**Online Registration for REMAC Refresher Exam – see below**

**From the Editor**

**New Online Registration for REMAC Refresher Exam**

Go to [www.planetReg.com/E31112555131510](http://www.planetReg.com/E31112555131510) (or [www.nycremsco.org](http://www.nycremsco.org) & click the REGISTER link under “News & Announcements”).

*See the last page of this journal for details.*

**July 1, 2012 REMAC Protocol revisions in effect**

Only the July 1, 2012 protocols are in effect in the field and on certification exams. (See page 2 for outline of changes.)

Always see [nycremsco.org](http://nycremsco.org) for the current approved protocols.

*REMEMBER: the protocols on the street are the protocols on the exam!*

**Mandatory REMAC Credentialing Fee**

A $25 fee has been instituted by NYC REMAC for all new or recertifying paramedic credentials. *No fee is collected at the exam.* After successfully completing a REMAC exam, candidates will receive an email directly from NYC REMSCO requiring a completed application and credentialing fee by money order only. On receipt, a permanent NYC REMAC certification card will be issued.

*Please direct inquires on this process to NYC REMSCO at 212-870-2301*
Outline of July 2012 NYC REMAC protocol changes
see REMAC Advisory 2012-01 at nycremsco.org

General Operating Procedures

- **Transport**: changes stroke criterion to 3½ hours from onset

BLS Protocols

- **400 WMD**: updates language of evaluation and autoinjector configuration

ALS Protocols

- **500-A Smoke Inhalation**: changes name of protocol and indication for its use
- **500-A Smoke Inhalation & 500-B Cyanide Exposure**: adds Table 2 to clarify different hydroxocobalamin bottle configurations; removes administration time per individual bottles
- **503-A V-fib/V-tach**: removes dilution of amiodarone
- **511 AMS**: adds glucagon to note specifying glucometer levels for treatment
- **513 Seizures**: clarifies that seizures must be generalized; adds glucagon to note specifying glucometer levels for treatment; adds glucagon option for diabetic patients
- **553 Peds Non-Traumatic Arrest**: updates endotracheal intubation to advanced airway management
- **557 Peds Seizures**: adds glucagon to note specifying glucometer levels for treatment; moves midazolam to Standing Orders for initial administration, increases dose, and specifies preference for intranasal route; defers rectal diazepam until all other options are exhausted
- **559 Peds Traumatic Arrest**: updates endotracheal intubation to advanced airway management

Appendices

- **Appendix R - Stroke Criteria**: changes criterion to 3½ hours from onset
REMAC Exam Study Tips

REMAC candidates have difficulty with:
* Epinephrine use for peds patients
* 12-lead EKG interpretation
* ventilation rates for peds & neonates

REMAC Written exams are approximately:
15% Protocol GOP
10% BLS
10% Adult Arrest
40% Adult Med. Emerg.
10% Pediatricite

Certification & CME Information

- **Of the 36 hours of Physician Directed Call Review CME required for REMAC Refresher recertification, at least 18 hours must be ACR/PCR Review (which may include QA/QI Review). The remaining 18 hours may include ED Teaching Rounds and OLMC Rotation.**

- Failure to maintain a valid NYS EMT-P card will invalidate your REMAC certification.

- By the day of their refresher exam all candidates must present a letter from their Medical Director verifying fulfillment of CME requirements. Failure to do so will prevent recertification.

- FDNY paramedics, see your ALS coordinator or Division Medical Director for CME letters.

- CME letters must indicate the proper number of hours, per REMAC Advisory # 2000-03:
  - 36 hours - Physician Directed Call Review
    - ACR Review, QA/I Session (minimum 18 hours of ACR/QA review)
    - Emergency Department Teaching Rounds, OLMC Rotation
  - 36 hours - Alternative Source CME - **Maximum of 12 hours per venue**
    - Online CME - Clinical rotations
    - Lectures / Symposiums / Conferences - Associated Certifications:
      - BCLS / ACLS / PALS / NALS / PHTLS

REMAC Refresher Written examinations are held monthly, and may be attended up to 6 months before your expiration date. See the exam calendar at the end of this Journal. To register, call the Registration Hotline @ 718-999-7074 by the last day of the month prior to your exam.

