



Mississippi Morbidity Report

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Haff Disease Identified in Three Mississippi Residents—July 2013

Introduction: Haff Disease is a rare illness characterized by rhabdomyolysis after the consumption of certain types of freshwater fish. The disease, primarily associated with the consumption of buffalo fish, is caused by an as yet unidentified toxin contained in the fish. Buffalo fish are a bottom feeding species found in the Mississippi River and its tributaries.

The first cases of Haff disease were identified in the Baltic Sea area in 1924 and since that time have occurred both sporadically and in large seasonal outbreaks in Europe. There have been approximately 30 cases reported in the US with the first reported in 1984. Most instances of reported Haff disease in the U.S. since 2004 have been limited to isolated cases or clusters of 2-3 cases. Nearly all US cases have been associated with buffalo fish consumption and most occur in the summer months.

Haff disease presents with a rapid onset of symptoms within 12 hours after eating fish. Initial symptoms may be nonspecific and include myalgia and muscle stiffness, chest pain and painful breathing and nausea or vomiting. Over the course of the next several hours, severe muscle weakness, dark urine and rhabdomyolysis may develop. The most profound clinical feature is an elevation of creatine kinase (CK) which has been reported as 10-1500 times normal. Liver function tests including aspartate and alanine aminotransferase levels (AST and ALT) are often elevated. Complications have included renal failure and disseminated intra-vascular coagulation. Treatment is supportive with intravenous fluid hydration to prevent myoglobin toxicity to the renal tubules. Symptoms usually resolve within two to three days. The case fatality rate has been reported as approximately 1.0%; no deaths have been reported in the U.S.

What follows is a report of the first reported cases of Haff Disease in Mississippi in three family members.

Case Presentations: On the morning of July 3, 2013 two family members, Patient A, a 56 year old female, and Patient B, a 26 year old male, presented to a central Mississippi ED. Patient A complained of tingling in her hands and pain with movement of her upper body and with deep inspiration that began at approximately 3:00 am on July 3. Her examination was normal except for tenderness to palpation in her upper and lateral chest wall. Her laboratory was significant for a serum CK of 1390 U/L. Patient B presented with complaints of severe chest pain radiating to the back since 4:00am. His examination was normal, with laboratory significant for a CK of 1189 U/L. Both were admitted for evaluation and hydration.

Patient C, a 57 year old family member who brought Patients A and B to the ED, developed symptoms of back and neck discomfort and chest pain at approximately 8:00am while waiting with his family. His examination was normal, with laboratories significant for a CK of 494. He was admitted that same morning for evaluation and intravenous hydration.

Over the course of the next several hours, Patient A's CK peaked at 9038 U/L. She also developed mildly elevated serum transaminases (AST 95 and ALT 61). After peaking on July 3, CK levels gradually declined and the patient was discharged on July 5 in stable condition. During his hospitalization, Patient B developed more significant elevations of serum transaminases (AST 582 and ALT 169) and a peak elevation of CK at 25,681 U/L. By July 7 he had improved with decreasing CK and was discharged. Patient C had the mildest course, with a CK that peaked at 992 U/L and no elevations of serum transaminases. He was discharged in stable condition on July 4, 2013.

The astute provider at the hospital diagnosed the three family members with Haff disease rhabdomyolysis after obtaining a history of consumption of pan-fried buffalo fish the evening prior to hospitalization. The fish, harvested from a local river by a commercial fisherman, was one of 5 packages the family had purchased from a local grocery store three weeks earlier. On two earlier occasions the fish had been consumed without problems. The fish was stored in the freezer and thawed each time for preparation and consumption. Both patients A and B ate dinner at approximately 6:00pm on July 2; patient C ate later, at approximately 8:15pm. No other risk factors for rhabdomyolysis were identified in the family members. All three individuals recovered without long term problems as a result of their illnesses.

