

## { Two Fatal Cases of PAM in Tulsa County, August 2005 }

**Primary amebic meningoencephalitis (PAM)** is an acute fulminating meningoencephalitis, caused by the small free-living amoeba *Naegleria fowleri*.<sup>1</sup> PAM is rare, but nearly always fatal as approximately 200 cases have been reported worldwide and only a few have survived.<sup>2</sup> The disease most commonly occurs in previously healthy children and young adults following contact with fresh water 3 to 7 days prior to onset of symptoms.<sup>1</sup> PAM results when the amoeba invades the brain via the cribriform plate leading to destruction of the olfactory bulbs and the cerebral cortex.<sup>2</sup> The Oklahoma State Department of Health (OSDH) Communicable Disease Division (CDD) investigates cases of PAM to assist in confirming the diagnosis and to identify possible sources of the infection.

The symptoms of PAM are indistinguishable from fulminant bacterial meningitis, characterized by severe frontal headache, high fever, stiff neck, photophobia, nausea, and vomiting.<sup>3</sup> As the disease rapidly progresses, symptoms often include confusion, hallucinations, seizures, and coma. Death typically occurs within 3 to 10 days following onset of symptoms.<sup>1-3</sup> Cerebrospinal fluid (CSF) findings mimic those of bacterial meningitis, with a predominantly polymorphonuclear leukocytosis, increased protein, and decreased glucose concentration.<sup>3</sup> Laboratory testing for a suspected case of PAM includes a wet-mount preparation of a fresh-centrifuged specimen of CSF in addition to fixation and staining with Giemsa-Wright and modified trichrome stain is recommended.<sup>3</sup> Confirmatory testing includes culture or an indirect fluorescent antibody test. Treatment of patients with PAM requires intensive supportive care.

*N. fowleri* are ubiquitous worldwide and are commonly found in fresh bodies of water including lakes, ponds, rivers, hot springs, soil and sewage.<sup>2</sup> High water temperature and low water depth can lead to increased risk for infection among swimmers in rivers, lakes, and ponds. No infections due to *N. fowleri* are known to have been acquired in a standard chlorinated swimming pool.<sup>1</sup>

On August 2, 2005, 2 previously healthy Tulsa residents ages 7 and 9 years presented to Tulsa hospitals with a 2- and 3-day history of fever, nausea, vomiting, and altered mental status. Symptoms rapidly progressed until the patients' deaths on August 5. Cultures of the CSF and blood were negative for bacterial growth, and no organisms were observed on a Gram-stained smear of the CSF collected from

each patient. A wet-mount preparation of the CSF from each patient revealed a motile, unicellular organism consistent with *N. fowleri*. Subsequent culture of brain tissue collected at autopsy confirmed the presence of *N. fowleri*.

The Tulsa City-County Health Department in conjunction with the CDD initiated an investigation to determine the likely source of the infection. The investigation revealed that both patients visited a local park splash pad (an area with several water fountains spraying water) within their incubation period. During the investigation, children were observed playing in 2 marshy areas directly adjacent to the splash pad. However, we were unable to confirm either patient had played in this natural water source. In addition, one of the patients played daily in a small creek behind his home. This same creek also runs 1/4-mile from the other patient's home. However, he was not known to have exposure to this creek. The children had no other common water exposures.

A total of 5 cases of PAM have been reported in Oklahoma. Prior to this year, the last known case of PAM in Oklahoma occurred in an 11-year-old from Cleveland County who was most likely exposed at Lake Konawa in 2001. Two cases of PAM were also reported in 1998; a 9-year-old from Cotton County who was most likely exposed at a lake south of Fort Worth, Texas, and a 3-year-old from Tulsa County who was most likely exposed at either Kaw Lake or Fort Gibson Lake. None of the Oklahoma cases have survived.

PAM can be prevented by keeping water from entering the nose or mouth when swimming, jumping, or diving into natural bodies of warm water. Chlorine rapidly kills the amoeba; therefore people swimming in well maintained swimming pools are not at risk of developing PAM.

