



Wyoming West Nile Virus Surveillance Summary

2017

Infectious Disease Epidemiology Unit

2017 Summary

In 2017, seven human cases of West Nile virus (WNV) were reported [three West Nile Fever (WNF) and four West Nile Neuroinvasive Disease (WNND)]. Numerous bird species, horses and mosquito pools also tested positive for WNV. The first human case was reported in late July and the last case was reported at the end of September. The incidence of WNND was 0.68 per 100,000 people, which decreased from 1.9 in 2016. The incidence of WNND in Wyoming was higher than the estimated national incidence of 0.40 cases per 100,000 people.

Statewide Statistics

Table 1. Demographic characteristics of human West Nile virus (WNV) cases in Wyoming, 2017 by manifestation: all infections, West Nile Fever (WNF) or West Nile Neuroinvasive Disease (WNND).

	All Human WNV Infections	WNF	WNND
Total Cases (n)	7	3	4
Mean age (years)	57.3	59	56
Female (percent of cases)	3 (42.9%)	2 (66.6%)	1 (25.0%)
Male (percent of cases)	4 (57.1%)	1 (33.3%)	3 (75.0%)

Table 2. Hospitalizations and death of human West Nile virus (WNV) cases in Wyoming, 2017 by manifestation: all infections, West Nile Fever (WNF) or West Nile Neuroinvasive Disease (WNND).

	All Human WNV Infections	WNF	WNND
Total Cases (n)	7	3	4
Hospitalized (percent of cases)	4 (57.1%)	0 (0.0%)	4 (100.0%)
WNV-Associated Death (percent of cases)	0 (0.0%)	0 (0.0%)	0 (0.0%)

WNV Human Cases in Wyoming, 2017

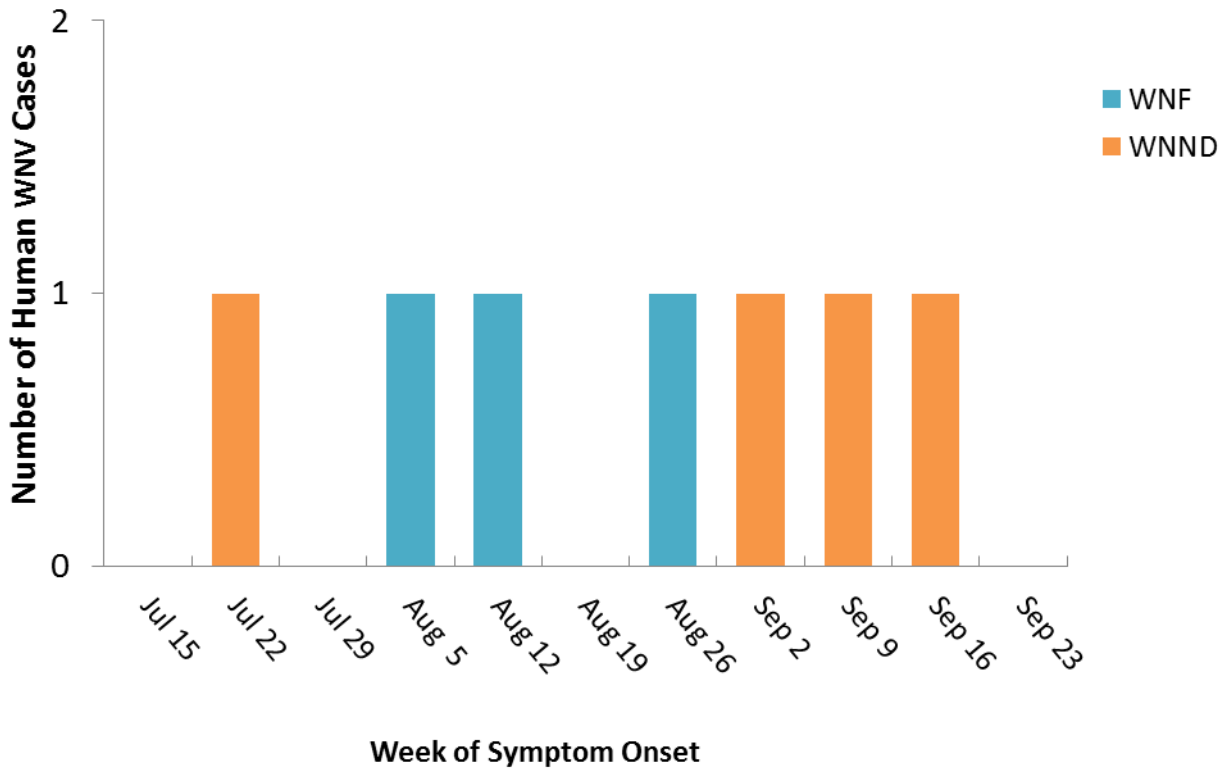


Figure 1. The number of human West Nile virus (WNV) cases by corresponding symptoms began, and by manifestation: West Nile Fever (WNF) and West Nile Neuroinvasive Disease (WNND).

