Mississippi State Department of Health

Mississippi Morbidity Report

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Listeriosis: Newborns at Risk

Background: *Listeria monocytogenes* is a Gram-positive bacillus that is an uncommon cause of serious illness in the general population, but is an important cause of bacteremia and meningitis in populations with impaired cell-mediated immunity. In healthy individuals it can cause gastrointestinal symptoms often with fever. Those at risk for more severe illness include pregnant women, neonates, immunosuppressed persons such as those with a hematologic malignancy, AIDS, organ transplantation, or those receiving corticosteroid therapy, and persons over 60 years of age. [1]

Transmission: *L. monocytogenes* is found commonly in soil, decaying vegetation, water and in the fecal flora of many mammals. Transmission to humans is usually through food: vegetables can be contaminated from the soil; foods of animal origin, such as uncooked meats and raw milk, can be contaminated by asymptomatic animal carriers; processed foods such as soft cheeses and cold cuts can be contaminated after processing; and ready to eat foods such as hot dogs may be contaminated before packaging. Historically *L. monocytogenes* has been the cause of foodborne outbreaks and sporadic cases of illnesses due to contamination of processed meats and soft cheeses. Cooking and pasteurization kill the bacteria, but contamination may occur in the processing plant after either of these processes, as it is a "tenacious colonizer that favors moist, cool environments." The bacteria also multiply readily in refrigerated temperatures. [2,3,4]

At Risk Populations: Pregnant women are 17 times more likely to develop *L. monocytogenes* bacteremia than the general population, manifested by an acute febrile illness, with myalgias, arthralgias, headache and backache. This usually occurs in the third trimester of pregnancy and in 22%, results in stillbirth or neonatal death. Transmission to the fetus occurs transplacentally. Transmission to the neonate may also occur transplacentally, and may be manifested by a sepsis syndrome in a premature infant, or the infant may be infected at delivery, resulting in a late onset meningitis that may occur up to several weeks after birth.[1]

Epidemiology: The national rates of infection have decreased markedly in the last 25 years as food industry regulations have been implemented to minimize the risk of foodborne listeriosis.[4] In spite of this decrease, the US has experienced several multi-state outbreaks in the past 10 years that have resulted from contamination at processing facilities that package ready to eat meats. The most recent active surveillance study estimated a rate of 0.27 cases per 100,000 population in 2007.[5] Pregnant women make up about 30% of all cases, and neonates to whom the bacteria are transmitted have a case fatality rate of 30% overall, and up to 50% among those with an onset within the first 4 days of life.[6]

In Mississippi 2 to 3 adult cases usually are reported per year. Since the beginning of 2008, 5 cases have been reported, 4 among infants, with one stillbirth. The neonates were 8, 10 and 15 days of age at onset of illness, with an initial clinical presentation of sepsis/bacterial meningitis. The cases were from geographically disparate parts of the state. The patient isolates were submitted to CDC for PFGE, and were found to be unrelated subtypes and not a part of an outbreak.

Risk reduction for patients at high risk, especially pregnant women:

- Do not eat hot dogs, luncheon meats, or deli meats, unless they are reheated until steaming hot.
- Avoid getting fluid from hot dog packages on other foods, utensils, and food preparation surfaces, and wash hands after handling hot dogs, luncheon meats, and deli meats.

- Do not eat soft cheeses such as feta, Brie, and Camembert, blue-veined cheeses, or Mexican-style cheeses such as queso blanco, queso fresco, and Panela, unless they have labels that clearly state they are made from pasteurized milk.
- Do not eat refrigerated pâtés or meat spreads. Canned or shelf-stable pâtés and meat spreads may be eaten.
- Do not eat refrigerated smoked seafood, unless it is contained in a cooked dish, such as a casserole. Refrigerated smoked seafood, such as salmon, trout, whitefish, cod, tuna or mackerel, is most often labeled as "nova-style," "lox," kippered," "smoked," or "jerky." The fish is found in the refrigerator section or sold at deli counters of grocery stores and delicatessens. Canned or shelf-stable smoked seafood may be eaten.[7]

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2. Gottlieb SL, Newbern EC, et al. Multistate outbreak of Listeriosis linked to turkey deli meat and subsequent changes in US regulatory policy. Clin Infect Dis 2006;42:29-36.
3. Mead PS, Dunne EF, et al. Nationwide outbreak of listeriosis due to contaminated meat. Epidemiol Infect 2006;744-51.
4. Voetsch AC, Angulo FJ, et al. Reduction in the incidence of invasive listeriosis in foodbrone diseases active surveillance network sites, 1996-2003. Clin Infect Dis 2007;44:513-20.
5. CDC. Preliminary FoodNet data on the incidence of infection with pathogens commonly transmitted through food – 10 states, 2007. MMWR 2008;57:366-70.
6. Heymann DL, ed. Control of Communicable Disease in Manual, 18th ed. Washington, DC:APHA, 2004:309-12.
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WNV IgM Antibody Testing False-Positives in Commercially Available Tests

