Mississippi State Department of Health

Mississippi Morbidity Report

Volume 24, Number 7 July 2008

Summertime Fun and Foodborne Illnesses

Summer has arrived, and with it many Mississippians will be enjoying more outdoor activities including picnics, cookouts, and family reunions. With these activities the risks of many foodborne illnesses are increased, but can be prevented. The following guide gives information on the specific infectious agents, symptoms, and associated foods for some common types of foodborne illnesses that can ruin summertime fun. This table is adapted from the "Diagnosis and Management of Foodborne Illnesses-A Primer for Physicians and Other Health Care Professionals" published by the CDC as an MMWR in 2004.

Bacterial

Infectious Agent	Incubation Period	Symptoms	Duration of Illness	Laboratory Testing	Associated Foods	Treatment
Bacillus cereus (toxin) Two toxins identified: preformed enterotoxin (heat stable); diarrheal toxin (heat labile; formed in host).	Enterotoxin-30 minutes to 6 hours. Diarrheal toxin-6 to 24 hours.	Enterotoxin-sudden onset of nausea and vomiting; Diarrheal toxin-colic and watery diarrhea.	24-48 hours for both, enterotoxin illness usually shorter.	Normally a clinical diagnosis. Stool and food samples for culture and toxin identification can be done, when indicated. (outbreaks)	Enterotoxin-improperly refrigerated cooked or fried rice; Diarrheal toxin-meats, stews, gravies, vanilla sauce	Supportive care for both types.
Campylobacter jejuni Zoonotic; can be spread from contact with infected pets.	2-5 days, with a range of 1-10 days.	Diarrhea (may be bloody), cramps, fever, and vomiting.	2-10 days.	Routine stool culture. Requires special Media / incubation at 42°C to grow.	Raw and undercooked poultry, unpasteurized milk, contaminated water.	Supportive care. Erythromycin and quinolones in severe cases.
Clostridium perfringens (toxin) Grows rapidly in foods that are cooling slowly, producing toxins.	6 to 24 hours, usually 10-12 hours.	Sudden onset of colic with diarrhea, and nausea. Vomiting and fever usually absent.	Short duration, 1 day or less.	Stools tested for enterotoxin or stool culture. Culture must be quantitative, as *C. perfringens* can be normally present.	Meat, poultry, gravy, dried or precooked foods, time and/or temperature abused foods.	Supportive care, antibiotics not indicated.
Enterohemorrhagic *E. coli* (EHEC) including O157:H7. These are Shiga toxin producers.	1-8 days.	Severe often bloody diarrhea, abdominal pain and vomiting. Fever rarely present. Can progress to HUS in 8% of cases.	5-10 days.	Stool culture. O157:H7 requires special media to grow. Contact Mississippi Public Health Lab for confirmation and serotyping.	Undercooked beef, especially hamburger. Also unpasteurized milk and juice, raw fruits and vegetables, and contaminated water	Supportive care. Monitor closely for HUS; antibiotic therapy may promote the development of HUS.
Listeria monocytogenes Neonates, elderly, Immunocompromised individuals, and pregnant women at highest risk.	9-48 hours for GI symptoms, 2-6 weeks for invasive disease.	Meningo-encephalitis and/or septicemia in neonates and adults. Fever and abortion in pregnant women.	Variable.	Blood or CSF cultures. Asymptomatic carriage occurs, so stool cultures not helpful.	Fresh soft cheeses, unpasteurized or inadequately pasteurized milk, ready to eat deli meats, hot dogs.	Supportive care and antibiotics, especially for invasive disease. (IV ampicillin, penicillin, TMP-SMX).
***Salmonella* spp**. Predominant species in state include *S. newport, S. javianna, S. mississippi* and *S. typhimurium.*	6 to 72 hours, usually about 12-36 hours.	Sudden onset of headache, abdominal pain, diarrhea, and nausea/vomiting. Fever usually present.	4-7 days.	Routine stool cultures.	Contaminated eggs, poultry, unpasteurized milk or juice, cheese, and raw fruits and vegetables.	Supportive care.

