

LapVision Hybrid

Patient/Surgical Simulator

Surgical Team Simulation
in OR Scenarios



A photograph of a surgical team in an operating room. The central figure is a woman wearing a blue surgical cap, a blue face mask, and blue scrubs. She is focused on a task, with her hands gloved and holding a surgical instrument. In the background, another team member is visible, also in blue scrubs and a cap, but out of focus. The scene is brightly lit, typical of an OR. The text 'Surgical team simulation in OR scenarios' is overlaid in white on the right side of the image.

Surgical team
simulation in
OR scenarios



LapVision Hybrid

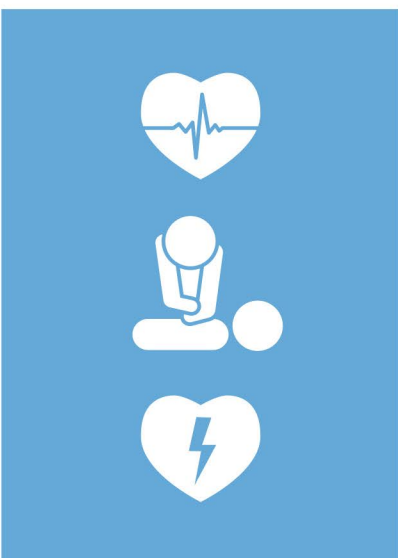
Our NEW **LapVision Hybrid** has been designed for realistic simulation scenarios in the OR setting to develop surgical teams in communication, decision-making and technical skills.

The comprehensive manikin-based training platform allows for the acquisition and retention of laparoscopic skills, which can be combined with a variety of dynamic OR scenarios, including anesthesia administration and management of complications, and other emergency scenarios that may arise during surgical procedures.



Integrating the principles of Human Factors to enhance clinical performance

When combining surgical and anesthesia emergencies into one seamless learning experience, you can create both common and complex critical scenarios that challenge the whole OR team.



Create a complete OR set up for the whole surgical team

- Enhance anesthesia and surgical team performance in critical scenarios
- Full range of advanced ventilation scenarios
- Complete range of resuscitation and anesthesia procedures
- Surgeon's actions can be controlled with the patient simulator's vital signs
- Magnetic haptic feedback with true-to-life tissue resistance
- Realistic interactive laparoscopic stand set-up
- Virtual anesthesia and ventilation machines connect
- Extensive Leonardo functionality can be employed

Training together those that work together..



Many dynamic scenarios can be created to reflect complications that arise in the OR realistically. Through the testing of technical and team communication skills, our LapVision Hybrid facilitates immersive learning of related complications, including those associated with:

- Administering drug therapy
- The induction of pneumoperitoneum
- 5 trocars in total - expandable with additional virtual trocars
- Bipolar and monopolar diathermy
- Mechanical instruments
- Other associated conditions and many more...

Setting the standard in Laparoscopic simulation

- Our proprietary Magnetic Haptic System provides realistic feedback
- Magnetic Haptic System is also more reliable than mechanical versions
- Wireless instruments can be completely removed from the port
- Instruments use integrated gyroscopes for easy tool selection and swap
- A camera imitator with angle adjustment control



A complete training solution

Our innovative software allows for a complete training solution that includes:

- Training and exam modes
- Detailed statistics after each module
- High definition 3D graphics
- Video and text materials
- 3D anatomy atlas

Mastering use of laparoscopic instruments and camera

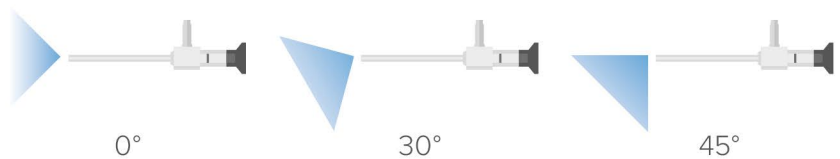
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Highly realistic instruments support a seamless transition of skills to real surgical practice

Laparoscope control

- Three camera angles: 0°, 30°, 45°
- Endocamera use training
- Realistic camera functions



Virtual instruments

Extend the learning and practice with a variety of virtual instruments.

