Prevention bulletin
Publication of the Bureau of Epidemiology & Disease Control Services September/October 2003, Vol. 17, No. 5

The Buzz on Mosquitoes and West Nile Virus

By Dr. Bob England and Craig Levy

As anticipated, West Nile Virus (WNV) has arrived in Arizona. On August 11, WNV activity was detected for the first time in Arizona in mosquitoes trapped in Cochise County. Infections in horses were detected in the northeastern part of the state shortly thereafter. Between the time this was written and when you read it, there have probably been more such findings.

Last year was by far the biggest year for WNV in the U.S. since it first arrived in New York in 1999. Human cases jumped to more than 4,000 in 2002 with 284 deaths, and Arizona was one of only four states in the continental U.S. without any WNV activity. So now what's in store for us here?

You might not think of Arizona as a likely hotbed for mosquito-borne diseases, but there's reason for concern. We have plenty of reservoir birds and plenty of the worst of the vector mosquito species. There are many local foci where both of these come together near human population centers. A disease that is closely related to WNV, St. Louis encephalitis (SLE), has been more of a chronic threat here than in many parts of the country where you might expect it to be worse. So buckle up, we may be in for a ride.

On the other hand, even under the worst of circumstances, the risk to any single individual is slight. Only about 1 in 150 infections results in severe disease, although the risk increases with age, starting at ~50 years of age.

No matter how hard we try, we won't be able to prevent every potential case of WNV. What we CAN do, however, is to keep close track of where it has spread, monitor conditions that might allow for local amplification of the virus in birds and in human-feeding mosquitoes, and use this information to guide local mosquito control efforts and public education so that we avoid major outbreaks of disease, such as those that several states suffered last year. So how do we do that?

Each year, from May through October, mosquito-, bird- and horse-based surveillance is conducted statewide for mosquito-borne encephalitis viruses. These include SLE, western equine encephalitis (WEE), and most recently, WNV. This program has five components:

1. **Mosquitoes** – Mosquitoes are trapped and collected by local environmental health department staff, brought to ADHS where each mosquito is sorted by species (one at a time), then each "pool" of mosquitoes of a single species from each trap site is tested at the Arizona State Health Laboratory for these arboviruses. So far this year, more than 800 mosquito pools have been tested.
2. **Sentinel chickens** – 18 flocks of chickens are maintained in 8 different counties and are periodically tested for seroconversion to any of the same arboviruses. So far, more than 900 chicken blood samples have been tested.
3. **Horses** – The University of Arizona Veterinary Diagnostic Laboratory tests horses that exhibit symptoms of neurologic disease for WEE and WNV. So far, more than 20 horses have been tested.
4. **Dead birds** – Citizens may call in sightings of recently dead birds, and many species are collected by local environmental health staff, shipped to the UofA Veterinary Diagnostic Lab, and tested. So far, more than 300 dead birds have been tested.
5. **Humans** – Clinicians may contact their local health department to arrange testing of suspect cases at the Arizona State Health Lab. Serologic testing can be performed on serum or CSF (serum is preferred). Testing is provided for any hospitalized person with encephalitis, and any adult hospitalized with aseptic meningitis. We do not have the ability to test the many pediatric cases of aseptic

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Arizona Department of Health Services

Visit the ADHS Web site at www.hs.state.az.us

Will It Be Another Mild Flu Season?

By Kathy Fredrickson and Susan Goodykoontz

Mild, short, late – three words that best describe last year's influenza season in Arizona. The first confirmed case of the season was reported on Dec. 9, 2003 (influenza B in a Maricopa County adult); however, influenza activity did not begin to rise until the first week of February, peaking near the end of March and ending in late May. Influenza activity remained at relatively low levels throughout the season compared with other years, both in Arizona and throughout the United States. Additionally, Maricopa County Emergency Departments reported significantly fewer instances of diversion during the season than expected.

Each year, isolates are submitted from providers around the state to the Arizona State Laboratory for influenza testing. The results indicate that influenza A(H1N1) was the predominant influenza strain of the season with a few reports of influenza B and influenza A(H3N2) interspersed throughout the season. There were 126 influenza virus isolates submitted to the Arizona State Laboratory, 105 (83%) were A(H1N1), 10 (8%) were A(H3N2) and 11 (8.7%) were B. All subtyped isolates were consistent with vaccine strains.