First date of symptom onset for any type of WNV infection was July 20, 2017.
Last date of symptom onset for any type of WNV infection was September 14, 2017.

Incidence of WNND, Wyoming and the US, 2007-2017

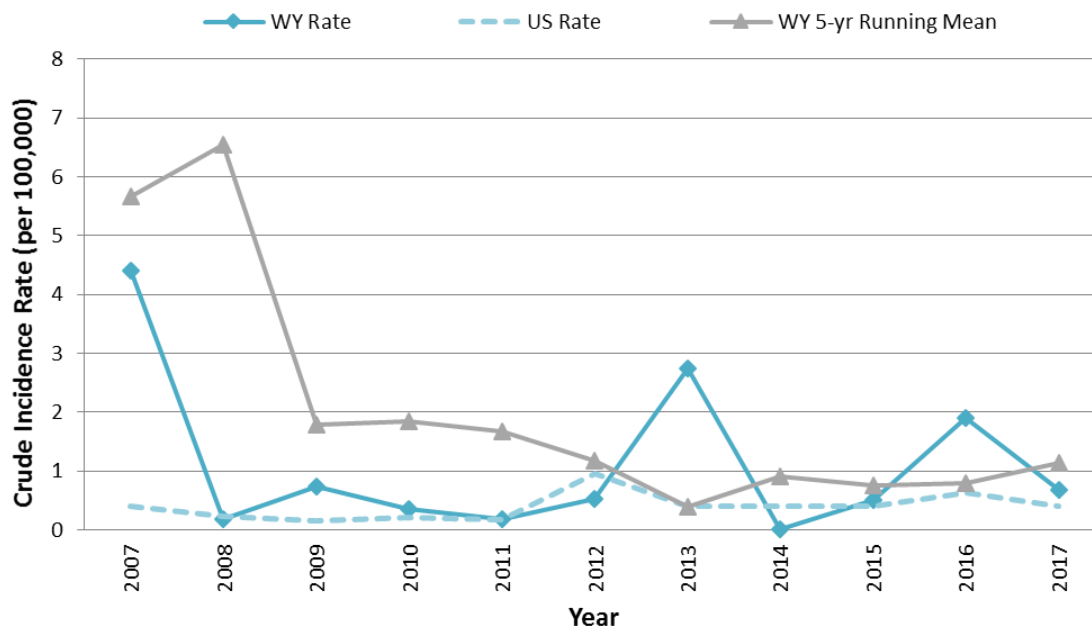


Figure 2. Wyoming, US, and Wyoming 5 year average incidence rates of West Nile Neuroinvasive Disease per 100,000 people from 2007-2017.

County Statistics

Table 4. West Nile virus (WNV) activity by county in Wyoming, 2017. Presumptive viremic donor (PVD) is a person whom tested positive for West Nile virus upon blood donor screening. PVDs are usually asymptomatic, are not included in human case counts, and are another indication of virus activity in an area. Counties not listed did not report West Nile virus infections or surveillance activities.

County	Human Fever Cases	Human Neuroinvasive Disease Cases	Human Case Fatality	Presumptive Viremic Donors	Avian Cases	Equine Cases	Positive Mosquito Pools	Mosquito Pools Tested
Albany	-	-	-	-	3	-	3	112
Big Horn	-	1	0	1	-	-	-	-
Campbell	-	-	-	-	-	1	-	-
Fremont	1	2	0	-	-	2	2	90
Goshen	2	-	0	-	-	-	14	55
Hot Springs	-	1	0	-	-	-	-	-
Johnson	-	-	-	-	-	1	-	-
Laramie	-	-	-	-	-	-	1*	21*
Natrona	-	-	-	-	-	-	-	17
Sheridan	-	-	-	-	-	-	-	54
Teton	-	-	-	-	-	-	-	63
Uinta	-	-	-	-	-	-	-	124
TOTAL	3	4	0	1	3	4	20	536

*Mosquito pools tested were reported by F.E. Warren Air Force Base only and may not reflect the total amount of mosquito tests performed in Laramie County.

Table 5. Incidence and age-adjusted incidence per 100,000 people of West Nile Neuroinvasive Disease cases by county in Wyoming, 2017. Counties not listed did not report WNND cases.

