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West Nile Virus Surveillance Summary
Kentucky 2002

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Introduction

The Kentucky Department for Public Health (KDPH), as the lead agency, prepared for the 2002 surveillance of West Nile virus through cooperative initiatives with the Kentucky Department of Agriculture (KDA) and the Kentucky Department of Fish and Wildlife Resources (KDFWR). The KDPH granted a contract to the University of Kentucky Livestock Disease Diagnostic Center (UKLDDC) for West Nile virus testing of wild birds, mosquito pools, and equines. The KDPH Division of Laboratory Services (DLS) provided IgM capture Elisa testing on human specimens with confirmation provided by the Centers for Disease Control and Prevention (CDC) Arboviral Laboratory. By the close of the year, West Nile virus activity had been documented in 90% of Kentucky's counties in either birds, horses, humans, or mosquito pools.

Information on the human West Nile virus meningitis/ encephalitis case definition and submission of samples were sent electronically to hospital infection control professionals and to health department surveillance personnel. The Public Health web site provided a fact sheet and weekly updates on West Nile virus.

Case Investigation

Local health department or KDPH surveillance personnel initiated a case history investigation on all West Nile positive human specimens reported by the DLS. Positive laboratory results received from commercial laboratories also were investigated and the request was made to these laboratories to forward the samples on to DLS. Samples testing positive by Elisa IgM capture antigen testing at the DLS were reported as probable cases until confirmation was received from CDC. Cases were divided by clinical history into two groups: West Nile encephalitis/meningitis or West Nile fever. West Nile encephalitis is reportable by regulation. West Nile fever is a milder form of clinical disease with no neurological manifestations. It is not reportable by regulation, but the CDC's National Electronic Telecommunication Surveillance System (NETSS) did provide a code for this disease and all confirmed cases in Kentucky were transmitted to CDC along with the confirmed cases of West Nile encephalitis.

75 Patients Met Definition and Criteria

Seventy-five patients met the clinical definition and laboratory criteria for either West Nile encephalitis or West Nile fever. Fifty-three persons or 70.6% of the cases were cases of West Nile encephalitis. The average age in this group was 59 years, with 68% being over the age of 50 years. The youngest case was a 7-year-old and the oldest a 91-year-old person. Fifty-five percent of the cases were male. There were five deaths in this group with an average age of 74 years in those who died. The week of August 18 through 24, Morbidity and Mortality Weekly Report (MMWR) week 34, was the peak onset week. Cases were reported in 10 of the 15 Kentucky Area Development Districts (ADDs).

Twenty-two persons were diagnosed with West Nile fever and most did not require hospitalization. The mean age in this group was 55 years and the ages ranged from 28 to 87 years. The peak onset week was again week 34. There were no deaths in this group. West Nile fever cases occurred in seven different Kentucky ADDs.

Map 1 shows the incidence by county for all 75 cases reported in Kentucky and Chart 1 shows the onset dates by MMWR week for all 75 cases. (See page 2.)

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West Nile Virus Surveillance—Kentucky, 2002

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Map 1.

Kentucky Counties with Positive Human Cases of West Nile Virus 2002

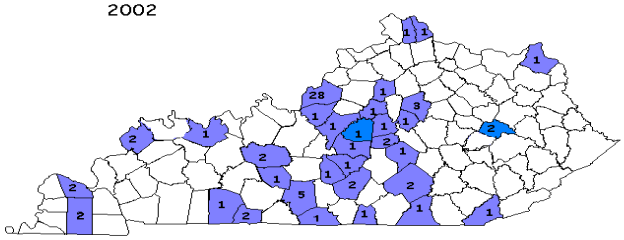
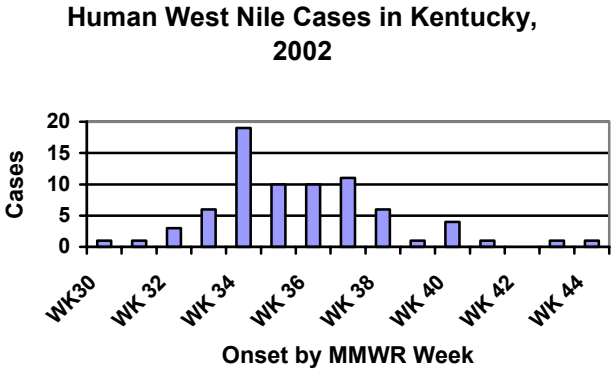


Chart 1.



