Austin/Travis County Health and Human Services Department
Epidemiology and Health Statistics Unit
West Nile Virus
Situation Summary – 10/26/2012

Current Situation:

- HHSD Epidemiology and Health Statistics Unit and Rodent and Vector Control Program staff are monitoring human cases, arbovirus surveillance and weather conditions to assess the need for additional control measures such as ground spraying and/or aerial spraying.
- HHSD is ready to implement its Integrated Mosquito Management procedures, which includes broadcast spraying (ground and/or aerial); if the data indicate it is necessary. Implementation of this plan will be based on the data and in coordination with the Department of State Health Services and City/County Leadership.
- Human data indicates a downward trend in the number of confirmed cases over the last several weeks.
- Arbovirus surveillance indicates a downward trend in positive mosquito pools. DSHS reported two additional positive mosquito pools for Travis County collected the week of October 8th – October 12th, bringing the total number of positive pools to 127 for 2012.

Duration:

- According to DSHS, the anticipated duration of this outbreak is expected to continue through the end of September.
- Arbovirus surveillance data indicates that mosquito activity is beginning to decrease, which is consistent with the trend in other areas of the state.

Epidemiology

Until July of this year, Travis County had not had any reported cases of West Nile Virus (WNV) in humans since 2008 with the last reported WNV fatalities in 2007 (Figure 3 and Table 1). Since July, the A/TCHHSD Epidemiology and Health Statistics Unit has investigated 138 reported confirmed and probable cases of WNV including three deaths with a mean age of 79 years. Reported cases of WNV began feeling ill as early as July 2nd and as recently as October 9th (Figure 1). The number of WNV cases reported in 2012 is the highest it has been since the introduction of WNV to Travis County in 2002 (Figure 3).

Approximately 54% (n=75) of the reported cases of West Nile Virus in Travis County occur among individuals over 50 years of age (Figure 5), and more than 60% are males (n=83), which is consistent with historical and national trends.

Although an estimated 80% of people infected with WNV have no symptoms at all, some people experience severe disease requiring hospitalization and may even die

(Table 1). Those people who do become ill can have symptoms including fever, headache, fatigue or weakness (malaise), body aches (myalgia), swollen lymph nodes (lymphadenopathy), and rash. Individuals experiencing more severe illness may also have symptoms of numbness, altered mental status, paralysis, coma and even death.

There are two categories of WNV that are notifiable conditions by law in Texas, West Nile Fever (WNF) and West Nile Neuroinvasive Disease (WNND). West Nile Fever is less severe and shows no evidence of neuroinvasion. WNF may be underreported especially among people who experience milder illness and consequently do not seek medical care or may not have diagnostic testing done if medical care is sought. West Nile Neuroinvasive Disease refers to severe disease that affects a person's nervous system and can cause permanent damage. WNND can impact various parts of the nervous system which determines the ultimate diagnosis and type of WNND including encephalitis, meningitis, meningoencephalitis and acute flaccid paralysis (AFP) (Figure 9). Locally, WNND associated meningitis (n=30) is most frequently diagnosed followed by meningoencephalitis (n=13) and encephalitis (n=13). AFP is most rare and no cases have been reported to date in Travis County.

In Austin/Travis County, people with West Nile Virus have a variety of symptoms. Figures 6 - 8 show the frequency of select symptoms in local cases. Thirty-one of the WNF cases report experiencing an altered mental state (Figure 6). Another interesting observation among the symptoms reported, is the similarities in the description of the rash. This rash is most frequently described as small red bumps or spots occurring on various parts of the body. Individuals experiencing more severe illness are more likely to be hospitalized. Approximately 51% of all reported cases have been hospitalized (n=71); including both cases of WNF (n=17) and WNND (n=54). At least 24% of hospitalized WNND cases required intensive care management (n=13) (Figure 10).

Approximately 34.8% (n=48) of the Travis County cases of WNV reported using insect repellent when going outdoors at any frequency.

