

**63<sup>rd</sup> EIS CONFERENCE**  
EPIDEMIC INTELLIGENCE SERVICE  
APRIL 28–MAY 1, 2014



# LATE-BREAKING REPORTS



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



3:45      **Session O: Late-Breaking Reports** ..... **Ravinia Ballroom**

**Moderators: Kevin Vagi and Tracie Gardner**

- 3:50      Acute Health Effects Associated with the Elk River Chemical Spill — West Virginia, 2014. *Erica Thomasson*
- 4:00      Assessing Risk Factors Associated with Prescription Opioid Overdose Deaths — New Mexico, 2012. *Benjamin Levy*
- 4:10      *Bipolaris* Surgical Site Infections Among Cardiothoracic Surgery Patients — Texas, Arkansas, and Florida, 2008–2013. *Snigdha Vallabhaneni*
- 4:20      Reducing Maternal Deaths: Results from the Saving Mothers, Giving Life Initiative — Uganda, 2011–2013. *Emily Petersen*
- 4:30      Fatal and Nonfatal Occupational Ladder Fall Injuries (LFIs) — United States, 2011. *Christina Socias*
- 4:40      Foodborne Botulism Outbreak among Middle-Eastern Men — Amarillo, Texas, December 2013. *R. Reid Harvey*
- 4:50      Rapidly Growing Nontuberculous *Mycobacterium* Wound Infections Among Medical Tourists Undergoing Cosmetic Surgeries in the Dominican Republic — Multiple States, March 2013–February 2014. *David Schnabel*
- 5:00      *Mycobacterium marinum* Infections Associated with Handling Fish from Chinese Markets — New York City, 2013. *Kari Yacisin*

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

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### **3:50      ACUTE HEALTH EFFECTS ASSOCIATED WITH THE ELK RIVER CHEMICAL SPILL — WEST VIRGINIA, 2014**

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**AUTHORS:** Erica D. Thomasson, S. Ibrahim, J. Hsu, M. Duncan, D. Bixler

**Background:** On January 9, 2014, approximately 10,000 gallons of a mixture of 4-methylcyclohexanemethanol (MCHM) and ~ 7% propylene glycol phenyl ether (PPH) spilled into the Elk River contaminating the potable water supply of ~300,000 residents. Because knowledge is limited regarding acute health effects associated with MCHM exposure, we reviewed medical charts of patients seeking care for spill-related health complaints at hospital emergency departments (EDs).

**Methods:** Demographic, clinical, and diagnostic data were abstracted from charts by using a standardized form. Charts were excluded from analysis if the patient left without being examined, did not report possible exposure, was asymptomatic, was examined previously for MCHM exposure, or had an alternative diagnosis to explain symptoms. Associations between route of chemical exposure and clinical symptoms were examined by using chi-square analysis.

**Results:** Ten hospitals reported 584 ED visits during January 9–23. Of 369 patients included in the analysis, 356 (96%) were treated and released and 13 (4%) were admitted. The majority of admitted patients had chronic, underlying conditions; no deaths occurred. Mean patient age was 40 years (range: <1–87 years); 59% were female. The most frequently reported symptoms were: nausea (38%), skin rash (28%), vomiting (28%), abdominal pain (24%), and diarrhea (24%). Routes of exposure included direct contact with skin or mucous membranes (53%), ingestion (44%), and inhalation (15%); or multiple routes (18%). Ingestion was associated with gastrointestinal symptoms; direct contact with skin symptoms; and inhalation with respiratory symptoms (each,  $P < 0.005$ ).

**Conclusions:** Our findings indicate that MCHM and/or PPH exposure could possibly lead to gastrointestinal distress, respiratory symptoms, and skin rashes; however, illnesses were mild. Results will be used for local outreach efforts and education.

**AUTHORS:** Benjamin Levy, B. Spelke, L. Paulozzi, J. Bell, D. Sugerman, K.B. Nolte, S. Lathrop, M. Landen

**Background:** Between 1999 and 2010, drug overdose deaths quadrupled nationally. In 2013, members of the National Association of Medical Examiners noted reports of breathing abnormalities among people who died of drug overdose. In response, the New Mexico Department of Health requested CDC assistance to characterize the overdose population, evaluate the presence of abnormal respirations, and identify opportunities for early intervention.

**Methods:** We reviewed all unintentional overdose deaths registered at the New Mexico Office of the Medical Investigator in 2012. We abstracted demographics, death scene investigations, autopsy reports, and medical records. We analyzed mutually exclusive groups of prescription opioid (RxO) and heroin-related deaths.

