Presentation Type:
Poster Presentation
Containment Strategies for Carbapenem-Resistant Enterobacteriaceae in Low- and Middle-Income Countries
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Background: Carbapenem-resistant Enterobacteriaceae (CRE) represent one of the most critical emerging antimicrobial-resistance threats globally. Data from low-and middle-income countries (LMICs) are increasingly reported as a part of global efforts to improve surveillance, and they demonstrate a high and increasing burden of CRE. However, containment of CRE using all recommended infection prevention and control (IPC) strategies requires substantial resources, which may be limited in LMICs. We conducted a review of the literature to better understand how approaches to CRE containment in LMICs have varied. **Methods:** We conducted a literature search using electronic databases (Medline, Embace, Cochrane Library, and Global Health) with no limit to study design or publication year. Search terms consisted of 3 categories: CRE, IPC, and LMIC. Additional publications were also identified from the references of identified articles. Publications were screened for eligibility; non-English articles and studies on other gram-negative organisms were excluded from the analysis. Control measures in included studies were categorized as active surveillance, hand hygiene, contact precautions, isolation, education, environmental control, monitoring and feedback, and other. **Results:** In total, 2,667 publications were identified using the databases and an additional 24 were manually identified. After deduplicating and screening for eligibility, 27 publications were included in the analysis. Overall, 21 publications (78%) were outbreak reports and 3 (11%) were quasi-experimental studies in settings of high rates of CRE. Also, 23 (85%) described a successful reduction in CRE. Among those 23 publications, 22 publications described adequate descriptions of IPC measures implemented, and the median number of IPC measures was 4.5 (range, 1–8). Environmental control was the most commonly utilized intervention (n = 19, 86%), followed by hand hygiene (n = 14, 64%) and contact precautions (n = 14, 64%). Three publications did not show a reduction in CRE despite the combination of IPC measures (median, 4.5). Overall, 13 publications utilized some method of active surveillance, but complete details on methodology were often lacking. In addition, 4 studies (15%) used only horizontal measures (defined as hand hygiene, environmental control, and/or education) and successfully controlled the CRE outbreaks. **Conclusions:** Among published reports, successful approaches to CRE control have been reported from LMICs. Use of only horizontal approaches, which are often lower cost and simpler to implement than some vertical strategies, have demonstrated some success; however, additional experience with identifying and implementing cost-effective strategies is needed.

Presentation Type:
Poster Presentation
Contamination of CSF Culture: Serious Risk to Patient Safety
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Background: Acute bacterial meningitis is a medical emergency, and early initiation of appropriate therapy is important to improving outcomes. Culture-based methods are still the standards for the detection of microorganisms in cerebrospinal fluid (CSF). Automated blood culture systems yield better results in cultures sterile body fluids, including CSF. However, the high sensitivity of this technology does not negate the danger of contamination compromising the final outcome. Thus, we tried to study the culture yield in suspected meningitis to determine the rate of contamination. **Methods:** We conducted a retrospective cohort study of CSF samples collected for culture over 1 year from January 2018 to December 2018 from patients who presented with signs and symptoms indicative of meningitis. The bacterial etiologies and rates of contamination were extracted from laboratory records. Descriptive statistics from Microsoft Excel software were used to analyze patient data. Limited statistical analysis (ie, the Fisher exact test) was performed using SPSS for Windows version 18 software. **Results:** In total, 1,053 CSF samples were received for aerobic culture, of which the most frequent were conventional cultures (685 of 1053, 65%), whereas BacT/ALERT cultures were requested for 368 of 1,053 cases (35%). Of 685 conventional CSF cultures, pathogens were isolated in 28 of 685 (4.1%), most commonly *Acinetobacter baumannii complex* (10 of 28, 35.7%). Contaminants were identified in 0.58% samples (4 of 685). In the 368 BacT/ALERT cultures, pathogens were detected in 15 (4.1%), most commonly *Streptococcus* spp (5 of 15, 33.3%). The contamination rate was 51.1% (188 of 368 cases). The overall rate of contamination was 18.2% (192 of 1,053 cases). The most CSF cultures were received from patients in neurosurgery (350 of 1,053, 33.2%) followed by medicine wards (270 of 1,053, 25.6%). Aerobic spore bacilli was by far the most common contaminant (109 of 1,053, 10.35%).

Conclusions: We believe efforts to decrease contamination are among the most cost-effective, but targeted clinical re-evaluation for all patients with positive CSF cultures remains vital. Due to the high sensitivity of the automated culture system, it is a imperative to maintain strict aseptic conditions while collecting CSF samples. Failure to do so may lead to overgrowth of contaminants masking the growth of the true pathogens in culture.

Presentation Type:
Poster Presentation
Core Elements of a State HAI/AR Program With Emphasis on Partnership Networks
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Background: There is a critical need for comprehensive and effective healthcare- associated infection and antibiotic resistance (HAI/AR) programs in the United States. Since 2009, the CDC has funded and engaged public health, healthcare, academic,