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epidemiology bulletin

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{2006-2007 Respiratory Virus Surveillance Update}

To track trends and patterns in influenza and other respiratory virus activity, the Oklahoma State Department of Health (OSDH) uses a sentinel surveillance system consisting of 30 healthcare providers and 10 laboratories. Seasonal surveillance activities resumed October 2, 2006. Culture-confirmed influenza type A and B were identified in Oklahomans during the week of December 2, 2006. The percentage of patient visits due to influenza-like illness (ILI) reported by sentinel providers has ranged from 1.2% (37/3102) during the first week of reporting to 12.2% (310/2458) for the week ending February 17, 2007. The proportion of positive influenza tests performed at sentinel laboratories began to rise in early February with 24.2% (104/249) postive tests reported and then increased to 39.1% (298/762) during the week of February 17, 2007. Oklahoma reached widespread activity status on January 27 and remained at that level until the end of February. Influenza activity can be highly variable from year to year, but "typical" seasons in Oklahoma do reflect peaking of activity in early to mid-February. The A (H1N1) strain that is predominating this season is primarily affecting the pediatric population. Numerous elementary schools have reported short-lived outbreaks and periods of high absenteeism due to influenza. It is anticipated that influenza activity will reach sporadic or very low levels in April and May. Rapid antigen influenza tests have high positive predictive value during peak activity, but during periods of low influenza prevalence, such as very early or late in the season, the positive predictive value of rapid tests is low, meaning that false positive tests are more likely to occur. Therefore, clinicians are urged to follow-up positive rapid antigen/enzyme influenza tests with confirmatory direct fluorescent antibody (DFA) testing or viral culture.

Respiratory virus culture may be obtained through the OSDH Public Health Laboratory (PHL) but it is important to note the requirements for shipping and transport of specimens. Viral culture specimens must be received within 3 days--with day 1 being the date of collection. If this may not be accomplished, the specimen must be shipped frozen at 4°C on dry ice or the specimen will be deemed unsatisfactory for testing. Physicians who are participants in the surveillance system may access the PHL courier for free laboratory transport by dropping off the specimen at a county health department, or by directly contacting the PHL shipping department for a courier pick-up.

Between October 1, 2006, and February 17, 2007, the PHL performed viral isolation and culture on 110 respiratory specimens. The PHL has isolated 24 type A H1N1, 4 type B, and 13 unsubtyped influenza A viruses. Respiratory syncytial virus (RSV) activity peaked in mid-January with a percent positivity of RSV tests at 56% (148/264) during the week ending January 13, 2007.

*Prepared by Renee Powell, MPH, Epidemiologist, CDD and Kristy Bradley, DVM, MPH, Deputy State Epidemiologist

{Epidemiology and Prevention of Invasive Pneumococcal Disease in Oklahoma}

Streptococcus pneumoniae is a common cause of serious illness among young children and adults in the United States (U.S.) including pneumonia, bacteremia, sinusitis, and acute otitis media, and has become the leading cause of bacterial meningitis in the U.S. replacing *Haemophilus influenza* group B (Hib).[1] Pneumococcal bacteria are carried in the nasopharynx of humans and are passed person to person via respiratory droplets. Severe infection results from entry of the bacteria into a sterile site, causing invasive disease. Invasive pneumococcal disease (IPD) was added to the Oklahoma State Department of Health (OSDH) reportable disease registry in July 2000.

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In the U.S. there are approximately 24 cases of IPD per 100,000 population annually with rates of disease highest in children <5 and in adults ≥65 years of age.[1] In Oklahoma, approximately 16.2 cases of IPD per 100,000 population occur annually in all ages with its highest rates of disease also in persons <5 years old and those ≥65 years old.

Death from IPD is rare in children and occurs mostly in the elderly. When compared to the U.S., IPD mortality rates in Oklahoma are higher in children <5 years old (3.2 vs. 1.9 per 100 population) but equivocal in adults ≥65 years of age (18.1 vs. 20.2 per 100,000 population). IPD occurs year round, but is most common during the winter and in early spring when respiratory diseases are more prevalent. In Oklahoma, 78% of all cases during 2001 to 2005 occurred between November and May.