**Results:** Of the 489 unintentional overdose deaths reviewed, 39.5% involved RxOs and 14.9% involved heroin. RxO deaths were more often male (55.1%), white non-Hispanic (59.1%), and between 40 and 60 years of age (57.6%). Most decedents (85.3%) had a substance abuse history. As compared to heroin-related deaths, RxO deaths were more likely to have chronic medical (odds ratio [OR]: 3.7; confidence interval [CI]: 1.8–7.4) or psychiatric conditions (OR: 4.2; CI: 2.2–8.2). Nearly a third of all overdoses were witnessed by family or friends. Of these, 33.8% had recognizable breathing abnormalities. Snoring prior to death was more common among RxO users than heroin users (OR: 5.2; CI: 1.2–46.3).

**Conclusions:** Given the frequency of substance abuse and chronic medical conditions among RxO-related deaths, medical professionals have multiple opportunities for reducing overdose risk in this population. This study will help providers identify patients with risk factors linked to RxO death. Additionally, families of known RxO users can be prescribed naloxone and educated to recognize breathing abnormalities and other warning signs of overdose.

**AUTHORS:** Snigdha Vallabhaneni, A. Purfield, U. Luvsansharav, K. Benedict, W. Chung, E. Hall, J. Peart, N. Pascoe, G. Heseltine, R. Jones, D. Haselow, L. Lester, K. Garner, J.G. Wheeler, C. Blackmore, S. Lockhart, C. Pham, S. Chideya, A. Laufer, B. Park

**Background:** The environmental mold *Bipolaris* occasionally causes sinusitis or skin infection but surgical site infections (SSIs) are extremely rare. In November 2013, state officials were alerted to seven *Bipolaris* cardiothoracic SSIs, with five deaths, occurring since May 2013 at three Texas and Arkansas hospitals. We conducted an investigation to describe this cluster and identify possible sources.

**Methods:** Cases were defined as *Bipolaris* spp. isolated from a sterile site during 2008–2013 in patients with prior cardiothoracic surgery. Nationwide case-finding was conducted through state infection control alerts and listservs such as ClinMicroNet. We abstracted clinical and product information from medical records, interviewed hospital staff about surgical procedures and compounding pharmacies, and reviewed microbiology records. Environmental sampling was conducted at five hospitals. Multi-locus sequence typing (MLST) was performed on case-patient and environmental isolates.

**Results:** We identified 21 case-patients at ten hospitals in Texas, Arkansas, and Florida; eleven (52%) occurred in 2013. Median case-patient age was 55 years (range: 3 days–82 years), and 19 (90%) were male. Nine (43%) had coronary artery bypass or valve surgery, seven (33%) had heart transplantation, and 15 (71%) had more than one cardiothoracic procedure (median: 3, range: 1–11). Fifteen (71%) SSIs were mediastinitis, and 16 (76%) died. No common compounded or commercial products administered primarily to case-patients were identified. MLST showed substantial variation among clinical and environmental isolates. Microbiology records indicated an overall increase in *Bipolaris* isolates, particularly from non-sterile sites, during 2000–2013 at multiple hospitals in the region, including those without cases.

**Conclusions:** Epidemiological and laboratory evidence does not support a common product exposure. *Bipolaris* spp. may be an emerging cause of infection in the southeastern United States.

**AUTHORS:** Emily E. Petersen, F. Serbanescu, W. Obiero, P. Stupp, S. McCracken

**Background:** Each year, 287,000 women die of pregnancy-related complications; 99% of these deaths occur in developing countries. Saving Mothers, Giving Life (SMGL) is an initiative that aims to rapidly reduce maternal deaths by using a multifaceted health-systems strengthening approach, including improving access to and the quality of emergency obstetric care. We determined if maternal death rates had changed after SMGL interventions were implemented in 4 pilot districts in Uganda.

**Methods:** During August–September 2012 and October–November 2013, CDC performed baseline and endline Reproductive Age Mortality Studies (RAMOS) in the 4 districts. Trained interviewers counted all deaths of women of reproductive age (WRA) during June 2011–May 2012 and June 2012–May 2013. Verbal autopsies were performed for deaths that occurred during pregnancy or shortly thereafter. Baseline and endline data were compared and analyzed by using SAS.

