

# Catalogue Patient Simulation

## Innovations for life

**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.

We look forward to partnering with you!



Innovations for life

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We also have a range of Surgical Simulators for:

- Laparoscopy
- Angiography
- Hysteroscopy
- Endoscopy

Please contact us at <a href="mailto:sales@medvisiongroup.com">sales@medvisiongroup.com</a> for further information about our innovative products.

# 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.

#### 6 Patient Simulators



- Realistic, Robust, Reliable
- Lifelike weight (150lbs/80kg) 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



#### CPR

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



#### Drug administration

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



#### Auscultation

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



#### Neurological Assessment

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



#### Full joint mobility

Realistic scenarios with learning objectives for patient handling and transportation



## Intubation of the upper respiratory tract

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

#### 8 Patient Simulators

## 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 of mechanical ventilator support, common 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.

#### 10 | Patient Simulators

## 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 preprogrammed patient states and scenarios are also available to ease your busy workload.



#### Patient monitor

Its generic interface and intuitive design creates 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 20cm 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



Available in several skin tones



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.

#### 16 | Patient Simulators

# Realistic skin quality

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



#### Neonatal Resuscitation

Realistic resuscitation skills practice support 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.



## 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.

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

#### 18 | Patient Simulators



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

## 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

## 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.



## Features

#### Airway

- Realistic airway
- Supraglottic airway device support
- Head and jaw mobility
- Orotracheal and
   nasotracheal intubation
- Laryngeal mask airway insertion
- 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 bronchi resistance
- Tracheotomy

#### 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 complianceVariable 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 pupils
- 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 (pre-installed catheter)
- 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

# Preparing for Pediatric Emergencies



## Arthur

When caring for a young child, communication skills are as important 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.

#### 24 | Patient Simulators



- Realistic airway
- Real mechanical ventilator compatibility
- Real device use for ECG, pulse monitoring, defibrillation and BP monitoring
- Cricothyrotomy, needle decompression of tension pneumothorax
- CPR with comprehensive performance assessment

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 Interactive eyes

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



- 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.

#### 26 | Patient Simulators



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

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

## Pediatric scenarios to challenge clinical decisionmaking 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 simuation 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 anesthesia 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





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# MedVision Auscultation Task Trainers



## MATT & Pediatric MATT

Our portable auscultation skills trainers are highly effective for learning cardiac, lung and abdomen auscultation points and sounds.

A rich library of sounds with amplified details for trainees to develop their patient assessment skills will allow for both cost and time efficiencies in your training programs, while ensuring the highest standards in learning outcomes.



The sounds library conforms to American Thoracic Society guidelines.









## Easy to teach... Easy to learn!

- Adult and Pediatric
   manikins available
- 39 Heart, 12 Lung and 14 Abdomen sounds
- Anterior and Posterior auscultation points
- All auscultation points light up
- Transmit sounds to
   external speakers
- Compatible with a real stethoscope





Challenge assessment skills from clear clinical findings to detecting faint murmurs. The flexible operating tablet allows you to:

- Activate or deactivate auscultation points and backlighting individually
- Adjust volume and intensity of sounds
- Change HR and RR for a sound that is currently being reproduced
- Compare sound recordings
- Sound matches ECG diagrams and other vital parameters

# Intuitive operating tablet to support gradient levels of skills development



MedVision simulator software allows for analyzing sounds in four critical areas: cardiac, lungs (anterior & posterior) and abdominal quadrants. Two different sounds can be compared within the same auscultation area. ECG and RR graphs are also shown.

## Features

#### Cardiac auscultation

- Normal heart sound
- Split first heart sound
- Split second heart sound
- Third heart sound (gallop)
- Fourth heart sound (gallop)
- Functional murmur
- Diastolic murmur
- Opening snap
- Holosystolic murmur
- Early systolic murmur
- Mid-systolic murmur
- Continuous murmur
- Austin Flint murmur
- Pericardial rub
- Graham Steell's murmur
- Aortic valve regurgitation
- Aortic valve stenosis
- Aortic stenosis and regurgitation
- Mitral valve regurgitation
- Mitral valve stenosis

#### Abdomen auscultation

- Normal bowel sound
- Hyperactive sounds
- Hypoactive sounds
- Borborygmus
- Capotement
- Peritoneal friction rub
- Normal bowel sound with
   bruits
- Irritable bowel syndrome
- Diarrhea
- Bruits due to renal arteries stenosis
- Constipation
- Ulcerative colitis
- Crohn's disease
- Paralytic ileus

## Auscultation of lungs (anterior & posterior)

- Bronchial respiration
- Vesicular respiration
- Diminished vesicular respiration
- Coarse crackles
- Fine crackles
- Wheezes
- Rhonchi
- Stridor
- Pleural friction rub
- Pneumonia
- Asthma
- Pneumothorax

#### Highlights

- 39 heart sounds
- 12 lung sounds
- 14 abdomen sounds
- All the auscultation positions light up
- Sounds can be transmitted to an external speaker
- Realistic manikin skin
- Anterior and posterior auscultation points
- Rotatable platform
- Compatible with a real stethoscope

# 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 perfomance in critical scenarios
- Full range of advanced ventillation 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 hook up
- Extensive Leonardo functionality can be employed (see page 5)

# 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...



# Modules for Basic & Essential Skills in Laparoscopy including:

skills



Vessel clipping and capturing



Electrocoagulation operating



Endoscopic scissor handling

# Modules for Surgical Skills in Laparoscopy including:



Full procedure of laparoscopic chole



Tubal ligation



Ectopic Pregnancy-Salpingostomy



Splenectomy



Salpingo-oophorectomy



Appendectomy



Suturing and knotting



Psychomotor skills



Total hysterectomy



Hernioplasty



Sigmoid colon resection







Anastomosis



Prophylactic oophorectomy



Diagnostic laparoscopy



Nephrectomy





## Setting the standard in Laparoscopic Simulation

- Our proprietary Magnetic Haptic System provides realistic feedback
- Magnetic Haptic System is also more reliable than mechanical ones
- 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



EIDOS/ medicine



## Services

We understand that you have made a big investment in your education program, which is why we have designed service solutions to help you every step of the way, from choosing the right simulator to fully integrating it into your simulation programs.

Whether it's product installation, preventive maintenance, troubleshooting or repairs, our team is here to help you optimize the full capability of your simulators, assisting you to efficiently meet your programs' goals and objectives.

For further information about our service solutions, please contact your Regional Representative.

## Contact us

To connect with your local Regional Representative email: <a href="mailto:sales@medvisiongroup.com">sales@medvisiongroup.com</a>



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