pseudomonas aeruginosa	**R**	**R**	**R**	**94%** (566)	**R**	**R**	**R**	**91%** (506)	**85%** (566)	**R**	NED	**91%** (566)	**98%** (566)	**93%** (433)	**93%** (493)	**89%** (566)	**83%** (566)	**R**	**R**	**R**

2016 Alaska State Antibiogram: Gulf Coast Region

The following tables show the proportion of isolates of various bacterial species that tested susceptible to various antibiotics during 2014 and 2015. These data were aggregated from the antibiograms produced by Alaska hospitals in order to create aggregate regional resistance pattern summaries. These antibiograms can be helpful for health care providers in selecting appropriate "presumptive" antimicrobial therapy for their patients until specific individual laboratory test results are available. They can also be helpful for determining antibiotic stewardship priorities within hospitals and emerging resistance patterns in a broader service area.

- **Methodology:** Individual hospitals prepared their own facility antibiograms, which were shared with the Alaska Section of Epidemiology. Aggregated susceptibility percentages were calculated as the proportion of all tested isolates for the region that were susceptible. Values are only reported when more than one facility provided data for the given species-antibiotic combination. Intrinsic resistance is indicated with an "R", following the guidance of CLSI document M100-S24.
- **Multi-Drug Resistant Organisms of Note:**
  - Vancomycin-resistant *Staphylococcus aureus* (VRSA): no cases of VRSA have ever been reported in Alaska. VRSA is reportable to the Alaska Section of Epidemiology.
  - Carbapenem-resistant Enterobacteriaceae (CRE): there was 1 case of CRE in a Gulf Coast resident in 2016.
- **Legend:**
  - The top value in each square is the percent of isolates of that species that tested susceptible to that antibiotic.
  - The lower value in each square indicates the number of tested isolates for that bacteria-antibiotic combination.
  - "R" indicates intrinsic resistance to that antibiotic, while "S" indicates definitional susceptibility.
  - "NED" indicates that there was Not Enough Data to report the value: either only one facility reported data for that drug-bug combination or <30 isolates were tested.
- **Limitations:** Individual facilities often use different methods to test for antimicrobial susceptibility, different methods to build their antibiograms, and different antibiotics in their pharmacies. These factors limit interpretation of these data. Additionally, antimicrobial susceptibility testing done in the laboratory does not always predict how effective that drug will be when used to treat a patient. Data are not stratified by infection site, which influences antibiotic choice and effectiveness.
- **Contributing Facilities:** Thanks to the following facilities for providing data in support of this project:
  - Central Peninsula Hospital
  - South Peninsula Hospital
  - Providence Valdez Medical Center

Gulf Coast Region data **Species**	Penicillin	Ampicillin	Oxacillin	Ampicillin-sulbactam	Amoxicillin-clavanulate	Ceftriaxone	Ciprofloxacin	Levofloxacin	Daptomycin	Clindamycin	Erythromycin	Vancomycin	Gentamicin	Trimethoprim-sulfamethoxazole	Linezolid	Tetracycline	Nitrofurantoin	Rifampin
Total *Staphylococcus aureus*	**10%** (547)	**6%** (182)	**63%** (547)	**60%** (182)	**62%** (182)	**65%** (386)	**53%** (547)	**54%** (547)	**99%** (386)	**81%** (474)	**39%** (495)	**99%** (547)	**99%** (182)	**96%** (547)	**99%** (547)	**95%** (547)	**99%** (142)	**99%** (526)
MSSA	**14%** (322)	NED	**S**	NED	NED	NED	**75%** (322)	**77%** (322)	NED	**83%** (292)	**59%** (292)	**98%** (322)	NED	**96%** (322)	**99%** (322)	**95%** (322)	NED	**99%** (322)
MRSA	**0%** (217)	**0%** (82)	**R**	**4%** (82)	**1%** (82)	**3%** (148)	**15%** (217)	**17%** (217)	**99%** (148)	**78%** (195)	**5%** (195)	**99%** (217)	**98%** (82)	**96%** (217)	**100%** (217)	**94%** (217)	**100%** (104)	**100%** (204)
Staphylocccus epidermidis	**12%** (168)		**47%** (168)	**52%** (33)	**47%** (33)	**47%** (138)	**64%** (168)	**75%** (138)	**99%** (138)	**55%** (122)	**31%** (122)	**98%** (168)	**85%** (33)	**58%** (168)	**99%** (168)	**93%** (168)	**99%** (79)	**99%** (165)
Enterococcus faecalis	**99%** (234)	**99%** (234)				**R**	**78%** (234)	**84%** (234)	NED	**R**	NED	**99%** (234)	**R**	**R**	**94%** (234)	**23%** (234)	**100%** (207)	NED
Group B *Streptococcus*	**100%** (29)	**S**						NED		**62%** (29)	**52%** (29)	**100%** (29)			NED	NED		
Streptococcus pneumoniae	**90%** (31)							NED		NED	NED	NED		NED		NED		

