



Continuing Medical Education - News & Information

August – September, 2015 - Volume 20, Issue 8-9

Multi-Agency Edition

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Journal CME Newsletter

FDNY - Office of
Medical Affairs

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From the Editor

To ensure the highest-possible quality of patient care in NYC, REMAC has raised CME and exam requirements for all re-certification and new candidates.

**** *All candidates must now meet CME requirements* ****

- **All REMAC paramedics and candidates should review Certification & CME Information on page 3 journal and plan accordingly.**
- **All upcoming exam candidates**, see registration instructions at the bottom of the last page of this journal.
- **Candidates who will not have a CME letter** at the time of their REMAC exam must email Christopher.Swanson@fdny.nyc.gov ASAP.

**** *The exam format has changed for all candidates* ****

- **Early testing is strongly encouraged, there is no loss of certification time.**
- **Study Tips – to pass the exam, candidates MUST:**
 - **memorize** the REMAC GOP, BLS and ALS protocols, and appendices
 - **interpret** 3 and 12-lead ECGs
 - **calculate** drug doses based on patient weight
- **120 question multiple-choice exam** with a 3-hour time limit
 - **20 Scenario questions: two new intensive patient-care scenarios**
 - one adult and one pediatric, 10 questions each
 - similar to past REMAC Orals and Scenario exams
 - testing the candidate's ability to integrate history, physical exam, ECG interpretation, diagnosis, treatment using the NYC REMAC protocols
 - **100 General questions:** the same format and content as past REMAC exams, on protocol content and patient care
- **Passing score** is 80%. Exam failure permits a retest the same month.

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

Always see nycremSCO.org for the current approved protocols

For updates, see REMAC Advisory 2015-03, 04, 05 & 07 at nycremSCO.org

General Operating Procedures

- **Spinal Precautions**
 - Removes rapid-takedown
 - New policy language
- **Pediatric Patients**
 - Changes age parameters
- **Prehospital Sedation**
 - Removes etomidate administration rate for intubation
 - Increases etomidate maximum dose for cardioversion
- **IO Administration**
 - Limits number of attempts
- **Pre-existing Central Venous Catheter**
 - New GOP section

BLS Protocols

- **407 – Wheezing & 410 – Anaphylaxis**
 - Changes note to not delay transport
 - Changes OLMC contact requirements
- **411 – Altered Mental Status**
 - Adds pediatric dosing for naloxone
 - Removes contraindications for pediatrics and therapeutic opiate use
 - Initiate transport prior to repeating treatment
 - Adds QA component
- **421 – Head and Spine Injuries**
 - Removes immobilization
 - Adds spinal precautions
 - Removes hyperventilation

• **430 – Excited Delirium**

- Changes name of protocol
- Language changes to criteria & procedures

ALS Protocols

• **500-A – Smoke Inhalation & 500-B – Cyanide**

- Changes blood drawing to “if available”
- Changes age requirement
- Changes bottle use of hydroxocobalamin
- Deletes Table 2

• **530 – Excited Delirium**

- Changes name of protocol
- Standing Orders:
 - adds midazolam IM/IN
 - add normal saline rapid infusion
- Medical Control Options:
 - reorganized as a table
 - adds ketamine IM/IN
 - removes IV lorazepam & midazolam
 - reduces IN lorazepam & midazolam
- Adds QA component

Appendices

• **Appendix P – CPAP**

- Removes pregnancy as contraindication

REMAC Exam Study Tips

<u>REMAC candidates have difficulty with:</u>	<u>REMAC Written exams are approximately:</u>	
* Epinephrine use for peds patients	15% Protocol GOP	35% Adult Med. Emerg.
* 12-lead EKG interpretation	10% BLS	15% Adult Trauma
* ventilation rates for peds & neonates	10% Adult Arrest	15% Pediatrics

Certification & CME Information

- **By the day of their exam, all REMAC paramedics and candidates must present a letter from their Medical Director verifying fulfillment of CME requirements.**
 - **Upcoming candidates without a CME letter ASAP must email Christopher.Swanson@fdny.nyc.gov**
 - **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 # 2007-11:**
 - 36 hours - Physician Directed Call Review
 - *ACR Review*
 - *QA/I Session*
 - *Emergency Department Teaching Rounds - Maximum of 18 hours*
 - 36 hours - Alternative Source CME - Maximum of 12 hours per venue
 - *Online CME (see examples below)* - *Clinical rotations*
 - *Lectures / Symposiums / Conferences* - *Associated Certifications – 4 hours each:*
BCLS / ACLS / PALS / NALS / PHTLS
 - *Journal CME*
 - **Failure to maintain a valid NYS EMT-P card will suspend your NYC REMAC certification until NYS is recertified.**
-

REMAC certification exams are held monthly for new and expired candidates, and for currently certified paramedics who may attend up to 6 months before their expiration date.

