

Catalog



MedVision

Innovations for life



ARCTURUS TECHNOLOGY SOLUTIONS

www.medvisiongroup.com

MedVision is a global company committed to the advancement of educational excellence in quality healthcare through medical simulation. Our designs and leading-edge technologies define our range of adult, pediatric, neonatal and surgical simulators.

We are proud to work closely with healthcare professionals around the world to create successful simulation programs that will impact the quality and safety of patient care and help to improve patient outcomes.

Arcturus Technology Solutions (Pty) Ltd. is a Level 1 BEE company with interests in a range of cutting-edge technologies, predominantly but not exclusively in the medical and healthcare fields. These technologies include AI-enabled medical devices and diagnostic support systems, rapid test equipment, point-of-care rapid tests, etc. Our medical technology systems division has a broad range of innovative products, including nanotechnology-based anti-microbial ceramic coatings and a nanotechnology-based hemostatic gauze.

Arcturus is the local representative of MedVision, who are technology leaders in their fields.

We look forward to partnering with you!



ARCTURUS TECHNOLOGY SOLUTIONS

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Please contact us at info@arcturus-solutions.co.za
for further information about our innovative products.

A blurred photograph of medical staff in a hospital hallway. In the foreground, a person in a white lab coat is seen from the back, walking towards the right. To their left, two other staff members are pushing a gurney. The gurney has a blue blanket covering a person lying on it. The background shows a brightly lit hallway with white walls and a ceiling light fixture. The overall image has a blueish tint and a sense of motion.

Training for Emergencies
Keeping it real...



Leonardo

Leonardo is a durable and easy-to-use adult patient simulator designed for high-quality simulation training in basic to advanced medical procedures, clinical team development and patient case management.

Extensive functionality, combined with the ability to use your own medical devices, will enable learners to fully immerse and challenge themselves, as they put their individual and team skills to the test in time-critical emergency scenarios.



- Realistic, Robust, Reliable
- Lifelike weight (150lbs/68kg) and height (5'9ft/180cm)
- Tetherless connection (with up to 8 hours of battery life)
- Rechargeable, swappable battery
- Reliable supply of durable consumables
- Realistic, seamless skin, easy to clean



Vital signs

- Pulse palpation (14 points)
- Monitor blood pressure



Auscultation

High-fidelity heart, lung (anterior & posterior) and bowel sounds with advanced controls



Neurological Assessment

- Convulsions
- Programmable blinking
- Programmable pupils
- Pupillary light reflex



Upper respiratory tract intubation

- Head tilt, chin lift
- Jaw thrust
- Bag valve mask (BVM)
- Laryngoscope
- Orotracheal intubation
- ET tube



Drug administration

- IV drug recognition, injected volume and speed recognition
- Pre-installed catheter
- Injection of fluids using an IV access port



Full joint mobility

Realistic scenarios with learning objectives for patient handling and transportation