Immunizations targeted for prevention of IPD in the two different age risk groups are distributed in the U.S. The 23-valent polysaccharide (PPV23) vaccine is recommended for all adults ≥65 years old and children ≥2 years with chronic conditions and is 60%-70% effective in preventing IPD. The 7-valent pneumococcal conjugate vaccine (PCV7) was licensed in the U.S. in 2000 for use in children <5 years, is highly effective against vaccine strains (~90%-100%), and has reduced the overall incidence of IPD in children and adults.[2] The Advisory Committee on Immunization Practices (ACIP) recommends all children aged 2-23 months be vaccinated with four doses of PCV7 given at 2, 4, 6, and 12-15 months of age.[1] In Oklahoma, immunization with PCV7 is recommended for school or child care entry and is currently covered under Vaccines for Children (VFC).

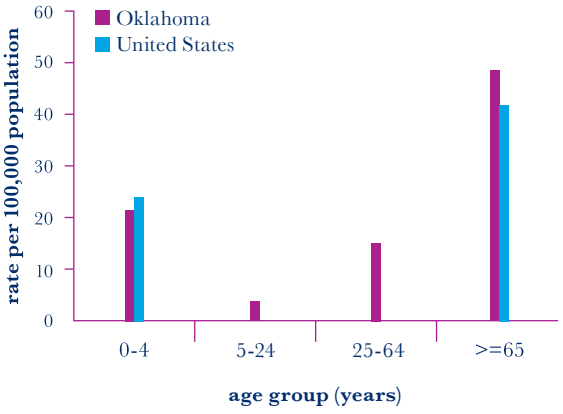
Despite VFC eligibility and recommendations for childhood vaccination, Oklahoma ranked last in the 2005 National Immunization Survey. Vaccination with 3+ doses of PCV7 was 82.8% for the U.S., with Oklahoma at only 54.4%. Oklahoma is currently seeking ways to increase vaccination coverage of PCV7 in children by educating parents and physicians about the vaccine and disease, and future implementation of child care entrance requirements. By increasing PCV7 coverage, Oklahoma will see a decrease in the incidence of IPD by direct and indirect effects of vaccinating our children.

*prepared by Joli Stone, MPH, Epidemiologist, CDD

[1] CDC. Preventing pneumococcal disease among infants and young children: Recommendations of the Advisory Committee on Immunization Practices (ACIP). MMWR 2000;49 (No. RR-9):1-35.

[2] CDC. Direct and Indirect Effects of Routine Vaccination of Children with 7-Valent Pneumococcal Conjugate Vaccine on Incidence of Invasive Pneumococcal Disease-United States, 1998-2003. MMWR 2005;54:893-897.

Annualized Age-Specific Rates of Invasive Pneumococcal Disease, Oklahoma and United States,* 2001-2005



*Active Bacterial Core surveillance system data 2001-2005; 2005 preliminary data

{Two Multi-state Outbreaks of *E. coli* O157:H7 Identified by Pulsed-field Gel Electrophoresis}

Escherichia coli (*E. coli*) O157:H7 and other enterohemorrhagic strains of *E. coli* (EHEC) are characterized by a sudden onset of diarrhea that is often bloody and accompanied by severe abdominal cramps, but fever is typically absent or mild. EHEC is a reportable disease in Oklahoma. When cases are reported, an epidemiologist from the Communicable Disease Division and the local county health department public health nurse conducts a thorough investigation to compile history, symptom, laboratory test, and exposure data. EHEC isolates must be forwarded to the Oklahoma State Department of Health Public Health Laboratory for confirmation, typing, and pulsed-field gel electrophoresis (PFGE) characterization. This article summarizes two recent multi-state *E. coli* O157:H7 outbreaks and emphasizes the importance of conducting testing on each suspected case by requesting specific culture of stool for enterohemorrhagic *E. coli*.

During August and September 2006, an outbreak of *E. coli* O157:H7 was identified among 199 persons from 26 states. Cases had an indistinguishable PFGE pattern. Among the ill persons, 102 (51%) were hospitalized and 31 (16%) developed hemolytic uremic syndrome (HUS). Three deaths were associated with this outbreak.

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Epidemiologic investigation revealed consumption of pre-packaged spinach was associated with illness. Specific brand names were implicated in the outbreak and were recalled to prevent additional cases.