**New 2012:** REMAC Basic Written and Oral examinations are held every January, March, May, July, September & November. Registration is limited to the first 36 applicants. See the exam calendar at the end of this journal.

REMAC CME and Protocol information is available, and suggestions or questions about the newsletter are welcome. Call 718-999-2671 or email swansoc@fdny.nyc.gov

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Bayley, Ryan 80314
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Freese, John 80293
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Gonzalez, Dario 80256
Hansard, Paul 80226
Hegde, Hradaya 80262
Hew, Phillip 80267
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Jacobowitz, Susan 80297
Jameson, Angus 80309
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Lai, Pamela 80311
Munjal, Kevin 80308
Redlener, Michael 80312
Schenker, Josef 80296
Schneitzer, Leila 80241
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ACUTE CEREBROVASCULAR ACCIDENTS (“STROKES”) – THE CLOCK IS TICKING

In this month’s journal CME, we will review the anatomy of the brain, the causes of acute CVAs, the assessment of the CVA patient, the prehospital care of these patients, and the important role that you play in ensuring that every patient is given the possibility of being treated with potentially life-altering treatment after their timely transport to a stroke center. What we hope to reinforce is the idea that the acute CVA patient should be treated the same manner that we treat a potential STEMI patient – with rapid assessment, selective transport, and early hospital notification – because for these patients, time is of the essence… and the clock is ticking.

A Little Perspective

Unfortunately, common things happen commonly… and strokes are quite common. Every year in the United States, there are 430,000 “first time” ischemic strokes and an additional 50,000 hemorrhagic strokes (“bleeds”). That means that nearly one in every 800 people will have a stroke this year, and that translates to 40 “acute strokes” every day across the five boroughs. And though there is often the perception that stroke is a disease of the elderly, it is not. One in every twenty strokes occurs in patients age 15-45. The point being that any new neurologic symptom in an adult patient of any age should raise suspicion of a possible stroke.

In addition to being common, perhaps more unfortunate for these patients is the outcome. Among ischemic strokes, 5-10% will not survive to leave the hospital. And among those who do survive as many as 1/3 will have permanent disability, one in five will require nursing home placement after leaving the hospital, and the overall cost of these first-time strokes will exceed $70 billion (that’s >$2 billion in NYC alone!). Among hemorrhagic strokes the outcomes are even worse – half of those patients will die within 30 days (most within 48 hours) and among the half that survive only one in five will ever be able to live on their own / care for themselves.

And finally, some really amazing numbers to emphasize that time really is of the essence for these patients. When a patient suffers

Figure 1: Neurons.
a stroke, for every hour that passes, 1.9 million nerve cells (neurons) will die, 14 billion synapses (the connections between neurons) are lost, and 7.5 miles of axonal fibers (the fibers extending from the neuron through which communication with other cells are accomplished) will perish. That’s the equivalent of what would happen to the brain over 3.6 years of normal aging, but it happens within a single hour!

**Your Assignment**

As we will discuss later on in this article, the prehospital evaluation of an acute stroke patient can be accomplished entirely on a BLS level (though ALS assessment may enhance this assessment to a degree). For this reason, as per the FDNY’s Telephone Triage Algorithms used at Emergency Medical Dispatch (EMD), 911 calls for suspected stroke (CVA) and acute stroke (CVAC) are BLS call-types.

But as you already know, being assigned to a CVA or CVAC call-type does not mean that the patient will necessarily be having a stroke. And the reverse is true as well – being assigned to a call-type other than CVA or CVAC does not mean that the patient is not having a stroke. EMD does the best job possible in determining a call-type, but their job is a difficult one – spending only a minute or so talking to someone who may or may not be the patient, getting limited information from a caller who likely has never asked for an ambulance via 911 before (>95% of 911 EMS calls are “first time” callers), having to deal with language barriers and cell phone connections… or maybe not being able to talk to anyone at all and instead having to determine a call-type based upon a single line of text entered by a medically untrained NYPD operator.