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<sup>1</sup> Heymann DL. Control of Communicable Disease Manual 18<sup>th</sup> ed. American Public Health Association; 2004: 383-385.

<sup>2</sup> Visvesvara GS. Pathogenic and opportunistic free-living amoebae. In: Baron EJ, Pfaller MA, Jorgensen JH, Tenover FC, eds. Manual of clinical microbiology, 8<sup>th</sup> ed. Washington, DC: American Society for Microbiology, 2003.

<sup>3</sup> McKee T, Davis L, Blake P, et al. Primary Amebic Meningoencephalitis Georgia, 2002. MMWR 2003;52 (No. 40): 962-964.

## { Oklahoma Influenza Surveillance

{ 2005 - 2006 }

The Oklahoma State Department of Health (OSDH) resumed its routine influenza surveillance activities on Monday, Oct. 3, 2005, and will continue through May 2006. The goals of the surveillance activities include detecting influenza activity as early as possible, monitoring and describing the intensity and geographic distribution of disease, measuring the impact of influenza on different age groups, and identifying and publicizing the circulating types and subtypes. Influenza surveillance information will be available on the Communicable Disease Division Web site and updated weekly: <<<http://www.health.ok.gov/program/cdd/fluwatch/index.html>>>.

The **Oklahoma Influenza Surveillance Program** consists of partnerships with various local and national groups. Oklahoma providers voluntarily collect and disseminate information on influenza to the OSDH on a weekly basis throughout the influenza season. The data is collected and described on a regional basis in Oklahoma. The laboratory diagnostic reporting system has been expanded from 5 laboratories to 10 laboratories. This expansion in laboratory sentinel providers will allow influenza laboratory data to be collected from all 8 regions of the state. The following describe the surveillance system components in depth.

### U.S. Sentinel Physicians Surveillance Network

On a weekly basis, 17 physicians from 14 Oklahoma counties voluntarily report the number and age distribution of patients seen with influenza-like illness (ILI). ILI is defined as fever (100°F [37.8°C], oral or equivalent) and cough and/or sore throat in the absence of a known cause other than influenza. Also, these sentinel physicians obtain specimens from a portion of their patients to be sent to the OSDH Public Health Laboratory (PHL) for viral culture. The information provided by Oklahoma sentinel providers is added to the influenza surveillance database at the Centers for Disease Control and Prevention where it is combined with the 1,900 participating healthcare providers in the U.S. Sentinel Physicians Surveillance Network.

### Laboratory Diagnostic Reporting System

The Laboratory Diagnostic Reporting System consists of 10 laboratories from across Oklahoma. Each facility voluntarily reports the results of testing done on respiratory viruses including influenza on a weekly basis. Influenza testing consists of viral culture from 2 labs and rapid antigen testing from 8 labs. Culture positive influenza isolates are submitted to the PHL for subtyping.

### Influenza Outbreak Reporting System

When outbreaks of influenza occur in schools, nursing homes, or other institutional settings, they should be reported to the local county health department. Once outbreaks are reported, specimens may be collected and submitted to the PHL for viral identification.

### OKPRN OKAlert System

The OKPRN OKAlert system consists of 35 physicians from 15 counties, which report ILI data through a hand held Personal Data Assistant on a daily basis. Data submitted includes the number of patients presenting with ILI by age group. Although sentinel laboratory and physician information is collected during influenza season, the PHL receives samples for viral culture on an annual basis for typing and subtyping of influenza viruses.

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## { Patient Education Materials }

The Communicable Disease Division has made the following documents available for distribution to practitioners. Cold and flu season is approaching quickly, and these materials will help patients understand the wise use of antibiotics.

### Pamphlets

*(All pamphlets available in quantities of 50)*

*Cold or Flu. Antibiotics Don't Work for You:* Folded color pamphlet (3.75" x 8.5") that explains antibiotic resistance and the differences between bacteria and viruses.

*A Guide for Parents: Runny Nose & Fluid in the Middle Ear:* Two-sided (8.5" x 11") color information sheet describing causes, treatments, and why antibiotics are not the first choice of treatment for these illnesses.

