

Report Immediately by Telephone

- Anthrax (*Bacillus anthracis*) a
- Botulism (*Clostridium botulinum*)
- Brucellosis (*Brucella* spp.) a
- Cholera (*Vibrio cholerae*) a
- Diphtheria (*Corynebacterium diphtheriae*) a
- Hemolytic uremic syndrome a
- Measles (rubeola) a
- Meningococcal disease (*Neisseria meningitidis*)
- (all invasive disease) a, b
- Orthopox virus a
- Plague (*Yersinia pestis*) a
- Polio myelitis a
- Q fever (*Coxiella burnetii*) a
- Rabies (animal and human cases and suspected cases)
- Rubella and congenital rubella syndrome a
- Severe Acute Respiratory Syndrome (SARS). 2. Cases of health care workers hospitalized for pneumonia or acute respiratory distress syndrome.) a
- Smallpox (variola) a
- Tularemia (*Francisella tularensis*) a
- Unusual or increased case incidence of any suspect infectious illness a

- a Submission of clinical materials required. If a rapid, non-culture assay is used for diagnosis, we request that positives be cultured and isolates submitted. If this is not possible, send specimens, enrichment broth, or other appropriate material. Call the MDH Public Health Laboratory at 651-201-5073 with questions regarding appropriate specimen types.
- b Isolates are considered to be from invasive disease if they are isolated from a normally sterile site. e.g., blood, CSF, joint fluid, etc.
- c Report on separate Sexually Transmitted Disease Report Card.
- d Report on separate HIV Report Card.
- e For criteria for reporting laboratory confirmed cases of influenza, see www.health.state.mn.us/divs/depd/topics/reportable/index.html.

Report Within One Working Day

- Amebiasis (*Entamoeba histolytica/dispar*)
- Anaplasmosis (*Anaplasma phagocytophilum*)
- Arboviral disease (including, but not limited to, LaCrosse encephalitis, eastern equine encephalitis, western equine encephalitis, St. Louis encephalitis, and West Nile virus)
- Babesiosis (*Babesia* spp.)
- Blastomycosis (*Blastomyces dermatitidis*)
- Campylobacteriosis (*Campylobacter* spp.) a
- Cat scratch disease (infection caused by *Bartonella* spp.)
- Chancroid (*Haemophilus ducreyi*) c
- Chlamydia trachomatis* infection c
- Coccidioidomycosis
- Cronobacter (Enterobacter) sakazakii* (infants under 1 year of age) a
- Cryptosporidiosis (*Cryptosporidium* spp.) a
- Cyclosporiasis (*Cyclospora* spp.) a
- Dengue virus infection
- Diphyllobothrium latum* infection
- Ehrlichiosis (*Ehrlichia* spp.)
- Encephalitis (caused by viral agents)
- Enteric *E. coli* infection
- (*E. coli* O157:H7, other enterohemorrhagic [Shiga toxin-producing] *E. coli*, enteropathogenic *E. coli*, enteroinvasive *E. coli*, enterotoxigenic *E. coli*) a
- Giardiasis (*Giardia lamblia*)
- Gonorrhea (*Neisseria gonorrhoeae*) c
- Haemophilus influenzae* disease (all invasive disease) a
- Hantavirus infection
- Hepatitis (all primary viral types including A, B, C, D, and E)
- Histoplasmosis (*Histoplasma capsulatum*)
- Human immunodeficiency virus (HIV) infection, including Acquired Immunodeficiency Syndrome (AIDS) a, d
- Influenza (unusual case incidence, critical illness, or laboratory confirmed cases) a, e
- Kawasaki disease
- Kingella* spp. (invasive only) a, b
- Legionellosis (*Legionella* spp.) a
- Leprosy (Hansen's disease) (*Mycobacterium leprae*)
- Leptospirosis (*Leptospira interrogans*)
- Listeriosis (Listeria monocytogenes)* a
- Lyme disease (*Borrelia burgdorferi*)
- Malaria (*Plasmodium* spp.)
- Meningitis (caused by viral agents)
- Mumps
- Neonatal sepsis, less than 7 days after birth (bacteria isolated from a sterile site, excluding coagulase-negative *Staphylococcus*) a, b
- Pertussis (*Bordetella pertussis*) a
- Psittacosis (*Chlamydophila psittaci*)
- Retrovirus infection
- Reye syndrome
- Rheumatic fever (cases meeting the Jones Criteria only)
- Rocky Mountain spotted fever (*Rickettsia rickettsii*, *R. canadensis*)
- Salmonellosis, including typhoid (*Salmonella* spp.) a
- Shigellosis (*Shigella* spp.) a
- Staphylococcus aureus* (vancomycin-intermediate *S. aureus* [VISA], vancomycin-resistant *S. aureus* [VRSA], and death or critical illness due to community-associated *S. aureus* in a previously healthy individual) a
- Streptococcal disease (all invasive disease caused by Groups A and B streptococci and *S. pneumoniae*) a, b
- Syphilis (*Treponema pallidum*) c
- Tetanus (*Clostridium tetani*)
- Toxic shock syndrome a
- Toxoplasmosis (*Toxoplasma gondii*)
- Transmissible spongiform encephalopathy
- Trichinosis (*Trichinella spiralis*)
- Tuberculosis (*Mycobacterium tuberculosis* complex) (Pulmonary or extrapulmonary sites of disease, including laboratory confirmed or clinically diagnosed disease, are reportable. Latent tuberculosis infection is not reportable.) a
- Typhus (*Rickettsia* spp.)
- Unexplained deaths and unexplained critical illness (possibly due to infectious cause) a
- Varicella-zoster disease (1. Primary [chickenpox]: unusual case incidence, critical illness, or laboratory-confirmed cases. 2. Recurrent [shingles]: unusual case incidence or critical illness.) a
- Yersinia* spp. a
- Yellow fever
- Yersinia*, enteric (*Yersinia* spp.) a
- Carbapenem-resistant Enterobacteriaceae (CRE), Acinetobacter spp. (CRA) and Pseudomonas aeruginosa (CR-PA) a

