MSE GROUP
Simulation & Diagnostics in Healthcare

Training for Acute Emergencies

Leonardo
Patient Simulator

www.mse-group.co

MedVision

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.

Training for Emergencies
Keeping it real...

- 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

CPR

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

Neurological Assessment

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

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

Full joint mobility

Realistic scenarios with learning objectives for patient handling and transportation

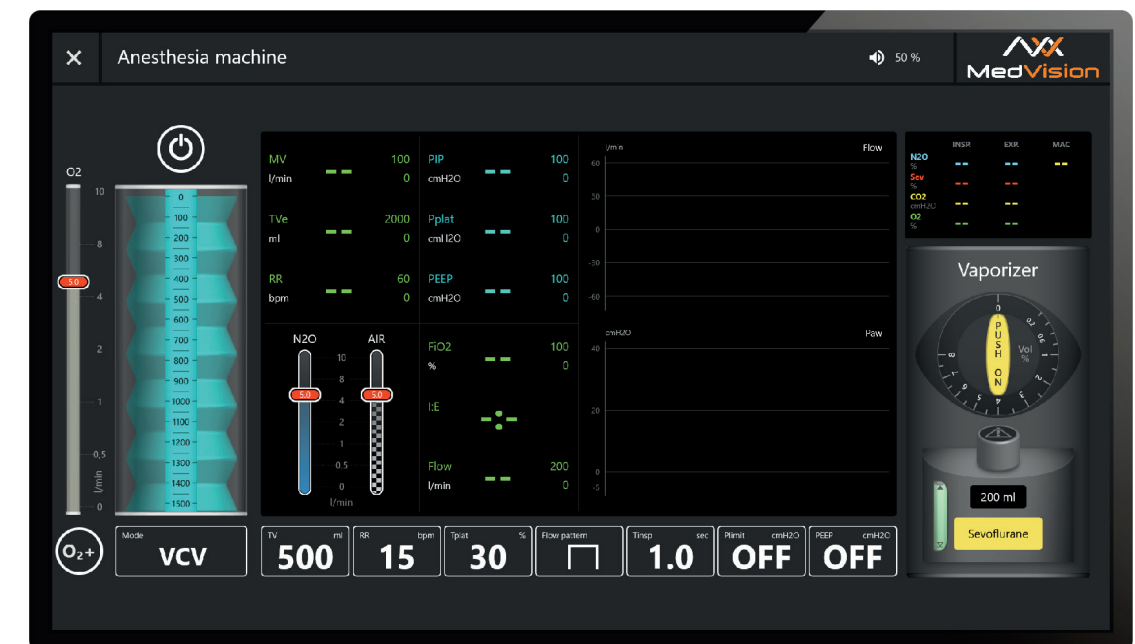### Intubation of the upper respiratory tract

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

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 anaesthesia 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.
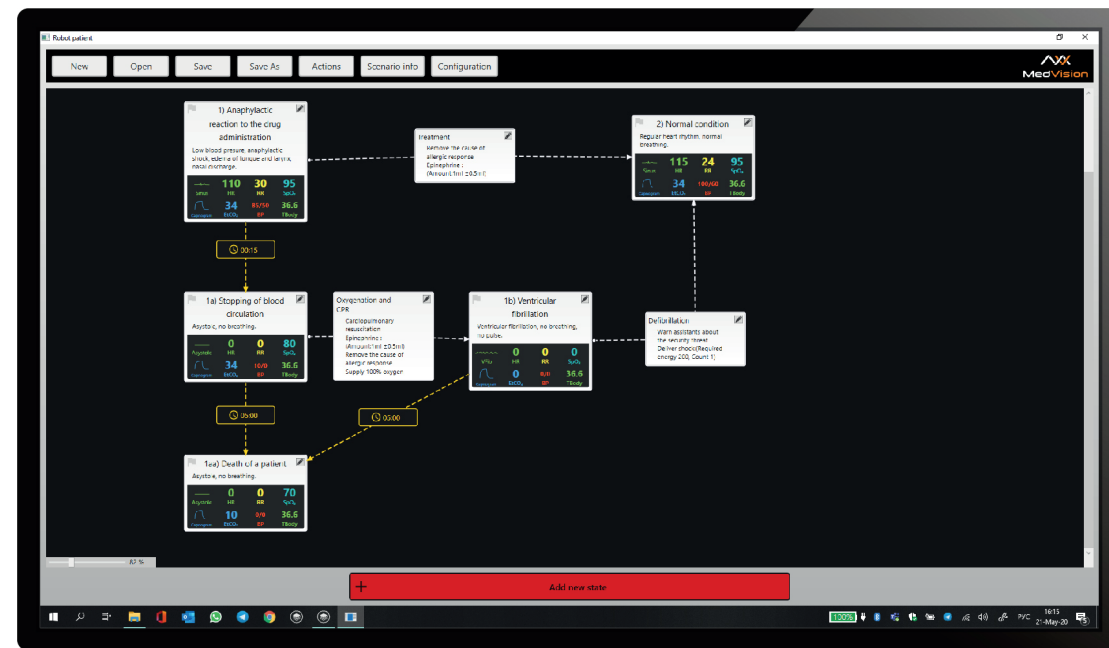
Let the software do the work...