A few years ago, the Office of Medical Affairs (OMA) worked with one of the stroke centers in Manhattan to look at our dispatch data and to analyze the CVA and CVAC call-type accuracy. And so to demonstrate the difficulty of assigning a call-type, let’s look at this data.

![Figure 2: Call-types for acute stroke patients](image1)

![Figure 3: Presenting problems for CVACs](image2)

As was already said, just because a CVAC call-type is assigned doesn’t mean that the patient is actually having an acute stroke. Figure 2 shows the presenting problem listed by on-scene EMS personnel for patients for whom a CVAC call-type was given. As you can see, just under 20% were thought to be having a stroke based
upon the on-scene history and examination. But the majority (nearly 70%) were having some form of potential neurologic emergency (altered mental status, migraine, syncope, seizure, vertigo or stroke).

And as was also stated above, this means that the reverse may also be (and is) true. Just because an assignment is not given a CVAC call-type does not mean that the patient may not be having an acute stroke, as demonstrated in Figure 3. This chart shows the call-types for patients felt to be having acute strokes (based upon on-scene EMS assessment). And while CVA was the most common of these call-types (22%), the rest of the “top five” call-types included SICK (18%), INJURY (12%), ALTMEN (11%), CARDIAC (9%) and a tie between DIFFBR and STATEP (7%).

The point is that common things happen commonly, so you shouldn’t allow a call-type to give you tunnel vision with regard to the patient’s complaint. EMD really does a remarkable job with the very limited information that they are often given so that we can prioritize the EMS responses within the system, but once you arrive on scene the responsibility for the assessment is yours. And any patient presenting with acute neurologic symptoms of any kind should be evaluated for the possibility of an acute stroke.

**Anatomy of the Brain**

In order to understand the signs and symptoms that may occur in an acute stroke patient, it is important to understand the anatomy of the brain. In addition, it is also important to understand the circulation that “feeds” the brain as it is an interruption of one or more areas of blood flow that will result in the stroke symptoms.

Although it may not need to be said, the human brain is a fascinating organ. Every function, every movement and every sensation (physical, emotional, etc) that we experience is made possible by this one organ. And without it, we cease to exist.

On a large scale, the brain can be divided up into three sections: the cerebrum, the cerebellum, and the brainstem (Figure 4). And at this simple level, one can think of the cerebrum as controlling all “higher” neurologic function as well as movement and sensation, the cerebellum controlling equilibrium / balance and
motor control (though it does have other functions), and the brainstem as being responsible for the most basic functions of life – breathing, is partially responsible for maintaining consciousness, etc.

But when you really start to focus in on the brain and to map out all of the things that it controls, it becomes clear why stroke symptoms can vary so greatly depending upon which area of the brain is affected by the stroke and how big the affected area is.

Figure 5 shows a much more detailed map of the brain and its functional areas – and this is just the left side of the brain. Let’s just use the example of speech (which can often be affected by a stroke). The ability to recognize / understand words, the ability to read words, the ability to speak words, and the socially appropriate use of words are all controlled by different areas. And so a stroke may affect one aspect of a patient’s speech while not affecting others, based upon the portion of the brain’s blood supply that is interrupted and the location / size of the area of the brain that is affected.

A stroke occurs when a portion of the brain’s blood supply is interrupted due to local obstruction (thrombus), obstruction that originated elsewhere (embolus), trauma, or reduction in blood flow on a systemic level (hypotension) – any of these resulting in hypoxia within a specific area of the brain. And knowing that various areas of the brain control various functions of the body, it makes sense to briefly review the circulation provided to the brain so that we can discuss the varied symptoms seen in stroke patients.

