Bureau of Infectious Disease and Laboratory Sciences

2015 Statewide Antibiogram Report

**Bureau of Infectious Disease and Laboratory Sciences**

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In 2015, 55 (79%) acute-care hospitals reported their antibiogram data and are included in this statewide report. Each page of this eleven page report displays the average percent susceptibility (red dots) and standard deviation (red bars) of a bacterial pathogen to relevant antibiotics. This data is representative of antibiotic susceptibility data for 232,748 inpatient and outpatient bacterial infections from reporting Massachusetts acute-care hospitals, and does not represent the full extent of antibiotic resistant infections in Massachusetts.

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.

STATEWIDE

100

96

93

98

92

90

95

91

86

84

85

81

79

80

80

73

45

23

90

80

70

60

50

% Susceptible

40

30

20

10

#### 0

AMIKACIN

AMP/SUL

CEFEPIME

CEFOTAXIME

CEFTAZIDIME

CEFTRIAXONE

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

MEROPENEM

PIP/TAZO

TETRACYCLINE

TIC/CLAV

TIGECYCLINE

TOBRAMYCIN

#### Antibiotic

TRIMETHOPRIM/SULFAMETHOXAZOLE

Overall State Mean (with 1 SD)

STATEWIDE

2

% Susceptible

100

96

91

91

88 88

86

84

82

71

71

67

90

80

70

60

50

40

30

20

10

#### 0

AMIKACIN

AZTREONAM

CEFEPIME

CEFTAZIDIME

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

MEROPENEM

PIP/TAZO

TOBRAMYCIN

Antibiotic

Overall State Mean (with 1 SD)

### STATEWIDE

#### 100

99

99

98

98

90

91

98

90

89

96

90

84

74

2

1

90

80

70

60

50

% Susceptible

40

30

20

10

#### 0

AMIKACIN

AMOX/CLAV

AZTREONAM

CEFEPIME

CEFOTAXIME

CEFOXITIN

CEFTRIAXONE

CEFUROXIME

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

PIP/TAZO

TIC/CLAV

#### Antibiotic

TRIMETHOPRIM/SULFAMETHOXAZOLE

Overall State Mean (with 1 SD)

# Susceptibility Rates - 2015

### STATEWIDE

#### 100

100

94

94

96 96 96

88

83

84

79

68

61

32

1

1

90

80

70

60

50

% Susceptible

40

30

20

10

#### 0

AMIKACIN

AMOX/CLAV

AZTREONAM

CEFEPIME

CEFOTAXIME

CEFOXITIN

CEFTRIAXONE

CEFUROXIME

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

PIP/TAZO

TIC/CLAV

#### Antibiotic

TRIMETHOPRIM/SULFAMETHOXAZOLE

Overall State Mean (with 1 SD)

Susceptibility Rates - 2015

STATEWIDE

100

100

94

99

100

91

90

91

91

87

83

84

77

76

75

62

53

32

90

80

70

60

50

% Susceptible

40

30

20

10

#### 0

AMIKACIN

AMOX/CLAV

AMP/SUL

AMPICILLIN

CEFEPIME

CEFOTAXIME

CEFOTETAN

CEFOXITIN

CEFTRIAXONE

CEFUROXIME

CEPHALOTHIN

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

TIC/CLAV

#### Antibiotic

TRIMETHOPRIM/SULFAMETHOXAZOLE

Overall State Mean (with 1 SD)

Susceptibility Rates - 2015

STATEWIDE

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AMIKACIN

AMOX/CLAV

AMP/SUL

CEFEPIME

CEFOTAXIME

CEFOTETAN

CEFOXITIN

CEFTRIAXONE

CEFUROXIME

CEPHALOTHIN

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

TIC/CLAV

#### Antibiotic

TRIMETHOPRIM/SULFAMETHOXAZOLE

Overall State Mean (with 1 SD)

STATEWIDE

Susceptibility Rates - 2015

TRIMETHOPRIM/SULFAMETHOXAZOLE

#### 100

93

86

49

41

90

80

70

60

50

% Susceptible

40

30

20

10

#### 0

CEFTAZIDIME

LEVOFLOXACIN

TIC/CLAV

TRIMETHOPRIM/SULFAMETHOXAZOLE

# Susceptibility Rates - 2015

### STATEWIDE

#### 100

100

100

96

97

98

99

99

95

96

96

27

1

0

90

80

70

60

50

% Susceptible

40

30

20

10

#### 0

AMIKACIN

AMOX/CLAV

CEFEPIME

CEFOTAXIME

CEFOXITIN

CEFTRIAXONE

CEFUROXIME

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

TIC/CLAV

TRIMETHOPRIM/SULFAMETHOXAZOLE

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AMIKACIN

AMOX/CLAV

AMP/SUL

CEFEPIME

CEFOTAXIME

CEFOTETAN

CEFOXITIN

CEFTRIAXONE

CEFUROXIME

CEPHALOTHIN

CIPROFLOXACIN

GENTAMICIN

IMIPENEM

LEVOFLOXACIN

TIC/CLAV

% Susceptible

Susceptibility Rates - 2015

STATEWIDE

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98

70

70

62

54

43

90

80

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60

50

40

30

20

10

#### 0

### STATEWIDE

Susceptibility Rates - 2015

% Susceptible

100

98

100

100

91

92

91

80

81

76

73

74

74

73

59

90

80

70

60

50

40

30

20

10

#### 0

AMOX/CLAV

CLINDAMYCIN

ERYTHROMYCIN

LEVOFLOXACIN

LINEZOLID

TETRACYCLINE

VANCOMYCIN

#### Antibiotic

CEFTRIAXONE <=0.5 ug/ml

CEFTRIAXONE <=1 ug/ml

CEFOTAXIME <=0.5 ug/ml

CEFOTAXIME <=1 ug/ml

PENICILLIN <=0.06 ug/ml

PENICILLIN <=2 ug/ml

TRIMETHOPRIM/SULFAMETHOXAZOLE

Overall State Mean (with 1 SD)

NOTE: Data from facilities may or may not include results on duplicate isolates.

Average percent susceptibilities for ceftriaxone, cefotaxime, and penicillin are reported for different MIC breakpoints according to recommendations made by the Clinical and Laboratory Standards Institute (M100-S26, 2015).

**Antibiotic susceptibility testing guidelines**

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Antibiotic susceptibility testing is conducted in microbiology laboratories. Microbiologists utilize standardized guidelines, such as those distributed by Clinical and Laboratory Standards Institute (CLSI)\* to determine whether a bacterial isolate is susceptible, intermediate, or resistant to an antibiotic. These guidelines are typically updated on an annual basis. The extent to which clinical microbiology laboratories across Massachusetts follow the most recently updated guidelines is not well established.

# \*Clinical and Laboratory Standards Institute (CLSI). *Performance Standards for Antimicrobial Susceptibility Testing*, 26th Edition. CLSI Supplement M100-S6. Published December 22, 2015.