Healthcare Simulation Center

NAVAL MEDICAL CENTER,
PORTSMOUTH

AVAILABLE FOR SCHEDULING

Simulation Center

Naval Medical Center Portsmouth's Healthcare Simulation Center provides the state of the art simulation based medical training for United States Armed Forces, as well as supports the local medical community. Since the Center's inception in February 2006 it has trained more than 9,000 DoD and civilian healthcare professionals and have expanded its capabilities to over 50 different medical simulators. From the basic IV training arm simulators to the latest in 3 dimensional virtual simulation. NMCP's Healthcare Simulation Center has remained on the cutting edge of Medical Modeling & Simulation.

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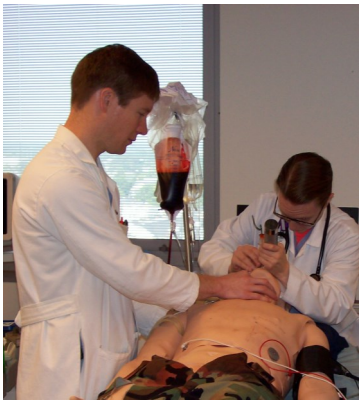


The Laerdal SimMan System is portable and flexible, which allows use in various simulation settings. SimMan can be used in the field for realistic EMS and military scenarios. SimMan can also be transported from the field to the ED or OR in order to simulate the transfer of care from prehospital to hospital clinical settings. Minimal connections, plus laptop and PDA controls allow for quick and easy set-ups and transfer.

Features

Airway – bag/valve mask ventilation, oropharyngeal and nasopharyngeal, airway placement, combitube placement, LMA placement, endotracheal tube intubation, retrograde intubation, fiber optic intubation, light wand intubation, transtracheal jet ventilation, needle cricothyrotomy, surgical cricothyrotomy, fiber optic bronchoscopy, exhaled CO2 Flow, spontaneous respiration and variable respiratory rate, trismus, tongue edema, pharyngeal obstruction and laryngospasm, decreased cervical range of motion, decreased lung resistance, pneumothorax decompression at three sites and chest tube insertion, stomach decompression

Pulses - carotid, femoral, brachial, radial, dorsalis pedis and posterior tibialis pulses, pulses synchronized with ECG or compressions, pulse strength dependent on BP selected and pulse sites

Cardiac Functions - extensive ECG library with rate from 20-200, compression artifacts on ECG during CPR, defibrillation/Cardiac monitoring, 3 lead (4 connectors) ECG monitoring or via the defib paddles, external Pacing with variable pacing threshold

CPR - ABC check, ventilation, chest compression, ECG and heart rate can be displayed on the simulated monitor

Genitalia for Urinary Catheterization - male or female genitalia can be added to the simulator for urinary catheterization procedures + More additional Features!

SimMan3G

The SimMan3G is the next generation of Laerdal simulation. The new SimMan 3G patient simulator is so advanced, it's actually easy to operate. Whether you're programming a scenario, using a programmed scenario, or using SimMan 3G on the fly. Its made a successful simulation experience as simple as possible.

Features

Quality CPR Feedback—Laerdal's Q-CPR technology measures the quality of CPR providing real time feedback on compression rate, depth, release, and hands-off time as well as generating palpable pulses , blood pressure wave forms and ECG artifacts.

Drug & Event Recognition—The new and advanced Drug Recognition System allows students to administer drugs simultaneously. It registers the amount, speed and type of drug automatically and applies the appropriate physiological responses, saving the instructor time and improving the overall intelligent debrief.

Bleeding and Wounds—Wound models can be connected to an internal blood reservoir which will bleed both from arterial and venous vessels. Connected to the simulator physiological modeling, SimMan 3G will react appropriately according to treatment.

Secretions—The new eye secretions feature has multiple scenario applications such as responsive reactions to chemical, biological, radiological and nuclear agents.

Wireless System—Wireless tablet PC controls simulator remotely along with a wireless patient monitor

Laerdal SimJunior

- SimJunior is designed to be easily integrated into all pediatric training programs.
  - Available in Standard and Advanced configurations. The SimJunior scalable format allows instructors to tailor the training to their needs.
  - Built with the quality you've come to expect from Laerdal, SimJunior is developed to be durable and reliable- giving you the ability to train where you practice medicine- in real environments with real results.
- Proven software, modeled from the ALS Simulator, allows flexible management of all patient parameters. Using the scenario editor, instructors can create basic to advanced scenarios and the use of Trends and Handlers enables multiple physiological changes in the simulation.
  - Automatic debriefing based on the event log synchronized with video pictures provides immediate, detailed feedback on performance and optimizes the simulation as an educational tool (Video with Advanced version only).
- Pre-programmed scenarios provide standardized training while customizable scenarios and real-time instructor control allows adaptation to meet individual student's needs.