The majority of the blood flow to the brain (80%) is supplied by the carotid arteries, while the remainder is supplied by the vertebral arteries (20%). Blood coming from the carotid arteries supplies the vast majority of the cerebrum via a “ring” of arteries known as a Circle of Willis. This ring is important because it allows for the possibility of continued blood flow to both sides of the brain even if one of the carotid arteries becomes obstructed.

Figure 6 demonstrates the circulatory anatomy of the brain. For our purposes, we can divide this blood flow into three – the frontal cerebrum (supplied by the anterior cerebral artery), parietal cerebrum (supplied by the middle cerebral artery), and the posterior region of the brain (supplied by vertebral arteries and the artery that they combine to form, the basilar artery).

Honestly, it is not important to remember which artery supplies which area of the brain (though the names are fortunately matched to the areas of the brain that they feed). What is important is the very different signs and symptoms that result from an interruption of blood flow to these five areas, as we will discuss in a moment.
**On-Scene Assessment**

The goal of the on-scene assessment of a potential stroke patient should be to obtain a focused history including the time of symptom onset (the most important question, and the one that “starts the clock” being: “When is the last time that the patient was seen in their normal state?”), performing a focused physical examination (including a stroke scale assessment), and quickly ruling out other causes for the patient’s symptoms – all in 15 minutes or less. Once that is done, for the patient now identified as potentially having an acute stroke, the priority becomes immediate transport with pre-arrival notification given to the receiving hospital.

Determining the time of symptom onset is very important and can be one of the more difficult aspects of the history. We think of strokes as having an acute or sudden onset of symptoms, but this isn’t always true. Depending upon which area of the brain is affected, 20-40% of strokes will have a gradual onset of symptoms, perhaps taking as many as three days to fully manifest themselves. And this is why it is so important to determine the last time that the patient was in their “normal state.” If they noticed that their arm was weak an hour ago but have been having numbness in that arm for the past day, it should not be considered an acute stroke. Or if they “woke up” with leg weakness 30 minutes ago but went to sleep six hours before that, they clock started when they fell asleep (since we have no way of knowing when during that six hours of sleep the stroke actually began).

The signs and symptoms that the patient presents with will depend upon the area of the brain affected by the stroke. So, let’s examine the three areas of the brain mentioned earlier and the symptoms that they may cause when affected by a stroke.

“Frontal strokes” affect the frontal lobe of the cerebrum which is supplied by the anterior cerebral artery – a branch of the circulation arising from the carotid arteries. Strokes in this area will present with symptoms that may include altered mental status (but not diminished consciousness), impaired judgment, incontinence, and a “clumsy gait” which is caused by the motor weakness that primarily affects the leg on the opposite side of the body. (Note that arm weakness, speech abnormalities, and facial weakness / droop are not seen in frontal strokes – meaning that our prehospital stroke scale would be “normal” in these patients even though they are having a stroke. More on that later…)

“Parietal strokes” affect the parietal lobe of the cerebrum which is supplied by the middle cerebral artery – also a branch of the circulation arising from the carotid arteries. Strokes in this area will present with motor weakness and/or sensory loss on the opposite side of the body (with weakness of the arm often being greater than in the leg) and speech abnormalities. And these speech abnormalities can vary as well – dysarthria (difficulty forming /articulating words), receptive aphasia (the patient can speak but cannot understand words spoken to
them), expressive aphasia (the patient can understand words being spoken to them but not speak themselves), and/or jumbled speech (words used in a nonsensical order).

“Posterior strokes” include those affecting the posterior lobe of the cerebrum as well as those affecting the cerebellum and brainstem. These areas are supplied in small part by the carotid arteries (via the posterior cerebral artery) but primarily by the vertebral arteries (via the basilar artery, which they join together to form, and the cerebellar arteries). And because of the various areas of the brain that are affected, depending on which of these arteries are involved, the symptoms of a posterior stroke can be quite varied: visual deficits, dizziness / vertigo, alteration of consciousness, “visual neglect” (when the patient seemingly ignores or neglects everything on one side), double vision, trouble speaking (dysphasia) or swallowing (dysphagia), loss of balance, or even “crossed symptoms” in which the patient describes being weak on one side of the body with altered sensation on the opposite side of the body.