During November and December 2006, an outbreak of *E. coli* O157:H7 was identified among 71 persons from five states. Fifty-three (75%) cases were hospitalized and eight (11%) developed HUS. This outbreak was also identified by routine PFGE subtyping performed by public health laboratories. All cases reported consuming food from the same restaurant chain during their incubation period. Epidemiologic investigation revealed consumption of lettuce, cheddar cheese, and ground beef was associated with illness. The investigation is ongoing to determine what food caused the outbreak.

PFGE subtyping is routinely performed on *E. coli* O157:H7 and other enterohemorrhagic *E. coli* strains at public health laboratories throughout the United States. Public health laboratories submit PFGE patterns to a national network of laboratories called PulseNet. Laboratories routinely compare patterns online to detect possible outbreaks of diseases. Indistinguishable patterns may indicate the occurrence of an exposure to a common source such as a contaminated food item. PFGE subtyping is used on other foodborne pathogens such as *Salmonella*, *Listeria*, and *Campylobacter*.

Although no cases were identified among Oklahoma residents during these two recent multi-state outbreaks, 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 epidemiologic methods. However, the continuing success of PulseNet requires that healthcare providers routinely collect and submit specimens for testing. The OSDH Communicable Disease Division highly recommends the routine culture of stool specimens for patients with symptoms of enteric disease.

*prepared by Carmen Clarke, MPH, Epidemiologist, CDD

{New CDC Guideline: Management of Multidrug-Resistant Organisms in Healthcare Settings}

This much-anticipated guideline has been released by the Centers for Disease Control and Prevention (CDC) to provide comprehensive guidance for healthcare facilities regarding management of patients with multi-drug-resistant organisms (MDROs). MDROs are defined as microorganisms that are resistant to one or more classes of antimicrobial agents, although in some cases resistance may be to only one agent, such as methicillin-resistant Staphylococcus aureus (MRSA) or vancomycin-resistant enterococci (VRE). This detailed guideline delineates a two-tiered approach to prevention and control of MDROs in a variety of settings such as acute care, long-term care, hemodialysis units and home health. The initial tier defines the basic infection prevention and control measures. The second tier describes the interventions recommended for intensified efforts when MDROs are not decreasing, or when a new MDRO or an outbreak occurs in a facility. For both tiers, the categories of recommendations fall into the following categories listed at right and continued on the next page, with examples of the recommended actions:

-**Administrative Measures/ Adherence Monitoring** includes use of expert consultation and performance of system analyses

-**MDRO Education** regarding transmission prevention and feedback of unit-specific rates

-**Judicious Antimicrobial Use** including analysis of susceptibility trends and controlled use.

-**Surveillance** of targeted MDROs including monitoring for emerging resistance or transmission, and when to increase culturing and reporting

-**Infection Control Precautions** to prevent transmission involving contact precautions and patient placement, including when to stop new admissions

-**Environmental Measures** to prioritize room cleaning of patients in contact precautions, dedicate non-critical equipment and when to perform environmental cultures

-**Decolonization** for MRSA in intensified control efforts along with susceptibility monitoring

This guideline addresses two issues that are frequent sources of debate: active surveillance cultures (ASC) and decolonization. The use of targeted ASC is thoroughly reviewed in this guideline. Communities abroad and in this country have drastically reduced transmission of MDROs within and between facilities when they implemented ASC as one part of a comprehensive bundle approach in targeted high-risk areas such as intensive care units. A significant reduction of costs, morbidity, and mortality were well documented using these bundles.

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Routine decolonization of MRSA is not recommended for patients, nor is it advised as a routine component of MRSA control in this guideline. Considerations are given for use of decolonization as a component of the second tier of intensified control measures. Decolonization of healthcare providers should be limited to those epidemiologically implicated in transmission of MRSA in the facility.

The guideline can be found in its entirety on the CDC Web site at <<www.cdc.gov/ncidod/dhqp/pdf/ar/mdroGuideline2006.pdf>>.

