

**Impact/Effectiveness:** There was no significant difference in trainee scores on the procedural checklist using the constructed model (mean 18.5; SD 1.6) compared to the animal model (mean 18.0; SD 2.9) ( $p = 0.64$ ) (Fig. 2). Students completed the procedure faster on the constructed model (mean 84.1 s; SD 17.8 s) than on the sheep trachea (mean 117.5 s; SD 54.3 s) ( $p = 0.038$ ). These results suggest that learning the procedural steps of cricothyrotomy on our model is equivalent to learning on animal tissue. Students' ability to complete the steps more quickly on the constructed model may be due the lack of subcutaneous tissue to dissect, simplifying the anatomy. Our model allows trainees to perform many iterations of a cricothyrotomy without the expense or difficulties in procurement and storage with animal or commercially available models. Overall, this model addresses the need for increased access to cheap, hands-on practice of cricothyrotomy for medical trainees.



| Procedural Step   | Constructed Model | Sheep Trachea     | p value     |
|---|-------------------|-------------------|-------------|
| 1. Correctly identifies cricothyroid membrane                   | 2.0 (0.0)         | 1.9 (0.3)         | 1.00        |
| 2. Vertical, midline incision, 3-5 cm, stabilized larynx        | 2.0 (0.0)         | 2.0 (0.0)         | 1.00        |
| 3. Bluntly dissects to expose cricothyroid membrane             | 1.8 (0.6)         | 1.8 (0.6)         | 1.00        |
| 4. Horizontal, 1-2 cm incision in membrane                      | 1.9 (0.3)         | 1.9 (0.3)         | 1.00        |
| 5. Index finger of non-dominant hand guards opening             | 1.6 (0.8)         | 1.6 (0.7)         | 0.58        |
| 6. Spreads membrane vertically with clamp                       | 1.9 (0.3)         | 1.6 (0.8)         | 0.47        |
| 7. Rotates clamp 90 degrees                                     | 1.8 (0.6)         | 1.5 (0.8)         | 0.58        |
| 8. Inserts and twists endotracheal tube into place              | 2.0 (0.0)         | 1.9 (0.3)         | 1.00        |
| 9. Blows up cuff with 10 mL syringe                             | 1.8 (0.6)         | 2.0 (0.0)         | 1.00        |
| 10. Verbalizes connecting to ventilator, checks CO <sub>2</sub> | 1.7 (0.7)         | 1.8 (0.6)         | 1.00        |
| <b>Total scores</b>   | <b>18.5 (1.6)</b> | <b>18.0 (2.9)</b> | <b>0.64</b> |

**Figure 2.** Comparison of the trainee performance on the constructed model vs sheep trachea on the procedural checklist. The p value was determined using Fisher's exact test. Data are expressed as mean (SD).

## 2 Incorporating an Interesting Case Discussion Board into an Emergency Medicine Clerkship

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**Background:** With shift work scheduling and students being assigned to geographically separate training sites, student - student collegial interaction is limited. Asynchronous discussion boards may help to address this and allow for more comparable educational experiences across clinical training sites.

**Educational Objectives:** Our goal was to incorporate an asynchronous "Interesting Case" discussion board into a 4th year EM clerkship for students rotating at geographically separate training sites.

**Curricular Design:** Using Blackboard Learning Management System, a student initiated "Interesting Case" discussion board was developed. Guidelines including expectations for participation were reviewed during the clerkship orientation. The discussion board allows students working different shifts and assigned to separate training sites to interact by creating case threads and replying to posts about cases encountered during their EM clerkship. A post clerkship evaluation was administered.

**Impact/Effectiveness:** From May - September 2016, 83 students at 8 clinical training sites participated in the "Interesting Case" discussion board. Students initiated 126 separate threads, 501 total posts. The mean # of threads per rotation was 25 (range 19-29), mean posts per rotation was 100 (range 65 - 159). 131 posts included references or hyperlinks, 49 PDF's, 44 radiographic images, 16 photographs and 15 EKG's. More than one third (37.3%) of threads had 5 or more posts. 63 students (75.9%, n=83) completed post clerkship evaluations. Most students (82.5%) favorably viewed our discussion board. Only 8 students (12.7%) report previously participating in a discussion board for medical education purposes. The majority, 55.6% reviewed the discussion board every few days, 22.2% reviewed it weekly. 63.5% of students spent 1-3 hours each week on the discussion board. 77.8 % of students report learning something from participation in the discussion board that they were able to directly apply to patient care during their rotation. 79.4% of students report reviewing articles or linking to websites that were posted. In the first 5 months of use, the discussion board was well received, improved collegial interactions and generated many interesting conversations.