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

REMSCO: www.NYCREMSCO.org Online CME: www.EMS-CE.com www.MedicEd.com
www.EMCert.com www.WebCME.com
NYS/DOH: www.Health.State.NY.US www.EMINET.com statenilandem.com

FDNY ALS Division Coordinators

<u>Citywide ALS</u>	<u>718-999-1738</u>	<u>Division 4</u>	<u>718-281-3392</u>
Lt. Evan Suchecki		Mike Romps	
<u>Division 1</u>	<u>212-964-4518</u>	<u>Division 5</u>	<u>718-979-7175</u>
William Meringolo		Krista Kolanovic	
<u>Division 2</u>	<u>718-829-6069</u>	<u>Bureau of Training</u>	<u>718-281-8325</u>
Kornelia Haynes		Hector Arroyo / Lisa Desena	
<u>Division 3</u>	<u>718-968-9750</u>	<u>EMS Pharmacy</u>	<u>718-571-7620</u>
Gary Simmonds		Cindy Corcoran	

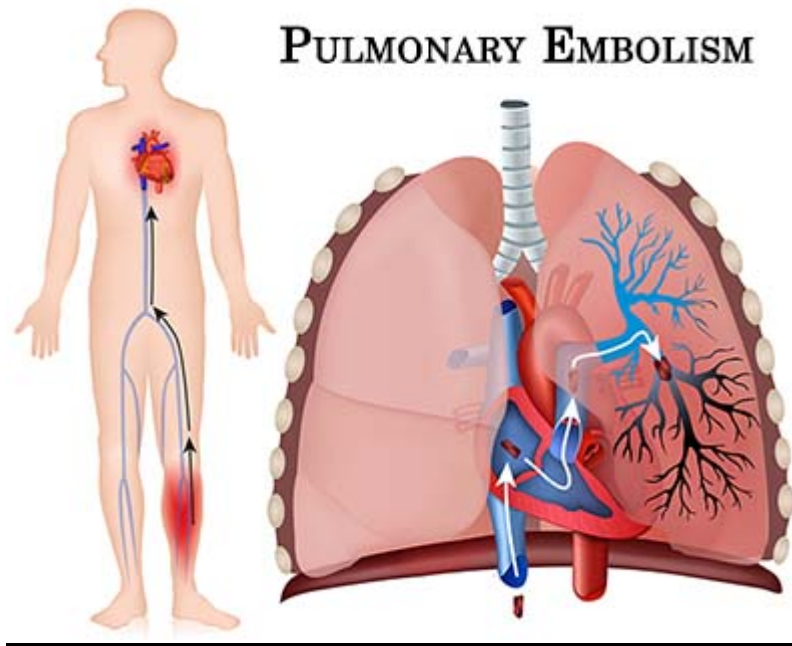
FDNY EMS Medical Directors

<u>Dr. Nikolaos Alexandrou</u>	<u>718-999-0124</u>	<u>Dr. Dario Gonzalez</u>	<u>718-281-8473</u>
Field Response Division 3 OLMC Director		Field Response Division 2 USAR/FEMA Director, OEM Liaison	
<u>Dr. Glenn Asaeda</u>	<u>718-999-2790</u>	<u>Dr. Doug Isaacs</u>	<u>718-281-8428</u>
Chief Medical Director REMAC Coordinator		Field Response Division 1 EMS Fellowship & Rescue Medic Director	
<u>Dr. David Ben-Eli</u>	<u>718-999-0404</u>	<u>Dr. Bradley Kaufman</u>	<u>718-999-1872</u>
Field Response Division 4 Haz-Tac, PASU & EMS Resident Director		QA, EMD & EMS Training Director	
EMS Fellows - Field Response Division 5			
<u>Dr. Nathan Reisman</u>	<u>718-999-0364</u>	<u>Dr. Carolina Periera</u>	<u>718-999-0351</u>

