



## Epidemiologic Notes & Reports

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### **The Kentucky Behavioral Risk Factor Surveillance System** By Sara Robeson, MA, MSPH

What percent of Kentuckians are current smokers?  
(Answer 29.7% in 1999)

What percent of Kentuckians have no health  
insurance? (Answer 14.5% in 1999)

What percent of Kentuckians have ever been told  
by a doctor that they have diabetes? (Answer 6.4%  
in 1999)

The answers to these health questions and many  
more can be found in data from the Behavioral Risk  
Factor Surveillance System (BRFSS).

The BRFSS is a telephone health survey jointly  
sponsored by the Centers for Disease Control and  
Prevention (CDC) and the Kentucky Department  
for Public Health. The survey is randomly  
administered to non-institutionalized civilian adults  
who are living in a household with a telephone.  
Participation in the survey is strictly voluntary.  
Personal identifying information, such as name or  
address, is not collected. In Kentucky, the BRFSS  
has been conducted continuously since 1985.

### **BRFSS Sample**

Kentucky uses disproportionate stratified sampling  
to obtain a random sample of Kentucky telephone  
numbers. Once an interviewer reaches a household,  
a member of the household 18 years of age or older  
is randomly selected to be interviewed. Surveyors  
conduct interviews six days a week (Monday  
through Saturday). The number of completed  
interviews has increased each year, but the most  
dramatic increase occurred from approximately

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3700 respondents in 1998 to 7500 respondents in  
1999. The number of completed interviews was  
increased to allow yearly analysis of BRFSS data  
by Area Development District. The 1999 total was  
the highest number of respondents in the nation.

### **How BRFSS Data are Used**

Data from each individual surveyed are combined  
and weighted to determine the health practices of  
Kentuckians. Currently, all 50 states conduct the  
BRFSS so Kentucky data can be compared with  
data from other states and the national average.  
BRFSS data are also useful because the data can be  
obtained in a timely manner. Data from 1999 are  
already available. BRFSS data are a valuable  
resource for public health planning and can be used  
in the following ways:

- To analyze health trends
- To develop plans, policies and legislation
- To measure the progress of prevention initiatives
- To monitor health goals, such as those stated in *Healthy Kentuckians 2010*
- To educate the public about risk behaviors and preventive health practices

### **BRFSS Questionnaire Format**

## The Kentucky Behavioral Risk Factor Surveillance System (continued)

All participating states are required to ask questions on certain topics. These topics are listed in Table 1. States do have the option of including additional questions pertaining to public health issues of local interest. The BRFSS questionnaire is divided into three sections: (1) core questions, (2) optional modules, and (3) state added questions.

### Core Questions:

Core questions are asked by all states. They consist of fixed core, rotating core, and emerging issues questions. Fixed core questions are asked every year. Rotating core questions are asked every other year. In years that the rotating questions are not asked, they can be included as an optional module. Approximately five questions each year are emerging issues questions. These questions are tested for one year then removed. If they are beneficial, then they may be included in the core on a fixed or rotating basis.

### Optional Modules:

These are groups of questions on particular topics that states may choose to include on the questionnaire. In 2000, the following modules are on the Kentucky BRFSS: arthritis, diabetes, cardiovascular disease, family planning and folic acid.

### State Added Questions:

States may develop or obtain questions to be included that relate to the public health needs of their state. In 2000, Kentucky added questions relating to quality of life.

### Health Topics Included in the BRFSS

Table 1 lists the health topics that have been included recently on Kentucky's BRFSS questionnaire.

**Table 1. Health Topics on the BRFSS Questionnaire 1993-2000**

Fixed Core 1993-2000	Rotating Core I (1993, 1995, 1997, 1999)	Rotating Core II (1994, 1996, 1998, 2000)
Health Status	Hypertension	Physical Activity
Health Insurance	Injury	Weight Control
Routine Checkup	Alcohol	Fruits and Vegetables
Diabetes	Flu/Pneumonia	
Smoking	Colorectal Screening	
Pregnancy	Cholesterol	
Women's Health		
Breast Cancer Screening		
Cervical Cancer Screening		
HIV/AIDS		
Demographics		



## The Kentucky Behavioral Risk Factor Surveillance System (continued)

### How to Obtain BRFSS Data

Prevalences of certain risk factors and preventive health practices from the 1999 Kentucky BRFSS are included in Table 2. Additional statewide data from Kentucky and all 50 states can be obtained from the CDC's BRFSS web site at [www.cdc.gov/nccdphp/brfss](http://www.cdc.gov/nccdphp/brfss). After the site opens, scroll down to the section titled "Prevalence Data". Data can be queried by topic, state and year (1995-1999). The CDC has also developed prevalence reports that compare the prevalence of Kentucky data to data from other participating states. These reports can be downloaded at <http://www.cdc.gov/nccdphp/brfss/pubrfdat.htm>.