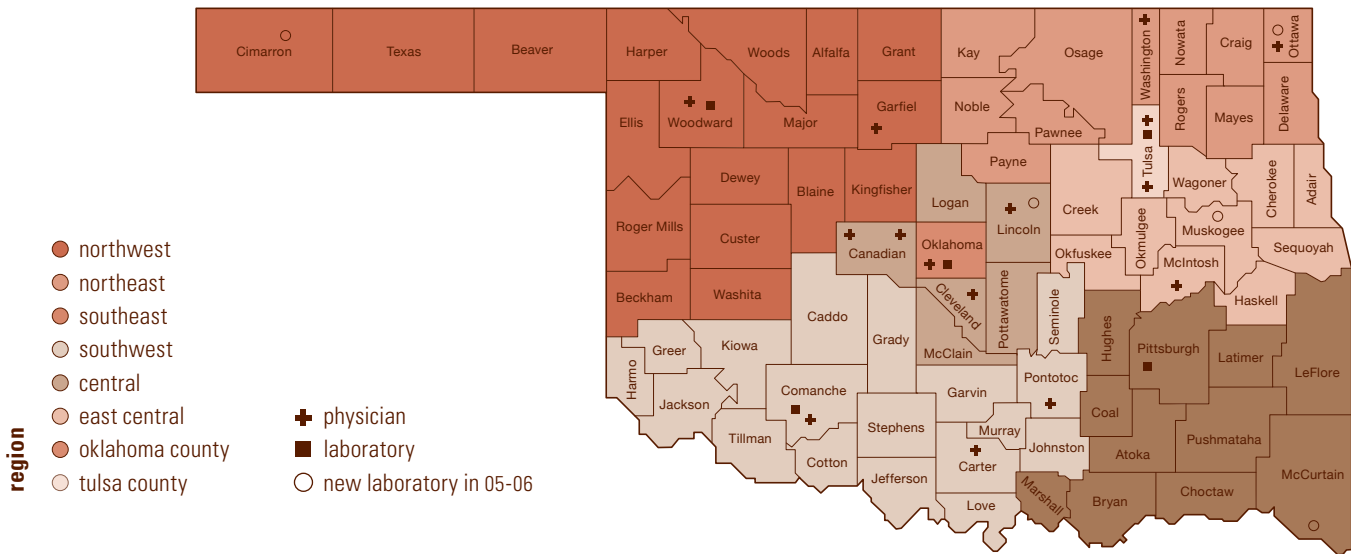
### Posters

*(Limit of 5)*

*Snort. Sniffle. Sneeze. No Antibiotics Please:* Color poster (17" x 22") with this summarized message: Antibiotics aren't always the answer. Talk with your doctor. Find out when antibiotics work.

*Cover Your Cough:* Poster (8.5" x 11") with illustrations and messages regarding actions to prevent transmission of respiratory illnesses. Available in English or Spanish (Cubra su Tos).

## Influenza Surveillance Sentinel Physician and Laboratory Sites 2005-2006



Patient Education Materials cont...

**Warning: Antibiotics Don't Work for Viruses Like Colds & Flu:** Color poster (15.5" x 22") with this summarized message: Antibiotics are strong medicines. Using antibiotics for viruses can put you at risk of getting a resistant bacterial infection.

**Auto-Medicarse con Antibioticos Puede Perjudicar su Salud:** Color poster (15.5" x 22") describing the risks of self-medicating with antibiotics. Available in Spanish only.

To obtain these materials: fax 405.271.6680 or contact **CDD** 405.271.4060.

### { Pertussis in Oklahoma: Reporting, Testing, and Recommendations for Prophylaxis }

Pertussis is a reportable disease in Oklahoma. The Oklahoma State Department of Health (OSDH) works with the county health departments to investigate cases of pertussis making recommendations for post-exposure prophylaxis with appropriate antibiotic therapy to close contacts to prevent further transmission of disease in the community.

