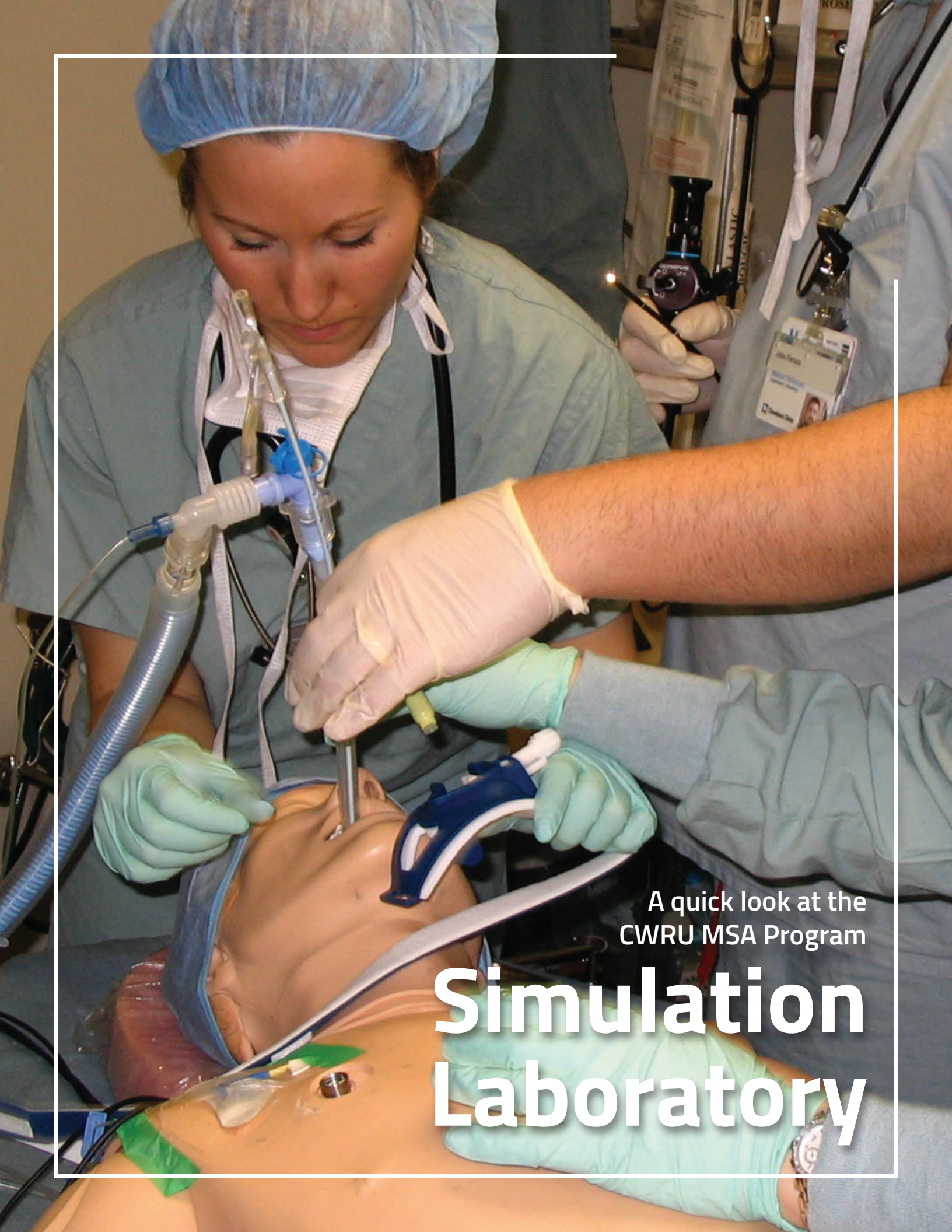
