

Submission Type ID	Breakout/Quick/Lightning/Poster 7578
Abstract Type	Breakout
Abstract Title Abstract	Burden of Extrapulmonary Nontuberculous Mycobacterial Disease and Utility of Statewide Surveillance — Oregon, 2014–2016 BACKGROUND: Nontuberculous mycobacteria (NTM), ubiquitous in soil and water, comprise >100 species. Multiple species can infect the lungs, skin, bone, joints, and lymphatic system. Trauma, surgeries, and tattooing can inoculate NTM into soft tissue, potentially resulting in substantial morbidity and death. Eight states, including Oregon, require NTM reporting. We sought to characterize extrapulmonary NTM infection burden and assesses usefulness of Oregon’s NTM surveillance system in detecting outbreaks. METHODS: Confirmed cases are culture-confirmed extrapulmonary NTM infections involving a wound or abscess, lymph node, or normally sterile site (e.g., blood or spinal fluid). Using surveillance data collected through laboratory reporting, patient interview, and chart review, we assessed demographic, risk, and clinical characteristics of Oregon extrapulmonary NTM cases and reviewed investigation of data-identified clusters. RESULTS: Of 117 confirmed extrapulmonary NTM cases (0.98 cases/100,000 persons annually), 53% were female; median age was 49 years. Commonly identified species included <i>Mycobacterium avium</i> complex (46%), <i>Mycobacterium fortuitum</i> (15%), and <i>Mycobacterium chelonae</i> (8%). Reported exposures included potting soil (30%), surgery (24%), trauma (19%), and infusions (19%). Wounds or abscesses were reported in 68% of patients; 31% were hospitalized; 14% were septic; and 1 died. Three clusters by time, place, and mycobacterial species were identified; subsequent investigation identified common exposures leading to public health action, including 4 cases associated with artificial joints from a common supplier, 2 with use of unsterile tattoo diluent at a single venue, and 2 with abdominoplasty at a single venue. CONCLUSIONS: Extrapulmonary NTM infections cause substantial morbidity in Oregon. NTM surveillance proved useful in detecting NTM outbreaks amenable to public health action. States should investigate the utility of NTM surveillance for outbreak detection. Nontuberculous mycobacteria (NTM), ubiquitous in soil and water, comprise >100 species. Multiple species can infect the lungs, skin, bone, joints, and lymphatic system. Trauma, surgeries, and tattooing can inoculate NTM into soft tissue, potentially resulting in substantial morbidity and death. Eight states, including Oregon, require NTM reporting. We sought to characterize extrapulmonary NTM infection burden and assesses usefulness of Oregon’s NTM surveillance system in detecting outbreaks.
Submission Complete?	Yes
Committee Topic Keywords	Infectious Disease Miscellaneous Infectious Diseases Data Collection; Surveillance; Environmental Health Hazards
Consider for Different Presentation?	Yes
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Submission Type Breakout/Quick/Lightning/Poster
ID [8546](#)

Abstract Type Breakout

Abstract Title
Abstract Evaluation of the Estimated Efficiency of Shigellosis Exclusion Policies in Childcare Settings

BACKGROUND: There are ~500,000 cases of shigellosis in the United States annually; young children are most at risk. Attempting to limit transmission, health departments exclude shigellosis patients from attending childcare until symptoms resolve, patients have been treated with antibiotics, and/or they have one or more negative laboratory tests. To aid public health officials design policies to limit transmission, we evaluated five childcare exclusion policies.

METHODS: For the policies evaluated, children return to childcare after: i) two consecutive laboratory tests (either PCR or culture) yield negative results, ii) one laboratory test (PCR or culture) yields a negative result, iii) 7 days after beginning antimicrobial treatment, iv) 24 hours symptom-free, or v) 14 days after symptom onset. We evaluated each policy for patients receiving four different treatments: i) immediate, effective treatment; ii) effective treatment after diagnosis; iii) no treatment; iv) ineffective treatment. For each policy and treatment, we calculated the likelihood of an infectious student reentering childcare, and the number of associated childcare days lost.