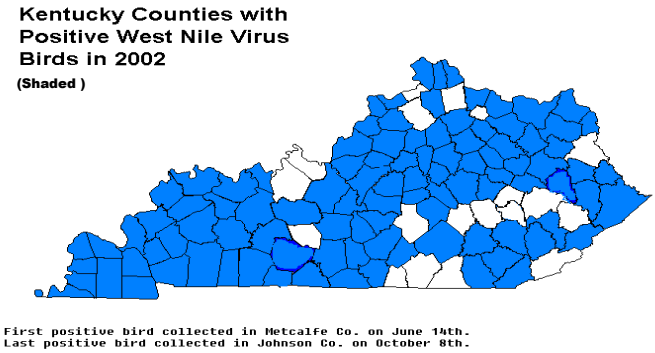
Bird Surveillance

The KDPH and KDFWR worked together to provide each county with a pre-paid shipping container to submit dead birds to the UKLDDC for West Nile testing. They jointly designed a reporting form and the KDFWR's toll free number was utilized once again for dead bird reporting. The public was encouraged to report dead birds and to submit birds to the local health department environmental section for shipment to the laboratory. Information was available on the Public Health web site about dead bird reporting and submission.

Initially, dead bird surveillance was to start in July, 2002, but as other states began reporting cases of West Nile virus in birds at an earlier than expected date, the KDPH requested local health departments submit any suspect cases beginning in June. Testing was done by polymerase chain reaction (PCR) testing on tissues from the birds at the UKLDDC.

Two thousand, six hundred, and eighty-five (2,685) dead birds were reported and, of those, 1,597 were submitted for testing from 115 of the 120 Kentucky counties. There were 693 birds positive for West Nile virus from 101 counties. The first positive bird was collected on June 14 in Metcalfe County and the last positive bird was collected on October 8 from Johnson County. A steep increase in positive birds was noticed the first week of August and 77.5% of the positive birds were collected between August 4 and August 31. Because of the rapid influx of specimens and a limitation on testing resources, the KDPH requested that counties stop submitting birds once positive activity had been determined for their area. Forty-one species of birds tested positive, with the three most prevalent being blue jays (24.7%), house sparrows (18.6%), and American crows (14%). Birds remain the most important sentinel species to provide information on the earliest activity of the virus in a given locality. MMWR week 32, August 4 through 10, was the peak week for positive birds.

Map 2.



Mosquito Surveillance

Fourteen counties (plus Marshall County through the Tennessee Valley Authority office) participated in mosquito sampling for West Nile virus surveillance in 2002. New counties included Fulton, Daviess, Union, Metcalfe, Kenton, Grant and Perry counties. Warren, Jefferson, Fayette, Boone, Campbell, and Rowan counties continued their surveillance effort from last year. The number of sites varied in each county, but at each site one CDC light trap and one gravid trap was used. Trapping was done once a week, starting the week of June 25 and lasting through October 16. Approximately 25,000 mosquitoes were collected in 2002 representing 36 different species, up from the 2001 total of 5,000 mosquitoes and 25 species. The mosquitoes were shipped to the UKLDDC where the KDPH's environmental biologist speciated the collections and separated each species into separate testing groups or pools. The mosquitoes were tested by PCR in pools of no more than 50 per species per county. Fifty-five positive pools were collected from nine

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counties in 2002 (Table 1). The positive pools peaked the week of August 18 and all positives were urban *Culex* species.

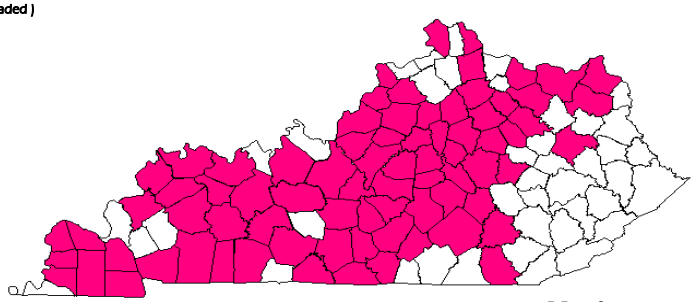
Table 1.

