The Clinical Simulation Laboratory is a collaborative effort of the UVM College of Medicine, the UVM College of Nursing and Health Sciences, and Fletcher Allen Health Care, and serves as a centralized hub in the training of health care professionals with the ultimate goal of improving safety and quality of care.
Improving Patient Care
Contemporary health care requires competency-based instruction that often relies on simulated experiences to prepare learners for patient care. The Clinical Simulation Laboratory enables trainees to use well-founded simulation principles to develop and maintain clinical skills and competencies to augment patient safety and improve patient care.

Interprofessional Training
The Clinical Simulation Laboratory brings together individuals, groups and teams for hands-on learning experiences designed to improve clinical, collaborative, and communication skills. Simulations are further enhanced by the integration of standardized patients and advanced technology in settings that reflect actual trauma, operating room, in-patient and ambulatory settings.

Serving the Community
Through comprehensive practical team training and innovative skills programs, the Clinical Simulation Laboratory serves as a valuable training resource for health care providers across Vermont and throughout the region.
Central Line Placement

Studies have proven that central line training can eliminate central line associated blood stream infections. Our Central Line Placement course trains participants using established guidelines for central venous catheter insertion, including the use of a central line bundle kit, aseptic technique, and maximum barrier precautions. The course emphasizes protocols and best-practices demonstrated to increase patient safety and reduce infection rates. Multiple anatomical approaches are covered including the pros and cons of each anatomical site. Training also includes ultrasound guided placement techniques.

Participants will learn to:
- Describe the anatomic landmarks and approach options for central line catheterization
- Utilize ultrasound for precise line placement
- Demonstrate safe and sterile placement of a central venous catheter
- Recognize how to avoid complications of central venous catheterization such as hematoma, pneumothorax and infection
POINT OF CARE ULTRASOUND

Point of care ultrasound has become a core competency in emergency medicine training and is now being used by over 20 other non-radiology specialties. It is recommended by the CDC as the standard of care for central line placement and skilled use has been shown to decrease the need for this invasive procedure. Point of care ultrasound also improves clinician diagnostic accuracy, decreases resource utilization, increases patient safety, and increases patient satisfaction. Our course reviews key aspects of ultrasound image acquisition and interpretation. The course emphasizes specific clinical applications including evaluation and management of the hypotensive patient, central line placement, and evaluation of undifferentiated dyspnea. Training utilizes state-of-the-art ultrasound systems and phantoms as well as standardized patients.

Participants will:
- Improve their skills at ultrasound image acquisition
- Utilize ultrasound for central and peripheral line placement
- Learn techniques to image different organ systems
- Understand how to use point of care ultrasound imaging for different clinical scenarios
- Benefit from low participant-to-instructor ratios for effective hands-on learning
In the Advanced Airway course participants will learn to effectively meet the challenges of airway management by focusing on the difficult and failed airway. The advanced airway course consists of a series of scenarios using sophisticated simulation technology to train participants in the varied skills and techniques required to successfully manage difficult airways.

Participants will learn to:

• Determine the best method of airway management for particular circumstances at hand
• Rapidly assess the patient’s need for a definitive airway
• Use a variety of airway devices proficiently to achieve a definitive airway
• Recognize when a planned airway intervention has failed and an alternative technique is required
DIFFICULT DELIVERY

Using high-fidelity maternal and infant simulators, participants will experience and learn to manage various complex delivery situations. This realistic simulation experience will also help labor and delivery care providers improve teamwork, communication, and crisis management skills.

Participants will be able to:
• Identify risk factors for difficult delivery
• Interpret fetal monitor tracings and recognize signs of fetal distress
• Perform advanced delivery techniques for shoulder dystocia and breech presentation
• Recognize and manage post-partum hemorrhage
• Recognize and manage hypertensive disorders (severe HTN, preeclampsia, eclampsia)
CLINICAL COMMUNICATION SKILLS AND PROFESSIONALISM

Communication failure is recognized as a leading cause of adverse patient events and workplace dysfunction. Through structured interactions with standardized patients and interprofessional teams, participants will learn to enhance their communication skills and professionalism with patients and colleagues. This versatile workshop can be tailored to the specific needs of participants including hand-offs/transitions of care, breaking bad news, error disclosure, establishing rapport, addressing disruptive behavior, conflict resolution, communication in crisis situations, paging simulations and end-of-life care discussions. One-on-one sessions to improve communication for interviews, public speaking and oral exams are also available.