One final note on stroke symptoms…. The symptoms described above are characteristic of an ischemic stroke, but we have already said that as many as 10% of new strokes are hemorrhagic. In addition to the symptoms above that are caused by the disrupted blood flow in the affected area of the brain, patients with hemorrhagic strokes are likely to present with additional symptoms. The classic presentation in these patients is the sudden onset of a severe headache (headaches are common in ischemic strokes) with vomiting, hypertension, and a rapid change in neurologic status. And although we often hear of “pinpoint pupils” in patients with “a bleed,” the reality is that hemorrhagic strokes can present with dilated pupils, constricted pupils, or unequal pupils (anisocoria).

In New York City’s EMS system, we utilize the Cincinnati Prehospital Stroke Scale (CPRSS - Figure 8) to assess patients for signs of a stroke. And while this is a valuable tool that standardizes the assessment of a stroke patient and does identify patients with stroke symptoms, it is also limited. Because it looks for arm weakness, facial droop, and speech abnormalities, it focuses on “parietal strokes” almost exclusively and will be normal in patients with “frontal” or “posterior circulation” strokes. So it is essential that every patient with a suspected stroke be evaluated using the CPSS, but a “normal” CPSS should not mean that the patient has not had / is not having a stroke. Any new neurologic deficits, in the absence of an alternative cause, should be considered to be an acute stroke.

In case you were wondering, there are other stroke scales designed for use in the prehospital setting (Los Angeles Prehospital Stroke Screen as well as one from Ontario and Melbourne). But each of these stroke scales,
while more accurate, requires the use of a glucometer which is not part of the BLS scope of practice (yet?) in NYC. But this brings up an important point…

In 2003 and then again this year, OMA partnered with some Stroke Centers to look at the patients brought to those facilities as “acute strokes” (based on hospital notification) in order to determine what their ultimate hospital diagnosis was (Figure 9). While the majority (62%) were strokes, the two most common specific alternative diagnoses were seizures (11%) and hypoglycemia (4%). And while one might immediately suspect that the “missed” cases of hypoglycemia were because the assessment was performed by a BLS crew without the benefit of a glucometer, when the data was split up based upon the level of provider who transported the patient, 4% of acute strokes transported by BLS providers were found to be hypoglycemic… but 5% of acute strokes transported by ALS providers were found to be hypoglycemic as well. The point – any patient with a new neurologic deficit who is assessed by an ALS provider must have their blood glucose checked as part of that assessment.

**Transport**

Two-thirds of all stroke patients enter the healthcare system via EMS, and their ability to receive timely care (including the possible use of thrombolytics such as tPA or other interventions to remove the “blockage” from their brain’s circulation) depends upon rapid on-scene assessment and transport to a NYS Department of Health-certified Stroke Center. And providing a pre-arrival notification to the hospital is a very important part of that transport.

While most patients presenting to a Stroke Center for an acute stroke will not qualify for thrombolytics, that decision is the result of a process that must be completed within ~4 hours of symptom onset. This number used to be three hours, but you’ll recall that in 2010 the American Heart Association increased the “window” for thrombolytic use in acute stroke from 3 hours to 4.5 hours (even though there are more exclusion criteria for the 3-4.5 hour window). But the point remains the same – the clock is ticking for these patients!

Keep in mind that most patients wait for ~2 hours before calling 911. Now even in the ideal situation where you would only add the 10 minutes that it takes for you to first make contact with them plus the 15-20 minutes for on-scene assessment and the 10-15 minutes for transport, and that means that the hospital has barely an hour to do what they need to do in order to assess the patient’s potential for thrombolytic therapy, an assessment that includes: patient registration, 12-lead EKG, blood glucose assessment, labs drawn and analyzed, chest x-ray, blood pressure control (if needed), ED physician assessment including a complete 15-point National
Institutes of Health Stroke Scale assessment, neurology consult, CT of the head, assessment of the CT by a neuroradiologist, and an assessment of whether the patient then qualifies for thrombolytics.