RESULTS: The exclusion policy requiring two consecutive negative PCR tests yielded a probability of onward transmission of <1%, with up to 19 childcare days lost for children receiving effective treatment (immediate or after diagnosis), and 53 days lost for those receiving ineffective treatment. Requiring one negative PCR test resulted in a 4% probability (range: 2-6%) of onward transmission, with up to 13 childcare days lost for children receiving effective treatment, and 47 days lost for those receiving ineffective treatment. When culture-based tests were used, the probability that children return to childcare while still infectious was 23% (range: 8%-31%) for two consecutive negative tests and 48% (range: 28%-56%) for one negative test, with up to 23 childcare days lost with either policy for children receiving effective treatment, and up to 57 days lost for children receiving ineffective treatment. Onward transmission risk was highly variable for policies that allow children to return to childcare after a predetermined number of days, and extremely high if children receive ineffective treatment (point estimate > 50%).

CONCLUSIONS: Requiring negative PCR testing before return to childcare is the most effective exclusion policy to reduce risk of shigellosis transmission, with one PCR test being more effective than single or repeat culture tests. These results can be used by state public health officials when considering modifications to the existing exclusion policies.

Submission Complete? Yes

Committee Infectious Disease
Topic Miscellaneous Infectious Diseases
Keywords Children and Adolescents; Infectious Diseases; Evaluation

Consider for Different
Presentation? Yes

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Submission Type ID	Breakout/Quick/Lightning/Poster 8047
Abstract Type	Breakout
Abstract Title Abstract	Investigation of a Large Outbreak of Blastomycosis Caused By <i>Blastomyces Gilchristii</i> Among Recreational River Tubers, Wisconsin, 2015

BACKGROUND: Blastomycosis, an uncommon fungal disease caused by *Blastomyces dermatitidis*, is an endemic and reportable disease in Wisconsin. Infection develops after inhalation of airborne fungal spores from the environment. On 7/31/2015, the Wisconsin Division of Public Health (DPH) was informed of a suspected cluster of blastomycosis cases among individuals who participated in recreational tubing on the Little Wolf River (LWR) on 6/17/2015. During initial interviews, many participants reported stopping at wooded river islands during their trip. An investigation was initiated to determine outbreak magnitude, features, risk factors, and control measures.

METHODS: Case-patients and members of their tubing cohort(s) were interviewed using a standardized investigation questionnaire to obtain clinical signs/symptoms, relevant medical history, tubing trip details, soil disruption behavior during trips, and other exposures and risk factors unrelated to the LWR. Outbreak cases were classified using a modified version of the DPH blastomycosis case definition. A retrospective case-control study was conducted using interview data. Soil samples were collected from exposure locations and tested for *Blastomyces* by PCR. Available clinical isolates of *Blastomyces* from patient specimens were characterized using Sanger sequencing of the ITS2_19 gene.

RESULTS: Ninety cases of blastomycosis (51 confirmed, 39 probable) were identified among 54 tubing cohorts. Exposures occurred during 5/23/2015–8/1/2015; illness onsets occurred during 6/22/2015–9/13/2015. Median case-patient age was 23 (range 5–48) years. Incubation intervals ranged from 14–74 (median 33) days. All 10 available *Blastomyces* clinical isolates were characterized as *B. gilchristii*. Among participants in one tubing trip, disturbing soil or brush was associated with developing blastomycosis (OR 2.63, 95% CI 1.23–5.61). Among 13 case-patients who neither stopped during their trip nor disturbed soil, 12 tubed during one busy June weekend. On 8/6/2015, health advisory signage discouraging soil disruption was posted along the tubing route. No additional cases were identified with exposure occurring after signage was posted. *B. gilchristii* was detected in one soil sample collected from an island.

