

Enhancing Junior Resident Confidence in Plasma Exchange Catheter Removal Through Simulation-Based Training

Simulation Showcase
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Simulation and
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(SASC)

Joseph Conway MD, Damla Sarisaltik DO, Robert J. Marquardt DO, Blake Buletto MD, Catherine Hassett DO

Background

- Plasma exchange (PLEX) catheter removal is a critical skill for junior neurology residents. Initial surveys revealed **low self-reported confidence in this procedure**, potentially compromising patient safety.
- To address this gap, a simulation-based skills station utilizing a manikin-based approach was developed to provide safe, supervised practice.

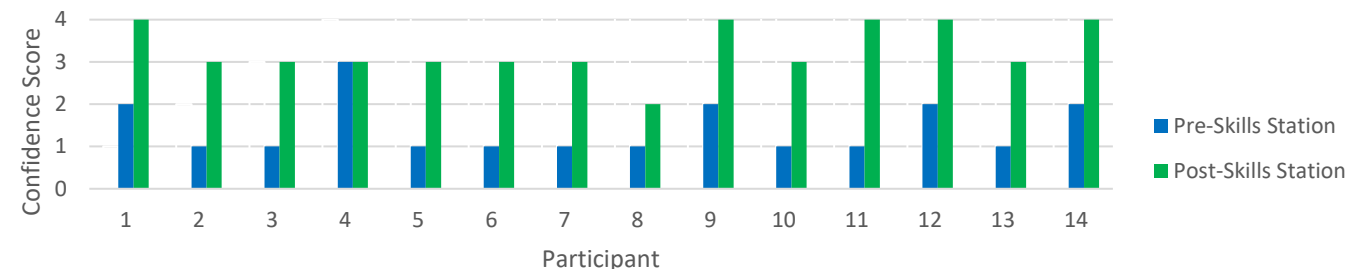
Description



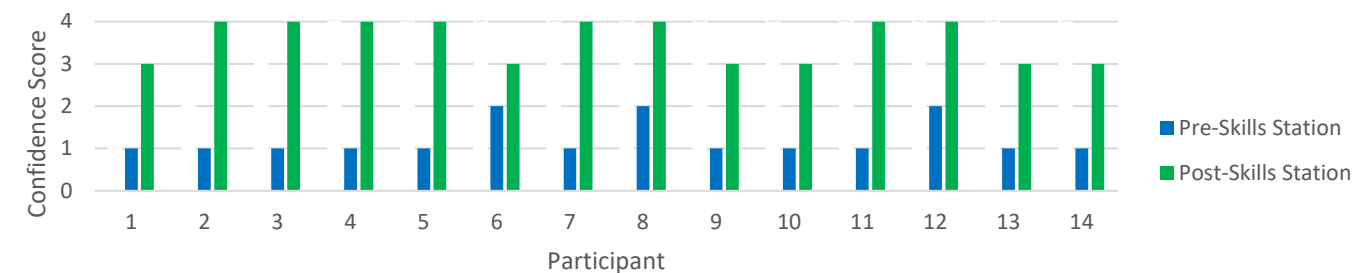
- A skills station based on institutional standard operating procedure, was integrated into a pre-neurology bootcamp for 14 junior residents (12 PGY-2 adult neurology, 2 PGY-3 child neurology).
- Residents and faculty observers **completed pre- and post-training surveys** assessing confidence and competence in performing PLEX removal independently.
- Confidence was rated on a **4-point Likert scale** (1=could not perform, 2=may perform with assistance, 3=may perform independently, 4=easily perform independently).
- Results were analyzed using Wilcoxon-Signed Rank Tests with median and interquartile range (IQR) reported.

Impact

Pre- vs Post-Procedural Skill Station Self-Assessment



Pre- vs Post-Procedural Skill Station Faculty Assessment



- Resident reported **confidence increased significantly** from a median of 1 (IQR 1-2) pre-training to 3 (IQR 1-4) post-training ($V=0$, $p<0.001$).
- Pre-training, 64% (9/14) residents rated themselves at the lowest confidence level, while post-training 93% (13/14) rated themselves as able to perform independently or easily (score 3-4).
- Faculty perceptions showed an even greater improvement, with median scores rising from 1 (IQR 0-1) to 4 (IQR 1-4), ($V=0$, $p<0.001$).
- Notably, **faculty consistently rated trainee confidence higher than the trainee themselves**.

Contact Information

Joe Conway: conwayj4@ccf.org Catherine Hassett: hassettc@ccf.org