SimBaby Classic

SimBaby is a portable advanced infant patient simulator for team training. SimBaby has realistic anatomy and clinical functionality that enables simulation training. SimBaby includes software with video debriefing and an interactive technologically advanced manikin allowing learners to practice the emergency treatment of infant patients.

Features

Full scale pediatric mannequin simulator which allows the learner to perform relevant pediatric emergency skills and scenarios. This simulator is a fully Interactive manikin which gives you immediate feedback to interventions. SimBaby utilizes software generating automatic debriefing based on the event log synchronized with video pictures, which provides immediate, detailed feedback on performance to learners. Mannequin has a realistic airway system which allows accurate simulation of all relevant difficult infant airway management and patient care scenarios. SimBaby also has practical infant breathing patterns and complications bringing realism to the infant simulation experience. IV training arm and IV/IO legs allows practice of peripheral intravenous and intraosseus therapy.

SimNewB

SimNewB is an interactive simulator, designed by Laerdal with the American Academy of Pediatrics to meet the training requirements of the Neonatal Resuscitation Program (NRP). With realistic newborn traits and lifelike clinical feedback, SimNewB helps neonatal healthcare providers improve team dynamics, build confidence, and practice in a risk-free environment.

Features

Helps enhance the educational environment by providing highly realistic patient simulation training experiences for the practice of teamwork, leadership and communication skills. SimNewB is designed to be easily integrated into all neonatal training programs. Available in Standard and Advanced versions, SimNewB's scalable training enables instructors to vary simulations from the delivery room to the NICU. Innovative user interface and scenario designs allow instructors to control the simulator's responses throughout a training session with the push of a button on a handheld remote control or a laptop PC. The airway is designed to allow for training in all aspects of newborn airway management, including the use of positive-pressure airway devices, and the placement of ET Tubes and LMAs. The patent umbilicus has a life-like pulse that can be assessed, cut and catheterized for IV access. Pre-programmed scenarios provide standardized training while customizable scenarios and real-time instructor control allows adaptation to meet individual student's needs.

Baby Hal

40 week tetherless newborn with breathing, pulses, color and vital signs that are responsive to hypoxic events and interventions. Also includes trending, crying, convulsions, oral and nasal intubation, airway sounds and extra tablet PC for control. Control Newborn at distances up to 300 feet while he smoothly transitions between physiologic states in response to commands from a wireless tablet PC. Color and vital signs respond to hypoxic events and interventions. HAL's umbilicus can be catheterized and even has a pulse synchronized with programmed heart rate. Newborn HAL® has bilateral IV training arms that can be used for bolus or intravenous infusions as well as for draining fluids. Intraosseous infusion and injection system with realistic tibia bones. Newborn has conductive skin regions that allow the application of real electrodes to view ECGs with physiologic variations, allowing the user to track cardiac rhythms with their own equipment just like with a human patient.

NOELLE™ Birthing Simulator

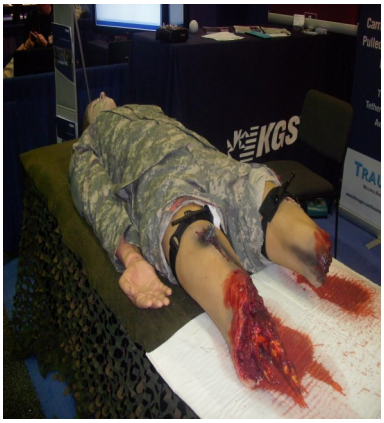
Standard features now include both programmable hemorrhage using simulated blood and catheterization with flow of simulated urine. Additional features include:

- Both fixed and tether less monitors are available
- Normal Vaginal and Instrumented Delivery
- Shoulder dystopia
- Breech Delivery
- C-Section
- Episiotomy Repair
- Postpartum Hemorrhage and Fungal Massage
- PLUS MORE!