Sentinel Surveillance (at sites designated by the Commissioner)

- Staphylococcus aureus* (invasive only) a, b
- Clostridium difficile* a



To Report a Case:

Fill out a Minnesota Department of Health case report form and mail to the above address. For diseases that require immediate reporting, or for questions about reporting, call the Acute Disease Investigation and Control Section at: 651-201-5414 or 1-877-676-5414 or fax form to 651-201-5743.

To Send an Isolate to MDH:

If you are using a courier, use transport packaging appropriate for the specific courier and send to: 601 North Robert Street, St. Paul, MN 55155. To request packaging, or for other assistance, call the Public Health Laboratory Specimen Handling Unit at: 651-201-4953.

The MDH Antibiogram is available on the MDH web site (<http://www.health.state.mn.us>).

Laminated copies can be ordered from: Antibiogram, Minnesota Department of Health, Acute Disease Investigation and Control Section, 625 North Robert Street, PO Box 64975, St. Paul, MN 55164-0975.

Antimicrobial Susceptibilities
of Selected Pathogens, 2015

		<i>Campylobacter</i> spp. ¹	<i>Salmonella enterica</i> (non-typhoidal) ^{2†}	<i>Shigella</i> spp. ^{3‡}	<i>Neisseria gonorrhoeae</i> ⁴	<i>Neisseria meningitidis</i> ^{5††}	Group A <i>Streptococcus</i> ^{6††}	Group B <i>Streptococcus</i> ^{7††}	<i>Streptococcus pneumoniae</i> ^{8††}	<i>Mycobacterium tuberculosis</i> complex ^{10*}	Healthcare-associated MRSA ^{11††}	Community-associated MRSA ^{11††}
Sampling Methodology												
* all isolates tested												
† ~20% sample of statewide isolates received at MDH												
†† ~15% sample of statewide isolates received at MDH												
‡ ~10% sample of statewide isolates received at MDH												
§ isolates from a normally sterile site												
Number of Isolates Tested		170	94	43	105	6	221	493	499	115	120	24
% Susceptible												
β-lactam antibiotics	amoxicillin								95			
	ampicillin (AMP)		82	86		67	100	100				
	penicillin				0	83	100	100	80 [†] /97 [†]			
	cefixime				100							
	cefuroxime sodium								90			
	cefotaxime						100	100	92 [†] /98 [†]			
	ceftriaxone		95	100	100	100			92 [†] /98 [†]			
	ceftaroline										100	100
meropenem						100		92				
Other antibiotics	ciprofloxacin	73 ¹	91	100	59	100						
	levofloxacin					100	100	99	100		25	58
	azithromycin (AZ)	96		98 ³	90	100						
	erythromycin	96							65			
	clindamycin						99/90 ⁶	71/59 ⁷	92		57/41 ¹¹	71/58 ¹¹
	chloramphenicol		93	91					99			
	gentamicin	97			33							
	doxycycline										96	100
	tetracycline	37			23		92		90		93	92
	trimethoprim/sulfamethoxazole (TMP/SMX)		94	56					82		98	100
	linezolid										100	100
	daptomycin										100	100
	telavancin										100	100
vancomycin						100	100	100		100	100	
TB antibiotics	ethambutol									99		
	isoniazid									92		
	pyrazinamide									94		
	rifampin					100				99	99	96

