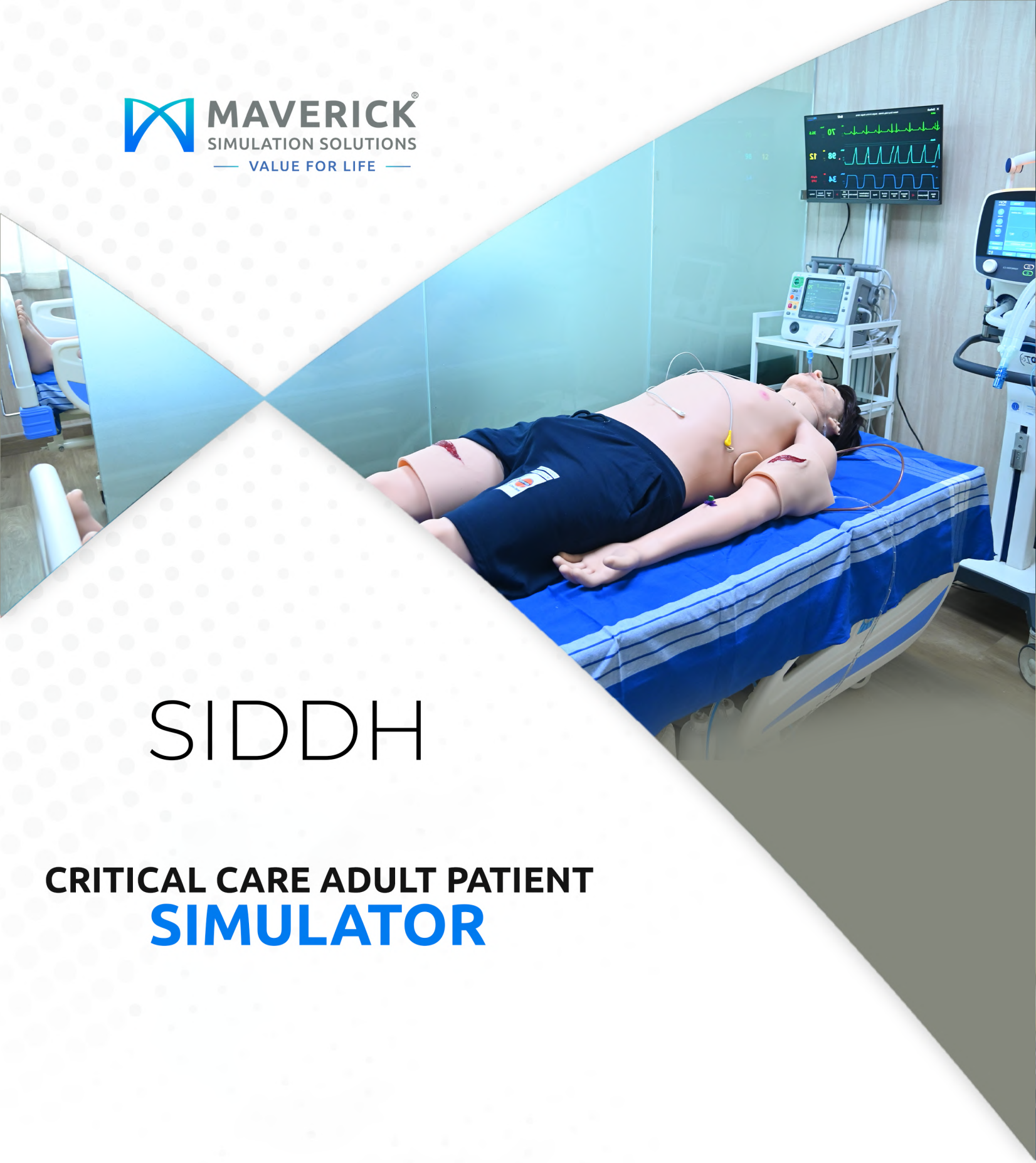
MAVERICK®
SIMULATION SOLUTIONS
VALUE FOR LIFE



