WEST NILE VIRUS INFECTION IN HUMANS: TRENDS FROM 2003-2007 IN MISSISSIPPI AND ITS NEIGHBORING STATES

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Abstract: West Nile virus (WNV) is a single stranded, RNA flavivirus. WNV is carried by birds and transmitted to humans by Culex mosquitoes. This zoonotic disease was first discovered in New York in 1999 and now the dominant vector-borne disease in this continent. Currently there is no particular treatment or vaccine. After Hurricane Katrina, the incidence of West Nile neuroinvasive disease (WNND) sharply increased in the hurricane-affected regions of Louisiana and Mississippi. As of June 24, 2008, the State of Mississippi is among 7 states in the United States that have reported human West Nile virus infection including severe neuroinvasive forms (http://www.cdc.gov). West Nile virus infection is a hazard in the aftermath of flooding that may accompany natural disasters such as hurricane or heavy rainfall. Our objective was to analyze the trends of number of human infections in Mississippi and its neighboring states of Alabama, Arkansas, Louisiana and Tennessee. We obtained data from the Center for Disease Control CDC (http://www.cdc.gov/ncidod/dvbid/westnile/index.htm) on the number of cases that were reported for each state. Graphs of the months in which human infection cases were reported in each state were downloaded from http://www.diseasemaps.usgs.gov. We have analyzed the trends from 2003 to 2007. During the 5 year period Mississippi and its surrounding states reported a total of 1,476 human WNV infections and 87 fatalities. Irrespective of the state or number of cases human WNV infections reported, most infections occurred during the months July and September, with August being the most Highest Incidental Month. The weather patterns during these summer months provide hospitable conditions that allow the mosquito population to increase, thus, contributing to the high occurrence of human WNV infections. Louisiana reported the highest number of infection cases in 2003, 2004 and 2005 with 124, 109 and 171 respectively. Mississippi reported the highest number of infection cases in 2006 with 183 and 136 cases in 2007. Future research will determine the impact of local geographical and occupational differences on trends of WNV human infections in Mississippi and its neighboring states.

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