Submission Type	Breakout/Quick/Lightning/Poster
ID	11146
Abstract Type	Breakout
Abstract Title	Candida Auris Colonization in the Community Setting — New York City (NYC), 2017-2018

Abstract

BACKGROUND: *C. auris* is a multidrug resistant yeast that can spread in healthcare settings and cause invasive infections. It emerged in NYC in 2016. In healthcare settings, most patients remain colonized for months, but it is unclear if patients remain colonized after discharge. NYC Department of Health and Mental Hygiene (DOHMH) piloted a case management program for people colonized with *C. auris* in the community setting to alert healthcare facilities where patients may seek care and monitor colonization status longitudinally.
METHODS: Starting October 4, 2017, New York State Department of Health referred people colonized with *C. auris* to DOHMH when they were informed of community discharges from healthcare facilities. DOHMH case managers collected clinical information through patient interview and medical record review and informed the patient's providers and healthcare facilities about the patient's *C. auris* status and infection control needs. Case managers coordinated colonization testing with the patient's providers every 3 months. Colonization testing included swabs of axillae, groins and nares and when applicable a culture of previously *C. auris* positive body site. If *C. auris* was not detected, testing was repeated at least one week later to confirm results.
RESULTS: By October 16, 2018, DOHMH received 59 referrals, performed 33 patient interviews, and sent 89 reports to health care facilities regarding a patient's *C. auris* status. Twenty-nine (49%) patients had at least 2 colonization tests after initial *C. auris* diagnosis, of whom 9 (31%) no longer had *C. auris* detectable on 2 consecutive assessments.
CONCLUSIONS: An ongoing pilot case management program supports infection control for people colonized with *C. auris* by informing a person's healthcare facilities of needed infection control. Some people no longer had *C. auris* detectable on repeat colonization testing. Continued data collection is needed to identify factors associated with persistent *C. auris* colonization.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Emerging Infections; Healthcare Associated Infections (HAI); Antimicrobial Resistance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11547
Abstract Type	Breakout
Abstract Title	Challenges and Successes in Investigating a Concurrent Outbreak of Invasive Escherichia coli K1 and Methicillin-Resistant Staphylococcus Aureus (MRSA) in a Hospital Neonatal Intensive Care Unit (NICU), Kansas 2017

Abstract

BACKGROUND: In November 2017, the Kansas Department of Health and Environment (KDHE) notified Centers for Disease Control and Prevention (CDC) of three invasive *E. coli* K1 infections and an increase in MRSA colonization and infection within one NICU. Cohorting and MRSA decolonization were recommended to prevent further transmission; concern remained that infants colonized with *E. coli* K1 without signs of infection could be sources of transmission. Identifying specific *E. coli* strains using traditional methods is challenging. CDC's novel approach combined whole genome sequencing (WGS) with culture-independent metagenomic sequencing (CIMS) to identify colonized infants.

METHODS: In the *E. coli* K1 outbreak, a case was defined as *E. coli* K1 isolated from an infant in the NICU from September 2017 to December 2017. NICU infants were routinely screened for MRSA colonization; therefore, in the MRSA outbreak a case was defined as infection or colonization in an infant in the NICU occurring above 12-month baseline rate. WGS of *E. coli* K1 isolates and MRSA isolates was performed. To inform cohorting, stool specimens from non-case-patients with close contact with infants with *E. coli* K1 underwent CIMS for microbiome analysis to detect whether the outbreak strain was present. KDHE staff conducted an on-site assessment of infection prevention and control.

RESULTS: Five infants in the NICU met the *E. coli* K1 outbreak case definition and 11 infants met the MRSA outbreak case definition. Two infants had both organisms isolated. Infants with *E. coli* K1 were hospitalized for a median of 70 days (55-117 days) and infants with MRSA were hospitalized a median of 29 days (4-161 days). All isolates were *E. coli* O75:K1:H5 with bla_{CMY-2} gene, were identical by MLST, and differed by 0-1 SNPs. CIMS identified one infant that was colonized with the outbreak strain. MRSA isolates from seven infants differed by 0-13 SNPs; four were unrelated by WGS and likely represent sporadic MRSA infection or colonization. KDHE observed poor hand hygiene compliance among ancillary staff which likely contributed to person-to-person transmission. Cohorting recommendations were not strictly followed and MRSA decolonization was not implemented. After no additional *E. coli* K1 cases and MRSA monthly incidence returned to baseline, the outbreaks ended in December 2017.

CONCLUSIONS: The facility's poor adherence to recommendations potentially prolonged transmission during the concurrent outbreaks. However, our novel approach combining WGS and CIMS can be useful in outbreak response and infection control efforts by effectively identifying colonized patients that could serve as potential reservoirs.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11709
Abstract Type	Breakout
Abstract Title	Establishing a Baseline of Infection Prevention Practices and Carbapenemase Producing Organisms (CPO) Colonization Rates in Tennessee Skilled Nursing Facility Ventilator Units—Tennessee, 2018–2019

Abstract

BACKGROUND: Carbapenemase Producing Organisms (CPO), including carbapenemase-producing carbapenem-resistant Enterobacteriaceae (CP-CRE) are a public health threat of increasing concern in healthcare settings that provide care for medically complex populations. Data from other states suggest that residents of ventilator skilled nursing facilities (vSNFs) appear to be at increased risk for CPO. Facilities that care for these patients can potentially serve as amplifiers for infection and colonization with multidrug-resistant organisms. Point prevalence surveys for CPOs have been limited in Tennessee's long term care facilities. A baseline assessment of CPO colonization and infection control programs in this setting is needed to inform future prevention and control efforts.
METHODS: All eleven licensed Tennessee vSNFs were recruited for on-site infection control assessments, followed by colonization screening for CPOs of residents on the ventilator unit. Tennessee Department of Health (TDH) staff performed assessments specific to ventilator units and community areas such as, dining room and rehabilitation gym. Facility observations were collected in REDCap by TDH staff. Rectal swabs were collected by facility staff. Testing of swabs was performed using reverse transcription-polymerase chain reaction (RT-PCR) on the Cepheid Gene-X at the Southeast Antimicrobial Resistance Laboratory Network (ARLN) in Nashville, Tennessee.
RESULTS: Infection control assessments have been completed at seven of eleven facilities. Common infection control gaps included lack of infection control risk assessments, low compliance with hand hygiene, limited hand sanitizer dispensers and hand washing sinks, lack of standardized surveillance processes, inadequate use of signage for transmission based precautions, low compliance with oral care of ventilated residents, lack of training programs for environmental cleaning and no oversight of contracted services offered at facilities. Colonization screening has been completed at four of eleven facilities with screening currently scheduled at one of the seven remaining facilities. 115 residents have been screened to date. Two of 115 (2%) rectal swabs were PCR positive for *Klebsiella pneumoniae* Carbapenemase (KPC). Eight (7%) residents refused screening.
CONCLUSIONS: This project highlights the need to improve various infection prevention practices in Tennessee vSNFs. We continue to work proactively with these vSNFs to address identified gaps. Facilities receive ongoing infection prevention support and resources. Although screenings will continue over the next two months, so far we have seen lower rates of colonization than expected. This project establishes a baseline of the prevalence of CPO colonization among residents in Tennessee vSNFs.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Antimicrobial Resistance; Infection Control; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11504
Abstract Type	Breakout
Abstract Title	Fatal *Acinetobacter Baumannii* Complex-Associated Septicemia Following Transfusion of Bacterial Contaminated Platelets

Abstract

BACKGROUND: In May 2018, the American Red Cross (ARC) notified the Utah Department of Health (UDOH) of a patient that died of *Acinetobacter baumannii* complex-associated septicemia following platelet transfusion. Platelet products pose an increased infection risk because they cannot typically be refrigerated, but are stored at room temperature, and routinely come into contact with non-sterile surfaces. Potential bacterial contamination of platelets from the exterior of the bag is extremely rare, so these events necessitate a multifaceted investigation.

METHODS: Investigators worked with the transfusion facility to review patient charts and assess transfusion documentation for protocol deviations. The investigation team worked with the ARC and transfusion facility to conduct infection control assessments, observations, and environmental sampling. The donor was also screened for urine, rectal and skin colonization. All samples were cultured by the Utah Public Health Laboratory (UPHL) for organism isolation and identification. Whole-genome sequencing (WGS) was conducted at UPHL to determine relatedness between patient and environmental bacterial isolates.

RESULTS: Patient record and transfusion documentation reviews indicated platelet contamination likely happened prior to the transfusion event based on the time between transfusion and symptom onset (~1 hr). The investigation revealed no deviations in blood supplier or hospital procedures, and donor screening swabs tested negative for *Acinetobacter* . The initial platelet bacterial surveillance sample demonstrated no growth. The co-collected platelet component was re-sampled (interior and exterior), with no bacterial growth detected. Environmental sampling at both the ARC and transfusing facility revealed environmental contamination of multiple locations which came into contact with platelets (receiving station at the transfusing facility, and platelet agitators at both facilities). A rare species of the *Acinetobacter baumannii* complex was identified from patient samples, residual platelet component and environmental samples. WGS and phylogenetic analysis indicated all isolates were highly related and nearly identical at the nucleotide level. Infection control assessments revealed that the transfusing facility did not have a routine cleaning schedule in place for platelet agitators. We determined there were no routine cleaning recommendations for platelet agitators in transfusion facilities, representing a significant gap in blood product infection control recommendations.

CONCLUSIONS: Bacterial contamination of platelets, although rare, can have severe consequences. Efforts should be taken to reduce potential bacterial contamination of the exterior surfaces of platelet bags. We recommend national infection control groups consider implementing standardized cleaning guidelines for platelet processing equipment in transfusion facilities. Facilities with blood banks should implement routine cleaning schedules for all blood product processing equipment.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infection Control
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11399
Abstract Type	Breakout
Abstract Title	Improving Infection Control through Non-Regulatory Infection Control Assessments in Long-Term Care Facilities in Orange County, Florida

Abstract

BACKGROUND: Infection control (IC) and prevention aim to inhibit the transmission of healthcare-associated infections. Recently, regulatory agencies have developed regulations to enforce IC best practices in nursing homes and assisted living facilities (ALFs). From December 2017 to June 2018, lack of an infection control and prevention program was the most common citation in nursing homes reported by the Agency for Health Care Administration. To close this gap, the Department of Health in Orange County (DOH-Orange) aimed to conduct 15 IC assessments within one year and evaluate its efficacy in changing IC practices.
METHODS: From January 2017 to November 2018, 27 nursing homes and 4 ALFs had outbreaks of infectious diseases. Recruitment of 23 facilities (5 facilities had ≥1 outbreak) began March 2018. Assessments were conducted using the Infection Control Assessment and Response (ICAR) tool developed by the Centers for Disease Control and Prevention.
RESULTS: From March to December 2018, ICARs were conducted at 3 ALFs and 8 nursing homes. Of the 11 facilities, 9 (81.8%) were able to identify a specific person responsible for leading the IC program and activities, and of those 100% provided documentation of IC training by the state or recognized professional societies. All nursing homes (100%) and one ALF (33%) had written IC policies/procedures. Annual training on hand hygiene and personal protective equipment (PPE) was conducted in 66% of ALFs and 87.5% of nursing homes. Only one ALF required hand hygiene competency validation. Among nursing homes, 75% and 37.5% required return demonstrations for hand hygiene and PPE competency, respectively, after each training. Only 50% of nursing homes conducted audits (monitoring and documenting) on adherence to both hand hygiene and PPE, whereas 33% and 0% of ALFs conducted audits on adherence to hand hygiene and PPE, respectively.
CONCLUSIONS: To evaluate the facility's uptake of recommendations provided by DOH-Orange, one-month follow up calls are being conducted. A post-test survey will be distributed at the end of the project to evaluate the ICAR tool's efficacy in improving IC practices. The ICAR assessment is a sustainable tool that increases collaboration between healthcare facilities and local health departments. Future goals aim to utilize the ICAR assessment as a prequel to regulatory visits by state agencies, to improve IC policies/procedures and decrease IC citations. Continuing efforts will be made to build partnerships between local health departments, regulatory agencies, and healthcare facilities to strengthen IC practices for the safety of residents and healthcare workers.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Risk Assessment
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11719
Abstract Type	Breakout
Abstract Title	Infection Control Assessments in Response to Novel/Targeted Multidrug-Resistant Organisms: Addressing Identified Gaps across the Continuum of Care in the State of Florida, 2018

Abstract

BACKGROUND: The field of public health is continuously faced with new challenges despite rapid advancements in medical knowledge and health practices. Microbes that were previously sensitive to treatment are becoming increasingly resistant to antibiotics. Florida's Health Care-Associated Infection (HAI) Prevention Program has been actively responding to contain transmission of novel/targeted multidrug-resistant organisms (MDROs). During 2018, we responded to a total of 27 novel/targeted MDROs, of which 16 responses warranted an infection control assessment and response (ICAR) using the Centers for Disease Control and Prevention ICAR form. Throughout our ICAR assessments we have identified consistent gaps across the continuum of care by collecting data on measurable indicators. This data is used to formulate infection control trainings for health care facilities across our state to address the identified gaps.

