



Mississippi Morbidity Report

Volume 27, Number 5-6

May/June 2011

West Nile Virus Update

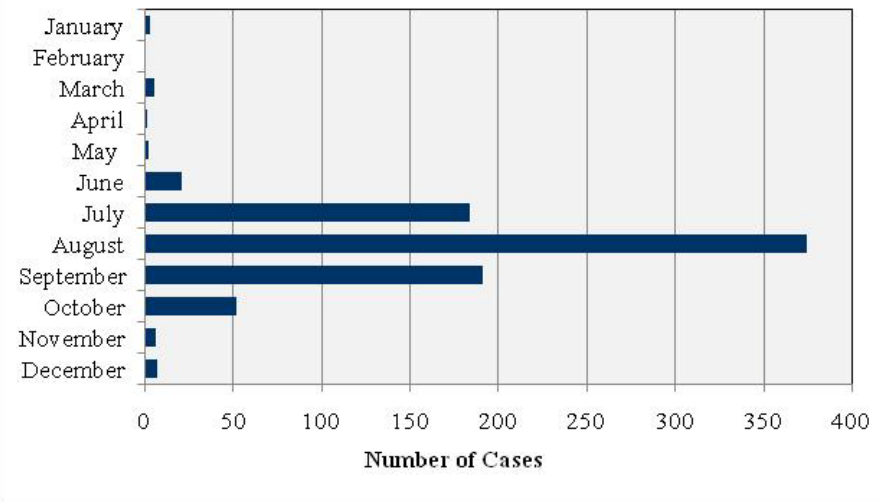
Introduction: The first 2011 case of West Nile virus (WNV) infection has been reported in an adult male from Northwest Mississippi. The onset of this individual's illness was in early March. Typically, WNV is most prevalent from July through October, with most cases reported in July, August and September (Figure 1). The mosquito vector is present for the entire year, however, and cases have been reported in Mississippi year round. As we approach the summer months, particularly in areas with standing water (mosquito breeding sites) from the recent flooding of the Mississippi River and its tributaries, clinicians are reminded to keep arboviral disease in the differential diagnosis in individuals with unexplained meningitis or encephalitis.

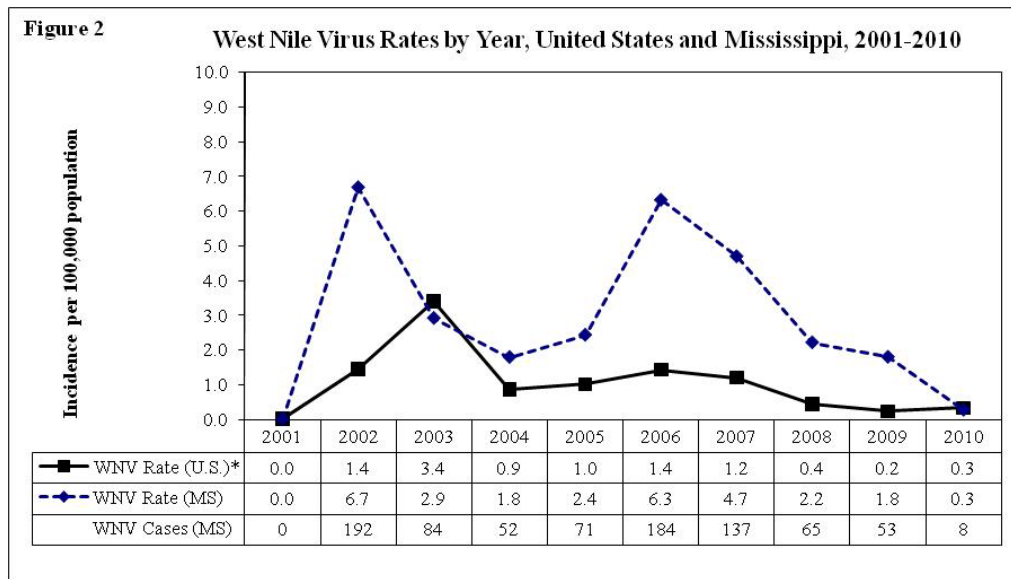
Transmission: WNV, a member of the genus *Flavivirus*, is transmitted through the bite of an infected mosquito; in Mississippi, primarily by the southern house mosquito (*Culex quinquefasciatus*, or "quinks"). The vector breeds in small amounts of standing water which contains large amounts of organic material. Breeding can occur in any container that can hold standing water, such as outdoor flower pots, old tires, bird baths or obstructed gutters. The virus is maintained in a bird-mosquito cycle, and has been detected in more than 300 species of birds, particularly in crows and jays. Horses may also become infected, and like humans, are dead end or incidental hosts.