Not knowing about the acute stroke patient until they arrive in the emergency department can cost valuable time that could cause the patient to miss their “window” for treatment. And so every patient transported to a stroke center as an acute stroke (symptom onset less than 3.5 hours from the time of EMS assessment) must have a notification provided to the facility prior to your arrival with the patient.

**Summary**

So what are our take-home points. 1) Strokes are unfortunately a very common medical emergency. 2) The signs and symptoms that a patient may have depend upon the area of the brain affected by their stroke, and they are not limited to arm weakness, speech abnormalities, and facial droop. All patients with new-onset neurologic deficits should be considered as an acute stroke in the absence of an alternative cause. 3) On-scene assessment of the acute stroke patient should be thought of in the same way as a trauma patient or STEMI patient – rapid assessment and transport. 4) When ALS providers are present, blood glucose assessment should be considered a mandatory part of the assessment of a patient with new neurologic deficits. And 5) Pre-arrival notification is an essential part of allowing for possible treatment with thrombolytics. The clock is ticking for these patients… neurons are dying by the millions each hour… and they are counting on you to stop the clock.

Written by: John Freese, M.D.
Chief Medical Director
Fire Department of New York

| CME JOURNAL 2013_J019: ACUTE CVA |

(BLS must answer all of the first five questions, and ALS must answer all ten questions)

1. 1.9 million neurons die and 14 billion synapses along with 7.5 miles of axons die:
   a. during a stroke.
   b. during the first hour of a stroke.
   c. during each hour of a stroke.
   d. during the 4.5 hours of an acute stroke.
   e. prior to EMS arrival.

2. All of the following are included as part of the Cincinnati Prehospital Stroke Scale except:
   a. arm weakness
   b. facial droop
   c. leg weakness
   d. speech abnormalities
3. Which of the following is true regarding the Cincinnati Prehospital Stroke Scale?
   a. If any of the findings are abnormal, the patient is definitely having a stroke.
   b. It does not assess for signs of frontal or posterior circulation strokes.
   c. Arm weakness is the most important finding.
   d. All findings must be abnormal for the patient to be a Stroke Center candidate.
   e. It will differentiate between new and old stroke findings.

4. Which of the following is not part of the goal of the BLS prehospital care of stroke patient?
   a. History-taking that includes determination of symptoms onset.
   b. Performing and documenting a Cincinnati Prehospital Stroke Scale.
   c. Rapid transportation to a NYS DOH-certified Stroke Center.
   d. Assessment of the patient’s blood glucose level.
   e. Pre-arrival notification given to the receiving facility.

5. Which of the following descriptions is not appropriately matched to a part of the brain or its circulatory supply?
   a. Cerebrum – higher functions of life including movement, sensation, and
   b. Cerebellum – controls basic functions of life such as breathing
   c. Brainstem – is responsible for maintaining consciousness
   d. Carotid arteries – provide 80% of the blood supply to the brain
   e. Vertebral arteries – provide 20% of the blood supply to the brain

6. Which of the following is true regarding alternative diagnoses among patients transported to Stroke Centers as acute strokes?
   a. The second most-common alternative diagnosis is hypoglycemia.
   b. Seizures are not an alternative diagnosis.
   c. Most of these patients have an alternative diagnosis other than stroke.
   d. Hypoglycemia is not present when patients are transported by ALS providers.
   e. The most common alternative diagnosis is brain tumor.

