Development and Implementation of a Simulation-Based Training Program to Standardize Central Line Maintenance

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Central line associated bloodstream infections — **CLABSIs** —are a costly, preventable health problem that adds to the morbidity and mortality of pediatric patients.

Problem:
In our efforts to standardize practice related to the CLABSI best practice bundle, we noted that many of our line access procedures were nonstandard.

The **Purpose** of this project was to develop and implement a rigorous one-on-one simulation training program to standardize and improve quality of practice related to central line access and maintenance.

Methods: Job instruction sheets
were developed to reconfirm process, step-by-step and PDCA'ed with staff feedback.

Medication administration
1. Blah blah blah
2. sh hands
3.

Cap (Microclave®) change
1. Was
2. Yad
3. And

Lab specimen collection
1. Wash hands.
2. Get yo' stopcock.
3. Attach yo' supplies.

Blood culture collection
1. Wash hands!
2. Do it again
3. Maintain sterility of your

Video, face-to-face, and written guidance was provided to ensure **inter-rater reliability** of the simulation experience. Trainers evaluated performance as one of the following:
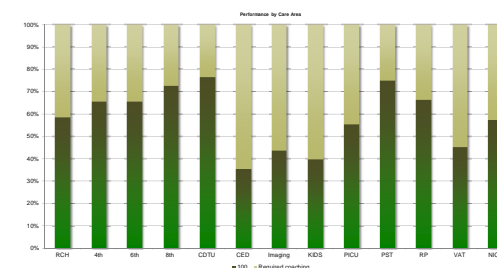
"100%," "required coaching," or "requires additional support and follow-up."
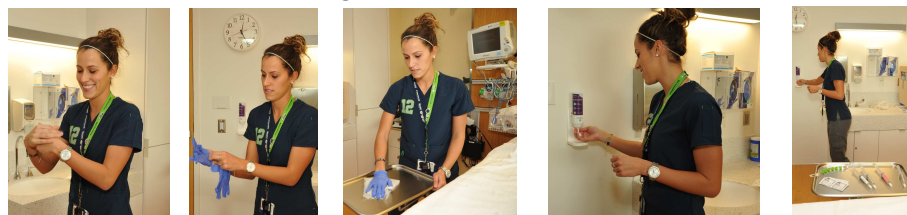
Every nurse and technician who touches central lines underwent a rigorous 1:1 performance evaluation of line access and maintenance.

Results:

Among 377 trainees, 58.62% received a performance score of "100%." The remaining 41.38% received a performance score of "required coaching." The third performance score, "requires additional support in the line access process and BPB elements," was never chosen.

Conclusion:
An evidence-based simulation training program has been identified as a useful method in reducing infections, evaluating compliance to central line maintenance BPB, and informing practices related to inter-rater reliability of standard work confirmations. System fixes were also prioritized based on qualitative data collected from trainees on identified challenges or barriers to completing the BPB. Finally, in an effort to foster a culture of safety, subsequent training programs were modified to shift from a "pass/fail" assignment by a trainer to a partnership in standardizing and improving practice.

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