New Algorithms for More Accurate Diagnosis of:
- Common neurological symptoms
- High-risk neurological conditions
- Neurological symptoms in special populations

State-of-the-art practices to:
- Avoid misdiagnosis
- Rapidly identify high-risk patients
- Act to optimize outcomes
- Optimize your use of imaging
- Minimize risk and liability

Updates for:
- Treating stroke, TIA, and ICH
- Imaging and treatment of wake-up strokes
- Selecting patients for transfer and/or for endovascular therapy
- Diagnosing dizziness at the bedside — is it stroke, neuritis, or BPPV?
- Improving headache diagnosis
- Managing head injuries (mild and severe)

Education for PHYSICIANS, NPs, PAs

Jonathan A. Edlow, MD, FACEP and Joshua N. Goldstein, MD, PhD, FAAEM, FNCS

Register at NeuroEmergencies.HMSCME.com
Course Description
This program prepares clinicians who work in Emergency Medicine, Inpatient and Outpatient Neurology, Critical Care, Hospital Medicine, Urgent Care and Internal/Family Medicine to quickly and accurately diagnose and provide appropriate care for patients with neurological emergencies, including:

High-frequency symptoms:
• Headache
• Back pain
• Dizziness
• Delirium
• Weakness

High-risk conditions:
• Ischemic and hemorrhagic stroke
• Subdural hematoma
• TIA
• Spinal cord compression
• Concussion and TBI

Strategies and best practices to:
• Avoid misdiagnosis
• Mitigate risk for you and your patient
• Improve patient safety

Presented by the leading clinical faculty at Harvard Medical School, this course ensures participants are better equipped to make an accurate diagnosis, better understand the uses and limitations of neuroimaging tests, and improve overall care in emergency, inpatient, and outpatient settings.

Learning Objectives
Upon completion of this activity, participants will be able to:
• Perform bedside diagnostic and therapeutic maneuvers with the dizzy patient.
• Use the focused history and physical to determine which patients with headache or minor head injury require neuroimaging or further workup.
• Review history and physical examination “red flags” to avoid misdiagnosis of cord and cauda equina compression in patients presenting with back pain.
• Discuss how to rapidly evaluate patients with stroke symptoms for intravenous and intra-arterial revascularization therapy.

Harvard Medical School Faculty

Erica Camargo Faye, MD, MMSc
William Copen, MD
Francis W. Drislane, MD
Nicole Dubosh, MD
Andrea G. Edlow, MD, MSc
Brian L. Edlow, MD

Jonathan A. Edlow, MD, FACEP
Corey R. Fehnel, MD, MPH
Joshua N. Goldstein, MD, PhD,
FAAEM, FNCS
Rebekah Mannix, MD, MPH
Pushpa Narayanaswami, MD, FAAN

MingMing Ning, MD, MMSc
Christopher S. Ogilvy, MD
Efstathios Papavassiliou, MD
David Perez, MD, MSc
Lee H. Schwarm, MD, FAHA, FANA
Magdy H. Selim, MD, PhD

Suzanne Duni Briggs, JD, RN, BSN, Director, Loss Prevention; Certified Professional Healthcare Risk Manager; Adjunct Faculty, Rhode Island College of Nursing

David Greer, MD, Chief, Department of Neurology, Boston Medical Center; Professor of Neurology, Boston University School of Medicine

Matthew S. Siket, MD, Assistant Professor of Emergency Medicine, Alpert Medical School of Brown University; Co-Director, Stroke Centers of Rhode Island Hospital and The Miriam Hospital, Providence, RI

Thanh Nguyen, MD, Director, Interventional Neuroradiology and Interventional Neurology, Boston Medical Center; Associate Professor of Neurology, Neurosurgery and Radiology, Boston University School of Medicine

Accreditation
ACCREDITATION COUNCIL FOR CONTINUING MEDICAL EDUCATION: The Harvard Medical School is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. The Harvard Medical School designates this live activity for a maximum of 22.50 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

RISK MANAGEMENT: This activity meets the criteria of the Massachusetts Board of Registration in Medicine for 4.75 credits of Risk Management Study. Please check your individual state licensing board requirements before claiming these credits.