Bacterial (Continued)

Infectious Agent	Incubation Period	Symptoms	Duration of Illness	Laboratory Testing	Associated Foods	Treatment
***Shigella* spp.** Usually person to person, but can be foodborne.	1-3 days, but can range from 12 to 96 hours.	Abdominal cramps, fever, and diarrhea (often bloody or mucoid stools).	4-7 days.	Routine stool cultures.	Food or water touched by infected persons hands contaminated with fecal material.	Supportive care. TMP-SMX recommended in U.S. Check sensitivities.
Staphylococcus aureus (toxin)Toxin forms in contaminated foods that remain at room temp. for several hours.	As short as 30 minutes, usually within 2-4 hours after eating.	Abrupt onset of severe nausea, cramps, vomiting and sometimes diarrhea.	1-3 days.	Usually clinical. Stool, vomitus, and food can be tested for toxin, or cultured as indicated.	Meat, poultry, cheese and egg products, starchy salads (potato and egg), and cream pastries.	Supportive care.

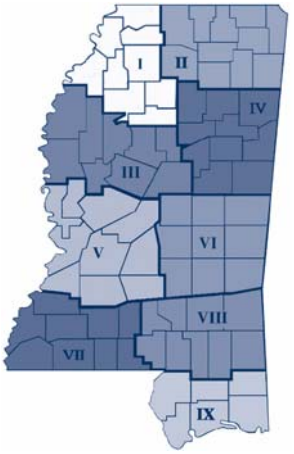
Viral and Parasitic

Infectious Agent	Incubation Period	Symptoms	Duration of Illness	Laboratory Testing	Associated Foods	Treatment
Hepatitis A Can be transmitted by infected food handlers. Usually person to person by fecal-oral route.	Average 28-30 days (range 15-50 days).	Diarrhea, dark urine, jaundice and flu-like symptoms.	From 2 weeks to 3 months.	Elevated ALT, and bilirubin. Positive IgM.	Shellfish from contaminated waters,contaminated drinking water, and foods contaminated by infected food workers.	Supportive Care. Prevention with immunization.
Norovirus (and other caliciviruses) Implicated as the most common cause of nonbacterial enteric outbreaks.	12-48 hours.	Nausea, vomiting, abdominal pain, fever, myalgia and headache. Usually self-limited with mild to moderate symptoms.	Usually 24-48 hours, up to 60 hours.	RT-PCR on fresh stool is the most sensitive. Also clinical diagnosis, and stool negative for WBC's.	Shellfish, fecally contaminated foods touched by infected food workers (salads, sandwiches, ice, cookies, fruit).	Supportive care.
Cryptosporidium Outbreaks can occur in recreational use of water (including swimming pools).	2-10 days.	Watery diarrhea, sometimes profuse with abdominal cramps.	May remit or relapse over weeks. Usually resolves by 30 days.	Stool exam for oocysts.	Uncooked food or food or water contaminated by ill persons.	Supportive care. Consider nitazoxanide in children 1-11 years.

This table represents only a partial listing of potential foodborne illnesses. When evaluating a potential foodborne illness, other infectious agents (Non-Cholera *Vibrio* spp., *C. botulinum*, and *Giardia*) and in some cases noninfectious agents (pesticides, mushrooms) should be included in the differential diagnosis. The foodborne illness primer published by the CDC is an excellent resource and can be accessed at http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5304a1.htm . Physicians may also contact Epidemiology at the Mississippi State Department of Health for assistance with diagnosis or laboratory testing at 601-576-7725, or 1-800-556-0003; after hours 601-576-7400.