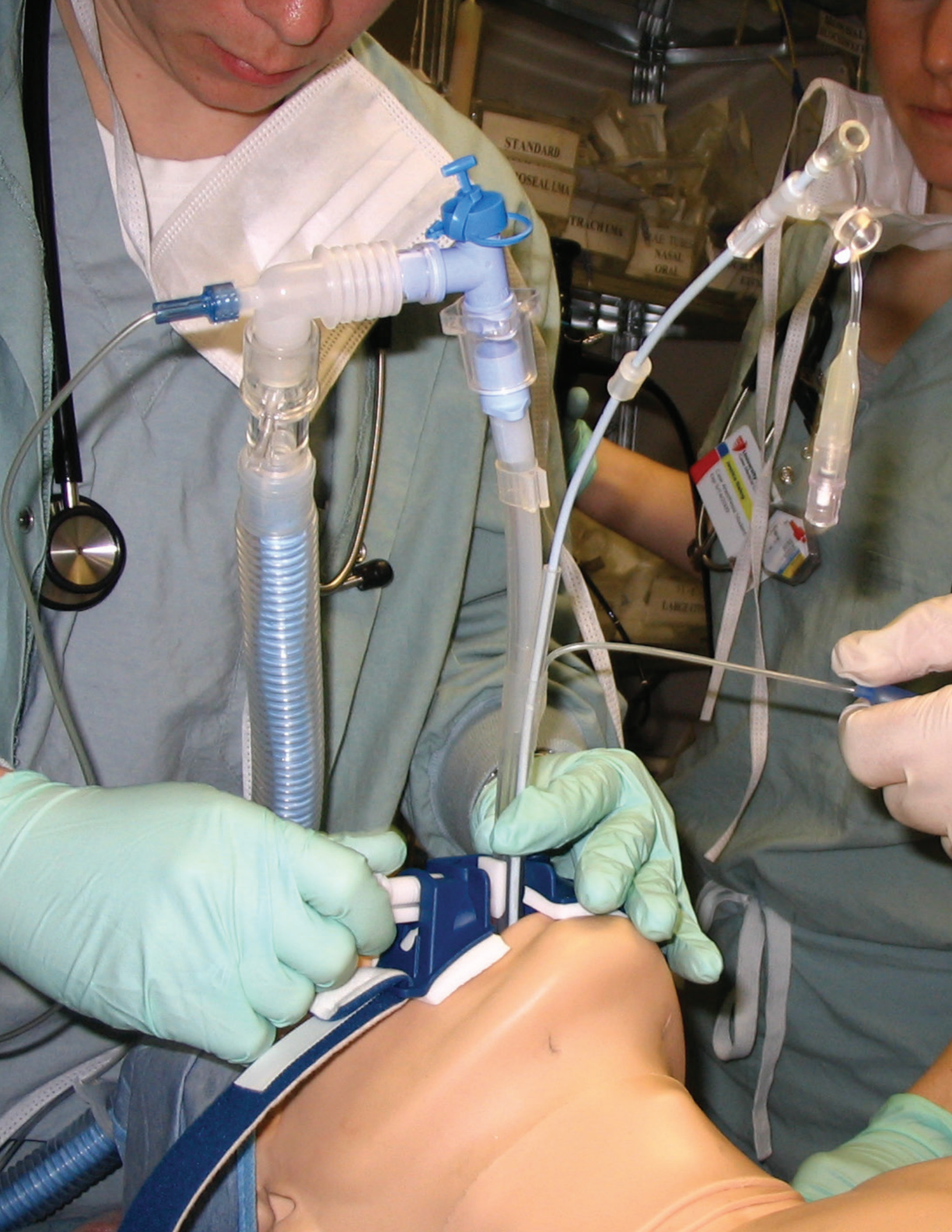