**Results:** In the endline RAMOS, there were 1,510 deaths of WRA; 463 were pregnancy-related. The maternal mortality ratio (MMR) decreased from 452 to 316 maternal deaths per 100,000 live births, a decline of 30% ( $P < .001$ ). The MMR for the following causes declined significantly: obstructed labor, 54% ( $P = .001$ ); hemorrhage, 43% ( $P < .001$ ); and sepsis, 50% ( $P = .048$ ). The MMR for delays in seeking obstetric care decreased by 46% ( $P < .001$ ); the MMR for delays in accessing care declined by 61% ( $P = .006$ ); and the MMR for delays in receiving care after reaching a facility declined by 43% ( $P = .004$ ).

**Conclusions:** Maternal mortality declines of this magnitude over one year, documented by population-based data, have never before been reported. Thus, the SMGL strategies and interventions should be continued in the current districts and extended to other districts.

**AUTHORS:** Christina Socias, C. Chaumont Menéndez, J. Collins, P. Simeonov

**Background:** To address the leading cause of work-related injuries and deaths in construction, NIOSH, OSHA, and the Center for Construction Research and Training (CPWR) are promoting a national campaign to prevent workplace falls. In construction workers, an estimated 81% of fall injuries treated in US emergency departments (EDs) involved a ladder. However, limited information exists on the overall burden of occupational ladder fall injuries (LFIs). This analysis used multiple surveillance systems to describe fatal and nonfatal work-related LFIs for all US workers in 2011.

**Methods:** Demographic, work and injury characteristics of LFIs were obtained from three surveillance systems: Census of Fatal Occupational Injuries (CFOI), the Survey of Occupational Injuries and Illnesses (SOII), and the National Electronic Injury Surveillance System — Occupational supplement (NEISS-Work). Data from the Current Population Survey (CPS) were used to calculate nonfatal injury rates (per 10,000 full-time equivalent [FTE] workers).

**Results:** In 2011, 113 fatal LFIs were identified from CFOI. The SOII system estimated 15,460 ( $\pm 550$ ) nonfatal LFIs were reported by employers, involving at least one day away from work. According to NEISS-Work, approximately 34,000 ( $\pm 6,800$ ) LFIs were treated in EDs. Rates for nonfatal ED-treated LFIs ( $2.6 \pm 0.5$  per 10,000 FTE) were higher compared with those reported by employers ( $1.2 \pm 0.1$  per 10,000 FTE). Preliminary data suggest that LFI rates differ by age, gender, employer size, ethnicity, and fall height.

**Conclusions:** The findings from this analysis are consistent with previous research, and provide a comprehensive description of LFIs among all US workers. Current NIOSH prevention efforts involve employing innovative assistive technologies, such as a smartphone application with essential tools for safe ladder use, to complement safe practices and engage industry stakeholders.

**AUTHORS:** R. Reid Harvey, R. Cooper, M. Richardson, D. Duke, R. Smalligan, C. Stoughton, L. Gaul, C. Drenzek, J. Barr, S. Kalb, J. Dykes, C. Luquez, A. Geissler, S. Bennett, P. Griffin, A. Rao

**Background:** Botulism is a rare neuroparalytic illness that can lead to respiratory failure and death. During 1998–2012, 49 US foodborne botulism outbreaks were recognized. In December 2013, an outbreak was identified among Middle-Eastern men in Amarillo, Texas. We investigated to identify the source and prevent additional cases.

**Methods:** Cases were identified through physician-initiated reporting of suspect botulism cases, messaging to physicians and the public, and review of emergency department records. A case was defined as botulism-like descending paralysis in Amarillo with onset during November 1–December 14, 2013. We iteratively interviewed patients to determine epidemiologic links and common foods consumed, and investigated food storage and handling practices. Serum and stool were tested for *Clostridium botulinum* and botulinum toxin.

**Results:** Four cases were identified through physician-initiated reporting; two required assisted breathing. One batch of homemade turshi, a traditional pickled Middle-Eastern vegetable staple, was identified as the suspected vehicle. Turshi preparation occurred in three phases. Broccoli, cauliflower, and cabbage were fermented with salt at room temperature for three weeks. Beets, commercially-canned garlic, and salt were boiled and then refrigerated for one week. All ingredients were then combined with vinegar and refrigerated for an additional three days. Botulism occurred in 4 of 8 persons who consumed the cold turshi at different times over one month. Clinical specimens were negative for *Clostridium botulinum* and botulinum toxin; no turshi remained for testing.

**Conclusions:** Homemade turshi was the likely vehicle for a botulism outbreak among Middle-Eastern men. Production of toxin likely occurred during fermentation. Physicians and public health investigators should be aware that consumption of cold fermented foods that are commonly consumed in some ethnic communities can result in botulism.

