

RespiSim® System Overview



A Mobile Training System For Mechanical Ventilation

Imagine yourself in the ICU assigned to the case of a patient intubated due to a COPD exacerbation. It's your first time treating a patient under this condition. How much more competent would you feel if you had already experienced the scenario in a risk-free simulated learning environment?

Ventilator management is a critical responsibility that demands sophisticated skills. Optimizing patient-ventilator interaction is challenging, and not necessarily made easier by the complexity of today's ventilators and the plethora of ventilation modes.

It's All About the Lungs

With the RespiSim® System, IngMar Medical has created a respiratory flight simulator that enables intuitive, interactive, and highly effective training. We have paired the world's most sophisticated spontaneously breathing simulator with a specialized manikin and training software to give you a unique mobile training station for mechanical ventilation.

The RespiSim System represents a new concept for teaching ventilator management. It brings instruction into the 21st century, taking advantage of simulation widely used in flight training and other medical disciplines.



Take your training where you need it with the mobile cart.



INGMAR MEDICAL

Respiratory Simulation Specialists

RespiSim® System



RespiPatient® — It's All About the Lungs

RespiPatient is the only manikin available with truly high-fidelity lungs. The ASL 5000, the world's most sophisticated breathing simulator (see page 4), forms the core of the system. The award winning TruMan Trauma by TruCorp gives RespiPatient an anatomically correct simulated human torso and airway.

Look, Feel, Listen

RespiPatient provides a comprehensive ventilator management training experience with realistic PEEP, unilateral and bilateral chest rise, and lung sounds.

With RespiPatient, you can move from initial CPR maneuvers to bag-valve-mask ventilation and intubation, all the way to advanced procedures such as needle decompression, chest tube insertion, and tracheotomy. RespiPatient can be used to train on any ICU ventilator.

Replaceable tissue sets allow each learner a life-like and unique experience for training. Anatomically correct airway and chest structure, three-layered tissue, "real feel" skin create a high level of realism to train the following skills:

Airway Management Skills (oro-tracheal, nasotracheal, combitube, LMA placement, right main stem)

- Full head tilt, chin lift, and jaw thrust
- Inflatable tongue with real-life size and texture
- "Breakout" teeth to simulate the effects of bad practice in direct laryngoscopy

Capnography CO₂-production (metabolic rate) controlled within scenario

Tension Pneumothorax

- Identification of tracheal deviation and jugular vein distension
- Either right or left tension pneumothorax
- Needle decompression maneuver with the familiar "hiss" of escaping air



Advanced Auscultation Option uses a stethoscope with WiFi.

Train needle decompression with “hiss” sound.



Chest Tube Insertion

- Recognition of correct position in the 2nd intercostal space at mid-clavicular line
- Blunt dissection through chest wall

Surgical Skills

- Tracheotomy
- Cricothyroidotomy

Auscultation

- Lung and heart sounds playback from computer
- RespiScope™ Advanced Auscultation Option is fully scenario-driven and uses Cardionics SimScope™ WiFi for exceptional sound quality

RespiSim® Software

RespiSim Software makes it easy to manage hands-on, multi-stage scenarios that engage learners in “clinical storytelling.” Instructors stay in control of the simulation and can amplify effects, challenge learners with unexpected events, or get the simulation back on track to ensure that learning goals are met. Learners review patient and ventilator data, make treatment decisions – and RespiPatient responds.

Instructor Dashboard

The Instructor Dashboard greatly simplifies management of multiple dimensions of the simulation, such as change events, possible treatment plans and their subsequent effects.

Vital Signs Monitor and Virtual Patient Chart

Learners get the full view of patient status including chest X-rays, lab results, EKG rhythms, vital signs, and ABGs.

Debriefing

Rich feedback is the hallmark of the RespiSim System, allowing you to enhance and accelerate training. Recordings of entire sessions with respiratory waveforms can be re-run for thorough debriefing.

Wireless Ventilator Data Interface Option

Enables retrieval of all ventilator parameters (including alarm information, mode settings, etc.) for thorough debriefing

Plug-and-Play Curriculum

Developed in collaboration with leading educators, RespiSim Modules save instructor time by providing a comprehensive, multi-media package of materials for running a simulation from start to finish. Modules include preparatory lectures as well as step-by-step instructions.

The curriculum topics cover basic bench simulations as well as advanced clinical scenarios.

Mobile Cart

Integrates ASL 5000 and RespiPatient® for in-situ simulation training, wherever the ventilator is located. Enables on-site training or the rehearsal of critical patient ventilation scenarios using real patient data, right on the treatment unit.

RespiPatient folds to an upright position on the mobile cart for easy transport.

Create Almost
Any Breath



ASL 5000 Breathing Simulator

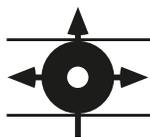
Imagine being able to simulate almost any breathing profile – including a spontaneously breathing patient whose respiratory parameters gradually change over time. Train for the highest level of patient care with the ASL 5000 Breathing Simulator, a high-fidelity, digitally controlled respiratory “flight simulator.”

With the ASL 5000 you can:

- Create almost any patient scenario with infinitely adjustable patient effort, resistance, and compliance, using a single or two-compartment lung model, neonatal to adults
- Simulate gradually changing patient behavior, pre-scripted or controlled by the instructor while the simulation is running
- Go beyond basic ventilator triggering and simulate patient active breathing, including “fighting” the ventilator (active exhalation)
- Ensure consistent instruction and skills assessment with reproducible patients
- Explain inflection points and the purpose of PEEP using non-linear compliance
- Conduct in-depth post-run analysis – extensive data analysis package captures 90+ parameters for hours of trending, research, and review, as well as flow, pressure, and volume waveforms.
- Export all captured data to ASCII (Excel-readable) formats with a mouse click



High performance respiratory simulation helps raise the level of patient care.



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IngMar Medical, Ltd. is ISO 9001:2008 certified.

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