CPR

- Chest compressions
- ECG Monitoring
- Defibrillation with a real device

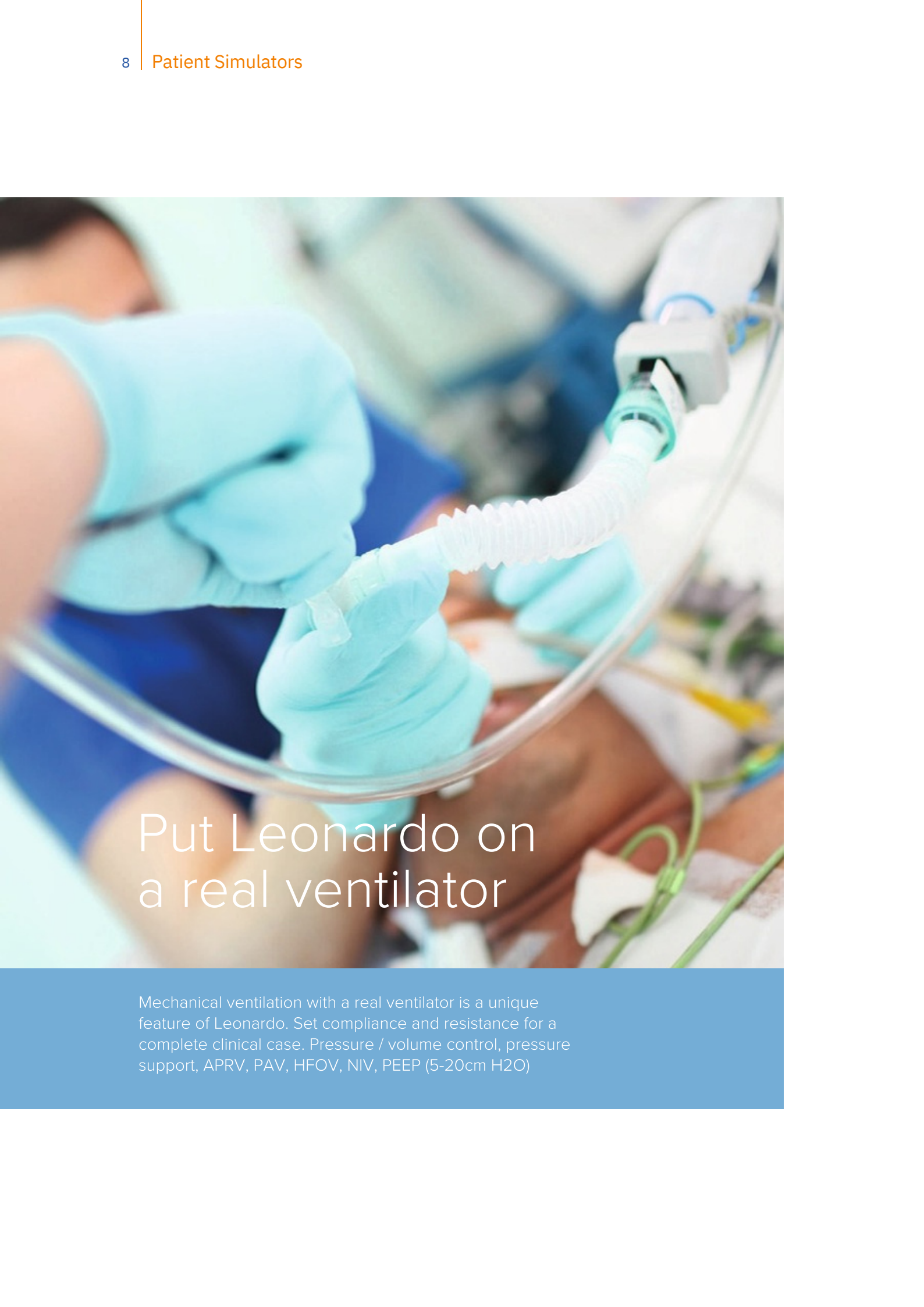


Connectors

- Removable metal connectors in the manikin's body to apply defibrillation electrodes, ECG electrodes



Available in several skin tones



Put Leonardo on a real ventilator

Mechanical ventilation with a real ventilator is a unique feature of Leonardo. Set compliance and resistance for a complete clinical case. Pressure / volume control, pressure support, APRV, PAV, HFOV, NIV, PEEP (5-20cm H₂O)

The only patient simulator to include comprehensive training in ventilation management



Use your own ventilators

Leonardo can be used with your institution's own real mechanical ventilators. Our propriety software makes it possible to set compliance and resistance for a complete clinical case. Pressure / volume control, pressure support, APRV, PAV, HFOV, NIV, PEEP (5-20cm H2O).

... or our virtual anesthesia machine

Our virtual ventilator can be used in conjunction with Leonardo or as a stand-alone training device. Trainees will learn the full functionality and application of ventilation equipment, including identifying criteria used to determine the need for mechanical ventilator support, commonly monitored ventilator settings, presence of artificial airways and prevention of complications, and weaning the patient from mechanical ventilation, including the nurse's role in this process.



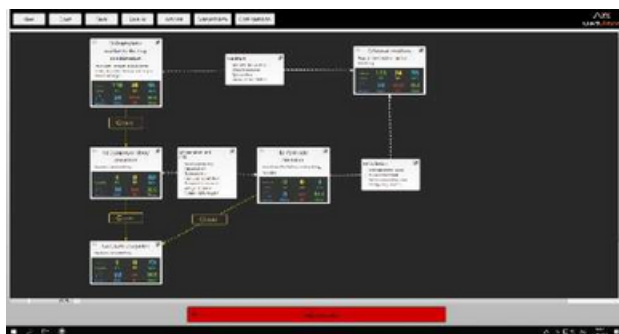
It all comes
down to the
scenario...

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

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



Intuitive software makes running and creating your own scenarios easy. Our intuitive software is so easy to use, you can run Leonardo 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.

