

62nd Annual

Epidemic Intelligence Service (EIS) Conference



Volume 62 Number 2 April 22–26, 2013

<http://www.cdc.gov/eis/conference.html>

LATE-BREAKING REPORTS



**U.S. Department of
Health and Human Services**
Centers for Disease
Control and Prevention

*You just tell me when and where,
and not only will I be there, but I'll also be late.*
—Jarod Kintz

Friday, April 26, 2013

SESSION R: Late-Breaking Reports
10:30–11:45 am

Ravinia Ballroom

MODERATORS: Douglas H. Hamilton and Randolph Daley

- 10:35** *Escherichia coli* O157:H7 Outbreak Associated with “Tiger Meat” Consumption, a Regional Holiday Tradition — Wisconsin, December 2012–January 2013. *Abbey J. Canon*
- 10:45** PAM in Paradise: Primary Amebic Meningoencephalitis Associated with the Practice of Ritual Nasal Rinsing — St. Thomas, U.S. Virgin Islands, 2012. *Jamae F. Morris*
- 10:55** Acute Health Effects Among Emergency Responders Following a Vinyl Chloride Exposure — New Jersey, 2012. *Kimberly Brinker*
- 11:05** Prisons, Pruno, and Potatoes — Botulism in an Arizona Correctional Facility, 2012. *Laura E. Adams*
- 11:15** Rapid Ethnographic Assessment Prior to the Implementation of Mobile Health Clinics to Improve Access to HIV Services in Rural Mozambique, 2013. *Philip A. Lederer*
- 11:25** Lead Poisoning at an Indoor Gun Range — King County, Washington, September–November 2012. *Michael H. Kinzer*
- 11:35** Donor-Derived Transmission of Methicillin-Resistant *Staphylococcus aureus* Infection. *Joyanna M. Wendt*
- 11:45** Preliminary Report of an Outbreak of Coccidioidomycosis Among Solar Power Farm Construction Workers — California, 2012–2013. *Jason A. Wilken*

The findings and conclusions in this report are those of the author(s) and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

10:35 *Escherichia coli* O157:H7 Outbreak Associated with “Tiger Meat” Consumption, a Regional Holiday Tradition – Wisconsin, December 2012–January 2013

AUTHORS: Abbey J. Canon, R. Klos, C. Quest, J.P. Davis

BACKGROUND: *Escherichia coli* O157:H7 (O157:H7) causes ~63,000 illnesses and 20 deaths in the United States annually. On January 8, 2013, the Wisconsin Division of Public Health was notified of two O157:H7 infections. Patient interviews revealed common-source consumption of Market A “tiger meat,” an upper-Midwestern raw ground beef (RGB) dish traditionally served with onions. We investigated to prevent additional infections, determine outbreak magnitude, and understand RGB consumption.

METHODS: We administered a case-finding and knowledge-attitudes-practice questionnaire to 62 persons identified by using Market A’s list of RGB orders. Persons with confirmed or probable cases had diarrhea with onsets <10 days after exposure (eating or other) to RGB sold by Market A during December 22–January 4. Persons with confirmed cases had O157:H7 culture isolates with a specific multilocus variable-number tandem-repeat analysis (MLVA) pattern; MLVA was used to characterize RGB O157:H7 isolates.

RESULTS: Among 17 patients, 14 had eaten and three

reported other exposure to Market A RGB; 13 were female and median age was 46 (range: 1–82) years. Eight (47%) received outpatient medical care; no hospitalizations or deaths occurred. Among 62 respondents, 98% (55/56) reported consuming RGB during holidays only, and 91% (53/58) were aware that consuming RGB can cause illness; 40% (6/15) of patients and 70% (28/40) of nonill persons intend to consume RGB in the future. Market A voluntarily recalled 2,532 pounds of RGB on January 15. O157:H7 isolates from four patients and RGB samples collected from two households had indistinguishable MLVA patterns.

CONCLUSION: Evidence implicated Market A RGB as the O157:H7 source; rapid public health response and voluntary RGB recall prevented further illness. Discouraging this tradition requires regional targeted consumer and retailer education.

KEYWORDS: *Escherichia coli* O157; foodborne diseases; disease outbreaks; health knowledge, attitudes, practice

10:45 PAM in Paradise: Primary Amebic Meningoencephalitis Associated with the Practice of Ritual Nasal Rinsing – St. Thomas, U.S. Virgin Islands, 2012

AUTHORS: Jamae F. Morris, A. Nuriddin, T. Hunte, T. Morris, V. Hill, B. Mull, L. Xiao, D. Roellig, A. daSilva, J. Gargano, M. Beach, J. Yoder, J. Cope

BACKGROUND: Primary amebic meningoencephalitis (PAM), an almost universally fatal condition, affects 0–8 persons annually in the U.S. PAM results when *Naegleria fowleri*, a free-living amoeba found in warm freshwater, enters the nose and migrates to the brain. While most infections are associated with recreational freshwater exposure, nasal rinsing has recently emerged as a mode of transmission. On November 21, the U.S. Virgin Islands (USVI) Department of Health documented the first PAM case and death in USVI. Infection occurred in a 47-year-old Muslim male who practiced ablution, a required ritual cleansing, sometimes involving nasal rinsing, done in preparation for prayer. An investigation was conducted to characterize water exposures and understand community ablution practices.