METHODS: For each ICAR assessment, we conduct a representative sample of hand hygiene and personal protective equipment (PPE) observations at each facility by using "My 5 Moments of Hand Hygiene" method from the World Health Organization. All observations are recorded on iScrub Lite mobile phone application (version 1.5.3, 2018, SwipeSense, Inc.). Adherence rates are aggregated by discipline type and opportunity type (e.g., "My 5 Moments of Hand Hygiene") in Microsoft Excel 2016. Additionally, during the administrative portion of the ICAR assessment, we determine the method each facility uses to evaluate competency following each hand hygiene and PPE training.

RESULTS: Out of the 16 ICARs, we collected representative samples of hand hygiene and PPE observations based on unit bed size for 13 facilities (acute-care hospitals=9; long-term acute-care hospitals=3; long-term care facility=1). Our analysis identified the lowest hand hygiene and PPE adherence rates occur during the "after body fluid exposure risk" opportunity (median hand hygiene rate: 55%, range: 0-80%; median PPE rate: 34%, range: 0-61%). Physicians and respiratory therapist had the lowest hand hygiene and PPE compliance rates (physician compliance rate=70%; respiratory therapist compliance rate=57%). Out of the 13 ICARs conducted, 15% required return demonstration of hand hygiene and PPE competency; 69% of facilities provide hand hygiene and PPE training through computer-based modules.

CONCLUSIONS: As our MDRO responses increase, our program aims to mitigate fundamental infection control gaps to decrease the risk of horizontal transmission. The consistency toward passive training and lack of return demonstration of competency may directly relate to the deficiencies identified in hand hygiene and PPE compliance. These findings provide us with ample opportunities to provide awareness, education, and behavior changes across the continuum of care.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Infection Control; Healthcare Associated Infections (HAI); Antimicrobial Resistance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11314
Abstract Type	Breakout
Abstract Title	Injection and Needle Use Practices By Healthcare Facility Type in Rural Jackson County, Oregon

Abstract

BACKGROUND: A 2015 investigation of an Oregon prolotherapy clinic delivering needle-based care was found to be placing patients at risk for infection with blood-borne pathogens as a result of unsafe injection practices. Following this identified risk, staff in the Healthcare-Associated infections (HAI) Program of the Oregon Health Authority (OHA) surveyed healthcare personnel (HCP) countywide across the continuum of care to identify potential future risks related to injection and needle use practice.
METHODS: We developed and distributed a survey by mail to all licensed HCP and businesses/facilities ("facilities") in Jackson County, Oregon that might provide care involving needles. We developed Oregon's Injection and Needle Safety Toolkit containing injection safety-related resources, which was distributed to all survey respondents. Responses were stratified by setting type: non-acupuncture inpatient; non-acupuncture outpatient; and acupuncture. Fisher's Exact Test comparisons and odds ratio calculations were conducted in SAS Version 9.4.
RESULTS: Respondents detailed the types of licensed HCP employed and procedures performed at the facility. Needle use and injection practices varied between inpatient and outpatient facilities. Nurses were less likely to administer the majority of injections in outpatient facilities than in inpatient facilities (OR 0.0445, 95% CI 0.0087 , 0.2280). Outpatient facilities were less likely to offer assistance to staff with substance use issues than inpatient facilities (OR 0.078, 95% CI 0.0089 , 0.6819). Outpatient facilities were more likely to report ever using vials of medication on more than one patient (OR 11.7857, 95% CI 1.3419 , 103.5147). Facilities reported interest in receiving education regarding topics including disease transmission and outbreaks associated with injection and needle use as well as needlestick injury.
CONCLUSIONS: The survey provided a number of tangible benefits for fostering injection safety in Oregon. Survey responses provided valuable insight regarding differences in injection and needle-based care by facility type as well as common practices involving needles and the types of licensed provider engaged in this care in one of Oregon's rural counties. The results of this survey are being used to develop targeted educational approaches and materials. Oregon's Injection and Needle Safety Toolkit has been viewed by 444 unique users since posting in May 2018. Furthermore, we have now established a network of providers who we can work with in future efforts focused on safe injection practices.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infection Control; Rural Health
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11075
Abstract Type	Breakout
Abstract Title	Multistate Outbreak of Burkholderia Cepacia Complex Infections Among Non-Cystic Fibrosis Patients - United States, 2018

Abstract

BACKGROUND: *Burkholderia cepacia* complex (Bcc) is an emerging cause of healthcare-associated outbreaks often due to contamination of aqueous medical products. In February and March of 2018 a Pennsylvania hospital and a California hospital notified public health authorities of clusters of suspected healthcare-associated Bcc infections among non-cystic fibrosis patients, predominantly in intensive care units. Product testing at the Pennsylvania facility resulted in Bcc growth from cultures of a perineal skin cleanser from Manufacturer X, suggesting infections could be related to a widely distributed product warranting further investigation.
METHODS: A national call for clusters of Bcc recovery from cultures collected from non-cystic fibrosis patients was issued to assist case finding. Data were collected including lot numbers of aqueous products from Manufacturer X used at facilities reporting clusters and clinical data from affected patients. A confirmed case was a patient's first culture collected on or after November 1, 2017, yielding Bcc indistinguishable or closely related to the outbreak strain by molecular typing. A probable case was a patient's first culture collected on or after November 1, 2017, yielding Bcc with unknown strain type, from a patient who received care at a facility utilizing aqueous product from a master lot manufactured at Manufacturer X that tested positive for Bcc. CDC tested products for presence of Bcc and compared clinical and product Bcc isolates by pulsed-field gel electrophoresis (PFGE).
RESULTS: We identified 17 confirmed and 31 probable cases from 13 hospitals in 6 states. Culture site was reported for 43 of 48 cases and included the urogenital tract (27), respiratory tract (9), bloodstream (4), wound (4), and peritoneum (3). Four patients had multiple positive culture sites. Three lots of the skin cleanser from Manufacturer X grew Bcc on culture; the species identified was *Burkholderia cenocepacia* . PFGE identified that product isolates and clinical isolates from patients across states were indistinguishable or closely related. Manufacturer X voluntarily recalled the three lots of the skin cleanser which tested positive for Bcc.
CONCLUSIONS: Epidemiologic and laboratory evidence indicated this large multi-state outbreak of Bcc was due to contamination of a nonsterile skin cleanser. Recognition of clusters of Bcc infections at sites unusual for the pathogen (e.g., non-pulmonary Bcc) can suggest possible product contamination. Contamination of aqueous medical products, including hygiene products, can lead to infections among susceptible patients. Nonsterile, aqueous medical products should therefore be considered as a potential source of Bcc outbreaks in healthcare settings.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Health Care; Outbreaks; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11593
Abstract Type	Breakout
Abstract Title	Positive Deviance Study for Timeliness of Mandated Reporting of Carbapenem-Resistant Enterobacteriaceae — Los Angeles County, 2017–2018

Abstract

BACKGROUND: In January 2017, Los Angeles County (LAC) hospitals were mandated to report carbapenem-resistant Enterobacteriaceae (CRE) infections. A November 2018 evaluation of CRE reporting revealed lengthy reporting delays (mean: 40 days) with substantial differences among facilities (mean: 8.8–143 days/facility). The Los Angeles County Department of Public Health (LACDPH) adapted the positive deviance methodology by qualitatively studying performance outliers to identify strategies that improve timeliness.
METHODS: The National Healthcare Safety Network (NHSN) was queried for CRE cases reported in LAC during January 2017–September 2018. Reporting delays were calculated as difference between culture collection and report dates. Mean reporting delay and 95% confidence limits (CLs) were generated for each hospital. Positive outliers (POs) and negative outliers (NOs) were defined as hospitals with CLs higher or lower than the grand mean, respectively. A sample was created using maximum variation sampling ensuring heterogeneity for mean reporting delay, case volume, and number of infection preventionists (IPs). Semi-structured interviews were conducted with selected IPs to characterize reporting practices.
RESULTS: We detected 2,907 CRE cases from 76 hospitals, and identified 45 POs and 15 NOs with CLs excluding the grand mean (43.5 days). Our sample included 13 POs and 6 NOs. IPs responded from 11 (24%) POs and 5 (33%) NOs. Interviews revealed no novel practices. Common workflow elements were similar between groups, including electronic laboratory notification (PO 82% and NO 80%) and automated NHSN entry (PO 18% and NO 20%). However, internal reporting targets differed between groups. Seven POs targeted reporting ≤5 days; all NOs intentionally batched reporting at least monthly.
CONCLUSIONS: Our findings indicate hospitals can improve CRE reporting timeliness with workflow or practice changes alone. LACDPH is designing a campaign with hospital IPs to increase awareness of CRE reporting requirements. This study demonstrates how positive deviance methods can guide intervention design.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Infectious Diseases; Antimicrobial Resistance; Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	10914
Abstract Type	Breakout
Abstract Title	Prescriber Adherence to *Clostridioides Difficile* Infection Treatment Guidelines, Minnesota 2013–2017

Abstract

BACKGROUND: In 2010, the Society for Healthcare Epidemiology of America (SHEA) and Infectious Diseases Society of America (IDSA) published clinical guidelines for *Clostridioides difficile* infection (CDI), with updates in 2018. SHEA/IDSA CDI clinical definitions were comprised of clinical presentation, white blood cell count (WBC), and serum creatinine level. Appropriate treatments for clinical infections were defined as follows: asymptomatic, no treatment; mild, metronidazole for 10-14 days; severe, vancomycin for 10-14 days; severe-complicated, vancomycin with or without metronidazole. We evaluated appropriateness of CDI antibiotic treatment in Minnesota during 2013-2017.

METHODS: An incident CDI case was defined as a positive *C. difficile* toxin or molecular assay on a stool specimen from a person without a positive *C. difficile* test in the prior eight weeks. During routine active surveillance, clinical presentation and treatment data were captured through medical record review. Creatinine levels, while included in the 2010 clinical guidelines, were not captured. CDI cases aged ≥18 years were assigned clinical infection severity: asymptomatic, no diarrhea documented or asymptomatic; mild, diarrhea with WBC ≤15,000/µl; severe, diarrhea with WBC >15,000/µl; and severe-complicated, documented megacolon and/or ileus. We defined treatment appropriateness as correct drug per 2010 SHEA/IDSA guidelines.

RESULTS: During 2013-2017, 3,042 incident adult CDI cases were reported: 284 (9%) asymptomatic, 2,368 (78%) mild, 256 (8%) severe, 50 (2%) severe-complicated, and 84 (3%) unknown. A total of 1,877 (62%) cases received appropriate CDI treatment: 28/284 (10%) asymptomatic (no treatment), 1,668/2,368 (70%) mild, 149/256 (58%) severe, and 32/50 (64%) severe-complicated. Though none was indicated, 249 (88%) asymptomatic cases were prescribed an antibiotic. Of these, 71 (20%) had a recurrent positive test with no clinical symptoms, and 57 (80%) asymptomatic patients received a second antibiotic course. Of the 170 severe cases that received metronidazole, 11 (6%) had recurrent positive tests. Although 30% (17/56) of severe-complicated cases received metronidazole without vancomycin, none had a documented recurrence. Of 1,023 patients receiving care at a hospital and 1,583 at a clinic, 557 (54%) and 1047 (66%) patients received appropriate treatment, respectively.