NURSE PRACTITIONERS and REGISTERED NURSES: For the purpose of recertification, the American Academy of Nurse Practitioners Certification Board and American Nurses Credentialing Center accept AMA PRA Category 1 Credit™ issued by organizations accredited by the ACCME (Accreditation Council for Continuing Medical Education). We would also suggest that learners check with their state licensing board to ensure they accept reciprocity with AMA PRA Category 1 Credit™ for re-licensure.

PHYSICIAN ASSISTANTS: The National Commission on Certification of Physician Assistants (NCCPA) states that AMA PRA Category 1 Credits™ are acceptable for continuing medical education requirements for recertification. We would also suggest that learners check with their state licensing board to ensure they accept reciprocity with AMA PRA Category 1 Credit™ for re-licensure.

CANADIAN ACCREDITATION: The Royal College of Physicians and Surgeons of Canada recognizes conferences and workshops held outside of Canada that are developed by a university, academy, hospital, specialty society or college as accredited group learning activities.

EUROPEAN ACCREDITATION: Through an agreement between the American Medical Association and the European Union of Medical Specialists, physicians may convert AMA PRA Category 1 Credit™ to an equivalent number of European CME Credits® (ECMECs®). Information on the process of converting AMA PRA Category 1 Credits™ to ECMECs® can be found at: www.eaccme.eu.
Dear Colleague,

We’ve all had the experience of seeing the dreaded “dizziness” or “back pain” chief complaint. Every day we go to work, we see patients with these symptoms and others, such as headache and “weakness.” There is precious little time to sort out which are the needles (patients with life, limb, brain, or vision threatening emergencies) from the much larger haystack (patients with benign, self-limiting disorders).

Then, once the diagnosis is made, what are the most important next steps? What is the current state of the art for stroke, head injury, and seizure? Do all of these patients need specialty or subspecialty consultation? Who will benefit from emergency MRI?

Knowing when it's safe NOT to do time-consuming and expensive imaging is as important as knowing when it is necessary.

If you see patients with potential neurological emergencies, you know that every year there is more practice-changing literature impacting our approaches to the history, the physical, and early management.

Through participation in this program, you can stay current with these changes. Our program summarizes the state-of-the-art, evidence-based workup and management procedures that help you find that needle in the haystack (and know what to do once you find it) AND avoid over-evaluation of the haystack.

Our program is unique in that it:

- Provides tips that you can immediately put into practice.
- Lays out algorithms for common complaints such as headache, dizziness, back pain, and visual problems.
- Includes case-based education and extensive time for group discussion. Hear what your colleagues in other cities and countries are doing.
- Delivers guidance for stroke and cerebrovascular episodes, including first hours of workup, rapid neuroimaging and treatment, and best practices in risk management.
- Incorporates the latest data for treating stroke up to 24 hours after last known well time.
- Offers interactive sessions with master clinicians, who share their strategies and techniques for clinical examination.
- Lets you customize your learning experience.

You will come away from this experience knowing the evidence-based, state-of-the-art practices that will ensure the best outcomes for your patients.

We look forward to seeing you in October.

