Suggested Team Training Course for the RobotiX Mentor

Description:

The course is composed of two components:

1. **Part 1: Nontechnical Skills to Enhance Patient Safety, a didactic course by CAMLS - Center for Advanced Medical Learning and Simulation .**

Nontechnical skills have been described by a program called TeamSTEPPS®, which stands for Team Strategies and Tools to Enhance Performance and Patient Safety. TeamSTEPPS was developed by the United States Department of Defense and the Agency for Healthcare Research and Quality (AHRQ). It is based on 25 years of research on teamwork. According to TeamSTEPPS®, there are four dimensions of teamwork: leadership, mutual support, situation monitoring, and communication. This course will describe each of these four dimensions. Also, it will illustrate the dimensions with examples of effective and ineffective behavior that can occur in the robotic operating room.

Several impressive results have been reported by organizations that implemented TeamSTEPPS®. These include improved interdisciplinary ICU communications with a decreased length of stay (LOS) by 50% (Pronovost et al., 2003), a decreased clinical error rate from 30.9% to 4.4% (Morey et al., 2002), and a 27% reduction in nurse turnover (DiMeglio et al., 2005). Thus, there are benefits to healthcare workers in addition to patient safety .

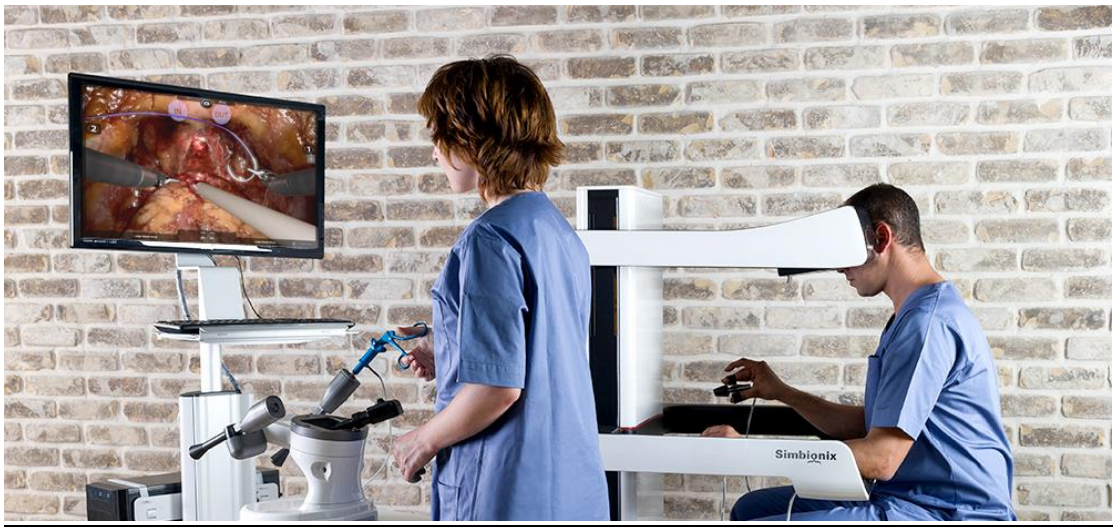
This course is intended for robotic surgeons. There are important nontechnical skills required for all surgical team members. However, the content of this course has been tailored specifically for the robotic surgeon.

2. **Part 2: Simulation-Based Robotic Surgeon and Bed-Side Assistant Training**

The team training option is enabled by incorporation of the LAP Mentor Express to allow the surgical assistant to collaborate with the robotic surgeon in practice, as in real procedures. The primary surgeon and the laparoscopic assistant practice the skills together in the same training environment and actively cooperate during the simulation, in order to improve communication skills and synchronization within the team.

Team training is available for basic skills tasks and clinical procedure modules. The assistant can practice laparoscopic skills relevant for working with the robotic

surgeon such as object transfers and handoffs, removal of objects from the operative field through the assisting trocars, retraction, suction/irrigation, clip applying and stapling. Comprehensive reports detail the performance of both the robotic surgeon and the assistant.



Goals: Nontechnical Skills to Enhance Patient Safety:

- To define the TeamSTEPPS dimensions of leadership, mutual support, situation awareness and communication.
- To identify effective and ineffective behaviors associated with each of the TeamSTEPPS dimensions.

