

57 Floating to Find Rhythm: Assessing Procedural Confidence and Competence in a Novel Transvenous Pacemaker Simulation

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Background: Performing a transvenous pacemaker (TVP) in emergency medicine (EM) is a high-acuity, low-occurrence (HALO) procedure essential for stabilizing patients with life-threatening bradyarrhythmias. EM residents have limited opportunities to perform this procedure, making simulation-based training crucial. A novel, inexpensive TVP model adapted from existing literature was constructed to help residents to conceptualize, visualize, and practice performing this complex procedure. The study aimed to evaluate the model's effectiveness in improving EM residents' confidence, procedural competence, and perceived realism.

Primary Objective: Assess resident confidence and competence performing a TVP.

Secondary Objective: Evaluate the realism of the simulator.

Methods: The study included 19 EM residents (PGY1-3) from a tertiary care center in New Jersey. A model costing \$86 was adapted from existing literature and constructed with a submersible pump, vinyl tubing, and PVC components. Residents completed a pre-simulation confidence survey, received instructional training, practiced on the model, and were evaluated on procedural competence via a standardized 8-task checklist.

Results: Post-simulation, residents were graded on their knowledge, rated their confidence, and rated the model's realism via a 20-question quiz. Statistical analysis was conducted using paired one-tailed t-tests ($\alpha=0.05$). Post-simulation, confidence in performing a TVP with assistance increased by 58.16% ($p<0.001$), and independent confidence rose by 60.26% ($p<0.001$). Knowledge of TVP indications improved by 39.74% ($p<0.001$). Confidence in identifying necessary supplies and procedural steps increased by 55.26% and 58.16%, respectively ($p<0.001$). Overall, education ratings improved from 23.16% pre to 87.63% post-simulation ($p<0.001$). Simulator realism scored 4.68/5.00 and pacer wire realism rated 4.79/5.00. Competency scores averaged 14.75/16.00 (PGY1), 15.00/16.00 (PGY2), and 14.83/16.00 (PGY3).

Conclusion: The TVP simulation training significantly improved resident confidence and proficiency. This low-cost model offered sufficient realism to effectively prepare residents for this rare emergency procedure. Limitations include a small sample size, potential Hawthorne bias, and inability to assess electrical and mechanical capture.

58 Doc Trial: A Targeted Documentation Curriculum for Emergency Medicine Residents

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Introduction: Documentation is essential to the practice of medicine as it creates a record of the medical care of a patient and the provider's thought process during an encounter. Adequate documentation allows for future providers to understand a patient's past medical care. It also can be protective in the case of a malpractice lawsuit, as it serves as the main record of that encounter. Despite this critical importance to the practice of medicine, formal Emergency Medicine (EM) documentation curricula are lacking.

Objective: Our goal was to create an interactive, entertaining, and educational curriculum to instruct Emergency Medicine residents in documentation. The primary aims of the intervention are to educate on documentation as a means to improve patient care, medicolegal protection, and billing/coding language.

Design: Designed as a series of sessions held every other month during our weekly conference didactics, each session is centered around a patient note created by the education team and designed to include common documentation errors observed by faculty. Residents are provided with notes prior to weekly conference and are instructed to identify deficiencies and areas for improvement. Residents are arranged into four teams that collaborate to fix notes in shared Google documents. The residents are thereby prepared for the sessions and arrive ready to discuss. The residents then engage in interactive didactics led by faculty. Primary learning points focus on delineation of thought processes to improve patient care, use of proper terminology and documentation of reassessments to assist in medicolegal protection, and optimize language for billing/coding.

Effectiveness/Impact: We surveyed residents and faculty using a 5-point unipolar Likert scale. Feedback was overwhelmingly positive, indicating a strong Kirkpatrick 1 impact. Residents rated sessions an average of 4.7/5, while attendings rated them 5/5 for both enjoyment and educational value. Additionally, 100% of faculty reported "very improved" or "extremely improved" resident documentation since the curriculum was implemented, with a mean score of 4.6/5, demonstrating Kirkpatrick 2 impact. Overall, this curriculum has shown great promise and we plan to collect data on Kirkpatrick 3 level through chart reviews in the future.