The 2003-2004 trivalent vaccine will consist of:

- H1N1, A/New Caledonia/20/99
- H3N2, A/Panama/2007/99 (an A/Moscow/10/99-like virus)
- B/Hong Kong/330/2001-like virus strain

Vaccine Information Statements (VIS) for the 2003-2004 influenza season can be found at *www.cdc.gov/nip/publications/VIS/vis-flu.pdf.*

The Arizona State Laboratory provides influenza testing free of charge to providers in the state. If you have any questions regarding influenza surveillance or influenza testing, please contact your local health department or the state Infectious Disease Epidemiology Section at 602.364.3676.

Flu Vaccination

Much of the illness and death caused by the flu can be prevented by a yearly flu shot. People in high-risk groups and people who are in close contact with those at high risk should get a flu shot every year. A flu shot can be given to anyone who wants to avoid the flu (persons >6 months of age).

The optimal time to receive influenza vaccine continues to be October and November. However, because of vaccine distribution delays during 2000-2002, the Advisory Committee on Immunization Practices (ACIP) recommends that vaccination efforts in October focus on persons aged 50 years or older and those aged 6-23 months, persons aged 2-49 with certain medical conditions that place them at increased risk for influenza-related complications, children less than 9 years receiving influenza vaccine for the first time, health-care workers, and household contacts of persons at high risk. ACIP recommends that vaccination of other groups begin in November. Persons who provide important community services (such as police, fire department personnel, emergency medical services) should consider getting a flu shot so that those services are not disrupted during a flu outbreak.

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First Nasal Vaccine Approved for Use

On June 17, 2003 the Food and Drug Administration (FDA) approved the use of FluMist, an influenza vaccine that is the first nasally administered vaccine to be marketed in the United States. It is also the first live virus influenza vaccine approved in the U.S. Unfortunately, it is not approved for use in many of those same groups for which influenza vaccine is most recommended.

FluMist is approved to prevent influenza illness due to influenza A and B viruses in healthy children and adolescents, ages 5-17 years, and healthy adults, ages 18-49.

In clinical trials, FluMist was evaluated in 20,228 individuals, including over 10,000 healthy children 5-17 years old. The efficacy of the vaccine in preventing influenza was approximately 87 percent among children included in the trial. In healthy adults ages 18-49 years, FluMist was effective in reducing severe illnesses with fever, and upper respiratory problems which may be caused by influenza infection.

As with any live virus vaccine, FluMist should not be given for any reason to people with immune suppression, including those with immune deficiency diseases, such as AIDS or cancer, and people who are being treated with drugs that cause immunosupression.

The safety of FluMist in people with asthma or other reactive airway diseases has not been established; FluMist should not be given to people with a history of these problems. In a large safety study, children under five years of age were found to have increased rate of asthma and wheezing within 42 days of vaccination compared to placebo recipients, and thus FluMist is not recommended for young children. For people age 50 years and over, the safe and effective use of FluMist has also not been established.

The vaccine should also not be administered to those with therapies including aspirin, a history of Guillain-Barre syndrome, chronic diseases, allergies to eggs or those who are pregnant.

The most common adverse events associated with the vaccine were nasal congestion, runny nose, sore throat, and cough.

FluMist is produced by MedImmune Vaccines and will be distributed by Wyeth. Both companies will market the product. For more information visit *www.fda.gov* or *www.cdc.gov/nip.*