CONCLUSIONS: This outbreak of blastomycosis, the largest reported, was caused by *B. gilchristii*, a cryptic species within *B. dermatitidis*. Behaviors resulting in soil disruption remain associated with increased risk of blastomycosis in endemic regions. This outbreak further supports that exposure to aerosolized spores while in the proximity of soil disturbing activities causes disease. Posting health advisory signage should be considered in areas of demonstrated risk to reduce exposure. Incubation periods as short as 14 days should be considered consistent with blastomycosis, based on known exposure and onset dates.

Submission Complete? Yes

Committee Infectious Disease
Topic Miscellaneous Infectious Diseases
Keywords Infectious Diseases; Environmental Exposures; Outbreaks

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
ID [8186](#)

Abstract Type Lightning

Abstract Title Increased Guillain-Barre Syndrome Incidence, Nebraska 2013–2015
Abstract

BACKGROUND: Guillain-Barre Syndrome (GBS), a potentially life-threatening paralysis with an annual United States incidence of 1–2 cases/100,000, is characterized by acute peripheral nerve demyelination and has been associated with antecedent triggers. In 2015, a provider notified the Nebraska state health department of an apparent increase in GBS. We initiated an epidemiologic investigation.

METHODS: We used Nebraska’s hospital discharge data (HDD) to identify patients with a diagnosis of GBS from 2007–2015. The case count appeared stable from 2007–2012 (mean=39 cases/year); therefore, we selected 2013 (n=37; incidence=2/100,000) as our referential baseline. HDD data identified an increased case count in 2014 (n=47, 27% above baseline) and again in 2015 (n=58, 36% above baseline). As a result, we initiated a chart review of the HDD-identified cases. In addition, we contacted the 36 hospitals with HDD-identified cases and requested they perform an independent screen of their records for additional GBS cases during 2013–2015. This screen identified 19 previously unreported cases. The Brighton GBS criteria was utilized to define cases as either confirmed or probable. Cases were defined as “suspect” if diagnosed with GBS by a neurologist despite not meeting all the Brighton criteria. We compared cases in 2014 and 2015 to the 2013 referent baseline using chi-square and Fisher’s exact tests.

RESULTS: The chart review validated 33, 41, and 58 total GBS cases (confirmed, probable, and suspect), for 2013, 2014 and 2015 respectively, for annual incidence rates of 1.8, 2.3, and 3.2 cases per 100,000, respectively. In comparing cases from 2013 with those from 2014–15, no significant differences in antecedent events, including influenza vaccinations, *Campylobacter jejuni* infections, West Nile Virus, or upper respiratory infections, were identified.

CONCLUSIONS: We confirmed an increase in GBS incidence in 2014 and 2015, but failed to find an explanation. Ongoing surveillance for GBS in this population is indicated.

Submission Complete? Yes

Committee Infectious Disease
Topic Miscellaneous Infectious Diseases
Keywords Epidemiology; Hospital Data; Surveillance

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
ID [8179](#)

Abstract Type Poster

Abstract Title Mortality of Reportable Diseases in San Mateo County, California, 2010-2015
Abstract

BACKGROUND: San Mateo County has low morbidity of reportable communicable diseases compared to the rest of the Bay Area region, but mortality of San Mateo County residents due to these diseases has not been previously explored. It was expected that severe diseases would have a high case fatality, whereas less severe categories of reportable diseases would have a lower case fatality. Likewise, higher mortality was expected for more severe diseases where it was determined that the underlying cause of death was directly due to the reportable disease.

METHODS: A two-pronged approach was used to analyze reportable disease mortality in SMC. One approach used morbidity data from the California Reportable Disease Information Exchange (CalREDIE) for 2010-2015, and identified case fatalities based on the availability of a date of death in CalREDIE. The second approach analyzed ICD10 codes for the underlying cause of death from vital statistics death data. Cases in CalREDIE were linked to the death files by first name, last name and date of birth. Deaths were determined to be directly caused by a reportable disease if the disease, etiologic agent, or a direct complication of the disease was listed in the ICD10 code.