Trends, Comments, and Other Pathogens

¹ <i>Campylobacter</i> spp.	Quinolone susceptibility was determined for all isolates (n=878); isolates that were screened as nalidixic acid-susceptible were assumed to be ciprofloxacin susceptible. Only 25% of isolates from patients returning from foreign travel (n=134) were susceptible to quinolones. <i>Campylobacter</i> susceptibility interpretations are listed in the 2013 NARMS Human Isolates Report (www.cdc.gov/narms/reports).
² <i>Salmonella enterica</i> (non-typhoidal)	Antimicrobial treatment for uncomplicated gastroenteritis due to <i>Salmonella</i> is not generally recommended.
³ <i>Shigella</i> spp.	For cases in which treatment is required and susceptibility is unknown or an AMP and TMP/SMX-resistant strain is isolated, AZ for 3 days, ceftriaxone for 2 to 5 days, or a fluoroquinolone (such as ciprofloxacin) for 3 days is recommended. For susceptible strains, AMP or TMP/SMX is effective; amoxicillin is less effective because of its rapid absorption from the gastrointestinal tract. (<i>Red Book</i> , 2015). Isolates with no zone of inhibition of bacterial growth using 15 µg of AZ were considered to have decreased susceptibility to AZ (DSA). The only DSA isolate in the 2015 sample was identified in an adult male; an increase in DSA <i>Shigella</i> infections has been noted in adult males nationally; recent outbreaks were published in the June 5, 2015 <i>MMWR</i> (http://bit.ly/29zq9nl).
⁴ <i>Neisseria gonorrhoeae</i>	Routine resistance testing for <i>N. gonorrhoeae</i> by MDH was discontinued in 2008. Susceptibility results were obtained from the CDC-contracted lab at Johns Hopkins University, and are for isolates obtained through the Gonococcal Isolate Surveillance Program (GISP). Isolates (n = 105) were received from the Red Door Clinic in Minneapolis. Resistance criteria for the following antibiotics have not been established; therefore, data reflect reduced susceptibility using provisional MIC breakpoints for cefixime ≥0.5 µg/ml, ceftriaxone ≥0.5 µg/ml, and AZ ≥2.0 µg/ml. 2015 STD Treatment Guidelines are available at www.cdc.gov/std/tg2015/default.htm and include changes for gonorrhea treatment and test of cure. GISP stopped susceptibility testing for spectinomycin in 2015 and added testing for gentamicin.
⁵ <i>Neisseria meningitidis</i>	The 6 isolates represent 86% of 7 total cases. In 2015, 1 case-isolate was intermediate to both penicillin and AMP, 1 case-isolate was intermediate to AMP only. There were no case-isolates with ciprofloxacin resistance. The MIC interpretive criteria for AZ, ciprofloxacin, levofloxacin, and rifampin apply to prophylactic therapy and do not apply to therapy of patients with invasive meningococcal disease.
⁶ Group A <i>Streptococcus</i>	The 221 isolates tested represent 94% of the 236 total cases. Among the 20 erythromycin resistant-clindamycin susceptible or intermediate isolates all 20 had inducible clindamycin resistance for a total of 90% of isolates that were susceptible to clindamycin and did not exhibit inducible clindamycin resistance.
⁷ Group B <i>Streptococcus</i>	100% (16/16) of early-onset infant, 100% (21/21) late-onset infants, 80% (4/5) of maternal, and 93% (452/485) of other invasive GBS cases were tested. Among 108 erythromycin resistant - clindamycin susceptible or intermediate isolates, 59 (55%) had inducible resistance to clindamycin for a total of 59% (291/493) that were susceptible to clindamycin and did not exhibit inducible clindamycin resistance. 57% (24/42) of infant and maternal cases were susceptible to clindamycin and did not exhibit inducible clindamycin resistance.