Flu Season

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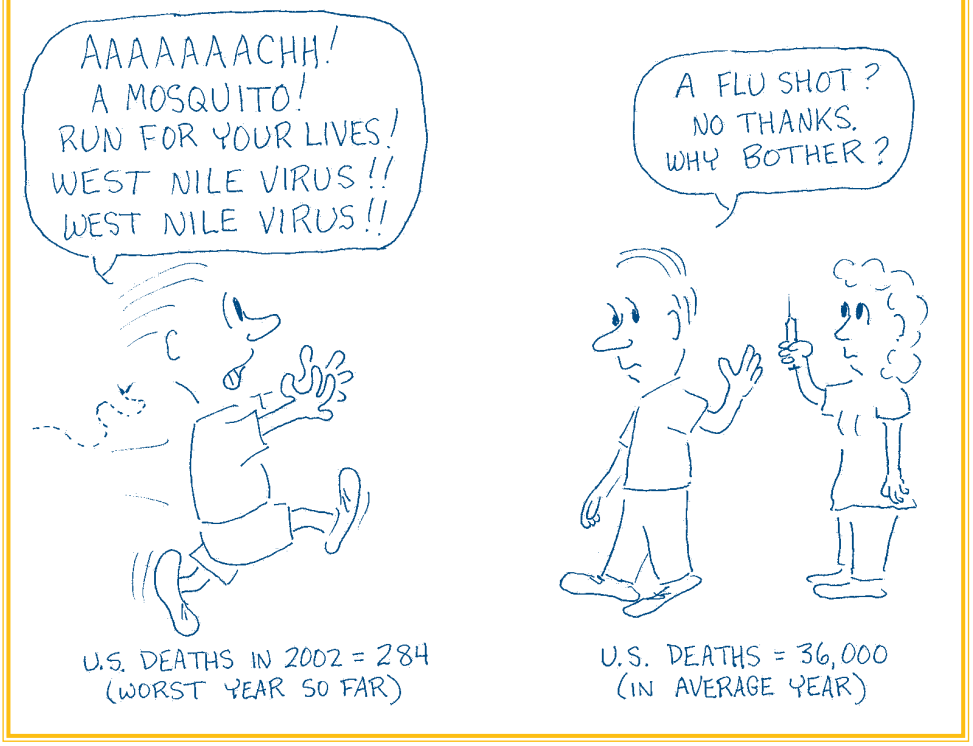
Pregnant Women

Pregnancy can increase the risk for complications from the flu, and pregnant women are more likely to be hospitalized from complications of the flu than non-pregnant women of the same age. In previous worldwide outbreaks of the flu (pandemics of 1918-19 and 1957-58), deaths among pregnant women were associated with the flu. Pregnancy can change the immune system in the mother, as well as affect her cardiovascular system (heart and lung function). These changes may place pregnant women at increased risk for complications from the flu.

Because the flu shot is made from inactivated viruses (the viruses are killed), many experts consider flu shots safe during any stage of pregnancy. However, since miscarriages (spontaneous abortions) most often occur in the first trimester of pregnancy, many providers have been reluctant to give a flu shot during the first trimester so as to avoid a coincidental association with miscarriage.

Women who will be beyond the first three months of pregnancy during the flu season should get a flu shot. Pregnant women who have medical problems that increase their risk for complications from the flu should get a flu shot before the flu season, no matter their stage of pregnancy.



Healthy Children Aged 6-23 Months

Because children aged 6-23 months are at substantially increased risk for influenza-related hospitalizations, influenza vaccination of all children in this age group is encouraged when feasible.

The Vaccines for Children (VFC) program has expanded to cover federal VFC-eligible children during the 2003-2004 flu season.

Where To Call for Flu Shot Clinics

Community Information and Referral Flu Hotline. Maricopa County 602.263.8856, and for the rest of the state, 800.352.3792. *www.cir.org.*

Kathy Fredrickson is the Office Chief for the Arizona Immunization Program and can be reached at kfredri@hs.state.az.us. Susan Goodykoontz is an epidemiologist with the Office of Infectious Diseases and can be reached at sgoodyk@hs.state.az.us. The Immunization Office can be reached at 602.364.3630.

September is Antibiotic Resistance Awareness Month

The Centers for Disease Control and Prevention (CDC) is kicking off a national media campaign on appropriate antibiotic use in September with "Snort, Sniffle, Sneeze…No Antibiotics Please" as the slogan. In conjunction with this campaign, Governor Janet Napolitano has proclaimed September as "Antibiotic Resistance Awareness Month."