*prepared by Becky Coffman, MPH, RN, CIC, Epidemiologist, CDD

Nationwide Outbreak of *Salmonella* Tennessee Associated with Peanut Butter, Summary of Oklahoma Cases

Public health officials from 42 states, with the assistance of the Centers for Disease Control and Prevention and the Food and Drug Administration, are investigating a nationwide outbreak of *Salmonella* tennessee infections. Twelve cases of salmonellosis with pulsed-field gel eletrophoresis (PFGE) patterns indistinguishable from those linked to the national outbreak have been identified in Oklahoma. Ages range from 1 to 80 years, median age is 64. Ten of the cases were female, and the isolate source was urine in 7 cases, stool in five cases. Onset dates range from October 1, 2006 to February 6, 2007. Symptoms included diarrhea in 6 cases (50%), while the remainder reported urinary tract infections (UTI). Two jars of peanut butter consumed by cases were found to have S. tennessee; PFGE testing confirmed the isolates were indistinguishable from the outbreak pattern.

{Fluoroquinolone-Resistant Neisseria Gonorrhea in Oklahoma}

In the United States, an estimated 700,000-800,000 persons are infected with *Neisseria gonorrhoeae* each year. Since 1993, the Centers for Disease Control and Prevention (CDC) has recommended the use of fluoroquinolones for gonorrhea treatment because it is an inexpensive one dose oral therapy. However, in 2002, data from Gonococcal Isolate Surveillance Project (GISP), demonstrated an increase of fluoroquinole-resistant *N. gonorrhoeae* (QRNG) in certain populations (persons exposed to males who have sex with males [MSM], people living in Asia, Pacific Islands [including Hawaii], and California). As a result, CDC now recommends alternate therapies (such as ceftriaxone) for these populations.

The GISP was established in 1986 as a collaborative project between 25 selected sexually transmitted diseases (STD) clinics, five regional laboratories, and CDC to monitor trends in antimicrobial susceptibilities of strains of *N. gonorrhoeae* in the United States in order to establish a rational basis for the selection of gonococcal therapies. Data collected nationally from these GISP sites during 2004 indicate a QRNG prevalence of 7.6%, which is higher when compared to 5.0% in 2003, 2.2% in 2002 and 0.7% in 2001. When examining national QRNG data by risk behavior, the prevalence of fluoroquinolone resistance in the MSM population increased from 7.2% in 2002, to 15% in 2003, and finally 23.8% in 2004.

In response to an increased incidence of QRNG in Dallas and Denver, the Oklahoma City County Health Department (OCCHD), in collaboration with the Oklahoma State Department of Health (OSDH), started a GISP screening project at the OCCHD STD Clinic in May 2003. The first 25 gonorrhea positive males seen at the OCCHD STD Clinic each month are cultured and tested for floroquinilone resistance. There were no resistant isolates identified in 2003, three positives in 2004, seven positives in 2005, and six as of April 2006.

Due to the increase in resistance, the OSDH instituted the following screening and treatment protocol for all county health departments in 2005:

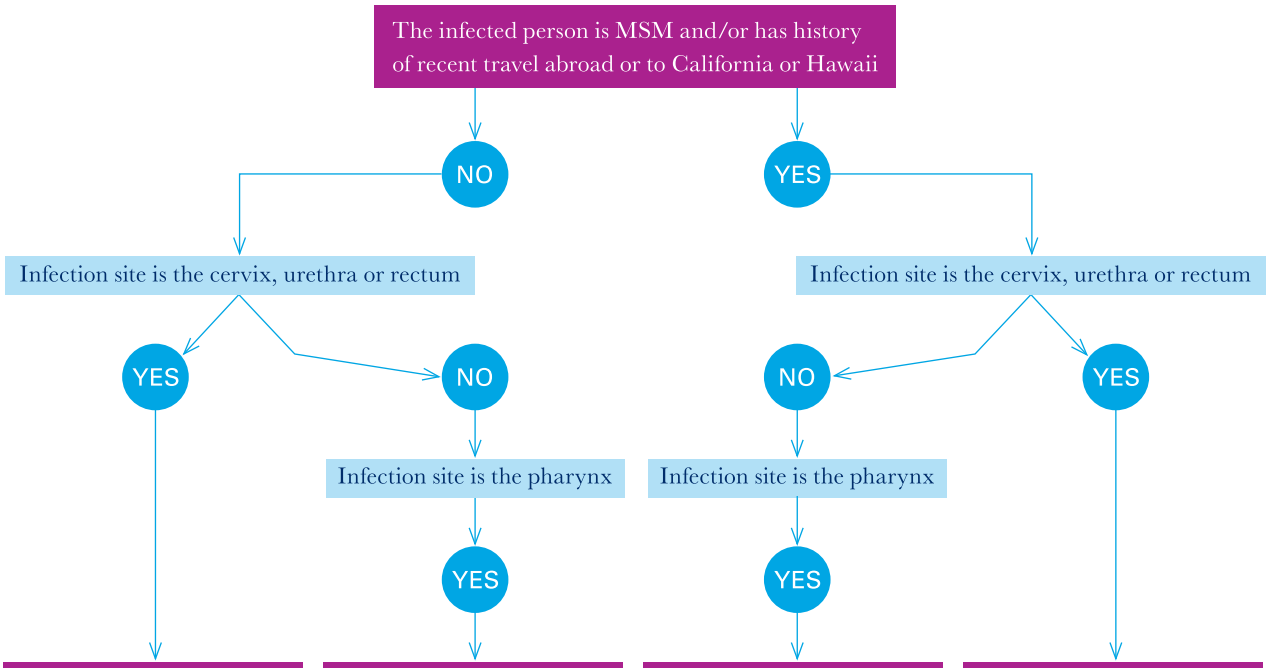
Health department staff treating an infected male patient for gonorrhea should:

1. Evaluate if the patient has had sex with persons within the last 60 days from the following countries with increased prevalence: Australia, Asia (China, Japan, Korea, Philippines, Singapore, and Vietnam), the Pacific Islands, England, Wales, California, and Hawaii.
2. Inquire of all male patients if they have had sex with men in the last 60 days.

Any gonorrhea positive male patient who responds with a **yes** to either question and any female responding **yes** to the first question should be treated with ceftriaxone and not ciprofloxacin. Their sexual partners, whether male or female, should also be treated with ceftriaxone. When well-documented penicillin allergy or other contraindications preclude treatment with a cephalosporin, patients can be treated with a single-dose azithromycin 2.0 g orally once followed by a test of cure.

*prepared by Mark Turner, MPH, Manager HIV/STD Surveillance & Analysis, & Jan Fox, RN, MPH, Manager, Viral Hepatitis & STD Care Services

Uncomplicated *N. Gonorrhoeae* Infection Treatment Flow Chart



RECOMMENDED REGIMEN
Ceftriaxone 125 mg IM in a single dose
OR
Cefixime 400 mg po in a single dose
OR
Ciprofloxacin 500 mg po in a single dose
OR
Ofloxacin 400 mg po in a single dose
OR
Levofloxacin 250 mg po in a single dose
PLUS
Treatment for chlamydia if chlamydial infection is not ruled out

RECOMMENDED REGIMEN
Ceftriaxone 125 mg IM in a single dose
OR
Ciprofloxacin 500 mg po in a single dose
PLUS
Treatment for chlamydia if chlamydial infection is not ruled out

RECOMMENDED REGIMEN
Ceftriaxone 125 mg IM in a single dose
PLUS
Treatment for chlamydia if chlamydial infection is not ruled out

RECOMMENDED REGIMEN
Ceftriaxone 125 mg IM in a single dose
OR
Cefixime 400 mg po in a single dose
PLUS
Treatment for chlamydia if chlamydial infection is not ruled out

Note

-An infected person who cannot tolerate penicillin, cephalosporins or quinolones may be treated with Spectinomycin 2 g in a single IM dose or Azithromycin 2 g po in a single dose. However, patients treated with Spectinomycin for pharyngeal infections should have a pharyngeal culture 3-5 days following treatment to verify eradication of infection. Spectinomycin may be unavailable from the manufacturer.

-Pregnant women should not be treated with quinolones or tetracyclines.

-Fluoroquinolones have not been recommended for children weighing ≤45 kg.