SIDDH

CRITICAL CARE ADULT PATIENT
SIMULATOR

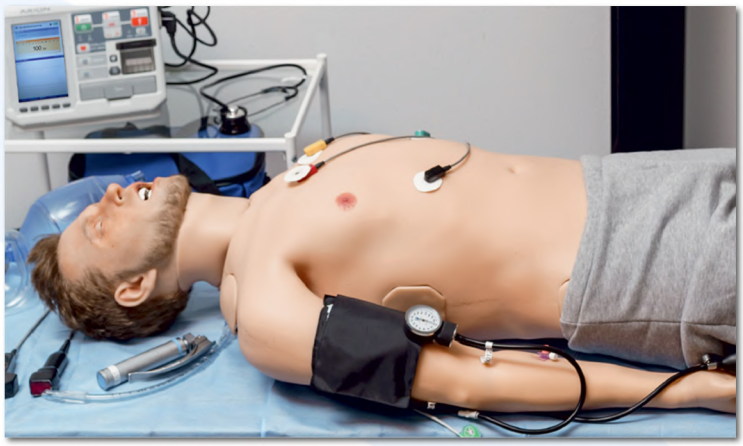
www.mavericksimulation.com

GENERAL OVERVIEW

The **SIDDH** Critical Care Simulator is a high-fidelity, full-body adult patient simulator integrated with an advanced lung simulator, providing an unparalleled learning environment.It enables participants to develop technical and non-technical skills in a safe and controlled setting,offering realistic clinical scenarios for training in anesthesia, critical care, emergency medicine,nursing, paramedical studies, and undergraduate medical education.

KEY FEATURES

Anatomical & Physiological Realism:



- Life-size adult human patient with realistic skin, musculoskeletal structure, and anatomical landmarks.
- Internal battery power with 8 hours of operation; wired power supply (110-220V).
- Interchangeable male/female genitals for catheterization training.
- Realistic hair, eyebrows, scalp, and facial skin.
- Palpable bones, including ribs, ulna, shoulder blades, and pelvic bones.
- Articulated joint movement with realistic range of motion.
- Bendable lumbar region for realistic patient positioning.

Advanced Airway Management:

- Controllable open/closed airway (manual & automatic control).
- Jaw thrust, head tilt/chin lift, and suctioning (oral & nasopharyngeal).
- Orotracheal, nasotracheal, combitube, LMA, i-gel, and endotracheal intubation.
- Automatic logging of main steam, right and left main bronchus and esophageal intubation.
- Fiberoptic and retrograde intubation.
- Two degrees of tongue edema, Tongue fallback.
- Laryngospasm, pharyngospasm.
- Needle and surgical cricothyrotomy.
- Transtracheal jet ventilation.
- Airway resistance adjustable in three settings (Open/ Medium/Closed).
- Stomach distention simulation on esophageal intubation.

CPR & Emergency Response:

- Compliant with ERC, AHA, and SRFAC Guidelines.
- Real-time CPR feedback (depth, rate, release).
- Realistic resistance and compression depth.
- Palpable pulses and BP waveform generated during compressions.
- Defibrillation, pacing, and airway support during CPR.

Advanced Pulmonary Simulation & Ventilator Integration:

- Capable of spontaneous breathing even while ventilated.
- Compatible with any ventilator and mode (except NAVA).
- Two physical lung compartments with realistic compliance and resistance settings.
- Variable lung compliance, airway resistance, and dynamic lung mechanics.
- Real-time arterial oxygenation saturation and plethysmogram.
- Displays lung recruitment dynamics, PEEP management (any level), and ventilator asynchrony, Weaning Protocols.
- Real-time arterial blood gas monitoring with FiO2, pO2, pCO2, pH levels.
- Functional Residual Capacity: 300 –4000 mL
- Spontaneous breath rate: 0 to 100 breaths/min
- Resistance settings: Adjustable between 3 to 200 cmH2O/L/s
- Total respiratory compliance settings: 8 to 120 mL/cmH2O
- Compatible with any tidal volume delivered by any ventilator
- Large number of cases such as ARDS(recruitable and no-recruitable), trauma, pulmonary edema, post-op etc.