Leonardo's range of pre-programmed patient states and scenarios are also available to ease your busy workload.



Patient monitor

Its generic interface and intuitive design create a more authentic experience and clinical realism in the scenario. Choose a heart rhythm from our library or create your own to match your learning objectives.

Features

Airway

- Realistic airway
- Supraglottic airway device support
- Combitube, LMA
- Retrograde intubation
- Fiberoptic intubation
- Head and jaw mobility
- Orotracheal and nasotracheal intubation
- Laryngeal mask airway insertion
- Pulmonary aspiration
- Cricoid pressure
- Surgical cricothyrotomy
- Needle cricothyrotomy
- Pneumothorax and hydrothorax
- Positive pressure ventilation
- Dynamic airway resistance
- Airways obstruction
- Esophageal Intubation
- Feeding tube insertion
- Bag valve mask (BVM)
- Cyanosis and acrocyanosis
- Chest rise and fall
- Bilateral bronchi resistance
- Tracheotomy
- Intubation tube real-time tracking
- Lockjaw
- Tongue swelling
- Laryngospasm
- Pharyngeal obstruction
- Cannot intubate / Can ventilate
- Cannot intubate / Cannot ventilate
- Trismus

Breathing

- Spontaneous breathing
- Programmable respiratory patterns
- Programmable diaphragmatic excursions
- Mechanical ventilation (A/C, PCV, PSV)
- PEEP (up to 40cm H2O)
- Variable compliance
- Variable bronchi resistance
- Audible needle decompression with realistic feedback

Auscultation

- High-fidelity heart, lung, and bowel sounds
- Independent normal / abnormal heart sounds at Mitral, Aortic, Pulmonary, Tricuspid valve and Erb's point
- 4 sites for abdominal murmurs: normal / abnormal
- Korotkoff sounds auscultation while monitoring blood pressure
- Programmable bilateral chest rise and fall

Neurology

- Convulsions
- Programmable blinking
- Programmable pupils

Circulation

- Rich library of ECG rhythms
- HR 0 - 200
- Real ECG electrodes
- Accurate landmarks for chest compression performance point finding
- Chest compressions
- Defibrillation, cardioversion and cardiac pacing using real devices
- Correct paddle placement
- Defibrillation in manual and automatic modes
- High quality CPR affects the HR and ECG
- Training defibrillation, cardioversion and cardiac pacing support
- Cyanosis
- Variable pulse strength with activity log

CPR

- Realistic chest compressions
- Automatic activity log, displaying all user actions
- Depth, frequency, hands placement assessment and log
- Ventilation volume
- Manual configuration of CPR protocols
- Printable detailed CPR assessment

Vascular access

- Intravenous injections (preinstalled catheter)
- Intraosseous access (tibia)

Other features

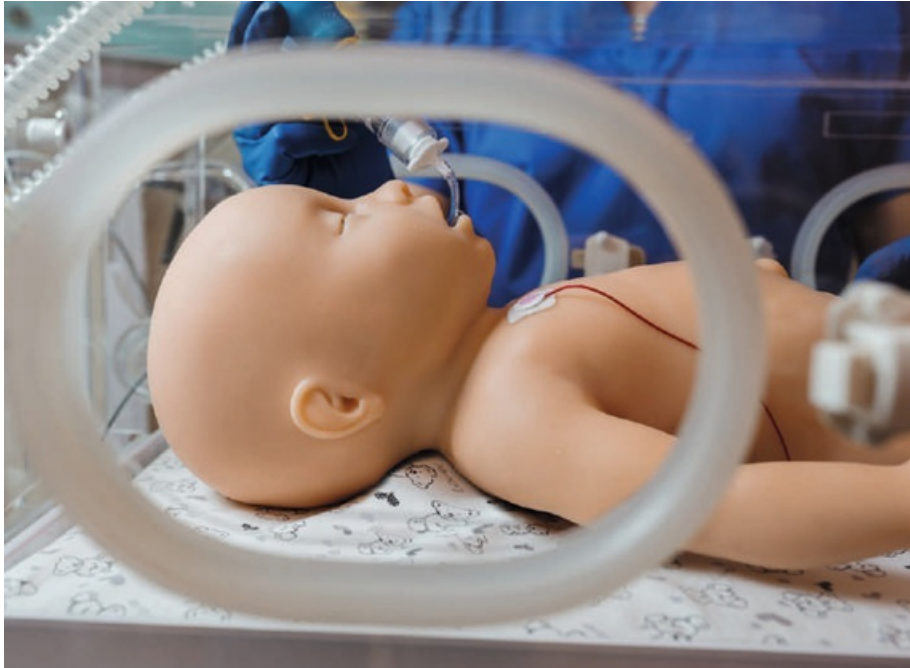
- Sounds: crying, screaming, coughing, moaning
- Speech (preloaded phrases or instructor's microphone)
- Teeth, soft cheeks and gums
- Pre-installed themes, scenarios, programs
- Realistic bone structure, palpable ribs, kneecaps and many more
- Secretion: sweat, tears, bleeding
- Urine output