County	Number of West Nile Neuroinvasive Disease Cases	Incidence (per 100,000 people)	Age-Adjusted Incidence (per 100,000 people)
Big Horn	1	8.32	11.25
Fremont	2	4.96	4.53
Hot Springs	1	21.09	13.34
WYOMING	4	0.68	0.86

Reported WNV Activity, Wyoming 2017

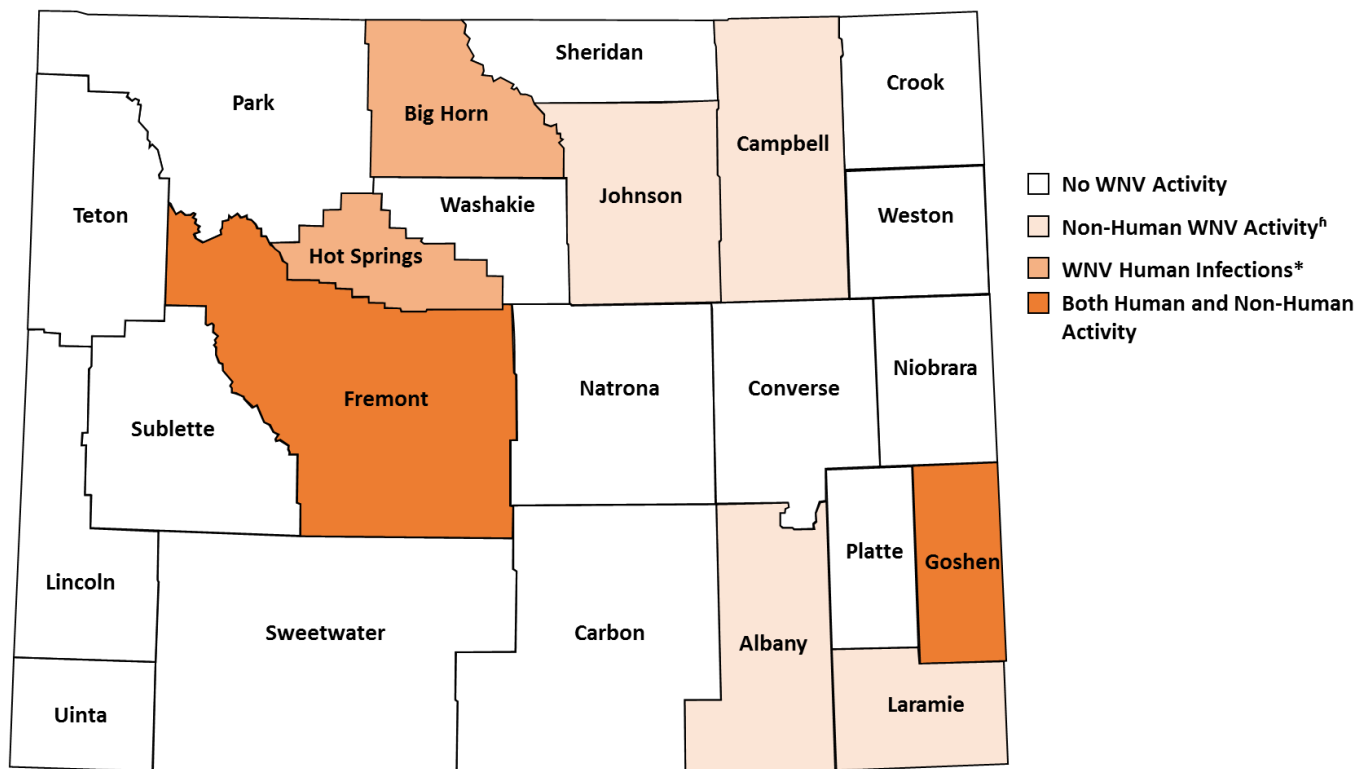


Figure 2. West Nile virus (WNV) activity by type and county in Wyoming, 2017. WNV human infections include reported cases of West Nile Fever, West Nile Neuroinvasive Disease, and Presumptive Viremic Donors.

Non-human WNV Activity includes reported WNV positive mosquito pools, and reported animal WNV infection cases such as horse or bird.

Surveillance and Data Analysis Methods

The West Nile Virus Surveillance Summary, 2017, contains data gathered from multiple sources through both required and volunteer-based reporting methods. Data collection for the year 2017 began January 1, 2017. Human infection data is gathered through mandatory reporting by physicians and laboratories of infectious diseases on the Reportable Diseases and Conditions list (State Statute § 35-4-107).

Veterinary data (i.e. equine infections) is gathered through mandatory reporting by veterinary laboratories and veterinarians to the Wyoming State Veterinarian within the Wyoming Livestock Board, who voluntarily passed the information to the Wyoming Public Health Veterinarian. Avian mortality data is gathered through the volunteer reporting by Wyoming Fish and Game, and the Wyoming Office of the U.S. Bureau of Land Management. Data on positive mosquito pools and total pools tested is gathered through the volunteer reporting of local city/county weed and pest management agencies, and local city/county public health environmental services divisions. Census data for the calculation of incidence rates in this document are provided by the U.S. Census Bureau, Population Division, 2015 estimates. The standard population used for calculating age-adjusted incidence, was the U.S. population estimates from the 2010 Census. This summary is divided into two sections: Statewide and County-Specific descriptive statistics.

For questions, comments or to report West Nile virus activity, please contact
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