The software solutions behind our simulator platforms follow a simple mantra: make it easy, make it reliable and make it do whatever the instructor wants!

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 programmes.

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

Scenario Builder

Creating scenarios has never been this easy! Highly flexible in its operation, our scenario builder software allows you to create simple to more complex patient cases through its touchscreen 'drag and drop' capability.

Drop in, Slide to Sequence and Easy Adjustment of patient events and physiological parameters, make it possible to fully customise your programmes for trainees to acquire the required competencies.
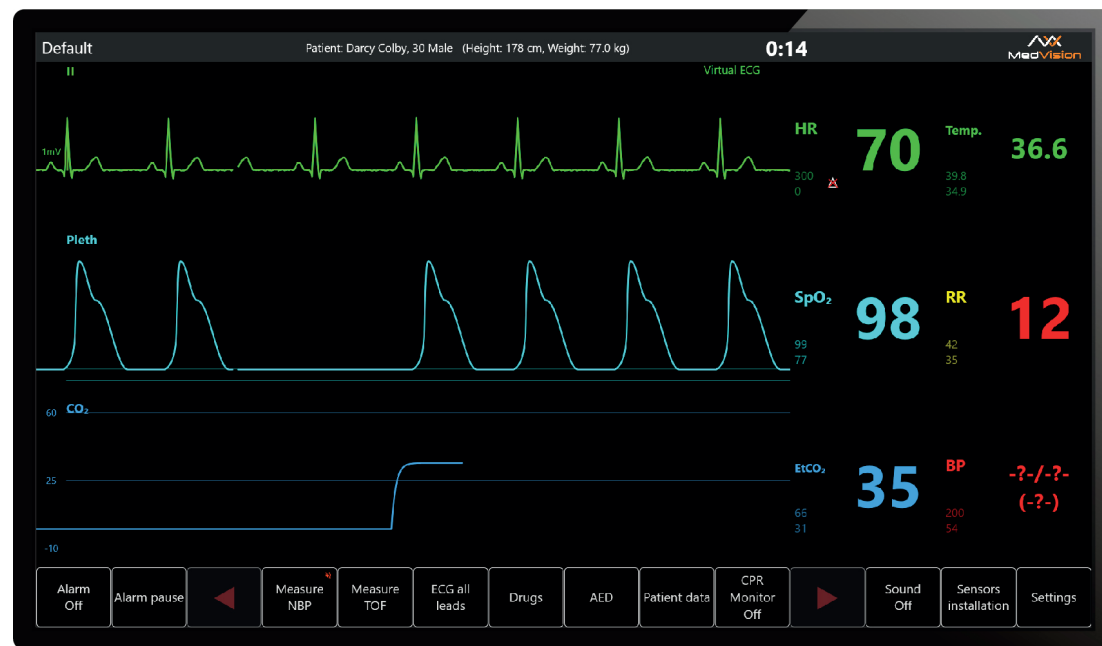

Instructor Tablet

Our Instructor Tablet with its quality touch screen makes navigation between windows and menus a totally seamless experience.

Of course, it has all the functionality you would expect from an instructor tablet: automated and manual scenario modes; easy selection of patient states and themes; synchronised vital signs with the patient monitor; slider controls for nuanced changes to the patient's condition... but it's the intuitiveness of the GUI that is the real game-changer here. From 'pick-up-and-play' to running complex scenarios, it really is that simple.