If these sites do not meet your BRFSS data needs, please contact the Kentucky BRFSS Program at 502-564-3418 for assistance.

**Table 2. 1999 Kentucky BRFSS Prevalences of Certain Risk Factors and Preventive Health Practices (Refused and Unknown Responses Excluded).**

Risk Factor	Weighted Percentage	Preventive Health Practice	Weighted Percentage
<b>Current Smoking</b> Persons age 18+ who have smoked at least 100 cigarettes and are smoking now.	29.7	<b>Mammogram</b> Females age 50+ who have had a mammogram within the past two years.	73.5
<b>Overweight</b> Persons age 18+ with a Body Mass Index $\geq$ 25.	58.5	<b>Clinical Breast Exam</b> Females age 50+ who have had a clinical breast exam within the past two years.	75.6
<b>Hypertension</b> Persons age 18+ who have had their blood pressure checked and have been told by a health professional that they have high blood pressure.	27.5	<b>Cervical Cancer Screening</b> Females age 18+ with an intact cervix who have had a Pap test within the past three years.	83.4
<b>High Cholesterol</b> Persons age 18+ who have had their cholesterol checked and have been told by a health professional that their cholesterol was too high.	32.5	<b>Colorectal Cancer Screening</b> Persons age 50+ who have had a proctoscopic or sigmoidoscopic examination.	34.7
<b>Diabetes</b> Persons age 18+ ever told by a doctor that they have diabetes.	6.4	<b>Influenza Immunization</b> Persons age 65+ who have had a flu shot within the past year.	68.4
<b>General Health: Fair or Poor</b> Persons age 18+ who report that their general health is fair or poor.	21.6	<b>Pneumonia Immunization</b> Persons age 65+ who report ever having a pneumonia vaccination.	52.0
<b>No Health Insurance</b> Persons 18+ who report not having any type of health insurance.	14.5	<b>HIV Testing</b> Persons age 18 to 64 who have been tested for HIV in the past year (excluding tests as part of blood donations).	15.7

\* Additional information on Disproportionate Stratified Sampling may be received upon request.

## West Nile Virus Activity in the United States in 2000

By Sue Billings, DVM, MSPH

West Nile virus, first isolated in the West Nile District of Uganda in 1937, has been recognized as a disease entity in the United States since the 1999 outbreak in New York City. West Nile virus, a flavivirus, is in the Japanese encephalitis antigenic complex, which also includes St. Louis encephalitis. West Nile virus is recognized in Africa, Europe, the Middle East, West and Central Asia, Oceania (Australia) and North America.

The West Nile virus is capable of causing fatal neurologic disease in humans and horses and mortality in certain wild bird species. Persons older than fifty years have a greater risk of severe disease. Most infections are mild with fever, headache, body aches and possibly lymphadenopathy or a skin rash.

West Nile is an arthropod-borne virus. Birds are the reservoir hosts and various mosquito species; primarily, *Culex* species are the vectors. People, horses and other mammals are incidental hosts and not contributory to the spread of infection, because an infectious level of viremia does not usually develop. Ongoing research projects may provide new information about the maintenance and transmission of this virus among birds, mammals, other mosquito species and possibly ticks.

Intensified regional surveillance throughout 2000

has documented West Nile virus epizootic activity in birds and/or mosquitoes in 12 states (Connecticut, Delaware, Maryland, Massachusetts, New Hampshire, New Jersey, New York, North Carolina, Pennsylvania, Rhode Island, Vermont, and Virginia) and the District of Columbia. Severe, neurologic West Nile virus infections in humans, horses or other mammal species have been reported from seven of these states.

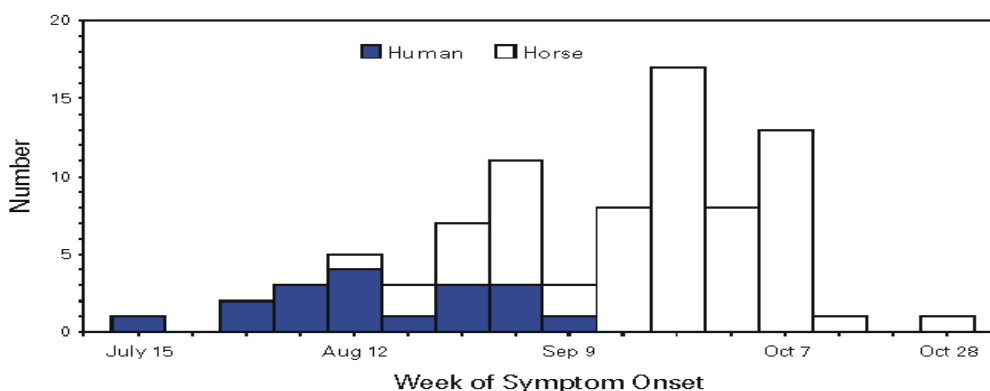
As of December 27, 2000, New York had reported 15 human cases and New Jersey 5 human cases. The mean age was 62 years with ages ranging from 36 to 87 years. In these 20 cases, there has been one death and one patient remains in a persistent vegetative state.