Pertussis is a disease with a wide clinical spectrum of illness ranging from mild infections in adults and adolescents to more severe presentations in unprotected infants and children. Typical or classic pertussis is described as onset of paroxysmal cough, post-tussive vomiting, and inspiratory whoop with a 1- to 3-month duration. In adults and adolescents, symptoms

of pertussis develop more often than not without a whoop and the cough duration is often much shorter. This atypical presentation of pertussis is more common than the typical presentation in adults and adolescents. Studies have shown that pertussis may account for 12% of prolonged cough illness in adults and adolescents.<sup>1</sup> There is a low index of clinical suspicion to diagnose pertussis in adults and adolescents. This may be due to the widespread misconception that pertussis is no longer occurring in the population and that it is strictly a childhood disease. These misconceptions may lead to misdiagnosis and lack of consideration of pertussis as a diagnosis even in the presence of classic symptoms.

Infection with *Bordetella pertussis* can be confirmed by culture, which is available at the OSDH Public Health Laboratory (PHL). The organism is most frequently recovered in the catarrhal or early paroxysmal stage (first three weeks), and the likelihood of a positive culture decreases throughout the course of the illness. Once a cough has been present for > 3 weeks, recovering the organism is unlikely; therefore, it is important to obtain the culture as early as possible in the course of the illness. Direct Fluorescent Antibody (DFA) is a rapid laboratory test that generally provides results within 1 to 2 days and testing is available at the PHL. Because of low sensitivity and variable specificity, DFA is not considered reliable for disease confirmation of *B. pertussis*. The low sensitivity of DFA may be due to the lack of use of multiplication or amplification of genetic material. The considerable cross-reactivity with normal nasopharyngeal flora with DFA may account for the variable sensitivity. Other challenges associated with DFA testing include the technical skill and experience involved in performing and reading the

test, preparation of reagents, quality control, test performance, and subjectivity in test interpretation.<sup>2</sup> **Polymerase Chain Reaction (PCR)** is a rapid, sensitive, and specific laboratory diagnostic test for pertussis. However, it is not yet standardized and is not available through the PHL. Even if a lab has validated its PCR method, culture should be used in addition to PCR. Serology is not currently standardized in the U.S. and is not currently considered reliable for laboratory confirmation. Until reliable standardization occurs, serology is not recommended as a diagnostic test for *B. pertussis*.

Secondary rates of transmission of pertussis can be high, especially, within household settings. In many instances, adolescents and adults are implicated as the source of infection for infants who are at greatest risk of complications and death due to pertussis. Household and close contacts of a case of pertussis should receive antibiotic prophylaxis to prevent spread of disease. The following table details the regimens of antibiotic prophylaxis and treatment.

Treatment is not recommended in those symptomatic individuals who have been coughing for > 3 weeks (past the infectious period). Also, prophylaxis is not recommended for contacts if it has been > 3 weeks since their last exposure to the case (one incubation period past exposure). In the case of high-risk individuals, the recommendations for antibiotic treatment or prophylaxis are extended up to 6 weeks after cough onset in symptomatic individuals and up to 6 weeks after the

last exposure in contacts. It is also important to make sure that children are up-to-date on their DTaP immunizations. The Communicable Disease Division encourages clinicians to report suspected cases of pertussis to the epidemiologist-on-call at 405.271.4060.

\*prepared by **Renee Powell**, M.P.H., Epidemiologist, CDD

<sup>1</sup> Cherry, J.D. et al. Defining Pertussis Epidemiology: Clinical, Microbiologic and Serologic Perspectives. The Pediatric Infectious Disease Journal, Vol 24, No. 5, May 2005: S25-S34.

<sup>2</sup> Muller, F.C. et al. Laboratory Diagnosis of Pertussis: State of the Art in 1997, Journal of Clinical Microbiology, Vol 35, No.10, Oct. 1997: 2435-2443.