PROMPT Birthing Simulator

PROMPT Birthing Simulator Simulation for Positive Delivery Outcomes
The PROMPT Birthing Simulator is designed to allow instructors to effectively teach the complexities associated with birthing, while allowing learners to practice the skills required for successful deliveries.
The clinical accuracy of the PROMPT product offers the ability to present both the mother and baby in multiple positions to simulate:
- Training in normal, difficult, instrument, and placenta deliveries
- Training in the relief of shoulder dystocia
- Measurement of the traction forces applied by the obstetrician to the baby during delivery (Force Monitoring version) + MORE!

"Matt Fx"



The Trauma FX product line includes an end-state high fidelity lower body, **Multiple Amputee Trauma Trainer** (MATT™) that can be paired with a matching upper body, other existing training aids, or can be worn by human patient simulators or human actors to support realistic training for hemorrhage control and other critical injuries. The current upper body component includes matching realistic skin, weight and feel, a tension pneumothorax penetrating wound on the chest, and abdominal training elements. Trauma FX provides the most accurate trauma simulation to improve in-field medical treatment, as well as unparalleled stress inoculation training such that soldiers and medical personnel will be technically and emotionally prepared to deal with severe wounds.

METI Anesthesia

Human Patient Simulator (HPS)

The HPS is METI's top-of-the-line, fully automatic, high-fidelity patient simulator specifically designed for training in anesthesia, respiratory and critical care.

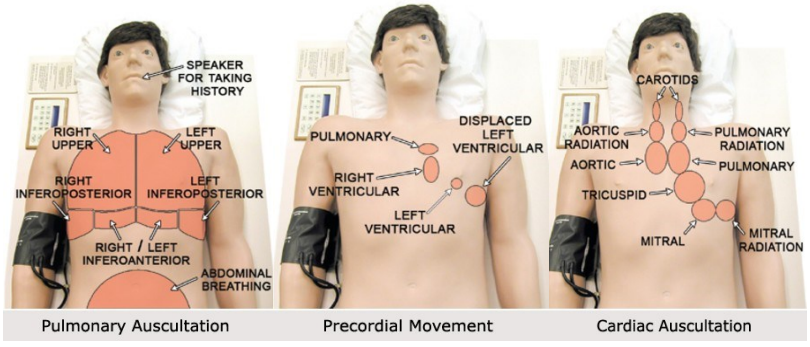
What differentiates the HPS from any other simulator available on the market today, is it's high level of automatic and enhanced features. The HPS is the only patient simulator with the ability to provide respiratory gas exchange, anesthesia delivery, and patient monitoring with real physiological clinical monitors.

Key Features:

-Pupils that automatically dilate and constrict in response to light
-Thumb twitch in response to a peripheral nerve stimulator
-Automatic recognition and response to administered drugs and drug dosages
-Variable lung compliance and airways resistance
-Automatic response to needle decompression of a tension pneumothorax, chest tube drainage and peri cardiocentesis
-Automatic control of urine output

The Cardiopulmonary Patient Simulator "Harvey"

For nearly 40 years, Harvey has been a proven simulation system to teach bedside cardiac assessment skills that transfer to real patients. Harvey, The Cardiopulmonary Patient Simulator, is the longest continuous university-based simulation project in medical education. Some product benefits is that Harvey realistically simulates nearly any cardiac disease at the touch of a button by varying blood pressure, pulses, heart sounds and murmurs. Dramatically updated with state-of-the-art technology, the current version of Harvey's software covers history, bedside findings, all laboratory data, medical, and surgical treatment. Thousands of students, residents, physicians, physician assistants, nurses and nurse practitioners train annually on Harvey, The Cardiopulmonary Patient Simulator, at hundreds of medical centers worldwide. Harvey is a turnkey system that is simple to use.



Pulmonary Auscultation | Precordial Movement | Cardiac Auscultation

Central Line Man™

Used for practicing Central Vascular Catheterization (CVC). This trainer utilizes the same technology found in the highly acclaimed Trauma Man system and trains surgeons on subclavian, supraclavicular and internal jugular access. The model also allows the user to practice real-time ultrasound guidance during catheter placement.

High Fidelity Model

This simulator offers an unsurpassed level of realism in the look and feel of the simulated tissue. In addition, the torso has anatomically correct landmarks that allow the users to practice a wide range of subclavian, supraclavian, and interjugular techniques. The simulator also differentiates the arterial an venous blood to show a positive or negative response. During the simulated procedure the user will experience natural resistance, natural flashback of blood, and it has self-sealing veins and skin for mul-

Femoral Line Man

Femora Line Trainer is a venous access trainer for femoral line placement and full catheterization. This femoral line access simulator utilizes the same highly acclaimed tissue properties as
Central Line Man and is also ultrasound compatible.