Gulf Coast Region data	Amoxicillin+ clavanulanic acid	Ampicillin	Ampicillin+Sulbactam	Piperacillin+Tazobactam	Cefazolin	Cefuroxime	Ceftriaxone	Ceftazidime	Cefepime	Gentamicin	Tobramycin	Amikacin	Imipenem	Ciprofloxacin	Levofloxacin	Trimeth+Sulfa	Tetracycline	Nitrofurantoin
Escherichia coli	**90%** (1051)	**60%** (1051)	**64%** (1051)	**98%** (1051)	**92%** (1051)	**96%** (982)	**99%** (1051)	**99%** (1051)	**100%** (303)	**92%** (1051)	**94%** (1051)	**99%** (817)	**99%** (817)	**85%** (1051)	**85%** (1051)	**77%** (1051)	**81%** (303)	**97%** (972)
Klebsiella pneumoniae	**99%** (221)	**R**	**88%** (221)	**98%** (221)	**97%** (221)	**99%** (217)	**100%** (221)	**100%** (221)	**100%** (51)	**99%** (221)	**99%** (221)	**100%** (174)	**100%** (174)	**98%** (221)	**99%** (221)		**92%** (51)	**46%** (201)
Proteus mirabilis	**93%** (70)	**84%** (70)	**86%** (70)	**100%** (70)	**89%** (70)	**98%** (66)	**97%** (70)	**100%** (70)	NED	**89%** (70)	**89%** (70)	**98%** (46)	**93%** (46)	**80%** (70)	**86%** (70)	**90%** (70)	**R**	**R**
Pseudomonas aeruginosa	**R**	**R**	**R**	**92%** (88)	**R**	**R**	**R**	**86%** (88)	**80%** (88)	**86%** (88)	**100%** (88)	**99%** (73)	**99%** (73)	**75%** (88)	**74%** (88)	**R**	**R**	**R**

2016 Alaska State Antibiogram: Northern Region

The following tables show the proportion of isolates of various bacterial species that tested susceptible to various antibiotics during 2014 and 2015. These data were aggregated from the antibiograms produced by Alaska hospitals in order to create aggregate regional resistance pattern summaries. These antibiograms can be helpful for health care providers in selecting appropriate "presumptive" antimicrobial therapy for their patients until specific individual laboratory test results are available. They can also be helpful for determining antibiotic stewardship priorities within hospitals and emerging resistance patterns in a broader service area.