The good news is penicillin resistant pneumococcus from invasive sites continues to decline in Arizona. Isolates with intermediate and high level resistance declined from 28% in 2000 to 20 % in 2002. Resistance levels of isolates from children showed an even more dramatic decrease from 46% in 2000 to 26% in 2002. Your continued assistance on this worthwhile project is greatly appreciated. Thank you!

Free brochures, posters, and appropriate use guidelines are available from the Arizona Department of Health Services, Infectious Disease Epidemiology Section at 602.364.3676 or ckioski@hs.state.az.us.

Rise In Norovirus Outbreaks Prompt Reminder of Good Hygiene Practices

By Graham Briggs

The Arizona Department of Health Services (ADHS) has offered laboratory testing for suspected norovirus clusters for approximately one year. As of July 2003, county health departments and ADHS have identified five laboratory confirmed outbreaks of norovirus and a handful of suspected norovirus clusters (See Fig. 1).

The high attack rates and explosive nature of these outbreaks, usually via person-to-person contact, provides a strong reminder for directors of health care, childcare and other residential facilities to reinforce hand hygiene and hand washing practices and to exclude ill employees and visitors from the facility.

An example of this occurred over the Fourth of July weekend at a children's summer camp. Campers were initially kept together indoors because of a bobcat wandering around camp. One child was reported to have been vomiting in this enclosed space and was the probable index case. An outbreak of gastroenteritis among 52% of 102 campers and employees followed. Testing at the Arizona State Laboratory confirmed presence of norovirus in stool samples collected. In addition, the bobcat tested positive for rabies virus at the State Laboratory.

Health care providers are reminded to report to your county health department any suspicious clusters of gastrointestinal illness. The local health department will facilitate appropriate laboratory test confirmation and implement control measures. Suitable specimens for testing include stool and emesis from symptomatic cases as well as stool from cases as soon as possible after resolution of symptoms.

The State Laboratory uses reverse transcriptase-polymerase chain reaction (RT-PCR) to screen for norovirus, which can detect 100 virus particles/ml. Positive results are confirmed by DNA sequencing. While the State Laboratory cannot test single suspected cases of norovirus, it will test representative samples for all suspicious clusters of gastroenteritis. Please contact your county health department or Graham Briggs at 602-364-3676 or gbriggs@hs.state.az.us , in the Infectious Disease Epidemiology Section at ADHS if you have questions concerning norovirus.

Graham Briggs is an epidemiologist with the ADHS Office of Infectious Diseases and can be reached at the contact information provided above.

FIGURE 1

LIST OF NOROVIRUS OUTBREAKS IN ARIZONA, JANUARY – JULY, 2003

County	Month	# ill	Attack rate	Setting
Gila	April	23	74%	Assisted Living Facility
Gila	April	115	58%	Skilled Nursing Facility
Yavapai	May	26	44%	Retirement Community
Maricopa	May	26	53%	Retirement Community
Yavapai	July	53	52%	Summer Camp

ADHS On The Move

The Bureau of Epidemiology and Disease Control Services will be moving its offices Sept. 8 to the new main health department building located at 150 N. 18th Avenue, Phoenix, AZ 85007. New phone and fax numbers for the offices are listed below.

Office	Phone	Fax
Bureau Chief	602.364.3860	602.364.3266
Environmental Health	602.364.3118	602.364.3164
HIV	602.364.3610	602.364.3268
Immunizations	602.364.3630	602.364.3285
Infectious Diseases/TB/STDs (Main Line)	602.364.4562	602.364.3198
Communicable Disease Reporting	602.364.3676	602.364.3199
Emergency Response/Bioterrorism	602.364.3289	602.364.3264

Aseptic Meningitis Outbreak in Arizona

By Craig Levy

Arizona has experienced a dramatic increase in the number of aseptic meningitis (AM) cases in 2003. As of July 31, 465 cases of AM have been reported to the Arizona Department of Health Services. By the time you read this, it will probably top 500. This represents more than a fourfold increase from last year when 104 cases were reported for the same time period.