METHODS: In December, semi-structured interviews were conducted with the case-patient’s roommate and a convenience sample of participating members of his mosque. Concurrently, environmental investigations, including water sampling, were conducted at the case-patient’s home and mosque.

RESULTS: The case-patient had no recreational freshwater exposure and primarily practiced ablution at home, using untreated rainwater and groundwater, and at the mosque, using municipal water. All 22 participants practiced ritual ablution; 86% performed nasal rinsing. For ablution, most participants (72%) used unchlorinated rainwater collected in cisterns connected to their residential plumbing. In total, 18% (3/17) of samples from the case-patient’s home, including the water heater, and none of three samples from the mosque yielded *N. fowleri*.

CONCLUSIONS: Although the case-patient was likely exposed to *N. fowleri* at home, his primary water source and treatment practices mirror those of other mosque members, demonstrating an ongoing risk for PAM in the USVI Muslim community. Culturally appropriate education materials on water treatment and PAM are needed.

KEYWORDS: *Naegleria fowleri*, ritual ablution, nasal rinsing, free-living amoeba, primary amebic meningoencephalitis

10:55 Acute Health Effects Among Emergency Responders Following a Vinyl Chloride Exposure — New Jersey, 2012

AUTHORS: Kimberly Brinker, R. Funk, C. Dowell, A. Rey, J.A. Wilken, J. Taylor, M.A. Duncan

BACKGROUND: Over 2.5 million emergency responders in the United States face hazardous exposures while on duty. On November 30, 2012, a bridge collapse and consequent train derailment caused a tank car to rupture and release vinyl chloride, an acute respiratory irritant and neurotoxin, exposing emergency responders. The National Institute for Occupational Safety and Health (NIOSH), Agency for Toxic Substances and Disease Registry (ATSDR), and New Jersey Department of Health collaborated in investigating the health effects on the emergency responders.

METHODS: NIOSH contacted emergency response leaders to identify personnel who responded on scene during November 30–December 7, 2012. A survey adapted from ATSDR's Assessment of Chemical Exposures toolkit assessed total hours worked in the evacuation zone, health effects experienced within 24 hours of exposure, and use of respirators.

RESULTS: Of approximately 100 emergency responders, 75 completed surveys. Participants were aged 19–78 years;

72 were male. Thirty-five (47%) worked >12 hours in the evacuation zone. Fifty-three (75%) indicated not wearing respirators upon initial arrival, and four specified they were fit-tested and given respirators several days later. Among all participants, acute symptoms included headache (28%), burning nose/throat (15%), and eye irritation/pain/burning (15%); 23 (31%) sought medical care from local providers or hospitals. The crude prevalence odds ratios (PORs) were highest for participants who worked >12 hours on scene (POR for headache, 4.0 [95% confidence interval (CI), 1.2–14.9]; for burning nose/throat, 6.3 [1.2–64.2]; and for eye irritation/pain/burning, 6.3 [1.2–64.2]).

CONCLUSION: Acute symptoms of vinyl chloride exposure were common and associated with longer exposure among emergency responders. Emphasis on hazard communication and appropriate use of respirators by emergency personnel is warranted.

KEYWORDS: emergency responders, vinyl chloride, occupational health

11:05 Prisons, Pruno, and Potatoes — Botulism in an Arizona Correctional Facility, 2012

AUTHORS: Laura E. Adams, S. Yasmin, G. Briggs, S. Anderson, J.F. Morris, J. Weiss, C.A. Tsang, E. Henke, M. Vasiq, T. Anderson, A. Rao, C. Luquez, J. Dykes, K. Bisgard, K. Komatsu

BACKGROUND: Botulism, caused by botulinum toxin, can lead to respiratory paralysis and death. Foodborne botulism outbreaks have been associated with pruno, an illicit prison-brewed alcohol, when potatoes are an included ingredient. We investigated the second botulism outbreak in one correctional facility within a 4-month period to examine pruno as the potential cause and prevent additional cases.

METHODS: A confirmed case was defined as botulism signs or symptoms in a correctional facility inmate, with laboratory confirmation of botulinum toxin during November 24–26. Clinical specimens and leftover pruno were tested for *Clostridium botulinum* and botulinum neurotoxin by using botulinum toxin gene real-time PCR, botulinum toxin enzyme-linked immunosorbent assay, mouse bioassay, and mass spectrometry. We interviewed inmates and correctional officers about brewing practices.