The Mississippi State Department of Health (MSDH) was notified on July 3. Portions of cooked leftover fish from the July 2 meal and still frozen raw fish were sent to the Food and Drug Administration (FDA) Gulf Coast Seafood Laboratory for further evaluation; results are pending at this time. No other cases of rhabdomyolysis associated with buffalo fish consumption were reported in the state.

Buffalo fish is harvested in the state by recreational and commercial fisherman, and is routinely consumed by the public without associated illness. The area where the fish the family purchased was harvested is fished by several commercial fishermen, and the catch is routinely distributed to local supermarkets. Because Haff disease can occur sporadically or in small clusters, fish consumption should be included in the history of patients with unexplained rhabdomyolysis. Clinicians are asked to report suspected cases of Haff disease to MSDH.

References available on request

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2013-2014 Influenza Vaccine Recommendations

Influenza causes > 200,000 hospitalizations and thousands of deaths annually in the U.S. Yearly influenza vaccination is the primary means of preventing influenza transmission and illness. Influenza vaccination is currently recommended for all individuals > 6 months of age, with added emphasis placed on vaccinating those over 65, pregnant women and the immunocompromised, as they may suffer from severe sequelae more frequently.

For the 2013-2014 influenza season, several new vaccine options will be available (Table 1), including quadrivalent vaccines containing coverage for two distinct strains of Influenza B and a recombinant vaccine containing no egg products. 2013-2014 influenza vaccines contain A/California/7/2009 (H1N1) and A/Victoria/361/2011 (H3N2) virus antigens, similar to the 2012-2013 components. Trivalent (3 component) vaccines will contain a B/Massachusetts/2/2012–like virus antigen. Due to the co-circulation of two Influenza B viruses in previous years, quadrivalent (4 component) vaccine products will be available that contain an additional B/Brisbane/60/2008–like virus. A high dose, trivalent product is available for individuals \geq 65 years of age. Flumist, the live attenuated vaccine, will be available for those aged 2 to 49 in a quadrivalent format.

Table 1: Influenza Vaccine Products for 2013-2014 *

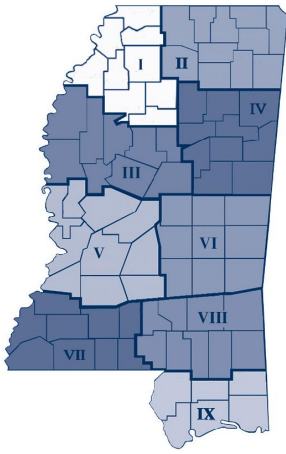
Product Type	Trade Name	Route of Administration	Comment
Trivalent (Inactivated)	Afluria Fluarix Flucelvax FluLaval Fluvirin Fluzone	Intramuscular	Appropriate for ages 6 months and up, depending on specific product
Trivalent (Inactivated)	Fluzone Intradermal	Intradermal	Preferred site of administration over deltoid muscle.
Quadrivalent (Inactivated)	Fluarix Quadrivalent FluLaval Quadrivalent Fluzone Quadrivalent	Intramuscular	Provides additional coverage of Influenza B. No preferential recommendation over trivalent products.
High Dose	Fluzone High-Dose	Intramuscular	Approved for patients \geq 65. Induces higher antibody titers. Increased frequency of minor adverse reactions.
Recombinant	FluBlok	Intramuscular	No contraindication from egg allergy of any severity.
Live Attenuated	FluMist Quadrivalent	Intranasal	Indicated for nonpregnant patients 2-49 years old barring medical contraindications.*