Human cases are dispersed across Travis County, but are with some clustering occurring in the Southern parts of the City of Austin (Map 1). It is important to note that the location in which individuals are bitten by an infected mosquito is unknown. The map is a based on the case's place of residence at the time of the report, and also represents confirmed West Nile Virus activity in mosquitos. Mosquito surveillance, which is performed by the A/TCHHSD Environmental Health Services Division, Rodent and Vector Control Unit, indicates an active 2012 mosquito season with West Nile Virus activity confirmed in mosquitos throughout Travis County. Additional information about West Nile Virus resources are at the end of this report.

PREVENTION

Prevention is the most effective way to protect yourself against the West Nile Virus. Remember to follow the Four Ds:

- **Dusk and Dawn**: Try to stay indoors at dusk and dawn. That is the time when mosquitoes likely to carry the infection are most active.
- **Dress**: Wear pants and long sleeves when you are outside. Wear light colored, loose fitting clothing; mosquito repellent clothing is also available.
- **DEET**: Apply insect repellent that contains DEET. Read and follow label instructions. Spray both exposed skin and clothing with repellent.
- **Drain**: Get rid of standing water in your yard and neighborhood. Old tires, flowerpots, clogged rain gutters, birdbaths and wading pools can be breeding sites for mosquitos.

Eliminate mosquito breeding sites:

- Reduce standing water around your home and neighborhood (including old tires, bottles, buckets and clogged gutters).
- Replace water at least once a week in pet dishes, bird baths, and watering troughs.
- Repair leaky outside faucets and pipes.
- Consider mowing or pruning dense vegetation to reduce mosquito habitat.
- Keep window and door screens in good repair.
- Fill in tree holes with sand and low spots in lawn with soil.
- Stock permanent water areas with mosquito-feeding fish (*Gambusia affinis* can be bought in pet stores and bait shops).
- Carefully screen rainwater harvesting cisterns to exclude mosquitos.
- Use “mosquito dunks” (*Bacillus thuringiensis israeliensis*) to reduce mosquitos in rain barrels and permanent bodies of water. These products slowly release a biological larvicide that kills the pest.
- Consider installing nesting boxes to attract bats and birds that feed on mosquitos.

2012 Travis County Epidemiological Summary of West Nile Virus Cases in Humans[1]

2012 West Nile Virus Case Counts		
Total	138	100.0%
West Nile Neuroinvasive Disease (WNND)	56	40.6%
West Nile Fever (WNF)	82	59.4%
Gender Distribution		
Male	83	60.1%
Female	55	39.9%
Hospitalizations		
Total Hospitalizations	71	100.0%
WNND Hospitalizations	54	76.1%
WNF Hospitalizations	17	23.9%
Fatalities	3	
Case Fatality Rate	2.2%	
Age Distribution		
Under 1 Year	0	0.0%
1-3 Years	0	0.0%
4-8 Years	0	0.0%
9-14 Years	1	0.7%
15-24 Years	4	2.9%
25-34 Years	17	12.3%
35-44 Years	24	17.4%
45-54 Years	26	18.8%
55-64 Years	27	19.6%
65 Years and Older	39	28.3%
Median Age	53 Years	
Age Range	11 Years - 91 Years	

Data presented in this report include both confirmed and probable cases of both West Nile Fever (WNF) and West Nile Neuroinvasive Disease (WNND) reported in Travis County. This report includes completed case investigations only. All data for 2012 are preliminary. The 2012 data provided for this report were generated on October 26, 2012 and historical data were generated on August 8, 2012. Data in this report may differ slightly from other published reports. It is important to be aware of the date the data are generated.

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Figure 1. 2012 Travis County West Nile Virus EPI Curve: Reported Cases by Onset Date[1]