## 4:50 RAPIDLY GROWING NONTUBERCULOUS *MYCOBACTERIUM* WOUND INFECTIONS AMONG MEDICAL TOURISTS UNDERGOING COSMETIC SURGERIES IN THE DOMINICAN REPUBLIC — MULTIPLE STATES, MARCH 2013–FEBRUARY 2014

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**AUTHORS:** David C. Schnabel, J. Gaines, D. Blythe, K. Feldman, N. Ahmad, A. Barry, R. Burns, J. Mullins, L. Posivak-Khouly, S. Pritchard, A. Ridpath, A. Shumate, K. Yacisin, L. Wilson, J. Razeq, D. Nguyen, J. Perz, E. Nyangoma, D. Esposito, M. Sotir; the Rapidly Growing Nontuberculous Mycobacterium Surgical-Site Infections Investigation Team

**Background:** In August 2013, the Maryland Department of Health and Mental Hygiene (DHMH) learned of 2 residents with rapidly growing nontuberculous *Mycobacterium* (RG-NTM) surgical-site infections. During July 2013, both had undergone cosmetic surgery at a private surgical clinic (Clinic A) in Santo Domingo, Dominican Republic (DR). Multiple states and CDC joined DHMH to initiate case finding and investigations.

**Methods:** Alerts were disseminated by health departments, *Epi-X*, the Emerging Infections Network, and the American Society of Plastic Surgeons. A probable case was soft-tissue infection unresponsive to standard antibiotic therapy in a patient after cosmetic surgery in the DR after March 1, 2013; a confirmed case was also culture-positive for RG-NTM. Patient interviews and chart abstractions were conducted.

**Results:** Twenty-one cases were identified from 6 states (New York [11], Massachusetts [4], Connecticut [2], Maryland [2], New Jersey [1], and Pennsylvania [1]). Eighteen (86%) were confirmed; All patients were female, aged 18–59 years. Thirteen (62%) had had surgery at Clinic A. The most frequent cosmetic surgical procedures were liposuction (71%) and abdominoplasty (52%); procedures occurred March–November 2013. Of 20 patients with hospitalization information, 15 (75%) were hospitalized and required multiple therapeutic surgical procedures and prolonged courses of antibiotics. Of 18 confirmed cases, 14 (78%) were *Mycobacterium abscessus*; 2 (11%) were *Mycobacterium fortuitum*, and 2 (11%) are pending speciation.

**Conclusions:** This outbreak demonstrates a potential risk of medical tourism. DR public health authorities have temporarily closed Clinic A. Medical tourists should consider only suitably accredited facilities when seeking health care. Health care providers should consider RG-NTM among patients who have undergone cosmetic surgery in the DR and have surgical-site infections unresponsive to standard antibiotic therapy.

## 5:00 *MYCOBACTERIUM MARINUM* INFECTIONS ASSOCIATED WITH HANDLING FISH FROM CHINESE MARKETS — NEW YORK CITY, 2013

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**AUTHORS:** Kari A. Yacisin, Y.L. Leung, L. Li, J. Yung, H. Hanson, D. Weiss, D. Blau, J. Ackelsberg

**Background:** *Mycobacterium marinum*, a bacterium found in both freshwater and saltwater, has been reported to cause infections among persons working with fish or who have contact with aquariums. During January–February 2014, the New York City Department of Health and Mental Hygiene (NYCDOHMH) was notified of 25 cases of suspected *M. marinum* infection among persons purchasing raw or live fish or seafood from Chinese markets.

**Methods:** A confirmed case was skin or soft-tissue infection of the upper extremity in a person who had handled fish from a NYC market, with symptom onset after June 1, 2013, and evidence of *M. marinum* by culture, immunohistochemical stain, or polymerase chain reaction. A possible case met clinical and epidemiologic criteria but lacked laboratory confirmation. NYCDOHMH alerted local providers and requested reporting of suspected or confirmed cases.

**Results:** As of March 7, 2014, a total of 35 cases (5 confirmed) had been identified among patrons of 11 Chinese markets in 2 different areas of NYC. Of 23 patients interviewed, median age was 66 years (range: 52–82 years); 18 (78%) were female; and all spoke Cantonese or Mandarin. Twenty patients (87%) reported infection onset during August–November 2013. All patients had prepared live or raw fish or seafood for cooking before symptoms began; 4 (17%) had worn gloves when preparing fish or seafood, and 13 (57%) had purchased live fish from tanks.

**Conclusions:** This is the first reported *M. marinum* outbreak among persons purchasing live fish from markets. Persons handling live or raw fish or seafood should wear waterproof gloves. An environmental investigation is ongoing to identify a common distributor or aquafarm and to recommend interventions for disease prevention.