7. Signs and symptoms of an ischemic parietal stroke most likely include:
   a. Arm weakness > leg weakness
   b. Leg weakness > arm weakness
   c. Dizziness / vertigo
   d. Headache
   e. Seizures

8. Signs and symptoms of an ischemic frontal stroke most likely include:
   a. Arm weakness > leg weakness
   b. Leg weakness > arm weakness
   c. Dizziness / vertigo
   d. Headache
   e. Seizures

9. Signs and symptoms of an ischemic posterior stroke most likely include:
   a. Arm weakness > leg weakness
   b. Leg weakness > arm weakness
   c. Dizziness / vertigo
   d. Headache
   e. Seizures

10. Which of the following is a classic sign or symptom of a hemorrhagic stroke?
    a. Severe headache
    b. Hypotension
    c. Vomiting blood
    d. Pinpoint pupils
    e. Normal mental status
January 2013 – Journal CME Newsletter

Journal CME Credit Answer Sheet

Based on the CME article, place your answers to the quiz on this answer sheet. Respondents with a minimum grade of 80% will receive 2 hours of Online/Journal CME.

Please submit this page only once, by one of the following methods:
• FAX to 718-999-0119 or
• MAIL to FDNY OMA, 9 MetroTech Center 4th flr, Brooklyn, NY 11201

Contact the Journal CME Coordinator at 718-999-2790:
• three months before REMAC expiration for a report of your CME hours.
• for all other inquiries.

Monthly receipts are not issued. You are strongly advised to keep a copy for your records.

Note: if your information is illegible, incorrect or omitted you will not receive CME credit.

check one: ☐ EMT ☐ Paramedic ☐ other

Name

NY State / REMAC # or “n/a” (not applicable)

Work Location

Phone number

Email address

Submit answer sheet by the last day of this month

January 2013
CME Quiz

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## Citywide CME - January 2013

Sessions are subject to change without notice. Please confirm through the listed contact.

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<td>TBA</td>
<td>TBA</td>
<td>TBA: call to inquire →</td>
<td>Avram Conference Rooms</td>
<td>Dr Chitnis</td>
<td>Dale Garcia 718-630-7230</td>
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<td><a href="mailto:dgarcia@lmcmc.com">dgarcia@lmcmc.com</a></td>
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<td></td>
<td>Lutheran</td>
<td>4th Wed</td>
<td>1730-1930</td>
<td>Call Review RSVP →</td>
<td>Call for location →</td>
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<td>MN</td>
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<td>Weill Cornell Campus TBA</td>
<td>Dr Williams</td>
<td>RSVP: <a href="mailto:ssamuels@nyp.org">ssamuels@nyp.org</a></td>
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<td></td>
<td>Ana Doulis 212-746-0885 x2</td>
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<td>NYU School of Medicine</td>
<td>TBA</td>
<td>TBA</td>
<td>TBA: call to inquire →</td>
<td>Schwartz Lecture Hall 401 E 30 Street</td>
<td>TBA</td>
<td>Jessica Kovac 212-263-3293</td>
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<tr>
<td>QN</td>
<td>FDNY-BOT</td>
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<td><a href="mailto:galera@nychhc.org">galera@nychhc.org</a></td>
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<td></td>
<td>Mt Sinai Qns</td>
<td>Last Tues</td>
<td>1800-2100</td>
<td>Lecture or Call Review</td>
<td>25-10 30 Ave, conf room</td>
<td>Dr Dean</td>
<td>Donna Smith-Jordan 718-267-4390</td>
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<td></td>
<td>NYH Queens</td>
<td>Thursdays</td>
<td>0800-0900</td>
<td>Call Review/Trauma Rounds</td>
<td>East bldg, courtyard flr</td>
<td>Dr Sample</td>
<td>Mary Ellen Zimmermann RN 718-670-2929</td>
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<td>Parkway Hosp</td>
<td>3rd Wed</td>
<td>1830-2130</td>
<td>Call Review</td>
<td>Board Room, 1st flr</td>
<td>TBA</td>
<td><a href="mailto:pabruzzino@capitolhealthmgmt.com">pabruzzino@capitolhealthmgmt.com</a></td>
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<td>Queens Hosp</td>
<td>2nd Thurs</td>
<td>1615-1815</td>
<td>Call Review</td>
<td>Emergency Dept</td>
<td>TBA</td>
<td>718-883-3070</td>
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<td>St John’s Episcopal</td>
<td>TBA</td>
<td>1830-2030</td>
<td>TBA: call to inquire →</td>
<td>Board Room</td>
<td>TBA</td>
<td>Judith Brown 718-869-7223</td>
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<td><a href="mailto:jbrown@ehs.org">jbrown@ehs.org</a></td>
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<tr>
<td>SI</td>
<td>RUMC</td>
<td>TBA</td>
<td>1400</td>
<td>TBA: call to inquire →</td>
<td>MLB conf room</td>
<td>TBA</td>
<td>William Amaniera 718-818-1364</td>
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<td>SIUH North</td>
<td>TBA</td>
<td>TBA</td>
<td>TBA: call to inquire →</td>
<td>Regina McGinn Center 475 Seaview Ave</td>
<td>TBA</td>
<td>Andrea Kleboe 718-226-7878</td>
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<td></td>
<td>SIUH South</td>
<td>TBA</td>
<td>TBA</td>
<td>TBA: call to inquire →</td>
<td>346 Seguine Ave</td>
<td>Dr Barbara</td>
<td><a href="mailto:pbarbara.md@gmail.com">pbarbara.md@gmail.com</a></td>
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<td>917-903-7475</td>
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## 2013 NYC REMAC Examination Schedule