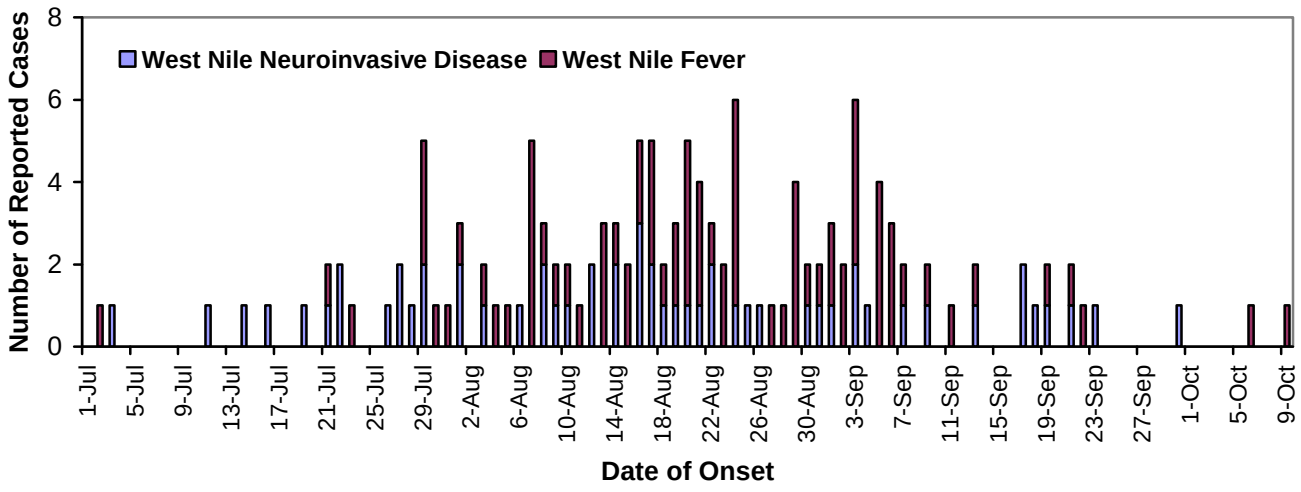


Figure 2. 2012 Travis County West Nile Virus EPI Curve: Reported Cases by Week of Onset[1]

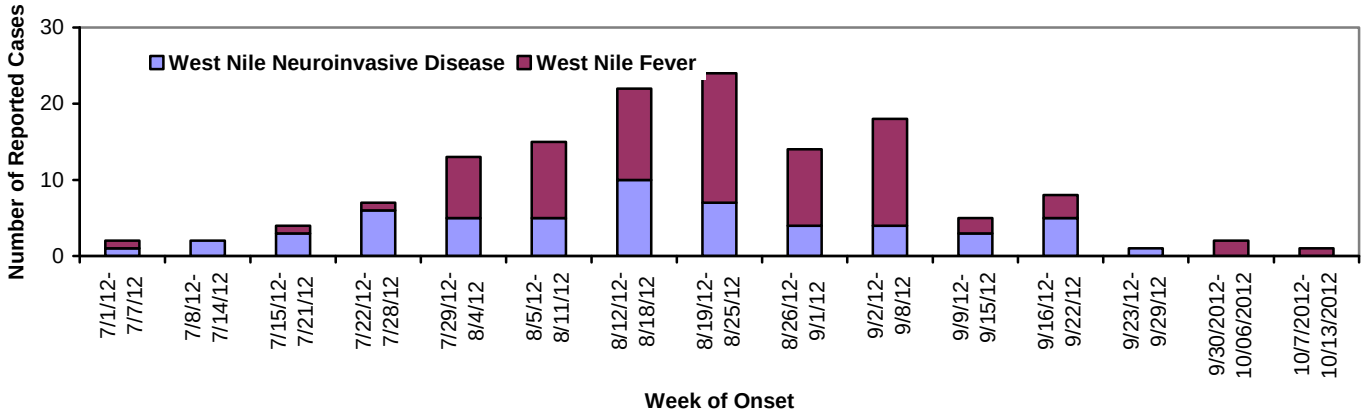
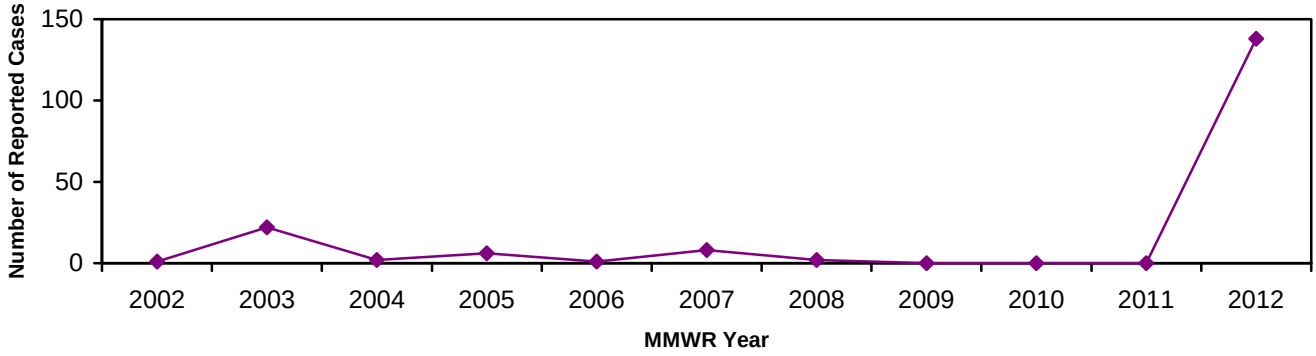