AM cases have been reported in eight counties, but 89 percent of cases were reported in Maricopa County. Most of the AM cases were in younger age groups (median age = 13 years, range 0 week to 86 years). The overall reported AM rate statewide for the first half of the year was 8.6 cases per 100,000 population in 2003, compared to 1.9 cases per 100,000 for the same time period in 2002. The highest case rate in 2003 was reported in Maricopa County with 12.7 cases per 100,000 (compared to 2.7 cases per 100,000 in 2002). Most of the cases have been sporadic, but several cases were clustered within families. Cases of AM typically peak in August each year in Arizona.

Enteroviruses are the leading cause of AM across the country. AM cases are more common during the summer and fall. The dramatic increase in AM cases seen this year is largely due to an increase in circulation of Echovirus type 30. This year, the Arizona State Health Laboratory has reported 57 enterovirus isolates (mostly from CSF specimens), and 42 of these (74%) were Echovirus 30. Increases in the circulation of Echovirus 30 appear to be somewhat cyclic. The last increase in Echovirus 30 in Arizona was seen in 1998-1999. Arizona is not the only state experiencing an increase in AM due to Echovirus 30 as several other western states have reported similar increases.

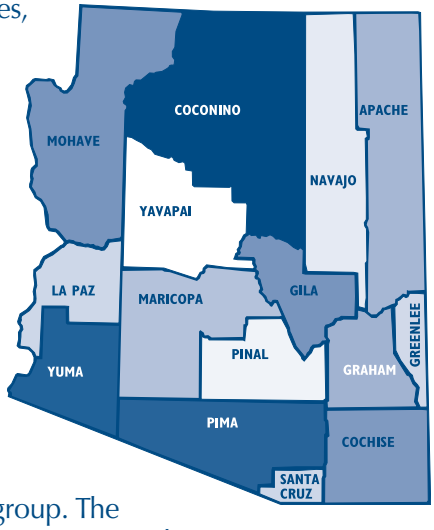
Transmission of enteroviruses is usually through the fecal-oral route. Prevention of transmission is achieved mainly through personal hygiene, especially handwashing.

Craig Levy is the manager of the Vector-Borne and Zoonotic Disease section at the Department. He can be reached at 602.364.4562 or clevy@hs.state.az.us.

Community Health Profiles

The Arizona Department of Health Services, Division of Public Health collaborated and developed Community Health Profiles for 87 incorporated towns and cities in Arizona.

The purpose of the Community Health Profiles is to aggregate various data from different agencies, especially those programs within the Arizona Department of Health Services to provide a user-friendly community health profile for communities in Arizona.



The Community Health Profile is in the initial phase of a long-term project to improve the accessibility of health-related data to communities and is a product of an Arizona Department of Health Services workgroup. The Profiles can be used by a variety of individuals, groups, and organizations to address a number of health issues. One of the goals of the project was to provide the data in groupings (using headings such as demographics, birth measures, prevention measures, etc.) to highlight data that would facilitate health program planning, implementation, and improvement in communities.

The profiles can be accessed through the Arizona Department of Health Services web page at *www.hs.state.az.us*. For more information about this effort please contact Patricia Tarango at 602.542.1219 or to receive this document in an alternative format contact Rodney Cluff at 602.542.2998.

Reader Survey Results

Thank you to all who responded to the *Prevention Bulletin* Reader Survey printed in the May/June issue. In general, responses were positive, indicating a high level of readership and sense that the content and article length were appropriate. A variety of suggestions for article ideas and ways to improve the *Bulletin's* layout have been noted, and we appreciate your ideas. Just over half of respondents indicated they wanted to continue receiving a printed copy of *Prevention Bulletin* instead of an on-line version. We think there is merit to both sides, and will ask again for your format preference in a future issue of Prevention Bulletin.

Please continue sending your suggestions and comments to us at ccasill@hs.state.az.us. We want to continue to make *Prevention Bulletin* your newsletter of choice when it comes to Arizona's epidemiology and disease control information.

Noteworthy...

