Abstract
Simulation is becoming widely used in medical education. For procedure based specialties, currently available commercial products are costly and can become prohibitive to incorporating simulation into medical training. The authors will describe the development of three low fidelity models that are currently being used during procedure based simulations in our Obstetrics and Gynecology (Ob-Gyn) residency training program.

Methods and Materials
Three reusable simulation models composed of commonly used items are described:

1) Episiotomy and perineal laceration
2) Obstetric hemorrhage
3) Laparoscopic treatment of ectopic pregnancy.

The episiotomy and perineal laceration model was constructed of the following items: large sponge, cotton pony tail holder, plastic glove, and plastic tampon applicator.

The obstetric hemorrhage uterine model was composed of a plastic whoopie cushion and cotton batting.

The ectopic pregnancy model was constructed of the following items: a plastic maraca, an assortment of rubber balloons, a plastic whoopie ball, plastic cord, and press and seal wrap.

Results
8 episiotomy and perineal repair models were constructed for approximately $23. The model has two functional sides allowing for two residents to use at a single time; it is also durable and can be used for multiple simulation sessions before needing to replace the model.

16 obstetric hemorrhage models were constructed for approximately $15. These models are also durable and can support the use of multiple placed “uterine compression” sutures.

8 laparoscopic uterine models with simulated ectopic pregnancies were constructed for approximately $16. To decrease materials, all models contained bilateral ectopic pregnancies allowing two uses per model. The handle of the maraca can be held by an assistant to simulate a “uterine manipulator” which is needed during laparoscopic surgery. The maraca base is reusable and the entire model can quickly be reconstructed for additional use.

All of the models are reusable and can be manipulated with standard surgical instruments and suture. By constructing less costly simulation models, all residents in our training program (n=16) were able to have hands on practice with each skill and model.

Discussion
In an effort to incorporate more procedural based simulations into our Ob-Gyn residency training program, the need arose to develop cost effective simulation models that would be durable, easy to construct, and reusable.

We evaluated available commercial models, and then began constructing our own models using commonly found items. This allowed us to keep cost to a minimum, while still providing high yield simulations for our residents. Feedback from our residents has been positive.

Conclusions
Reusable low fidelity models for simulation of procedural based skills can easily be constructed using commonly found items. The total combined cost for constructing the three models, ($54) is less than the published price a single commercially available model for ectopic pregnancy.

References