Clinical Presentation: The typical incubation period is 3 to 15 days. Clinical illness occurs in approximately 20% of infected individuals. Most with clinical manifestations will develop the milder West Nile fever, which includes fever, headache, fatigue, and sometimes a transient rash. About 1 in 150 infected persons develop more severe West Nile neuroinvasive disease ranging from symptoms compatible with meningitis to encephalitis. Encephalitis is the most common form of severe illness and is usually associated with altered consciousness that may progress to coma. Focal neurological deficits and movement disorders may also occur. West Nile poliomyelitis, a flaccid paralysis syndrome, is seen less frequently. The elderly and immunocompromised are at highest risk of severe disease. Infections can be fatal.

Epidemiology: WNV has become endemic in Mississippi since the first report of an infected horse in 2001 and the first human cases in 2002. The number of reported cases varies from year to year, with a high of 192 cases in 2002, to a low of 8 cases in 2010 (Figure 2). Since 2002, there have been 48 deaths associated with WNV infection, with none reported in 2010. Cumulatively, cases range in age from three months to 98 years, with approximately 56% (472 out of 846 total reported cases) in individuals 50 years of age and older. Human cases, positive mosquito pools, birds or horses have been reported in every county except Issaquena.

Figure 1 Cumulative West Nile virus Cases by Month, 2002-2010, Mississippi





Discussion: Although the number of reported cases was lower in 2010 than in previous years, this is not an indication that the virus is disappearing and does not predict the number of expected cases this year or in the future. Natural disasters that result in flooding are often followed by a proliferation of mosquitoes. During the initial period of flooding, the majority of mosquitoes are “nuisance

mosquitoes”, or non-disease transmitting mosquitoes. As flood waters recede and form small areas of standing water, the vector, or disease transmitting mosquitoes, may begin to breed. Standing water becomes a more suitable quink breeding sites in times of drought, as pools begin to evaporate, concentrating the organic matter contained in them. The one human case repeated so far in 2011 was not flood related since the onset of illness was well before the flooding began.

The potential increase in the population of vector mosquitoes does not necessarily translate to increased numbers of human cases. MSDH entomologists and environmentalists have initiated enhanced mosquito surveillance in the affected areas to monitor changes in vector mosquito numbers and test for evidence of WNV in the mosquito population. Additionally, MSDH has distributed information to the public regarding personal protective measures. MSDH does not engage in spraying or other physical mosquito control activities; these are carried out at the discretion of the local communities.

To report cases of arboviral infection or with questions please call the MSDH Office of Epidemiology at 601-576-7725 in the Jackson area (1-800-556-003 outside the Jackson area) or 601-576-7400 after hours, weekends and holidays.

Pilot Project-New Strategy for Tuberculosis Infection Treatment

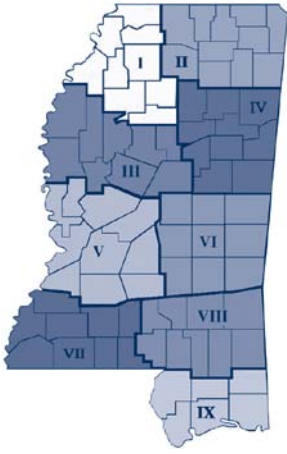
Treatment for latent Tuberculosis infection (LTBI) is typically a difficult and lengthy process extending over 9 months and impacted by patient non-adherence. Recently a new directly observed treatment regimen for LTBI was presented at the American Thoracic Society International Conference in May 2011. The new regimen consists of 12 weeks of once weekly rifapentine and isoniazid (INH). Many details of this new regimen are not available, but once the study is published, the CDC will provide formal recommendations for its use. The study took place over 10 years and the regimen was found to be safe and as effective as the standard 9 months of INH in the prevention of new cases of active TB disease and provided substantially improved therapy completion rates. **The regimen was given only under direct observation.**

The MSDH is planning a pilot project providing the new regimen to targeted groups in two areas of the state. The two pilot sites are the Hinds County Health Department and Public Health District VIII (Hattiesburg area). Select patients will be offered the new regimen given for three months, **only under direct observation by Health Department personnel.** The patients will undergo weekly assessments and monthly labs to monitor for potential adverse reactions.