Jonathan A. Edlow, MD, FACEP
Course Director
Vice-Chair, Department of Emergency Medicine, Beth Israel Deaconess Medical Center
Professor of Medicine and Emergency Medicine, Harvard Medical School

Joshua N. Goldstein, MD, PhD, FAAEM, FNCS
Course Director
Director, Center for Neurologic Emergencies, Department of Emergency Medicine, Massachusetts General Hospital
Professor of Emergency Medicine, Harvard Medical School

Register at NeuroEmergencies.HMSCME.com
Monday, October 21

7:30-7:50 Registration and Continental Breakfast

7:50-8:00 Welcome and Introduction
Jonathan A. Edlow, MD, FACEP and Joshua N. Goldstein, MD, PhD, FAAEM, FNCS

8:00-8:45 Keynote Presentation: Improving Stroke Care across the U.S. — Lessons from the American Heart Association
Lee H. Schwamm, MD, FAHA, FANA

8:45-9:00 Q&A

9:00-9:45 Optimal Use of Neuroimaging to Answer Clinical Questions
William Copen, MD

9:45-10:15 Q&A and Case Presentations

10:15-10:45 Back Pain: Whom to Evaluate and When?
Jonathan A. Edlow, MD, FACEP

10:45-11:00 Q&A

11:00-11:15 Break (Refreshments provided)

11:15-11:45 Imaging for Nontraumatic Spine Emergencies: What to Scan and How to Protocolize
William Copen, MD

11:45-12:00 Q&A

12:00-12:30 Treatment of Nontraumatic Spinal Cord and Cauda Equina Disorders: State-of-the-Art Approaches
Efstathios Papavassiliou, MD

12:30-12:45 Q&A

12:45-1:45 Break for lunch*

Your choice of breakout sessions

<table>
<thead>
<tr>
<th>Acute ED and ICU Management</th>
<th>Hospitalist/Outpatient Care</th>
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</thead>
<tbody>
<tr>
<td>1:45-2:15 Acute Subdural Hematoma (Efstathios Papavassiliou, MD)</td>
<td>Acute Weakness (Pushpa Narayanaswami, MD, FAAN)</td>
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<tr>
<td>2:15-2:30 Q&amp;A</td>
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<tr>
<td>2:30-3:00 Acute Stroke Imaging (William Copen, MD)</td>
<td>Seizures, Status Epilepticus and Management (Francis W. Drislane, MD)</td>
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<tr>
<td>3:00-3:15 Q&amp;A</td>
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<tr>
<td>3:15-3:45 Headache 101 (Jonathan A. Edlow, MD, FACEP)</td>
<td>CNS Infections (Corey R. Fehnel, MD, MPH)</td>
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<tr>
<td>3:45-4:00 Q&amp;A</td>
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<td>4:00-4:15 Break (Refreshments provided)</td>
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<tr>
<td>4:15-5:00 Case Discussions: Neurology Consults in the ED (Erica Camargo Faye, MD, MMSc)</td>
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</table>

NEW | Throughout this program, master clinicians share strategies and techniques for clinical examination

Program changes/substitutions may be made without notice. To view the most up-to-date version of the course program, please visit the course website.

* There are many convenient and varied lunch options within a short walking distance of the course.

Register at NeuroEmergencies.HMSCME.com
Tuesday, October 22

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>7:30-8:00</td>
<td>Continental Breakfast</td>
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<tr>
<td>8:00-8:45</td>
<td>Keynote Presentation: Current and Future Management of Cerebral Aneurysms</td>
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<td>Christopher S. Ogilvy, MD</td>
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<tr>
<td>8:45-9:00</td>
<td>Q&amp;A</td>
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<tr>
<td>9:00-9:30</td>
<td>Updates for Diagnosing Subarachnoid Hemorrhage</td>
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<td>Nicole Dubosh, MD</td>
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<td>9:30-9:45</td>
<td>Q&amp;A</td>
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<td>9:45-10:15</td>
<td>TIA Workup: What to Do and Where to Do It</td>
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<td>Matthew S. Siket, MD</td>
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<tr>
<td>10:15-10:30</td>
<td>Q&amp;A</td>
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<tr>
<td>10:30-10:45</td>
<td>Break (Refreshments provided)</td>
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<tr>
<td>10:45-11:15</td>
<td>Updates on IV Thrombolitics: Current Evidence and Logistical Challenges</td>
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<td></td>
<td>Joshua N. Goldstein, MD, PhD, FAAEM, FNCS</td>
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<tr>
<td>11:15-11:30</td>
<td>Q&amp;A</td>
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<tr>
<td>11:30-12:00</td>
<td>Updates on Endovascular Therapy: A New Age in Stroke</td>
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<td>Thanh Nguyen, MD</td>
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<tr>
<td>12:00-12:15</td>
<td>Q&amp;A</td>
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<tr>
<td>12:15-1:00</td>
<td>Break for lunch*</td>
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Your choice of breakout sessions