RESULTS: There were 52 deaths identified among CalREDIE cases (n=28254). The number of case fatalities for severe influenza outnumbered the other disease fatality counts (n=14), and was comprised mostly of individuals age 41-60 years old. Creutzfeldt-Jakob Disease (n=5) and Toxic Shock Syndrome (n=2), two other usually severe diseases, had a 100% case fatality. In the mortality analysis of deaths directly due to the reportable disease from vital statistics data, influenza deaths had the highest count (n=5). Next was meningitis of any microbial etiology (n=2), followed by invasive *Haemophilus influenzae* (n=1) and *E. coli* O157 without hemolytic uremic syndrome (n=1).

CONCLUSIONS: It was confirmed that less severe diseases had lower case fatalities, although it should be noted that only more severe cases of disease may have been reported to San Mateo County Public Health and entered into the CalREDIE system. Influenza deaths with the underlying cause of death actually due to influenza outnumbered other disease categories, however, the underlying causes of death were largely not due to a reportable disease. Future analysis should be performed using multiple cause of death data to get a better picture of reportable communicable disease mortality in San Mateo County.

Submission Complete? Yes

Committee Infectious Disease

Topic Miscellaneous Infectious Diseases

Keywords Infectious Diseases; Local Epidemiology; Influenza / Pandemic Influenza

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
ID [8421](#)

Abstract Type Quick

Abstract Title Abstract
A Cluster of Group A Streptococcus (GAS) Infection Among Persons Who Inject Drugs (PWID)

BACKGROUND: In October 2016, an infectious disease clinician at an acute care hospital in New Hampshire reported 4 cases of invasive Group A Streptococcus (GAS) infection to the New Hampshire Division of Public Health Services (DPHS). The 4 patients were admitted within 4 days of each other and blood cultures from each identified *Streptococcus pyogenes*. Initial interviews revealed that all were persons who inject drugs (PWID).

METHODS: DPHS initiated an investigation using a standardized questionnaire and data collection instrument for case finding to assess risk factors for infection. To identify additional cases, DPHS reviewed GAS cases reported since July 2016 and sent a Health Alert Network message to healthcare providers. A press release was issued to notify PWID of the outbreak. Isolates obtained from the first four cases were analyzed by Pulsed-field gel electrophoresis (PFGE) and whole-genome sequencing (WGS) using standard procedures.

RESULTS: Retrospective review of disease reports and outreach to providers identified 7 additional cases of invasive GAS among PWID. Seven (67%) patients were diagnosed with cellulitis, 10 (90%) with bacteremia, and 6 (55%) with sepsis. Two (18%) cases had pneumonia and 5 (55%) experienced respiratory symptoms including cough and hemoptysis. Nine (82%) cases experienced disease onset during October; only 2 cases were identified with earlier onset. Six (55%) cases reported homelessness. Ten (90%) cases were also seropositive for hepatitis C virus infection; including three (30.0%) with a new diagnosis. Specimens for 8 of 11 cases were obtained for microbiology drug susceptibility testing (DST) to evaluate for GAS strain relatedness. We identified three different antibiotic susceptibility patterns, with 5 isolates demonstrating pan-sensitive antibiotic susceptibilities. Specimens from the 4 initial cases were collected for molecular characterization. Pulsed-field gel electrophoresis and whole-genome sequencing confirmed a common strain of *S. pyogenes* among 3 patients residing in the same city, 2 of which also had a social connection.

CONCLUSIONS: This outbreak report highlights a lesser known yet important life threatening bacterial complication of injecting drugs. NH has been disproportionately impacted by the narcotic epidemic and our clinicians need urgent education and awareness of this complication. Invasive GAS is not a nationally notifiable condition and outbreaks affecting PWID may go unrecognized in jurisdictions that do not track these infections. Strong partnerships between public health departments and healthcare providers can facilitate identification of unique clusters and creative outreach strategies to minimize transmission and ultimately connect PWID to effective addiction services.