A quick look at the
CWRU MSA Program

Simulation Laboratory


STANDARD

Realistic and Risk-free

The mission of the Master of Science in Anesthesia Program at Case Western Reserve University School of Medicine is to train the finest anesthetists in the world.

One component of this training is our simulation laboratory. Designed to look and feel like an operating room, sim lab allows students to hone their anesthesia care techniques through participation in real-world scenarios.

Examples of scenarios include:

- acute intraoperative unilateral pneumothorax
- anaphylatic shock
- cardiac arrhythmias
- complete upper airway obstruction
- crisis management
- hemorrhage
- hypotension and hypertension
- hypovolemia and tachycardia
- hypoxia, hypercarbia, and hyperglycemia
- intraoperative bronchospasm
- malignant hyperthermia
- post-extubation stridor
- symptomatic bradycardia
- tachycardia
- unstable ventricular fibrillation

MSA students have also participated in mock codes, such as cardiac arrests, and other serious crisis events in partnership with hospital affiliates.

Sim lab provides our students with the opportunity to practice in a realistic and risk-free environment where they can learn from their mistakes. Studies have shown that simulation training increases students' competency and speed while decreasing the risk of patient injury. Lessons translate immediately into the operating room.

Paired with clinical work, which begins just one month after the start of the MSA Program, the sim lab experience is invaluable.

All three program sites direct and operate simulation laboratories. The sim lab is an important learning space for MSA students in Cleveland, Houston and Washington, D.C. In Cleveland, the lab is also used as a collaborative space with the residency program.

Specific Preparation

There are three goals, or learning objectives, set for students in the simulation laboratory:

1. Safe Technique

Students learn how to safely take care of mock patients by performing and managing various scenarios presented to them. In these scenarios, students learn how to use basic and advanced equipment, set-up drugs and perform safe, basic intravenous and airway management. Repetition is important, and each scenario emphasizes proper and safe technique. Each simulation exercise places patient safety as the highest priority.

2. Be Specific

Sim lab is designed to augment clinical and classroom training by requiring specific preparation for specific clinical scenarios.