Input Invited On Revised Draft Communicable Disease Rules

The Bureau of Epidemiology and Disease Control Services (BEDCS) has completed a revised draft of rule changes for the communicable disease rules in 9 A.A.C. 6, Articles 1, 2, 3, 5, and 6. In March 2003, BEDCS solicited input from interested persons on a draft of communicable disease rule changes. In response to comments received and internal review of the draft rules, BEDCS has made numerous changes to the draft rules. Thus, BEDCS is again soliciting input so that major issues can be identified and, if possible, resolved before the formal rulemaking process begins.

The revised draft rules are available for review on the ADHS website by going to *www.hs.state.az.us/diro/admin_rules/draft4.htm* and selecting one of the links for "Revised Draft—Communicable Diseases and Infestations." If you do not have access to the ADHS website and would like a copy of the draft rules, please call 602.364.0781 to request a copy. Comments should be submitted by October 24, 2003, to:

Sarah Harpring
1740 W. Adams, Suite 202
Phoenix, AZ 85007
E-mail: sharpri@hs.state.az.us
Fax: 602.364.1150

New TB Treatment Guidelines

New guidelines for treatment of tuberculosis were jointly put forth by the Centers for Disease Control, the American Thoracic Society, and the Infectious Disease Society of America in June of this year. The standard six-month "short course" with initial four-drug treatment is still the mainstay, but there are several new features including:

Extended treatment for patients with cavitary disease who are still culture-positive at two months of treatment. Once weekly treatment with rifapentine during the continuation phase in selected patients.

Practical treatment recommendations for special situations such as HIV infection, extrapulmonary tuberculosis, interrupted therapy, and hepatic and renal disease.

The full text of the new guidelines is available for free at *www.cdc.gov/mmwr/PDF/rr/rr5211.pdf.* If you do not have access to the Internet, you may call the Arizona Department of Health Services' TB Elimination Section at 602.364.4562 for a free copy.

Inhale Life – "It's a Girl Thing"

It's a girl thing, and it's a powerful message being delivered by two of Arizona's most high-profile girls – Phoenix Mercury players Adrian Williams and Lisa Harrison.

The Arizona Department of Health Services (ADHS) has teamed up with the Phoenix Mercury to spread the message that it's dangerous for young girls to try smoking.

"We need to reach young girls because just as many girls as boys are beginning to smoke in Arizona. That is a disturbing new trend," says Arizona Department of Health Services Director Catherine Eden.

Eden points to a recently released study from the National Center on Addiction and Substance Abuse that shows smoking among teenage girls is on the rise. Research indicates that girls can sink into addiction within 21 days of regular tobacco use and find it more difficult to quit than boys, who frequently do not become addicted until they have been using tobacco for six months.

Punctuated by the tag line, "Inhale Life – It's a girl thing," Phoenix Mercury players Lisa Harrison and 2003 WNBA All-Star Adrian Williams convey the message that smoking is a dangerous experiment because it is so quickly addictive. The campaign, which targets girls ages 7 to 18, stresses that making healthy choices can lead to success in school, career and life.

The ADHS/Mercury partnership will encompass TV and radio advertising, print ads, mall kiosks and a variety of other event appearances and promotional tactics through the end of the Mercury's 2005 WNBA season.

More information about the "Inhale Life – It's a girl thing" campaign can be found at *www.phoenixmercury.com.*

Department Awarded Grants for Chronic Disease Prevention

The Arizona Department of Health Services has recently received two grants that will positively impact the state's chronic disease prevention efforts. The first grants focuses on Nutrition, Physical Activity and Obesity. The initial phase of the project is the development and implementation of a statewide nutrition and physical activity plan. The grant award is for $321,254. The program will be housed in the Office of Nutrition and Chronic Disease Prevention Services.

The Department also received notification that it was awarded the Comprehensive Cancer Control Grant, funded for $148,834. The activities of the grant include the development of a statewide Cancer Control Plan utilizing broad professional and community input. This was truly a partner driven application, and we believe that played a significant role in its success.

