

Presentation Type:

Poster Presentation

Reduction of Central-Line–Associated Bloodstream Infections in a Spinal Cord Injury Unit

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Background: Central-line–associated bloodstream infections (CLABSIs) are a complication of indwelling central venous catheters, which increase morbidity, mortality, and cost to patients.

Objective: Due to increased rates in a spinal cord injury unit (SCIU), a performance improvement project was started to reduce CLABSI in the patient population. **Methods:** To reduce the incidence of CLABSI, a prevention bundle was adopted, and a peer-surveillance tool was developed to monitor compliance with the bundle. Staff were trained to monitor their peers and submit weekly surveillance. Audits were conducted by the clinical nurse leader with accuracy feedback. Bundle peer-surveillance was implemented in February of 2018 with data being fed back to leadership, peer monitors, and stakeholders. Gaps in compliance were addressed with peer-to-peer education, changes in documentation requirements, and meetings to improve communication and reduce line days. In addition, the use of an antiseptic-impregnated disc for vascular accesses was implemented for dressing changes. Further quality improvement cycles during the first 2 quarters of fiscal year 2019 included service-wide education reinforcement, identification in variance of practice, and reporting to staff and stakeholders. **Results:** CLABSI bundle compliance increased from 67% to 98% between February and October 2018. The weekly audit reporting accuracy improved from 33% to 100% during the same period. Bundle compliance was sustained through the fourth quarter of 2019 at 98%, and audit accuracy was 99%. The initial CLABSI rates the quarter prior to the intervention were 6.10 infections per 1,000 line days for 1 of the 3 SCIUs and 2.68 infections per 1,000 line days for the service overall. After the action plan was initiated, no CLABSIs occurred for the next 3 quarters in all SCIUs despite unchanged use of central lines (5,726 line days in 2018). The improvement was sustained, and the line days decreased slightly for 2019, with a fiscal year rate of 0.61 per 1,000 line days (ie, 3 CLABSIs in 4,927 central-line days). **Conclusions:** The incidence of CLABSI in the SCIU was reduced by an intensive surveillance intervention to perform accurate peer monitoring of bundle compliance with weekly feedback, communication, and education strategies, improvement of the documentation, and the use of antiseptic-impregnated discs for dressings. Despite the complexity of the patient population requiring long-term central lines, the CLABSI rate was greatly impacted by evidence-based interventions coupled with reinforcement of adherence to the bundle.

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Reflex Urine Culture Practices in a Regional Community Hospital Network

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Background: Reflex urine cultures (RUCs) have the potential to reduce unnecessary urine cultures and antibiotic use. However, urinalysis parameters that best predict true infection are unknown. In this study, we surveyed different RUC practices in laboratories across a regional network of community hospitals. **Methods:** We conducted a voluntary electronic survey of infection preventionists to describe laboratory practices relating to RUCs across 51 community hospitals in the Duke Infection Control Outreach Network (DICON) between May 15, 2019, and July 3, 2019. **Results:** We received 51 responses (response rate, 100%). Most hospital laboratories were located in North Carolina (n = 25, 49%) and Georgia (n = 18, 35%); 28 laboratories (55%) incorporated RUCs. Surveyed laboratories accepted urine samples from any source and various collection methods (eg, indwelling catheter specimens, clean catch specimens). Moreover, 24 laboratories (86%) offered RUCs for all patients, whereas 4 laboratories (14%) restricted RUCs to specific populations (ie, outpatient, emergency room or children). We observed wide variability in the urinalysis criteria used for RUCs (Table 1); 26 unique approaches were used among 28 laboratories. Also, 24 laboratories (86%) used multiple criteria and 4 (14%) used 1 criterion. Of those that used multiple criteria, all 24 proceeded to RUC if at least 1 UA criterion was met. Furthermore, 22 laboratories (79%) incorporated the presence of nitrites as a urinalysis criterion; 21 laboratories (75%) incorporated white blood cell count (WBC) as a criterion. The most frequent WBC cutoffs were “ ≥ 5 ” (n = 11, 39%) and “ ≥ 10 ” (n = 7, 25%). In addition, 21 laboratories (75%) incorporated leukocyte esterase as a urinalysis criterion, with criteria including “positive” (n = 15, 54%), “trace” (n = 4, 14%), “moderate” (n = 1, 4%), and “large” (n = 1, 4%). Also, 17 (61%) laboratories incorporated magnitude of bacteriuria as a urinalysis criterion. The cutoff ranged from “few” (n = 8, 29%), “moderate” (n = 7, 25%), to “many” (n = 2, 7%). Another 3 (11%) laboratories incorporated other criteria: presence of blood (n = 2, 7%) and presence of fungal elements (n = 1, 4%). Only 3 (11%) laboratories utilized epithelial cells as an exclusion criterion where urinalysis would not proceed to culture if epithelial cells in urinalysis samples exceeded the designated limit, ranging from “ >5 ” to “ >15 ”. **Conclusions:** More than half of the hospitals in our community hospital network utilize RUCs, but criteria varied widely. Future epidemiological research should aim to identify ideal urinalysis parameters as well as specific patient populations that safely benefit from RUC strategies.

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