County	Number of Positive Pools
Boone	6
Campbell	3
Daviess	2
Fayette	19
Fulton	1
Jefferson	19
Marshall	2
McCracken	1
Warren	2

Equine Surveillance

Kentucky Department of Agriculture personnel investigated equine cases with positive West Nile virus findings or with reported neurological disease. The KDA provided the KDPH with results on positive equines as to county of residence and onset date. The West Nile surveillance group entered this data into the Arbonet system. A total of 513 equine were found to be positive from 78 of the 120 counties in Kentucky (Map 3). Eighty-six percent of the positive horses were unvaccinated and only 23% of those receiving vaccine were vaccinated according to the manufacturer's recommendations. The UKLDDC provided PCR results on tissue samples from necropsied horses and tested serum and cerebrospinal fluid samples with the IgM capture Elisa for West Nile virus. The Breathitt Veterinary Center at Murray State University submitted samples to the National Veterinary Services Laboratory (NVSL) in Ames, Iowa, for IgM testing.

Kentucky Counties with Positive West Nile Virus Cases in Equines--2002
(Shaded)



Map 3.

The peak week of onset for equines was MMWR week 36, September 1 through 7, two weeks following the peak onset for humans.

Positive birds peaked in week 32, humans and mosquito pools in week 34, and equine in week 36. Detecting positive birds provides the earliest evidence of viral activity.

For additional information on West Nile virus data, contact either Dr. Sue Billings or Catherine Mahl in the KDPH Division of Epidemiology and Health Planning at 502-564-3418. The map of Kentucky counties with West Nile virus activity in 2002 and the county West Nile virus chart, listing the positives by species for each county, may be found on the Public Health web site in the data warehouse section.

Chlamydia Update: 119 Kentucky Counties Report Cases in 2002

Information for this article was provided by the Kentucky Department for Public Health's STD/HIVCT program and the Region IV Chlamydia Prevention Project, a joint effort of the Centers for Disease Control and Prevention (CDC) and the Office of Population Affairs.*

Kentucky observed its first Chlamydia Awareness Day in April to underscore the importance of preventing the state's most commonly reported sexually transmitted disease. During 2002, 119 Kentucky counties reported one or more chlamydia cases. The statewide total for the year (8,756 cases) was more than twice the number of gonorrhea cases (3,772), the second most frequently reported sexually transmitted disease.

According to the 1999 STD Surveillance Report distributed by the Department of Health and Human Services and CDC, infection due to *Chlamydia trachomatis* is the most commonly reported notifiable disease in the United States. These infections are among the most prevalent of all sexually transmitted diseases and, since 1994, have comprised the largest proportion of all STDs reported to the CDC. In women, chlamydial infections, which are usually asymptomatic, often result in pelvic inflammatory disease (PID), a major cause of infertility, ectopic pregnancy, and chronic pelvic pain. Data from a randomized controlled trial of chlamydia screening in a managed care setting suggest that such screening programs can lead to a reduction in the incidence of PID by as much as 60%. As with other inflammatory STDs, chlamydial infection can facilitate the transmission of HIV infection. In addition, pregnant women infected with chlamydia can pass the infection to their infants during delivery, resulting in neonatal ophthalmia and pneumonia.

Screening Programs Expanded

The increase in reported chlamydial infections during the 1990s is attributed to expanded screening programs, use of increasingly sensitive diagnostic tests, greater emphasis on case reporting by providers and laboratories, and improved information systems for reporting. However, many women at risk for this infection are still not being tested because of a lack of awareness among some health care providers and limited resources available to support screening.

Chlamydia screening and reporting are likely to expand further with a recently implemented measure for chlamydia screening of sexually active women 15 to 25 years of age who receive care through managed care organizations. An increase in screening for the disease also is expected to occur as a result of the CDC's recommendation that all sexually active adolescent females undergoing a pelvic examination receive routine screening for chlamydia.

To more accurately monitor trends in disease burden in defined populations during the expansion of chlamydia screening activities, data of chlamydia positivity among persons in a variety of settings are used. In most instances, testing positivity serves as a reasonable approximation of prevalence. In some parts of the U.S. where large scale chlamydia screening has been conducted for a decade or more, prevalence of the disease has declined substantially.

*Project Seeks to Prevent Infertility

The role of the Region IV Chlamydia Prevention Project is to prevent infertility through the control and reduction of chlamydia and/or gonorrhea infection. The eight states in the region monitor the prevalence of chlamydia through the collection of data. The CDC uses this data to assess the relationship between positivity rates of chlamydia and prevalence of chlamydia in Region IV and throughout the nation. Once this information is analyzed and disseminated to public health professionals, comprehensive and culturally sensitive prevention interventions and programs can be designed, implemented, and evaluated for their effectiveness in reducing chlamydia and/or gonorrhea and preventing infertility.

