

Presentation Type:

Poster Presentation - Oral Presentation

Subject Category: CLABSI

Implementing an Internal CLABSI Validation Program

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Background: The National Healthcare Safety Network (NHSN) provides detailed surveillance case definitions for healthcare-associated infections (HAI), including central line-associated bloodstream infections (CLABSI). CLABSI data are used for several purposes, including improving patient safety, value-based purchasing, and comparing hospitals' performance. Our Infection Prevention (IP) team conducts house-wide HAI surveillance. To ensure that our hospital CLABSI reporting is accurate and that staff are implementing case definitions consistently and systematically, we conducted an internal validation of CLABSI. This undertaking allowed us to identify educational opportunities for IPs and improve surveillance data consistency. **Methods:** At UNC Hospitals, data on all positive blood cultures collected in the inpatient setting from July 2022 – June 2023 were obtained from electronic medical records. A random number generator was used to select 16 records per quarter. Each record was then randomly assigned to two different IPs (out of 8 total inpatient IPs) for review. Concordance of CLABSI classification was summarized across the two reviews and compared to the initial review. Discordant cases were then reviewed by the Associate IP Director (a certified IP with 15 years of experience) for final adjudication. A summary of findings and discordant cases details were discussed at regular IP educational meetings. **Results:** From July 2022-June 2023, there were 1658 positive blood cultures collected in the inpatient setting. Of the 64 randomly selected blood cultures, total concordance amongst all reviewers occurred 65.6% of the time. Concordance improved in the 2nd half of FY23 compared to the 1st half

(72% vs, 59%, $p>0.05$). Amongst the 33% of blood culture results with reviewer discrepancy, the most common reasons were related to distinction of a bloodstream infection secondary to another infection site (32%) and application of the repeat infection timeframe (18%). Importantly, there was only one instance where a blood culture result was categorized by all 3 reviewers as present on admission, but upon Associate Director review, actually represented a CLABSI (i.e., false negative). **Conclusions:** Standardized case definitions remain open to interpretation. At our hospital, we experienced discordance in approximately one-third of instances during review of blood culture data amongst trained infection preventionists. Reviewing all blood culture data is key for validation so that both false positives and false negative CLABSIs can be identified. Identifying the most common reasons for discordance and using specific examples when case disagreement occurred for educational purposes may lead to improved reliability and accuracy of application of the NHSN surveillance definitions.

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Subject Category: Diagnostic Stewardship

Impact and Safety of Diagnostic Stewardship to Improve Urine Culture Testing Among Patients with Indwelling Urinary Catheters

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Background: Indiscriminate urine culturing of patients with indwelling urinary catheters may lead to overdiagnosis of urinary tract infections, resulting in unnecessary antibiotic treatment and inaccurate reporting of catheter-associated urinary tract infections (CAUTIs) as a hospital

Figure 1. Catheter-Associated Urinary Tract Infections (CAUTI) per 10,000 Catheter Days Decreased Over Time