Update-*Salmonella* Saintpaul Outbreak; U.S. 2008 (continued on back)

As of July 10, 2008, more than 1000 cases of a specific strain of *Salmonella* Saintpaul with onset dates of April 10 to July 4, 2008 have been reported from 42 states, Washington D.C., and Canada. These infections have resulted in 205 hospitalizations and 1 death, and may have contributed to the death of another. Tomatoes, fresh serrano peppers, fresh jalapeno peppers, and fresh cilantro are under investigation by the CDC and FDA as potential sources of infection. (Continued on back)



Mississippi
Provisional Reportable Disease Statistics
June 2008

		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	June 2008	June 2007	YTD 2008	YTD 2007
Sexually Transmitted Diseases	**Primary & Secondary Syphilis**	1	2	0	0	1	5	0	4	2	15	9	71	56
	Total Early Syphilis	3	2	0	2	18	6	1	5	4	41	31	174	215
	Gonorrhea	58	47	117	48	206	69	47	69	66	727	638	3,492	4,022
	Chlamydia	211	129	279	134	524	208	124	201	199	2,009	1,593	9,432	10,939
	HIV Disease	6	2	6	2	12	4	4	4	8	48	40	304	305
Myco-bacterial Diseases	**Pulmonary Tuberculosis (TB)**	0	1	2	2	2	1	0	0	3	11	6	42	44
	Extrapulmonary TB	0	0	1	0	0	0	2	0	0	3	1	11	4
	Mycobacteria Other Than TB	5	1	0	1	12	4	1	2	0	26	27	133	113
Vaccine Preventable Diseases	**Diphtheria**	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	5	0	0	2	0	0	0	0	7	27	51	46
	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	0
Viral Hepatitis	**Hepatitis A (acute)**	0	0	0	0	0	0	0	0	0	0	0	2	6
	Hepatitis B (acute)	0	0	1	0	2	0	0	0	0	3	8	13	19
Enteric Diseases	**Salmonellosis**	10	17	2	5	37	14	6	16	11	118	78	320	276
	Shigellosis	1	3	0	2	5	1	1	0	1	17	79	226	201
	Campylobacter Disease	3	1	0	1	1	2	0	2	2	12	24	47	64
	E. coli O157:H7/HUS	0	0	0	0	0	0	0	0	0	0	1	4	3
Other Conditions of Public Health Significance	**Invasive Meningococcal Disease**	0	0	0	0	0	0	0	0	0	0	0	9	8
	Invasive *H. influenzae* b Disease	0	0	0	0	0	0	0	0	0	0	0	2	0
	RMSF	0	0	0	0	0	2	0	0	1	3	2	5	7
	West Nile Virus	0	0	0	0	1	0	0	3	1	5	4	9	8
	Lyme Disease	0	0	0	1	0	0	0	0	0	1	0	1	0
	Animal Rabies (bats)	0	0	0	0	0	1	0	0	0	1	0	2	0

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

Update-*Salmonella* Saintpaul Outbreak; U.S. 2008 (continued)

In 2008, as of July 10th, there have been 2 reported cases of *Salmonella* Saintpaul in Mississippi that are related to the outbreak strain, and investigation of these cases is underway. Ongoing case control studies by CDC and the FDA are being conducted at this time and MSDH is currently assisting with case findings, trace back and source investigations. Any suspected *Salmonella* infection should be confirmed by stool culture and isolates should be submitted to the MSDH Public Health Laboratory for further serotyping. Further information can be accessed at www.cdc.gov/salmonella/saintpaul .

References available on request. Submitted by Paul Byers, MD, Epidemiology, MSDH

The Public Health Laboratory

The Mississippi State Department of Health (MSDH) Public Health Laboratory (PHL) has been sanctioned by CMS for referring a proficiency testing (PT) specimen to a reference laboratory. PT specimens are required to be treated like patient specimens, and the current PHL routine for patient tuberculosis specimens is to send them to an outside laboratory for identification, therefore the tuberculosis PT specimen was sent to the outside laboratory. Referring a PT specimen to an outside laboratory was a mistake that CMS is sanctioning by revoking the laboratory's CLIA certification. At this time MSDH is both appealing this decision to revoke the certification, and seeking administrative solutions that will allow the PHL to continue to serve the people of Mississippi. Possible solutions include reorganizing the administrative location of the PHL within MSDH, with the Board of Health's permission, and working with UMMC to apply for a CLIA certificate under which the PHL would work. We expect the laboratory services to continue uninterrupted.