- **Methodology:** Individual hospitals prepared their own facility antibiograms, which were shared with the Alaska Section of Epidemiology. Aggregated susceptibility percentages were calculated as the proportion of all tested isolates for the region that were susceptible. Values are only reported when more than one facility provided data for the given species-antibiotic combination. Intrinsic resistance is indicated with an "R", following the guidance of CLSI document M100-S24.
- **Multi-Drug Resistant Organisms of Note:**
    - Vancomycin-resistant *Staphylococcus aureus* (VRSA): no cases of VRSA have ever been reported in Alaska. VRSA is reportable to the Alaska Section of Epidemiology.
    - Carbapenem-resistant Enterobacteriaceae (CRE): there were no cases of CRE reported in the Northern Region in 2016
- **Legend:**
    - The top value in each square is the percent of isolates of that species that tested susceptible to that antibiotic.
    - The lower value in each square indicates the number of tested isolates for that bacteria-antibiotic combination.
    - "R" indicates intrinsic resistance to that antibiotic, while "S" indicates definitional susceptibility.
    - "NED" indicates that there was Not Enough Data to report the value: either only one facility reported data for that drug-bug combination or <30 isolates were tested.
- **Limitations:** Individual facilities often use different methods to test for antimicrobial susceptibility, different methods to build their antibiograms, and different antibiotics in their pharmacies. These factors limit interpretation of these data. Additionally, antimicrobial susceptibility testing done in the laboratory does not always predict how effective that drug will be when used to treat a patient. Data are not stratified by infection site, which influences antibiotic choice and effectiveness.
- **Contributing Facilities:** Thanks to the following facilities for providing data in support of this project:
    - Maniilaq Health Center
    - Norton Sound Health Center
    - Samuel Simmonds Memorial Hospital

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Northern Region data

Species	Amoxicillin-clavulanic acid	Ampicillin	Ampicillin-sulbactam	Oxacillin	Ciprofloxacin	Levofloxacin	Clindamycin	Erythromycin	Vancomycin	Gent Syn	Trimethoprim-sulfamethoxazole	Linezolid	Tetracycline	Nitrofurantoin	Rifampin
Total *Staphylococcus aureus*			NED	**69%** (495)	**69%** (495)	**68%** (495)	**79%** (491)	**54%** (216)	**95%** (495)		**99%** (495)	**99%** (495)	**97%** (495)	**100%** (381)	**99%** (393)
MSSA	**99%** (152)		**99%** (152)	**S**	**87%** (152)	**86%** (152)	**77%** (150)	**70%** (150)	**87%** (152)		**97%** (152)	NED	**95%** (152)	**100%** (69)	NED
MRSA	NED	NED	NED	**R**		NED	**61%** (67)	NED	NED		**100%** (69)	**100%** (69)	**99%** (69)	**100%** (38)	
Coag negative Staphylococcus		NED	NED	**45%** (95)	**84%** (95)	**84%** (95)	**60%** (59)	NED	**97%** (95)		**83%** (95)	**98%** (95)	**93%** (95)	**95%** (65)	**98%** (95)
Enterococcus faecalis		**99%** (97)			**96%** (97)	**96%** (97)	**R**		**100%** (97)	**78%** (50)	**R**	**99%** (97)	**27%** (97)	**100%** (94)	NED

Northern Region data

Species	Amoxicillin+ clavulanic acid	Ampicillin	Ampicillin+Sulbactam	Piperacillin+Tazobactam	Ticaricillin-clavulanic acid	Cefazolin	Cefuroxime	Ceftriaxone	Ceftazidime	Cefepime	Cefotaxime	Cefotatan	Cefoxitin	Gentamicin	Tobramycin	Ertapenem	Imipenem	Ciprofloxacin	Levofloxacin	Trimeth+Sulfa	Tetracycline	Nitrofurantoin
Escherichia coli	**85%** (982)	**54%** (982)	**61%** (982)	**98%** (982)	**96%** (543)	**91%** (982)	**100%** (804)	**97%** (982)	**97%** (982)	**97%** (982)	**86%** (543)	**100%** (543)	**98%** (543)	**93%** (981)	**95%** (982)	**92%** (543)	**100%** (804)	**85%** (982)	**85%** (982)	**76%** (982)	**84%** (543)	**98%** (973)
Klebsiella pneumoniae	**97%** (103)	**R**	**89%** (103)	**100%** (103)	NED	**98%** (103)	**100%** (67)	**100%** (103)	**99%** (67)	**100%** (103)	**98%** (63)	**100%** (63)	**98%** (63)	**99%** (103)	**98%** (103)	NED	**100%** (67)	**97%** (103)	**96%** (103)	**99%** (103)	NED	**62%** (98)
Proteus mirabilis	**100%** (45)	**91%** (45)	**96%** (45)	**100%** (45)	NED	**98%** (45)	**94%** (35)	**100%** (45)	**100%** (45)	**100%** (45)	NED	**89%** (45)	**89%** (45)	**89%** (45)	**89%** (45)	NED	**100%** (35)	**90%** (45)	**93%** (45)	**89%** (45)		**R**
Pseudomonas aeruginosa	**R**	**R**	**R**	**98%** (47)			**90%** (40)	**R**	**94%** (47)	**91%** (47)	NED	NED	**94%** (47)	NED	**94%** (47)		NED	**87%** (47)	**85%** (47)	**R**		**R**