The eight states in Region IV are Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee. Among women tested in Region IV family planning clinics, positivity rates rose from 8.9 in 1997 to 10.1 in 1998.

Smallpox Hotline

CDC public information hotline for questions about smallpox and smallpox vaccine:

888-246-2675

Spanish 888-246-2857 ■ TTY 866-874-2646

Cases of Selected Reportable Diseases in Kentucky
(YTD Through February for Each Year)

Disease	2003	2002	5 year median
AIDS	32	30	36
Chlamydia	1530	1532	1449
Gonorrhea	649	608	608
Syphilis (Prim. and Sec.)	12	9	9
Group A Streptococcus	5	3	4
Meningococcal Infections	0	3	5
Haemophilus influenzae, invasive	2	1	2
Hepatitis A	5	12	6
Hepatitis B	7	7	7
E. coli O157H7	1	0	1
Salmonella	41	27	35
Shigella	22	34	26
Tuberculosis	13	15	11
Animal Rabies	3	2	3
Motor Vehicle Injury Deaths	100	132	101

Vaccine Preventable	2003 YTD	Total in 2002
Diphtheria	0	0
Measles	0	0
Mumps	0	3
Pertussis	3	102
Polio	0	0
Rubella	0	0
Streptococcus pneumoniae	0	19
Tetanus	0	0

Influenza Statistics
For Confirmed Isolates
Influenza Season = October-May

Type	2002-2003 Through March 15	2001-2002 Total
A	10	158
B	151	3
Unknown	12	75
Total	173	236

Smallpox Information Packets Sent to Clinicians

In March, the Centers for Disease Control and Prevention (CDC) began mailing smallpox information packets to 3.5 million clinicians nationwide as part of the agency's established plan to educate medical professionals about smallpox and the smallpox vaccine.

The packet includes up-to-date information that will help clinicians identify a case of smallpox, recognize and manage patients with an adverse reaction to the vaccine, and help others make decisions about receiving the vaccine. The packet contains:

- ***Evaluating Patients for Smallpox***—a poster with color photographs to assist clinicians in assessing patients who present with rash illnesses.
- ***Smallpox Vaccination Methods and Reactions***—a pocket guide with color pictures and information about smallpox vaccination, responses to vaccination, and adverse reactions.
- ***Vaccine Information Statement***—a three-page document being used in vaccination clinics across the country with information about who should get vaccinated, associated risks, and information regarding adverse reactions.

Included in the mailing is an invitation to clinicians to join a registry which will provide real-time information to help health care professionals prepare for possible terrorism events. Clinicians who choose to register will receive regular e-mail updates on terrorism preparedness issues as well as training opportunities.

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Kentucky Annual Vital Statistics Report 2000

A world of newly released Kentucky statistical information is now as close as your desktop. Selected tables from *Kentucky Annual Vital Statistics Report 2000* are available on the Department for Public Health's web site at publichealth.state.ky.us/Health-Data.htm.

The full report, which is being sent to all local health departments and various libraries and educational institutions throughout the state, includes data on vital events occurring in Kentucky or to Kentucky residents during calendar year 2000. Tables display data on resident births, deaths, marriages, and divorces. The report also includes tables on place of occurrence of births and deaths.

The information in the report represents **the only official source** of vital statistics data in the Commonwealth of Kentucky. The data are collected from certified records of births, deaths, marriages, and divorces by the Vital Statistics Branch of the Division of Epidemiology and Health Planning. The data are then supplied to the Surveillance & Health Data Branch (State Center for Health Statistics) for compilation and publication.

The report is organized around three major sections: Birth Statistics, Death Statistics, and Marriage and Divorce Statistics. Each section is set up in two formats. The state summary displays statewide data for 2000, and in some instances includes comparisons to previous years. The district and county profile presents data for the Commonwealth, the 15 Area Development Districts (ADDs), and the counties within each district. The final section of the report is the Appendix, which contains 2000 population data, a glossary of vital statistics terms, a list of vital statistics rate definitions, a grams to pounds and ounces conversion chart, and selected maps. Charts and graphs of various design have been included throughout the report.

For more information, contact:
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Internet: publichealth.state.ky.us/Health-Data.htm.

Kentucky Vital Statistics 2000