

Arthur

Hi-Fidelity Pediatric Patient Simulator
For Critical Care



MAVERICK
Technology Transformation Partners





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
- 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

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

The only patient simulator to include comprehensive training in ventilation management



Use your own ventilators

Arthur 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 Arthur or as a stand-alone training device. Trainees will learn the full functionality and application of ventilation equipment.

Pediatric scenarios to challenge clinical decision-making and team performance

Arthur supports real-life pediatric emergency scenarios in a safe and realistic inter-disciplinary team environment. The instructor can create a diverse range of scenarios where learning to communicate effectively and respond as a team are essential to impact patient outcomes.

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!

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.

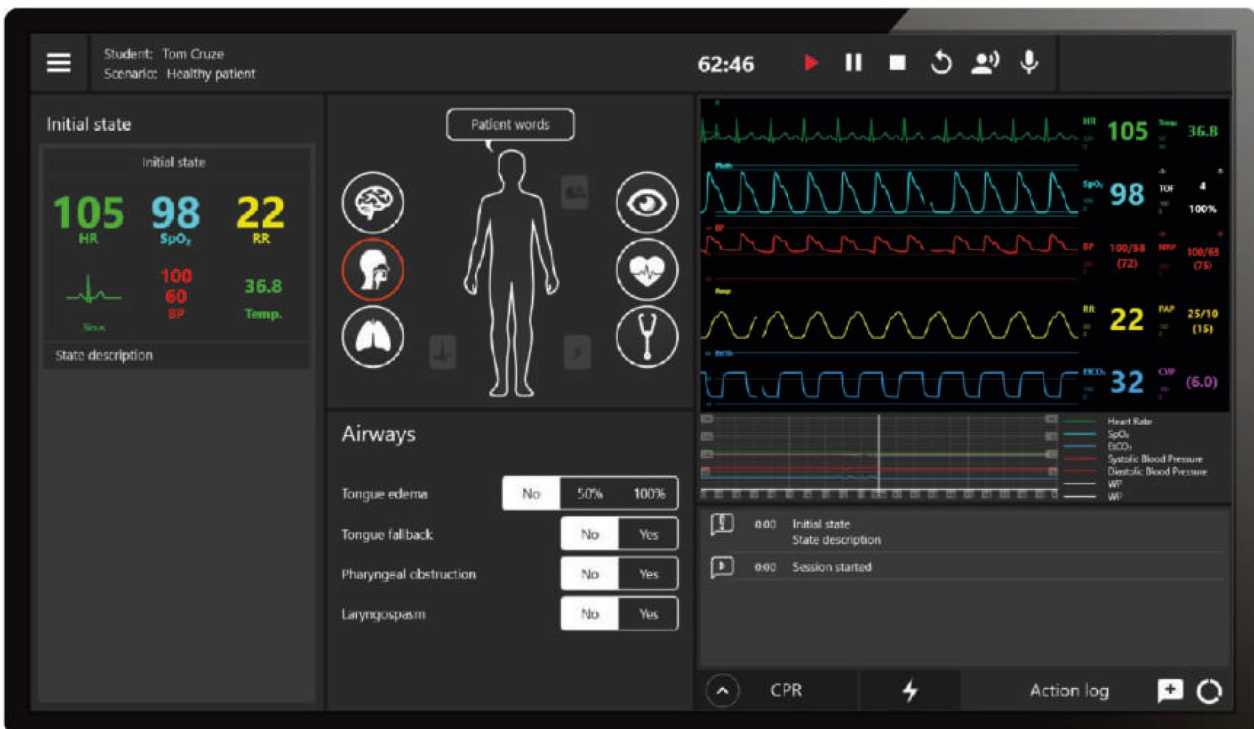
Arthur also comes with a range of pre-programmed patient states and scenarios of typical pediatric cases that will help to get your simulation programs up and running quickly.



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 customize your programs 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.