<table>
<thead>
<tr>
<th>Month</th>
<th>Registration Deadline</th>
<th>Written exams</th>
<th>Orals exams</th>
<th>NYS/DOH Written Exam</th>
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<tr>
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<td>Refresher: Written only, CME letter required</td>
<td>Requires one Written exam prior to the Orals below</td>
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<tr>
<td></td>
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<td>Basic: any one Written before an Orals exam</td>
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<tr>
<td>January</td>
<td>1/1/13</td>
<td>1/16 @10:00 1/16 @18:00 1/20 @18:00 1/27 @10:00</td>
<td>Tuesday 1/29 @10:00</td>
<td>1/17/13</td>
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<tr>
<td>February</td>
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<td>March</td>
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<td>Wednesday 3/27 @10:00</td>
<td>3/21/13</td>
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<td>May</td>
<td>5/1/13</td>
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<td>Thursday 5/30 @10:00</td>
<td>5/23/13</td>
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<td>July</td>
<td>7/1/13</td>
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<td>Wednesday 7/31 @10:00</td>
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<td>August</td>
<td>8/1/13</td>
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<td>September</td>
<td>9/1/13</td>
<td>9/12 @18:00 9/15 @18:00 9/18 @10:00 9/18 @18:00</td>
<td>Thursday 9/26 @10:00</td>
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<tr>
<td>October</td>
<td>10/1/13</td>
<td>10/17 @18:00 10/20 @18:00 10/23 @10:00 10/23 @18:00</td>
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<td>November</td>
<td>11/1/13</td>
<td>11/14 @18:00 11/17 @18:00 11/20 @10:00 11/20 @18:00</td>
<td>Tuesday 11/26 @10:00</td>
<td>11/21/13</td>
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<tr>
<td>December</td>
<td>12/1/13</td>
<td>12/15 @10:00 12/18 @10:00 12/18 @18:00 12/19 @18:00</td>
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The **REMAC Refresher Written examination** is offered for paramedics who meet CME requirements and whose REMAC certifications are either current or expired less than 30 days. To enroll, go to the REGISTER link under “News & Announcements” at nycremsco.org before the registration deadline above. Candidates may attend an exam no more than 6 months prior to expiration.

The **REMAC Basic Written & Orals examination** is for initial certification, or for inadequate CME, or for certifications expired more than 30 days. Seating is limited and registrations must be postmarked by the deadline above. A $100 exam fee by money order is required. Email swansoc@fdny.nyc.gov for instructions.