### \* Disease Reporting

Diseases or conditions reportable to the Oklahoma State Department of Health must be reported to the **Communicable Disease Division** via fax, telephone, mail or the secure Web-based Public Health Investigation and Disease Detection in Oklahoma (PHIDDO) system:

**fax** 405.271.6680 **phone** 405.271.4060

**mail** Oklahoma State Department of Health, Communicable Disease Division, 1000 NE 10<sup>th</sup> Street-0305, Oklahoma City, OK 73117

For additional information on disease reporting or to obtain access to PHIDDO, please contact **Anthony Lee** [AnthonyL@health.ok.gov](mailto:AnthonyL@health.ok.gov) or **Kim Rayno** [KimR@health.ok.gov](mailto:KimR@health.ok.gov) at 405.271.4060

## Antibiotic Treatment and Prophylaxis of Pertussis

Treatment/Prophylaxis: Same Regimen		
Drug Name	Adult	Children
Erythromycin Estolate (Ilosone ®) <i>drug of choice</i>	40-50 mg/kg/day PO QID with 2g/day max for 14 days	40-50 mg/kg/day for 14 days
Azithromycin (Zithromax ®)	10-12 mg/kg/day PO QD for 5 days	10-12 mg/kg PO QD for 5 days
Clarithromycin (Biaxin ®)	15-20 mg/kg/day PO BID for 7 days	15-20 mg/kg/day PO BID for 7 days
Trimethoprim Sulfamethoxazole TMP-SMZ (Bacrim ®, Septra ®) <i>alternative therapy</i>	320 mg/day TMP 1600/mg/day SMZ PO BID for 14 days	8 mg/kg/day TMP 40 mg/kg/day SMZ PO QID for 14 days

## { REPORTABLE DISEASES / CONDITIONS IN OKLAHOMA }

The following diseases are to be reported to the **OSDH** by telephone or fax immediately upon suspicion, diagnosis, or positive test.

Anthrax	Hepatitis A (anti-HAV IgM+)	Rabies (Animal and Human)
Bioterrorism-suspected disease	Measles (Rubeola)	Smallpox
Botulism	Meningococcal invasive disease	Tularemia
Brucellosis	Outbreaks of apparent infectious disease	Typhoid Fever
Diphtheria	Plague	Viral Hemorrhagic Fever
<i>H. influenzae</i> invasive disease	Poliomyelitis	

The following diseases are to be reported to the **OSDH** within **one business day**.

Acid Fast Bacillus (AFB) positive smear	Hemolytic Uremic Syndrome, postdiarrheal	Pertussis
AIDS (Acquired Immunodeficiency Syndrome)	Hepatitis B (acute or chronic, HBsAg+ and/or anti-HBc-IgM+)	Psittacosis
Arboviral Infections	Hepatitis C (confirmed by RIBA or PCR only)	Rocky Mountain Spotted Fever
Campylobacteriosis	Hepatitis, acute unspecified	Rubella
Congenital Rubella Syndrome	Human Immunodeficiency Virus (HIV) infection	Salmonellosis
Cryptosporidiosis	Legionellosis	Shigellosis
Cyclosporiasis	Leprosy	<i>Streptococcus</i> , group A, invasive disease
Dengue Fever	Leptospirosis	<i>Streptococcus pneumoniae</i> invasive disease
[ <i>E.coli</i> O157, <i>E. coli</i> O157:H7 or a shiga-like toxin producing <i>E. coli</i> (EHEC)]	Listeriosis	Syphilis
Ehrlichiosis	Lyme Disease	Tetanus
Encephalitis	Malaria	Trichinosis
Giardiasis	Mumps	Tuberculosis
Hantavirus Pulmonary Syndrome		Unusual syndrome, or uncommon disease
		<i>Vibrio spp.</i> infections including cholera
		Yellow Fever

The following diseases/test results are to be reported to the **OSDH** within **one month**.

CD4 Cell Count <500	Creutzfeldt-Jakob Disease	Pelvic Inflammatory Disease
Chlamydia infections	Gonorrhea	

Isolates of the following organisms must be sent to the **OSDH Public Health Laboratory**: P.O. Box 24106 OKC, OK 73124

1 <i>Bacillus anthracis</i>	5 <i>Francisella tularensis</i>	10 <i>Plasmodium</i> spp.
2 <i>Brucella</i> spp.	6 <i>H. influenzae</i> (sterile site isolates only)	11 <i>Salmonella</i> spp.
3 <i>Campylobacter</i> spp.	7 <i>Listeria</i> (sterile site isolates only)	12 <i>Shigella</i> spp.
4 <i>E. coli</i> O157, <i>E. coli</i> O157:H7, or a shiga-like toxin producing <i>E. coli</i> (EHEC)	8 <i>Mycobacterium tuberculosis</i>	13 <i>Vibrio</i> spp.
	9 <i>N. meningitidis</i> (sterile site isolates only)	14 <i>Yersinia</i> spp.