Figure 3. 2002 - 2012 Travis County Reported Cases of West Nile Virus by Year[1,2]



Data Source: Texas Department of State Health Services Zoonosis Control Branch
Austin/Travis County Health and Human Services Department Epidemiology and Health Statistics Unit
Austin/Travis County Health and Human Services Department Environmental Health Services Division Rodent and Vector Control Unit

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Figure 4. 2002 – 2012 Travis County Reported Cases of West Nile Virus by Year[1,2]

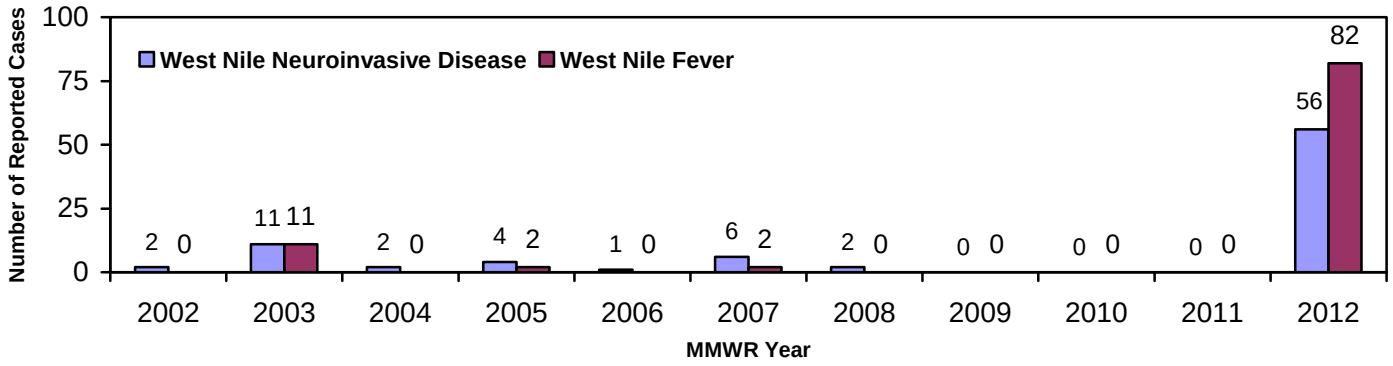
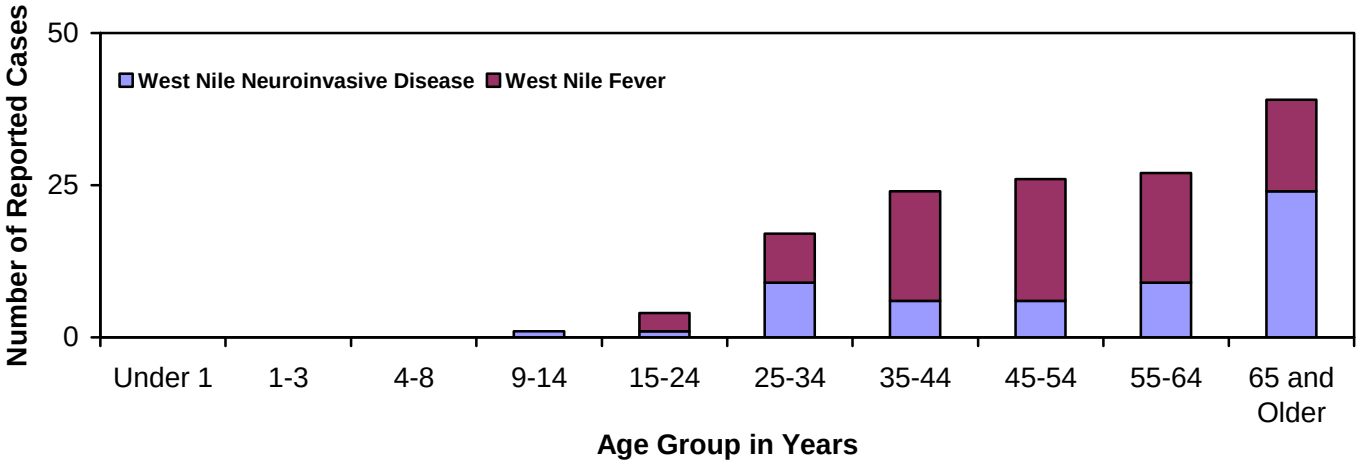


