Massachusetts General Hospital faculty and staff have been leaders in the development of medical simulation as an important training platform in modern healthcare — championing the creation of the international Society for Simulation in Healthcare, helping found the first academic journal in field, and consolidating fellowship training to advance next-generation education and research.

Building on this rich history, the MGH Learning Laboratory was created in 2009 to integrate clinical simulation as a quality and safety tool across MGH.* Recognizing the importance of routine practice for expert performance, the Learning Lab serves as the central institutional resource to support simulation-based training and research for essential healthcare skills, including teamwork and communication, critical thinking and decision making, and procedural, protocol, and process skills.

If you’ve taken advantage of this tremendous resource, thank you for contributing to the Learning Lab’s success. If you haven’t yet discovered us, we welcome you to join us as we continue to advance the way today’s healthcare providers develop and enhance their professional expertise.

James A. Gordon, MD, MPA
The MGH “Hub and Spoke” Model
A Comprehensive Blend of Central and Distributed Training

The central Learning Lab “Ward” is highly adaptable for a variety of simulated learning experiences.

Multiple simulation spaces throughout the hospital support busy clinical teams.

MGH Distributed Simulation Spaces and Network:
- Norman Knight Nursing Center for Clinical and Professional Development
- Surgical Skills Lab
- Anesthesia Clinical Research and Skills Lab
- Vincent OB/GYN Simulation Suite
- Newborn – Labor & Delivery Simulation Lab
- Dr. Dinesh Patel Arthroscopic Learning Lab
- In situ Emergency Department Resuscitation Bay
- Cardiac Surgery Skills Lab
- Center for Medical Simulation
- MGH Institute of Health Professions Clinical Simulation Lab
- Skills Lab at Massachusetts Eye and Ear Infirmary
The Learning Lab maintains a fully functional simulation operating room.

Who We Serve

Learners 2016

- Staff Physicians
- Residents/Fellows
- Registered Nurses
- Staff Health Professionals
- Students
- Others

Total unique simulation participants across campus = 1,926
Our Growth

Campus-wide Simulation Sessions

Notes: Figures include approximately 100 sessions per year sponsored by the Norman Knight Nursing Center. The Simulation OR was briefly closed for renovation/relocation in 2016.
Programmatic Highlights

The Learning Laboratory currently offers approximately 70 unique courses per year, in collaboration with almost 20 departments, divisions, and units. A dedicated cadre of appointed Simulation Officers leads efforts with faculty and staff across campus. Highlighted here are four initiatives that have met the challenging bar of offering sessions on a weekly basis, thereby modeling “routine practice for expert performance” as a quality and safety imperative. Each of these programs has also shared their experience in the academic literature (sample publications listed below each section).

The OR Simulation Team

An exceptional example of interprofessional education, the Learning Lab OR Simulation Team* brings together attending and trainee surgeons and anesthesiologists, alongside junior and senior nurses and OR staff, to simulate OR cases in a realistic environment. At the end of the “cases” the full operative team debriefs together in a rich discussion designed to improve group effectiveness and crisis management skills. A core tenet of simulation is the ability to try new approaches in a risk-free environment, reflect on the experience, and then “replay” the scenario again, using the iterative experience to cement lessons learned. The MGH OR simulation work also supports an institutional platform for provider insurance discounts, and provides important opportunities for competency-based training and assessment among physician trainees.

Radiology Contrast Reaction Training

Instituted as an annual expectation of every Radiology provider involved in contrast administration—including attending physicians, nurses, and radiology technicians—this interprofessional program is a national model for how simulation-based practice can enhance preparedness for critical patient encounters across an entire department.*


“Over time, the simulation cases we have done have made me much more confident in attending to emergency situations and quickly thinking through ... the most urgent clinical needs.”
Medicine House-staff Training

In addition to team building or procedural skills, simulation is also a critical tool used to develop and assess bedside cognitive and communication skills. Daily sessions for Medicine house-staff—organized by Simulation Chief Residents who use standardized cases informed by real patient care episodes—not only help hone their diagnostic and treatment skills, but also serve as a platform to model shared decision-making and patient/family communication.*