CONCLUSIONS: Over one-third of CDI cases are inappropriately treated, demonstrating a need for targeted education on appropriate CDI testing and treatment. The lack of data on creatinine might lead to overestimation of both mild cases and the rate of appropriately treated severe disease. Over- and incorrect prescribing of antibiotics might increase the chance of recurrence and increase overall CDI rates. Repeat analysis could assess uptake of the updated 2018 SHEA/IDSA guidelines.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infectious Diseases; Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11615
Abstract Type	Breakout
Abstract Title	VIM-Crpa in Lubbock, Texas: Conducting the First Antibiotic Resistance Laboratory Network Multi-Site Epi-Aid in the United States

Abstract

BACKGROUND: The Texas Department of State Health Services (DSHS) Antibiotic Resistance Laboratory Network (ARLN) notified the Region 1 Healthcare-Associated Infections (HAI) Epidemiologist of the first four cases of Carbapenem-resistant *Pseudomonas aeruginosa* (CRPA) positive for the carbapenemase VIM, or Verona Integron-Mediated Metallo-β-lactamase, in August 2017. From January 2017 to July 2018, 76 cases of VIM-CRPA were identified through regional laboratories from across the entire United States. Facilities in Lubbock, Texas, voluntarily submitted certain isolates to the ARLN for antibiotic resistance mechanism testing. The DSHS ARLN has tested over 237 CRPA isolates from the Lubbock area and identified 27 cases of VIM-CRPA. The Lubbock isolates were from urine, sputum, wound, tissue, and respiratory sources. On October 8, 2018, the Centers for Disease Control and Prevention (CDC) began an Epi-Aid investigation in the city of Lubbock due to the continued positive results without an identifiable source. The Epi-Aid and ongoing investigation involved the CDC, the Region 1 HAI Epidemiologist, Texas DSHS, the City of Lubbock Health Department, and multiple healthcare facilities in Lubbock.
METHODS: During the Epi-Aid, medical records were reviewed for risk factors, and patients who received outpatient care were interviewed. Pulsed-field gel electrophoresis (PFGE) and whole genome sequencing (WGS) were performed on all VIM-CRPA positive isolates. Site visits were conducted at multiple healthcare facilities in Lubbock where case patients received healthcare; these visits included infection prevention assessments, consultations, and point-prevalence surveys to assess for the presence of VIM within the facilities. Point-prevalence surveys were implemented by obtaining specimens via rectal swabs from 265 patients in seven facilities.
RESULTS: 31 VIM-positive isolates have been identified from Lubbock from June 2017 to October 2018. PFGE revealed 15 unique patterns: seven isolates share a common pattern and two clusters of three isolates share other patterns. WGS showed that VIM-CRPA in Lubbock is unique to the region. Point-prevalence surveys resulted in no additional VIM-positive patients identified. Common infection control gaps identified included hand hygiene, environmental cleaning, and communication during transfers between healthcare facilities.
CONCLUSIONS: The VIM-CRPA outbreak in Lubbock is unique to the area and is characterized by genetically-related cases occurring across multiple closely-connected healthcare facilities. There is currently no identifiable reservoir. A regional containment strategy is being developed and implemented to further contain this outbreak, increase infection prevention across facilities in Lubbock and, upon success, decrease all multidrug-resistant organism prevalence and transmission.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Antimicrobial Resistance; Healthcare Associated Infections (HAI); Epidemiology
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11317
Abstract Type	Lightning
Abstract Title	Developing a Risk Score to Prioritize Hawaii Dialysis Facilities for State-Led Infection Control Intervention Activities

Abstract

BACKGROUND: Infections are the second leading cause of death among hemodialysis patients. The standard measure for healthcare facilities, excess bloodstream infections (BSI), may not completely describe infection risk and burden for dialysis facilities. The Hawaii Department of Health piloted a modified Targeted Assessment for Prevention strategy, which included additional infection control indicators beyond excess BSI, to identify dialysis facilities with the greatest potential to benefit from state-led infection prevention activities.

METHODS: We identified a list of metrics relevant to infection control in dialysis facilities from the National Healthcare Safety Network (NHSN) and Medicare's Dialysis Facility Compare data. These included census (patient-months), excess BSI, proportion of patients with central venous catheters, access-related BSI (ARBSI) rate, local access site infection (LASI) rate, number of patients with Hepatitis B and C, Dialysis Compare quality of patient care rating, hospitalization rate, and death rate. Each continuous metric was standardized to a Z-score using data from 25 NHSN-reporting dialysis facilities in Hawaii. Z-scores were summed across indicators to compute a total risk score for each facility.

RESULTS: Risk scores ranged from -9.1 to 13.4 (median, -0.15). The four facilities identified with the highest risk scores measured higher on indicators related to potential infection drivers compared with the four lowest ranked facilities: mean LASI rates per 100 patient-months (mean of highest ranked, 0.14 vs. mean of lowest ranked, 0.10), mean proportion of patients on catheters (0.18 vs. 0.11), and mean ARBSI rates per 100 patient-months (0.65 vs. 0.11). Additionally, patients of the four highest ranked facilities had worse outcomes compared with patients of facilities ranked in the four lowest: mean hospitalization rate per 100 patient-years (150.0 vs. 137.0) and mean death rate per 100 patient-years (21.5 vs. 19.2).

CONCLUSIONS: Expanding the standard assessment tool by including additional data elements allowed us to summarize facility performance and identify specified drivers of infection in Hawaii dialysis facilities. In contrast with traditional assessments, our approach offers a more comprehensive and specific assessment of infection drivers at the facility level to inform intervention development and targeting. Use of Z-scores based on a set of carefully selected dialysis-specific infection control metrics can be used to develop standardized summary risk scores which identify facilities of greatest need for infection control activities. Subsequent work can guide state-led efforts by focusing on designing targeted intervention strategies tailored to each of the facilities with the greatest risk of infection.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Epidemiologic Methods; Infection Control
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11710
Abstract Type	Lightning
Abstract Title	First Investigation of Healthcare-Associated Legionnaires' Disease in Hawaii

Abstract

BACKGROUND: In June 2018 the Hawaii Department of Health (HDOH) initiated an investigation upon receiving reports of potentially healthcare-associated (HA) Legionnaires' Disease (LD) from a large Honolulu acute care hospital, Hospital A, which is supplied with water from a private well. HA-LD can cause substantial morbidity and mortality, although it had not been previously recognized in Hawaii. This investigation offered the first glance at etiologic agents of HA-LD in Hawaii, and insight into the hospital's and health department's preparedness to prevent, identify, respond to HA-LD.

METHODS: HDOH staff from various branches reviewed Hospital A's existing water management plan, conducted site visits, guided implementation of control measures including water use restrictions, and conducted case finding. Confirmed cases were classified using CSTE's confirmed case definition for Legionnaires' disease with symptom onset during May or June 2018 and inpatient stays at Hospital A the entire 10 days before onset date. Probable cases had inpatient stays for any period of the 10 days before onset date. A consultant collected environmental water samples, which were tested at a private laboratory. Positive results were retested at the Hawaii State Laboratories Division by Legiolert™, culture, MALDI-TOF, and PCR. Select isolates were sent to CDC for whole genome sequencing.

RESULTS: One confirmed case and one probable case were identified. *Legionella pneumophilia* serogroup 2, identified via culture from a bronchial wash, was isolated from the confirmed case. The probable case was diagnosed by the urine antigen test, which only detects *L. pneumophila* serogroup 1 (LP1). Various species of *Legionella* were recovered from 16 different water outlets throughout Hospital A. The existing water management plan lacked detail on: target chlorine residual levels among the distribution system, specific response procedures for low chlorine residual, and documentation or reporting requirements. Whole genome sequencing revealed no match between the one clinical isolate and the environmental isolates.

CONCLUSIONS: LP1 causes the vast majority of LD cases. However, one of our two identified HA-LD cases was not LP1, and the environmental investigation revealed a diversity of *Legionella* species and serogroups which pose pathogenic potential. Our findings reveal the need to ensure future HA-LD investigations in Hawaii utilize laboratory testing methods sensitive to all *Legionella* species and serogroups. Additionally, our investigation highlighted that healthcare facilities should ensure their water management plans are both comprehensive and specific enough to prevent *Legionella* proliferation and transmission, and that a robust HA-LD outbreak investigation requires multidisciplinary expertise.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Outbreaks; Waterborne Disease
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11371
Abstract Type	Lightning
Abstract Title	Improving Florida's Capacity to Respond to HAI Outbreaks

Abstract

BACKGROUND: Healthcare-associated infections (HAI) present critical challenges in the field of public health requiring professionals to respond timely and competently to HAI outbreaks. There is a lack of knowledge about the Florida Department of Health epidemiology staff's capacity to respond to HAIs. In this study, we aimed to understand staff's self-efficacy in their ability to 1) respond to HAI outbreaks, 2) identify and help address gaps in a facility's infection control (IC) program, 3) educate medical providers on HAI prevention and response, 4) conduct IC assessments (ICAR), and 5) investigate outbreaks involving contaminated medical equipment.
METHODS: Florida's HAI Prevention Program in collaboration with the Florida Department of Health in Orange County (DOH-Orange) conducted a cross-sectional survey in November 2017 and 2018. The "Certification in Infection Prevention and Control (CIC) Employee Assessment" was administered to epidemiology staff throughout the state of Florida, via SurveyMonkey. Results from respondents were aggregated and analyzed using Microsoft Excel 2016.
RESULTS: In our assessment, those who answered the self-efficacy questions (2017 n=103; 2018 n=53) "strongly agreed/agreed" that they felt confident in their ability to respond to an HAI outbreak (mean=70.3%), identify and help address gaps in a facility's infection control program (mean= 61.2%), and educate medical providers on HAI prevention and response (mean= 63.0%). Whereas, approximately one-third "strongly agreed/agreed" that they felt confident in their ability to conduct an infection control assessment (mean= 36.6%) and investigate an outbreak involving contaminated medical equipment (mean= 33.5%). Among all participants (n=158), only 16 (mean= 10.5%) reported being CIC certified and less than half (mean= 43.9%) of those not certified planned to take the exam in the upcoming 12 months.
CONCLUSIONS: The CIC Employee Assessment illustrated opportunities for improvement in several areas, including improving staff's self-efficacy to respond to HAI outbreaks, accessibility to infection control education/resources, and increasing the number of CIC credentialed staff at local health departments. Interventions developed from these findings included the Florida Department of Health HAI CIC Study Group and access to IC education through a series of trainings dedicated to long-term care facilities with a focus on outbreak prevention and response. Our findings allowed us to clearly and efficiently target gaps in infection control education throughout Florida to improve capacity to respond to HAI outbreaks. Continuing education and resources are warranted for our Florida public health professionals.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Infection Control; Healthcare Associated Infections (HAI); Epidemiology
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11367
Abstract Type	Lightning
Abstract Title	Incorporating Electronic Medical Records with National Healthcare Safety Network Data to Characterize Recurrent Clostridioides Difficile Infections Reported at the Ohio State University Medical Facilities, 2014-2016

Abstract

BACKGROUND: Recurrent *Clostridioides difficile* infection (rCDI) occurs among 10-25% of incident cases. All CDI events at Ohio State University Wexner Medical Center (OSUWMC) are submitted to the National Healthcare Safety Network (NHSN) but only incident data is analyzed and publicly reported. Our objective was to reliably merge NHSN CDI laboratory-identified (LabID) events with electronic medical records (EMR) to develop a comprehensive dataset that could be used for epidemiologic investigations.
METHODS: We conducted a retrospective cohort analysis from a major academic medical center in Ohio, United States. CDI data were collected as part of the NHSN surveillance program from 2014 to 2016. We merged CDI LabID events with OSUWMC EMR data for the period January 1, 2014, to December 31, 2016. We matched NHSN records with EMR data by medical record number, admission date, and specimen date. We performed descriptive epidemiologic analyses for rCDI including evaluating trends over time.
RESULTS: Six hospitals within OSUWMC make up 3 unique facilities that submit data separately to NHSN. These separate NHSN facilities were merged before they could then be combined with the patient's electronic record. The 3 different NHSN facilities generated a list of 3,213 patients who were submitted to the NHSN MDRO and CDI database. However, only 2,024 were CDI LabID events that occurred within the study window. One hundred percent of the NHSN cases were able to be merged to EMR data. The resulting comprehensive dataset contained 180 variables. When comparing different follow-up periods for recurrence, 121 (6.5%) patients experienced recurrence within 56 days; 209 (11.8%) patients experienced recurrence within 180 days; and 245 (14.3%) patients experienced recurrence at any point in the study period. We found that patients who experienced recurrence within 56 days were more likely to be older, more likely to be female, and more likely to have an emergency or outpatient status. Finally, there was an increase in the proportion of rCDI between 2014 (6.2%) and 2016 (7.1%).
CONCLUSIONS: Our analysis demonstrates how to use the EMR to supplement NHSN CDI data. Facilities reporting CDI LabID events may be able to extend their own data to further examine CDI outcomes, including recurrence. OSUWMC Clinical Epidemiology and Antimicrobial Stewardship Programs are using these analyses to update provider policy and improve CDI prevention.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infectious Diseases; Hospital Data
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11804
Abstract Type	Lightning
Abstract Title	The Development of Screening Protocols for Colonization of Contacts with CP-CRE in Non-Acute Care Settings in Nebraska

