

**Antimicrobial Susceptibilities  
of Selected Pathogens, 2000**



**Sampling Methodology**

- † all isolates tested
- \* 1 isolate tested per week at MDH
- 10% sample of statewide isolates received at MDH
- \*\* all isolates tested from 7-county metropolitan area
- ✓ isolates from a normally sterile site

<i>Campylobacter</i> spp. <sup>1*</sup>	<i>Salmonella typhimurium</i> <sup>2†</sup>	Other <i>Salmonella</i> serotypes (non-typhoidal) <sup>2</sup>	<i>Shigella</i> spp.	<i>Neisseria gonorrhoeae</i> <sup>3</sup>	<i>Neisseria meningitidis</i> <sup>4†✓</sup>	Group A <i>Streptococcus</i> <sup>1✓</sup>	Group B <i>Streptococcus</i> <sup>5✓</sup>	<i>Streptococcus pneumoniae</i> <sup>6**✓</sup>	<i>Mycobacterium tuberculosis</i> <sup>7†</sup>	
No. of Isolates Tested	51	160	75	80	255	22	124	226	411	141

**% Susceptible**

	<i>Campylobacter</i> spp. <sup>1*</sup>	<i>Salmonella typhimurium</i> <sup>2†</sup>	Other <i>Salmonella</i> serotypes (non-typhoidal) <sup>2</sup>	<i>Shigella</i> spp.	<i>Neisseria gonorrhoeae</i> <sup>3</sup>	<i>Neisseria meningitidis</i> <sup>4†✓</sup>	Group A <i>Streptococcus</i> <sup>1✓</sup>	Group B <i>Streptococcus</i> <sup>5✓</sup>	<i>Streptococcus pneumoniae</i> <sup>6**✓</sup>	<i>Mycobacterium tuberculosis</i> <sup>7†</sup>
β-lactam antibiotics	amoxicillin	/	/	/	/	/	/	/	89	/
	ampicillin	/	61	89	6	/	100	100	/	/
	penicillin	/	/	/	/	/	95	100	100	73
	cefuroxime sodium	/	/	/	/	100	/	/	/	77
	cefotaxime	/	/	/	/	/	100	100	100	83
	ceftriaxone	/	98	92	100	100	100	/	/	/
	meropenem	/	/	/	/	/	100	/	/	80
Other antibiotics	levofloxacin	/	/	/	/	/	/	/	/	99
	ciprofloxacin	89 <sup>1</sup>	100	100	100	99	100	/	/	/
	chloramphenicol	/	72	89	92	/	100	/	/	98
	clindamycin	/	/	/	/	/	100	88	97	/
	erythromycin	98	/	/	/	/	96	77	74	/
	gentamicin	92	/	/	/	/	/	/	/	/
	tetracycline	43	/	/	/	/	/	/	/	91
	trimethoprim/sulfamethoxazole	/	93	100	90	/	64	/	/	66
	vancomycin	/	/	/	/	/	/	100	100	100
TB antibiotics	ethambutol	/	/	/	/	/	/	/	/	99
	isoniazid	/	/	/	/	/	/	/	/	84
	pyrazinamide	/	/	/	/	/	/	/	/	97
	rifampin	/	/	/	/	/	100	/	/	99
	streptomycin	/	/	/	/	/	/	/	/	83