Mississippi

Provisional Reportable Disease Statistics

May 2011



		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	May 2011	May 2010	YTD 2011	YTD 2010
Sexually Transmitted Diseases	Primary & Secondary Syphilis	1	0	1	0	5	1	1	2	6	17	18	56	80
	Total Early Syphilis	4	3	5	0	16	3	3	6	13	53	53	192	215
	Gonorrhea	37	37	84	33	143	37	27	44	52	494	469	2,276	2,499
	Chlamydia	199	154	246	135	442	155	107	164	156	1,758	1,692	8,731	9,121
	HIV Disease	9	5	5	2	19	3	1	4	9	57	37	281	208
Mycobacterial Diseases	Pulmonary Tuberculosis (TB)	0	0	0	0	2	0	1	1	1	5	6	35	28
	Extrapulmonary TB	1	0	0	0	0	0	0	0	0	1	0	4	4
	Mycobacteria Other Than TB	3	4	2	2	14	2	3	0	3	33	27	156	181
Vaccine Preventable Diseases	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	0	0	0	0	0	0	0	0	0	4	8	23
	Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	0
	Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0	0
	Measles	0	0	0	0	0	0	0	0	0	0	0	0	0
	Mumps	0	0	0	0	0	0	0	0	0	0	0	2	0
	Hepatitis B (acute)	0	0	0	0	1	0	0	0	1	2	5	14	14
	Invasive <i>H. influenzae</i> b disease	0	0	0	0	0	0	0	0	0	0	0	3	0
	Invasive Meningococcal disease	0	0	0	0	0	0	0	0	0	0	0	2	2
3Enteric Diseases	Hepatitis A (acute)	0	0	0	0	0	0	0	0	0	0	0	2	1
	Salmonellosis	4	14	1	5	18	13	7	7	8	77	72	207	159
	Shigellosis	0	1	0	0	2	7	0	5	1	16	3	51	13
	Campylobacteriosis	0	0	0	0	1	0	0	1	0	2	10	23	40
	<i>E. coli</i> O157:H7/HUS	0	0	0	0	1	0	0	0	0	1	4	2	8
Zoonotic Diseases	Animal Rabies (bats)	0	0	0	0	0	0	0	0	0	0	0	0	0
	Lyme disease	0	0	0	0	0	0	0	0	0	0	0	0	0
	Rocky Mountain spotted fever	0	0	0	0	0	0	0	0	1	1	2	1	3
	West Nile virus	0	0	0	0	0	0	0	0	0	0	0	1	1

*Totals include reports from Department of Corrections and those not reported from a specific District.



Candidates for treatment with the regimen will be limited to HIV negative, adult males and non-pregnant, non-lactating females ≥ 18 years of age with LTBI.

This regimen is not appropriate for the following individuals:

- Contacts to INH or Rifampin resistant disease
- Active or suspected tuberculosis
- History of intolerance to INH or rifampin
- Pregnant or nursing females
- Individuals receiving other medications in which drug interactions cannot be mitigated.

The pilots are designed to determine both the feasibility and costs associated with the new treatment regimen. The combined rifapentine/INH regimen is more costly than the usual 9 month INH regimen and there are increased costs in both nursing time and effort and labs. However, it is projected that the initial costs will be offset by increased compliance and higher completion rates translating into decreased morbidity and a reduction in future transmission. Once the study is published in the peer reviewed literature and the pilot projects have been analyzed, MSDH will consider broadening the availability of the treatment.

Please feel free to contact Risa M. Webb, M.D., MSDH State Tuberculosis Consultant at 601-576-7700 with questions.

References on request when available for release.