Abstract

BACKGROUND: Recommendations on colonization screening of CP-CRE (carbapenemase producing carbapenem resistant Enterobacteriaceae) in acute care hospitals are relatively well established. However, there is little published guidance on what factors should be considered in determining who needs such screening in non-acute healthcare settings. After performing several screenings in skilled nursing facilities (SNFs) and assisted living facilities (ALFs), the HAI/AR (Healthcare Associated Infections/Antimicrobial Resistance) team at NDHHS (Nebraska DHHS) developed checklists for approaching colonization screening in these settings.
METHODS: We reviewed the factors that influenced the actual screenings performed in SNFs and ALFs in Nebraska. Discussions with in-state and out-of-state experts as well as infection preventionists (IPs) at various facilities identified the following factors as essential: the overall acuity of the patients in the facility; the source of the CP-CRE; continence; sharing of toileting facilities; common use of bathing, whirlpool and PT/OT equipment; mental capacity of the patient; and overall level of IP practices. Nebraska's largest tertiary care hospital recommends screening individuals located 3 rooms on either side with a 3 day or more overlap. Therefore, we included this recommendation for all NE acute care settings and for SNFs.
RESULTS: In ALFs the stepwise checklist begins with the question: "Does the patient have a roommate?" If the answer is "yes" that person should be screened. Question 2: "Does the index case share toileting facilities?" If "yes" then all those who share toileting facilities are screened. Question 3: Does the patient use common bathing facilities or whirlpool equipment? An affirmative triggers screening those who use the same devices. Additional questions regarding continence, compliance with personal hygiene, and use of PT/OT facilities, contribute to the screening algorithm. In high acuity SNFs the acute care recommendation to screen those in 3 rooms on either side is followed. The SNF checklist intersects the ALF paradigm at Q3: both recommend auditing and documentation of auditing findings for hand hygiene and compliance with contact precautions. Lastly a link to the Nebraska Interfacility Transfer Form is included to encourage transfer communication.
CONCLUSIONS: Since little formal guidance on colonization screening in SNFs and ALFs exists, easy-to-use checklist protocols to determine who to screen for CP-CRE colonization in ALFs and SNFs are necessary, particularly since the staff members tasked with performing the screening in non-acute care settings often lack infection prevention experience.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Antimicrobial Resistance; Healthcare Associated Infections (HAI); Infection Control
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11311
Abstract Type	Poster
Abstract Title	Carbapenemase-Producing (CP) Carbapenem-Resistant Enterobacteriaceae (CRE) and Carbapenem-Resistant Pseudomonas Aeruginosa (CRPA) Infections in Georgia Long-Term Care Facilities (LTCF), 2018

Abstract

BACKGROUND: CRE and CRPA with carbapenemase-producing enzymes (i.e., CP-CRE and CP-CRPA) represent a serious public health threat, as they have high transmission rates and contribute to antibiotic resistant disease in healthcare settings. The epidemiology of CP-CRE and CP-CRPA are not well characterized in Georgia, particularly in LTCFs. In 2018, the Georgia Public Health Laboratory (GPHL) expanded its capacity to identify CP-CRE and CP-CRPA and initiated a pilot project with a statewide LTCF reference laboratory to test their CRE and CRPA isolates for carbapenemase production and genotypic expression.
METHODS: Data were analyzed using Excel, and urban and rural classifications were assigned to LTCFs. Submitted isolates were tested for carbapenemase production using modified carbapenem inactivation method (mCIM); those positive were tested for resistance genes genotype using the Cepheid GeneXpert® CARBA- R assay.
RESULTS: Between December 28, 2017 and November 28, 2018, the LTCF reference laboratory submitted 215 isolates from 94 LTCFs to GPHL for carbapenemase testing; these isolates were collected between 11/14/2017 through 11/22/2018. Of these 94 facilities, 79% (74) were in urban regions and 21% (20) rural. Urban LTCFs submitted 87% (186) of isolates and rural 13% (29). Twenty-three percent (34/146) of the CRE isolates were carbapenemase producers; 23% (27/118) urban isolates and 25% (7/28) rural. GPHL identified *Klebsiella pneumoniae* in all 7 of the rural CP-CRE isolates, 86% (6) with the *Klebsiella pneumoniae* carbapenemase (KPC) gene and 14% (1) with the New-Delhi metallo-β-lactamase (NDM) gene. GPHL detected more strains of CP-CRE and CP-CRPA from urban LTCF isolates. Of the 27 CP-CRE isolates identified in urban LTCFs, 56% (15/27) were KPC-*Klebsiella pneumoniae* , 19% (5/27) KPC-*Escherichia coli* , 15% (4/27) KPC-*Enterobacter cloacae* , 7% (2/27) NDM-*Klebsiella pneumoniae* , and 4% (1/27) KPC-*Enterobacter asburiae* . Four percent (3/69) of the CRPA isolates were carbapenemase producers, and all were from urban LTCFs. GPHL identified one incidence of Verona integron-encoded metallo-β-lactamase (VIM)-CRPA and two incidences of KPC-CRPA, which are emerging multi-drug resistant organisms (MDROs) in the US.
CONCLUSIONS: Although GPHL identified similar rates of CP-CRE in urban and rural LTCFs, it detected a greater diversity of *Enterobacteriaceae* species harboring carbapenamase genes in urban LTCFs. In addition, GPHL detected the emerging MDROs of CP-CRPA in urban LTCFs, signaling a need for increased infection control training and support in these facilities. The carbapenemase testing capacity at GPHL is essential for DPH to understand CP-CRE and CP-CRPA epidemiology and to direct effective response to antibiotic resistance in Georgia LTCFs.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Surveillance; Antimicrobial Resistance; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	10908
Abstract Type	Poster
Abstract Title	Data from the 2018 National Healthcare Safety Network (NHSN) Home Dialysis Center Practices Survey: What Can NHSN Tell Us about Home Dialysis Care?

Abstract

BACKGROUND: The number of end-stage renal disease (ESRD) patients who receive dialysis at home has increased over the past decade. Facilities that provide home dialysis services, specifically peritoneal dialysis (PD) or hemodialysis (HD), are less regulated than clinics that perform in-center HD. In addition, these facilities do not report dialysis healthcare-associated infection (HAI) event data to the National Healthcare Safety Network (NHSN), even when the home dialysis services are provided within other healthcare settings, such as long-term care facilities (LTCF). Using data from NHSN, we aimed to describe the characteristics of facilities providing home dialysis (home HD or PD) without in-center HD services.
METHODS: Outpatient dialysis facilities that lack in-center HD services complete an annual Home Dialysis Center Practices Survey as part of their participation in the NHSN Healthcare Personnel Influenza Vaccination Module. We analyzed 2018 survey data, which includes facility characteristics and select patient and staff characteristics that were present during the first week of February. NHSN does not currently collect the location of dialysis services (i.e., a home vs. LTCF) from these facilities.
RESULTS: In 2018, 402 home dialysis facilities completed the annual survey; 384 (95.5%) of these provided PD and 277 (68.9%) provided home HD. Facilities were located in 39 states and Washington, DC. Most facilities were part of a chain (n=385, 95.7%) and had for-profit ownership (n=353, 87.8%). Facilities had a median number of 30 home dialysis patients (26 PD and 6 home HD) and 8 staff. Of home HD programs, 95.3% reported that they tracked patient bloodstream infections; 100% of PD programs reported tracking peritonitis episodes. Of home patients treated by these facilities during the first week of February, 73.1% had received ≥3 doses of hepatitis B vaccine, 85.2% had received the 2017-2018 seasonal influenza vaccine, and 81.4% had received ≥1 dose of pneumococcal vaccine. Among facility staff during the same time period, 78.1% had received ≥3 doses of hepatitis B vaccine and 83.8% had received the seasonal influenza vaccine. Of home HD patients cared for by these facilities, 66.2% used an arteriovenous fistula for dialysis and 20.4% used a central line.
CONCLUSIONS: Home-only dialysis facilities are located in most states and provide care to a large patient population. Extending HAI surveillance at the national level to this at-risk patient population could bolster efforts to track and prevent infections.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infectious Diseases; Surveillance
Consider for Different Presentation?	Yes
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Affiliation	Corporate Settings

Submission Type	Breakout/Quick/Lightning/Poster
ID	10818
Abstract Type	Poster
Abstract Title	Examining the Difference in Clostridioides Difficile Incidence By Gender in South Carolina, a Population-Based Study

Abstract

BACKGROUND: *Clostridioides difficile* infection (CDI) has emerged as a significant threat to public health. Cases of CDI have been linked to inappropriate antibiotic prescribing and use. Previous studies have reported higher CDI incidence for women than men. This cross-sectional study seeks to examine if the burden of CDI is higher in women than men in South Carolina as well as any implications of antibiotic use.
METHODS: To assess the antibiotic prescribing rate in South Carolina, 2015 Medicaid and State Health Plan claims data for oral antibiotic prescriptions and associated medical claims were used as a proxy to estimate antibiotic prescription rates for adults age 18-64. Community-onset CDI (CO-CDI) cases were identified through state-mandated reporting in the National Healthcare Safety Network (NHSN) and the South Carolina Infectious Disease and Outbreak Network (SCION). The incidence rates of CO-CDI were obtained in both men and women in two age groups, 18-39 years and 40-64 years. The incidence rates were then adjusted by antibiotic prescription rates within each gender and age group. Ninety-five percent confidence intervals (CI) were constructed to examine statistical significance across genders within the same age group.
RESULTS: In 2015, a total of 1,564 CO-CDI cases were identified in SC residents 18-64 years of age. The CO-CDI incidence rate per 100,000 persons was higher in women than men in each age group: 18-39 years (37.3, 95% CI [32.8, 41.8] vs. 21.0 (95% CI [17.6, 24.4]) and 40-64 years (86.4, 95% CI [80.1, 92.8] vs. 56.6, 95% CI [51.2, 61.9]). Similarly, antibiotic prescription rates per 1,000 person-years were higher in women than men in the two respective age groups (1130.9 [95% CI: 1126.4, 1135.3] vs. 529.8 [95% CI: 525.5, 534.1] and 1283.9 [95% CI: 1278.3, 1289.6] vs. 830.9 [95% CI: 825.1, 836.7]). After adjustments for antibiotic prescriptions, there was no significant difference in the incidence rates of CO-CDI per 100,000 persons between women and men 18-39 years of age (33.0 [95% CI: 29.0, 37.0] vs. 39.6 [95% CI: 33.2, 46.0] and 40-64 years old (67.3 [95% CI 62.4, 72.2] vs. 68.1 [95% CI: 61.7, 74.5]).
CONCLUSIONS: Higher crude incidence rates of CO-CDI in women are associated with higher outpatient antibiotic prescription rates.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11788
Abstract Type	Poster
Abstract Title	Management of Extended Spectrum Beta-Lactamase (ESBL)-Producing Proteus Mirabilis in a Long-Term Care Facility in Nebraska