**Trends, Comments, and Other Pathogens**

1 <i>Campylobacter</i> spp.	Note that ciprofloxacin susceptibility was determined for all isolates received (n=1,028) rather than 1 isolate per week. Less than 40% of isolates from patients returning from foreign travel were susceptible to quinolones. Susceptibilities were determined using 2000 NCCLS breakpoints for <i>Enterobacteriaceae</i> . Susceptibility for erythromycin was based on an MIC ≤4 µg/ml.
2 <i>Salmonella</i> spp.	Antibiotic treatment for enteric salmonellosis generally is not recommended.
3 <i>Neisseria gonorrhoeae</i>	255 isolates comprise 8% of total (3,163) cases reported. Also, all isolates tested were susceptible to cefpodoxime, cefixime, and spectinomycin. Two isolates were found to have intermediate susceptibility to ciprofloxacin. No decreased susceptibility to azithromycin was detected in 247 MN isolates tested through another surveillance system (GISP) using a CDC provisional breakpoint of 1.0 µg/ml.
4 <i>Neisseria meningitidis</i>	Provisional breakpoints from CDC. MIC ≤0.06 µg/ml to penicillin was considered susceptible. In 2000, one isolate had intermediate susceptibility to penicillin (MIC of 0.25 µg/ml).
5 Group B <i>Streptococcus</i> (GBS)	76% (25/33) of early-onset infant, 74% (17/23) of late-onset infant, 60% (9/15) of maternal, and 78% (175/223) of other invasive GBS cases were tested. 86% (44/51) of infant and maternal case isolates were susceptible to clindamycin, and 80% (41/51) were susceptible to erythromycin.
6 <i>Streptococcus pneumoniae</i>	10% (41/411) had intermediate susceptibility, and 17% (68/411) were resistant to penicillin; 10% (41/411) had intermediate susceptibility, and 7% (28/411) were resistant to cefotaxime. Breakpoints for amoxicillin (susceptible ≤2 µg/ml; intermediate = 4 µg/ml; resistant ≥8 µg/ml), were provisional in 2000 and officially adopted by NCCLS in 2001. Using these criteria, 3% (12/411) had intermediate susceptibility, and 8% (31/411) were resistant to amoxicillin. Isolates were screened for resistance (high-level) to rifampin at a single MIC (4 µg/ml); all were ≤4 µg/ml.
7 <i>Mycobacterium tuberculosis</i> (TB)	National guidelines recommend initial 4-drug therapy where resistance to isoniazid (INH) exceeds 4%. In Minnesota, 16% of <i>M. tuberculosis</i> isolates were INH-resistant. One case of multi-drug resistant TB (i.e., resistant to INH and rifampin) was identified.
<i>Bordetella pertussis</i>	189 isolates were received and tested for erythromycin susceptibility using provisional CDC breakpoints; none were resistant.
<i>Escherichia coli</i> O157:H7	Antibiotic treatment for <i>E. coli</i> O157:H7 infection is not recommended.
<i>Staphylococcus aureus</i> (VISA/GISA)	In 2000, a Minnesota resident became the fifth person in the U.S. with a vancomycin- or glycopeptide-intermediate <i>S. aureus</i> (VISA or GISA) infection. Like other VISA patients, this patient was on dialysis and had received prolonged vancomycin therapy. VISA/GISA strains have a vancomycin MIC of 8-16 µg/ml by broth microdilution. However, all <i>S. aureus</i> isolates with vancomycin MICs ≥4 µg/ml should be referred to MDH for further testing, since commercial susceptibility panels may underestimate the true vancomycin MIC.

## Reportable Diseases, MN Rule #4605.7040

### Foodborne, Vectorborne and Zoonotic Diseases

- Amebiasis (*Entamoeba histolytica*)
- Anthrax (*Bacillus anthracis*) **a**
- Babesiosis (*Babesia* spp.)
- Botulism (*Clostridium botulinum*) **a**
- Brucellosis (*Brucella* spp.) **g**
- Campylobacteriosis (*Campylobacter* spp.) **b**
- Cat scratch disease (infection caused by *Bartonella* spp.)
- Cholera (*Vibrio cholerae*) **a,b**
- Cryptosporidiosis (*Cryptosporidium parvum*)
- Dengue virus infection
- Diphyllobothrium latum* infection
- Ehrlichiosis (*Ehrlichia* spp.)
- Encephalitis (caused by viral agents) **g**
- Enteric *E. coli* infection (*E. coli* O157:H7 and other pathogenic *E. coli* from gastrointestinal infections) **b**
- Giardiasis (*Giardia lamblia*)
- Hantavirus infection **g**
- Hemolytic uremic syndrome
- Leptospirosis (*Leptospira interrogans*)
- Listeriosis (*Listeria monocytogenes*) **b**
- Lyme disease (*Borrelia burgdorferi*)
- Malaria (*Plasmodium* spp.)
- Plague (*Yersinia pestis*) **g**
- Psittacosis (*Chlamydia psittaci*)
- Q fever (*Coxiella burnetii*) **g**
- Rabies (animal and human cases and suspects) **a**
- Rocky Mountain spotted fever (*Rickettsia* spp., *R. canada*)
- Salmonellosis, including typhoid (*Salmonella* spp.) **b**
- Shigellosis (*Shigella* spp.) **b**
- Toxoplasmosis
- Trichinosis (*Trichinella spiralis*)
- Tularemia (*Francisella tularensis*) **g**
- Typhus (*Rickettsia* spp.)
- Yellow fever
- Yersiniosis (*Yersinia* spp.) **b**

