ROBOTIC SURGERY SIMULATOR

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Surgeons who are trained to use robots in robotic assisted surgeries may not feel comfortable performing these surgeries.

Training platform were on animals.
HISTORY OF ROBOT ASSISTED SURGERIES

• 1985 – The Puma 560 was used to place a needle in the brain for biopsies.
• 1987 – Robotics used in first laparoscopic surgery, cholecystectomy.
• 1988 – The PROBOT was developed.
• 1999 – The Da Vinci was created.
ABOUT THE DA VINCI

• Robotic technology that allows smaller and more precise incisions on patients

• Has a magnified 3D high-definition vision system and tiny wristed instruments that bends and rotates

• As a result, surgeons are able to operate with enhanced vision, precision and control.

• A surgeon is 100% in control of the da Vinci System at all times.

• System translates surgeon’s hand movements into smaller, precise movements of tiny instruments inside your body.
• Robotic Surgery Simulator (RoSS) – a portable simulator that teaches novice surgeons the motor and cognitive skills required for operating the da Vinci.

• uses virtual reality to introduce the user to the fundamentals of robot-assisted surgery.

• has a multi-level curriculum, designed with various levels of difficulty, that does a walkthrough and teaches the novice surgeon the required skills needed for effectively advancing robotic surgery abilities.
Arm Rest
Improved arm rest. Comfortable to reach master controller.

Weight
New RoSS is 200 lbs lighter. Much easier to transport from room to room.

Pedals
Improved pedal access. 4th arm pedal extended for easier access.

Visualization
Brighter 3D display, crisper images, vivid color.

Dimension
Maximum dimension is reduced from 36" to 30". Easier to fit in small doorways.
HOW DOES IT WORK?

• Gives novice surgeons a virtual reality based training
• Hands-on Surgical Training (HoST) modules use actual surgical cases
• Offers 16 modules, each with different levels of difficulty
• Provides in-vivo virtual operative steps with 3 levels of complexity
• Stores performance metrics for all users
ADVANTAGES

- Training for novice surgeon is more cost effective
- Eliminates previous methods of training
- Comes with different levels of complexity
- Provides surgeons with extensive training prior to performing surgery on patients.
- It allows for re-familiarization with the robotic interface after a period of inactivity
- It enables cognitive and motor skills warm-up prior to surgery.
- Portable and can be moved from one room to the other
LIMITATIONS

• Surgeons may not truly be prepared for what is about to happen in the operation room.
• Can only be used for the da Vinci
FUTURE

• Have the simulator be used for all types of robotic assisted surgery.


THANK YOU

Any questions?