

2020 ANNUAL REPORT



MILLER SCHOOL of MEDICINE





Leadership Message



S. Barry Issenberg, M.D. Director

2020 was unlike anything most of us have experienced in our lifetime. But thanks to the Gordon Center team and our longstanding partners, we rose to the challenge with resilience and a commitment to excellence and innovation, even in the face of a pandemic. Why? Because the Gordon Center for Simulation and Innovation in Medical Education is dedicated to saving lives especially during a global pandemic.

In this annual report, we will reflect on the accomplishments and milestones of 2020 and take a glimpse of the future of simulation education. We'll look back at the new initiatives undertaken last year, including: launch of the NextGenMD curriculum for medical students at the University of Miami Miller School of Medicine; expanded use of telemedicine capabilities in fire-rescue vehicles in South Florida; and dissemination of our online training modules jointly developed with the American Heart Association for the care of stroke patients in the COVID-19 era.

We celebrated the 50th anniversary of Harvey[®] – the cardiopulmonary patient simulator and longest-established computerized manikin in health professions education – and the 15th anniversary of the <u>Best Evidence Medical Education (BEME)</u> systematic review – the most cited simulation study to date.

In 2020 we also unveiled our refreshed website, launched our monthly newsletter, bolstered our social media presence, and engaged learners and partners in a series of Facebook Live sessions for National Healthcare Simulation Week.

We have weathered and continue to address the uncertainties surrounding COVID-19, and I thank our many partners who have helped us in our efforts. Together, we are optimistic and look forward to ongoing opportunities to foster innovation, achieve excellence, and improve lives in our community and around the world.

Adapting to COVID-19

In March 2020, the faculty and staff at the Gordon Center were faced with navigating the challenges of the novel coronavirus. We applied the team's collective expertise to find ways to combat the virus while remaining firm in our commitment to our learners and partners in Florida and beyond. We turned challenges into opportunities, opportunities into innovative work, and we made our educational efforts more relevant to all trainees and healthcare providers.

"As a leader in the development of e-learning programs, the Gordon Center pivoted almost overnight from face-to-face curriculum delivery to online or remote teaching environments," said Ross J. Scalese, M.D., Associate Professor of Medicine and Director of Educational Technology Development at the Gordon Center. "This move was made possible by the capable and agile professionals who comprise our multimedia development team at the Gordon Center."

The Gordon Center's collaboration with the Broward Sheriff's Office (BSO) Fire Rescue Department is an example of this agility. Remote learning capabilities coupled with the Gordon Center's expertise ensured that all active BSO fire rescue personnel completed Basic Life Support, with 700 paramedics also completing Advanced Cardiac Life Support recertification safely and in a socially distant manner.

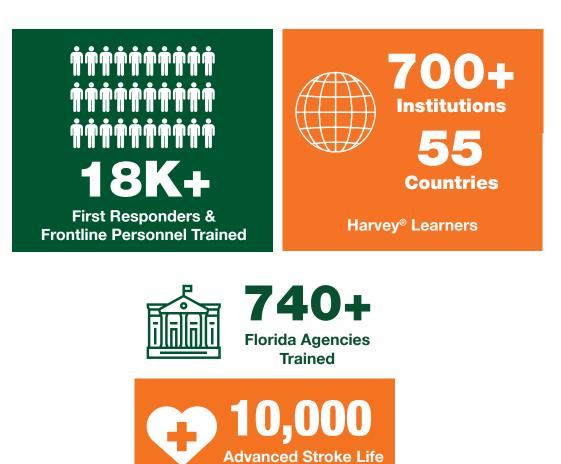
We adjusted our curriculum so that students could complete assessments that were usually conducted in person – such as the final promotional exams administered by the Gordon Center to third-year medical students utilizing our standardized patient (SP) program – with all participants (students, raters, and SPs) interacting remotely. Using video-conferencing technology, we were able to successfully evaluate nearly 200 medical students rotating through nine virtual simulation stations that mimicked telemedicine patient encounters.

