

West Nile Virus

2008 Case Total	9	2008 Rate	0.3 per 100,00
2007 Case Total	107	2007 Rate	3.1 per 100,000

Since national surveillance began nine years ago, there have been a total of 28,961 human cases of West Nile (WN) disease with 1,130 deaths reported in the United States. In 2008, a total of 1,356 human cases of WN disease were reported to the Centers for Disease Control and Prevention (CDC) by 46 states representing a 63% decrease in cases as compared to 2007. Most of the 2008 WN virus activity was seen in the southwestern states with the highest number of cases reported from California (445), Arizona (115) and Mississippi (65). Oklahoma was one of 21 states that reported less than 10 cases. The statewide incidence of human WN disease was 9 cases of WN Fever or WN neuroinvasive disease (0.2 per 100,000) resulting in a sharp (91.5%) decrease over the previous season. This also marked the lowest annual incidence of WN disease since it was identified in Oklahoma in 2002.

Oklahoma originally received 18 reports of positive West Nile virus IgM test results but only 50% of them were reported as cases following a multi-state investigation of a faulty commercial WN virus IgM ELISA test kit. The kits were distributed to four labs in the U.S. from July through September of 2008. The Oklahoma State Department of Health worked with the CDC to notify healthcare providers who submitted specimens for testing during the specified time frame. If the initial specimen was unavailable, efforts were made to collect a second specimen to be retested at the OSDH Public Health Laboratory or CDC Arbovirus Laboratory using a different method. Of nine Oklahomans who had positive WN IgM test results with the implicated kit, seven (68%) were determined to be false positive results. In October, the manufacturer voluntarily recalled two lots of the kits.

Reported cases were distributed across 9 counties with Pushmataha (8.5 per 100,000), Woodward (5 per 100,000) and Caddo (3.4 per 100,000) having the highest incidence rates per 100,000 population. By gender, six (66%) case patients were female; seven (78%) were white, one was African American, and one was an American Indian. Dates of symptom onset ranged from April 29 to October 21, 2008. The highest incidence rate of WN disease was in those 80 years of age and older (1.4 per 100,000); age range of all cases was 14 –84 years. While persons of any age may develop symptoms of disease, those over the age of 50 are at greater risk of developing WN neuroinvasive disease. Neuroinvasive disease comprised 44% (4) of reported WN cases.

Typically, WN disease in Oklahoma has a seasonal pattern with most human cases occurring between July and October. This general trend was not seen in 2008 with cases identified primarily during the spring and only sporadically thereafter. Increased WN activity has been associated with above average high temperatures followed by a period of drought. As reported by the National Climatic Data Center, both the average high temperature and precipitation in Oklahoma was below normal from June to August 2008. This weather pattern may in part account for the drop in WN disease in 2008.

Due to the risk of WN virus transmission through contaminated blood products, blood collection facilities routinely perform nucleic acid amplification testing (NAT) to screen donors for WN viremia. Donations from all NAT-positive donors are excluded. One viremic Oklahoma blood donor was reported in 2008 as compared to 18 in 2007. In 2008, only 11% of WN cases reported wearing insect repellent. Until a WN vaccine becomes available, personal protection measures such as regular use of an insect repellent containing DEET, Picaridin, Oil of Lemon Eucalyptus (PMD) or IR3535 are the only WN disease prevention methods available.