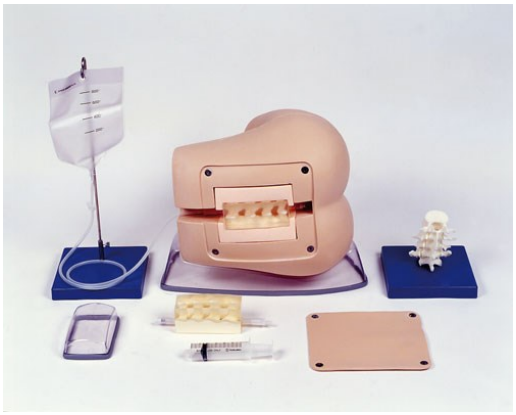
Trauma Man ATLS Simulator

Since **TraumaMan**'s debut in 2001, he has both won the approval of the leading surgical societies and become the most widely used surgical simulator in the world. Each year over 20,000 medical professionals are trained using the TraumaMan System and that number keeps growing. TraumaMan was created to meet the needs of advanced trauma surgical skills courses and now has been integrated into a wide variety of curriculum.
The **TraumaMan** System is an anatomical human body form designed for students to practice several advanced surgical procedures, including cricothyroidotomy, chest tube insertion, pericardiocentesis, diagnostic peritoneal lavage, and intravenous cutdown. The **TraumaMan** System consists of simulated human tissue structure made of an elastomeric composition designed specifically for surgical dissection.

Lumbar Puncture

This simulator is designed to teach the lumbar puncture and epidural procedures, allowing hands-on training without the need for direct patient contact.

- Epidural procedure can be practiced
- Variations of puncture pads: adult normal, adult obese, elderly, and obese
- 3 different support bases for lateral and sitting positions, and team teaching
- Patient position management
- Skin preparation can be practiced
- Palpation of pelvic landmarks
- Palpation of lumbar spinous process
- Needle positioning and insertion
- Collection of cerebrospinal fluid (CSF)
- CSF pressure measurement



SonoSim

The *Case List* button provides immediate access to a wide-ranging and ever-growing SonoSim® Case Library. Navigation allows a user to move between discrete points along the body. Clicking on a navigation button or dragging the cursor arrow from button to button will simultaneously move the virtual ultrasound probe to the corresponding location. The *Body Position* feature allows users to place the virtual patient in different positions that provide alternative viewer perspectives. With the *Layers* feature, anatomic layers can be removed to reveal underlying anatomy, allowing the user to correlate the ultrasound image to relevant anatomic structures. Probe-positioning assistance, for *Longitudinal* and *Transverse* windows acquisition, allows for virtual "hand-holding" during image acquisition. The *Findings* button provides immediate, expert feedback. A narrated version of the original ultrasound clip describes what users should recognize while scanning a corresponding SonoSim® Case.

Ultrasound

CAE Ultrasound Trainer

Mastering ultrasonographic assessment of the thoracic, abdominal and pelvic cavities

Using the CAE VIMEDIX, learners will discover the full potential of ultrasound assessment. With real-time interactive capabilities and access to a variety of cases and pathologies, learners will be able to recognize a wide spectrum of conditions before they touch their first patient.

Unlike other echocardiography simulators, the CAE VIMEDIX simulator features a customizable, animated 3D display, which is presented in real-time on a split screen next to the corresponding 2D ultrasound image. This dramatically enriches the learning experience, and speeds uptake and retention of ultrasound training.

OtoSim

OtoSim™ is an integrated system that ***dynamically*** and ***interactively*** improves the accuracy of diagnosing pathologies of the ear through experiential learning. Both students and current professionals can practice to improve their knowledge-base of ear pathologies and otoscope technique.

An extensive array of tutorials and high resolution images provide significant content for further student skill development. The instructor's ability to provide immediate feedback and guidance through the OtoSim™ integrated platform and software is critical to the simulation experience and its effectiveness for learning interactively.