- Easy switch between instruments
- Instrument freeze functions



Forceps



Endobag Extractor



Coagulator

Over 20 different virtual instruments are available that are commonly used in laparoscopic surgeries. We can add new instruments by arrangement.

Library of Laparoscopic Modules



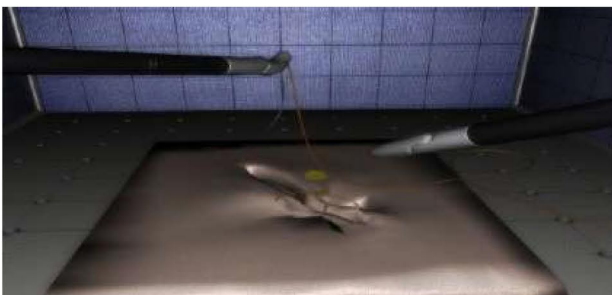
Certain important skills in laparoscopy

- The task on endoclip applicator control
- The task on endoscopic scissors control in examination mode
- The task on endoscopic scissors control in training mode
- The task on movement of objects on pins
- The task on movement of pins



Complex of training tasks on suturing and knotting

- Interrupted (loop) suture for curved incision
- Interrupted (loop) suturing technique
- Square knot tying for right/left hand
- Surgeon`s knot tying for right/left hand



Special critical skills of suturing and knotting

- Mattress suturing technique
- Square knot tying on a thread without a needle
- Surgeon`s knot tying on a thread without a needle
- Suturing by right-hand / left-hand needle
- Training of skills of needle orientation in the need-holder
- Z-shaped suturing technique



Acute adhesive small bowel obstruction

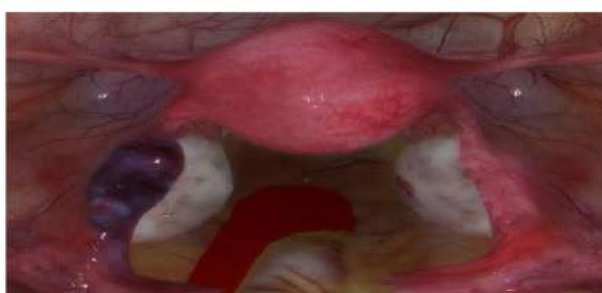
- Acute adhesive small bowel obstruction in the right/left area

Library of Laparoscopic Modules



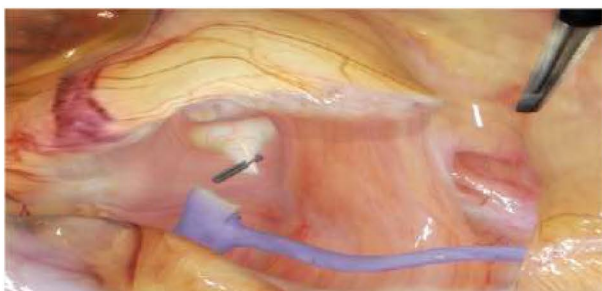
Diagnosis of the abdominal cavity

- Diagnosis of appendicitis
- Diagnosis of cholecystitis
- Diagnosis of ectopic pregnancy
- Diagnosis of ovarian cysts
- Diagnosis of perforated duodenal ulcer



Skills in gynecological surgery

- Preventive oophorectomy
- Tubal sterilization
- Tubectomy with abdominal pregnancy in ampullar area of the right/left fallopian tube with active bleeding
- Tubectomy with abdominal pregnancy in ampullar area of the right fallopian tube in ampulla of the right tube
- Tubotomy with abdominal pregnancy in isthmic area of the right fallopian tube



