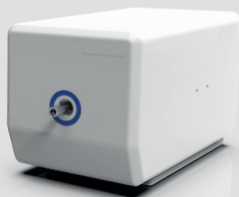


VirtaMed UroS[™]

The most comprehensive simulator for endoscopic urology and basic laparoscopic urology.

Realistic training

- Photorealistic graphics
- Best in class haptic feedback
- Original instruments ease transfer of skills to the OR
- Resectoscope with working element for electrosurgery
- Camera optics: 0°, 12°, 30°

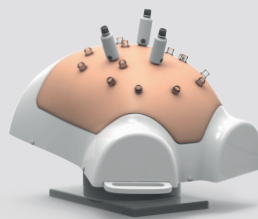


Portable platform

- Versatile and compact laptop-based simulation platform with 17" multi-touch screen
- Complete system easily transportable in one robust trolley case

Independent learning

- Progressive training, from basic skills to advanced cases
- Expert-developed courses
- Create your own curriculum with a unique variety of cases
- In-simulation procedure guidance



Ergonomic platform

- Mobile and height-adjustable display cart with movable 27" multi-touch screen

VirtaMed UroS[™] can be complemented with LaparoS[™] General Surgery, GynoS[™] and ArthroS[™], for multidisciplinary training on one platform.

Used by:

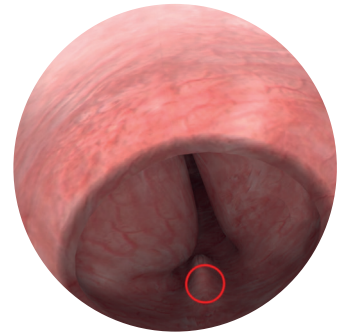
Teleflex[®]

**Boston
Scientific**

The VirtaMed Urology Platform

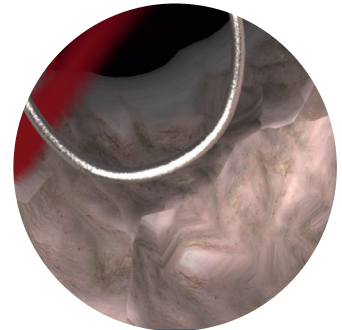
TURP basic skills

The Basic Skills module is designed to start new trainees on the very basics of urology, starting with depth perception, eye-hand coordination, and identification of key anatomical landmarks. As the user continues through the cases, more advanced skills are added including bleeding control and partial resection of the median and side lobes.



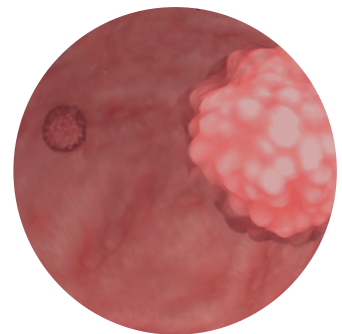
TURP full procedures

This module allows the user to complete full cases in a variety of prostate sizes, with correlative haptic feedback, for scaled learning. Trainees can practice tissue removal using both passive and active resectoscopes while mastering fluid management, coagulation of bleeding and severe errors, such as cutting the verumontanum. Training features are provided to help the user better identify tissue that still needs to be resected and the current section depth.



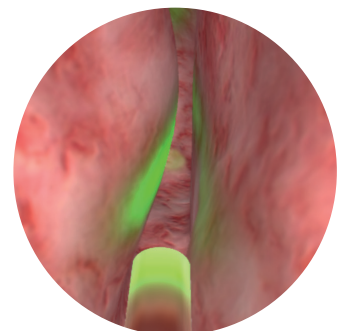
TURB

This module offers the opportunity to train complete TURB procedures including different multiple papillary and solid tumors in a safe environment without involving patient related risk. The goal of the training module is to remove bladder tumors in various locations, ranging from easily accessible to locations that are more difficult to reach. Managing complications is also one of the learning objectives: bleedings have to be managed and the risk of perforating the thin bladder wall has to be avoided.



Laser BPH

Partial and full procedures with the ThuLEP and HoLEP lasers teach surgeons the removal of prostatic tissue with different endoscopic techniques: vaporization, denuclearization and vapor resection. Trainees learn laser fiber handling in a realistic environment, requiring adjustment to the laser power settings to safely treat prostate sizes varying from 55 to 90 grams.



LaparoS™ Laparoscopic Training for Urology

The UroS™ on the ergonomic platform can be extended with the LaparoS™ Essential Skills module for training of key psychomotor skills in laparoscopic surgery.

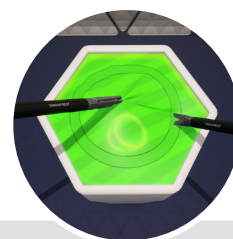
LaparoS™ Essential Skills

Using a simulated 0° and 30° optic, residents become proficient in camera navigation, eye-hand coordination, clip placement, development of bimanual and ambidextrous psychomotor skills. Objective feedback metrics provide proficiency-based feedback.



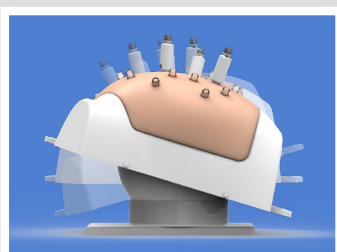
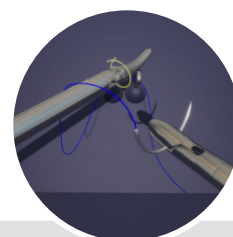
LaparoS™ Essential Skills (FLS)

The LaparoS™ Essential Skills module offers training cases inspired by FLS¹ (Fundamentals of Laparoscopic Surgery) to prepare for the assessment of the 5 key skills: bimanual coordination, pattern cutting, loop ligation, needle manipulation and intracorporeal knot tying.