Knee Aspirator

- Simplified design for ease-of-use
- Quick release skin, musculature and patella (with fat pad) to enable rapid changeover of self synovial sac
- Synaovial sac connects easily to the fluid bag
- 1 liter bag enables uninterrupted training sessions (time saving feature for large groups of students/trainees)
- Patient posture and management
- Palpation techniques
- Identifying anatomical landmarks
- Aspirating synovial fluid from the knee joint form both lateral and medial aspects

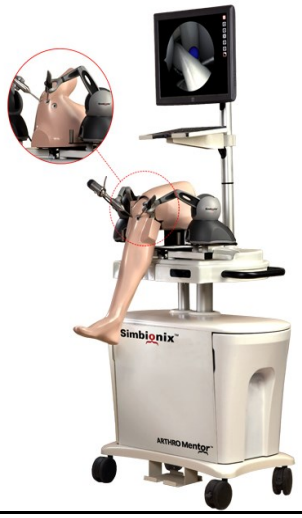
IV Simulation (Adult & Pedi)

Lifelike arm reproduction with multi-vein system designed
for peripheral intravenous therapy.
• Venipuncture possible in the antecubital fossa or dorsum
of the hand
• Rotation at deltoid for easier access
• Accessible veins include median, basilic, and cephalic
• Palpable veins enable site selection and preparation
• Infusible veins allow peripheral therapy with IV bolus or push injection method

Arthro Mentor

Arhtro VR is an advanced arthroscopic training simulater. As the most effective tool for arthroscopic surgey skill acquisition, the system reduces training time and considerably improves the ,earning curve of the complex surgery techniques.

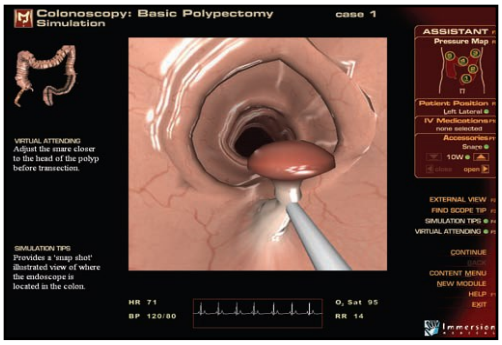
The simulator features a line of simulated procedures, combining fiberglass anatomical models (shoulder and knee) with 3D images and haptic sensation, to allow users to learn key aspects of the procedures. Simulated procedures are performed utilizing a realistic set of tool as used in the OR including the arthoscopic camera which allow the trainee to acquire a true-toolife hands-on experience.



SHOULDER TRAINING	KNEE TRAINING
ARTHRO Mentor allows exploration of the shoulder joint in both healthy and pathological models, as well as provides a set of key steps for surgical procedures. **Shoulder module includes:** ● Diagnostic tasks – enables trainee to practice recognizing a healthy knee, following the understanding of various pathologies. ● Procedural cases – enables trainee to practice performing various procedure cases with different pathologies, including cases such as: O Glenohumeral O Subacromial O Instability O Loose bodies O Cartilage repair O Body O ASD O RCR	ARTHRO Mentor allows exploration of the knee joint in both healthy and pathological models, as well as provides a set of key steps for surgical procedures. **Knee module includes:** ● Diagnostic tasks – enables trainee to practice recognizing a healthy knee, following the understanding of various pathologies. ● Procedural cases – enables trainee to practice performing various procedure cases with different pathologies, including cases such as: O Menisectomy O ACL O Loose bodies Cartilage repair

Endoscopy Trainer® System

This system includes three types of endoscopic procedures: flexible bronchoscopy, and upper and lower gastrointestinal flexible Endoscopy. Endoscopic procedures are some of the most commonly practiced medical procedures today. The motor skills necessary to perform these are difficult to train and assess. The Endoscopy AccuTouch Simulator is a realistic, computer-based system for teaching and assessing motor skills and cognitive knowledge, enabling novices and experienced physicians to practice in a safe environment. Using real-time computer graphics, including anatomic models developed from actual patient data and a virtual robotic interface device, force is transmitted through the flexible scope to provide tactile sensations mimicking the actual feel of a procedure.



Lap Mentor™

The LAP Mentor is specifically designed to provide comprehensive training in the field of laparoscopic surgery. Simbionix has developed a unique technique for realistic visualization of the human anatomy and anatomy behavior. The LAP Mentor takes advantage of this technology to provide realistic hands-on training that mimics the look and feel of not only basic hand-eye coordination but actual surgical procedures as well.

The LAP Mentor Assessments System

The system features a built-in independent tool for managing groups or individual trainees. It keeps track and manages workshops, skills labs and courses. The Lap Mentor provides a large number of quantitative and comprehensive performance parameters, allowing objective trainee performance assessments and running extensive performance statistics on an individual or a group. It serves as a useful and efficient tool for studies and future certification. This simulator's performance metrics provide assessment of basic laparoscopic skills, as well as performance measurement of full laparoscopic procedure!