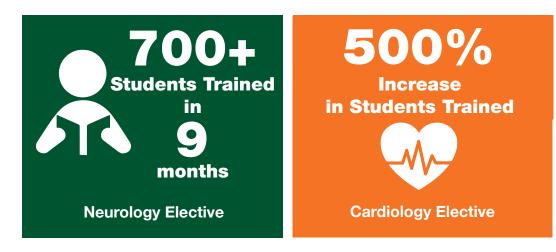


The transition to virtual and remote learning also enabled the Gordon Center to increase the availability of our courses to more learners. No longer did physical classroom space or geography impose constraints. People as far away as Australia were taking classes offered by the Gordon Center.

Gordon Center for Simulation and Innovation in Medical Education

Innovative Life-Saving Training Programs with Global Impact





Support[®] Learners

A Year of Firsts

NextGenMD

In August, with the launch of the NextGenMD curriculum, the Gordon Center opened its doors to welcome University of Miami Miller School of Medicine Class of 2024 students who conducted their first clinical skills sessions with standardized patients (SPs).

This new curriculum further aims to empower and inspire students to serve not only in our local community but also worldwide. The 205 participating medical students spend less time in large lecture-type, instructor-led sessions and engage more in self-directed learning and smaller-group, hands-on training, such as with the Gordon Center's standardized patient program.

Standardized Patient Program

In May, the Gordon Center along with Specialty Telehealth Services (STS) conducted its first TeleSim objective structured clinical examination (OSCE) for the Internal Medicine Clerkship. The students asked questions and verbalized their next steps to the standardized patient in the consult. This is one example of the team innovating during the pandemic and developing new approaches to completing OSCEs using integrated technology.

In July, the Gordon Center would have been hosting dozens of third-year medical students for their final promotional exams, a critical milestone as part of any medical school education. Due to COVID-19, the students took them fully remotely using streaming technology, and were evaluated by our Gordon Center SPs. In less than one week, we were able to successfully evaluate nearly 200 medical students rotating through nine simulation stations. This is just another way the Gordon Center innovated in the "new normal" atmosphere in medicine, especially given the importance of training individuals in patient care.

It has become evident that telehealth is here to stay far beyond the pandemic. Now our job is to develop training programs to educate our students and those at other medical schools on best practices using telehealth, and to explore how technology can assist us in doing so. This includes exploring innovations that will enable students and practitioners to conduct remote physical examinations with patients.



Gordon Center for Simulation and Innovation in Medical Education



Telemedicine in the Fire Service

In 2020, the Gordon Center implemented telemedicine capabilities in Coral Gables Fire Rescue vehicles, giving paramedics direct access to participating physicians from area hospitals when a patient is showing signs of COVID-19 or other critical symptoms. This telemedicine initiative provides critically ill patients with faster diagnoses, access to the appropriate medical intervention, and reduces the time on scene to achieve more favorable outcomes.



Gordon Center Director of Operations Al Brotons said: "This is what the Gordon Center is all about – leveraging technology to save lives. Utilizing a secure video system, paramedics and



patients can now speak with specialists for evaluation before arriving at the hospital or dedicated COVID-19 unit, giving medical staff time to prepare for the patient's arrival."

This is just the beginning. The Gordon Center is extending its tele-training methodologies to include more augmented reality, mixed reality, and extended reality, as well as training using remote standardized patients.



Anniversaries

Harvey® Turns 50



In 2020, Harvey®, the cardiopulmonary patient simulator, turned 50! During the past five decades, Harvey®, the longest-established computerized simulator in health professions education, has circled the globe and helped hundreds of thousands of students and health professionals. But the decades of travel and jetlag left Harvey® in need of some rejuvenation.

"Even though Harvey doesn't look a day over 35, everyone can benefit from a refresh," said Gordon Center Director Barry Issenberg, M.D.