Submission Complete? Yes

Committee Infectious Disease
Topic Miscellaneous Infectious Diseases
Keywords Substance Abuse; Infectious Diseases

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
ID [8408](#)

Abstract Type Quick

Abstract Title Acute Flaccid Myelitis Surveillance in the United States, 2016
Abstract

BACKGROUND: Standardized surveillance for acute flaccid myelitis (AFM) was adopted by the Council of State and Territorial Epidemiologists in June 2015 following an increase in cases during 2014, to determine baseline information for AFM and help identify an etiology.

METHODS: Confirmed cases of AFM are defined as patients with acute onset of focal limb weakness and an MRI showing a spinal cord lesion largely restricted to gray matter spanning one or more vertebral segments. State health departments report suspected cases using standardized forms. Cases are reviewed and confirmed as meeting the case definition at CDC. Specimens were submitted to CDC for enterovirus (EV) and parechovirus testing. Descriptive analyses of confirmed cases are presented.

RESULTS: From January 1 through October 31, 2016, a total of 108 confirmed cases were reported to CDC from 36 states; 70% of cases had onset of limb weakness between August and October. Median age of confirmed cases was 5.0 years (range, 5 months–61 years); 63 (58%) were male and all were hospitalized. No fatalities were reported. Forty-one (38%) cases reported limb weakness in all four extremities and 84/104 (81%) cases with CSF drawn had pleocytosis (white blood cell count >5 cells/mm³). Among those with reported information, other clinical findings included: cranial nerve dysfunction (31%), altered mental status (22%), seizures (2%), and requirement of mechanical ventilation (32%). Ninety (83%) reported a preceding respiratory or febrile illness in the four weeks before weakness. Testing performed at CDC identified the following: of 55 cases for which CSF specimens were submitted, none were positive for EV or parechoviruses; of 43 cases with respiratory specimens collected within two weeks of weakness onset, 12 (28%) were positive for EV-D68, 3 (7%) for various rhinovirus (RV; RV-A57, RV-A58, RV-B83), 2 (5%) for non-specified EV/RV, 1 (2%) for echovirus 6. Stool specimens were received from 45 cases, 1 (2%) was positive for EV-D68, 2 (4%) for coxsackievirus (CV; CV-A10, CV-B4), 1 (2%) for EV-A71, 2 (4%) for various RV (RV-A57, RV-B83), 2 (4%) for non-specified EV/RV, none for poliovirus.

CONCLUSIONS: From January through October, CDC confirmed 108 cases of AFM. Case counts peaked between August and September, a time frame similar to that observed in 2014. Pathogen-specific testing remains inconclusive; therefore, testing has shifted to explore other infectious and non-infectious causes, including immune-mediated mechanisms. Continued vigilance with surveillance and reporting of suspected cases remains an important tool for characterization and understanding of AFM.

Submission Complete? Yes

Committee Infectious Disease
Topic Miscellaneous Infectious Diseases
Keywords Epidemiology; Surveillance; Infectious Diseases

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
ID [7487](#)

Abstract Type Quick

Abstract Title Collecting Clinical Outcome Information Following Botulism Antitoxin Release
Abstract

BACKGROUND: Though rare, every case of botulism is considered a public health emergency because of its severity and outbreak potential. CDC's National Botulism Consultation Service consults on suspected botulism cases, releases heptavalent botulism antitoxin (BAT), and conducts national surveillance. The investigational new drug (IND) period for BAT before licensure was a period of enhanced surveillance during which CDC and Cangene, the manufacturer of BAT, both actively collected clinical outcome information for suspected cases of botulism treated with BAT. To assess collection of outcome information, we investigated completeness of follow-up data during and after the IND period and summarize these data.

METHODS: A suspected case of botulism is a nationally notifiable condition, most frequently reported to CDC during clinical consultations. Using standardized questionnaires, CDC collects information about demographic information and clinical features (Form 1) and outcome information (Form 2). Form 2, which is completed by clinicians upon discharge or death, collects information about hospital course, final diagnosis, death, and sequelae. We compared reporting characteristics and results during the IND (2010–2013) and the post-IND (2013–2016) periods.

