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A Real Life Cricothyrotomy Trainer

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## 11 A Real Life Cricothyrotomy Trainer

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**Background:** Emergency surgical cricothyrotomy (ESC) is one of the most critical but least commonly performed procedures in emergency medicine, making simulation an important component in achieving and maintaining competence. Standard ESC models emphasize the external landmarks and basic procedural motions, but fail to account for the need for tactile-only guidance or the challenging environment of the procedure. A program teaching “real-life” ESC would benefit EM residents in learning this high stress/low frequency procedure.

**Educational Objectives:** Develop an ESC training program to train residents in ESC that accurately mimics the challenges to ESC in a patient (difficult visualization, blind technique, high stress environment).

**Curricular Design:** We developed an ESC training program using a reversibly modified airway mannequin in which standard ETI was not possible; the neck portion was also modified using parts available from a local hardware store and from the ED (Fig 1), giving not only the appropriate external tactile landmarks, but also requiring the learner to perform dissection through 2.5 cm of soft tissue and blind incision of the cricothyroid membrane. Additionally, visualization during dissection is limited by the instructor’s ability to make the model actively bleed after skin incision. ESC is taught in this scenario via the modified scalpel-forecep-scalpel-bougie (Fig 2) technique to prevent sharps injury. We also designed a “stand-alone” model to be used without an airway mannequin (Fig 2D). Use of a simulated monitor adds a realistic but controllable impetus to act or attempt to implement rescue techniques.

**Impact/Effectiveness:** ESC is a critical skill for emergency providers, but the first time an EM provider is likely to perform the skill will be in a critical setting on a patient that looks and behaves very little like the model he or she has practiced on; our novel curriculum and model recreate the conditions under which ESC must commonly be performed, ie a “real-world cric.” Using our models, we were able to train our classes of junior and senior level residents in ESC for a cost of \$25.22. For a procedure like ESC, which junior physicians may have at best one opportunity to practice during training, realistic simulation of the actual procedure is likely to be the learner’s only chance to not only learn the procedural steps, but how to perform those steps in the clinical setting.

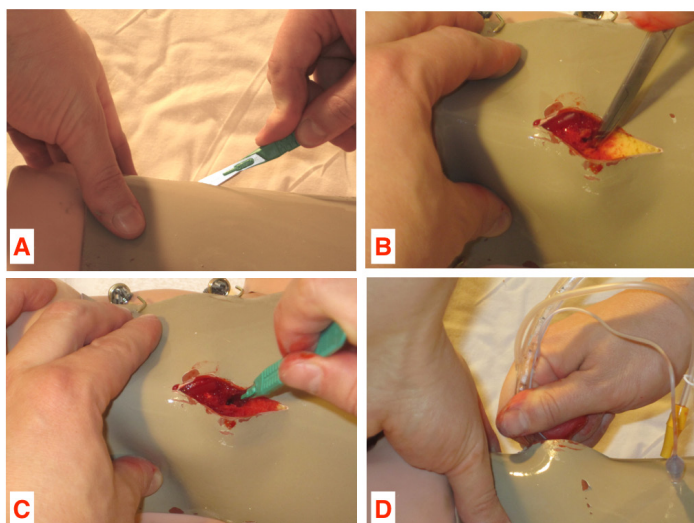


Figure 1.

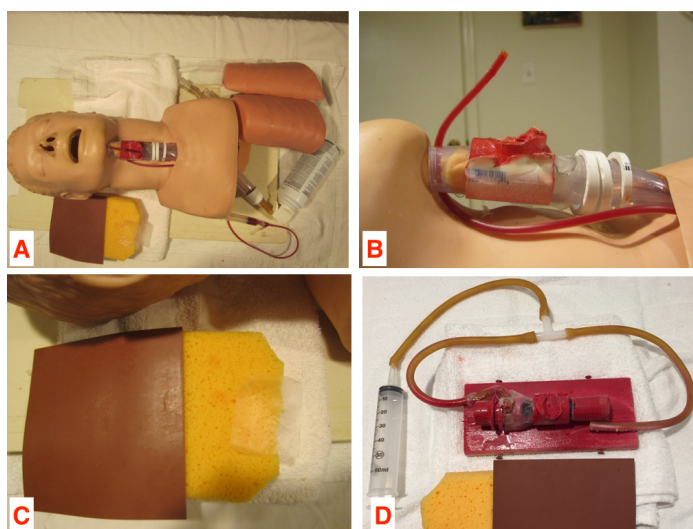


Figure 2.

## 12 A Web-based Patient Follow Up Log with Faculty Feedback Loop

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**Background:** The Residency Review Committee for Emergency Medicine (RRC-EM) requires that EM residencies must develop a system that provides and documents efforts to teach residents the importance of patient follow-up. This should involve a representative sample of patients who are discharged from the emergency department.” In addition, the Emergency Medicine Milestone Project requires residents to perform regular patient follow up to achieve a “Level 2” for the “Practice-based Performance Improvement” milestone.

**Educational Objectives:** To date, there is limited data on