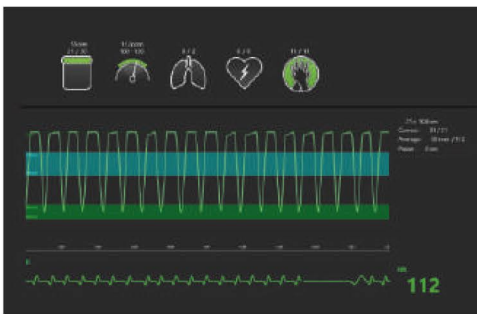
Of course, it has all the functionality you would expect from an instructor tablet: automated and manual scenario modes; easy selection of

patient states and themes; synchronized vital signs with the patient monitor; slider controls for nuanced changes to the patient's condition... but it's the intuitiveness of the user interface 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



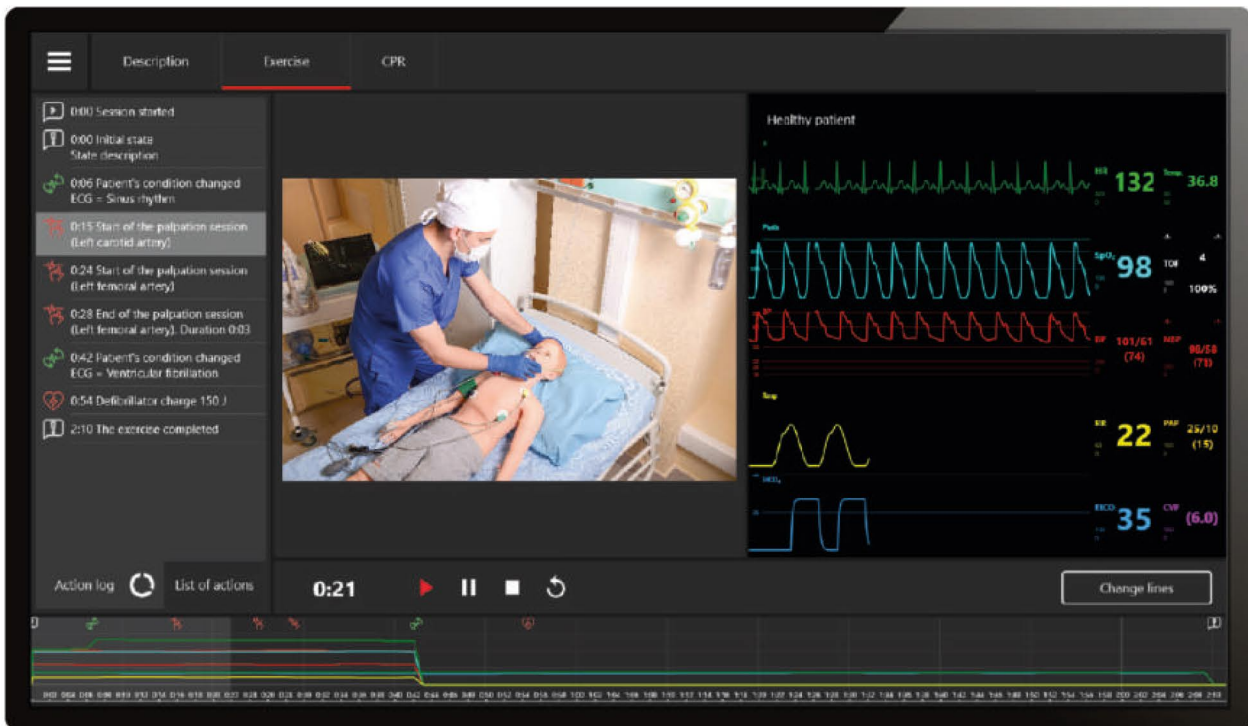
Our touchscreen patient monitor displays vital signs with a familiar look and functionality typical of its real counterparts.

It is fully customizable 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.

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

Arthur Hi-Fidelity Pediatric Patient Simulator for Critical Care

	CRITICAL CARE
Airways	
Airway obstruction	+
Orotracheal intubation	+
Nasotracheal intubation	+
Retrograde intubation	+
Intubation of right main/left bronchus	+
Fiberoptic intubation	+
Gastric intubation	+
BVM	+
Transtracheal jet ventilation	+
Positive pressure ventilation	+
Airway placement (LMA, LTA, Combitube)	+
Lung compliance (0-100%)	+
Lung resistance (0-100%)	+
Endotracheal tubes – insertion, fixation and care	+
Cricothyrotomy	+
Cricoid pressure	+
Vomiting imitation	+
Suction	+
Airway complications	
Tongue edema	+
Pharyngeal obstruction	+
Proper head position sensor	+
Laryngospasm	+
Trismus	+
Airway obstruction modelling	+
Foreign body obstruction	+
Breathing	
Spontaneous breathing	+
Chest rise and fall	+
Normal and pathological breath sounds	+
Lung sounds	+
Lung sounds during ventilation	+
Lung sounds synced with respiratory rate	+
Programmable lung sounds	+
Posterior auscultation	+
SpO2	+
Needle decompression (Bilateral)	+
Chest drainage (Bilateral)	+
Unilateral spontaneous breathing	+
Pulmonary features	
Non-linear lung compliance (upper and lower inflection points)	+