RESULTS: For cases that had botulism consultation during the IND period and post-IND period, annual Form 2 return was 46%–96% and 19%–46%, respectively. Based on Form 2 data, the most frequent final diagnoses were botulism (n=78; 70%), Guillain-Barré syndrome (GBS) (n=19; 17%), and myasthenia gravis (n=4; 3.5%). The average ICU duration for cases diagnosed with botulism was 14 days (range: 1–57), compared with 34 days (range: 6–84) for GBS and 17 days (14–20) for myasthenia gravis. The fatality rate was 5% for persons diagnosed with botulism and 2% for those with other diagnoses. Barriers to reporting follow-up data include low awareness of Form 2, time and personnel constraints, difficulty reaching the clinician when Form 2 is not submitted, and duplicated reporting to Cangene for post-IND review.

CONCLUSIONS: Information about the outcome of suspected botulism cases is valuable to improve consultation for BAT release and to inform preparedness planning for large outbreaks or bioterrorism events. However, this information has been obtained for few cases in the post-IND period compared with the IND period. Improved communication and collection plans between CDC, state health departments, and treating clinicians are needed to improve follow-up data collection. Implementing a protocol for the CDC consultation service to follow up with clinicians could improve data collection and completeness without placing additional reporting burden on state partners.

Submission Complete? Yes

Committee Infectious Disease

Topic Miscellaneous Infectious Diseases

Keywords Infectious Diseases; Data Collection; Outcome Measures

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
ID [7651](#)

Abstract Type Quick

Abstract Title Abstract Enhanced Surveillance for Coccidioidomycosis in States Where It Is Not Highly Endemic: Preliminary Results

BACKGROUND: Coccidioidomycosis (“Valley fever”) is endemic in the southwestern United States, particularly Arizona and California, where its effects on patients have been relatively well-characterized. However, features of coccidioidomycosis in residents of non-highly-endemic states have not been described in detail. Coccidioidomycosis is nationally notifiable, but the National Notifiable Diseases Surveillance System only captures basic coccidioidomycosis patient demographic information. We conducted enhanced surveillance in states where coccidioidomycosis is reportable to better describe the epidemiology, diagnosis, and outcomes of these patients to help inform surveillance and guide awareness and educational efforts.

METHODS: In 14 states (Louisiana, Michigan, Minnesota, Missouri, Montana, Nevada, New Mexico, North Dakota, Ohio, Oregon, Pennsylvania, Utah, Wisconsin, and Wyoming), state and local health department personnel identified coccidioidomycosis cases according to the CSTE case definition through routine surveillance during 2016 and interviewed consenting patients. Patients were asked about symptoms, healthcare use, treatment, outcomes, underlying medical conditions, and travel history using a standardized questionnaire. Coccidioidomycosis diagnostic test information was extracted from health departments’ surveillance databases. Data were compiled at CDC.

RESULTS: As of November 15, 2016, 140 coccidioidomycosis patients were interviewed. Seventy-nine (56%) were male, 113 (82%) were white, and the median age was 66 years (range, 7–90). Fatigue (n=97, 69%), cough (n=92, 66%), and fever (n=68, 49%) were commonly reported symptoms. Median time from symptom onset to seeking healthcare was 7 days (range, 0–488), and median time from seeking healthcare to diagnosis was 38 days (range, 0–295). Eighty-nine patients (66%) reported having been diagnosed with another condition before being tested for coccidioidomycosis; of those, 61 (74%) were prescribed antibiotics. Fifty-seven (42%) were hospitalized, 88 (64%) were treated with antifungal medications, and 88 (66%) said that their illness interfered with daily activities (for a median of 32.5 days [range 2–1,080]). In the 4 months before symptom onset, 69 (49%) traveled to Arizona and 16 (11%) traveled to California. Sixty-five (47%) patients knew about coccidioidomycosis before being diagnosed with it. Forty-one patients (29%) had culture-positive coccidioidomycosis.