SUMMARY OF SELECTED REPORTABLE DISEASES

Year to Date (January - July, 2003)[1, 2]

	Jan - July 2003	Jan - July 2002	5 Year Median Jan - July
VACCINE PREVENTABLE DISEASES:			
Haemophilus influenzae, serotype b invasive disease (<5 years of age)	6 (3)	4 (2)	4 (2)
Measles	1	0	0
Mumps	0	1	2
Pertussis (<12 years of age)	61 (37)	41 (27)	41 (27)
Rubella (Congenital Rubella Syndrome)	0 (0)	0 (0)	0 (0)
FOODBORNE DISEASES:			
Campylobacteriosis	526	400	330
E.coli O157:H7	19	16	18
Listeriosis	5	10	8
Salmonellosis	380	320	357
Shigellosis	287	185	229
VIRAL HEPATITIDES:			
Hepatitis A	175	192	254
Hepatitis B	193	132	113
Hepatitis B: non-acute[3]	642	684	684
Hepatitis C	6	3	9
Hepatitis C: non-acute[3]	2,024	3,063	1,102
INVASIVE DISEASES:			
Streptococcus pneumoniae	438	566	566
Streptococcus Group A	136	205	130
Streptococcus Group B in infants <30 days of age	19	14	18
Meningococcal Infection	13	22	22
SEXUALLY TRANSMITTED DISEASES:			
Chlamydia	8,501	8,544	7,429
Gonorrhea	2,270	2,052	2,337
P/S Syphilis (Congenital Syphilis)	120 (16)	112 (8)	106 (15)
DRUG-RESISTANT BACTERIA:			
TB isolates resistant to at least INH (resistant to at least INH & Rifampin)	0 (0)	7 (0)	7 (1)
Vancomycin resistant *Enterococci* isolates	605	600	536
VECTOR-BORNE & ZOONOTIC DISEASES:			
Hantavirus Pulmonary Syndrome	0	1	2
Plague	0	0	0
Animals with Rabies[4]	43	93	54
ALSO OF INTEREST IN ARIZONA:			
Coccidioidomycosis	1,437	1,752	1,118
Tuberculosis	87	107	121
HIV	317	289	289
AIDS	242	217	285
Lead Poisoning (<16 years of age)	157 (139)	138 (127)	167 (106)

1 *Data are provisional and reflect case reports during this period except Lead Poisoning which is by date of diagnosis.*
2 *These counts reflect the year reported or tested and not the date infected.*
3 *Case counts for non-acute Hepatitis B and C are not available before 1998.*
4 *Based on animals submitted for rabies testing.*

Prevention bulletin

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West Nile Hits Arizona

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meningitis (see related article on page 5.) or the many outpatients you may see with headache and fever. We also do request samples for follow-up testing of any individual who has tested positive for WNV through a private lab. (It is important to note that private testing is generally much less specific and there have been a number of false positives. The only way to confirm infection is with paired acute and convalescent serology or with other confirmatory testing by the CDC.) So far, we have tested more than 50 human serum and CSF specimens. An adult male from Graham County was the first reported human case for Arizona on August 25th. However, it is likely the man contracted the disease while visiting Colorado or Wyoming.

Human cases usually occur in late summer, so you should consider WNV in your differential of encephalitis and meningitis cases that occur now. However, we are in the throes of an increase in enteroviral aseptic meningitis cases, and this is the most likely cause of typical aseptic meningitis, especially in younger persons. For clinical guidance on WNV, please visit the CDC web site at *www.cdc.gov/ncidod/dvbid/westnile/clinical_guidance.htm* or the ADHS web site at *www.hs.state.az.us/phs/oids/vector/ann_int_med.pdf* .

Encephalitis and meningitis are reportable conditions in Arizona. In August, ADHS issued an emergency order specifically making WNV disease reportable. Please help us by reporting promptly. To report a suspect case or arrange for testing, please contact your local health department.

CHART 1

POSITIVE ARBOVIRUS FINDINGS AS OF AUG. 25, 2003:

COUNTY	WEST NILE	ST. LOUIS	WESTERN EQUINE
Apache	2 horses	1 chicken	1 chicken 1 mosquito pool
Cochise	3 mosquito pools		
Maricopa		2 mosquito pools 2 chickens	10 mosquito pools 4 chickens
Pinal			2 mosquito pools
Yuma	3 mosquito pools	3 mosquito pools 1 chicken	2 mosquito pools
Navajo	1 horse		
Graham	2 mosquito pools		