In celebration of Harvey's® birthday, the Gordon Center gave him a new outfit and many advanced internal features, such as 20 additional customized patient scenarios, including cases with more complex heart and respiratory rates; 50 total patient scenarios with more than



1,500 bedside findings; 10 comprehensive standardized patient cases ideal for use in teaching sessions or OSCEs; and access to ongoing webinars for faculty and technical support.





700+ INTERNATIONALLY

Harvey® teaches thousands of learners in more than 700 institutions, with multiple studies demonstrating its teaching and testing effectiveness





MORE CASE SIMULATIONS



The Next Generation Harvey® features the latest in diagnostic procedures & treatments doubling the number of case simulations

> The National Heart, Lung, and Blood Institute sponsored a national multi-center study in five medical schools. The data demonstrated that students trained with Harvey® scored significantly higher on examinations involving real patients.

The Harvey[®] system is used worldwide at over 700 institutions.

Best Evidence Medical Education (BEME) Systematic Review Celebrates 15 Years

Most cited reference in healthcare simulation

Another milestone in 2020 was the 15th anniversary of our Best Evidence Medical Education (BEME) Systematic Review, "Features and uses of high-fidelity medical simulations that lead to effective learning." Since publication in 2005, it has become the most cited reference in healthcare simulation.

This study was novel in that it transcended medical specialties. The Gordon Center aimed at casting a large net across all health professions and disciplines. Yes, simulation technology has changed and now takes many forms, such as manikins, task trainers, digital videos, standardized patients, and more recently, virtual and augmented reality. Nonetheless the ten features identified in the review remain the foundation of best practices to achieve effective learning. They serve as the necessary stepping stones to optimal education and training - regardless of the simulation technology utilized.





1. Provide feedback during the learning experience

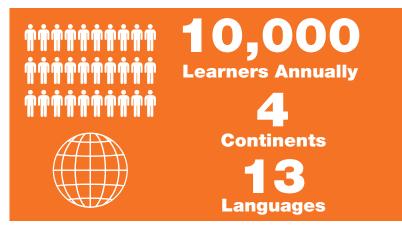
ten features

- 2. Learners should repetitively practice skills on the simulator
- 3. Integrate simulators into the overall curriculum
- 4. Learners should practice with increasing levels of difficulty, if possible
- 5. Adapt the simulator to complement multiple learning strategies
- 6. Ensure the simulator provides for clinical variation
- 7. Learning on the simulator should occur in a controlled environment
- Provide individualized (in addition to team) 8. active learning on the simulator
- 9. Clearly define outcomes and benchmarks for the learners to achieve using the simulator
- 10. Ensure the simulator is a valid learning tool

The Gordon Center is a proud leader in stroke education and training.

ADVANCED STROKE LIFE SUPPORT (ASLS®)

2020 proved to be an exciting year for the ASLS® team and its curricula.



Throughout the world, there are **175 training centers certified to teach ASLS®** to thousands of learners to save lives using the **MEND** exam.

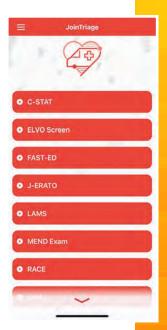
The Gordon Center partnered with the American Heart Association to develop an online course entitled: Stroke Care During the COVID-19 pandemic. The course provides users the latest science on the overlap between care for patients impacted by COVID-19 and stroke. To date this online stroke course has already trained more than 3,000 registrants worldwide.

The Gordon Center's Miami Emergency Neurologic Deficit (MEND) Examination made its debut as part of the JoinTriage app. The app helps paramedics and EMTs quickly and accurately triage patients, ensuring they receive the care they need as soon as possible.