CONCLUSIONS: Coccidioidomycosis causes substantial morbidity in residents of non-highly-endemic states, similar to previous studies of Arizona residents. The high proportion of patients diagnosed by culture (compared with <10% in Arizona surveillance) suggest that less severe cases likely go undiagnosed or unreported. Even among recognized cases, delays in diagnosis and unnecessary antibiotic use were common. Improved healthcare provider and public awareness of coccidioidomycosis outside highly-endemic areas is needed.

Submission Complete? Yes

Committee Infectious Disease
Topic Miscellaneous Infectious Diseases
Keywords Infectious Diseases; Surveillance

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
ID [8590](#)

Abstract Type Quick

Abstract Title Epidemiology of Sporadic Blastomycosis in Wisconsin, 2011-2015

Abstract

BACKGROUND: Blastomycosis, a potentially serious illness caused by *Blastomyces* infection, is endemic in the Mississippi Valley region, including Wisconsin, where it has been a reportable disease since 1984. At least 12 outbreaks occurring in Wisconsin have been reported since 1984. Outbreaks of blastomycosis are usually attributed to epi-linked environmental point sources. Sporadic cases are non-outbreak related cases reported to the public health system; the sources of infection for sporadic cases remain elusive. Understanding the epidemiology of sporadic blastomycosis can inform public health efforts to increase disease awareness and prevention.

METHODS: A standardized blastomycosis case worksheet was maintained in the Wisconsin Electronic Disease Surveillance System and used by local health departments to document patient demographics, symptoms, medical diagnosis and treatment, comorbidities, and potential exposures. Data for patients meeting the Wisconsin blastomycosis laboratory and clinical case criteria with onset reported between January 1, 2011 and December 31, 2015 were extracted for epidemiologic description and analysis of sporadic blastomycosis.

RESULTS: During 2011-2015, a total of 534 blastomycosis cases were reported; including 89 outbreak-related and 455 sporadic cases. This represented a statewide average of 91 sporadic cases per year, and a mean annual incidence rate of 1.61 cases per 100,000 persons. Mean annual incidence rates by race were 1.24, 2.10, 3.73 and 6.36 cases per 100,000 white, black, Asian and Native American persons respectively. Three-hundred and nine (67%) were male, and the median age was 48 years (range, 3-97 years). Sixty-five percent (290) of patients were hospitalized, and the average annual case-fatality rate was 10.65%. Immune-compromising comorbidities were associated with an increased risk of death (OR=8, p<0.01). Nearly 69% of cases were classified with acute illness. While 69% of infections were confined to the pulmonary system, skin lesions were reported in 83% of extra-pulmonary infections. The most common reported exposures were camping-fishing-hiking (35.4%), gardening-mulching (33.8%), and clearing brush (30.9%). County incidence rates (range, 0-48 cases/100,000 persons) were highest in counties located in the northcentral and southeastern regions of Wisconsin.

CONCLUSIONS: This study was unique in differentiating and focusing on sporadic cases. Blastomycosis incidence increased at least 22% from 1.32 outbreak and sporadic cases/100,000 persons reported during 1985-1994 to 1.61 sporadic cases/100,000 persons during 2011-2015. The findings of this study highlight the importance of early disease recognition, especially among immune-compromised individuals, to reduce hospitalization, chronicity, and mortality rates. The disparities of incidence by gender and race likely represent differences in outdoor exposures to conidia-releasing activities that we hope to discern through improved surveillance efforts.

Submission Complete? Yes

Committee Infectious Disease

Topic Miscellaneous Infectious Diseases

Keywords Infectious Diseases; Epidemiology

Consider for Different Presentation? Yes

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Submission Type Breakout/Quick/Lightning/Poster
 ID [7680](#)
 Abstract Type Quick
 Abstract Title Multistate Epidemiologic Description of Histoplasmosis in the United States—2011–2014
 Abstract

BACKGROUND: Histoplasmosis is one of the most common endemic mycoses in the United States. Infection can range from asymptomatic to life-threatening disease. Histoplasmosis is reportable in 10 states and Puerto Rico; however, a standardized case definition was only recently approved by CSTE, and incidence and distribution nationwide remain poorly understood. This study summarizes available state surveillance data to better understand the epidemiologic features of histoplasmosis.

