An Interprofessional Approach to Improving Central Line Associated Bloodstream Infections

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Purpose

In response to an increase in central line blood stream infections from specimens collected from central lines on 5 Acute Care Surgical Unit, a process was designed that reduced the number of times a central line was accessed for laboratory specimen collection.

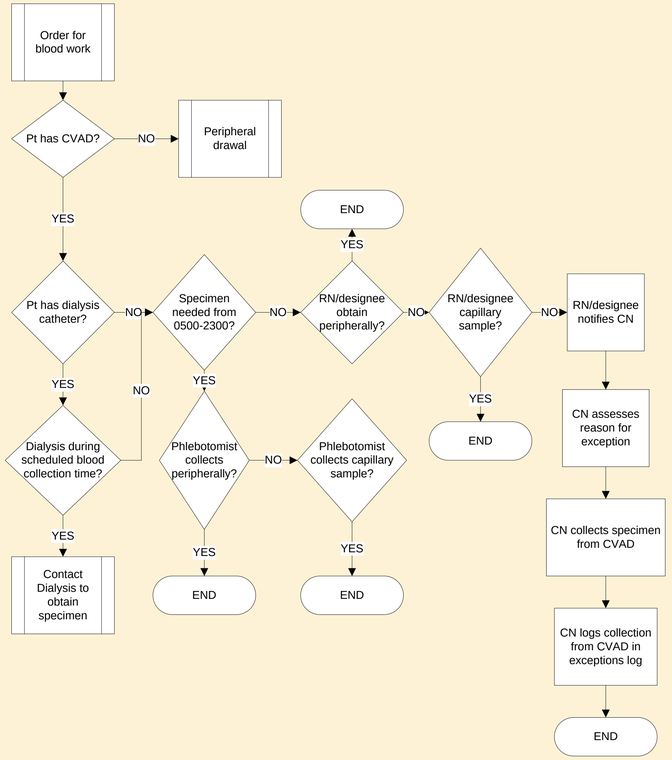
Significance

The risk of introducing microorganisms into a central line access device increase every time the device is accessed or manipulated. Prevention of nosocomial infections requires a systematic, multidisciplinary approach, which usually can be achieved under the leadership of an institutional infection-control program.

Strategy and Implementation

An interprofessional approach between nurses, physicians, vascular access team, infection control, and phlebotomy was needed to improve the management of laboratory sampling for patients with central line devices. The team reviewed infection rates, central line days and access rates in order to develop a standardized process. They determined care outcomes could be improved by eliminating blood draws from central lines and a “No Central Line Blood Draw” process was implemented. This process change required redesign of physicians’ ordering, restructure of phlebotomy, nursing workflow, competency validation for nurses related to central line blood draws, and creation of patient/family education titled, “*KEEPING You Safe on 5 Acute Care.”*

Each patient with a central line is evaluated, and lab specimens are bundled and drawn peripherally by only phlebotomy or nursing staff. Special training on central line blood draws and capillary specimen collection was provided. A visual process flowchart was created as a guide for all staff.



Evaluation

Since October 2014, the unit has had zero central line infections for patients included in this process, which is a decrease from 2.99 central line infections per 1,000 central line days the year prior. The number of times central lines were accessed decreased from an average of 6 to 1.4 times per day, and lab error rates were significantly reduced. Physician ordering of STAT labs was reduced and increased bundling of multiple laboratory specimens occurred as evidence from staff feedback.

Implication for Practice

Implementation of an innovative process has improved central line infection rates and decreased the risk of transmitting nosocomial infections. Because of the successful outcomes, the process has remained as a gold standard practice, and is being evaluated for hospital wide rollout in acute care areas at Penn State Hershey Medical Center.

References

Center for Disease Control (n.d.) *Catheter-Associated Bloodstream Infections.* Retrieved from: http://www.cdc.gov/hai/pdfs/bsi/BSI_tagged.pdf

Mahieu, L.M., De Dooy, J.J., leven, M.M., and Muynch, A.O. (2001). Catheter manipulations and the risk of catheter-associated bloodstream infections in neonatal intensive care unit patients. *Journal of Hospital Infection*, 48, 20-26.