Trauma Modules available, including wounds and amputations

Preparing for time-critical neonatal emergencies





Mia

Mia is a state-of-the-art newborn simulator designed to meet the challenges of specialist training in neonatal care.

From basic assessment to critical thinking skills in emergency scenarios, Mia will enable profound learning experiences that are transferable to clinical practice promoting safer patient care and improved outcomes.

One of the benefits of **Mia** is that you can use as both a newborn and an infant.



Realistic skin quality

Mia's Action Log captures all performance data to allow for a structured, quality debrief and reflective learning.

Defib pads, band aids, moulage... Mia's skin can be easily cleaned to as good as new.



Neonatal Resuscitation

Realistic resuscitation skills practice supports clinical guidelines and protocols. Chest compressions, ventilation with a bag valve mask (BVM), airway adjuncts and mechanical ventilation.



Difficult Airway Management

Can't intubate, can't ventilate! The anatomically correct, realistic feel and durable design of Mia's airway allows trainees to hone their airway management skills in advanced neonatal emergency scenarios.



Available in several skin tones

In-situ and 'Just in time' training

The wireless design of Mia and her extensive battery life (5-6 hours) enables in-situ simulation training to take place in the NICU and will help to overcome challenges in training schedules, enhance performance in new teams and provide an opportunity to practice rare emergency scenarios just before patient admissions.

Basic Assessment of the Newborn



Mia allows for many of the checks required in the basic physical assessment of the newborn, including:

Measurements

- Head & abdominal circumference
- Length
- Vital signs including pulse and breathing rate

Physical Exam

- General appearance
- Head and Neck –head shape, fontanelles and clavicles
- Auscultation – heart, lung and bowel sounds
- Bilateral chest rise and fall synced with breathing
- Correct movement of the arms and legs – realistic bone structure, palpable ribs, knee caps and many more



Neurological Assessment

- Convulsions
- Programmable blinking
- Programmable pupils
- Programmable muscle tone: active, decreased, hypotonia, lacking
- Programmable, palpable fontanelle
- Sounds: crying, screaming, coughing, moaning, grunts



Measuring 21.5"/55cm and weighing 9lbs/4kg, Mia can facilitate many emergency scenarios simulating a newborn to a 28-week old infant.

