

Project Design Specification

An Anatomical Model to Demonstrate Correct Use of Female Barrier

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Problem Statement:

Students in the advance Contemporary Issues of HIV/AIDS of the Medical Genetic department need to learn to demonstrate the proper use of female barriers against sexually transmitted disease by the end of the semester. Currently, an adequate model to show proper use of female barrier is unavailable, thus, instructors have resort to illustrated figure to educate students in this matter. The goal of this project is to design a pelvic model to be used as a teaching tool to demonstrate proper installation of female barrier devices. The model needs to be compatible with over-the-counter female condoms and dental dam.

Client Requirements:

1. The model must be anatomically correct
2. The model must be life-size
3. The model should include at least two openings within the female pelvic, the vagina and the anus.
4. The model should be flexible and portable
5. The different tissues within the pelvic model needs to be represented and labeled clearly

Design Requirements:

1. Physical and Operational Characteristics

a. Performance Requirements- The model must be able to withstand repeated attempt of female barrier installation. The model must be properly labeled to indicate different tissues within the female pelvic.

b. Safety- The materials must be compatible with currently available female and male condoms. No hazardous material can be used in constructing this model.

c. Accuracy and Reliability- The model must be one time life-size and be anatomically correct. Additionally, the model must show similar compliance and flexibility of the female pelvic.

d. Life in Service- The model needs to be able to withstand at least five years of constant usage.

e. Shelf Life- 10 years with only minor repairs required.

f. Operating Environment- The model will be used in classroom setting by students with prior knowledge of female barrier installation. The model also needs to withstand constant transport. The weather conditions of the operating environment might have slight variations between each country.

g. Ergonomics- N/A

h. Size and Shape- The model should anatomically mimic the female pelvic, with a similar dimension to

i. Weight- As light as possible; preferably less than 500g.

j. Materials- The model must be prepared from a material that is widely accepted by the users, not rejected by the users' skin (e.g. allergic if made from latex). The material of the model needs to correctly represent the pelvic compliance and flexibility.

k. Aesthetics- The model should be presentable. Each component of the pelvic needs to be distinguishable and correctly labeled.

2. Production Characteristics:

a. Quantity- One working and well tested prototype by the end of the semester.

b. Target production cost- \$100 for the original prototype.

c. Testing procedure- Testing will be done to test the improvement of students' understanding of how to properly use a female barrier.

3. Miscellaneous:

a. Standards and Specifications- Any part of the model needs to be compatible with water-based lubricant.

b. Customer- Students of the advance course of Contemporary Issues of HIV/AIDS in the Medical Genetic department

c. Patient-related concerns- N/A

d. Competition- Illustrated figures and hard plastic pelvic model.