⁸ <i>Streptococcus pneumoniae</i>	The 499 isolates tested represent 93% of 534 total cases. *Case-isolates susceptible by meningitis breakpoints for cefotaxime, ceftriaxone (intermediate = 1.0 µg/ml, resistant ≥ 2.0 µg/ml) and penicillin (resistant ≥ 0.12 µg/ml). †Case-isolates susceptible by nonmeningitis breakpoints for cefotaxime, ceftriaxone (intermediate = 2.0 µg/ml, resistant ≥ 4.0 µg/ml), and penicillin (intermediate = 4.0 µg/ml, resistant ≥ 8.0 µg/ml). Isolates were screened for high-level resistance to rifampin at a single MIC; 100% (499/499) were ≤ 2 µg/ml. Using meningitis breakpoints, 16% (82/499) of isolates were resistant to two or more antibiotic classes and 10% (51/499) were resistant to three or more antibiotic classes. (CLSI also has breakpoints for oral penicillin V; refer to the most recent CLSI recommendations for information).
¹⁰ <i>Mycobacterium tuberculosis</i> (TB) complex	National guidelines recommend initial four-drug therapy for TB disease, at least until first-line drug susceptibility results are known. Of the 16 TB cases reported in 2015 resistant to at least one first-line drug, 15 (94%) were foreign-born. There were no new cases of multidrug-resistant TB (MDR-TB) (i.e., resistant to at least isoniazid and rifampin).
¹¹ Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)	196 cases of invasive MRSA infection were reported in 2015 in Ramsey and Hennepin Counties, 144/196 had an isolate submitted and antimicrobial susceptibility testing conducted. Of cases with an isolate tested, 83% (120/144) were epidemiologically classified as healthcare-associated (hospital and community onset). Healthcare-associated isolates were screened for mupirocin resistance with 4% (5/120) exhibiting high-level resistance (MIC >256 µg/ml), 57% (68/120) of isolates were susceptible to clindamycin by broth microdilution; however among 47 erythromycin resistant-clindamycin susceptible or intermediate isolates, 19 had inducible clindamycin resistance for a total of 41% (49/120) that were susceptible to clindamycin and did not exhibit inducible clindamycin resistance. For community-associated cases (24/144 isolates), 4% (1/24) exhibited high-level mupirocin resistance. 71% (17/24) were susceptible to clindamycin by broth microdilution; however among 13 erythromycin resistant-clindamycin susceptible or intermediate isolates 13% (3/13) had inducible clindamycin resistance for a total of 58% (14/24) that were susceptible to clindamycin and did not exhibit inducible clindamycin resistance. There were no isolates confirmed as vancomycin resistant or intermediate in 2015.
<i>Bordetella pertussis</i>	In 2015, 15 case-isolates of pertussis were screened for erythromycin susceptibility in Minnesota and none were resistant.
Carbapenem-resistant Enterobacteriaceae (CRE)	Of the 271 isolates submitted from 233 patients, 37 (14%) isolates (representing 32 patients) were bla _{KPC} positive by PCR including 17 (46%) <i>Enterobacter cloacae</i> , 15 (41%) <i>Klebsiella pneumoniae</i> , 2 (5%) <i>E. coli</i> , 1 (3%) <i>Enterobacter asburiae</i> , 1 (3%) <i>Klebsiella oxytoca</i> , and 1 (3%) <i>Leclercia adecarboxylata</i> . 41% (13/32) patients with bla _{KPC} positive isolates were residents of the 7-county metro area, and 5 (16%) were non-Minnesota residents. Additionally, 1 isolate (<i>E. coli</i>) from a non-MN resident was positive for bla _{NDM} . Although not routinely tested for, 2 isolates (<i>K. pneumoniae</i>) were positive for bla _{OXA-48} from non-MN residents. More systematic testing for bla _{OXA-48} is needed to determine true prevalence. The 2015 CRE definition is based on current CLSI breakpoints and includes Enterobacteriaceae that are nonsusceptible to a carbapenem (excluding ertapenem) and resistant to all tested third generation cephalosporins, or are positive for carbapenemase production. Due to their intrinsic resistance to imipenem, additional criteria apply for all species of <i>Proteus</i> , <i>Providencia</i> , and <i>Morganella</i> .
<i>Escherichia coli</i> O157:H7	Antimicrobial treatment for <i>E. coli</i> O157:H7 infection is not recommended.