Developed by stroke neurologists, emergency physicians, neuroscience nurses, and paramedics at the Gordon Center, MEND is a neurologic assessment tool to aid in rapid identification of patients with stroke. The exam incorporates the Cincinnati Prehospital Stroke Scale (CPSS) and has additional components from the NIH Stroke Scale (NIHSS).

The MEND EMS application facilitates the detection and management of stroke patients in the prehospital setting. The application is divided into tabs that allow the user to navigate, in order, from the history to the CPSS and MEND exams, then to management considerations and references, and finally to an ED report. As such, it is a useful tool for communicating effectively with the receiving hospital and for following the patient from initial exam through hospital admission.



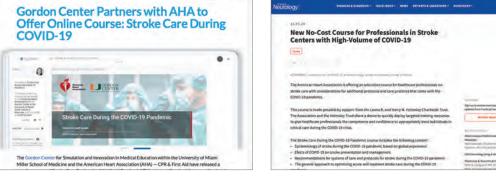


"A stroke is a very serious condition for patients, and the treatment options are often extremely time sensitive," said Ivette Motola, M.D., MPH, FACEP, Assistant Director for the Gordon Center, Medical Director of its Advanced Stroke Life Support[®] curricula and volunteer expert for the American Heart Association (AHA). "These are challenging times and the rate of strokes has not diminished. Therefore, the goal of the joint course with AHA is to inform and empower healthcare professionals to safely apply evidence-based and guideline-directed care amidst a global pandemic."



Dr. Motola and the American Heart Association were featured in HealthySimulation.com and PracticeNeurology.com





https://rb.gy/vem2ns

https://rb.gy/tnn6c0

The Gordon Center was also featured on NBC KFYR 5 in Bismarck, North Dakota, when members of the ASLS[®] team trained local healthcare providers and paramedics.



https://rb.gy/f3lviy



Brand Refresh Revealed

In 2020, the Gordon Center unveiled its new brand identity to reflect the energetic, innovative culture at the Center, past and present achievements, and its vision of the future. The Gordon Center refreshed its website, recreated its logo, produced a series of videos, and launched a monthly newsletter.

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Healthcare Simulation Week

National Healthcare Simulation Week is a time for the healthcare community to recognize, advocate, evaluate, and share the impact simulation and innovation have on healthcare education, in the field, and on patients and the community.

The Gordon Center hosted a series of Facebook Live events with award-winning broadcast journalist Neki Mohan, and local partners including Miami-Dade Fire Rescue and its Blackheart Extrication Team, City of Miami Fire Rescue, Bascom Palmer Eye Institute, and Coral Gables Fire Rescue, to give viewers a glimpse of the importance of the newest medical simulation applications, training, and technology.

"These days, simulation has taken a new direction, with innovative technology reaching and impacting more people and additional disciplines," said Barry Issenberg, M.D., Director of the Gordon Center. "Now it is not uncommon to see simulation utilized on the front lines of various fields such as nursing and medicine, military medical practice, physical therapy, and in the training of first responders - all with the same aim: to reduce errors, engage practitioners, improve human behavior, and impact patient care for the better."

CENTER

The five-day Facebook Live series included:

• Virtual Learning: A tour of the Gordon Center's state-of-the-art facility and the acclaimed Standardized Patient Program.



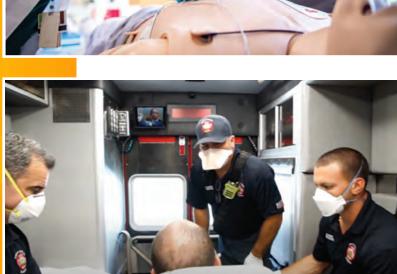
Trauma & Extrication: A live vehicle extrication simulation with the nationally ranked Blackheart Extrication Team at the Miami-Dade Fire Rescue Department.

Patient Safety: The importance of patient safety training and the pivotal role of simulations to improve patient safety in hospitals and medical facilities.