*Clinical specimens for Botulism testing must be sent to the OSDH Public Health Lab*

*Fax machines are located in locked offices and are monitored to ensure the confidentiality of disease reports.*



### HIV/STD Service

405.271.4636 • fax 405. 271.1187

### Communicable Disease Division

405.271.4060 • fax 405.271.6680 / 800.898.6734

### Immunization Division

405.271.4073 • fax 405.271.6133

## { Multistate Outbreaks Detected Using PulseNet }

Oklahoma reportable disease rules (O.A.C. 310: Chapter 515) require that isolates of *Salmonella*, *Campylobacter*, *Listeria*, *E. coli* O157:H7 or other enterohemorrhagic *E. coli* be sent to the Oklahoma State Department of Health (OSDH) **Public Health Laboratory (PHL)** for confirmation, serotyping/serogrouping, and molecular subtyping. The OSDH PHL routinely performs molecular subtyping (or “DNA fingerprinting”) on all isolates of these foodborne pathogens by **Pulsed-Field Gel Electrophoresis (PFGE)**. DNA “fingerprints,” or patterns, are submitted electronically to a national computer network called **PulseNet** where they are examined to detect nationwide outbreaks of disease. PulseNet is a national network of public health and food regulatory agency laboratories coordinated by the Centers for Disease Control and Prevention (CDC). The network consists of state health departments, local health departments, and federal agencies including CDC, the U.S. Department of Agriculture, and the Food and Drug Administration.

PulseNet participants can rapidly compare patterns to detect possible outbreaks of diseases caused by these organisms. Indistinguishable patterns may indicate the occurrence of a common exposure among cases geographically dispersed over several states. When indistinguishable patterns are detected, epidemiologists at state health departments investigate to determine if any common exposure exists between the persons who submitted the clinical specimens. During the months of April and July 2005, Oklahoma participated in 2 multistate outbreaks of salmonellosis detected by PulseNet.

During April 2005, the OSDH PHL identified **2** Oklahoma cases of *Salmonella* serotype montevideo with indistinguishable PFGE patterns to cases in Colorado and New Mexico. Queries by other state health department laboratories identified a total of **26** cases of *S. montevideo* with a similar PFGE pattern from **15** states with symptom onsets from January through May 2005. The multistate investigation, led by Colorado and New Mexico, identified **14** of **18** cases that reported contact with baby turkeys, ducklings, or chicks using a detailed standardized questionnaire, including **1** of the **2** Oklahoma cases. One Oklahoma case reported visiting a feed store in Southern Oklahoma during their incubation period where baby chicks were sold to the public. The second Oklahoma case denied contact to baby birds during their incubation period, but did reside in the same town as the feed store the first case visited. One hatchery, located in New Mexico, was ultimately found to be the source of all implicated baby birds.

During July 2005, the OSDH PHL identified **1** case of *Salmonella* serotype typhimurium in an Oklahoma resident that was indistinguishable to cases involved in a multistate outbreak investigation involving 22 states. As part of its routine investigations of cases of salmonellosis, the Michigan Department of Community Health noted that of the **13** cases with this PFGE pattern they were able to interview, **11** reported consumption of “fresh-squeezed” orange juice from upscale

“...the continuing **SUCCESS** of PulseNet requires that health-care providers **routinely collect and submit specimens for culture and identification.**”

market retailers located in Southeast Michigan. **Twenty-two** states found indistinguishable isolates from **126** cases with symptom onset dates between April and August during this investigation. To test the hypothesis that salmonellosis was associated with consumption of unpasteurized, fresh-squeezed orange juice, cases belonging to the cluster, in addition to each state’s routine salmonellosis investigation, were questioned regarding their consumption of fresh-squeezed orange juice during the incubation period before their illness. After tracing the juice named by respondents through its point of purchase, a single producer in Florida was implicated as the source of infection. The Oklahoma case and his family reported travel to Florida during his incubation period. An interview of the case’s family revealed he had consumed the implicated fresh-squeezed orange juice while in Florida.