Abstract

BACKGROUND: A cluster of extended spectrum beta-lactamase (ESBL)-producing *Proteus mirabilis* urinary tract infections was reported by Hospital A to be occurring at a long-term care facility, Facility A, in Nebraska. Local health department A (LHD A), the Nebraska Department of Health and Human Services (NDHHS) and the Infection Control Assessment Program (ICAP) team performed a site visit and made recommendations on infection prevention (IP) practices. Cases continued and a repeat visit was made.
METHODS: A team from NDHHS, LHD A, ICAP and ASAP (Nebraska Antimicrobial Stewardship Assessment and Promotion Program) visited Facility A and met with personnel over 2 days for interviews and record review. A review of possible contributing IP concerns and an evaluation of antimicrobial stewardship (AMS) were performed.
RESULTS: Over a 1 year period, there were 27 reports of ESBL-producing *P. mirabilis* with similar resistance patterns from Hospital A, including 23 residents of Facility A. These isolates were resistant to 6 classes (aminoglycosides, cephalosporins, folate-inhibitors, nitrofurantoins, penicillins, and quinolones) of antimicrobials. Initial chart review suggested there may have been an index patient who introduced the pathogen to Facility A. Notably, there were 4 cases reported by Hospital A from patients that live in the region but were not Facility A residents. Although *P. mirabilis* isn't required to be reported to the state, a review of the *P. mirabilis* isolates voluntarily reported state-wide in 2017 found 98% susceptible to ceftriaxone (a proxy marker for ESBL production) compared to 84% based on Hospital A's antibiogram. A number of IP gaps were noted in Facility A that may have facilitated transmission including gaps in cleaning of shared whirlpool devices.
CONCLUSIONS: Our findings suggest this outbreak likely reflects the multiple challenges associated with AMS and IP in a long-term care setting. These facilities can amplify infectious agents due to the presence of inhabitants in close proximity with complex health issues, on multiple medications (including antimicrobials), This investigation provided an opportunity for the mobilization of our ICAP and ASAP (Nebraska Antimicrobial Stewardship Assessment and Promotion Program) team to improve practices (an ongoing effort at Facility A) and the application of our state-wide antibiogram to determine the increased prevalence of this organism both in the surrounding community as well as Facility A.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Antimicrobial Resistance; Healthcare Associated Infections (HAI); Infection Control
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	10828
Abstract Type	Poster
Abstract Title	Validation of Risk Factors for NHSN Colon and Abdominal Hysterectomy Surgical Procedures in Maine Hospitals

Abstract

BACKGROUND: A total of 14 patient, procedure, and facility risk factors are used to calculate the Standardized Infection Ratio (SIR), the risk-adjusted metric used by the National Healthcare Safety Network (NHSN) to track Healthcare Associated Infections (HAIs). This ratio is made available to the public and is used as an indicator of hospital quality by consumers and payers. The objective of this validation was to review a small sampling of surgical procedure risk factors for accuracy and types of errors to determine if a more comprehensive validation should be conducted.

METHODS: Data from NHSN procedure datasets were frozen before the validation was announced so no changes could be made to the data. Nine of the 11 patient and procedure-centric risk factors were evaluated; two risk factors, age and gender, were not included due to restrictions on access to Protected Health Information (PHI). A maximum of two colon and two abdominal hysterectomy procedures, performed between July 2016 and June 2017, were randomly selected from each hospital. Hospitals were asked to submit a copy of the medical record page that contained the risk factor information. Data on each medical record page were compared, manually, to data reported to NHSN. Errors identified were sorted by risk factor and potential for error to decrease or increase surgical procedure risk.

RESULTS: A total of 615 risk factors were reviewed and 43 errors were identified, yielding an accuracy score of 93%. The number of errors by category were: procedure duration (27 errors), body mass index (7), use of scope (3), wound class (3), closure technique (1), diabetic status (1), and wrong procedure reported (1). The percent of errors that decreased or increased surgical procedure risk were 49% (21/43) and 51% (22/43), respectively.

CONCLUSIONS: The accuracy score provided assurance regarding the quality of data being reported by Maine hospitals and identified an opportunity for education to improve procedure duration reporting. The difference in the percent of errors that had the potential to decrease or increase surgical procedure risk did not appear to bias the SIR to the hospital's benefit. The small sample size, however, was not adequate to determine if a single hospital may be using surgical procedure risk factor reporting to deliberately improve their hospital SIR.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Outcome Measures; Surveillance; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11574
Abstract Type	Quick
Abstract Title	An Outbreak of Enterobacter Cloacae Infections Among Patients Receiving Joint Injections at an Outpatient Clinic in Virginia, 2018

Abstract

BACKGROUND: Numerous outbreaks have been associated with unsafe injection practices in outpatient settings. Few outpatient facilities are licensed in Virginia. On October 19, 2018, the Virginia Department of Health (VDH) was notified of a cluster of *Enterobacter cloacae* joint infections in patients identified at an out-of-state hospital September-October 2018. All patients had received steroid injections at one rheumatologist's clinic in Virginia.

METHODS: VDH conducted a site visit October 23, 2018 to observe injection practices, interview staff, collect lidocaine and synthetic corticosteroid vials and alcohol and betadine prep pads, and review medical records of patients with laboratory-confirmed infections. VDH conducted active case finding by interviewing patients who had received steroid injections at the clinic during July–October 2018, querying Virginia's syndromic surveillance system, and requesting that regional hospital and reference laboratories report any detection of *E. cloacae* in wound or joint fluid isolates during July–October. VDH obtained supply invoices identifying vial lot numbers. Virginia's state public health laboratory and CDC performed pulsed-field gel electrophoreses (PFGE) on isolates from seven patients, and open multi-dose medication vials.

RESULTS: VDH observed injection safety breaches at the clinic, including drawing medications in patient rooms, not dating multi-dose vials, and using one syringe across different multi-dose vials. The clinic did not record vial lot numbers by patient. Injections were performed July 11–October 16. VDH reached 87 of 114 (76%) patients who received intra-articular injections at the clinic; two reported unconfirmed symptoms post-injection. *E. cloacae* was detected in nine patients and the open lidocaine vial. PFGE patterns for six patients and the lidocaine isolates were indistinguishable from each other. The seventh patient isolate was highly related. Retrospective surveillance did not identify any additional cases. There were no known reports of product recall or contaminated lidocaine or steroid vials.

CONCLUSIONS: Contamination of lidocaine likely occurred because of injection safety breaches, although the source was undetermined. VDH provided and followed up on these recommendations to the clinic: use single-dose vials whenever possible; draw up medications in a location separate from the patient room; record when multi-dose vials are opened; log vial lot numbers in patient charts; and conduct post-injection surveillance for infection-related symptoms. Active surveillance is ongoing, with no additional cases reported. Clinic practices may not have been unusual, but were lacking regulatory oversight. Education on safe injection practices to outpatient providers and timely reporting of infections may prevent future outbreaks.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infection Control; Outbreaks
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11629
Abstract Type	Quick
Abstract Title	Are Paid Plasma Donors at Increased Risk of Bloodborne Disease Transmission?

Abstract

BACKGROUND: Each year approximately 30 million paid plasma donations are collected in the United States to manufacture plasma protein therapies (PPT). Plasmapheresis is utilized to collect whole blood, plasma is removed for PPT, and remaining components are returned to the donor. Plasma donation centers (PDCs) are not considered healthcare facilities. PDCs are subject to regulations aimed at manufacturers to ensure safe blood products and preventing worker exposure to bloodborne pathogens (BBPs). Following a report of poor glove change practices at two PDCs, we initiated an investigation into their infection prevention (IP) practices; we also sought to gain a general understanding of PDC practices and regulations, as well as populations served by PDCs in Colorado.
METHODS: Phone (two PDCs and corporation) and onsite (one PDC) assessments of IP practices were completed, including hand hygiene (HH), standard operating procedures (SOP), plasmapheresis equipment cleaning, and donor screening. We reviewed current Colorado public health hepatitis B (HBV) and hepatitis C (HCV) surveillance methods. We compared census tract poverty level with locations for all PDCs with paid donors in Colorado.
RESULTS: Assessments identified deficient HH and glove change practices, and HH supplies were not readily available. There was little physical separation between donors, and equipment and donor beds were not cleaned/disinfected between uses. Colorado corporate SOP for HH, glove use and disinfection/cleaning were reviewed and consistent with facility assessments. In Colorado, investigation of HBV and HCV cases reported to public health via surveillance includes follow-up of acute cases with positive confirmatory results, but patients interviewed are not routinely asked about plasma donation. Since PDC donor screening includes only antibody testing, and follow-up confirmatory testing does not typically occur at the PDC, disease surveillance does not currently identify most confirmed cases identified from plasmapheresis. Of 18 paid-donor PDCs in Colorado, 72% are located in areas with the highest levels of poverty.
CONCLUSIONS: IP assessments identified gaps that might place plasma donors at increased risk of BBPs, but current surveillance systems are inadequate to detect cases of BBPs associated with PDCs; we are exploring methods to improve identification of HBV and HCV cases following plasma donation. Current Colorado and federal regulatory oversight focuses on recipient and healthcare worker safety, and paid donors, who might be disproportionately disadvantaged socioeconomically, are likely unaware of possible increased risk for BBPs given current IP practices. Additional assessments of broader PDC practices are necessary to understand the full BBP risk to plasma donors.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infection Control; Social Inequalities
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11824
Abstract Type	Quick
Abstract Title	Bacterial Infections Post-Stem Cell Product Procedures, Texas 2018

Abstract

BACKGROUND: On September 17, 2018 the Texas Department of State Health Services (DSHS) received notification of three patients that had developed *Enterobacter cloacae* and *Citrobacter freundii* bloodstream infections after having non-FDA-approved umbilical cord blood-derived stem cell product procedures at the same outpatient clinic. Due to the concern for additional affected patients, DSHS collaborated with the CDC to identify other patients and potential sources of contamination.
METHODS: Patient isolates and remaining product from the same lot that was used on the affected patients were submitted for PFGE and whole genome sequencing (WGS). An epidemiologist certified in infection control conducted two onsite assessments at the outpatient clinic to review infection control practices. Case finding methods included a call-for-cases, investigating reported suspect cases, and active case finding. Active case finding was conducted by contacting the 67 facilities in Texas that received the product of interest between 02/01/18 and 09/26/18 and inquiring about post-procedural complications. Facilities were instructed to avoid using remaining product. If patients were reported as having complications, their medical records were reviewed to determine if they developed a post-procedural bacterial infection that met case definition.
RESULTS: All three index patient isolates of *E. cloacae* had identical PFGE patterns. Six unopened product vials were tested and all grew *E. cloacae* and *C.freundii* ; WGS testing showed that all 9 isolates were highly related to each other. During the onsite assessments at the outpatient clinic, multiple opportunities for improvement were observed and recommendations were provided. Working with 23 health department jurisdictions, contact was made with 61(91%) of the 67 facilities that received the stem cell product of interest. From the 61, 54 (88.5%) reported post-procedural status of a total 321 patients. Five additional patients were identified through case finding and met case definition, bringing the total number of confirmed cases to 8. These 8 cases were identified from 4 (7.4%) different facilities. All cases required hospitalization. In addition to the confirmed cases, four suspect cases were investigated and ruled-out.
CONCLUSIONS: Results of laboratory testing suggest a common source and that these bacterial infections may have occurred due to contamination of the products prior to distribution. Total case count in Texas remains unknown due to optional self-reporting by facilities and patients. Having standard procedures in place for large-scale active case finding aided this investigation. We were able to highlight the importance of large-scale case finding methods during suspected product contamination investigations.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infection Control; Epidemiology
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11224
Abstract Type	Quick
Abstract Title	Collaborative Effort between Regulatory and Epidemiology to Improve Hospital Infection Control Program for Surgical Services

Abstract

BACKGROUND: Historically, the Indiana State Department of Health (ISDH) Health Care Regulation Commission has been able to issue citations; however, the regulatory commission cannot provide educational assistance for improvement. With the help of the regulatory commission, the ISDH Epidemiology Resource Center (ERC) was able to assist on an investigation that resulted in an immediate jeopardy. Immediate jeopardy is defined as actions likely to cause serious harm, injury, impairment or death to an individual.
METHODS: The ISDH Healthcare-Associated Infections (HAI) Epidemiologist received a notification from a hospital infection preventionist (IP) of multiple surgical site infections and improper infection control practices. The IP was facing leadership support challenges; therefore, the HAI Epidemiologist and regulatory commission contact submitted a complaint in order for all pertinent information regarding the complaint to be deemed as high priority. Within three days, an onsite visit was scheduled to review patient records and observe practices in the surgical services and sterile processing department.
RESULTS: The pre-existing relationship between the ISDH ERC and the regulatory commission allowed the HAI Epidemiologist to gain an understanding of the surveying process and complaint submission procedures to demonstrate the urgency of the issue. The regulatory nurse was able to rely on the HAI Epidemiologist for specific knowledge regarding surgical site infection (SSI) classification and issues identified in the sterile processing department. Throughout the process, consistent communication was maintained with the regulatory nurse to ensure understanding of evidence-based best practices.
CONCLUSIONS: Collaboration between regulatory and epidemiology enhanced and improved the investigation of an immediate jeopardy. The HAI Epidemiologist helped the hospital to better understand the citations issued as a result of infection prevention breaches and to identify opportunities for improvement. Ultimately, the hospital was able to make informed decisions based on evidenced-based best practices that led to improved patient safety. This process allowed for continued and future collaboration between regulatory and epidemiology to maximize efforts for overall HAI reduction.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Infection Control; Communication; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11133
Abstract Type	Quick
Abstract Title	Community-Associated Clostridium Difficile Infection and Antibiotic Exposure — Minnesota, 2009–2016

Abstract

BACKGROUND: Community-associated (CA) *Clostridium difficile* infections (CDIs) account for an increasing proportion of CDIs nationally. Prior antibiotic use is a known risk factor for CA-CDI. We sought to identify other risk factors by comparing CA-CDI patients with antibiotic use in the prior 12 weeks to those without antibiotic use.