Antibiotic Susceptibility of Invasive *Streptococcus Pneumoniae* Isolates from Sentinel Surveillance Laboratories, January 1998-December 2006**

Hospital	Suscept.*	# Penicillin (%)	# Ceftriaxone (%)	# Cefotaxime (%)	# Erythromycin (%)	# TMP/SMZ (%)	Total # of isolates submitted
OKC AREA							
Columbia Bethany	S I R	4/5 (80) [e] 1/5 (20)	3/3 (100) [e]	1/2 (50) [e] 1/2 (50)	3/3 (100) [d]		**5**
Deaconess	S I R	86/121 (71) [b,e] 25/121 (21) 10/121 (8)	116/119 (98) [e] 1/119 (<1) 2/119 (2)		24/29 (83) [d] 5/29 (17)	1/1 (100) [d]	**121**
Integris Baptist	S I R	210/305 (69) [d, e] 59/305 (19) 36/305(12)	286/301 (95) [e] 14/301 (5) 1/301 (<1)	3/3 (100) [e]	210/303 (69) [d] 93/303 (31)	6/9 (67) [d] 3/9 (33)	**305**
Integris Southwest	S I R	174/225 (77) [d, e] 35/225 (16) 16/225 (7)	209/218 (96) [e] 7/218 (3) 2/218 (<1)	4/4 (100) [e]	170/220 (77) [d] 1/220 (<1) 49/220 (22)	1/2 (50) [d] 1/2 (50)	**225**
Mercy	S I R	69/109 (63) [e] 21/109 (19) 19/109 (17)	52/59 (88) [e] 4/59 (7) 3/59 (5)	48/63 (76) [e] 8/63 (13) 7/63 (11)	6/13 (46) 7/13 (54) [e]	15/36 (42) [e] 3/36 (8) 18/36 (50)	**109**
Midwest Regional	S I R	123/173 (71) [e] 41/173 (24) 9/173 (5)	29/31 (94) 2/31 (7) [e]	130/162 (80) [e] 25/162 (15) 7/162 (4)	13/14 (93) [d] 1/14 (7)	12/21 (57) 2/21 (10) 7/21 (33)	**173**
Norman Regional	S I R	113/166 (68) [e,o,m] 31/166 (19) 22/166 (13)	166/170 (98) [e] 4/170 (2)	108/115 (94) [e] 5/115 (4) 2/115 (2)	106/155 (68) [d] 2/155 (1) 47/155 (30)	101/157 (64) [e] 13/157 (8) 43/157 (27)	**166**
OU Med Center Children's	S I R	66/111 (60) [b] 30/111 (27) 15/111 (13)	2/2 (100)	97/111 (87) [b] 9/111 (8) 5/111 (5)	72/109 (66) [b] 2/109 (2) 35/109 (32)	60/111 (54) [b] 9/111 (8) 42/111 (38)	**111**
OU Med Center Everett Tower	S I R	54/76 (71) [b] 13/76 (17) 9/76 (12)		70/76 (92) [b] 4/76 (5) 2/76 (3)	57/76 (75) [b] 19/76 (25)	48/76 (63) [b] 4/76 (5) 24/76 (32)	**76**
St. Anthony	S I R	123/147 (84) [e,d,o] 14/147 (10) 10/147 (7)	110/113 (97) [e] 2/113 (2) 1/113 (1)	22/22 (100) [e]	118/142 (83) [d] 24/142 (17)	115/146 (79) [d] 5/146 (3) 26/146 (18)	**147**
VA-OKC	S I R	33/43 (77) [e,d,o] 5/43 (12) 5/43 (11)	15/16 (94) [e] 1/16 (6)	39/42 (93) [e] 2/42 (5) 1/42 (2)	31/42 (74) [d] 11/42 (26)	29/40 (72) [d] 1/40 (3) 10/40 (25)	**43**
OKC AREA TOTAL	**S I R**	**1055/1481 (71) 274/1481 (19) 152/1481 (10)**	**1015/1059 (96) 35/1059 (3) 9/1059 (1)**	**522/600 (87) 54/600 (9) 24/600 (4)**	**810/1106 (73) 5/1106 (<1) 291/1106 (26)**	**388/599 (65) 37/599 (6) 174/599 (29)**	**1481**
TULSA AREA							
Hillcrest	S I R	92/106 (87) [o] 10/106 (9) 4/106 (4)	103/104 (99) [o] 1/104 (1)		56/65 (86) [o] 9/65 (14)	53/64 (83) [o] 3/64 (5) 8/64 (13)	**106**
St. Francis	S I R	57/88 (65) [d,e] 22/88 (25) 9/88 (10)	2/2 (100) [e]	71/86 (83) [d,e] 13/86 (15) 2/86 (2)			**88**
St. John	S I R	214/290 (74) [d,e,o] 45/290 (16) 31/290 (11)	224/266 (92) [e] 13/266 (5) 6/266 (3)	167/195 (86) [e] 22/195 (11) 6/195 (3)	220/267 (77) [d,e] 3/267 (1) 64/267 (22)	182/279(65) [d] 22/279 (8) 75/279 (27)	**290**
St. John Sapulpa (Bartlett Memorial)	S I R	6/7 (86) [e] 1/7 (14)	7/7 (100) [e]	6/6 (100) [e]	7/7 (100) [d]	3/7 (43) [d] 1/7 (14) 3/7 (43)	**7**
TULSA AREA TOTAL	**S I R**	**369/491 (75) 78/491 (16) 44/491 (9)**	**357/379 (94) 15/379 (4) 7/379 (2)**	**244/287 (85) 35/287 (12) 8/287 (3)**	**283/359 (79) 3/359 (<1) 73/359 (20)**	**238/350 (68) 26/350 (7) 86/350 (25)**	**491**