The detection of these outbreaks demonstrates the power of systematic molecular subtyping of pathogens to identify clusters that cannot easily be uncovered using conventional laboratory or epidemiological methods. However, the continuing success of PulseNet requires that healthcare providers routinely collect and submit specimens for culture and identification. The Oklahoma State Department of Health highly recommends the routine culture of stool specimens for patients with symptoms of enteric disease. In addition to offering diagnostic and treatment information to the individual patient, high rates of culturing of enteric disease provide invaluable benefits by detecting related cases of disease and acting to remove sources of contamination in food, animals, and other sources.

\*prepared by **Carmen Clarke**, M.P.H., Epidemiologist, CDD  
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## { Summary of Oklahoma Meningococcal Disease Cases, 2000 - 2005 }

**Meningococcal disease** must be reported to the Oklahoma State Department of Health (OSDH) immediately upon diagnosis or suspicion. County health department public health nurses and Communicable Disease Division epidemiologists perform rapid investigation and follow-up of all report cases to find contacts possibly exposed to a case to identify risk factors for disease acquisition and spread. When exposed contacts are identified, individuals are recommended to receive prophylaxis through a clinician.

*Neisseria meningitidis* is the causative agent for meningococcal disease and has the potential to cause serious disease including septicemia or meningitis. Meningococcal disease has a case fatality rate of approximately **8% to 15%**.<sup>1</sup> Of those people surviving the disease, **11% to 19%** suffer from permanent sequelae including hearing loss, neurologic or brain damage, renal failure, or limb amputation.<sup>2</sup> Transmission occurs by direct exposure to respiratory droplets or direct contact with discharges from the nose or throat of an asymptomatic colonized person or individuals with invasive disease.

The secondary attack rate among close contacts that do not receive prophylaxis is **4 per 1000** persons, which is **500 to 800 times greater** than the general population (see table listing close contacts). A **contact** is defined as any members of the case's household or other individuals who had direct contact with the case's saliva or oral/nasal secretions during the 7 days prior to onset of the case's symptoms and until 24 hours after the initiation of appropriate antibiotic therapy.

The number of meningococcal cases in Oklahoma and the United States has **steadily declined** in the last 5 years. The number of reported meningococcal disease cases in Oklahoma has dramatically decreased from **34** in 2000 to **10** in 2004. The rate of meningococcal disease has ranged from **0.98 per 100,000** Oklahoma population in 2000 to **0.29 per 100,000** population in 2004. The rate of meningococcal cases have consistently been higher in Oklahoma than the U.S. until 2004, where the rate dropped from **0.8 per 100,000** U.S. population in 2000 to **0.48 per 100,000** U.S. population in 2004.

The case-fatality rate in Oklahoma since 2000 has ranged from **3.8%** to **24%**. The median age of the cases between 2000 and 2004 ranged from **12** years to **40** years, with ages reported from 8 days to 96 years. Since January 2005 through August 31, **14** cases have been identified with a case-fatality rate of **28.6%**. The median age for 2005 is **8** years.

Thirteen serogroups of *N. meningitidis* exist but only 5 groups cause most of the cases: A, B, C, Y, and W-35. Laboratories in Oklahoma are required to submit sterile-site isolates of *N. meningitidis* to the OSDH Public Health Laboratory (PHL) for confirmation and serogroup determination. The OSDH PHL received 115 *N. meningitidis* isolates

for serogrouping from 2000 through 2004, serogroup Y was identified from 33 (28.7%) isolates. Serogroup C was the second most common serogroup identified from 15 (13%) Oklahoma case isolates followed by serogroup B (N=11, 9.5%), and W-135 (N=10, 8.6%). Thirty-three (28.7%) isolates were non-groupable and serogroup data was unknown for 13 (11.3%) cases. Of those cases with available serogroup data, most of those cases were a vaccine-preventable strain.