METHODS: We analyzed Minnesota Department of Health active population- and laboratory-based CDI surveillance data from 2009-2016. A CA-CDI case was defined as a *C. difficile* -positive specimen collected as an outpatient or ≤3 days of hospitalization from a person aged ≥1 year who resided in 1 of 5 sentinel counties and did not have CDI in the prior 8 weeks or an overnight stay in a healthcare facility in the prior 12 weeks. We limited our analysis to cases with negative laboratory results for other enteric pathogens and with symptoms consistent with CDI. CA-CDI contributing factors were ascertained by reviewing medical records and patient interviews.

RESULTS: Of 2,679 CA-CDI cases, 1,514 (56.5%) were included in the analysis. Antibiotics were not used prior to infection in 749 (49.5%) CA-CDI patients. Compared with patients with prior antibiotic use, patients without antibiotic use were younger (median age: 48.5 years versus 56 years, P <.001), more likely male (40.9% versus 35.0%, P <0.05), have preexisting inflammatory bowel disease (IBD) (11.1% versus 5.9%, P <.001), take antidiarrheal medications (11.3% versus 7.1%, P <0.05), and had animal exposures (11.5% versus 9.6%, P <0.05). In a multivariate model including these significant variables, being younger (P <.05) and having preexisting IBD (P <.005) were more likely in CA-CDI patients without prior antibiotic use before CDI.

CONCLUSIONS: After exploring potential exposures, we identified CA-CDI patients without prior antibiotic use were more likely to have preexisting IBD diagnosis. This novel finding warrants further investigation as does consideration of other unexplored risk factors.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Risk Factors; Infectious Diseases; Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	10588
Abstract Type	Quick
Abstract Title	Dialysis Event Surveillance and Epidemiology in Philadelphia, PA

Abstract

BACKGROUND: Hemodialysis patients are at risk for bloodstream infections (BSIs) and are often prescribed antibiotics for suspected infection. Most hemodialysis-related BSIs are preventable when infection control guidelines are followed. Hemodialysis facilities are required to report dialysis events (DEs) [BSIs, intravenous antimicrobial starts (IVASs), and suspected infections (pus, redness, or increased swelling at vascular access site)] to the National Healthcare Safety Network (NHSN); these events are monitored by the Philadelphia Department of Public Health.

METHODS: We analyzed 42 months of data from NHSN, including DEs and facility characteristics as reported on the 2018 *Outpatient Dialysis Center Practices Survey* . Citywide rates were calculated as the total count of an event over the number of patient-months reported and standardized infection ratios (SIRs) were calculated. Rates were stratified by vascular access type and assessed over time. Analyses were conducted using SAS v.9.4.

RESULTS: A total of 54 facilities were operational in 2018 and completed the survey; all were included in the January 2015-June 2018 event analysis. Most facilities were for-profit (94.3%) and part of a national chain (96.2%). The median number of dialysis stations and patients treated per facility were 21 (IQR=16-24) and 73 (IQR=50-88), respectively. A total of 3,958 DEs were reported, including 937 BSIs, 3,608 IVASs, and 531 suspected infections. Approximately three-quarters of all BSIs (699,74.6%) were related to the access site. The Citywide rate over the study period was 0.67 per 100-patient months for BSI and 2.59 per 100-patient months for IVAS. Of all IVASs, 75.7% included vancomycin. BSI rates in patients with a fistula or graft compared to a central line (CL) were 0.24 and 3.05 per 100 patient-months, respectively ($p<0.0001$). IVAS rates in fistula or graft patients compared to CL patients were 1.56 and 8.26 per 100 patient-months, respectively ($p<0.0001$). The distribution of BSI SIRs was positively skewed with a median of 1.02 (IQR=0.71-1.47). The most commonly identified organism among BSIs was *Staphylococcus aureus* (23.82%).

CONCLUSIONS: Dialysis event rates were significantly higher in CL patients. Prevention efforts should target the reduction of CL usage in an effort to reduce BSIs and antibiotic use. When antibiotics were prescribed, the majority involved vancomycin. While this is likely related to the incidence of *Staphylococcal* infections, prescribing should be closely monitored due to associated nephrotoxic side effects. Future work should explore facility-level data to identify outlier facilities who contribute the highest burden of infection and prescribing; these facilities should be the priority for prevention and intervention efforts.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Surveillance; Healthcare Associated Infections (HAI); Epidemiology
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	10769
Abstract Type	Quick
Abstract Title	Estimating Time between Central Line-Associated Bloodstream Infection Events

Abstract

BACKGROUND: Acute care hospitals submit central line-associated bloodstream infection (CLABSI) data to the Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN) in accordance with state and federal requirements, most of which went into effect between 2006 and 2010. The duration and scope of NHSN's CLABSI surveillance coverage enable use of the CLABSI data to evaluate potential value of Time Between Events (TBE) as a complement to the standardized infection ratio (SIR) summary measure. Use of TBE monitoring has yielded benefits for quality measurement when applied to non-healthcare, successive adverse events, but further study is needed to establish whether similar benefits can be achieved when TBE monitoring is applied to CLABSIs or other healthcare-associated infections (HAIs).

METHODS: We calculated TBE for 25,823 CLABSI events reported to NHSN in 2017 for hospital patient care locations, i.e., ICUs and select ward types, reporting ≥50 CLABSIs. The Geometric distribution was used to model TBE data for several types of patient care locations and needle plots were used to assess adequate fit. Key features of this modeling are probability limits for TBE and the probability of CLABSI occurring on any given day were estimated from fitted Geometric distributions and these were compared among location types.

RESULTS: Probability estimates of a CLASBI occurring among ICU patients on a given day ranged from p=0.0377 for medical ICUs to p=0.012 for neurologic ICUs. Among surgical, medical/surgical, and medical wards, the probability was p=0.0112, 0.0141 and 0.0141 (Figure 1), respectively. T-chart upper probability limits ranged from 137 days for Medical ICUs (Figure 2) to 437 days for neurologic ICUs and ranged from 372 to 471 among the select wards.

CONCLUSIONS: TBE analysis provides a way to estimate the probability that a CLABSI will occur on any given day, which in turn enables predictions of the likelihood of such rare events. This probability estimate is identical to the prevalence of CLABSI which is useful to assess prevention progress among applicable patient care locations. Implementation of T-charts with lower and upper probability limits could help healthcare staff better track CLABSI TBE and set prevention targets among these patient care locations and be used as an additional national benchmark. Furthermore, mean TBE across patient care locations could also be used for external comparison and help to produce a complimentary metric for performance measurement.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11660
Abstract Type	Quick
Abstract Title	Evaluation of Invasive Methicillin-Resistant Staphylococcus Aureus (MRSA) Reporting from Hospitals in Allegheny County, Pennsylvania – April 2017 through March 2018

Abstract

BACKGROUND: An estimated 72,000 invasive MRSA cases occurred in the United States in 2014. That same year, the Allegheny County Health Department (ACHD) made invasive MRSA a reportable condition. No evaluation of the invasive MRSA reporting system had been conducted since its inception. Our investigation involved three main objectives based on the Centers for Disease Control and Prevention's surveillance system evaluation guidelines: 1) to assess the completeness and timeliness of invasive MRSA reports, 2) to compare hospital reports of MRSA septicemia to hospitalizations involving MRSA septicemia, and 3) to assess perceived barriers to invasive MRSA reporting.

METHODS: To measure data quality, all variables were checked for completeness. Average time from culture to report was used to characterize timeliness. To assess representativeness, the number of reported positive MRSA blood cultures was compared to the number of hospital discharges with a primary or secondary ICD-10 code for MRSA septicemia (A41.02) from April 2017 through December 2017. The Pennsylvania Health Care Cost Containment Council provided hospital discharge data. Phone interviews with hospital infection preventionists (IPs) were conducted to understand the barriers to complete reporting.

RESULTS: ACHD received 144 reports of invasive MRSA from April 2017 through March 2018 for an incidence of 11.8 cases per 100,000 persons. No clusters were identified. Completeness of demographic variables was high (<10% missing), except for ethnicity (49% unknown, 31% missing). Incomplete surveillance variables included reporting facility (46% missing), admitting facility (45% missing), and surgical history (40% unknown). The median number of days between culture and report was 7 (IQR=4-25). There were 167 hospital discharges with an MRSA septicemia diagnosis code and 102 surveillance system reports from April 2017 through December 2017. Of 21 hospitals treating ≥1 patient with an MRSA septicemia diagnosis code, 12 (57%) reported cases to ACHD's system. Two hospitals did not discharge any patients with an invasive MRSA diagnosis but reported cases to the system. IPs thought the system was user-friendly but identified finding time and locating the form as reporting barriers. IPs believed that invasive MRSA data are valuable, but they rarely received surveillance feedback.

CONCLUSIONS: Not all hospitals are reporting invasive MRSA cases; providing IPs with consistent surveillance summaries may encourage timely reporting. Other recommendations for system improvement include making reporting facility a required field, interviewing IPs from all non-reporting facilities to understand and address outstanding barriers, and making the report form more accessible on ACHD's website.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Evaluation; Electronic Case Reporting; Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11463
Abstract Type	Quick
Abstract Title	External Validation of Massachusetts 2017 Clostridium Difficile Data Reported By Long-Term Care Facilities (LTCFs) through the National Healthcare Safety Network (NHSN)

Abstract

BACKGROUND: Since 2013, the Massachusetts Department of Public Health (MDPH) has received Epidemiology and Laboratory Capacity (ELC) cooperative agreement funding to conduct external validation of acute care hospital (ACH) NHSN data. The purpose of external validation is to assess reporting completeness and accuracy, promote correct application of surveillance definitions and educate on common reporting errors. In collaboration with the New England Healthcentric Advisors QIN/QIO, over 90 LTCFs in Massachusetts have enrolled in NHSN and report *Clostridium difficile* (CDI) Laboratory Identified (LabID) event data. Due to evidence of multidrug-resistant organism and CDI transmission across the continuum of care, MDPH validated CDI LabID event data in both the ACH and LTCF settings.
METHODS: Reporting of CDI data to NHSN using standardized surveillance definitions is required of Massachusetts ACHs and voluntary for Massachusetts LTCFs. The ten LTCFs selected for CDI validation included those with complete NHSN CDI data for the first six months of 2017 and identified as a transferring or receiving facility by one of the validated ACHs. Selected LTCFs provided MDPH with a complete list of positive and negative CDI laboratory results collected in 2017. On-site validations consisted of medical record review of all positive CDI laboratory results. Appropriate NHSN CDI reporting definitions and discrepant validation findings were discussed with facility staff.
RESULTS: Prior to MDPH's validation, only two of the ten selected LTCFs had reported at least one CDI event in NHSN (total of 11 events). Completion of ten LTCF validations resulted in review of 57 records (range: 1-19). Thirty-four CDI events were identified as missed, meaning the facility did not correctly report the positive result as an event in NHSN (range: 1-7, sensitivity=24%, specificity=100%). Only one facility correctly reported zero CDI events. In addition, MDPH identified three discrepant event details among events reported in NHSN, including two discrepant specimen dates and one incorrect resident ID.
CONCLUSIONS: Based on Massachusetts' external validation, many LTCFs are not correctly reporting CDI events in NHSN resulting in an underestimate of the burden of disease in these settings. MDPH created resource materials and conducted an educational webinar to address common misunderstandings in CDI NHSN reporting. These findings also suggest the need for additional and ongoing external validation of data as part of the CDC, CMS, and QIN-QIOs CDI Reporting and Reduction Project. MDPH will continue to conduct external validations of CDI NHSN data among twenty additional LTCFs in 2019.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Surveillance; Data Collection
Consider for Different Presentation?	Yes
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Institution Affiliation	Massachusetts Department of Public Health State Public Health Agency