Cardiovascular & Hemodynamic Features:

- Extensive ECG library, 4/5 lead ECG monitoring, and 12-lead ECG display.
- Defibrillation and cardioversion with real defibrillators.
- Manual BP measurement with Korotkoff sounds.
- Bilateral Carotid, radial, femoral, popliteal, posterior tibial, and dorsalis pedis pulses
- Pulse strength varies with BP; pulse palpation is detected and logged.
- Realistic cyanosis and hypoxia representation.

Vascular Access & Drug Administration:

- IV and intraosseous access (tibial).
- Automated drug and dose recognition.
- Realistic bleeding control with tourniquet application.
- Extensive drug formulary with automatic and programmable physiological responses

Neurological & Reflex Features:

- Programmable blinking and pupillary light reflex.
- Aschner reflex, tonic and clonic convulsions.
- Head tilt and jaw thrust tracking sensors.
- Programmable pupil sizes for neurological assessment.
- ICP (Intracranial Pressure) monitoring

Auscultation & Respiratory Features:

- Simulated stethoscope for heart, lung, and bowel sounds.
- Bilateral and unilateral chest rise and fall.
- Bilateral Pneumothorax simulation with needle decompression.
- Bilateral Chest tube insertion with pleural cavity simulation.
- Spontaneous breathing with realistic lung mechanics.

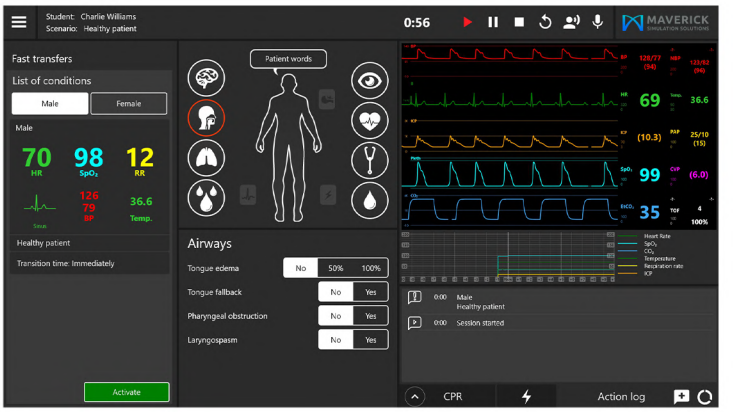
Patient Monitoring & Diagnostics:

- Multi-parameter monitoring including SpO2, EtCO2, ABP, CVP, PAP, NIBP, TOF,ICP, C.O, RR.
- Peripheral temperature monitoring.
- Train-of-four (TOF) neuromuscular monitoring.
- AGT (Anesthetic Gas Tracing) & N_2O levels.

Special Features for Critical Care Simulation:

- Non-linear lung compliance with recruitable and non-recruitable lung simulation.
- Venous admixture (shunt, QS/QT) representation.
- Heart-lung interaction via plethysmogram analysis.
- Real-time display of PV loops and respiratory mechanics.
- Display of tidal volume, FiO2, pO2, pCO2,

Operating Software & Control System:



- Wireless instructor control unit for remote operation.
- Scenario-based training with automated progression.
- Dual operating mode (manual & auto-mode for scenario-driven learning).
- Real-time event logging and debriefing system.
- Bookmarking important events, logging comments, and integrating event logs for effective review
- Integratable with a portable ultrasound simulator and probe for various protocol training.(for e.g. RUSH)
- Virtual patient monitoring system with radiographic image and procedural video integration.
- Scenario constructor tool for customizable training cases.

Sounds

- Large library of normal and abnormal sounds.
- Heart sounds(5 sites).
- Lung sounds(anterior and posterior).
- Bowel sounds(4 quadrants).
- Inclusive of pre-recorded or custom or instructor generated patient sounds.

Training & Customization:

- On-demand scenario creation for customized training programs.
- Remote faculty control and debriefing support.

The actual product appearance and features may vary due to ongoing enhancements and advancements.

MAVERICK SIMULATION SOLUTIONS

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