* For details visit: <http://www.cdc.gov/flu/professionals/acip/>

Mississippi

Provisional Reportable Disease Statistics

September 2013



		Public Health District									State Totals*			
		I	II	III	IV	V	VI	VII	VIII	IX	Sept 2013	Sept 2012	YTD 2013	YTD 2012
Sexually Transmitted Diseases	Primary & Secondary Syphilis	0	0	0	2	2	2	0	1	0	7	20	60	124
	Early Latent Syphilis	2	1	1	0	5	0	1	1	0	11	31	130	193
	Gonorrhea	31	30	51	22	105	36	7	42	41	365	592	3,944	5,136
	Chlamydia	171	146	207	89	365	138	48	133	182	1479	1,625	13,485	17,626
	HIV Disease	4	1	5	1	19	5	3	4	3	45	38	421	415
Mycobacterial Diseases	Pulmonary Tuberculosis (TB)	0	0	1	0	2	0	1	0	0	4	4	48	50
	Extrapulmonary TB	0	0	1	0	0	0	0	0	0	1	1	4	7
	Mycobacteria Other Than TB	0	2	0	1	9	2	2	2	4	22	23	271	226
Vaccine Preventable Diseases	Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0	0
	Pertussis	0	0	1	0	0	0	0	0	0	1	3	42	61
	Tetanus	0	0	0	0	0	0	0	0	0	0	0	0	1
	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
	Hepatitis B (acute)	0	1	0	0	0	0	0	0	4	5	8	44	65
	Invasive <i>H. influenzae</i> disease	0	0	0	0	2	0	0	0	0	2	1	24	20
	Invasive Meningococcal disease	0	0	0	0	0	0	0	0	0	0	0	3	4
Enteric Diseases	Hepatitis A (acute)	0	0	0	0	0	0	0	0	0	0	1	4	5
	Salmonellosis	17	32	6	13	32	6	7	14	10	139**	233	699	1,002
	Shigellosis	3	2	0	0	6	4	1	2	4	22	41	136	214
	Campylobacteriosis	0	0	2	1	2	0	0	1	1	7	11	71	84
	<i>E. coli</i> O157:H7/STEC/HUS	1	0	0	0	0	0	0	0	0	1	0	24	16
Zoonotic Diseases	Animal Rabies (bats)	1	0	0	0	0	0	0	0	0	1	0	4	1
	Lyme disease	0	0	0	0	0	0	0	0	0	0	0	0	1
	Rocky Mountain spotted fever	0	1	0	0	0	0	0	1	0	2	2	22	25
	West Nile virus	0	0	0	0	4	0	0	3	1	8	57	38	226

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

**Address unknown for two *Salmonella* cases.

Influenza in Healthcare Workers

An estimated 72% of healthcare workers received influenza vaccination in 2012-2013, an improvement from 66.9% the previous year¹. By employment type, physicians achieved the highest rate at 92.3%. Facilities requiring vaccination as a condition of employment achieved the best results, successfully vaccinating 96.5% of employees. Vaccination coverage was 76.9% in facilities where employers promoted but did not require vaccination. Only 50.4% of employees were vaccinated in facilities that neither required nor promoted influenza vaccination. Vaccination of healthcare workers at long-term care facilities (LTCF's) trailed that of acute care settings in 2012-2013, with an average vaccination rate 58.9%. During the 2012-2013 Influenza season, 33 nursing homes in Mississippi reported influenza outbreaks compared with two the previous year. Outbreak investigations revealed that only 76% of residents and 40% of employees had been vaccinated for flu.

Instituting a mandatory influenza vaccination policy is the most successful way to improve vaccination rates. LTCF's using this approach achieved 95.8% vaccination among healthcare workers in 2012-2013. The Mississippi State Department of Health has implemented a mandatory influenza vaccination policy for all employees since 2012, with unvaccinated employees in clinical settings required to wear surgical masks throughout the flu season. Short of mandatory vaccination, CDC has issued guidance for improving vaccination rates among healthcare providers using a variety of strategies that include improving access to vaccinations, educational campaigns, and requiring signed declination to forego influenza vaccination. (For additional information please visit: <http://www.hhs.gov/ash/initiatives/hai/hcpflu.html>). Evidence suggests that effective interventions combine education with measures that minimize barriers and make the default decision to get vaccinated easier than declining. MSDH strongly encourages every healthcare worker be vaccinated for influenza in order to minimize death and debility in the vulnerable patients that we all serve.

¹CDC. Influenza vaccination coverage among health-care personnel—United States, 2011–12 influenza season. MMWR 2012;61:753–7.