### Invasive Bacterial Diseases

- Haemophilus influenzae* disease (all invasive disease) **b,c**
- Meningitis (caused by *Haemophilus influenzae* **b**, *Neisseria* other bacterial agents) **a,g**, *Streptococcus pneumoniae* **b**, or viral or
- Meningococemia (*Neisseria meningitidis*) **b,g**
- Streptococcal disease (all invasive disease caused by *S. pneumoniae*) **b,c**
- Toxic shock syndrome **b**

### Vaccine Preventable Diseases

- Diphtheria (*Corynebacterium diphtheriae*) **b**
- Hepatitis (all primary viral types including A,B,C,D, and E)
- Influenza (unusual case incidence or lab confirmed cases) **d**
- Measles (Rubeola) **a**
- Mumps **a**
- Pertussis (*Bordetella pertussis*) **a,b**
- Poliomyelitis **a,d**
- Rubella and congenital rubella syndrome
- Tetanus (*Clostridium tetani*)

### Sexually Transmitted Diseases and Retroviral Infections

- Chancroid (*Haemophilus ducreyi*) **a,e**
- Chlamydia trachomatis* infections **e**
- Gonorrhea (*Neisseria gonorrhoeae*) **e**
- Human immunodeficiency virus (HIV) infection, including Acquired Immunodeficiency Syndrome (AIDS) **f**
- Retrovirus infection (other than HIV)
- Syphilis (*Treponema pallidum*) **a,e**

### Other Conditions

- Agents of bioterrorism **g**
- Blastomycosis (*Blastomyces dermatitidis*)
- Histoplasmosis (*Histoplasma capsulatum*)
- Increased incidence of any illness beyond expectations
- Kawasaki disease
- Legionellosis (*Legionella* spp.) **d**
- Leprosy (*Mycobacterium leprae*)
- Reye syndrome
- Rheumatic fever (cases meeting the Jones Criteria only)
- Staphylococcus aureus* (only death or serious illness due to methicillin-resistant *S. aureus*) **b**
- Vancomycin Intermediate/Resistant *Staphylococcus aureus* **d**
- Unexplained deaths **b** and serious illness **d** (possibly due to infectious cause)
- Tuberculosis (*Mycobacterium tuberculosis* and *M. bovis*) **b**

- a** Report immediately by telephone 612-676-5414 or 877-676-5414
- b** Submit isolates to the MDH. If a rapid, non-culture assay is used for diagnosis, we request that positives be cultured, and isolates submitted. If not possible, please send specimens, enrichment broth, or other appropriate material. Please call the MDH Public Health Laboratory at 612-676-5938 for instructions.
- c** Isolates are considered to be from invasive disease if they are isolated from normally sterile sites, e.g. blood, CSF, joint fluid, etc.
- d** Submission of isolates to MDH is requested, but not required by rule
- e** Report on separate Sexually Transmitted Disease Report Card
- f** Report on separate HIV Report Card
- g** Requested to report immediately by telephone; reporting rule change expected in 2001

## Antimicrobial Susceptibilities of Selected Pathogens 2000



Minnesota Department of Health  
717 Delaware Street SE  
Minneapolis, MN 55414  
[www.health.state.mn.us](http://www.health.state.mn.us)

### 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 Epidemiology Section at: 612-676-5414 or 877-676-5414 or fax form to 612-676-5743.

### To Send an Isolate to MDH:

Send isolates by U.S. mail using approved containers to the above address. If using a courier, isolates should be sent to 717 Delaware Street SE, Minneapolis, MN 55414. To order pre-paid etiologic agent mailers, or for other assistance, call the Public Health Laboratory Specimen Handling Unit at: 612-676-5396.

The MDH Antibiogram is available on the MDH Web site (<http://www.health.state.mn.us>). Laminated copies can be ordered from: Antibiogram, Minnesota Dept. of Health, Acute Disease Epidemiology Section, 717 Delaware St. SE, Minneapolis, MN 55414.