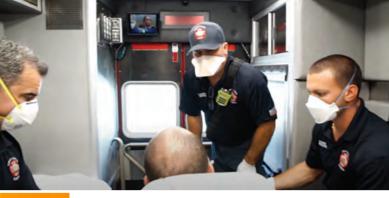
Future of Telemedicine: A look at our . telemedicine command center and the latest technology that allows paramedics and first responders to communicate with clinicians in area hospitals from their rescue trucks.

Advanced Stroke Life Support: An in-depth look at the Gordon Center's world-renowned Advanced Stroke Life Support (ASLS®) curriculum utilized by nearly 10,000 learners annually.









Top-Level Metrics

	Impressions	Post Engagements	Engagement Rate
Facebook	67,643	8,157	7.90% *Industry Average: 0.12%
Instagram	8,236	1,578	11.83% *Industry Average: 1.75%
Twitter	8,626	396	1.22% *Industry Average: 0.063%
LinkedIn	473	62	12.26% *Industry Average: 0.054%
Totals :	84,978	10,193	8.30%

News Coverage for Healthcare Simulation Week

Locally on WFOR CBS4, and nationally on MSN News, Yahoo! News, and Daily Dispatch, a Fire Service Trade Publication.





https://rb.gy/jko12l

https://rb.gy/wggmvy



Research Milestones



There is one reason why researchers, educators, and learners continuously seek out the Gordon Center: We are leaders in healthcare education through simulation and innovation. At the Gordon Center, we drive changes in professional standards, the way learners learn, and even public policy.

Research. It is the backbone of what we

do. Since our inception, we have conducted outcomes-based research to rigorously assess the effectiveness of simulation and technology-based training programs developed at the Gordon Center.

The research we conduct is a tool for building knowledge, facilitating learning, assessing the effectiveness of new training techniques and simulation technologies, and increasing public awareness. We readily share our knowledge and research findings with the world's healthcare, first responder, military, and education communities through our publications, presentations, curricula, and learning programs. Being a leader is a role we take seriously; at the Gordon Center, we strive every day to maintain the trust of the learners we serve.



Gordon Center for Simulation and Innovation in Medical Education

COVID-19 study with First Responders

The Gordon Center and Sylvester Comprehensive Cancer Center led the Firefighter/Police Tracking, Resources and Assessment of COVID-19 Epidemiology study, or F-TRACE/P-TRACE. A simple blood test identified first responders with COVID-19 antibodies that may indicate previous infection. The tests were administered to all firefighters and police officers in the City of Coral Gables and Hialeah Fire Departments and helped shed light on the prevalence of (and exposure to) COVID-19 among our frontline health workers.

The final manuscript has been published in the British Medical Journal's Occupational and Environmental Medicine (OEM) journal.

This research garnered media attention and was covered in the Miami Herald, CBS WFOR 4, NBC WTVJ 6, and ABC WPLG 10.







Department of Defense

The Gordon Center was honored to conduct a research study sponsored by the U.S. Department of Defense (DOD). The DOD leveraged the expertise of the Gordon Center to evaluate whether complex procedures can be taught to trainees using telemedicine while a remote expert instructor guides them through the procedure with the assistance of augmented reality: for example, a virtual overlay of the relevant anatomy is displayed to assist learners as they perform the procedure on an actual (physical) task trainer.

The Gordon Center is always on the cutting edge of integrating the latest innovative technologies to enhance patient care and save lives.



Active Research

There are more than 26 active research protocols that the Gordon Center is leading or supporting across multiple departments within the University of Miami and the Miller School of Medicine, as well as with international collaborators.

In 2020, the Gordon Center trained **18,000+** first responders and frontline personnel from medical, educational, and community agencies. Training programs include disaster response, acute stroke, advanced life support, rapid response teams, point-of-care ultrasound, and acute trauma.