Simulation training with your own medical devices

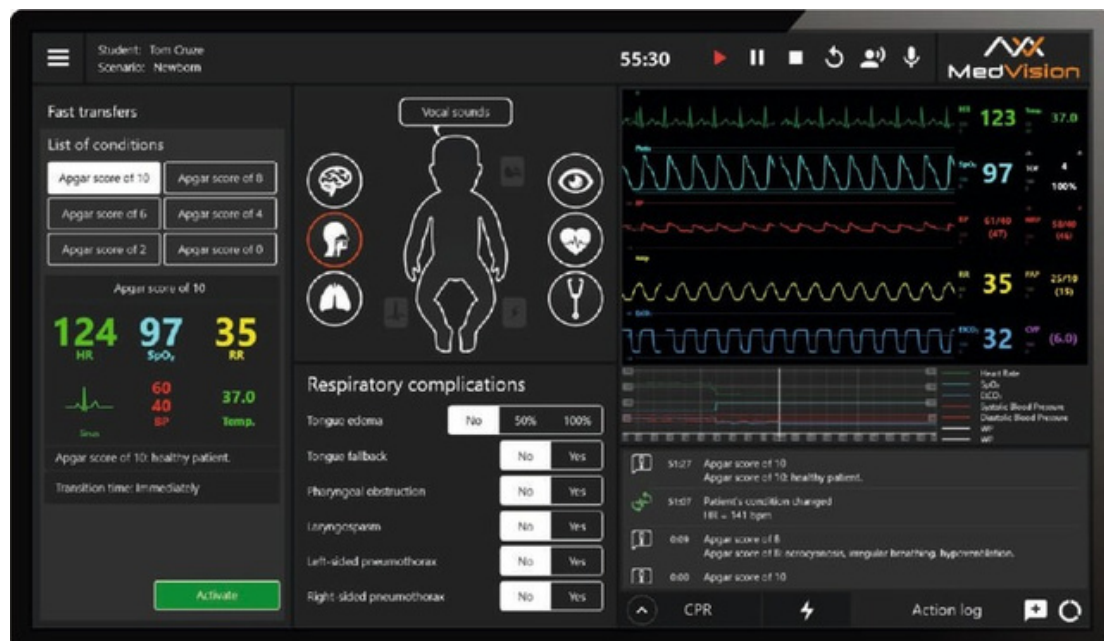


When simulation training can incorporate the use of your own medical devices, the learning benefits are highly significant in transferring skills to real patient care. ECG, defibrillation, pacing, capnography, mechanical ventilator with different modes. (A/C, SIMV, PCV, PSV, NIPPV, setting PEEP values up to 20 cmH₂O)

Run scenarios on the fly to challenge quick decision-making skills

Mia's easy-to-use and intuitive software allows you to change the parameters of the scenario on the fly to test clinical decisions made in time-critical scenarios. Pre-programmed patient

states and ready-to-run scenarios are also available with Mia saving you preparation time in your simulation programs.





Measuring 21.5"/55cm and weighing 9lbs/4kg, Mia can facilitate many emergency scenarios simulating a newborn to a 28-week old infant.

Features

Airway

- Realistic airway
- Supraglottic airway device support
- Head and jaw mobility
- Orotracheal and nasotracheal intubation
- Laryngeal mask airway insertion
- Pulmonary aspiration
- Positive pressure ventilation
- Dynamic airway resistance
- Neck hyperextension
- Airways obstruction
- Esophageal Intubation
- NG/OG tube placement
- Bag valve mask (BVM)
- Cyanosis and acrocyanosis
- Chest rise and fall
- Bilateral bronchi resistance

Breathing

- Spontaneous breathing
- Respiratory rate is synchronized with vital parameters on the bedside monitor
- Programmable respiratory patterns
- Programmable diaphragmatic excursions
- Mechanical ventilation (A/C, SIMV, CPAP, PCV, PSV, NIPPV)

- PEEP (up to 20cm H2O)
- Airways synced to the respiratory rate
- Variable compliance
- Variable bronchi resistance
- Audible needle decompression with realistic feedback

Auscultation

- High-fidelity heart, lung, and bowel sounds
- Independent normal / abnormal heart sounds at mitral (1), aortic and pulmonic (2) sites
- Abdominal murmurs: normal / abnormal
- Korotkoff sounds auscultation while monitoring blood pressure
- Programmable bilateral chest rise and fall, synced with breathing

Neurology

- Convulsions
- Programmable blinking
- Programmable muscle tone: active, decreased, hypotonia, lacking
- Programmable, palpable fontanel

CPR

- Realistic chest compressions
- Automatic activity log, displaying all user actions
- Depth, frequency, hands placement assessment and log
- Ventilation volume
- Manual configuration of CPR protocols
- Printable detailed CPR assessment

Vascular access

- Intravenous injections (hands, scalp, umbilicus)
- Intraosseous access (tibia, bilateral)

Other features

- Sounds: crying, screaming, coughing, moaning, grunts
- Sucking reflex
- Pre-installed themes, scenarios, programs
- Realistic bone structure, palpable ribs, kneecaps and many more

A blurred photograph of a medical team in a hospital hallway. Three people in white scrubs and one in a yellow safety vest are pushing a gurney with a patient on it. The patient is covered with a white sheet. The background is a brightly lit hallway with a yellow wall.

Preparing for Pediatric Emergencies



Arthur

When caring for a young child, communication skills are as critical as the technical skills required to manage pediatric emergencies.

Arthur has been designed to support those working in child health to effectively communicate, assess, diagnose and treat young patients in a diverse range of critical scenarios and in a variety of clinical settings.



- Realistic airway
- Real mechanical ventilator compatibility
- Real devices can be used for ECG, pulse monitoring, defibrillation and BP monitoring
- Cricothyrotomy, needle decompression of tension pneumothorax

Arthur represents a 5-8 year old boy that simulates a wide range of conditions. From a healthy, talking child to being unresponsive with no vital signs, Arthur provides meaningful learning experiences through his extensive range of features.