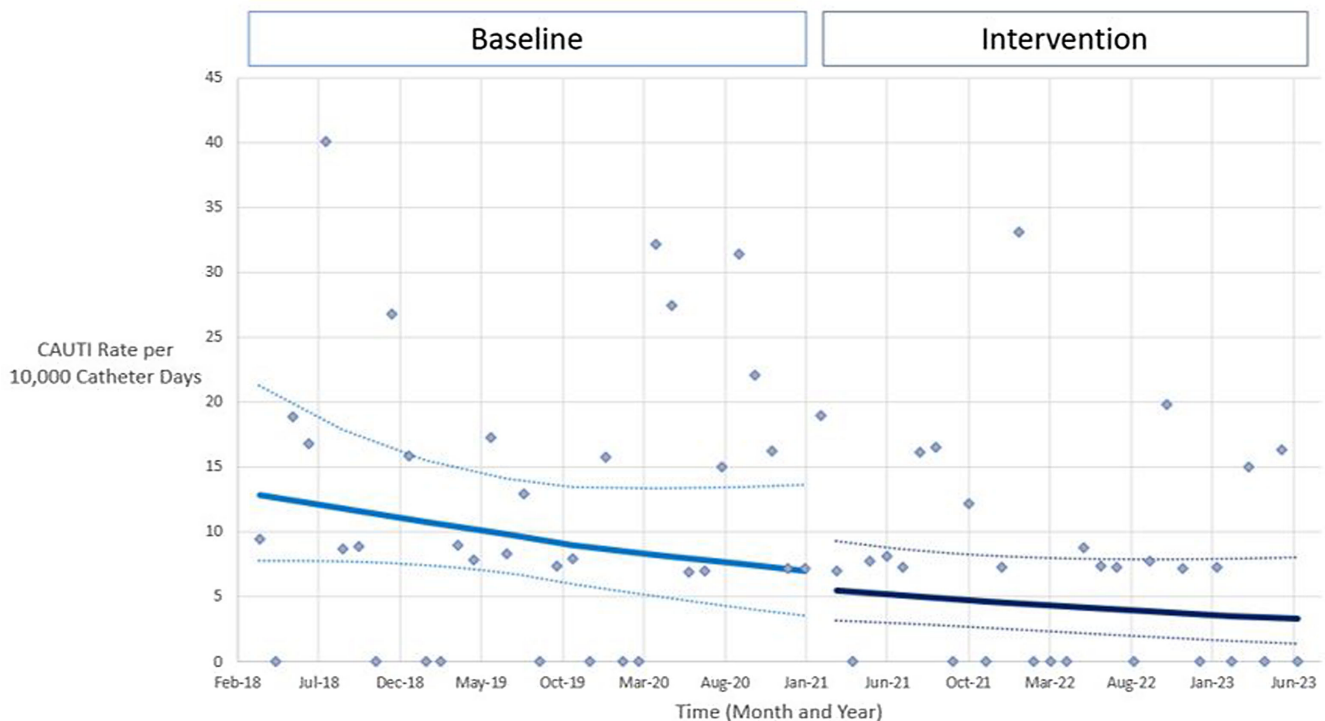
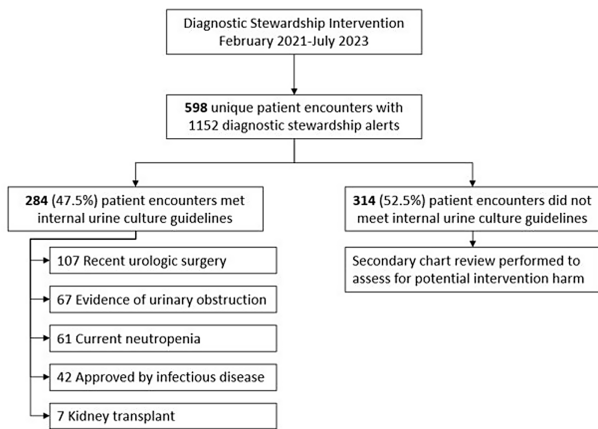


Figure 2. Outcomes of Diagnostic Stewardship Intervention from February 2021 to July 2023



quality metric. We evaluated the impact of a computerized diagnostic stewardship intervention to improve urine culture testing among patients with indwelling urinary catheters. **Methods:** We performed a single-center retrospective observational study at Rush University Medical Center from April 2018 – July 2023. In February 2021, we implemented a computerized clinical decision support tool to promote adherence to our internal urine culture guidelines for patients with indwelling urinary catheters. Providers were required to select one guideline criteria: 1) neutropenia, 2) kidney transplant, 3) recent urologic procedure, 4) urinary tract obstruction; or if none of the criteria were met, then an infectious diseases consultation was required for approval. We compared facility-wide CAUTI rate per 10,000 catheter days and standardized infection ratio (SIR) during baseline and intervention periods using ecologic models, controlling for time and for monthly Covid-19 hospitalizations. In the intervention period, we evaluated how providers responded to the intervention. Potential harm was defined as collection of a urine culture within 7 days of the intervention that resulted in a change in clinical management. **Results:** In unadjusted models, CAUTI rate decreased from 12.5 to 7.6 per 10,000 catheter days ($p=0.04$) and SIR decreased from 0.77 to 0.49 ($p=0.09$) during baseline vs intervention periods. In adjusted models, the CAUTI rate decreased from 6.9 to 5.5 per 10,000 catheter days ($p=0.60$) (Figure 1) and SIR decreased from 0.41 to 0.35 ($p=0.65$) during baseline vs intervention periods. Urine catheter standard utilization ratio (SUR) did not change ($p=0.36$). There were 598 patient encounters with ≥ 1 intervention. Selecting the first intervention for each encounter, 284 (47.5%) urine cultures met our guidelines for testing and 314 (52.5%) were averted (Figure 2). Of these, only 3 ($< 1\%$) had a urine culture collected in the subsequent 7 days that resulted in change in clinical management. **Conclusion:** We observed a trend of decreased CAUTIs over time, but effect of our diagnostic stewardship intervention was difficult to assess due to healthcare disruption caused by Covid-19. Adverse outcomes were rare among patients who had a urine culture averted. A computerized clinical decision support tool may be safe and effective as part of a multimodal program to reduce unnecessary urine cultures in patients with indwelling urinary catheters.