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<thead>
<tr>
<th>Time</th>
<th>Acute ED and ICU Management</th>
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<tbody>
<tr>
<td>1:00-1:30</td>
<td>Concussion: Early Diagnosis and Treatment</td>
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<td>Rebekah Mannix, MD, MPH</td>
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<tr>
<td>1:30-1:45</td>
<td>Q&amp;A</td>
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<tr>
<td>1:45-2:15</td>
<td>Intracerebral Hemorrhage</td>
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<td>Joshua N. Goldstein, MD, PhD, FAAEM, FNCS</td>
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<tr>
<td>2:15-2:30</td>
<td>Q&amp;A</td>
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<tr>
<td>2:30-3:00</td>
<td>Updates in ICU Management of TBI</td>
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<td>Brian L. Edlow, MD</td>
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<tr>
<td>3:00-3:15</td>
<td>Q&amp;A</td>
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<tr>
<td>3:15-3:30</td>
<td>Break (Refreshments provided)</td>
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<tr>
<td>3:30-4:00</td>
<td>Diagnosis of Posterior Circulation Stroke: Real-Life Lessons from Real-Life Cases</td>
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<td>Jonathan A. Edlow, MD, FACEP</td>
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<tr>
<td>4:00-4:15</td>
<td>Q&amp;A</td>
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<td>4:15-5:00</td>
<td>Case Discussions: Stroke Mimics and Chameleons</td>
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<td>MingMing Ning, MD, MMSc</td>
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Who Attends

Physicians, NPs, PAs and other practitioners in the fields of:

- Emergency Medicine
- Critical Care
- Internal Medicine
- Neurology
- Hospital Medicine
- Urgent Care
- Family Medicine

Register at NeuroEmergencies.HMSCME.com
### Reasons to Attend

**Algorithms and State-of-the-Art Practices to:**

- Evaluate symptoms and high-risk conditions
- Avoid misdiagnosis
- Act in the first hours
- Manage coma and delirium
- Diagnose dizziness at the bedside
- Diagnose headaches: basic and advanced practices
- Optimize your use of CT, CTA, MRI
- Identify stroke patients for endovascular therapy
- Treat stroke up to 24 hours after onset
- Treat TIA and intracerebral hemorrhage
- Manage head injuries, from concussion to critical care management
- Optimize patient safety
- Better understand and mitigate liability

### NEW in 2019

**Education covering:**

- The latest data for treating wake-up strokes
- Imaging for back and spine: when to image and what to look for
- Evidence-based evaluation of altered mental status and coma
- Case-based sessions with audience participation and group discussion — learn from your peers
- How to minimize diagnostic error and mitigate liability