Partnerships

The Gordon Center's partnerships within the community and state fuel our mission and lead to real, long-lasting change benefiting the patients we all serve. We thank our friends far and wide for believing in our mission and for being part of the Gordon Center family, including:

• Army Trauma Training Detachment & Special Operations Military Teams: Continuing our longstanding partnership with the U.S. Army for nearly 20 years and training the Special Operations Military Teams for several years, lessons learned from the military allow us to transfer critical life-saving techniques to civilian first responders. We are proud to train the U.S. Army's Forward Surgical Teams prior to their front-line deployment, and we are honored to have been chosen as an international simulation center of excellence that trains the Special Operations Military Teams staff who respond to emergency events for the U.S.



• The Gordon Center also extends its gratitude to the State of Florida for its investment in our far-reaching programs, impacting more than 740 agencies and institutions throughout Florida, from a community college in Pensacola to a state university in Gainesville, from a healthcare system in Orlando to a small urgent care clinic in Naples.



Highlights and Kudos

- Dr. Barry Issenberg joined with the University of Miami Miller School of Medicine to celebrate the John G. Clarkson Freshman White Coat and Pinning Ceremony. The Gordon Center welcomed the class of 2024 with the launch of the NextGenMD curriculum where students conducted their first clinical skills sessions with standardized patients.
- In January, the Gordon Center hosted an active shooter first responders training course on the Gulf Coast State College campus in Panama City. The event was covered by Florida Headline News and News Herald's photo gallery and NBC WJHG 7.



 Gordon Center leaders participated in the International Meeting on Simulation in Healthcare (IMSH) annual conference, which is the world's largest conference focused on simulation in healthcare and the health professions education.



- Al Brotons, EMT-P, presented at the International Meeting on Simulation in Healthcare (IMSH) and shared research demonstrating that simulationbased training on tactical and medical response to active shooter hostile events significantly improves knowledge of public safety first responders.
- In February, the Gordon Center team took part in the 2020 American Heart Association International Stroke Conference, which is the world's premier meeting dedicated to the science and treatment of cerebrovascular disease.



Gordon Center for Simulation and Innovation in Medical Education

- Samantha Syms, MS, CHSE, Director of the Standardized Patient (SP) Program, was selected to present at the 2020 Association of Standardized Patient Educators Annual Conference. The Gordon Center utilizes standardized patients for our ASLS[®], Acute Coronary Syndromes and Hostile Events Protocol Training courses. Adding a human element makes real-world scenarios that enhance our participants' skill set in such areas as bedside manner, communication and empathy. Ms. Syms's findings encompassed what makes a top performing SP, how to identify those traits, and further train them to improve education for medical students.
- The Gordon Center hosted pre-med students from Seton Hall University as part of an initiative by the Miller School's Office of Diversity, Inclusion and Community Engagement. Students learned how simulation is incorporated throughout the medical school curriculum and experienced an interactive demonstration of Harvey[®], our cardiopulmonary patient simulator.



 In May, Dr. Barry Issenberg, Director of the Gordon Center, was featured in the Miller School of Medicine Magazine discussing how a summer junior high school job ultimately led him to a global leadership role in medical training. For the full article, please visit: <u>https://magazine.</u> med.miami.edu/from-high-school-to-hightech-2/



In June, the Gordon Center joined hundreds of University of Miami medical community members, led by Dean Ford and President Frenk, to remember and honor George Floyd and countless other victims of systemic racism. The effort reinforced our commitment to saying no to racism, to expanding diversity and inclusion across the health system, and to improving the future of medicine.



 In July, the Gordon Center had the honor to host United States Vice President Mike Pence and State of Florida Governor Ron DeSantis during a visit to thank the University for its leadership in launching the first Phase III clinical trial of a COVID-19 vaccine. Participants at the news briefing attended a roundtable discussion with the Vice President and the Governor at the Gordon Center that included Lt. Gov. Jeanette Nunez, U.S. Rep. Mario Diaz-Balart, Dean Henri Ford and other leaders of the University of Miami Miller School of Medicine.