The LAP Mentor system meets all of your laparoscopic surgery training needs

The system is aimed at enhancing operational and medical decision making, improving medical training, and expanding physiological and medical knowledge. Training modules consist of basic Laparoscopic training, LapChole, Gastric Bypass, Incisional hernia repair, and advanced suturing.

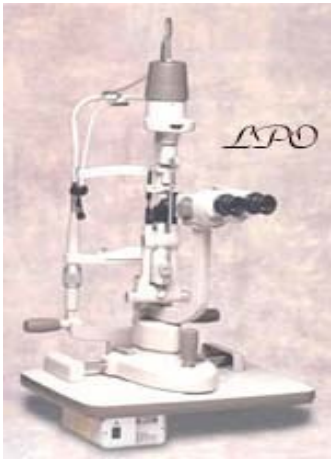
Fundamentals of Laparoscopy (FLS) Trainer

LapTrainer with SimuVision™

As an industry leader in surgical simulators and other medical training products, Simulab Corporation is pleased to offer its third generation of open box trainers, a highly portable, innovative laparoscopic video trainer featuring our SimuVision™ technology. SimuVision is a simulated laparoscope which leverages PC technology to create unsurpassed graphics. The boom mounted digital camera allows the user to adjust the viewable area of the operative site or task. They are viewed on 24 inch monitors. SimuVision technology is integrated into our laparoscopic trainer creating an affordable and portable platform for product and surgical demonstrations or for teaching techniques and skill building tasks.

Slit Lamp

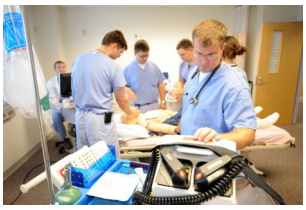
With a new modernize optical design, the Ultra Series utilizes a multilayered, multi-coated system which transmits light more efficiently, producing a measurable 20% increase in optical resolution and clarity. The breakthrough optical quality of the ultra Series also results in 20% increase in a light transmission, a 15% expanded field of view and a 14% increase in depth of field. A single look through the optics of any Ultra Series slit lamp is enough to tell you that a new age in diagnostics observation has arrived.



Audio & Visual Recording

The Simulation Center has the latest audiovisual technology, using multiple cameras and microphones located throughout the training areas that record all training evolutions with HD and 3D capabilities. Utilizing Laerdal's Sim Man & Sim Baby manikin and software and METI's Emergency Care Simulator manikin and software, instructors create or use standardized scenarios which provide practical real time training. As training is conducted, instructors can monitor students from a distance in our state-of-the-art control center. Training evolutions can be played back to the individual student or a target audience to enhance the learning process.

Immersive Environment Training



Designed in 2007 to replicate the ever changing environments that our sailors, Marines, soldiers and airman will encounter in the world today. With the ability to convert the room from shipboard conditions to the mountains of Afghanistan or the deserts of Iraq.

Using 8 infrared ceiling mounted cameras and ceiling mounted microphones, students can observe real-time training as it unfolds. Converting the room to replicate an Emergency Room or Operating Room setting is not out of the questions either.

The Immersion Room has quickly become the requested and preferred room for training during our quarterly TeamSTEPPS training program. Using multiple projectors, surround sound technology, strobe lights, and fog machines the Immersion Room can accommodate the ever changing environment in the hospital and on the battlefield. Training to save lives has never been more realistic!

Training equipment not shown:

- Male and Female Catheterizations
- Breast Exam
- Rectal and Prostate Exams
- Perineal Repair
- Crash Carts with D-Fib
- Broslow Bags
- IVAC IV Pumps
- Sonosite Ultra Sound
- Glide Scope Ranger
- Suturing Blocks
- Rescue Randy (full body weight manikins)
- Episiotomy Trainer
- Difficult Airway Manikin
- Cric Procedure Manikin
- Chester Chest Training Module
- Portable Projector with Portable Screen
- Field Liters with Stands
- Assorted Moulage
- Arterial Arm Stick Simulator
- Vascular Access Simulation
- Rhythm Generator Simulators

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www-nmcp.mar.med.navy.mil/simcenter/index.htm

NMCP Healthcare Simulation Center.

The Healthcare Simulation Center is located at the Naval Medical Center Portsmouth, NMCP, Bldg.3, 12th Deck