2016 Alaska State Antibiogram: Southeast Region

The following tables show the proportion of isolates of various bacterial species that tested susceptible to various antibiotics during 2014 and 2015. These data were aggregated from the antibiograms produced by Alaska hospitals in order to create aggregate regional resistance pattern summaries. These antibiograms can be helpful for health care providers in selecting appropriate "presumptive" antimicrobial therapy for their patients until specific individual laboratory test results are available. They can also be helpful for determining antibiotic stewardship priorities within hospitals and emerging resistance patterns in a broader service area.

- **Methodology:** Individual hospitals prepared their own facility antibiograms, which were shared with the Alaska Section of Epidemiology. Aggregated susceptibility percentages were calculated as the proportion of all tested isolates for the region that were susceptible. Values are only reported when more than one facility provided data for the given species-antibiotic combination. Intrinsic resistance is indicated with an "R", following the guidance of CLSI document M100-S24.
- **Multi-Drug Resistant Organisms of Note:**
  - Vancomycin-resistant *Staphylococcus aureus* (VRSA): no cases of VRSA have ever been reported in Alaska. VRSA is reportable to the Alaska Section of Epidemiology.
  - Carbapenem-resistant Enterobacteriaceae (CRE): there was 1 case of CRE reported in a Southeast resident in 2016.
- **Legend:**
  - The top value in each square is the percent of isolates of that species that tested susceptible to that antibiotic.
  - The lower value in each square indicates the number of tested isolates for that bacteria-antibiotic combination.
  - "R" indicates intrinsic resistance to that antibiotic, while "S" indicates definitional susceptibility.
  - "NED" indicates that there was Not Enough Data to report the value: either only one facility reported data for that drug-bug combination or <30 isolates were tested.
- **Limitations:** Individual facilities often use different methods to test for antimicrobial susceptibility, different methods to build their antibiograms, and different antibiotics in their pharmacies. These factors limit interpretation of these data. Additionally, antimicrobial susceptibility testing done in the laboratory does not always predict how effective that drug will be when used to treat a patient. Data are not stratified by infection site, which influences antibiotic choice and effectiveness.
- **Contributing Facilities:** Thanks to the following facilities for providing data in support of this project:
  - Bartlett Regional Hospital
  - Peacehealth Ketchikan Medical Center
  - SEARHC
  - Petersburg Medical Center
  - Sitka Community Hospital
  - Wrangell Medical Center

