Antimicrobial Susceptibilities of Selected Pathogens, 1999

MINNESOTA MDH DEPARTMENT OF HEALTH

Sampling Methodology

† all isolates tested
* ~ 20% sample of statewide isolates received at MDH
~10% sample of statewide isolates received at MDH
** all isolates tested from 7-county metropolitan area
✔ isolates from a normally sterile site

	Campylobacter spp.[1]*	*Salmonella typhimurium*[2]†	Other *Salmonella* spp. (non-typhoidal)[2]	*Shigella* spp.	*Neisseria gonorrhoeae*[3]	*Neisseria meningitidis*[4]†✔	Group A streptococci[5]†✔	Group B streptococci[6]✔	*Streptococcus pneumoniae*[7]**✔	*Mycobacterium tuberculosis*[8]†
No. of Isolates Tested	131	160	43	20	250	55	162	192	559	163
	% Susceptible									
β-lactam antibiotics: ampicillin		60	86	15			100	100		
β-lactam antibiotics: penicillin						98	100	100	76	
β-lactam antibiotics: cefuroxime sodium					100				81	
β-lactam antibiotics: cefotaxime						100	100	100	83	
β-lactam antibiotics: ceftriaxone		100	95	100	100	100				
β-lactam antibiotics: meropenem						100			83	
Other antibiotics: levofloxacin									100	
Other antibiotics: ciprofloxacin	82	100	100	100	100	100				
Other antibiotics: chloramphenicol		75	95	80		100			98	
Other antibiotics: clindamycin							100	87	98	
Other antibiotics: erythromycin	100						95	79	78	
Other antibiotics: gentamicin	98									
Other antibiotics: tetracycline	48								91	
Other antibiotics: trimethoprim/sulfamethoxazole		96	100	75		56			67	
Other antibiotics: vancomycin							100	100	100	
TB antibiotics: ethambutol										98
TB antibiotics: isoniazid										88
TB antibiotics: pyrazinamide										99
TB antibiotics: rifampin						100				98
TB antibiotics: streptomycin										89

	Trends, Comments and Other Pathogens	
1	***Campylobacter* spp.**	< 20% of isolates from patients returning from foreign travel were susceptible to quinolones. Susceptibilities were determined using 1999 NCCLS breakpoints for *Enterobacteriaceae*. Susceptibility for erythromycin was based on an MIC ≤4 µg/ml.
2	***Salmonella* spp.**	Antibiotic treatment for enteric salmonellosis generally is not recommended. 2/43 *Salmonella* spp. isolates were intermediate to ceftriaxone.
3	***Neisseria gonorrhoeae***	250 isolates comprise 8.8% of total (2,835) cases reported. Also, all isolates tested were susceptible to cefpodoxime, cefixime and spectinomycin.
4	***Neisseria meningitidis***	Provisional breakpoints from CDC. MIC ≤0.06 to penicillin considered susceptible. One isolate had a MIC of 0.12, which is considered intermediate to penicillin.
5	**Group A streptococci**	Susceptibility testing was also done on 514 pharyngeal (non-invasive) GAS isolates from five clinical labs (three were in metro area). 100% were susceptible to clindamycin and 98% were susceptible to erythromycin.
6	**Group B streptococci (GBS)**	83% early-onset and late-onset infant cases, invasive maternal cases, and 84% of other invasive GBS cases tested. 86% (38/44) of infant and maternal isolates were susceptible to clindamycin and 80% (35/44) were susceptible to erythromycin.
7	***Streptococcus pneumoniae***	8% had intermediate-level and 16% had high-level resistance to penicillin; 13% had intermediate-level and 4% had high-level resistance to cefotaxime.
8	***Mycobacterium tuberculosis* (TB)**	National guidelines recommend initial 4-drug therapy where resistance to isoniazid (INH) exceeds 4% . In Minnesota, 12% of *M. tuberculosis* isolates were INH-resistant. Four cases of multi-drug resistant TB (i.e., resistant to INH and rifampin) were identified.
	Bordetella pertussis	The first erythromycin-resistant *B. pertussis* in MN was identified in 1999. The remaining 80 isolates were susceptible to erythromycin by provisional CDC breakpoints. Erythromycin remains the drug of choice for treatment and prophylaxis of pertussis.
	***Escherichia coli* O157:H7**	Antibiotic treatment for *E. coli* O157:H7 infection is not recommended.
	Methicillin-resistant *Staphylococcus aureus* (MRSA)	MRSA isolates were submitted in 1999 from sentinel hospitals. No vancomycin resistance has been identified. Community-acquired MRSA infections have been observed; isolates were generally susceptible to many antibiotic classes except beta-lactams/cephalosporins, and many were non-susceptible to erythromycin. Serious cases of community-acquired MRSA should be reported to MDH.

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.

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**

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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

c Isolates are considered to be from invasive disease if they are isolated from normally sterile sites, i.e. blood, CSF, joint fluid,..etc.

Invasive Bacterial Diseases

- *Haemophilus influenzae* disease (all invasive disease) **b,c**
- Meningitis (caused by *Haemophilus influenzae* **b**, *Neisseria meningitidis* **b,g**, *Streptococcus pneumoniae* **b**, or viral or other bacterial agents)
- Meningococcemia (*Neisseria meningitidis*) **b,g**
- Streptococcal disease (all invasive disease caused by Groups A and B streptococci and *S. pneumoniae*) **b,c**
- Toxic shock syndrome **b**

Vaccine Preventable Disease and Tuberculosis

- 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*)
- Tuberculosis (*Mycobacterium tuberculosis* and *M. bovis*) **b**

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)

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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 2000

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MINNESOTA MDH DEPARTMENT OF HEALTH

Minnesota Department of Health
717 Delaware Street SE
Minneapolis, MN 55414
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.