Hospital	Suscept.*	# Penicillin (%)	# Ceftriaxone (%)	# Cefotaxime (%)	# Erythromycin (%)	# TMP/SMZ (%)	Total # of isolates submitted
OTHER PARTICIPATING HOSPITALS							
Ada-Carl Albert Indian Health Facility	S I R	13/16 (81) [d,e] 2/16 (13) 1/16 (6)	15/15 (100) [d]	11/11 (100) [b]	7/8 (88) [b] 1/8 (12)	8/11 (73) [b] 1/11 (9) 2/11 (18) [b]	**16**
Ardmore-Mercy Memorial	S I R	87/116 (75) [e] 24/116 (21) 5/116 (4)	74/74 (100) [e]	94/96 (98) [e] 2/96 (2)	10/17 (59) [d] 7/17 (41)	10/17 (59) [d] 1/17 (6) 6/17 (35)	**116**
Bartlesville-Jane Phillips	S I R	29/34 (85) [d,e] 5/34 (15)	31/31 (100) [e]	21/21 (100) [e]	24/33 (73) [d] 2/33 (6) 7/33 (21)	17/31 (55) [d] 14/31 (45)	**34**
Duncan Regional	S I R	19/27 (70) [e,o] 7/27 (26) 1/27 (4)	16/18 (90) [e] 1/18 (6) 1/18 (6)	12/14 (86) 1/14 (7) 1/14 (7)	16/26 (62) [d] 10/26 (39)	17/25 (68) [d] 3/25 (12) 5/25 (20)	**27**
Enid-St. Mary's	S I R	71/99 (73) [d,e] 18/99 (18) 9/99 (9)	82/90 (91) [e] 8/90 (9)	38/46 (83) [e] 8/46 (17)	33/41 (80) [e] 6/41 (15) 2/41 (5)	2/2 (100) [e]	**99**
Lawton-Comanche County	S I R	35/56 (62) [b,m] 6/56 (11) 15/56 (27)	43/54 (80) [b,m] 8/54 (15) 3/54 (5)	39/50 (78) [b,m] 8/50 (16) 3/50 (6)	26/47 (55) [m] 21/47 (45)	26/45 (58) [m] 19/45 (42)	**56**
McAlester Regional	S I R	37/48 (77) [e,o] 8/48 (17) 3/48 (6)	21/21 (100) [e]		9/17 (53) [e] 2/17 (12) 6/17 (35)	7/17 (41) [e] 5/17 (29) 5/17 (30)	**48**
McCurtain Memorial	S I R	5/6 (83) [e,m] 1/6 (17)	6/6 (100) [m]	4/5 (80) [m] 1/5 (20)	5/6 (83) [m] 1/6 (17)	3/6 (50) [m] 2/6 (33) 1/6 (17)	**6**
Muskogee Regional	S I R	72/88 (82) [m] 10/88 (11) 6/88 (7)	77/81 (95) [m] 4/81 (5)	76/83 (92) [m] 7/83 (8)			**88**
Muskogee-VA	S I R	20/23 (87) [d,e] 2/23 (9) 1/23 (4)	5/5 (100) [d]	2/2 (100)	17/19 (90) [d] 2/19 (10)	12/19 (63) [d] 2/19 (11) 5/19 (26)	**23**
Pauls Valley	S I R	14/24 (58) [d,o] 5/24 (21) 5/24 (21)	11/11 (100) [d]	1/2 (50) [d] 1/2 (50)	3/8 (38) [d] 5/8 (62)	5/7 (71) [d] 2/7 (29)	**24**
Shawnee-Unity Health	S I R	75/101 (75) [d,e,m,o] 11/101 (11) 15/101 (15)	81/93 (87) [e,m] 10/93 (11) 2/93 (2)	67/77 (87) [m] 10/77 (13)	66/99 (66) [d,e,m] 3/99 (3) 30/99 (30)	64/97 (66) [d,e,m] 7/97 (7) 26/97 (27)	**101**
Stillwater	S I R	59/94 (63) [d,e] 21/94 (22) 14/94 (15)	89/92 (97) [e] 3/92 (3)	1/1 (100) [e]	55/92 (60) [d] 1/92 (1) 36/92 (39)	54/89 (61) [d] 3/89 (3) 32/89 (36)	**94**
OTHER PARTICIPATING HOSPITALS TOTAL	**S I R**	**537/732 (73) 119/732 (16) 76/732 (10)**	**551/591 (93) 34/591 (6) 6/591 (1)**	**366/408 (90) 37/408 (9) 5/408 (1)**	**271/413 (66) 15/413 (4) 127/413 (31)**	**225/366 (62) 24/366 (7) 117/366 (32)**	**732**
TOTAL	**S I R**	**1961/2704 (72) 471/2704 (17) 272/2704 (11)**	**1923/2029 (95) 84/2029 (4) 22/2029 (1)**	**1132/1295 (87) 126/1295 (10) 37/1295 (3)**	**1364/1878 (73) 23/1878 (1) 491/1878 (26)**	**851/1315 (65) 87/1315 (7) 377/1315 (28)**	**2704**

