



FACT SHEET: The need for simulation training

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Robotic surgery is now a respected adjunct to minimally invasive surgery, but training is complex. Furthermore, training is often restricted to console time in the operating room, which can be difficult to acquire with the popularity of the *daVinci* robot. Studies have shown virtual reality-based simulation to be effective in providing the surgical skills training that is needed to advance the learning curve more quickly.

The Need/Demand:

- Complex Robotic Surgery must be thoughtfully introduced:
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1356924/#_ref-listid4073329
- Surgeons say they need “on-demand” training:
<http://www.kdvr.com/health/sns-health-robotic-surgery-safety,0,5182407.story>
- Medical leaders claim that the technology must closely reproduce the experience of robotic surgery:
<http://www.sages.org/publication/id/ROBOT/>

With the help of independently-validated studies and academic experience, Mimic Technologies has developed a system for the *daVinci* robot that is shown to be both realistic and effective, called the dV Trainer. This fact sheet outlines the reasons for the dV Trainer and why it is the best solution for surgeons today.

The Solution/Supply:

The dV Trainer simulates the surgeon console of the *daVinci* surgical system. Like a “flight simulator” for robotic surgery, it is designed to allow efficient on-demand training for surgeons learning to use the *da Vinci* Surgical System.

Important aspects of the technology physicians cannot access anywhere else:

The dV-Trainer consists of a compact hardware platform that closely reproduces the look and feel of the *da Vinci* surgeon console, and can be placed outside the operating room for improved access. It uses a proprietary surgical simulation platform, MSim, that enables realistic training scenarios. Its MScore application provides comprehensive performance evaluation, metrics history, and course administration tools. Mimic is implementing a new proficiency-based scoring system based on expert data, that can be customized by the training institution, and serve as a platform for surgeon credentialing.

Independently-validated Studies

Recent independent studies, both government funded as well as academic, have concluded that the dV-Trainer is comparable to dry-lab training on the *da Vinci* robot (concurrent validity), and efforts are underway to assess the predictive validity of the simulator. These studies ask the following questions:

- Is the operation realistic?
- Is the technology a useful training tool?
- Can it distinguish between a novice and an expert surgeon?
- Does it correlate with dry-lab?
- Can it accurately predict performance?

For information on the studies, see the study fact sheet.

Features of the dV Trainer:

- Unparalleled realism - exercises developed in close collaboration with Intuitive Surgical.
- Cost effective *da Vinci* training - reduces need for training robot and does not require expensive training instruments and materials.
- Improved robot utilization - encourages surgeon adoption and frees up clinical robot for revenue generating procedures.
- Accelerated surgeon learning- suite of validated exercises speeds up the learning curve.
- Improved patient safety - extensive training with objective feedback prior to live cases.

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