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Subject Category: Infection prevention and environmental sustainability
Perspectives and Awareness of Environmental Sustainability in the Infection Prevention and Control Community Nationally

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Background: Healthcare contributes significantly to waste production and greenhouse gas emissions. This became especially apparent during the COVID-19 pandemic. Yet there is modest recognition of this issue, particularly within decision-making in Infection Prevention and Control (IPC). The aim of our study was to gauge general knowledge and attitudes of hospital epidemiologists (HEs) and infection preventionists (IPs) around the intersection of environmental sustainability and IPC, and to identify related institutional practices. **Methods:** An online survey, composed of ten questions related to environmental sustainability in IPC, was created and emailed to members of the SHEA Research Network (SRN), a national consortium of healthcare facilities collaborating on IPC research, from August - October 2023. Survey answers were collated via Redcap® and descriptive results were obtained. **Results:** Forty-two individuals (33 HEs, 7 directors of IPC, and 2 IPs) from unique institutions completed the survey. Thirty (71.4%) were from academic medical centers, 5 (11.9%) were from VA medical centers and 7 (16.7%) were from community hospitals. Over half of participants correctly estimated the amount of waste and carbon emissions produced annually by the US healthcare system (6 million tons and 8.5% of national emissions, respectively). However, only 42.9% considered environmental sustainability concerns important or very important when making IPC decisions. Fifteen (34.9%) had an environmental sustainability committee at their institution and of these, 8 had an established relationship with the IPC department. The most common techniques to promote sustainability amongst institutions were water/energy conservation (59.5%), reusable personal protective equipment (52.4%) and Leadership in Energy and Environmental Design (LEED) certification (47.6%). When asked which efforts they would support at their institution, 28.6% would eliminate the use of single-use endoscopes and one third would avoid use of ethylene oxide for sterilization. In deciding whether to support environmental sustainability measures, key considerations participants articulated were patient safety concerns, knowledge about effectiveness and costs, and administrative support. **Conclusion:** Although there is growing awareness around the contribution of the healthcare industry to carbon emissions and waste production, IPC professionals have not yet universally adopted measures to promote environmental sustainability. In our survey, many participants acknowledged the importance of balancing patient safety and sustainability concerns. Our study demonstrates the need for more research and education to inform decisions around environmentally sustainable efforts in IPC that also preserve patient safety. Additionally, professional and regulatory bodies must acknowledge and promote the importance of environmental sustainability in IPC decision-making.

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Two Novel Antibiotic Use Metrics for Facilities and Individual Prescribers in Post-Acute and Long-Term Care Settings

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Background: Measuring and reporting antibiotic use are essential to antimicrobial stewardship activities. The most common metric to assess facility-level use is days of antibiotic therapy per 1000 days of care (DOT/1000 DOC). This metric may be difficult to calculate, not be readily comparable, or not provide actionable data to individual prescribers, particularly those that work in post-acute and long-term care (PALTC) settings. Here we use data from a centralized dispensing pharmacy to develop antibiotic use metrics suitable for offering individualized feedback to prescribers working in PALTC settings. **Methods:** We obtained medication dispensing data and resident census data for 13 PALTC settings