Skills in laparoscopic nephrectomy

- Clipping and intersection of the ureter
- Clipping and intersection of the vessels
- Mobilization of the descending colon
- Removal of the kidney



Important skills in laparoscopic cholecystectomy

- Traction and dissection of the peritoneum
- Dissection of structures in Calot's triangle
- Clipping and cutting of cystic artery and cystic duct
- Mobilisation of the gall bladder



Execution of hysterectomy

- Execution of total hysterectomy
- Subtotal hysterectomy



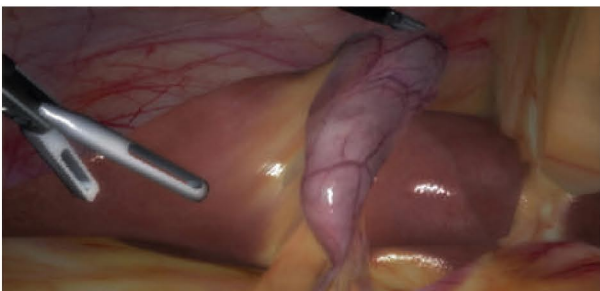
Execution of laparoscopic appendectomy

- Acute phlegmonous appendicitis in pregnant woman
- Acute phlegmonous appendicitis with effusion in the area of the appendix
- Acute phlegmonous appendicitis with local peritonitis
- Acute phlegmonous appendicitis with retrocecal location of the appendix
- Acute phlegmonous appendicitis
- Gangrenous appendicitis with effusion and local peritonitis



Sigmoid colon resection

- Cutting vessels, mobilisation and intersection of the sigmoid colon
- Anastomosis

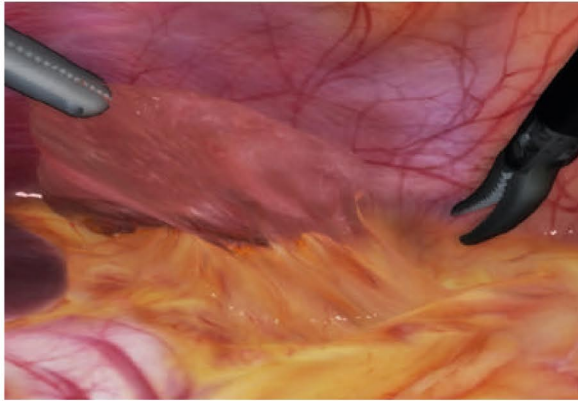


Full procedure of laparoscopic cholecystectomy

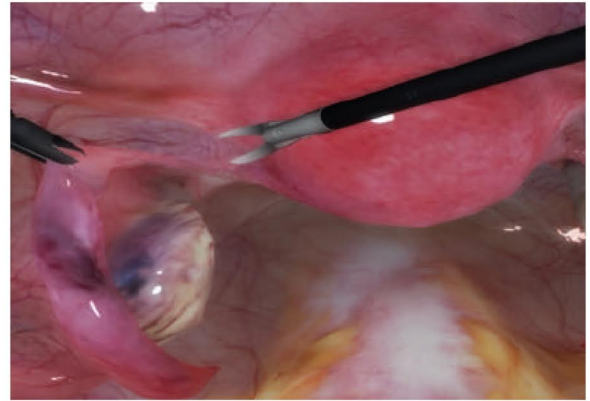
- Planned cholecystectomy with acute catarrhal cholecystitis
- Cholecystitis with phlegmonic cholecystitis
- Urgent cholecystectomy with gangrenous cholecystitis with local peritonitis

