Presentation Type: Poster Presentation - Poster Presentation
Subject Category: Other
Changing the use of isolated urine-culture testing with diagnostic testing stewardship
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Background: Urine testing is one of the more frequently ordered diagnostic tests among hospitalized patients. Many hospitals have implemented urinalysis with reflex culture (UARC) as a method of diagnostic testing stewardship to guide appropriate use of urine testing. Isolated urine culture, or urine culture without preceding urinalysis, is the most appropriate diagnostic test for patients who are neutropenic, pregnant, or those about to undergo an invasive urologic procedures. This testing is often used beyond these indications in hospitals though, potentially leading to overdiagnosis of UTI and overtreatment of asymptomatic bacteriuria.

Methods: We compared outcomes in the preimplementation period (December 2018–November 2019) to those in the postintervention period (December 2019–October 2020) at an academic medical center. The intervention was the addition of an indication selection (ie pregnancy, neutropenia, etc) to the isolated urine-culture order in the electronic medical record (EMR). The primary outcomes were isolated urine culture rate per 1,000 patient days and urine-culture positivity. Our exploratory analysis included a review of selected indications after the intervention was implemented and a chart review of a subset of these tests for appropriateness. The primary analysis was performed using interrupted time-series negative binomial regression. Results: There was no significant change in isolated urine-culture rates after the intervention (11.18 cultures per 1,000 patient days before the intervention versus to 7.75 cultures per 1,000 patient days after the intervention; P > .90), and there were no significant pre- or postintervention trends. We detected no significant change in isolated urine-culture positivity: 26.9% before the intervention versus 26.7% after the intervention (P > .90). These results are shown graphically in Fig. 1. In the exploratory analysis, of 661 isolated urine-culture tests ordered in the postintervention period, the indication for testing was left blank in 71.9% of tests. The other most common reasons for testing included other (16%), pregnancy (5.7%), and neutropenia (4.4%). In the 100 tests reviewed for appropriateness, only 8% had a documented diagnosis corresponding with the selected indication for testing. Discussion: The addition of an indication selection for isolated urine-culture testing did not change the rates of culture ordering or the culture’s subsequent likelihood of positivity. In the exploratory analysis, most providers were incorrectly selecting this testing rather than UARC as prompted. Next steps could potentially be removing the “other” category and requiring a selected answer or requiring approval from stewardship team prior to ordering. Continued education of providers is paramount to the appropriate use of diagnostic testing.

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Risk factors for candidemia: A case–control study
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Background: Candida bloodstream infections (candidemia) have significant mortality and morbidity rates, as well as healthcare cost implications. Emerging multidrug-resistant Candida spp such as Candida auris, as well as increasing resistance among non–albicans species, which are becoming more prevalent, also raise concern. Understanding the epidemiology of this infection could enhance prevention and management efforts. We studied risk factors for candidemia. Methods: This matched case–control study was conducted at a university hospital from December 2019 through May 2021. Cases of candidemia were identified using positive blood-culture results. Controls were matched 5:1 to cases by age, sex, and month and year of admission. Risk factors of interest included total parenteral nutrition (TPN), central venous access (CVA), neutropenia, Clostridium difficile, pancreatic disease, Candida in urine culture, cancer, invasive procedures, H2 blockers, chemotherapy,
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Management of a large tuberculosis contact investigation related to a contaminated bone graft product used in spinal surgery

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Background: In March–April 2021, 23 patients at a 906-bed hospital in Delaware had surgical implantation of a bone graft product contaminated with *Mycobacterium tuberculosis*. 17 patients were rehospitalized for surgical site infections and 6 developed pulmonary tuberculosis. In May 2021, we investigated this tuberculosis outbreak and conducted a large, multidisciplinary, contact investigation among healthcare personnel (HCP) and patients potentially exposed over an extended period in multiple departments. Methods: Exposed HCP were those identified by their managers as present, without the use of airborne precautions, in operating rooms (ORs) during index spine surgeries or subsequent procedures, the postanesthesia care unit (PACU) when patients had draining wounds, inpatient rooms when wound care was performed, and the sterile processing department (SPD) on the days repeated surgeries were performed. We created and assigned an online education module and symptom screening questionnaire to exposed HCP. Employee health services (EHS) instituted a dedicated phlebotomy station to provide interferon-γ release assay (IGRA) testing for HCP at ≥8 weeks after last known exposure. EHS managed all exposed HCP, including nonemployees (eg, private surgeons) via automated e-mail reminders, which were escalated through supervisory chains as needed until follow-up completion. The infection prevention team notified exposed patients, defined as those who shared semiprivate rooms with case patients with transmissible tuberculosis. The Delaware Division of Public Health performed IGRA testing. Results: There were 506 exposed HCP in ORs (n = 100), the PACU (n = 87), inpatient units (n = 140), the SPD (n = 54), and other locations (n = 122); 83% were placed, or staff collecting CSF samples. A standard protocol for CSF collection was followed for all cases. Overall, 3 patients cleared cultures without intervention, 2 received oral antibiotics, and 2 underwent surgical removal of their device. Specimen processing was unchanged, although due to supply issues, an alternative anaerobic culture media (Anaerobic Systems, Morgan Hills, CA) was used for 6 weeks, during which all cases were identified. Compared to routine media, the alternative is known to enhance organism detection. The company reported no concerns for media contamination or *C. acnes* outbreaks. Once routine media

Conclusions: This large investigation demonstrated the need for a systematic process that encompassed all exposed HCP including nonemployees and incorporated administrative controls to ensure complete follow-up. We did not identify any conversions related to this outbreak despite high burden of disease in case patients and multiple exposures to contaminated bone graft material and infectious bodily fluids without respirator use. Transmission risk was likely reduced by baseline surgical mask use and rapid institution of airborne precautions after outbreak recognition.

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Learning from a *Cutibacterium acnes* pseudo-outbreak in pediatric neurosurgical patients

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Background: *Cutibacterium acnes* is normal skin flora as well as a common culture contaminant. It can cause infections in the setting of sterile implants, although clinical presentations can be subtle. Differentiating true infection from sample contamination is challenging and has implications for patient care. We describe an investigation of a cluster of 7 hospitalized pediatric patients with *C. acnes* isolated from anaerobic cultures of cerebrospinal fluid (CSF) over 3 weeks at a quaternary-care children’s hospital. Methods: An outbreak response was coordinated between the infection prevention and control (IPC), microbiology, and neurosurgery teams. We defined a case as a hospitalized patient with *C. acnes* isolated from a CSF culture beginning in November 2020. We reviewed charts of all cases and CSF culture collection on all case units, transport to and processing at the microbiology laboratory, and the IPC team measured adherence for all processes. Results: There were 8 positive cultures in 7 cases from November 10 to 27, 2020. The median case age was 2 months (range, 0–119). Cases occurred on 4 different units. All positive patients had at least 1 implanted neurosurgical device used for CSF drainage. There were no clear commonalities in surgeon responsibility for device placement, hardware type placed, or staff collecting CSF samples. A standard protocol for CSF collection was followed for all cases. Overall, 3 patients cleared cultures without intervention, 2 received oral antibiotics, and 2 underwent surgical removal of their device. Specimen processing was unchanged, although due to supply issues, an alternative anaerobic culture media (Anaerobic Systems, Morgan Hills, CA) was used for 6 weeks, during which all cases were identified. Compared to routine media, the alternative is known to enhance organism detection. The company reported no concerns for media contamination or *C. acnes* outbreaks. Once routine media