** Preliminary data as of 01.19.07

* Susceptibility: S = Sensitive, I = Intermediate, R = Resistant

Susceptibility Method:
- a Agar Dilution
- b Bacterial Broth Dilution
- d Bacterial Disk Diffusion (Kirby Bauer)
- e Antimicrobial Gradient Strip (E-test ®)
- m Antimicrobial Panel (MicroScan ®)
- o Oxacillin Disk Only

Summary of Selected Notifiable Disease Reports in Oklahoma

diseases/conditions	winter quarter[1]	year to date[2]	5 year average[3]
AIDS	33	166	189
Campylobacteriosis	71	343	444
Chlamydial infections	2825	12706	10600
Cryptosporidiosis	11	44	25
E.coli O157:H7	3	36	28
Ehrlichiosis	0	6	44
Giardiasis	31	135	119
Gonorrhea	1029	4695	4498
H. influenzae (all types)	25	76	59
H. influenzae, type B (kids < 5)	0	0	0
Hepatitis A	2	11	44
Hepatitis B (acute)	7	73	85
Hepatitis C (acute)	1	8	9
HIV infections	36	199	173
Meningococcal invasive	0	11	22
Rabies, animal	12	69	116
Rocky Mountain spotted fever	0	38	140
Salmonellosis	111	516	479
Shigellosis	33	135	721
Streptococcus invasive group A	25	105	74
Streptococcus pneumoniae, invasive	192	679	476
Syphilis (primary)	10	37	21
Syphilis (secondary)	8	31	33
Syphilis (early latent)	24	124	72
Tuberculosis	32	143	131

diseases/conditions	year to date[2]	5 year average[3]
Brucellosis	0	0
Hemolytic Uremic Syndrome (HUS)	1	4
Legionellosis	7	11
Listeriosis	4	4
Lyme disease	0	1
Malaria	7	9
PAM	0	1
Psittacosis	0	0
Tularemia	3	13
Typhoid fever	0	1
Vibriosis	1	2
Yersiniosis (Yersinia enterocolitica)	0	2

number of animal rabies cases by animal type	year to date[2]	percent
Bat	3	4
Cat	4	6
Cow	6	9
Dog	1	1
Goat	0	0
Horse	5	8
Skunk	50	72
Total	**69**	**100**

[1] **10.01.06 through 12.31.06**
[2] **01.01.06 through 12.31.06**
[3] **Five year average of year to date data for 2001 through 2005.**

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