Submission Type	Breakout/Quick/Lightning/Poster
ID	11173
Abstract Type	Quick
Abstract Title	KPC-Producing Pseudomonas Aeruginosa Outbreak, Houston, Texas, 2018

Abstract

BACKGROUND: The Texas Department of State Health Services (DSHS) Laboratory is funded to perform mechanism testing on carbapenemase-producing organisms, including *Pseudomonas aeruginosa* , as part of CDC's Antibiotic Resistance Lab Network (ARLN). In June and August 2018 DSHS identified four cases of *Klebsiella pneumoniae* carbapenemase (KPC)-producing carbapenem-resistant *Pseudomonas aeruginosa* (KPC-CRPA) from the Houston region. One of the isolates was non-susceptible to all antibiotics tested. Infections caused by KPC-CRPA are uncommon in the United States. Initial investigations did not identify common exposures among the cases. An additional outbreak investigation was conducted.
METHODS: The outbreak investigation included the patients' healthcare visits in the previous six months. A total of 10 facilities were identified in the healthcare lookback . One of the facilities was a long-term acute care hospital (LTACH) where three of the four patients were admitted to several months prior to the culture collection dates. The other facility was a long-term care facility (LTCF), where two of the patients resided with overlapping stays prior to the positive KPC-CRPA cultures. Both facilities conducted point prevalence screenings (PPS), and the LTACH began performing admission screenings.
RESULTS: The DSHS Laboratory performed PFGE on KPC-CRPA isolates from the index cases, which showed three distinct patterns with 90% relatedness according to the Dice comparison. Infection control assessments at both the LTACH and LTCF identified minor lapses in infection control. Two separate PPS of 36 swabs at the LTCF revealed one positive KPC-*Klebsiella pneumonia* e case. Four separate PPS were performed over a two-month period at the LTACH and 30 swabs were collected; 12 swabs were positive for KPC: 2 for KPC-CRPA, 1 for KPC-*Escherichia coli* , 6 for KPC-*Klebsiella pneumoniae* , and 3 for KPC with no organism identified. Of the two KPC-CRPA identified from PPS at the LTACH, one matched the PFGE pattern of the index cases, and the other strain was a new, highly-related pattern. Out of 9 admission screenings at the LTACH, one was positive for KPC. Best practices in infection control were implemented at the facilities.
CONCLUSIONS: Admission screenings and PPS at the LTACH uncovered ongoing transmission of KPC-CRPA. The facility increased environmental disinfection and performed staff re-education on basic infection control practices. These small but important interventions are believed to be responsible for the decrease in new cases. One newly related case of KPC-CRPA was found in the geographic region from prospective surveillance.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Antimicrobial Resistance; Healthcare Associated Infections (HAI); Infection Control
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	10955
Abstract Type	Quick
Abstract Title	Large-Scale Patient Notification Event Following Improperly Reprocessed Surgical Equipment - Colorado, 2018

Abstract

BACKGROUND: In February 2018, the Colorado Department of Public Health and Environment (CDPHE) was notified of infection control breaches related to improperly sterilized surgical equipment at a large metropolitan hospital. CDPHE initiated a disease control investigation to determine if patients who underwent surgery were at risk of acquiring bloodborne pathogens (BBPs) or surgical site infections (SSIs). The risk of disease transmission due to this type of Category B infection control breach was unknown but thought to be low.

METHODS: CDPHE interviewed facility staff from the perioperative (OR) and the sterile processing department (SPD). Facility records including facility occurrence reports, SSI data, immediate use steam sterilization (IUSS) logs and data, OR instrument case reports, and data from a quality improvement project on instrument pre-cleaning/decontamination were collected. Additionally, CDPHE staff conducted infection prevention site visits to observe decontamination and sterilization processes. Finally, CDPHE staff reviewed 2015-2017 data from the National Healthcare Safety Network (NHSN) for SSIs at the facility.

RESULTS: Facility occurrence reports detailed instances of visible bioburden following sterilization on orthopedic and spine surgical instruments from January 1, 2017, to April 2, 2018. The contaminants included bone, blood, cement, black residue, a dead insect and hair. IUSS data from the facility showed IUSS use increased from 2.35% to 4.75% in fiscal year 2017. Interviews with facility staff revealed orthopedic/spine OR staff were not properly wiping down instruments or applying enzymatic cleaner after use, allowing for bioburden to dry on equipment. The SSI standardized infection ratios (SIRs) from 2015-2017 indicated no statistically significant difference between the facility's observed and predicted number of infections using the 2015 national baseline. On March 29, 2018, CDPHE recommended the facility notify orthopedic/spine (including neuro/spine) surgical patients of the possible risk of SSIs and BBPs. Following the initial notification, the facility reported additional issues with a residue on surgical equipment leading to the closure of their ORs and the identification of a second cohort to receive SSI and BBP risk notification. A total of 6,043 patients were notified.

CONCLUSIONS: The investigation details the first patient notification event by CDPHE resulting from a sterilization breach of improperly decontaminated and sterilized surgical equipment. CDPHE was unable to quantify individual patient risk. Determining the appropriate cohort to notify involved complex discussions regarding risk stratification among surgical service lines and exposure periods. The investigation revealed the importance of pre-cleaning surgical instruments at the point of use and following manufacturer's instructions.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11564
Abstract Type	Quick
Abstract Title	Lessons Learned from Validation of Electronically-Submitted National Healthcare Safety Network (NHSN) Antimicrobial Use (AU) Option Data

Abstract

BACKGROUND: Hospital participation in the Centers for Disease Control and Prevention's (CDC's) National Healthcare Safety Network (NHSN) Antimicrobial Use (AU) surveillance increased exponentially over the last two years, with over 1,100 facilities submitting AU data to NHSN as of December 2018. The NHSN AU Team works closely with hospital participants to identify and mitigate data errors. These data validation activities prompt corrections to erroneous data and serve as guidance for the NHSN AU Team as it develops its technical support. Based on these activities, the NHSN AU Team will provide data validation targets for state and local health departments to establish and extend their roles in AU surveillance and antimicrobial stewardship.
METHODS: The NHSN AU Team analyzed AU data submitted to NHSN between January 1, 2016 and March 31, 2018. The NHSN AU Team identified and categorized data errors with SAS to pinpoint opportunities for targeted outreach and improvement.
RESULTS: The NHSN AU Team notified 474 hospitals with potential data quality issues in antimicrobial days (i.e., numerator data) and days present (i.e., denominator data). The most common numerator errors were: • More antimicrobial days than days present
• More antimicrobial days than the sum of the routes of administration
• Off-label use of certain antimicrobials
• Zero antimicrobial days across all antimicrobials
• Large variance in antimicrobial days from month-to-month
• Equal use of related drugs piperacillin and piperacillin/tazobactam
• Use of antimicrobials discontinued by the manufacturer
The most common denominator errors were: • Days present less than patient days reported for healthcare-associated infections within a patient care location
• Zero days present when antimicrobial days reported
• Large variance in days present from month to month

CONCLUSIONS: NHSN AU surveillance leverages electronic data capture and reporting by hospital participants, which avoids dependence on manual surveillance processes but requires data validation. The NHSN AU Team's protocols allow hospitals to validate their AU data collection processes and outputs before submitting AU data. These protocols are an important resource for data quality assurance; however, the analysis suggests additional steps to ensure data validity during the AU data submission process. State and local health departments should incorporate data validation that focuses on common errors as they define and develop their roles in AU surveillance and antimicrobial stewardship. Data validation by state and local partners complements CDC's efforts to assure high quality AU data are available for analysis and action at all jurisdictional levels.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Antimicrobial Resistance; Evaluation; Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11453
Abstract Type	Quick
Abstract Title	Leveraging Syndromic Surveillance for Automated Notification of Extensively Drug-Resistant Organisms (XDRO) upon Admission to Illinois Hospitals

Abstract

BACKGROUND: Illinois' XDRO Registry maintains a database of patients reported to have XDROs, including highly resistant Enterobacteriaceae and *Pseudomonas aeruginosa* , and *Candida auris* . Since 2015, 67 Illinois hospitals have been connected to its automated alert system, which notifies infection prevention staff when a patient with an XDRO is admitted to their facility. To receive alerts, facilities periodically send a direct feed of inpatient admissions (usually batch uploaded every 15-30 minutes) to Illinois Department of Public Health (IDPH) to be matched against XDRO registry patients. The facility's IT department creates admission files, and through sFTP, interfaces with the registry. This process can be burdensome for local personnel and require technical assistance from XDRO staff. Separately, IDPH established a syndromic surveillance system that requires acute-care hospitals to report emergency department (ED) encounters in near real-time. IDPH expanded syndromic surveillance reporting to include inpatient admissions and patient identifiers, allowing it to be leveraged for automated alerts. Reuse of the existing syndromic surveillance system provides efficiencies in generating automated alerts.
METHODS: In 2018, inpatient admissions from syndromic surveillance at 20 hospitals were matched to XDRO registry patients based on name and birthdate. Matches that generated an alert were recorded in a database. For 12 hospitals already receiving alerts via direct feed, we compared the two methods of generating alerts. Additionally, two facilities manually validated a list of patients who triggered alerts against their hospitals' inpatient records.
RESULTS: From 3/16/2018–8/4/2018, 421 alerts were generated for the 20 test facilities from syndromic surveillance feeds. For 12 sites already receiving alerts, 298 syndromic surveillance alerts were generated vs. 156 direct feed alerts. The direct feed for several of those sites was known to be missing inpatient admissions, including patients admitted through the ED. For the two validation facilities, 82 of 83 (99%) alerts were sent for the correct patients. All 185 Illinois hospitals participate in syndromic surveillance. Of these facilities, 71 included all elements necessary for XDRO alerts in their syndromic surveillance feed and could be connected with minimal time or burden. A pilot with 10 sites is expected to start January 2019.
CONCLUSIONS: Using syndromic surveillance has the potential to rapidly expand XDRO alerting to all Illinois hospitals with more complete admission data and minimal resource investment from their IT departments. In the future, IDPH plans to expand the use of syndromic surveillance reporting to other diseases and public health purposes.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Syndromic Surveillance; Antimicrobial Resistance; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	Yes
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Submission Type	Breakout/Quick/Lightning/Poster
ID	11333
Abstract Type	Quick
Abstract Title	The Impact of Infection Control Assessment and Response (ICAR) Visits on Hospital Infection Rates

Abstract

BACKGROUND: In 2016-17, the Los Angeles County Department of Public Health (LAC DPH) performed ICAR visits in LAC hospitals to assess infection prevention (IP) practices and identify areas for improvement. The objective of this project was to determine the impact of the ICAR visits on healthcare-associated infection rates in participating hospitals.
METHODS: Hospitals were targeted based on current National Healthcare Safety Network (NHSN) data, plus volunteer facilities. Using modified CDC tools, the visits included a review of IP policies, direct observations of practices, and recommendations for improvement. Infection data were obtained via NHSN. Quarterly standardized infection ratios (SIRs) were calculated for all LAC general acute care hospitals for CLABSI and CDI for one year prior to each visit and four quarters following the visit. 2016Q3 was used as time 0 for non-ICAR hospitals as it was the midpoint between the first and last visits. A repeated measures ANOVA was used to compare SIRs of ICAR to non-ICAR hospitals. Analysis were conducted using SAS 9.4. Hospitals unable to generate an SIR in NHSN were excluded. Follow-up calls one year after the visit assessed the effectiveness and changes made following the visit.
RESULTS: Nineteen ICARs were performed from January 2016-February 2017. From follow-up calls, we found all hospitals found the visit beneficial and made recommended changes to their IP program. Overall, county-wide CLABSI and CDI SIRs decreased, with ICAR hospitals showing a more dramatic decrease. For CLABSI, 90% of ICAR hospitals demonstrated a decreased SIR between one quarter before and four after intervention, with an overall average change of -0.57. In comparison, the non-ICAR average change was -0.18. For CDI, 60% decreased their SIR after four quarters, with an overall average change of -0.17; compared to -0.24 for non-ICAR hospitals. Compared to non-ICAR hospitals, ICAR hospitals had a lower average SIR one year post intervention (0.84 vs. 1.17 for CLABSI, 0.94 vs. 1.03 for CDI); however, the ANOVA test showed no statistical significance when comparing average SIRs one year before and one year after intervention between the two groups; CLABSI p=0.25, CDI p=0.28.
CONCLUSIONS: Overall, CLABSI and CDI rates are decreasing across LAC through combined efforts of public health and individual facilities. The analysis shows that intervention from public health can help to reduce rates faster; however, the change may not be implemented immediately, and continued outreach may be needed to maintain progress.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infection Control; Surveillance
Consider for Different Presentation?	Yes
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Submission Type	Roundtable
ID	10898
Abstract Type	Roundtable
Abstract Title	A New Framework for Patient Notifications of Infection Control Breaches and Outbreak Investigations in Healthcare Settings

Abstract

Key Objectives:
Discuss upcoming updates to CDC's new patient notification framework for healthcare-associated outbreaks; discuss reasons for patient notification; share some commonly encountered scenarios and, as a group, apply the updated framework.