“I wanted to let you know about a tremendous patient care success story as a result of our simulation case discussion ... It is very gratifying to think that the simulation saved even one life. I am hopeful it will save more.”
MassGeneral Hospital for Children (MGHfC)

With programming that occurs in the Pediatric Intensive Care Unit (PICU) and the central Simulation Ward, senior teaching clinicians routinely simulate both routine and emergency/critical care scenarios as part of a comprehensive MGHfC simulation education program. Involving the whole unit in PICU practice sessions, residents, fellows, nurses, pharmacists, respiratory therapists, operations assistants and others play their part in ensuring constant team readiness for pediatric emergencies. In the Simulation Ward the Pediatric Residency Program has pioneered a comprehensive system for longitudinal resident training and assessment.*


"Just wanted to let you know that, in part because of her excellent experience with simulation in the PICU, [the resident] was the star of the show yesterday in the ED when we had a 9-day-old infant present with SVT [supraventricular tachycardia, a life-threatening heart rate disturbance]."
Community Outreach

Engaging Youth and the Community in their Healthcare

The Learning Lab is pleased to partner with the MGH Paul S. Russell, MD Museum of Medical History and Innovation to host hundreds of children and adults each year, providing them with exposure to simulated patient care experiences to pique their interest in science and healthcare and to share more broadly the work that goes on every day at MGH. “Performing” arthroscopic knee surgery and intubating a “patient” are just two ways that participants can experience what it’s like on the other end of the stethoscope.
Academic Achievements

Contributing to the Science of Simulation in Healthcare

Complementing the core teaching mission, MGH Learning Lab and affiliated faculty have contributed to the understanding of simulation education through regular academic publications, grant funding, and patent filings, all supporting Learning Lab accreditation as a Level I Education Institute by the American College of Surgeons. Lab-led journal contributions have repeatedly earned distinction as “Top Ten Most Influential Articles of the Year” at the annual International Meeting on Simulation in Healthcare. Not content to simply implement healthcare simulation, MGH simulation faculty are constantly exploring how to optimize the efficacy and efficiency of experiential learning to enhance patient care—a commitment memorably captured in a New York Times feature story and accompanying video.*

A Specialty of Its Own

MGH Fellowship in Medical Simulation

Recognizing that there is a specific knowledge base and skill set required of faculty using simulation as a teaching tool, the MGH offers a core curriculum for physicians who seek dedicated expertise in simulation-based medical education theory and practice. The MGH simulation fellowship is one of the oldest such training opportunities offered in the field, with graduates now leading simulation programs nationally and internationally. The fellowship is integrated with graduate studies (certificate and master’s degree programs) at the MGH Institute of Health Professions, working in collaboration with the Harvard-Macy Institute and the Center for Medical Simulation, and serves as a model for other health systems seeking to train the next generation of leaders in the field.*

Making MGH Expertise Available Beyond Boston

TeleSimulation
Capitalizing on MGH’s wealth of clinical and educational expertise, the Learning Laboratory has developed a platform to provide remote clinical simulation and teaching in collaboration with community hospital partners. Learners remain at their workplace but are able to tap into MGH instructional expertise in Boston, in real time.

For more information on TeleSimulation services and fees, please contact mghsimulation@partners.org.

Customized Professional Development
Recognizing that every experienced healthcare provider has a unique and ever-evolving set of learning needs, the MGH Learning Laboratory offers customized continuing education courses for providers to receive individualized, hands-on teaching and feedback on skills of their choosing.

For more information and registration details, visit Partners HealthCare System Continuing Professional Development at https://www.phsepd.org/activities or email us at mghsimulation@partners.org.
“Picking up on atypical Acute Coronary Syndrome was definitely something I gained from the simulation sessions. We had a “pneumonia” patient who came in with shortness of breath ... turned out she actually had an NSTEMI [heart attack] .... Simulation helped me think through the management steps for her.”
For more information about the Learning Laboratory, including how to access Learning Laboratory services and expertise, please visit:

http://www.massgeneral.org/learninglab/

Or email:

mghsimulation@partners.org

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