Use of CLABSI Prevention Bundle Audits to Decrease CLABSI Rates in COVID Positive ICU Patients in an Acute Care Hospital in New York City during the COVID-19 Epidemic

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Background

Mount Sinai Beth Israel (MSBI) is a 220 bed acute care hospital located in the borough of Manhattan in New York City. Prior to COVID-19, the hospital had one 16-bed Medical/Surgical ICU. When the COVID epidemic struck New York City, the MSBI ED was flooded with critically ill patients requiring ICU care. Seven other ICUs were opened, all of which were filled with COVID patients. The majority of these patients required central lines for the multiple antibiotics, steroids, and vasopressors they needed to survive. Agency RNs from all over the country were brought in to care for our ICU patients. In April, the MSBI Infection Prevention (IP) department received several CLABSI notifications through its data mining system. The IPs were alarmed at the number of CLABSIs occurring in ICU COVID patients with central lines.

Methods

A baseline assessment, using the central line maintenance bundle tool, was conducted on all COVID patients with central lines. This assessment revealed issues with central line maintenance, including: undated, bloody, and non-intact dressings, poorly placed CHG impregnated disks; blood in end-caps, and missing alcohol impregnated caps on ports. The decision was made to bring in infusion RNs from an outpatient system site to perform daily rounds on central lines.

These RNs performed daily intensive maintenance bundle rounds for a month during the COVID epidemic. During their rounds, ICU nurses and managers were notified immediately about patient central line dressing and cap issues and educated on how to correct them. These RNs also e-mailed daily reports of their findings to Nurse Leaders for their review.

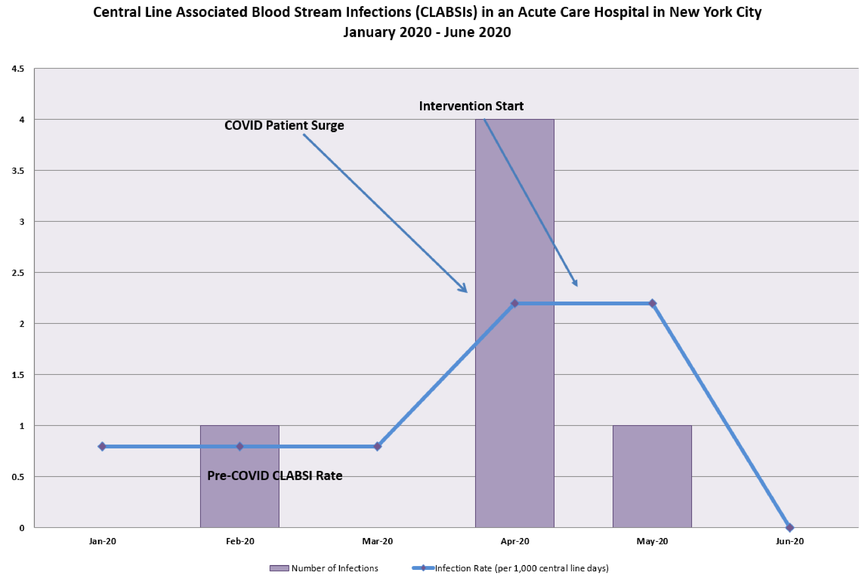

Figure 1: Central line associated bloodstream infection (CLABSI) rates pre-and post-intervention.

The Central Line Maintenance Audit Team

The MSBI Infection Prevention Team

Results

Central line rounds performed after the intervention showed a great improvement in compliance with the central line maintenance bundle, from 13% during the first rounds performed in April, to 88% in May, less than a month after these rounds started. Since this intervention, the ICU CLABSI rate has decreased from a rate of 3.3 per 1,000 central line days in April and May to a post-surge rate of 0.

Conclusion

The timely identification and root cause analysis of a problem must be followed by timely, intensive, and repeated interventions that are designed to attack the causes of problems at their source. After the crisis period is over, the interventions must be maintained to ensure that gains made can be sustained.

References

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