Brief Summary:
Deciding if, when, and how to notify patients about infection control breaches or healthcare-related outbreak investigations can be very challenging. Public health agencies play a critical role in helping assess communication needs under these circumstances. Healthcare providers often have to weigh the potential risks to patients against the perceived risk to the provider's reputation, although it is usually impossible to quantify either. Additionally, the needs of stakeholders, including patients, providers, public health, and the public may not always align. In 2008, CDC published a patient notification framework which focused on bloodborne pathogen exposure risks and defined Category A ("gross error or demonstrated high-risk practice, generally relating to bloodborne pathogen exposure") and Category B (lower likelihood of blood exposure) infection control breaches. We will discuss upcoming updates to this framework, including the expansion of the framework to include bacterial pathogens, notification during an outbreak investigation, and recent research into the benefits of patient notification to protect patients. We will discuss reasons for patient notification, including the need for patient action (e.g., diagnostic testing), the need for public health actions (e.g., case finding, cohorting, product recall), and transparency. We will share some commonly encountered scenarios and, as a group, apply the updated framework. Finally, we will discuss how this revised framework relates to the work of the Council on Outbreak Response: Healthcare-Associated Infections and Antimicrobial-Resistant Pathogens (CORHA).

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Communication; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	No
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Submission Type	Roundtable
ID	11476
Abstract Type	Roundtable
Abstract Title	A Tale of Two State Health Departments: Building Robust Capability to Respond to Cases and Outbreaks of Invasive Group a Streptococcus in Long-Term Care Facilities

Abstract

Key Objectives:

• Discuss jurisdictional experiences and lessons learned when responding to cases and outbreaks of invasive Group A streptococcal (GAS) disease in long-term care facilities.

• Share GAS toolkits and resources developed by PA and NC state health department staff.

• Identify strengths and weaknesses of available resources and identify opportunities for improvement or development of additional resources to promote best practices and a robust response to GAS long-term care setting investigations in the absence of published CDC guidelines

Brief Summary:

Group A *Streptococcus* (GAS) infection can result in severe and life-threatening illness, particularly in people aged≥65 years. Given risk factors inherent to long-term care settings, residents are particularly vulnerable to severe sequelae from GAS infection. Therefore, the CDC recommends that even one case of invasive GAS in a long-term care facility should prompt an epidemiological investigation. Outbreaks in long-term care facilities can result in high morbidity and mortality and might result in a large-scale response involving multiple stakeholders. Epidemiologists from Pennsylvania and North Carolina state health departments will share toolkit resources created to promote a standardized and robust response to invasive GAS in long-term care settings. Resources include investigation algorithms based on draft CDC guidelines; template facility letters; prospective surveillance/symptom identification log; outbreak line list; wound care observation checklist; throat culture collection guidelines; normally sterile site list; antibiotic recommendations for decolonization of carriers; transmission-based precautions for GAS; guidance for restriction of visitors and new admissions during GAS outbreaks; and training webinar slides. During this roundtable, participants will review the toolkits and discuss how their jurisdictions identify and investigate cases or outbreaks of invasive GAS in long-term care settings. Participants will also have an opportunity to provide feedback regarding toolkit strengths and weaknesses, identify additional resource needs, and discuss best practices. Participants will be provided with toolkit resources for implementation in their jurisdictions.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Healthcare Associated Infections (HAI); Infectious Diseases; Epidemiology Capacity
Consider for Different Presentation?	No
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Submission Type	Roundtable
ID	11369
Abstract Type	Roundtable
Abstract Title	Council for Outbreak Response: Healthcare-Associated Infections and Antimicrobial Resistant Pathogens (CORHA) – Progress and Updates

Abstract

Key Objectives:
Participants will hear about the priorities of the Council for Outbreak Response: Healthcare-Associated Infections and Antimicrobial Resistant Pathogens (CORHA), learn about new products developed by CORHA, including work from CORHA's new Workgroup focused on legal and policy considerations related to outbreaks of healthcare-associated infections, and participate in a discussion about future product needs relating to outbreak detection, reporting, investigation, and control.

Brief Summary:
Healthcare-associated infections (HAIs) including antimicrobial-resistant (AR) pathogens cause hundreds of thousands of illnesses and deaths among U.S. patients each year. Despite significant progress, patients are still experiencing preventable harms in the context of outbreaks and other adverse events that stem from delayed recognition of emerging infectious diseases with potential for healthcare transmission, unsafe healthcare practices, contaminated drugs, and medical device risks. Consistent and coordinated approaches are needed to speed up detection of new threats, develop tools to support outbreak investigation, stop outbreaks from spreading, and better inform prevention activities. To address these needs, CDC's Division of Healthcare Quality Promotion (DHQP) funded the Association of State and Territorial Health Officials (ASTHO) and the Council of State and Territorial Epidemiologists (CSTE) to co-lead CORHA. CORHA members include ASTHO, CSTE, CDC, and the National Association of County and City Health Officials (NACCHO), Association for Professionals in Infection Control (APIC), Society for Healthcare Epidemiology of America (SHEA), US Food and Drug Administration (FDA), the Centers for Medicare and Medicaid Services (CMS), and the Association of Public Health Laboratories (APHL). CORHA is a multi-sector collaboration representing the interests of public health and healthcare stakeholders, including healthcare consumers, the medical community, state, local, and territorial public health authorities, professional associations, clinical and public health laboratories, and federal agencies with an interest in HAI and AR prevention and control. Since the 2018 CSTE Annual Conference, CORHA launched a newsletter to highlight CORHA products, outbreak-related news and journal articles, and partner spotlights, developed a series of outbreak detection and response and investigation and control products, and began addressing new topics related to the policy and laboratory aspects of healthcare-associated and antimicrobial resistant organism outbreak response. During this roundtable session, CORHA members will describe newly developed products and discuss new activities— particularly as it relates to developing standards for consistent reporting, notification and public disclosure of HAI outbreaks—with session participants.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Antimicrobial Resistance; Infection Control; Outbreaks
Consider for Different Presentation?	No
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Submission Type	Roundtable
ID	11395
Abstract Type	Roundtable
Abstract Title	Future Development of Applied Public Health Healthcare-Associated Infection/Antibiotic Resistance Workforce: Discussing the Benefits of Certification in Infection Prevention & Control

Abstract

Key Objectives:
Roundtable participants will discuss the importance of public health healthcare-associated infection and antibiotic resistance (HAI/AR) epidemiology staff pursuing professional certification in infection prevention and control (CIC).

Brief Summary:
Historically, the Centers for Disease Control and Prevention (CDC) Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement has focused primarily on surveillance activities. In recent years, an emphasis has been placed on the identification and remediation of gaps and breaches in infection control. The issues identified by public health cross the continuum of care and require evidence-based interventions. A well-trained public health workforce is required to ensure ethical principles are applied in collection, analysis, maintenance, and use of data and information. Obtaining the CIC is a strategy that can assure the level of expertise needed to address the complicated issues identified in healthcare facilities. Certification by the Certification Board of Infection Control and Epidemiology (CBIC) is viewed as a metric of knowledge and assures competency in the field of infection control. Many healthcare facilities require infection preventionists (IPs) to obtain certification; however, it has not been as widely recognized in public health. This round table will provide participants the opportunity to discuss the importance of certification in HAI/AR prevention programs and develop strategies for obtaining CIC. The goal of this roundtable is to facilitate dialogue regarding the importance of certification for the HAI/AR Prevention Programs. Participants will discuss their experience in preparing for the examination and develop strategies to assist the applied public health workforce obtain CIC credentials.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Infection Control; Antimicrobial Resistance; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	No
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Submission Type	Roundtable
ID	11300
Abstract Type	Roundtable
Abstract Title	Principles of Successful Collaboration between Public Health Departments' Healthcare Associated Infection (HAI)/Antibiotic Resistance (AR) Programs and State and Local Hospital Partners

Abstract

Key Objectives:
The goals of this session are to identify promising approaches and lessons learned for effective collaboration between public health programs and hospital associations, hospital leadership, chief medical officers, hospital epidemiologists, infection preventionists, and others working in acute care settings. Discussion will focus on the elements of successful collaborations including identifying common goals and priorities, understanding respective roles and obligations, and identifying strategies, challenges, and solutions for maintaining the working relationship as new threats, science, or policy changes emerge.

Brief Summary:
Effective working relationships between public health departments' HAI/AR Programs and state and local hospital or acute care partners are widely considered to be an essential component of an HAI/AR prevention program strategy. State health departments' HAI/AR programs began being funded through CDC in 2009 to promote and support HAI reporting and to publish a state HAI prevention plan. Since HAI reporting becoming mandated through state or other local requirements, as well as via Centers for Medicare (CMS) payment incentive programs, HAI/AR programs and hospitals have had to navigate an evolving relationship that emphasized detection and reporting, but also preventing infections to protect patients. Over the past several years, state and local HAI/AR programs' mission has expanded, especially for infections caused by antibiotic resistant pathogens, to providing significant leadership roles, increasing focus on using data for prevention, and establishing and growing antibiotic stewardship programs in acute care settings. Because of the shared public health and healthcare responsibility to ensure patients receive the highest quality of care, an increasing need exists for public health HAI/AR programs and those individuals working in acute care settings to better understand each other's roles and challenges and to establish common goals and strategies for preventing infections and improving patient outcomes.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Collaboration; Antimicrobial Resistance; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	No
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Submission Type	Roundtable
ID	11243
Abstract Type	Roundtable
Abstract Title	Roundtable on *Candida Auris* Surveillance and Control

Abstract

Key Objectives:

- Review current guidance for surveillance for *Candida auris* and public health measures for minimizing transmission.
- Discuss efforts to make *C. auris* reportable in state or local public health jurisdictions.
- Discuss how health departments can partner with healthcare facilities to identify *C. auris* and control its transmission.
- Identify structural barriers to implementing *C. auris* control efforts and possible solutions.

Brief Summary:

Candida auris is an emerging multidrug-resistant yeast that causes invasive infections associated with high mortality. It can spread easily in healthcare settings, causing outbreaks. Since 2016, when CDC first issued a clinical alert regarding *C. auris* , approximately 500 clinical cases have been reported in twelve states. Receipt of healthcare abroad in a country with *C. auris* transmission, being a resident of a high-acuity post-acute care setting, and being colonized with another multidrug-resistant organism (MDRO) are prominent risk factors for *C. auris* infection or colonization. Control of *C. auris* requires good adherence to infection control practices across the continuum of care settings. Institution-level and system-level changes, such as improved staffing ratios and physical layout of patient care areas, may be key factors in limiting transmission. *C. auris* will be nationally notifiable as of January 1, 2019. Many states have already made *C. auris* reportable or are in the process of doing so. It is crucial to support state and local health departments in this effort, as making the condition reportable will aid in earlier detection of and response to cases of *C. auris,* thereby containing its spread. This roundtable session offers an important opportunity to share lessons learned from public health jurisdiction effort to make *C. auris* reportable in their jurisdiction. This roundtable is also an opportunity for state and local health departments to share successes and challenges with *C. auris* surveillance, including efforts to screen patients at high risk for *C. auris* , such as those with recent history of receiving healthcare outside the United States, those colonized with other MDROs (especially carbapenemase-producing organisms), and those with healthcare facility exposure in areas with high prevalence of *C. auris* . Participants will be encouraged to share ideas on how control of other MDROs can help inform *C. auris* control efforts on experiences with implementing control measures, and the role of regulatory agencies and policy in improving compliance with infection control measures in healthcare facilities.

Submission Complete?	Yes
Committee	Infectious Disease
Topic	Healthcare-Associated Infections
Keywords	Infection Control; Emerging Infections; Healthcare Associated Infections (HAI)
Consider for Different Presentation?	No
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