

86 Simulated Thoracotomy Model

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Introduction/Background: Simulation affords residents an opportunity to develop an approach for rapid assessment and treatment of patients presenting with high acuity, low frequency clinical events in a safe learning environment. A thoracotomy is a procedure that is infrequently performed in the emergency department and would benefit from simulation; however, realistic models are expensive and hard to find.

Educational Objectives: Our objective was to develop a realistic, low cost, reusable model to facilitate hands on learning for the low frequency, high acuity procedure of an emergency thoracotomy.

Curricular Design: A trauma scenario was developed to incorporate proper indications for an emergency thoracotomy. A task-trainer was devised to facilitate hands on learning of the thoracotomy procedure. Using the IMSH model as a template, we took the frame of a Laerdal manikin and secured PVC pipe to act as a sternum by drilling into the base of the manikin. One end of an ET tube was hot-glued into the base of the manikin, the other secured to the PVC pipe to act as a rib. We then inserted jello-filled balloons for the aorta, vena cava, esophagus and heart. A plastic bag simulated the pericardium. A manikin lung was inserted that could be inflated with a BVM during the simulated thoracotomy, and tan shelf liner was velcroed in place to simulate skin (Figure 1). High fidelity simulators were used for initial resident assessment and stabilization of the trauma patient. The residents were then transitioned to the task trainers to practice the thoracotomy.

Impact/Effectiveness: This low cost, simulated task trainer was designed to provide valuable procedural experience for our residents and positively impact patient care. Residents who completed a post-simulation survey all agreed that the model was an effective way to learn and practice the procedure.



Figure 1. Thoracotomy model.