Southeast Region data

Species	Penicillin	Ampicillin	Oxacillin	Ampicillin-sulbactam	Amoxicillin-clavanulate	Ceftriaxone	Ciprofloxacin	Levofloxacin	Moxifloxacin	Daptomycin	Clindamycin	Erythromycin	Vancomycin	Gentamicin	Gent Syn	Trimethoprim-sulfamethoxazole	Linezolid	Tetracycline	Nitrofurantoin	Quinupristin-dalfopristin	Rifampin	Strep syn
Total *Staphylococcus aureus*	**10%** (606)	**0%** (101)	**57%** (908)	**50%** (104)	**52%** (104)	**51%** (103)	**63%** (648)	**63%** (648)	**70%** (365)	**100%** (103)	**85%** (906)	**47%** (906)	**100%** (866)	**99%** (386)		**98%** (866)	**99%** (363)	**97%** (826)	**99%** (811)	**99%** (80)	**99%** (545)	
MSSA	**11%** (231)	**0%** (51)	**S**	**96%** (54)	**100%** (54)	**100%** (53)	**87%** (218)	**85%** (218)		**100%** (53)	**90%** (395)	**72%** (395)	**100%** (377)	**100%** (83)		**98%** (377)	**99%** (231)	**71%** (347)	**99%** (335)	**100%** (53)	**99%** (231)	
MRSA	**0%** (50)	**0%** (50)	**R**	**0%** (50)	**0%** (50)	**0%** (50)	**28%** (187)	**29%** (187)		**100%** (50)	**72%** (186)	**13%** (186)	**100%** (269)	**98%** (60)		**99%** (246)	**100%** (132)	**98%** (269)	**98%** (233)	**98%** (50)	**100%** (132)	
Coag-negative *Staphylocccus*	**19%** (63)		**61%** (98)				**72%** (74)	**72%** (74)	**73%** (52)		**64%** (81)	**39%** (82)	**99%** (98)	**96%** (53)		**68%** (91)	**100%** (58)	**80%** (98)	**100%** (67)		**98%** (64)	
Enterococcus faecalis	**100%** (127)	**100%** (141)					**92%** (137)	**95%** (123)		**100%** (40)		**6%** (114)	**100%** (141)		**88%** (118)		**100%** (113)	**21%** (127)	**100%** (127)		**70%** (40)	**93%** (105)

Southeast Region data	Amoxicillin+ clav	Ampicillin	Ampicillin-sulbactam	Piperacillin-tazobactam	Cefazolin	Cefuroxime	Ceftriaxone	Ceftazidime	Cefepime	Gentamicin	Tobramycin	Amikacin	Imipenem	Ciprofloxacin	Levofloxacin	Trimeth + sulfa	Tetracycline	Nitrofurantoin
Escherichia coli	**90%** (1051)	**60%** (1051)	**64%** (1051)	**98%** (1051)	**92%** (1051)	**96%** (982)	**99%** (1051)	**99%** (1051)	**100%** (303)	**92%** (1051)	**94%** (1051)	**99%** (817)	**99%** (817)	**85%** (1051)	**85%** (1051)	**77%** (1051)	**81%** (303)	**97%** (972)
Klebsiella pneumoniae	**99%** (221)	**R**	**88%** (221)	**98%** (221)	**97%** (221)	**99%** (217)	**100%** (221)	**100%** (221)	**100%** (51)	**99%** (221)	**99%** (221)	**100%** (174)	**100%** (174)	**98%** (221)	**99%** (221)	**94%** (221)	**92%** (51)	**46%** (201)
Proteus mirabilis	**93%** (70)	**84%** (70)	**86%** (70)	**100%** (70)	**89%** (70)	**98%** (66)	**97%** (70)	**100%** (70)	**NED**	**89%** (70)	**89%** (70)	**98%** (46)	**93%** (46)	**80%** (70)	**86%** (70)	**90%** (70)	**R**	**R**
Pseudomonas aeruginosa	**R**	**R**	**R**	**92%** (88)	**R**	**R**	**R**	**86%** (88)	**80%** (88)	**86%** (88)	**100%** (88)	**99%** (73)	**99%** (73)	**75%** (88)	**74%** (88)	**R**	**R**	**R**

2016 Alaska State Antibiogram: Southwest Region

The following tables show the proportion of isolates of various bacterial species that tested susceptible to various antibiotics during 2014 and 2015. These data were aggregated from the antibiograms produced by Alaska hospitals in order to create aggregate regional resistance pattern summaries. These antibiograms can be helpful for health care providers in selecting appropriate "presumptive" antimicrobial therapy for their patients until specific individual laboratory test results are available. They can also be helpful for determining antibiotic stewardship priorities within hospitals and emerging resistance patterns in a broader service area.

