

The Battlefield Excellence through Superior Training (BEST) Practices Act (S. 498/H.R. 1243)

The men and women who serve in the U.S. military deserve the best medical training possible. Yet the Department of Defense (DOD) continues to train personnel in combat trauma courses using animals when superior human-relevant methods are widely available. **The animals—more than 8,500 goats and pigs each year¹—are often stabbed, shot with firearms, burned, and have their limbs amputated before being killed.** The use of animals in this training is unnecessary and has been phased out of nearly all civilian trauma programs and an increasing number of military training centers,² which now use high-tech simulators modeled on human anatomy to teach the procedures that some military personnel still learn on animals.

The BEST Practices Act would carefully modernize the military's combat trauma training courses. The bill would:

“We have entered into an age where artificial simulator models are at least equivalent to, if not superior to, animal models.”

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- Develop and improve human-relevant training methods, where needed, for combat trauma courses over three years.
- Phase in nonanimal methods within five years.
- Require that DOD provide an annual report to Congress on its progress toward the transition.

Background

While most of the civilian sector and some military training centers have already transitioned to human-based methods for teaching the treatment of severe trauma, overall the U.S. military lags behind.

Many trauma centers in the Army, Air Force, and Navy use only simulators. DOD's medical school, Uniformed Services University, stopped using animals in 2013.⁵ In 2014, the U.S. Coast Guard committed to reducing by half the number of animals it uses for combat trauma training exercises.⁶ Further, as of 2015, Advanced Trauma Life Support courses across the U.S. military were no longer allowed to use animals.⁷

Practicing on anesthetized pigs and goats, who differ from humans on many anatomical levels, poorly prepares medics and corpsmen to treat wounds in actual combat situations. As a result of these anatomical differences, it is impossible to mimic human wounds, including injuries to the skin (such as burns), head, face, and limbs.

Medical training devices, including simulators, are based on human anatomy and offer lifelike skin, fat, and muscle. Their limbs are based on the weight and feel of the human body. Using simulators, trainees can practice skills repeatedly.



The Human Worn Partial Task Surgical Simulator (known as the “Cut Suit”) is a training device worn by a human actor.⁴

The Need to Modernize Military Training

- The anatomical differences between goats and pigs and humans present numerous problems when teaching trauma management. Compared with humans, goats and pigs have smaller torsos, lighter limbs, thicker skin, and important differences in anatomy of the head and neck, internal organs, rib cage, blood vessels, and the airway.
- In a 2006 training video shown to medics in the Army's Tactical Combat Medical Care course the instructor repeatedly references significant differences between training on live goats and human casualties.⁹
- A 2007 U.S. Army paper stated that "[t]he goat model is not ideal for venous access practice," resulting in "personnel not having the opportunity to treat other injuries."¹⁰
- A 2009 report from medical experts compiled by DOD predicted that simulators for teaching nearly every "high value/high volume" medical procedure could be validated by 2014.¹¹ But in a 2013 report to Congress, DOD refused to commit to a deadline for making this transition.¹² The agency is lagging behind the recommendations of its own experts.

98%
of civilian trauma
training programs—
including
**Massachusetts General
Hospital, the Mayo
Clinic, Yale University,
and UCLA—use only
medical simulators
based on human
anatomy.⁸**



80%
of NATO member
nations have either
switched to using only
medical simulation or
never employed live
animal use in the first
place.¹³

References

1. Number arrived at by combining figures from major military training institutions and private contractors hired to teach courses to DOD personnel.
2. Physicians Committee for Responsible Medicine. (2013) "Live Animal Use for Advanced Trauma Life Support Courses in U.S. and Canadian Programs: An Ongoing Survey." <http://www.pcrm.org/research/edtraining/ATLS/survey-of-atls-programs>
3. Hall, J. (2014). Letter to the editor. *Military Medicine*, 179, 7.
4. Capitol Hill combat trauma training briefing, October 2014; photo: Tony Brown / IMIJ Photo
5. Blum, A. "Medical students no longer train on live animals at Bethesda-based military school." *Montgomery County Gazette*. 5 Sept. 2013. Retrieved February 20, 2015, from <http://www.gazette.net>.
6. Vergakis, B. "Coast Guard Reduces Use of Live Animal Training." Associated Press. 13 Feb. 2014. Retrieved February 20, 2015, from <http://www.military.com>.
7. U.S. Department of Defense Office of the Assistant Secretary of Defense for Health Affairs. "Determination for the Use of Animals in Medical Education and Training." 15 May 2014.
8. Physicians Committee for Responsible Medicine. (2013) "Live Animal Use for Advanced Trauma Life Support Courses in U.S. and Canadian Programs: An Ongoing Survey." <http://www.pcrm.org/research/edtraining/ATLS/survey-of-atls-programs>
9. U.S. Army Medical Command. Tactical Combat Medical Care Surgical Skills Lab update. 2006.
10. Sohn, V.Y., et al. (2007). From the Combat Medic to the Forward Surgical Team: The Madigan Model for Improving Trauma Readiness of Brigade Combat Teams Fighting the Global War on Terror. *Journal of Surgical Research*, 138, pp. 25–31.
11. U.S. Department of Defense Office of the Director of Defense Research and Engineering. "Final Report on the Use of Live Animals in Medical Education and Training Joint Analysis Team." 7 Dec. 2009.
12. U.S. Department of Defense Office of the Under Secretary of Defense for Acquisition, Technology and Logistics. "Report to Congress on the Strategy to Transition to Use of Human-Based Methods for Certain Medical Training." April 2013.
13. Gala, S.G., et al. (2012). Use of Animals by NATO Countries in Military Medical Training Exercises: An International Survey. *Military Medicine*, 177-8.

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