Table 1. 2002 -2011 Travis County Reported Cases of West Nile Virus[2]

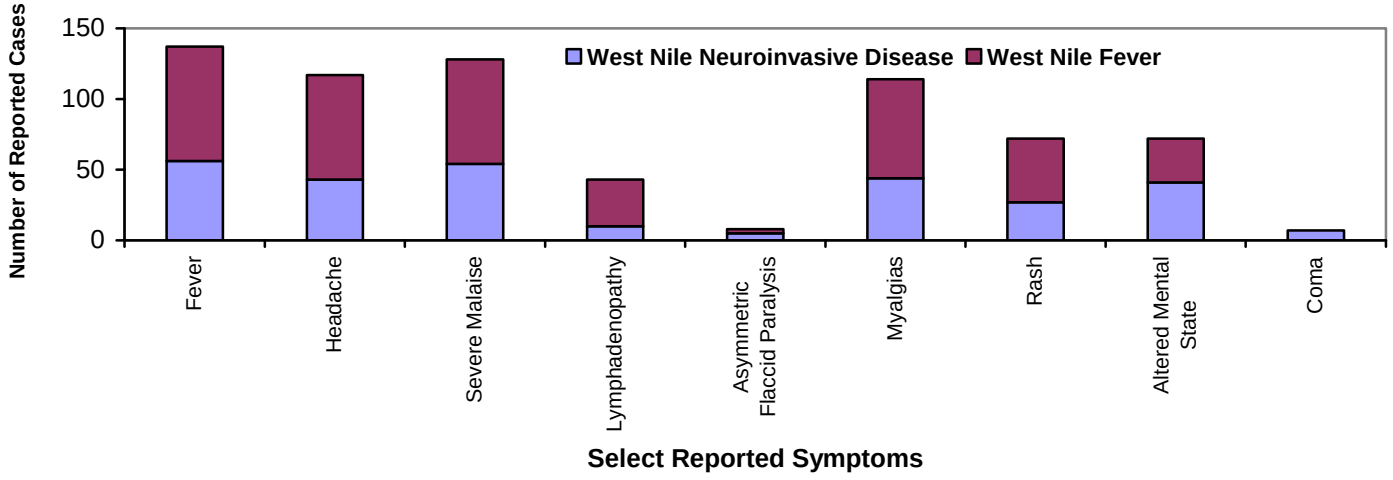
Year	Total Reported Cases	WNF	WNND	Number of Hospitalizations	Percent of Hospitalizations	Imported	Fatalities	Case Fatality Rate
2002	1	0	1	1	100.0	0	0	0.0%
2003	22	11	11	14	63.6	0	1	4.5%
2004	2	0	2	2	100.0	0	0	0.0%
2005	6	2	4	3	50.0	0	0	0.0%
2006	1	0	1	1	100.0	0	0	0.0%
2007	8	2	6	2	25.0	0	2	25.0%
2008	2	0	2	2	100.0	0	0	0.0%
2009	0	0	0	0	0.0	0	0	0.0%
2010	0	0	0	0	0.0	0	0	0.0%
2011	0	0	0	0	0.0	0	0	0.0%