Objectives: Simulation-Based Robotic Surgeon and Bed-Side Assistant Training:

- To allow the laparoscopic assistant practice in the basic laparoscopic skills relevant for working together with the robotic surgeon: transfers and handoffs, object manipulation, depth perception, retraction and removal of objects from the operative field.
- To practice the laparoscopic assistant's roles in Bladder Neck Dissection task of the RARP procedure –creating tension by pulling the catheter and clearing bleeding by using suction/irrigation.
- To practice the laparoscopic assistant's roles in Nerve Sparing task of the RARP procedure – clip applying, creating tension by pulling the Vas Deferens and Seminal Vesicles. To practice the surgical assistant's role in the Uretherovesical Anastomosis of the RARP Procedure: clearing bleeding by using suction/irrigation.

- To show effective communication between the robotic surgeon and the surgical assistant.

Specialties:

Obstetrics & Gynecology, Urology, Thoracic surgery, General surgery, Colon & Rectal Surgery, Bariatric Surgery, Orthopedics.

Target Audience:

Robotic surgeons, interested in team training including Nontechnical Skills to Enhance Patient Safety and an opportunity for hands-on training for the surgical assistant and the robotic surgeon to collaborate in practice, as in real procedures.

Assumptions:

None

Authors:

Nontechnical Skills to Enhance Patient Safety, a didactic course by CAMLS - Center for Advanced Medical Learning and Simulation was developed by:

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The Tower Transfer and Roller Coaster tasks are based on the Robotic Training Network Curriculum, developed in collaboration with:

- Martin A. Martino, MD, FACOG, Associate Professor, Division of Gynecologic Oncology, Department of Obstetrics and Gynecology, University of South Florida. Medical Director, Minimally Invasive Robotic Surgery, Lehigh Valley Health Network, Allentown, Pennsylvania.
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On behalf of the Robotic Training Network. http://www.robotictraining.org/

The Peg Transfer task is based on the LAP Mentor Laparoscopic Essential Tasks Module, developed in collaboration with:

- Amir Szold, MD, Department of Surgery, Tel Aviv Sorasky Medical Center, Tel Aviv.
- Yaron Munz, MD, Senior Surgeon, Dept. of General Surgery, Rabin Medical Center,
- Golda Campus – Hasharon. Director of Surgical Simulation, The Israel Centre for Medical Simulation, Sheba Medical Centre, Tel Hashomer.

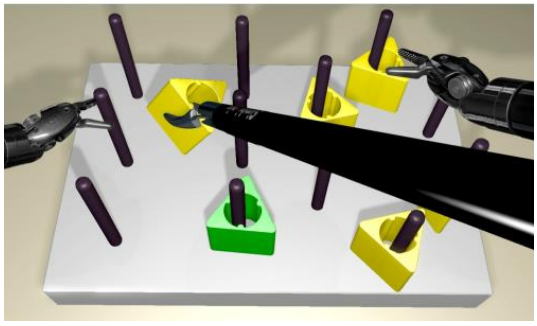
The Robotic Radical Prostatectomy Module was developed in Collaboration with:

- Peter Wiklund, MD, Professor of Urology, Chairman, Department of Molecular Medicine and Surgical Sciences, Karolinska Institute, Sweden.
- Justin Collins, MD, Department of Molecular Medicine and Surgery, Section of Urology, Karolinska Institute, Sweden.
- Trushar Patel, MD, Director, Robotic Urologic Surgery, Florida Hospital, Tampa, Florida.
- Shay Golan, MD, Urologic Oncology Fellow, Section of Urology, The University of Chicago Medicine, Chicago, United States.
- Andrei Nadu, MD, Director of Laparoscopic Urology Department, Rabin Medical Center, Israel

Task Descriptions

Robotic Essential Skills – Team Training

Peg Transfer – Team Training



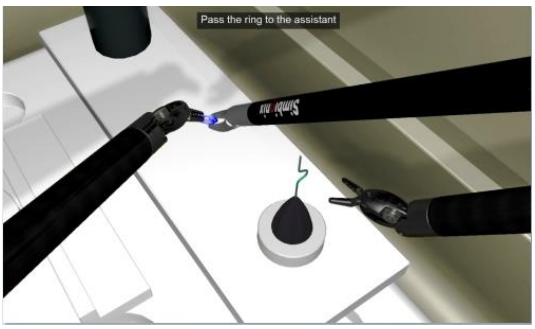
Description:

Lift objects from the pegboard with a needle driver, first in your non-dominant hand, and transfer the object midair to a laparoscopic assistant. Then place each object on a peg on the other side of the board. The order in which the objects are transferred is of no importance. Once all 6 pegs have been transferred, the process is reversed.