	CRITICAL CARE
Freely programmable spontaneous breathing simulation	+
Physically measurable lung volume, for example with wash-out method	+
Remote controllable FRC	+
Refractory hypoxemia with and without physically recruitable lung volume	+
Airway temperature measurement	+
Remote controllable and programmable anatomical dead space which is extremely important in Covid 19 patients	+
Arterial oxygenation saturation and measurable by a pulse oximeter providing feedback to trainees	+
Measured alveolar oxygen partial pressure	+
Alveolar pressure measurement	+
Measured end-expiratory lung volume	+
Non-refractory hypoxemia (diffusion limitation)	+
Venous admixture (shunt, QS/QT)	+
Heart-lung interaction measurable by pulse oximeter plethysmogram in Real time	+
Breath-by-breath CO2 concentration measurable by etCO2	+
Spontaneous breathing effort with programmable P0.1	+
Actual Oxygen and Carbon Dioxide exchange	+
Compatible with actual anesthesia machine	+
Real anesthetic gas usage	+
Cardiac	
Cyanosis	+
Ever-growing ECG library	+
ECG monitoring (4 points)	+
Heart sounds auscultation	+
ECG and heart sounds sync	+
Defibrillation (manual / automatic)	+
Manual ECG settings	+
Pacing	+
Defib pads correct placement	+
Pericardiocentesis	+

	CRITICAL CARE
Blood circulation	
Pulse palpation points	+
Adjustable pulse strength	+
Pulse and ECG sync	+
Pulse palpation detailed log	+
Pulse strength synced with BP	+
Korotkoff tones	+
Pulse oximeter	+
Arterial blood gas monitoring	+
Pharmacology	
IV access (intravenous)	+
Drug recognition with dose and injection speed	+
IO access (intraosseous)	+
IM injections (intramuscular)	+
Automatic and programmable physiological responses	+
Eyes	
Pupillary light reflex	+
Variable size pupils	+
Blinking (slow, normal, excessive)	+
Open, half-open or closed eyes	+
CPR	
Conforming to 2010-2015 guidelines	+
Realistic compressions	+
Anatomical landmarks	+
Depth, frequency, hands placement assessment and log	+
Head tilt/chin lift with sensors	+
Realistic vital parameters change during and after CPR	+
Other functions	
Full body manikin	+
Realistic joint mobility	+
Foley catheterization	+
Urine output	+
Secretion (eyes, ears, nose, mouth)	+
Diaphoresis Extrication/Immobilization	+
Immobilization	+
Bowel sounds auscultation	+
Abdominal distension	+
Trauma module (wound and fracture)	+
Bleeding	+
Limb trauma (optional)	+
Extra kit of trauma straps	+
Patient speech (screaming, moaning etc.)	+

	CRITICAL CARE
Microphone for instructor to simulate patient speech	+
"Instructor" Software	
Wireless remote control	+
Automatic scenarios	+
Programmed scenarios	+
Manual mode	+
Themed scenarios	+
Trainee database for debriefing	+
Video debriefing, synced with activity log	+
Detailed CPR reports	+
"Bedside monitor" Software	
Wireless remote control	+
Modular and configurable	+
6 waves	+
More than 30 parameters	+
Full HD screen	+
CT, MRI, videos	+
Anesthesia machine simulation	+
Mechanical ventilator simulation	+
Actual Multipara monitor	
Actual oxygen saturation measurement	+
Actual etco2 monitoring	+
Actual plethysmograph	+
Actual capnograph	+
Scenario constructor	
Create and manage scenarios	+
Add new actions	+
ECG software	
Create and manage new ECG graphs	+
Equipment kit	
Adult human patient simulator	+
Bedside monitor	+
Laptop	+
Defibrillator adapter	+
Syringe imitators	+
BP monitoring kit	+
Consumables kit	+
Service instrument kit	+
Headphones	+
Refill bottles	+
Webcam	+

Contact us

For Sales or Technical Information
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Maverick is a 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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