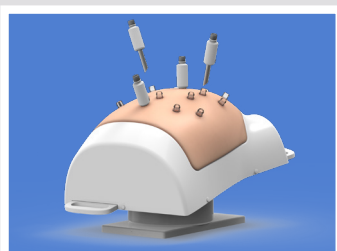


LaparoS™ Essential Skills (Suturing)

The LaparoS™ Essential Skills cases for suturing focus on a step by step learning of key manual skills for laparoscopic suturing, such as needle rotation, needle positioning and manipulation and knot tying (half knot, square knot and surgeon's knot).



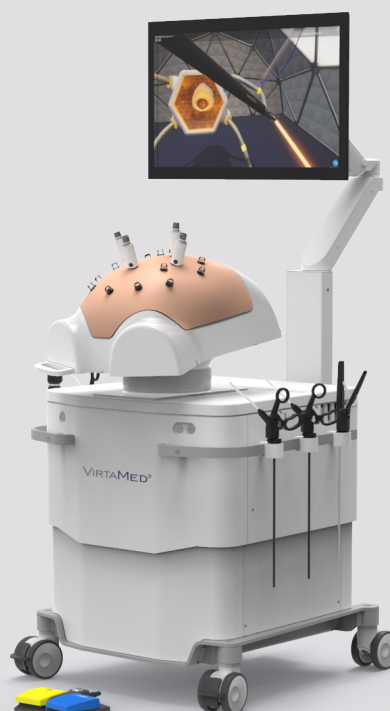
Patient positioning



Trocar placement



Team training



Curriculum Integration

The VirtaMed UroS™ simulators have been validated by many studies to make sure they are the most realistic, accurate, and helpful tool on the market for urology skills training. Integrating simulation into the educational pathway is essential for patient safety and evidence showed that the simulator can be used for accreditation in a proficiency-based program prior to supervised procedures in the OR.^{2 3 4 5}

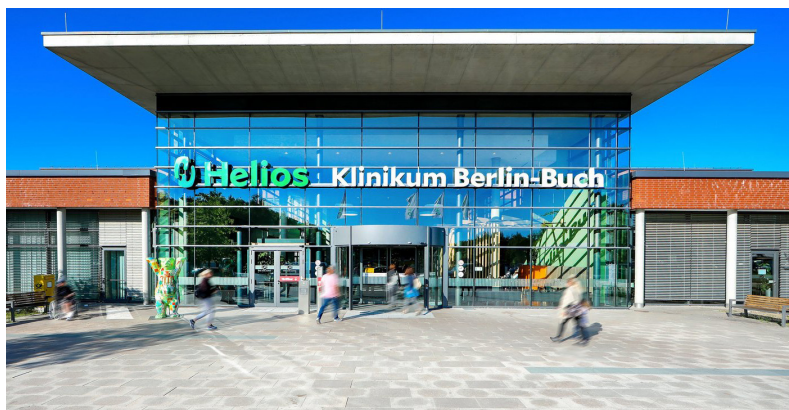
” The TURP module offers urologic surgeons a very realistic training with a wide range of prostate anatomies, pathologies and operative complications. The basic skills training with outside views guides the trainee and shows the important landmarks used for orientation. Color schemes mark the sections where to resect - and where to stop. Thus, urologists can practice to perfection without any risk for the patient and then transfer this experience to the OR.

—PD Dr. Michael Müntener, Head of urology department, Triemli Hospital Zurich



Reference Center HELIOS hospital group, Germany

The HELIOS Hospital Group consists of 110 acute and rehabilitation facilities with about 34.000 beds and more than 69.000 employees. The departments for urology and gynecology train a large group of residents each year until they complete their education as medical specialists. In 2011, HELIOS included VirtaMed's virtual reality simulators into their standard curriculum for residents in training. E.g. in each urology department, a simulator is placed at the disposal of each clinic for six weeks each year. During this time, the head physician conducts a training program. In his or her first year, every surgeon who wants to conduct transurethral resection has to perform 50 documented procedures on the simulators.



VirtaMed Connect

Connect is VirtaMed's cloud-based solution that lets you access your simulator data anytime from anywhere. Use Connect to remotely create courses, track student progress, and manage your simulator usage - all from the convenience of your desk or tablet. With Connect, trainees are motivated through online leader boards and can compare their own results over time.

¹ chrome-extension://efaidnbmninnibpcapjpcglclefindmkaj/https://www.flisprogram.org/wp-content/uploads/2014/02/Proficiency-Based-Curriculum-updated-May-2019-v24-.pdf

² Kuronen-Stewart et al, Holmium Laser Enucleation of the Prostate: Simulation-Based Training, 646 UROLOGY 86 (3), 2015: 639-648.

³ Rafi et al, Construct validity of UroSim® simulator for learning transurethral resection of bladder tumor, 201 UROLOGY 53 (5), 2019: 319-324.

⁴ Bright et al, Face validity, construct validity and training benefits of a virtual reality turp Simulator, International Journal of Surgery 10 (2012) 163-166.

⁵ Berkers et al, Evaluation of the educational value of the virtual reality TURP simulator according to a curriculum-based approach, Simul Healthc. 2014 Oct 9 (5): 288-294