- **Methodology:** Individual hospitals prepared their own facility antibiograms, which were shared with the Alaska Section of Epidemiology. Aggregated susceptibility percentages were calculated as the proportion of all tested isolates for the region that were susceptible. Values are only reported when more than one facility provided data for the given species-antibiotic combination. Intrinsic resistance is indicated with an "R", following the guidance of CLSI document M100-S24.
- **Multi-Drug Resistant Organisms of Note:**
    - Vancomycin-resistant *Staphylococcus aureus* (VRSA): no cases of VRSA have ever been reported in Alaska. VRSA is reportable to the Alaska Section of Epidemiology.
    - Carbapenem-resistant Enterobacteriaceae (CRE): there were no cases of CRE reported in Southwest residents in 2016.
- **Legend:**
    - The top value in each square is the percent of isolates of that species that tested susceptible to that antibiotic.
    - The lower value in each square indicates the number of tested isolates for that bacteria-antibiotic combination.
    - "R" indicates intrinsic resistance to that antibiotic, while "S" indicates definitional susceptibility.
    - "NED" indicates that there was Not Enough Data to report the value: either only one facility reported data for that drug-bug combination or <30 isolates were tested.
- **Limitations:** Individual facilities often use different methods to test for antimicrobial susceptibility, different methods to build their antibiograms, and different antibiotics in their pharmacies. These factors limit interpretation of these data. Additionally, antimicrobial susceptibility testing done in the laboratory does not always predict how effective that drug will be when used to treat a patient. Data are not stratified by infection site, which influences antibiotic choice and effectiveness.
- **Contributing Facilities:** Thanks to the following facilities for providing data in support of this project:
    - Yukon-Kuskokwim Health Center
    - Bristol Bay Area Health Center

Southwest Region data

Species	Penicillin	Ampicillin	Oxacillin	Levofloxacin	Clindamycin	Erythromycin	Vancomycin	Trimethoprim-sulfamethoxazole	Tetracycline	Nitrofurantoin
Total *Staphylococcus aureus*	**10%** (738)	NED	**57%** (738)	**66%** (738)	**97%** (725)	**47%** (725)	**99%** (738)	**99%** (738)	**97%** (738)	NED
MSSA	**17%** (416)	NED	**S**	**85%** (416)	**96%** (406)	**69%** (406)	**99%** (416)	**99%** (416)	**99%** (416)	NED
MRSA	**0%** (322)	NED	**R**	**41%** (322)	**98%** (319)	**19%** (319)	**99%** (322)	**100%** (322)	**94%** (322)	NED
Coag-negative *Staphylococcus*	**17%** (294)		**50%** (294)	**90%** (294)	**75%** (157)	**38%** (157)	**98%** (294)	**79%** (292)	**91%** (294)	**95%** (137)
Enterococcus faecalis	**100%** (56)	**100%** (56)		**96%** (56)		**NED**	**98%** (56)		**36%** (56)	**98%** (50)

Southwest Region data **Species**	Amoxicillin+ clavulanic acid	Ampicillin	Piperacillin+Tazobactam	Cefazolin	Ceftriaxone	Gentamicin	Ciprofloxacin	Levofloxacin	Trimeth+Sulfa	Tetracycline	Nitrofurantoin
Enterobacter cloacae	**0%** (33)	**0%** (33)	**94%** (33)	**0%** (33)	**91%** (33)	**100%** (33)	**100%** (33)	**100%** (33)	**97%** (33)	**91%** (33)	NED
Escherichia coli	**85%** (1290)	**47%** (1290)	**99%** (1290)	**91%** (1290)	**97%** (1290)	**92%** (1290)	**84%** (1290)	**84%** (1290)	**73%** (1290)	**78%** (1290)	**99%** (1244)
Klebsiella pneumoniae	**94%** (72)	**0%** (72)	**99%** (72)	**97%** (72)	**99%** (72)	**100%** (72)	**96%** (72)	**99%** (72)	**96%** (72)	**89%** (72)	**63%** (56)
Proteus mirabilis	**98%** (56)	**95%** (56)	**100%** (56)	**98%** (56)	**100%** (56)	NED	**100%** (56)	**100%** (56)	**98%** (56)	**0%** (56)	**0%** (56)