In January 2005, a meningococcal conjugate vaccine was licensed by Sanofi-Pastuer called Menactra in the United States for use in persons **11** to **55** years of age. This vaccine covers serogroups A, C, Y, and W-135, and is recommended to persons in this age group at high-risk for developing disease. The current polysaccharide vaccine (Menomune, Sanofi-Pastuer) also covers serogroups A, C, Y, and W-135 but is licensed for persons between **2-10** years old and over **55** years.<sup>3</sup>

\*prepared by **Joli Stone**, M.P.H., Epidemiologist, CDD

<sup>1</sup> American Public Health Association. Bacterial Meningitis. In: Heymann DL, ed. Control of Communicable Diseases Manual. 18<sup>th</sup> Edition. Baltimore, MD: American Public Health Association; 2004.

<sup>2</sup> National Foundation for Infectious Diseases. Reducing the Impact of Meningococcal Disease in Adolescents and Young Adults. July 2005.

<sup>3</sup> Centers for Disease Control and Prevention. Meningococcal Disease and Meningococcal Vaccines. April 2005.

## Meningococcal Disease Prophylaxis Recommendations for Contacts

<b>1</b>	Household contacts (especially young children)
<b>2</b>	Child care or nursery school contacts
<b>3</b>	Direct exposure to secretions of index patient through kissing, sharing toothbrushes or eating utensils (markers of close social contact)
<b>4</b>	Mouth-to-mouth resuscitation, unprotected contact during endotracheal intubations
<b>5</b>	Frequently slept or ate in same dwelling as index patient (household-like contact)

American Academy of Pediatrics. Meningococcal infections. In: Pickering LK, ed. Red Book: 2003 Report of the Committee on Infectious Diseases. 26<sup>th</sup> ed. Elk Grove, IL: American Academy of Pediatrics; 2003.

## { Summary of Selected Notifiable Disease Reports in Oklahoma }

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diseases/conditions	fall quarter <sup>1</sup>	year to date <sup>2</sup>	5 year avg <sup>3</sup>
AIDS	24	129	167.8
Campylobacteriosis	188	377	329
Chlamydial infections	3,004	8,443	7,976.4
Cryptosporidiosis	12	34	17
<i>E. coli</i> O157:H7	9	20	20.8
Ehrlichiosis	0	4	24.8
Giardiasis	62	123	79.6
Gonorrhea	1163	3382	3423.8
<i>H. influenzae</i> (all types)	9	51	40.6
<i>H. influenzae</i> , type B (kids < 5)	0	0	0
Hepatitis A	0	4	79.6
Hepatitis B	31	26	76.2
Hepatitis C	1	3	8
HIV infections	37	138	122.4
Meningococcal invasive	1	15	18.4
Rabies, animal	13	66	91.8
RMSF	1	7	98
Salmonellosis	145	313	375
Shigellosis	119	515	402.6
<i>Streptococcus</i> invasive group A	20	92	43.8
<i>Streptococcus pneumoniae</i> , invasive	40	430	299.6
Syphilis (primary)	2	11	22.6
Syphilis (secondary)	6	18	29.4
Syphilis (late & late latent)	37	95	167.4
Tuberculosis	35	103	116.6

diseases of low frequency	year to date <sup>2</sup>	5 year avg <sup>3</sup>
HUS	2	2
Legionellosis	7	8.6
Listeriosis	3	4.2
Lyme disease	0	0.6
Malaria	9	6.8
PAM	2	0.2
Tularemia	2	9.8
Typhoid fever	0	0.4
Vibrosis	1	0.4

no. of animal rabies cases by animal type	year to date <sup>2</sup>	%
Bat	1	1.5
Cat	5	7.6
Cow	7	10.6
Dog	6	9.1
Goat	1	1.5
Horse	3	4.5
Skunk	43	65.2
<b>Total</b>	<b>66</b>	<b>100</b>

1. 07.01.05 through 09.30.05
2. 01.01.05 through 09.30.05
3. aggregate data for fall quarter of years 2000 through 2004



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