

Using simulation models to teach surgical skills in developing countries

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Background

In many developing countries the opportunity for learning or maintaining surgical skill proficiency is limited. Some of the challenges include limited opportunity for practicing skills, financial support, surgical supplies and on site coordination of the course. Simulation provides the opportunity for learning and practice of the required skills such as suturing, knot tying, instrument handling and tissue manipulation.



Key Points

To conduct a surgical skills program in developing countries several points are important for success.

- 1) Designate a contact person on site to perform a needs assessment, coordinate logistics and orientate the participants to the curriculum.
- 2) Develop an educational program tailored to the needs of the veterinarians.
- 3) Use simulation models that can realistically translate to field practice.
- 4) Perform continual assessments during the program using a skills checklist.
- 5) Conduct an exit interview to determine efficiency of the surgical skill program..

Summary of Surgical Skills Program

A one day seminar was conducted with 12 Mountain Gorilla veterinarians. Working with the course coordinator the level of surgical skill competencies was determined. Based on this information the surgical skills program was developed centered around the use of simulation models. The program allows the participant to progress through a continuum of surgical skills beginning with the foundational skills of suturing, knot tying and progressing through the additional skills of tissue and instrument handling, incision and managing hemostasis.

The surgical simulation model mimicked the tactile sensation and holding strength of real tissue. The model also bleeds requiring the identification and ligation of the vessels. An important benefit of using simulation models was that the participants could continue to practice the surgical techniques in lab and at home.



Initial incision



Incisional bleeding



Tissue dissection

Conclusion

Maintaining surgical skill proficiency is possible in developing countries with the use of simulation models. Optimum learning was achieved by tailoring the program to the veterinarian's level of skill, covering applicable content, repetition of surgical skills, hands on practice and the opportunity for continued practice with the models at home.



Simulation models to teach surgical skills represents an easy, cost effective method of continuing education.