Library of Laparoscopic Modules

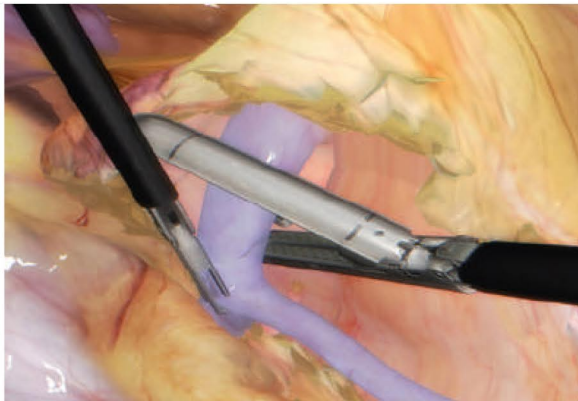
Immersive anatomies



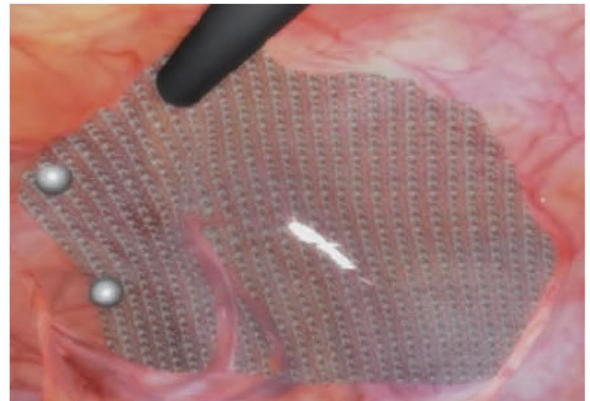
Splenectomy



Salpingo
oophorectomy



Nephrectomy



Hernioplasty

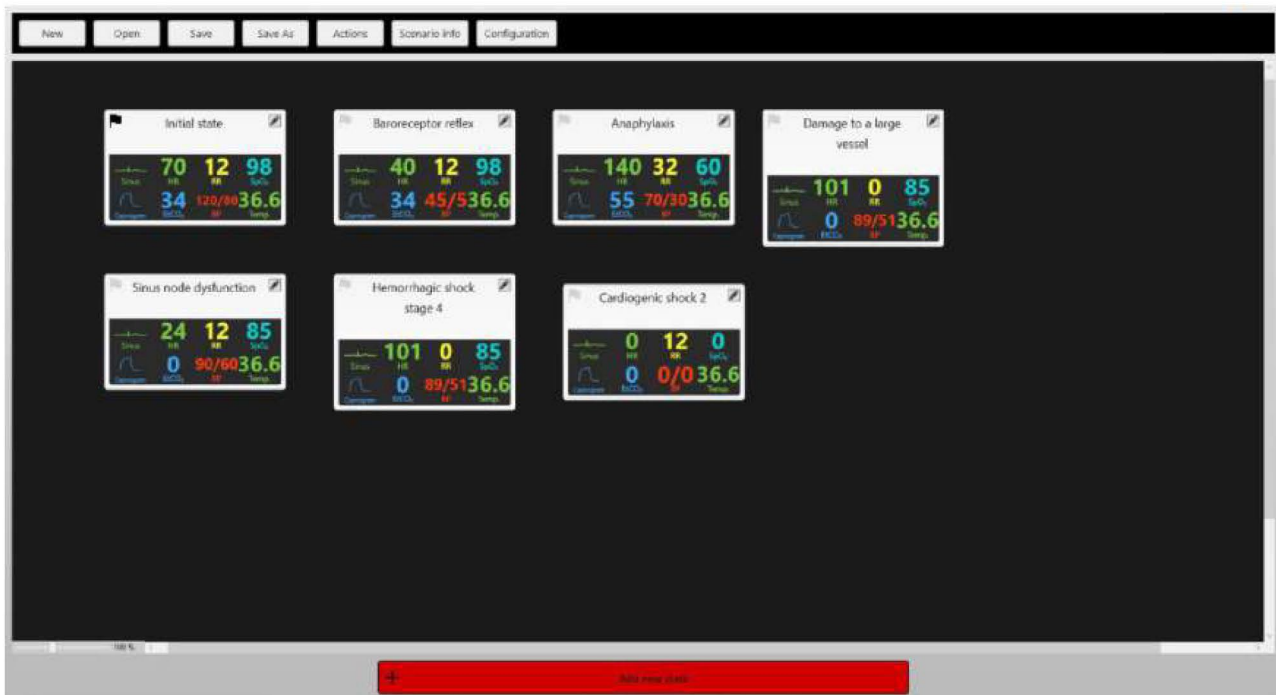
- Internal bleeding that occurs during the exercise will lead to changes in the patient's condition including possible death;
- When coagulating or dissecting, the tissues of the internal organs change and react accordingly;
- Realistic fluid physics;
- The abdominal cavity is operable, presenting the perfect learning opportunity to make surgical mistakes and then correct them.