RESULTS: Illness was confirmed in eight males aged 20–35 years. Initial symptoms included double or blurred vision, slurred speech, dysphagia, ptosis, and weakness. All

patients received heptavalent botulinum antitoxin (HBAT); seven required mechanical ventilation, and all survived. All reported sharing a batch of pruno made primarily from potatoes; median incubation from pruno consumption to clinical signs was 29 (range: 16–64) hours. No other inmates reported consuming this pruno. Sera from all patients and leftover alcohol tested positive for botulinum toxin type A. *C. botulinum* type A was isolated from rectal swabs, stool, and pruno samples.

CONCLUSIONS: Prison-brewed alcohol made with potatoes was associated with the second botulism outbreak in one Arizona prison and the first U.S. outbreak in which pruno tested positive for botulinum toxin. Pruno ingredients and brewing practices likely facilitated botulinum toxin production. Access to potatoes was curtailed in the facility, and inmates were educated regarding the risk of botulism.

KEYWORDS: *Clostridium botulinum*, botulism, foodborne diseases, disease outbreaks

11:15 Rapid Ethnographic Assessment Prior to the Implementation of Mobile Health Clinics to Improve Access to HIV Services in Rural Mozambique, 2013

AUTHORS: Philip A. Lederer, A. Schwitters, L. Zilversmit, I. Ramiro, P. Samo Gudo, K. Jobarteh

BACKGROUND: In Mozambique, 1.4 million people are living with HIV, and 74,000 AIDS-related deaths occur each year. Over 60% of the population lives in rural areas and lacks ready access to health services. To improve the uptake of HIV services, Mobile Health Clinics (MHCs) will be introduced in rural areas this year. We conducted a rapid ethnographic assessment to inform their implementation.

METHODS: From January 14-31, 2013, we conducted an ethnographic assessment in two districts of rural Gaza Province where MHC implementation is planned. Community leaders served as key informants, and chain-referral sampling was used to recruit participants. Interviewees were asked about local health practices; barriers to health services; and acceptance of MHCs. Interviews were coded until saturation (the point at which no new themes emerged).

RESULTS: We conducted 57 interviews among five community leaders, 10 health care providers, 20 health system patients, 12 traditional healers, and 10 traditional

healer patients. The following key themes emerged: patients utilize both traditional healers and the national health system; access to the national health system is impeded by long distances, cost, lack of transportation, poor health facility conditions, and denial/stigma associated with HIV/AIDS; patients report visiting traditional healers because of spiritual concerns, convenience, and lack of confidence in the national health system; and interviewees are receptive to MHCs.

CONCLUSIONS: The planned MHCs should address many of the barriers to uptake of HIV services identified in this assessment. Involvement of community leaders, providers, traditional healers, and patients is critical to the successful implementation of MHCs. We found rapid ethnographic assessment a useful adjunct to inform policy and design and implement improved provision of HIV services in rural Mozambique.

KEYWORDS: HIV/AIDS, Mozambique, Mobile Health Units, Traditional Medicine, Delivery of Health Care

11:25 Lead Poisoning at an Indoor Gun Range — King County, Washington, September–November 2012

AUTHORS: Michael H. Kinzer, R. Kellogg, S. Whittaker, N. Oleru, T. Schoonover, R. Cunningham, K. Larson, J. Duchin

BACKGROUND: Lead poisoning effects range from asymptomatic renal dysfunction to life-threatening neurologic complications and begin at blood lead levels (BLLs) ≥ 5 $\mu\text{g}/\text{dL}$. Lead ingestion or inhalation by workers at indoor firing ranges is a known occupational hazard. During November 2012, a multiagency team investigated the cause and extent of lead exposure among construction workers and employees at an indoor firing range.

METHODS: We reviewed applicable lead safety regulations and identified workers during September–November 2012 from employment records. Site visits evaluated workplace lead contamination and 100/117 (85%) contractors and 39/42 (93%) range employees underwent standardized telephone interviews on exposure and symptoms. BLLs from blood lead registries, clinical laboratories, and health care providers were available for 74/117 (63%) contractors and 26/42 (62%) range employees. An elevated BLL was defined as ≥ 10 $\mu\text{g}/\text{dL}$.

RESULTS: Since 1978, a worker BLL of 40 $\mu\text{g}/\text{dL}$ is the

federal threshold for protective action. Our site visits documented inadequate ventilation, extensive air and surface lead contamination, and lack of correct protective equipment for range employees. Among contractors, 75% had not received lead safety training, and 73% had not used a respirator onsite. Elevated BLLs were found among 35% of contractors (maximum: 153 $\mu\text{g}/\text{dL}$) and 77% of range employees (maximum: 58 $\mu\text{g}/\text{dL}$). Gastrointestinal, neurologic, or behavioral symptoms were seen in 13/26 (50%) contractors and 11/20 (55%) range employees with elevated BLLs.