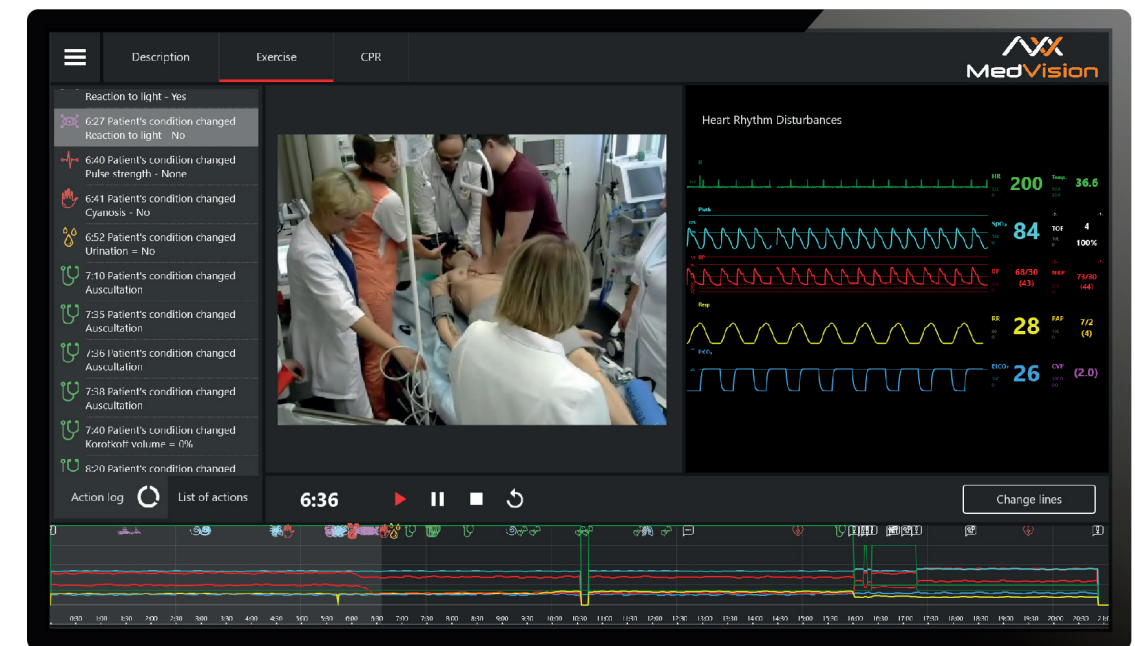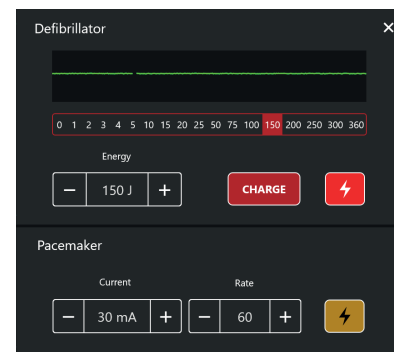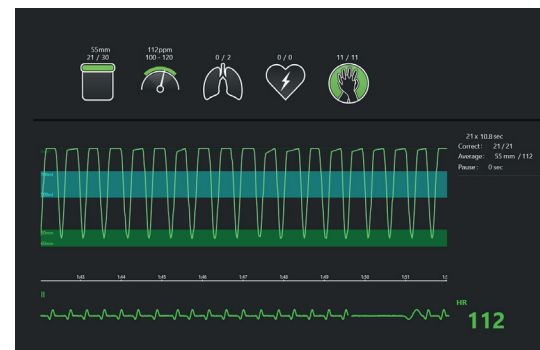Scenarios... create your own or run on the fly

Patient Monitor

Our touchscreen patient monitor displays vital signs with a familiar look and functionality typical of its real counterparts.

It is fully customisable and the operator can simply select and display vital signs most appropriate to the patient's clinical case.

A novel feature of our patient monitor is the real-time CPR performance display, which can be employed during cardiac arrest scenarios. Feedback on the quality of CPR: rate, depth, release and ventilation supports compliance with Guidelines.

A virtual manual defibrillator is also available for cardiac arrest and cardioversion events.

Debrief Viewer

The debrief is arguably the most important element of the simulation exercise, which is why we have put careful attention to the features within our Debrief Viewer.

Our debrief software provides the instructor with unprecedented flexibility in its operation. Whether you review the session from start to finish or jump to time-stamped events, we have made it easy to find and access meaningful moments within the simulation with full patient data to ensure the best possible learning outcomes.

CPR performance metrics are also available at the touch of a button.

The integrated action log captures all trainee records and performance data.

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

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

MedVision is a global company committed to the advancement of quality education in healthcare through its range of patient and surgical simulators. The MSE Group is the exclusive partner of MedVision in Europe.

hello@mse-group.co

www.mse-group.co