

## RATIONALE/NEED

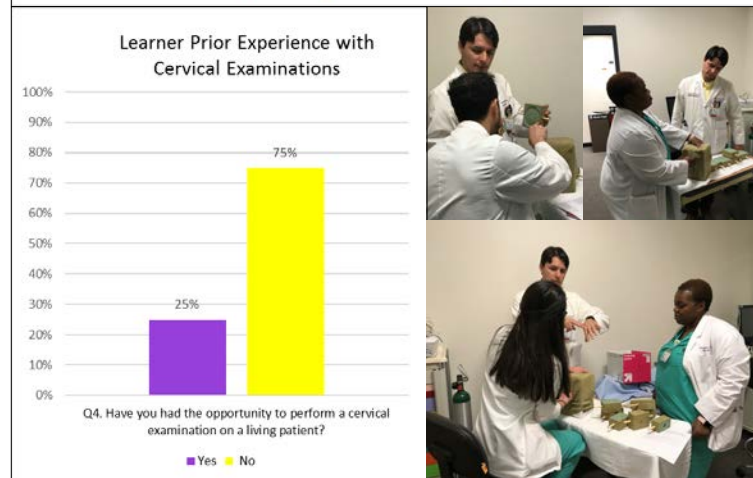
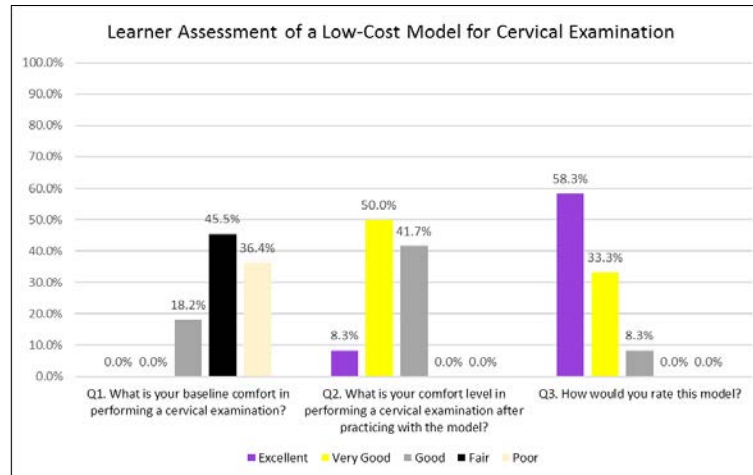
The traditional approach for teaching cervical examinations to medical students includes a didactic lecture to prepare the student for an actual digital cervical examination in the clinic or L&D. Learning to perform cervical examinations can be optimized by creating tools that enhance the learner's acquisition of the skill<sup>(2)</sup>. An accurate cervical examination is critically important in labor management, therefore directly impacting the quality of care provided to both mother and fetus<sup>(1,2)</sup>. A cervical examination has an additional level of difficulty for trainees as it requires the development of proprioception skills not used in their everyday life<sup>(3)</sup>. Skills which even at the level of a OBGYN intern can be very difficult to master<sup>(1)</sup>. The opportunities a medical student will encounter in the clinical setting is not sufficient to adequately improve their accuracy and skill. Additionally, all cervical exams in the clinical setting are conducted under the supervision of a resident or attending physician who will repeat the exam at bedside creating a difficult system for an objective assessment<sup>(2)</sup>. There are costly cervical examination simulators on the market, creating a barrier difficult to overcome for students who desire more training. In the literature, few low-cost cervical models have been proposed but none that provide a realistic experience in which you can develop the technique of assessing the dilation, effacement and station during a cervical exam. To address this challenge, a model was created that can be built easily and inexpensively, as a medical student. With the use of this model, a trainee can practice and enhance their technique before and after they perform cervical examinations on their patients.

## RESULTS

A survey was administered to 12 third year medical students during cohort 5 to evaluate the model on its usability and functionality. The survey also assessed their confidence and comfort performing cervical exams before and after using the model taking into account previous experience.

## RESULTS (continued)

Approximately 81.9% of the participants described their comfort level as fair or poor compared to 91% reporting their confidence as very good or good. Further 91% of the participants rated the model as excellent or very good. Taking into consideration that 75% of the participants have not been exposed to a cervical examination in a real patient. The average number of cervical examinations performed amongst the participants with previous experience is 3.6.



## MATERIALS AND METHODS

The students used the model which had a cost of less than 50 dollars. This low-cost model can be built with products easily found at a home improvement store. I utilized an 8ft 1/2in PVC pipe, smooth foam, wooden dowels, clear silicon, and faux leather fabric to create the model. The finished model includes 10 cervixes at different effacement and dilation. The model allows for the ability to emulate a retroverted or anteverted cervix as well as provides the simulation of suprapubic pressure. The assembly time is approximately 3 hours. I developed an "Educator Module" complete with materials list and step by step instructions on how to build the module.

## IMPACT/LESSONS LEARNED

It has been documented in the literature the importance of training with cervical exam models. Models allow students to increase their confidence during a cervical examination. The results presented provides more data that correlate with what has been reported in the literature<sup>(2)</sup>. The students who participated expressed the importance of this model and how it could provide a valuable training platform. It is important to highlight that 75% of the participants had no prior practice or performed a cervical examination. There is a clear need for increasing the training opportunities in medical education but cost of training models present a difficult barrier to overcome. The model presented is portable, affordable and ready for adoption at other institutions to aid in medical student learning of this necessary skill.

## REFERENCES

1. Arias, Tatiana, et al. "A Prospective Study into the Benefits of Simulation Training in Teaching Obstetric Vaginal Examination." *International Journal of Gynecology and Obstetrics*, vol. 133, no. 3, 2016, pp. 380-384.
2. Nitsche, Joshua F., et al. "Effectiveness of Labor Cervical Examination Simulation in Medical Student Education." *Obstetrics & Gynecology*, vol. 126 Suppl 4, 2015, pp. 13S-20S.
3. Shea, Kathleen L., and Edward J. Rovera. "Vaginal Examination Simulation using Citrus Fruit to Simulate Cervical Dilation and Effacement." *Cureus*, vol. 7, no. 9, 2015, pp. e314.

## ACKNOWLEDGEMENTS

Special thanks to Shauna Meyers, ECU OBGYN Clerkship Coordinator, for her assistance with data collection and compilation, and photography.