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# Efficacy of 3D Printed Uterus and Silicone Cervix for Medical Education in Learning and Practicing Gynecologic Procedures

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**Poster presented at the 2023 Spotlight on Scholarship at the University of Nebraska Medical Center, Omaha, Nebraska.**

**Audience Choice Award Winner**

## Abstract

Medical students and residents in obstetrics and gynecology engage in numerous simulations to enhance their skills. In pursuit of a more lifelike training environment, we developed a PVC vagina based on the referenced model originally published in https://pubmed.ncbi.nlm.nih.gov/28072606/. Collaborating with the McGoogan Maker Studio, we further refined the model by introducing a novel 3D-printed uterus, silicone cervix models, and a stabilizing ring for the PVC base. This comprehensive model serves as a platform for learners to practice various gynecologic procedures, such as uterine sounding, endometrial biopsy, intrauterine device insertion and removal, cervical polyp removal, manual vacuum aspiration, and cerclage placement. During simulations involving endometrial biopsy and manual vacuum aspiration, a specialized thickened, pink liquid mimicking endometrial tissue can be extracted from the uterine cavity using either a pipelle aspirator or manual vacuum device. These hands-on simulations employing the advanced 3D-printed uterus and silicone cervix enable learners to acquire proficiency in performing these procedures. Additionally, session facilitators provide comprehensive instruction on instrument usage and emphasize effective patient communication before and during procedures. Educational objectives extend to encompass the significance of adequate pain management, ensuring quality tissue sampling, obtaining informed consent, and practicing value-based care. Notably, the model's affordability and ease of replication contribute to its widespread adoption and utility in medical education. We conducated a quality improvement project by asking learners to complete a survey post-simulation to evaluate their experience with the task trainer. The feedback was overwhelmingly positive. A complete report of our project may be accessed on the UNMC Dept. of OB-GYN website at https://www.unmc.edu/obgyn/education/simulation.html. We also have an article on the Healthy Simulation website at https://www.healthysimulation.com/54524/3d-printed-gyno-task-trainer/. The instructions for how to create the task trainer are available at this site: https://digitalcommons.unmc.edu/com_obgyn_pres/1/. To date, the instructions have been accessed and downloaded 55 times in five countries across the world.

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