The total number of equine cases is now 57, with 34 horses surviving. Eight additional equine cases are unconfirmed at this time. States reporting equine cases are Connecticut, Delaware, Massachusetts, New York, New Jersey, Pennsylvania, and Rhode Island. Some foreign countries have issued temporary import restrictions for horses originating from these states.

Horses do not appear to be a good sentinel animal for West Nile virus because disease onset in this species occurs later and/or coincidentally with disease onset in humans. Figure 1 taken from the November 24, 2000 *Morbidity and Mortality Weekly Report* compares the onset dates for humans and horses for the cases occurring in 2000.

Other test positive mammals reported through

**FIGURE 1. Number\* of reported humans and horses with severe neurologic illness attributed to West Nile virus, by week of symptom onset — United States, 2000**



\* N=18 humans and 65 horses.

## West Nile Virus Activity in the United States in 2000, continued

November 2000 are one skunk from Connecticut and 14 bats, 2 cats, 3 rabbits, 3 squirrels, 2 raccoons, and 1 chipmunk, all from New York State.

In the 12 states listed above and the District of Columbia, over 4300 wild birds have been documented as infected with West Nile virus. More than 3200 were crows, the same species with the highest mortality in the 1999 epizootic.

New Jersey reported 10 positive sentinel chickens; six converted on blood samples drawn in late October. New York had 2 sentinel chickens convert to West Nile virus positive. Sentinel chickens are not used in all states and have not proved to be useful for detecting West Nile virus prior to onset of human cases.

Five states, Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania reported a total of 478 positive mosquito pools. Positive pools included *Culex* species and several *Aedes* species.

### 2000 Kentucky Surveillance

The Kentucky Department for Public Health (KDPH), Division of Epidemiology and Health Planning with the assistance of several other agencies is working to expand and improve Kentucky's surveillance for arboviral conditions, including the West Nile virus.

Improved human surveillance has been encouraged with visits to infection control practitioners (ICP's) in hospitals, a large informational mail-out to physicians, ICP's, health departments and laboratories, and information distributed through other media.

Ongoing bird and animal surveillance is occurring through cooperation with the Kentucky Department for Fish and Wildlife (DFW), the Kentucky Department of Agriculture, the United States Department of Agriculture, the University of Kentucky Cooperative Extension Service, the animal disease diagnostic laboratories and the

veterinarians throughout the state.

The DFW began surveillance for dead birds early in 2000. The DFW investigated 170 dead bird reports, with 23 specimens submitted for West Nile virus testing, all negative. The University of Kentucky Livestock Disease Diagnostic Laboratory and the Murray State University Breathitt Veterinary Center are handling these specimens through a surveillance grant the KDPH Division of Epidemiology and Health Planning received from the Centers for Disease Control and Prevention specifically for West Nile virus surveillance.

Environmentalists from Jefferson County and Fayette County health departments collected mosquitoes from late May until mid-October. To date 56 mosquito pools have been tested for St. Louis Encephalitis (SLE) and Eastern Equine Encephalitis (EEE) viruses. The KDPH Division of Laboratory Services performed the pool testing for 2000 and all pools have been negative. Next year the pools will be tested for West Nile virus in addition to SLE and EEE. The KDPH Division of Laboratory Services is also providing serology testing on human specimens for arboviruses.

Veterinary surveillance for West Nile virus in horses and other animals is ongoing. Informational material was sent to veterinarians and agricultural extension agents across the Commonwealth. There have been no confirmed cases of arboviral infections in horses or other animals in the State this year.

The movement of the West Nile virus chronicled in 2000 increases the likelihood for its occurrence within Kentucky in the near future. Ongoing and improved surveillance is necessary to provide our citizens with adequate public health measures to prevent disease and to implement measures to protect the equine industry in the state.

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## Changes in the Recommended Childhood Immunization Schedule

The Centers for Disease Control and Prevention has issued a report that presents the recommended childhood immunization schedule for 2001, which has been approved by the Advisory Committee on Immunization Practices (ACIP), the American Academy of Pediatrics (AAP), and the American Academy of Family Physicians (AAFP). The changes that have occurred since the January 2000 schedule are 1) the addition of pneumococcal conjugate vaccine to the schedule, and 2) the extension of the recommendation for the use of hepatitis A vaccine. Pneumococcal vaccine is recommended for all children ages 2-23 months in a 4-dose schedule at 2, 4, 6, and 12-15 months of age, and should be considered for children 24-59 months of age who are at increased risk for pneumococcal disease. The recommendation for use of Hepatitis A vaccine has been extended to include persons through age 18 years in selected geographic areas and in certain high-risk groups.

Source: Mortality and Morbidity Weekly, January 12, 2001/50, NO. 1, 7-11.