Let the software do the work...

The software solutions behind our simulator platforms follow a simple mantra: make it easy, make it reliable and make it do whatever the instructor wants!

Our intuitive software is so easy to use, you can run this simulator on the fly and capture learning opportunities in the moment - all in a risk-free environment!

Alternatively, you can create your own scenarios to cover specific teaching points and learning objectives unique to your training programs.



Scenario Builder

Creating scenarios has never been this easy! Highly flexible in its operation, our scenario builder software allows you to create simple to more complex patient cases through its touchscreen 'drag and drop' capability.

Drop in, Slide to Sequence and Easy Adjustment of patient events and physiological parameters, make it possible to fully customize your programs for trainees to acquire the required competencies.



Instructor Tablet

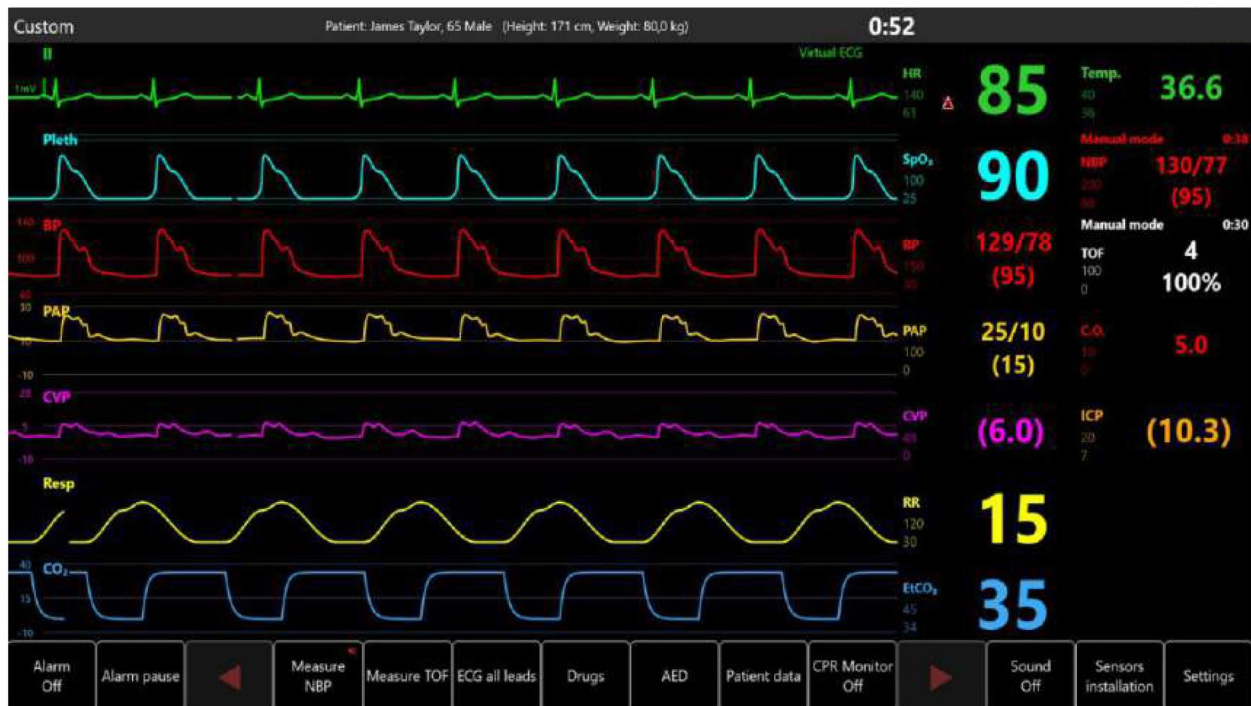
Our Instructor Tablet with its quality touch screen makes navigation between windows and menus a totally seamless experience.