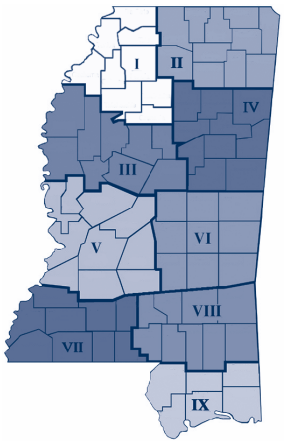
The Centers for Disease Control and Prevention (CDC), the Food and Drug Administration (FDA), and state health departments, including the Mississippi State Department of Health (MSDH), are investigating an increase in false-positive test results obtained with a commercially-available West Nile virus immunoglobulin M capture enzyme-linked immunosorbent assay (WNV IgM capture ELISA). Inverness Medical (Princeton, NJ) has voluntarily recalled two lots of their PanBio WNV IgM capture ELISA kit. One lot (#07262) was only distributed in Canada. The other lot (#08118) was distributed to several laboratories, including one that performs testing for providers in Mississippi, ViroMed (Minnetonka, MN), the facility that performs West Nile virus antibody testing for LabCorp, and was used July-September 2008. Preliminary confirmatory testing of these positive tests showed a false-positive rate of 75%. These tests are licensed to aid in the *presumptive* laboratory diagnosis of WNV infection in patients with *clinical symptoms of meningitis or encephalitis*. The package inserts also state that all positive results obtained with any of the commercially-available WNV test kits should be confirmed by additional testing at a state health department laboratory or CDC.

Currently CDC is repeating tests on specimens that were found to be positive at LabCorp, and are still available. In addition, for patients for whom specimens are not available, MSDH is contacting physicians to obtain additional serum from patients so that the testing may be repeated at the MSDH laboratory. MSDH is sending a letter to all physicians who reported patients with positive results from LabCorp between July 1 and September 1, 2008, with information about their patient's testing status.

As the investigation proceeds, the provisional number of WNV disease cases reported to CDC for 2008 will be adjusted, with information available at http://www.cdc.gov/westnile.

False-positive test results that occurred between July and September 2008 may have led to an incorrect diagnosis in some patients. If the patient is still experiencing symptoms, additional evaluation and alternative diagnoses should be considered

For more information about false-positive WNV tests, refer to http://www.cdc.gov/ncidod/dvbid/westnile/wnv_DiagnosticsUpdate.html.



Mississippi
Provisional Reportable Disease Statistics
September 2008

		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	Sept 2008	Sept 2007	YTD 2008	YTD 2007
Sexually Transmitted Diseases	**Primary & Secondary Syphilis**	2	0	0	0	3	4	0	6	2	17	12	122	88
	Total Early Syphilis	5	2	1	0	13	7	0	9	2	39	33	279	301
	Gonorrhea	55	38	95	49	142	48	30	48	26	531	750	5,414	6,348
	Chlamydia	207	135	252	140	387	120	86	134	111	1,572	1,759	14,950	16,682
	HIV Disease	4	3	1	2	19	2	5	8	4	48	43	443	453
Myco-bacterial Diseases	**Pulmonary Tuberculosis (TB)**	1	0	1	0	0	1	0	1	2	6	12	57	82
	Extrapulmonary TB	0	0	0	0	0	0	0	0	0	0	0	13	8
	Mycobacteria Other Than TB	2	5	2	1	8	4	1	3	2	28	19	223	187
Vaccine Preventable Diseases	**Diphtheria**	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	1	0	0	1	0	0	0	1	3	18	80	207
	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	0	1
Viral Hepatitis	**Hepatitis A (acute)**	0	0	0	0	0	0	0	0	0	0	1	4	8
	Hepatitis B (acute)	0	1	0	0	1	0	0	0	0	2	7	35	33
Enteric Diseases	**Salmonellosis**	14	36	4	20	49	24	12	20	21	200	192	909	742
	Shigellosis	5	2	0	0	0	2	0	2	1	12	185	278	562
	Campylobacter Disease	1	1	0	0	1	1	2	1	1	8	8	97	108
	E. coli O157:H7/HUS	0	0	0	0	0	0	0	0	0	0	1	4	6
Other Conditions of Public Health Significance	**Invasive Meningococcal Disease**	0	0	0	0	0	0	0	0	0	0	0	9	10
	Invasive *H. influenzae* b Disease	0	0	0	0	0	0	0	0	0	0	0	2	0
	RMSF	0	0	0	0	0	1	0	0	0	1	4	7	16
	West Nile Virus	1	0	2	0	5	1	1	2	0	12	36	97	117
	Lyme Disease	0	0	0	0	0	0	0	0	0	0	1	1	2
	Animal Rabies (bats)	0	0	0	0	0	0	0	0	0	0	1	2	2

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

Important Note: Complete the Primary Series of Hib Vaccine

Since April 2008, there has been a shortage of *Haemophilus influenzae* type b conjugate vaccine. In response, the ACIP recommends that providers continue to vaccinate children with the primary series and defer the booster dose that is usually given at 12 to 15 months, until the shortage has been resolved. American Indian and Alaska Native children, (who are at higher risk for Hib disease), are exempt from the deferral and can receive the VFC stockpile's PedvaxHIB® which is a two-dose primary series that must be followed by a booster dose during the second year of life. If PedvaxHIB® can not be obtained, American Indian and Alaska Native should receive the booster dose of any Hib vaccine that is available. Providers who still have a supply of TriHIBit® should continue to use it for the booster dose until the supply has been depleted.

There is no shortage of the newly VFC approved combination vaccine that contains DTaP, IPV and Hib vaccine (Pentacel®). This product is available for Mississippi VFC providers to order. Please consider adding this new combination vaccine to your practice in order to have adequate supplies of Hib vaccine. It is expected that the shortage of Hib vaccine will improve by the end of the calendar year.

Please be reminded that the full primary series of Hib vaccine is essential in protecting our children from getting invasive Hib disease. It is only the booster dose that is being deferred. A reduced primary series will provide decreased protection and put children at risk. For more information about ordering Pentacel® though the VFC Program, please contact MSDH Immunization Program at 601-576-7751 or 1-800-634-9258.