The Use of Simulation Based On-site Education as a Competency Validation Technique to Reduce Central Line Associated Bloodstream Infection Rates

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ABSTRACT

BACKGROUND

Radiology technologists are tasked with contrast administration and accessing/de-accessing ports daily. However, radiology technologists have no formal competency training associated with central lines upon hire; they only receive on-the-job training, which is not congruent with CDC guidelines.

PURPOSE

The purpose of this quality improvement project was: 1) to identify knowledge and skill gaps in radiology technologists, and 2) to provide immediate and ongoing annual on-site simulation based competency training to increase knowledge, enhance skill sets, and ultimately reduce the number of CLABSIIs.

METHODS

A pre-/post-test design was used to measure central line knowledge of radiology technologists. A simulation based on-site education program, which included an online training video followed by a direct observation competency checklist, was tailored to address content covered in the education program. The number of CLABSIIs per month, the number of central line days per month, and the rate per 1,000 central line days were collected the 6 months prior to the study intervention and compared to the 6 months following the intervention.

RESULTS

On completion of the education intervention, the post-test demonstrated a 20.1% increase in radiology technologist competence related to central lines. The average CLABSI rate for pre-intervention was 1.88 per 1,000 central line days as compared to the post-intervention CLABSI rate of 0.79 per 1,000 central line days.

CONCLUSIONS

A targeted educational intervention providing formal central line competency training through the use of simulation based on-site education program improved competence in central line care and resulted in decreased CLABSI rates.