Of course, it has all the functionality you would expect from an instructor tablet: automated and manual scenario modes; easy selection of

patient states and themes; synchronized vital signs with the patient monitor; slider controls for nuanced changes to the patient's condition... but it's the intuitiveness of the user interface that is the real game-changer here. From 'pick-up-and-play' to running complex scenarios, it really is that simple.



Scenarios...
create your
own or run
on the fly



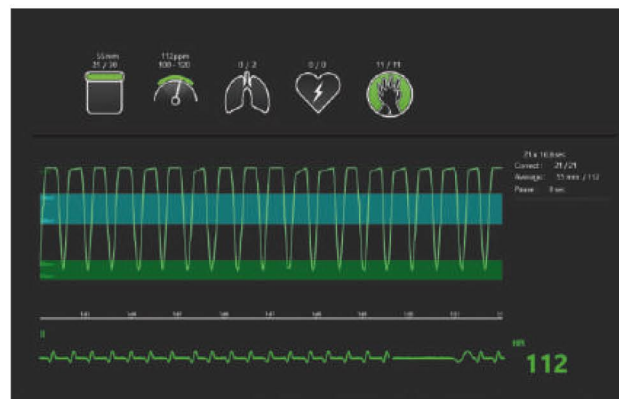
Patient Monitor

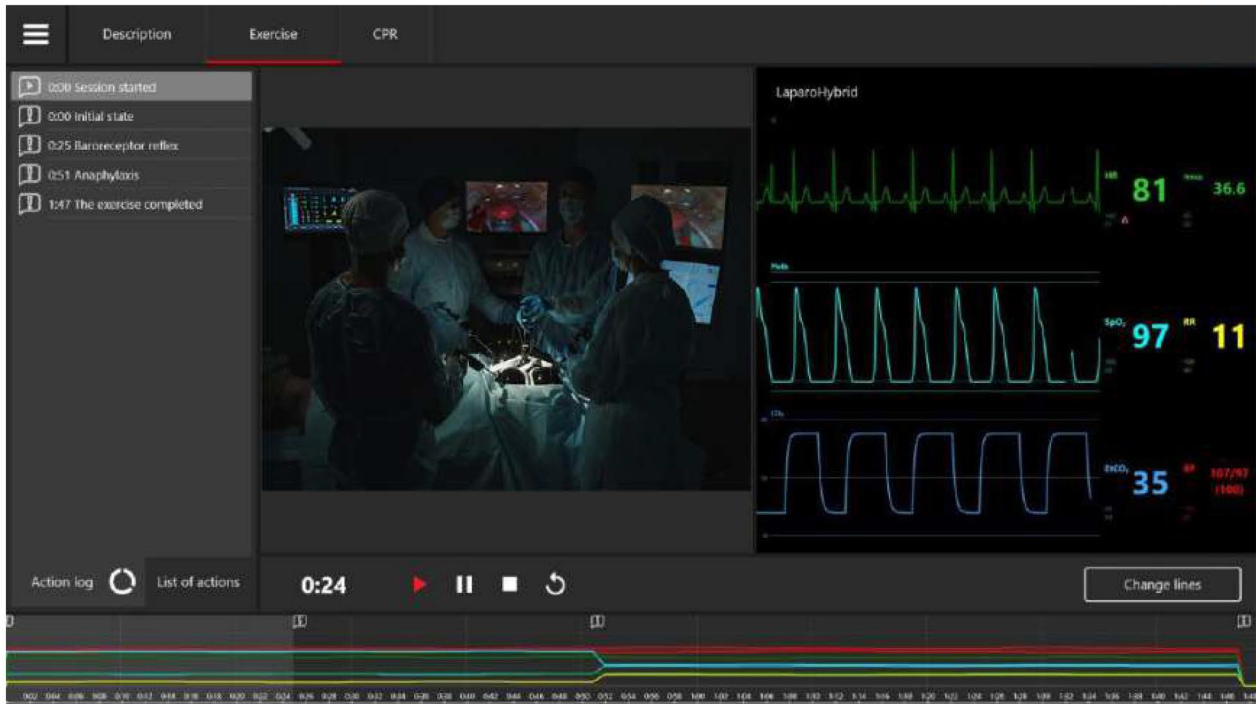
Our touchscreen patient monitor displays vital signs with a familiar look and functionality typical of its real counterparts.