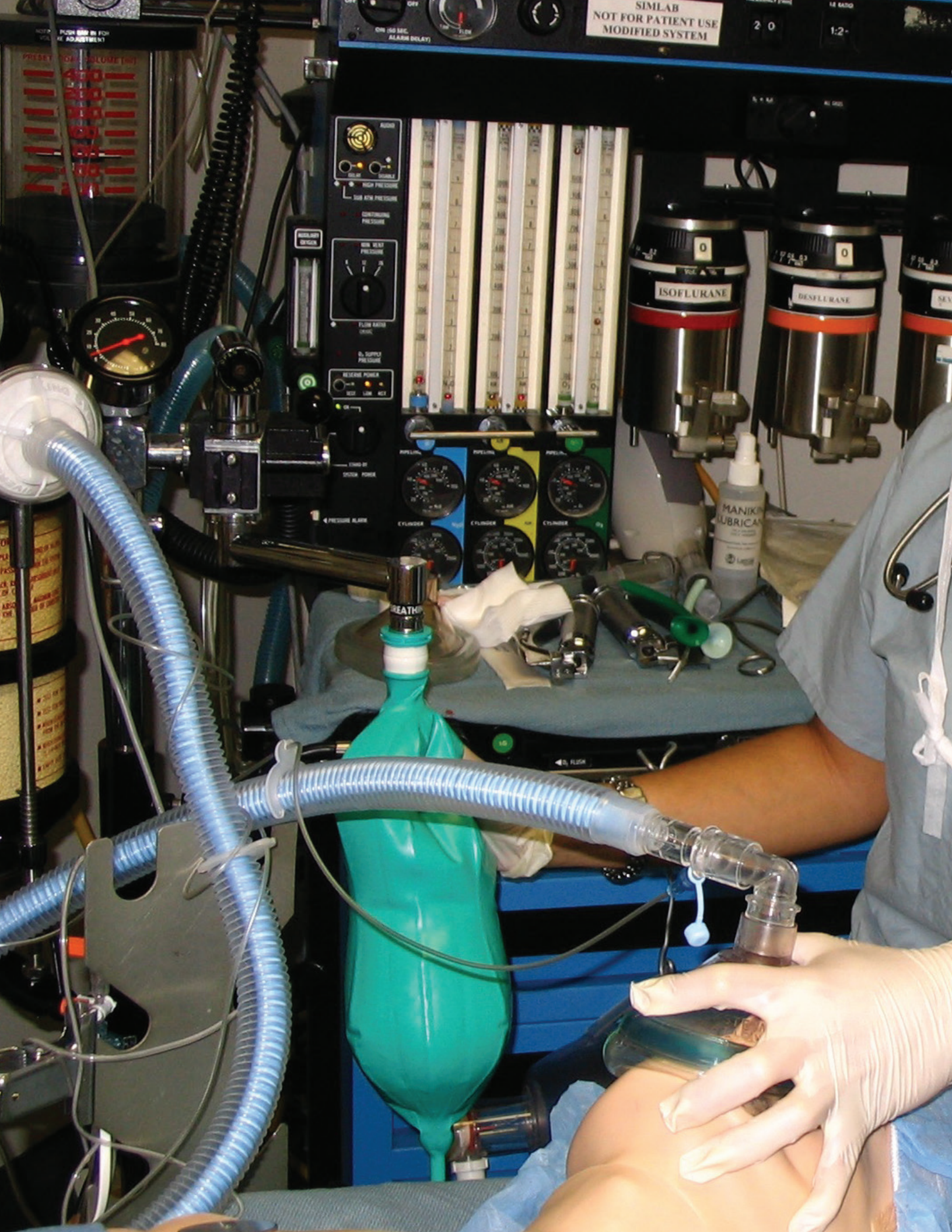
3. Expand on Experience

Students' tasks in sim lab will become increasingly complex as the range of equipment used and tecnhiques practiced expands over time as the skill and clinical experience of the student expands.

Diverse Resources

The simulation laboratory requires a wide range of diverse resources including appropriate medical and audio-visual equipment as well as expert staff and consultants from disciplines such as medicine, physiology and pharmacology, electrical engineering and computer science.

Additionally, realistic cases must be selected that can be recreated by the computer-controlled simulator mannequins and by the simulation designer.


SIMLAB
NOT FOR PATIENT USE
MODIFIED SYSTEM
ISOFLURANE
DESFLURANE

Types of Simulation

The simulation laboratory incorporates three types of simulators into student training.

Mannequin Simulators

Low fidelity simulators, including vascular models, and high fidelity simulators, including Laerdal Humanoid and CAE Apollo computer-controlled and electrically- and pneumatically-operated mannequins, are used regularly as "patients" in the sim lab. Scenarios are programmed into the simulator computer, and control all mechanical activities including head and jaw motion, vocal sounds, and a range of twenty-seven physiological and instrument parameters.The physiological parameter trends are programmed to follow actual physiological changes seen in real cases.

The laboratory also has fully functional anesthesia machines that work with these simulators.

On-screen Simulators

Sometimes called virtual simulation, this type of simulator uses graphical computer programs based on elaborate physiological models to control the actions of virtual patients. The on-screen simulators are very useful for teaching pharmacology and clinical techniques as well as illustrating the consequences of anesthesia in cardiovascular, respiratory, and renal systems in pre-, intra- and post-operative events.

Realistic Training, Real Equipment

Some of the equipment used in the simulation laboratory includes:

- adult and pediatric simulators
- anesthesia machines
- arterial line trainers
- central line trainers
- double lumen tubes
- epidural and spinal kits
- fiberoptic intubating scope
- IV trainers
- video-assisted laryngoscopes

Think Beyond the Possible

As one of the top 25 medical schools in the nation, Case Western Reserve University School of Medicine is dedicated to enhancing human health as a leader and innovator in the fields of medical education.

The Master of Science in Anesthesia Program is a premier educator of certified anesthesiologist assistants, and has led innovation in the field of anesthesia care for nearly fifty years. The MSA Program graduates superior anesthetists, and our students are known as confident, ambitious, and skilled caregivers as well as committed educators and advocates.

Learn more about the MSA Program online today.

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