Objectives:

- To test eye-hand coordination, depth perception and passing objects between the console surgeon and laparoscopic assistant.
- To allow the laparoscopic assistant practice in the basic laparoscopic skills relevant for working together with the robotic surgeon: transfers and handoffs, object manipulation, depth perception and retraction.

Tower Transfer – Team Training



Description:

Remove rings from towers located in four corners of a structure. Transfer the rings carefully to the laparoscopic assistant so he can remove them from the scene by pulling the laparoscopic handle out of the laparoscopic port.

Objectives:

- To test basic eye-hand coordination, bimanual manipulation, depth perception, wrist articulation, camera, clutching and awareness of applied instrument force.
- To allow the laparoscopic assistant practice in the basic laparoscopic skills relevant for working together with the robotic surgeon: transfers and handoffs, object manipulation, depth perception and removal of objects from the operative field.

Roller Coaster - Team Training

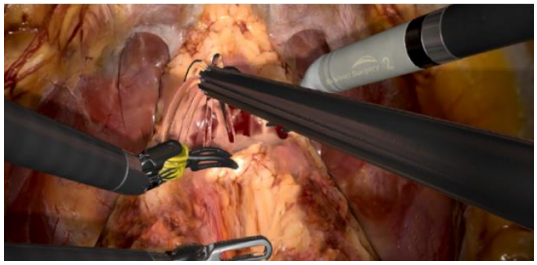
Move each of the two rings from the right side to the left side efficiently utilizing the laparoscopic assistant.

Objectives:

- To test basic eye-hand coordination, bimanual manipulation, depth perception, wrist articulation, camera, clutching and awareness of applied instrument force.
- To allow the laparoscopic assistant practice in the basic laparoscopic skills relevant for working together with the robotic surgeon: object manipulation, depth perception and retraction.

Robotic Radical Prostatectomy: Guided Team Training

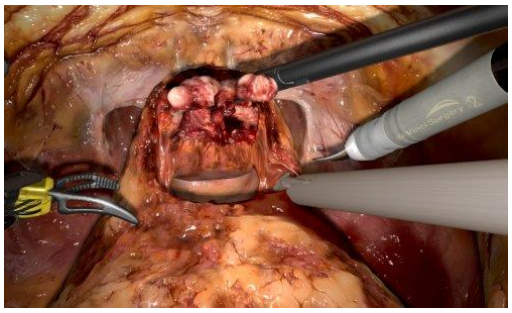
Guided Team Training: Bladder Neck Dissection



Objectives:

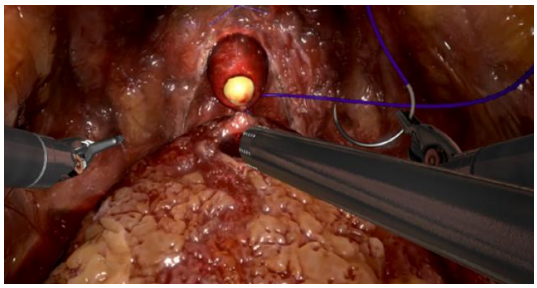
- To identify the bladder neck junction and completely separate the bladder neck from the base of the prostate.
- To identify the first part of the urethra and divide the urethra to achieve preservation of the bladder neck.
- To practice the laparoscopic assistant's roles – creating tension by pulling the catheter and clearing bleeding by using suction/irrigation.

Guided Team Training: Nerve Sparing



- To primary control the prostatic vascular pedicles.
- To release the neurovascular bundles posteriorly and along the lateral border of the prostate to the apex.
- To practice the laparoscopic assistant's role – retraction and clip applying.
- To show effective communication between the robotic surgeon and the surgical assistant.

Guided Team Training: Uretherovesical Anastomosis



Objectives:

- To practice needle holding and manipulation associated with using wristed instrumentation.
- To perform continuous (running) suturing using two barbed sutures for the urethrovesical anastomosis with atraumatic tissue and suture handling.
- To practice the surgical assistant's role: clearing bleeding by using suction/irrigation.
- To show effective communication between the robotic surgeon and the surgical assistant.