Figure 5. 2012 Travis County Reported Cases of West Nile Virus by Age Group[1,2]



Data Source: Texas Department of State Health Services Zoonosis Control Branch
Austin/Travis County Health and Human Services Department Epidemiology and Health Statistics Unit
Austin/Travis County Health and Human Services Department Environmental Health Services Division Rodent and Vector Control Unit

Figure 6. 2012 Travis County Reported Cases of West Nile by Select Reported Symptoms[1]



Note: Reported symptom data is not mutually exclusive. Individuals reporting rash often described a similar rash on varying parts of the body. Description similarities: small red (dish) spots, sometimes raised.

Figure 7. 2012 Travis County Reported Cases of WNND by Select Reported Symptoms[1]

Total Cases=56

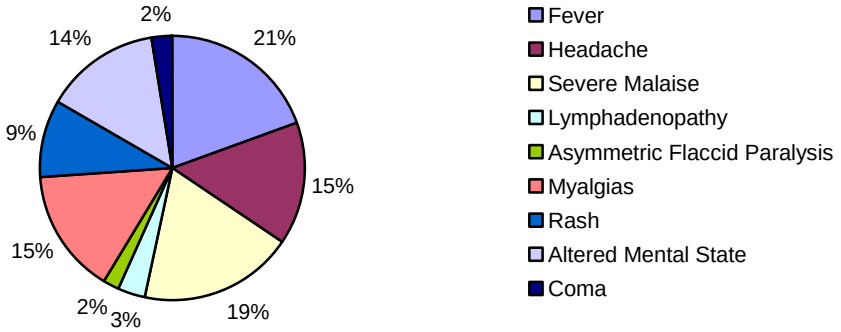
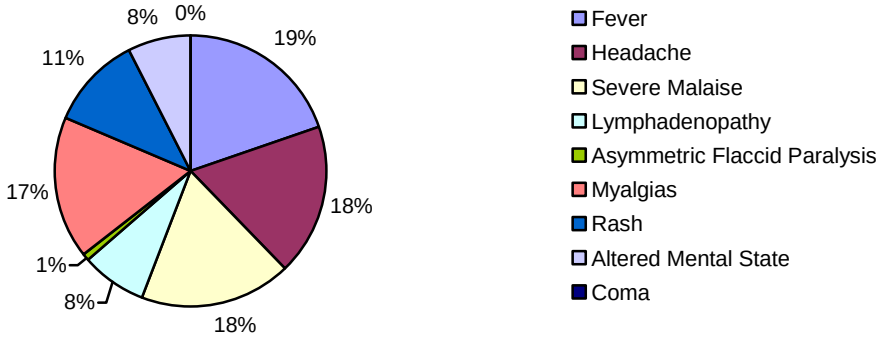


Figure 8. 2012 Travis County Reported Cases of WNF by Select Reported Symptoms[1]

Total Cases=82



Note: Reported symptom data is not mutually exclusive. Also of note, individuals reporting rash often described a similar rash on varying parts of the body. Description similarities: small red (dish) spots, sometimes raised.

Figure 9. 2012 Travis County Reported Cases of West Nile Neuroinvasive Disease by Condition[1]