It is fully customizable and the operator can simply select and display vital signs most appropriate to the patient's clinical case.

A novel feature of our patient monitor is the real-time CPR performance display, which can be employed during cardiac arrest scenarios. Feedback on the quality of CPR: rate, depth, release and ventilation supports compliance with Guidelines.

A virtual manual defibrillator is also available for cardiac arrest and cardioversion events.





Debrief Viewer

The debrief is arguably the most important element of the simulation exercise, which is why we have put careful attention to the features within our Debrief Viewer.

Our debrief software provides the instructor with unprecedented flexibility in its operation. Whether you review the session from start to finish or jump to time-stamped events, we have made it easy to find and access meaningful moments within the simulation with full patient data to ensure the best possible learning outcomes.

CPR performance metrics are also available at the touch of a button.

The integrated action log captures all trainee records and performance data.

Leonardo's Action Log captures performance data from the scenario to allow for a quality debrief and reflective learning.

Features

General

- Manikin torso with a head (full body manikin - optional)
- Laparoscopic trocars (4 pcs) + camera trocar
- Magnetic haptic feedback with true-to-life tissue resistance
- Laparoscope imitator
- Laparoscopic wireless instruments (4 pcs)
- Interactive laparoscopic stand
- Pedals for coagulation and electrical dissection
- Patient monitor is synchronized with surgeons actions
- Virtual anesthesia machine
- Reactive pupils
- Open/half open/close eyes
- Heart, lungs and bowel sounds
- Drug recognition

Airway

- Anatomically correct CT scan-based airway
- Oral/nasal intubation
- Difficult airway
- Tongue edema (0%/50%/100%)

- Airway obstruction
- Pharyngeal obstruction
- Trismus
- Cricothyrotomy

Breathing

- Spontaneous breathing
- Bilateral and unilateral chest rise and fall
- Bilateral tension pneumothorax
- Needle decompression
- Ventilation using a real mechanical ventilator
- Hook up to a virtual anesthesia machine

Circulation

- CPR with detailed feedback
- Adjustable pulse: bilateral carotid, femoral, brachial, radial
- Defibrillation using a live defibrillator

Laparoscopic modules

- Basic skills
- Appendectomy
- Anastomosis
- Sigmoid colon resection
- Splenectomy
- Hernioplasty

- Saplings oophorectomy
- Tubal ligation
- Ectopic pregnancy-salpingostomy
- Total hysterectomy
- Prophylactic oophorectomy
- Full procedure of laparoscopic chole
- Nephrectomy
- Adhesive small bowel obstruction
- Diagnostic laparoscopy

Laparoscopic instruments

- Wireless instruments can be pulled out from the ports for maximum realism
- Modelled after real instruments
- Effortless tool selection and swap
- Freeze function for all instruments if you want to train using one hand only

Others

- Scenario constructor
- Extended debriefing

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