Feasibility of Simulation Training for Hyperbaric Team Skills

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INTRODUCTION

- The Duke Center for Hyperbaric Medicine and Environmental Physiology is home of the first fellowship in hyperbaric medicine certified by Accreditation Council for Graduate Medical Education (ACGME) under the American Board of Preventive Medicine (ABPM).
- Training in medicine using simulation was a recommended method for training following the Institute of Medicine Reports on patient safety.  
- Simulation training has been used for years in the aviation and nuclear power industries to improve outcomes of team interactions.
- Our goal is to evaluate the feasibility of simulation training for development and improvement of hyperbaric team skills.

METHODS

- The Duke Hyperbaric Center is a large multipurpose facility consisting of seven chambers. We set up the simulation equipment inside “Alpha” Chamber, a 3.20 M by 4.42 M cylinder, with a single medical lock.
- The chamber was not pressurized.
- A Laerdal SimMan (Wappingers Falls, NY) simulator was placed on a stretcher. The control computer cables were routed through the medical lock to the outside (Middle picture - laptop inside medical lock).
- We utilized an Apple PowerBook G4 affixed with a iSight camera (Cupertino, CA) and Varas Software Wreckcast v.2.6.4 Software (London, UK) to capture audio and video of the training scenarios.
- The captured video recordings were utilized during post treatment debriefing to identify aspects of the defined tasks in need of improvement.

CONCLUSIONS

- The use of human simulation in hyperbaric team training is a very clear and effective method of conducting and evaluating knowledge and skills needed for safe effective patient care.
- Discussions surrounding the simulations provided more interactive learning than classroom lectures alone.
- The use of simulation training for the introduction of new equipment, improved patient care techniques, and a better understanding of human error in hyperbaric medicine should be evaluated in the future.
- Both facilitators and fellows found this to be a safe, effective, and fun way of learning.

REFERENCES

3. Stolp BW, Taekman JM, Hobbs GW. Simulation, Hyperbarics, and the ACGME. This meeting.