Basic to advanced patient examinations

From pulse checks and SpO2 monitoring to checking pupillary light reflexes for neurological assessment, Arthur allows for a complete patient examination.



Interactive eyes

- Blinking: open, half-open or closed
- Pupillary responses: normal or absent response



Resuscitation Scenarios

Realistic chest compressions: rate, depth, hands placement and ventilation volume. Arthur's activity log will capture all aspects of performance to ensure compliance with Guidelines.



Drug Administration

- IV drug recognition, injected volume and speed recognition
- Pre-installed catheter



Integrating ALS into Emergency Scenarios

Incorporating essential skills including difficult airway, IV administration, IO infusions, intubation and hypoxia.



Available in several skin tones



- A range of respiratory complications
- Realistic unilateral and bilateral chest rise and fall
- Spontaneous breathing
- Mechanical ventilation supporting real devices or our proprietary virtual anesthesia machine
- Programmable lung resistance and compliance
- Heart, lung (posterior & anterior) and bowel sounds

Arthur's Action Log captures all performance data to allow for a structured, quality debrief and reflective learning.

Pediatric scenarios to challenge clinical decision-making and team performance

The easy-to-use software of Arthur's Instructor Tablet allows scenarios to be created on the fly capturing unique learning moments as the scenario unfolds.

Alternatively, you can create and standardize your own set of patient cases to meet specific learning objectives required within your programs.

Arthur also comes with a range of pre-programmed patient states and scenarios of typical pediatric cases that will help to get your simulation programs up and running quickly.



Patient Monitor

Add clinical realism to your scenarios. Our patient monitor is highly configurable and simulates several parameters including heart rate, ECG, SpO2, Respiration Rate, NIBP and ETCO2



Put Arthur on a real ventilator or use our virtual anaesthesia machine

Features

Airway

- Realistic airway
- Supraglottic airway device support
- Head and jaw mobility
- Orotracheal and nasotracheal intubation
- Laryngeal mask airway insertion
- Intubation sensor
- Pulmonary aspiration
- Cricoid pressure
- Positive pressure ventilation
- Dynamic airway resistance
- Neck hyperextension
- Airways obstruction
- Esophageal Intubation
- Feeding tube insertion
- Bag valve mask (BVM)
- Cyanosis and acrocyanosis
- Chest rise and fall
- Bilateral lung resistance
- Tracheotomy

Breathing

- Spontaneous breathing
- Respiratory rate is synchronized with vital parameters on the bedside monitor
- Programmable respiratory patterns
- Mechanical ventilation (A/C, SIMV, CPAP, PCV, PSV, NIPPV)

- PEEP (up to 20cm H2O)
- Airways synced to the respiratory rate
- Variable compliance
- Variable bronchi resistance
- Needle decompression with realistic feedback
- Real sensors for EtCO2 (Optional)

Auscultation

- High-fidelity heart, lung, and bowel sounds
- Korotkoff sounds auscultation while monitoring blood pressure
- Programmable bilateral chest rise and fall, synced with breathing

Neurology

- Convulsions
- Programmable blinking
- Programmable pupils

Circulation

- Rich library of ECG rhythms
- HR0-320
- Real ECG electrodes
- Accurate landmarks for chest compression performance point finding
- Chest compression

- Defibrillation, cardioversion and cardiac pacing using real devices
- Correct paddle placement
- Defibrillation in manual and automatic modes
- Successful compressions are registered and affect the HR and ECG
- Defibrillation, cardioversion and cardiac pacing using real devices
- Cyanosis
- Variable pulse strength with activity log

CPR

- Realistic chest compressions
- Automatic activity log, displaying all user actions
- Depth, frequency, hands placement assessment and log
- Ventilation volume
- Manual configuration of CPR protocols
- Printable detailed CPR assessment