CONCLUSIONS: This was the largest lead poisoning ever associated with one of the 16,000 to 18,000 indoor firing ranges in the United States. Employers did not take consistent steps to protect workers, but worker lead safety regulations are out-of-date and should be updated to reflect the true health risks of lead.

KEYWORDS: lead poisoning, occupational health

11:35 Donor-Derived Transmission of Methicillin-Resistant *Staphylococcus aureus* Infection

AUTHORS: Joyanna M. Wendt, H. Akselrod, S. Cohle, D. Kaul, A. Denison, M. DeLeon-Carnes, D. Blau, C. Paddock, M. Kuehnert, S. Basavaraju

BACKGROUND: Donor-derived infection transmission is suspected in 1-2% of solid organ transplants, and can result in allograft failure or recipient death. Donors with a history of active injection drug use (IDU) at death are associated with increased prevalence of HIV and hepatitis B and C, but transmission risk is not routinely considered for bacterial infections. On January 18, 2013, CDC was notified of methicillin-resistant *Staphylococcus aureus* (MRSA) bacteremia in a recipient who received lungs from an IDU donor who had endocarditis and MRSA bacteremia. We investigated to determine whether this was donor-derived, and the extent of transmission.

METHODS: We reviewed donor and recipients' medical records, including antibiotic susceptibility testing (AST) results. Cases were organ recipients from the common donor who, following transplantation, developed MRSA infection matching donor's AST results. CDC acquired the lung recipient's blood culture isolates and donor's post-mortem formalin-fixed paraffin-embedded heart mitral valve (MV) tissue. The MV tissue underwent DNA extraction and

polymerase chain reaction for *S. aureus*. The *S. aureus* DNA from the isolates and MV tissue were tested for *spa* type, and *mec* antibiotic resistance and Panton-Valentine leukocidin (PVL) virulence factors.

RESULTS: Four recipients received 5 organs; none died. Two cases (lung and liver recipients) developed MRSA bacteremia despite appropriate antimicrobial prophylaxis, requiring a median of 8 additional hospital days as compared to non-cases. The donor and lung recipient *S. aureus* demonstrated *spa* type t008, *mec* type IVa and were PVL-positive.

CONCLUSION: The 2 cases of MRSA bacteremia were donor-derived. Infection transmission risk assessment for recipient adverse outcomes should be considered in transplants involving donors with active history of IDU, especially those with endocarditis or bacteremia with multi-drug resistant pathogens.

KEYWORDS: tissue donors, methicillin-resistant *Staphylococcus aureus*, endocarditis, bacteremia

11:45 Preliminary Report of an Outbreak of Coccidioidomycosis Among Solar Power Farm Construction Workers – California, 2012–2013

AUTHORS: Jason A. Wilken, G. Sondermeyer, J. McNary, D. Shusterman, D. Vugia, P. Borenstein, A. McDowell, G. Windham, B. Materna

BACKGROUND: Coccidioidomycosis, a fungal infection endemic in the southwestern United States, can lead to severe and potentially fatal disseminated disease. Workplace-acquired coccidioidomycosis can result from soil-disturbing activities or windborne dust. In December 2012, San Luis Obispo County (SLO) Public Health alerted the California Department of Public Health (CDPH) to three coccidioidomycosis cases among construction workers at Solar Power Farm A. CDPH investigated to determine the extent of the outbreak and risk factors.

METHODS: Because use of coccidioidomycosis prevention measures within this growing industry is unknown, CDPH reviewed routinely collected occupational injury/illness and confidential morbidity reports, and associated medical records. Cases were defined as both clinical- and laboratory-diagnosed coccidioidomycosis, symptom onset since January 1, 2012, and working on solar farm construction in SLO.

RESULTS: By March 7, 2013, a total of 12 cases were

identified from two solar farms in SLO, five from Farm A and seven from Farm B. Five patients resided outside SLO and two outside California. All patients were male, aged 21–63 years, and had symptom onset January 13, 2012–January 1, 2013. Six patient records noted dusty workplace conditions, four working in or near heavy equipment, five digging or working in soil, and four lack of respiratory protection. Two patients were hospitalized; four visited emergency departments; and five were unable to work for 2 weeks–12 months.

CONCLUSION: Data from routine public health and occupational illness reporting revealed ongoing occurrence of coccidioidomycosis among construction workers at two solar power farms in SLO. An *Epi-X* call for cases was posted March 5, 2013, and worksite investigations are under way to assess practices, identify additional cases, and educate construction employers in endemic areas.

KEYWORDS: coccidioidomycosis, occupational exposure, renewable energy, public health surveillance, California