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### Wednesday, October 23

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker(s)</th>
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<tbody>
<tr>
<td>7:30-8:00</td>
<td>Continental Breakfast</td>
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<tr>
<td>8:00-9:00</td>
<td>Keynote Presentation: Altered Mental Status and Coma</td>
<td>David Greer, MD</td>
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<td>9:00-9:15</td>
<td>Q&amp;A</td>
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<tr>
<td>9:15-10:30</td>
<td>Diagnosing Dizziness: A New, Improved Paradigm</td>
<td>Jonathan A. Edlow, MD, FACEP</td>
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<td>10:30-10:45</td>
<td>Q&amp;A</td>
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<td>10:45-11:00</td>
<td>Break (Refreshments provided)</td>
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<tr>
<td>11:00-11:30</td>
<td>Functional (Psychogenic) Neurological Disorders and Malingering</td>
<td>David Perez, MD, MMSc</td>
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<td>11:30-11:45</td>
<td>Q&amp;A</td>
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<tr>
<td>11:45-12:15</td>
<td>Acute Neurological Emergencies in Pregnant and Postpartum Patients</td>
<td>Andrea G. Edlow, MD, MSc</td>
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<td>12:15-12:30</td>
<td>Q&amp;A</td>
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<td>12:30-1:45</td>
<td>Break for lunch*</td>
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<tr>
<td>1:45-2:30</td>
<td>The Eyes Have It: Practical Bedside Neuro-ophthalmology</td>
<td>Jonathan A. Edlow, MD, FACEP</td>
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<td>2:30-2:45</td>
<td>Q&amp;A</td>
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<tr>
<td>2:45-3:00</td>
<td>Break (Refreshments provided)</td>
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<tr>
<td>3:00-4:45</td>
<td>Medicolegal Issues: Case Presentations of Real Closed Cases, with Panel Discussion and Debate</td>
<td>Jonathan A. Edlow, MD, FACEP,</td>
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<td>Joshua N. Goldstein, MD, PhD,</td>
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<td>FAAEM, FNCS, and Suzanne Duni</td>
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<td>Briggs, JD, RN, BS</td>
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<td>Course participants are invited</td>
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<td>to bring their own cases for</td>
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<td>discussion</td>
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<tr>
<td>4:45-5:00</td>
<td>Q&amp;A and Wrap-Up</td>
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</table>
Tuition includes continental breakfast each day and morning and afternoon refreshment breaks. Presentations of all lectures will be emailed to registered participants the morning of the first day of the course.

### Registration, Payment, Confirmation and Refund Policy

Registrations for Harvard Medical School CME programs are made via our secure online registration system. To register for this course, please visit the course website at NeuroEmergencies.HMSCME.com.

At the end of the registration process, a $10 non-refundable processing fee will be added to your registration, and you will have the choice of paying by check, credit card (Visa, MasterCard, or American Express), or wire transfer in USD. If you are paying by check (draft on a United States bank) or by wire transfer, the online registration system will provide you with instructions for remitting your course fees. Postal, telephone, fax, and cash-payment registrations are not accepted. All fees shown in USD.

Upon receipt of your paid registration, an email confirmation will be sent to you. Be sure to include an email address that you check frequently. Your email address is used for critical information, including registration confirmation, evaluation, and certificate. **Please do not make non-refundable travel arrangements until you have received an email from our office confirming your paid registration.** Refunds, less an administrative fee of $75, will be issued for all cancellations received two weeks prior to the start of the course. Refund requests must be received by email. No refund will be issued should cancellation occur less than two weeks prior. “No shows” are subject to the full course fee and no refunds will be issued once the course has started.

Questions? Call 617-384-8600 Monday-Friday 9am – 5pm (ET) or send email to CEPrograms@hms.harvard.edu

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### Venue

**Fairmont Copley Plaza**

138 St. James Avenue

Boston, Massachusetts

+1 617-267-5300

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### Accommodations

Fairmont Copley Plaza has reserved a block of discounted rooms for course participants.

**Important to note:**

- The number of discounted rooms is limited.
- Discounted rooms are available on a first-come, first-served basis.
- The discounted room rate is only available until September 27, 2019, or until the block sells out, which typically happens well in advance of this date.

**To reserve your room:**

- **Online:** To reserve your room online, please visit NeuroEmergencies.HMSCME.com/Venue—the Venue page of the course website—and click on the dedicated room reservation link.
- **By phone:** If you are calling the hotel rather than using the dedicated link to request a discounted room, please call 1-800-441-1414 and be sure to specify that you are enrolled in Neurological Emergencies.