- We celebrated the 5-year anniversary of the Society for Simulation in Healthcare (SSH) Pioneer Award for Dr. Michael S. Gordon. "Michael was a pioneer and created a remarkable foundation," said Dr. Barry Issenberg. "It is the goal of the Gordon Center to carry out his mission every day and honor his legacy as a clinician, educator, and visionary."
- In October, Dean Henri R. Ford, M.D., MHA, celebrated a year of remarkable accomplishments at his second annual State of the Miller School of Medicine address during a live virtual event hosted at the Gordon Center, a designated Center of Excellence of the Miller School of Medicine.
- Dr. Ross J. Scalese directed a soldout masterclass on Clinical Debriefing at the first virtual AMEE 2020 Conference, featuring an animated version of Dr. Scalese. AMEE is the largest annual conference in the world devoted to the full spectrum of medical education. The conference is typically attended by 4,500 delegates representing up to 90 countries.



- **Dr. Barry Issenberg** joined the leadership team of the University of Miami Miller School of Medicine Task Force on Racial Justice. This past year, the task force released a 200-page report highlighting recommendations on the path to confront racism.
- Drs. Ross Scalese and Jeffrey Groom hosted a webinar with Laerdal Medical on incorporating Harvey[®] into educational training and assessment programs across the health professions.
- **Dr. Ivette Motola** was selected as a Society for Simulation in Healthcare Academy Fellow. Dr. Motola epitomizes a leader who is dedicated to advancing simulation-based education and training.



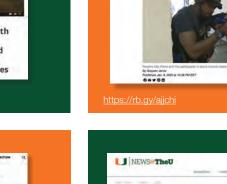
Gordon Center in the News



Coral Gables Fire Department, Specialty Telehealth Systems and Local Hospitals to Help Patients with Life Threatening Emergencies

An ER Doctor Explains Why the Hospital May Be One of the Safest Places During a

https://rb.gy/hryeuq





Active Shooter Training in Gulf

Coast State College

part in activ

7 18

Panama City first

ter training

Vice President Pence Visit

The Gordon Center had the honor to host Vice President Mike Pence and Governor Ron DeSantis during a visit to thank the University for its leadership in launching the first Phase III clinical trial of a COVID-19 vaccine.

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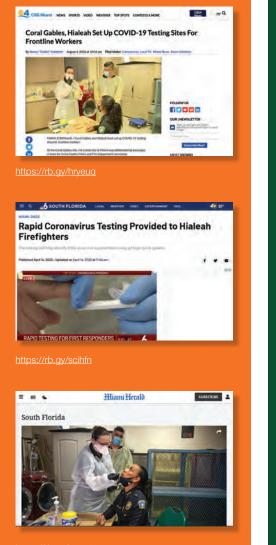


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Magazine about the rising number of people avoiding hospitals because of the pandemic despite experiencing life-threatening symptoms of a heart attack or stroke. She reminded viewers that first responders and hospitals are taking all precautions to keep everyone safe and urged anyone experiencing a medical emergency to seek immediate medical care.

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Study/Testing with Hialeah and Coral Gables for COVID-19



https://rb.gy/oc4y68

Simulation Week



https://rb.gy/jko12l



https://rb.gy/fgtpmf



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Stroke in Time of COVID-19



With the rise in coronavirus cases, doctors were seeing a decrease in the number of people seeking emergency non-COVID-19 treatment at hospitals. Dr. Ivette Motola spoke with CBS channel 4 news to raise awareness.

https://rb.gy/lcuwex



Vision

To create an environment where innovation, simulation and education come together

Mission

Saving lives through simulation technology

Connect with the Gordon Center

To learn more, please visit gordoncenter.miami.edu and follow us on

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- in linkedin.com/company/umgordoncenter
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This report was produced by the Gordon Center for Simulation and Innovation in Medical Education

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