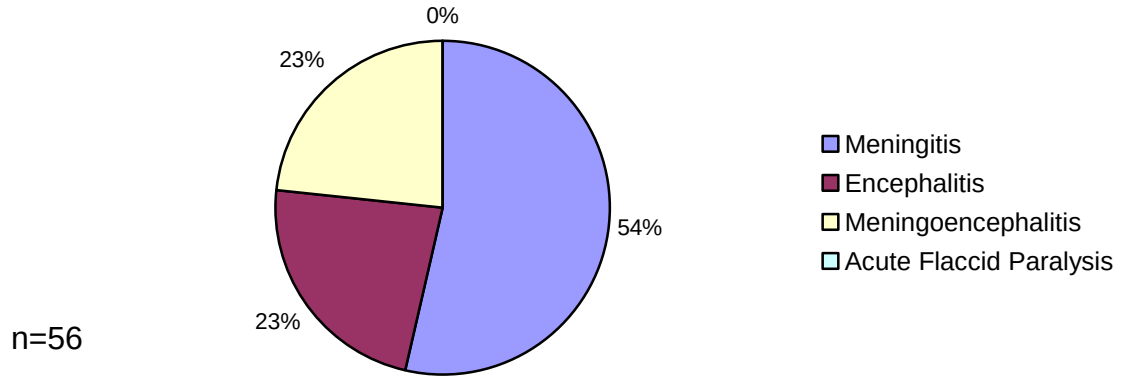
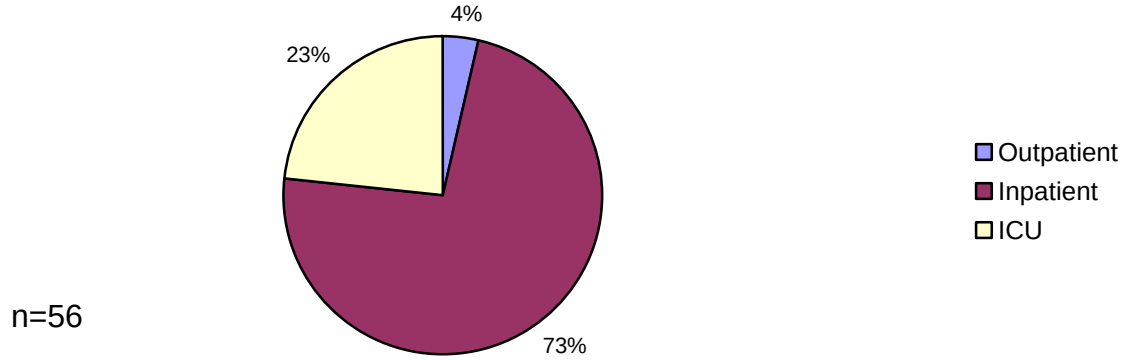


Figure 10. 2012 Travis County Reported Cases of WNND by Hospitalization Status[1]



Note: ICU is a subset of the inpatient population. This graph is mutually exclusive. ICU status is not a standardized variable collected. Disease Surveillance staff began noting when patients were known to be in the ICU to reflect the severity of disease; however this data collection was initiated after the 2012 WNV Outbreak began. This change was made in an effort to monitor severity of disease. As a result, the ICU data above may be underrepresented. The graph above does not reflect the current hospitalization status of cases.