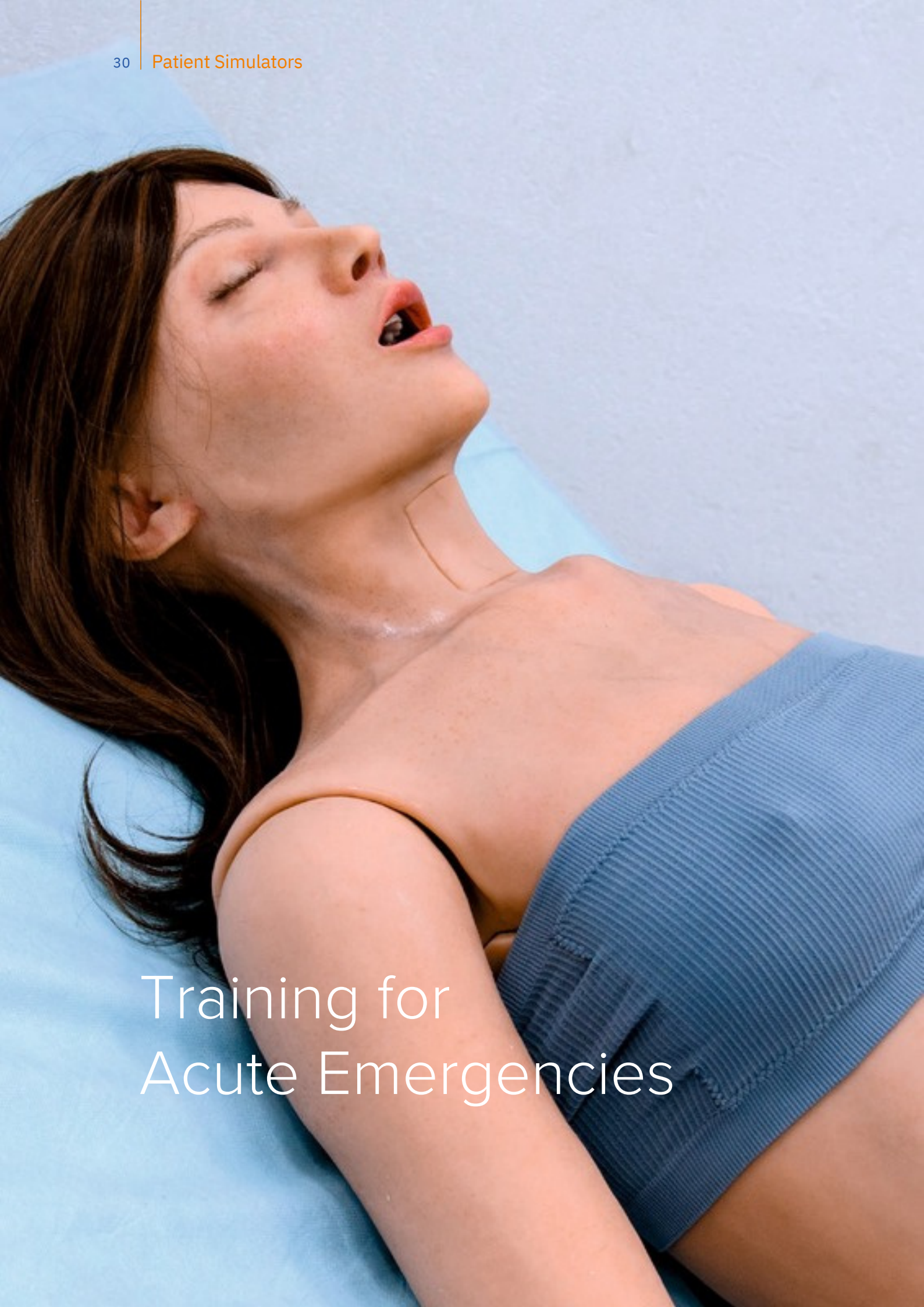
Vascular access

- Intravenous injections with automatic drugs recognition (pre-installed catheter)
- Intraosseous access (tibia, bilateral)

Other features

- Vocal sounds
- Speech (preloaded phrases or instructor's microphone)
- Pre-installed themes, scenarios, programs
- Realistic bone structure, palpable ribs



A female medical simulator is lying on a light blue surface, possibly a gurney or table. The simulator has long brown hair and is wearing a blue, ribbed, strapless top. Its mouth is open, and its eyes are closed, suggesting it is in a state of unconsciousness or being used for airway management training. The background is a plain, light blue wall.