Participants will learn to:
• Address communication failures that account for the majority of adverse events and conflicts in the professional environment
• Utilize techniques to improve communication with patients and colleagues
• Apply communication skills to reduce liability and improve patient satisfaction
• Enhance communication skills and professionalism within clinical and non-clinical settings
EFFECTIVE TEAMWORK IN HEALTHCARE

Effective teamwork is recognized as a requirement for enhanced clinical outcomes in the delivery of healthcare. Poor collaboration and failures in communication among members of the health care team are a leading cause of adverse patient events. This interactive simulation workshop focuses on teamwork and communication skills that enhance clinical performance and patient outcomes. Participants will learn to develop high-functioning teams using proven principles of TeamSTEPPS and interprofessional collaboration.

Participants will learn to:
• Develop competencies required for effective teamwork
• Employ principles of teamwork that improve patient outcomes
• Enhance interprofessional interactions and team collaboration
This program is designed to ensure that participants are exposed to the life-saving skills necessary for the initial resuscitation and management of the trauma or emergency medical patient. Remaining proficient in high-stakes procedures can significantly improve patient outcomes, especially when situations requiring these skills are not frequently encountered in clinical practice. Simulation skills training can help clinicians and first responders obtain proficiency and remain competent in critical skills required for emergency resuscitation.

Participants will learn to:
• Assess patients for signs and symptoms of cardiac and respiratory distress and initiate appropriate management
• Conduct the initial assessment and stabilization of trauma patients
• Implement emergency resuscitation protocols
• Perform bedside emergency procedures
BREAST ULTRASOUND

Directed towards radiologists, breast surgeons, and sonographers who wish to learn more about breast ultrasound, this hands-on, interactive course is designed for clinicians interested in learning how to incorporate breast ultrasound into their practice. The course will provide an overview of ultrasound technique as well as a comprehensive review of the principles of diagnostic and interventional breast ultrasound. Participants will review the BI-RADS lexicon and work with ultrasound devices and simulated breast models to learn to characterize breast lesions and perform needle biopsy procedures.

Participants will learn to:
• Demonstrate fundamental skills in scanning breast ultrasound
• Recognize breast anatomy on ultrasound imaging
• Characterize benign and malignant breast lesions on ultrasound
• Perform ultrasound-guided breast needle biopsy techniques
• Review the BI-RADS lexicon
• Understand the concordance process
MOBILE SIMULATION

This program effectively brings the simulation lab into your facility and helps participants discover opportunities for process improvement. By bringing our simulation resources to your medical facility, scenarios can be performed using actual environments, equipment and staff in order to allow participants to assess teamwork, improve efficiency and address system-level factors within their organization. This mobile simulation program can be implemented anywhere including the ambulance bay of the emergency department, intensive care units, operating rooms, inpatient floors, outpatient clinics and even non-patient care areas of the hospital. Simulation is a powerful tool for testing healthcare processes, equipment and hospital functions.

Participants will learn to:
- Assess efficiency, teamwork and process within your organization
- Implement systems-level interventions to improve efficiency and quality
- Detect potential latent errors and redesign systems to prevent harm to patients
- Perform a gap analysis of team and system performance
- Identify opportunities to improve practices, policies and protocols
- Evaluate the usability of new health care equipment and technology
CUSTOM SIMULATION SCENARIO DEVELOPMENT

This hands-on program will teach participants how to design effective simulation scenarios to meet their particular clinical needs. Customized scenarios are designed specifically to meet the unique training needs of the learners within your organization. These scenarios are created based on your specifications while working closely with members of the simulation development team. This process includes performing a needs assessment, developing an effective simulation training program, assessing the impact of training and implementing quality improvement metrics.

Participants will learn to:
• Conduct a customized needs assessment and risk assessment
• Utilize essential skills for simulation scenario development
• Effectively use adult learning principles and debriefing to enhance training
• Construct powerful learning objectives and methods of assessment
The Clinical Simulation Laboratory
is located on the second floor of
Rowell Hall on the UVM campus.