METHODS: Thirteen states provided de-identified data. Contributing states included 10 (Arkansas, Delaware, Illinois, Indiana, Kentucky, Michigan, Minnesota, Nebraska, Pennsylvania, Wisconsin) in which histoplasmosis is currently reportable, 2 (Alabama, Mississippi) in which it was previously reportable, and 1 (Ohio) in which it is not reportable, but data are available. We examined epidemiologic data during 2011–2014 (years for which data were available in all states) and calculated county-specific mean annual incidence rates. Some data elements were only available from certain states. Cases were included if they were classified as a confirmed or probable case by the state.

RESULTS: A total of 3,409 cases were reported; 303 additional cases were detected in Ohio during 2012–2015. County incidence ranged from zero to 39 per 100,000. Mean patient age was 49 years (interquartile range: 33–61), and 2,079 (61%) were male. Of 1,729 patients for which race data was available (from 8 states), most were white (62%) or unknown (26%) race. Common symptoms reported by patients (from 4 states) were cough (74%), shortness of breath (65%), and fever (56%). Thirty percent of 1,154 patients (from 3 states) were immunocompromised, and 57% of 2,218 patients (from 9 states) were hospitalized. Seventy-six (7%) of 1,142 patients died.

CONCLUSIONS: The large proportion of hospitalized patients in this sample suggests that passive surveillance likely fails to capture many cases, particularly less severe illnesses, underestimating the true burden of histoplasmosis. County-level incidence data enhances our understanding of endemic regions in the United States. Expanding reporting to additional states would allow for more comprehensive knowledge of histoplasmosis in the United States.

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Committee Infectious Disease
 Topic Miscellaneous Infectious Diseases
 Keywords Surveillance; Infectious Diseases

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Submission Type Breakout/Quick/Lightning/Poster
ID [7564](#)

Abstract Type Quick

Abstract Title Wound Botulism Associated with a Traumatic Injury, New Jersey, 2016
Abstract

BACKGROUND: Wound botulism is a rare condition and accounts for only 10% of all botulism cases reported in the United States (CDC 2014). In data from CDC in 2014, all reported wound botulism cases were associated with intravenous drug use (IVDU). Prior to this rise in cases among individuals with IVDU, wound contamination from traumatic injuries was the most common cause of wound botulism. In November 2016, the New Jersey Department of Health (NJDOH) was alerted to a possible case of wound botulism in a young male with a recent history of a gunshot wound. This prompted a public health investigation which is described below.

METHODS: Upon initial notification, basic clinical and epidemiologic information was collected. Based on this information and the request of botulinum antitoxin from the treating physician, the Centers for Disease Control and Prevention (CDC) was consulted and a determination was made to release anti-toxin. Specimens (serum, wound swab) were collected for testing at CDC prior to administration of anti-toxin.

RESULTS: The case-patient was a 27-year-old male with a history of a gunshot wound to lower right leg. Patient denied IVDU. Approximately eight days after the injury, the case-patient began to develop extremity weakness and sought care. Upon initial evaluation, the patient was given antibiotics and sent home. Four days later, the patient presented to another facility and was admitted with extremity weakness, diplopia, and difficulty swallowing. The wound was well healed with no presence of cellulitis. Upon x-ray, bullet fragments were noted to be present with migration from the site of initial injury. After evaluation, treating physician suspected wound botulism as a possible etiology and contacted public health authorities. After consultation with CDC, anti-toxin was released and administered within 16 hours of notification to public health authorities. A serum sample collected was positive for Botulinum toxin type A, however, wound cultures were negative. The case-patient improved clinically, and was discharged on day 29.

CONCLUSIONS: While wound botulism is rare and the majority of recent cases have been associated with IVDU, it is still important for health care providers to be aware of the possibility of wound botulism emanating from a traumatic injury. In this case, astute clinicians recognizing the possibility of a wound botulism diagnosis, prompted timely public health intervention and response that led to a favorable outcome.

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