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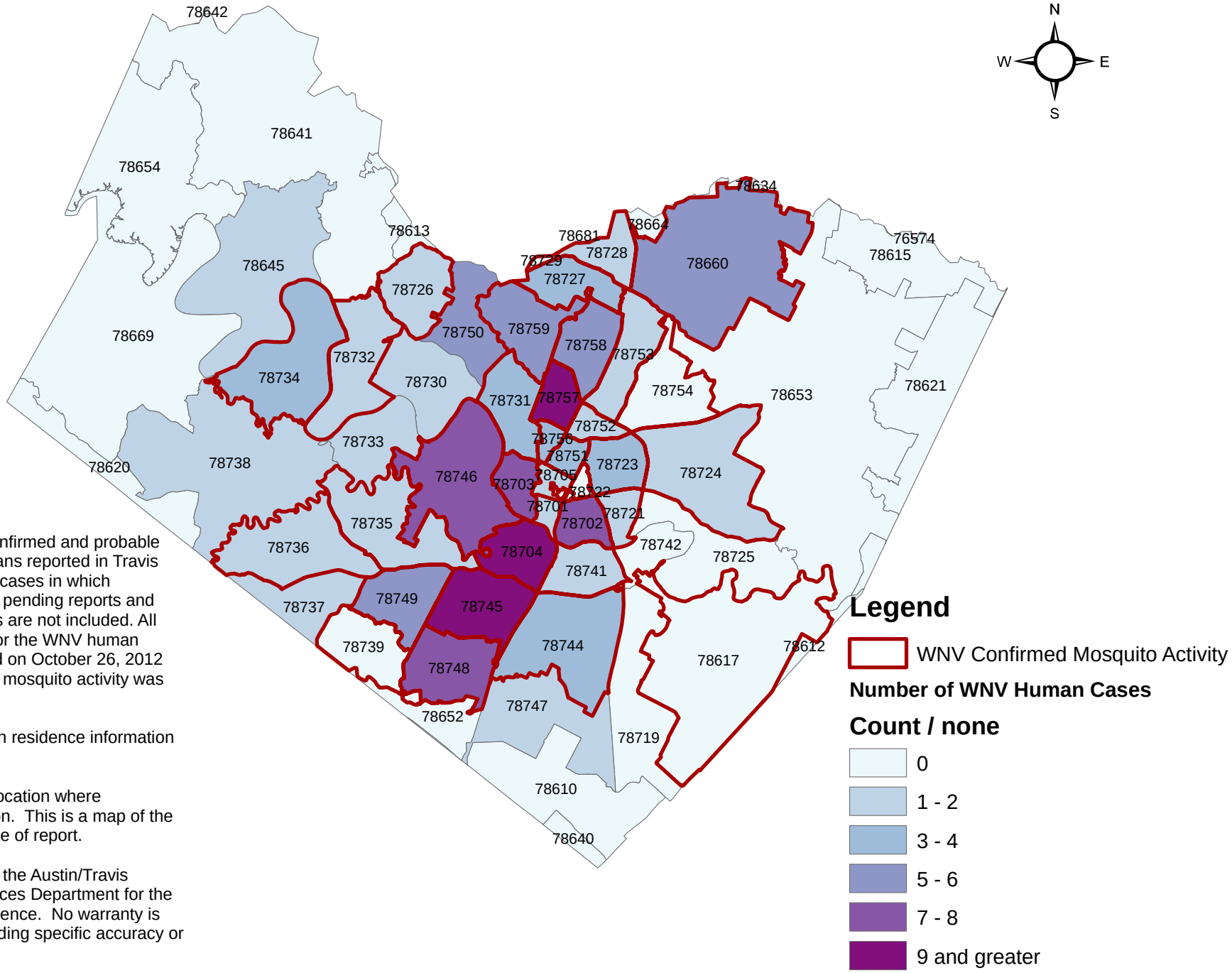
Map 1. Travis County Reported Cases of West Nile Virus 2012[1]



Data presented includes both confirmed and probable cases of West Nile Virus in humans reported in Travis County. This map only includes cases in which investigations are complete, any pending reports and investigations for West Nile Virus are not included. All 2012 data is preliminary. Data for the WNV human cases in this map was generated on October 26, 2012 and data for the WNV confirmed mosquito activity was generated on October 22, 2012.

Unable to map human cases with residence information at Post Office Boxes.

This map does NOT reflect the location where individuals acquired their infection. This is a map of the residence of the cases at the time of report.

This map has been produced by the Austin/Travis County Health and Human Services Department for the sole purpose of geographic reference. No warranty is made by the City of Austin regarding specific accuracy or completeness.

Legend

WNV Confirmed Mosquito Activity

Number of WNV Human Cases

Count / none

- 0
- 1 - 2
- 3 - 4
- 5 - 6
- 7 - 8
- 9 and greater

RESOURCES

For additional information about West Nile Virus:
City of Austin West Nile Virus
Texas Department of State Health Services West Nile Virus
CDC West Nile Virus

For additional information about how to protect from West Nile Virus:
Mosquito Season: Take Steps to Avoid Exposure

For additional Information about Mosquito Control in Travis County:
http://www.austintexas.gov/department/vector-control

For additional Information on Arbovirus Surveillance Maps:
Travis County West Nile Virus Confirmed Mosquito Activity 10-10-12

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[1] Data provided for 2012 are preliminary data. The 2012 data provided in this report are from A/TCHHSD Epidemiology and Health Statistics Unit and were generated on October 26, 2012.
[2] Data provided for the years 2002-2011 were provided by Texas Department of State Health Services Zoonosis Control Branch and were generated August 8, 2012.