Training for Acute Emergencies



Lisa ALS

Lisa is a durable and easy-to-use advanced life support simulator designed for high-quality simulation training in basic to advanced medical procedures and clinical team development

Extensive functionality, combined with the ability to use your own medical devices, will enable learners to fully immerse and challenge themselves as they put their individual and team skills to the test in time-critical emergency scenarios



- Realistic, Robust, Reliable
- Height (67inches/ 170 cm) and weight (66lbs/30kg)
- Tetherless connection (over 6 hours of battery life)
- Rechargeable, swappable battery
- Reliable supply of durable consumables
- Realistic, seamless skin, easy to clean
- Works with real medical devices such as ventilator
- defibrillator, ECG, etc.
- Available in several skin tones



Circulation

- Radial, carotid, femoral pulses
- ECG monitoring
- Central cyanosis



Breathing

- Spontaneous breathing
- Realistic unilateral chest rise and fall
- Lungs compliance and resistance



Full joint mobility

Realistic patient handling and transportation scenarios with learning objectives



Auscultation and vocal sounds

- High-fidelity heart, lung (anterior+posterior) and bowel sounds
- Speaker and microphone installed in the head



Realistic CPR

- Rate, depth and ventilation vol.
- ECG monitoring
- Defibrillation, cardioversion, pacing with a real device
- Activity log



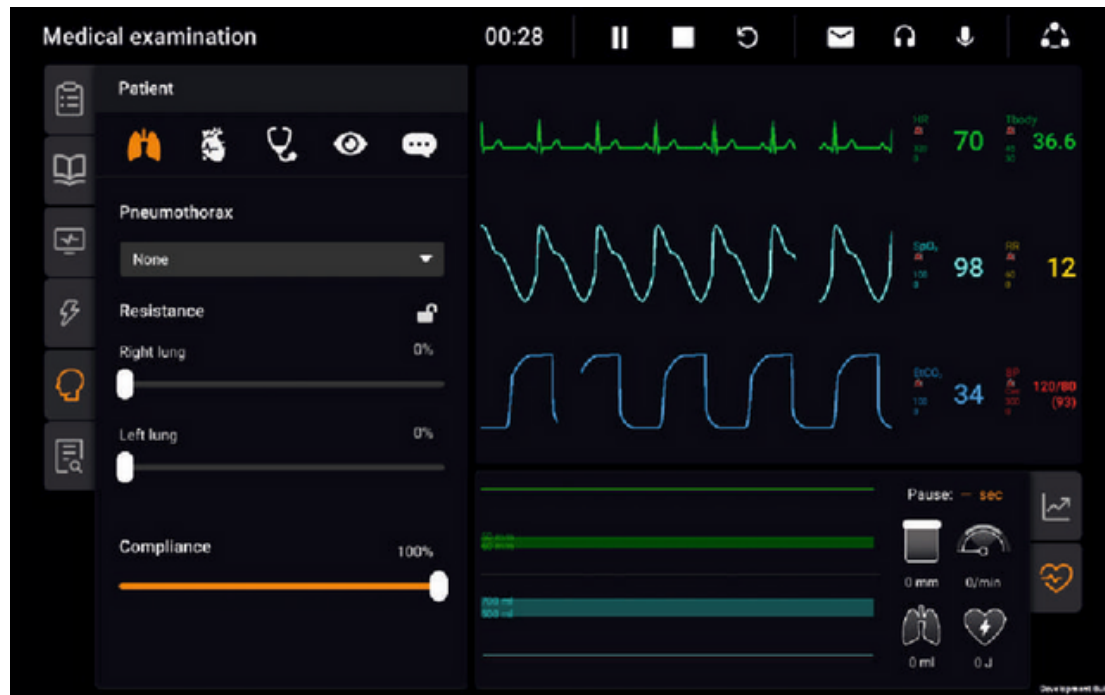
Drug administration

- IV - pre-ported access arm, arm with venipuncture
- IM - upper leg (bilateral), shoulder
- Bilateral tibia IO access



- Realistic airway
- Head tilt, chin lift
- Jaw thrust, articulated jaw
- Bag valve mask
- Supraglottic devices placement
- Oro-, naso- tracheal intubation
- Esophageal intubation
- Laryngospasm
- Cricothyrotomy
- Pneumothorax decompression
- Real mechanical ventilator support (600 ml)

Make it easy, make it reliable and make it do whatever the instructor wants!



Our multiplatform intuitive software is so easy to use, you can run MedVision ALS manikin on the fly and capture learning opportunities in the moment - all in risk-free environment! Alternatively, you can create your own scenarios to cover specific teaching points and learning objectives unique to your training programs. Lisa's range of pre-programmed patient states and scenarios are also available to ease your busy workload.

Contact us

To connect with your local Regional Representative
email: sales@arcturus-solutions.co.za



MedVision is a global company committed to the advancement of quality education in healthcare through simulation. Innovative design and cutting-edge technologies define its range of adult, pediatric, neonatal and surgical simulators.

For further information about any of our products, please contact your local regional representative.

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