FDNY OLMC Physicians and ID Numbers

Alexandrou, Nikolaos	80282	Jacobowitz, Susan	80297
Asaeda, Glenn	80276	Kaufman, Bradley	80289
Barbara, Paul	80306	Lai, Pamela	80311
Bayley, Ryan	80314	Munjhal, Kevin	80308
Ben-Eli, David	80298	Redlener, Michael	80312
Freese, John	80293	Rotkowitz, Louis	80317
Friedman, Matt	80313	Schenker, Josef	80296
Giordano, Lorraine	80243	Schneitzer, Leila	80241
Gonzalez, Dario	80256	Silverman, Lewis	80249
Hansard, Paul	80226	Soloff, Lewis	80302
Hegde, Hradaya	80262	Van Voorhees, Jessica	80310
Hew, Phillip	80267	Williams, Alan	80316
Huie, Frederick	80300	Zabar, Benjamin	80323
Isaacs, Doug	80299	Zimmerman, Jason	80324

PULMONARY EMBOLISM



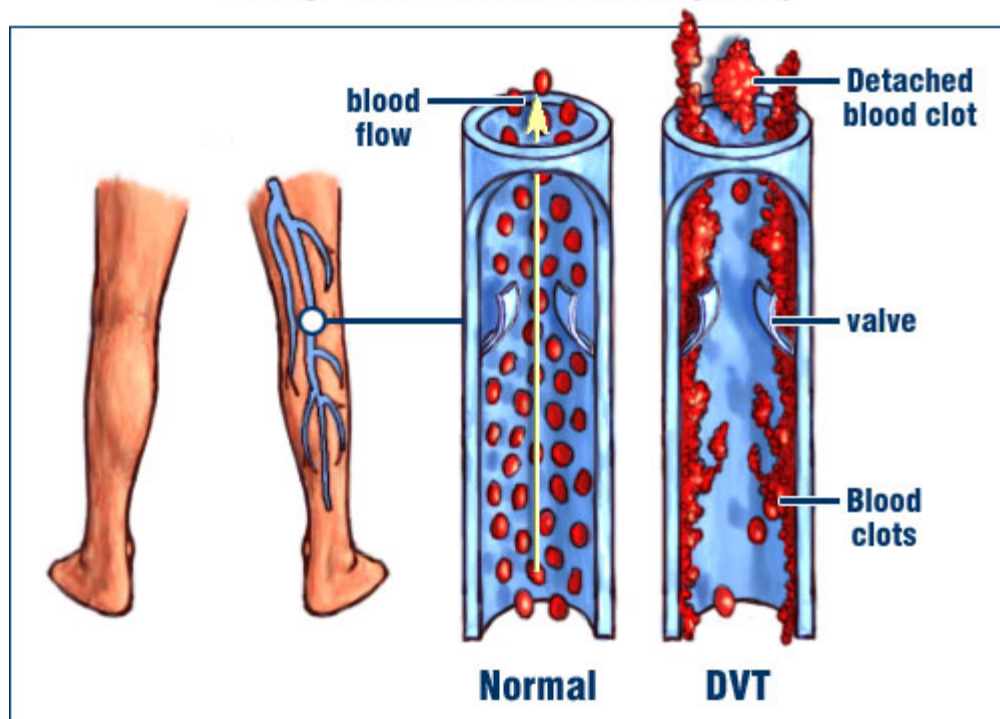
What is a Pulmonary Embolus?

Pulmonary embolism is a condition that occurs when an artery in the lung becomes blocked. In most cases, the blockage is caused by one or more blood clots that travel from the body to the lungs. Pulmonary emboli are caused by clots from the venous circulation originating from: the right side of the heart; tumors that have invaded the circulatory system; or other sources such as amniotic fluid, air, fat, bone marrow, and foreign substances. Most are caused from clots originating in the lower extremities called deep vein thrombosis (DVT), but these often resolve on their own and do not result in a PE. The risk factors associated with PE include prolonged bed rest or inactivity, oral contraceptive use, surgery, childbirth, cancer, stroke, heart attack, heart surgery, and fractures of the hips or femur. A pulmonary embolism is not universally fatal but may result in severe disability. Pulmonary embolism is a leading cause of prehospital and hospital deaths. The cornerstone of treatment for pulmonary emboli is recognition and early anti-clotting medications.

Frequency of Occurrence

Pulmonary embolism (PE) is an extremely common and potentially lethal condition that is a leading cause of death in all age groups. A pulmonary embolism affects as many as 5 out of 10,000 people in the U.S. each year, and sudden death can occur as a result. PE is the third most common cause of death in the US, with at least 650,000 cases occurring annually. It is either the first or the second most common cause of unexpected death in most age groups. The highest incidence of recognized PE occurs in hospitalized patients. Autopsy results show that as many as 60% of patients dying in the hospital have had a PE, but the diagnosis has been missed in about 70% of the cases. Surgical patients have long been recognized to be at special risk for DVT and PE, but the problem is not confined to surgical patients.

Deep Vein Thrombosis (DVT)



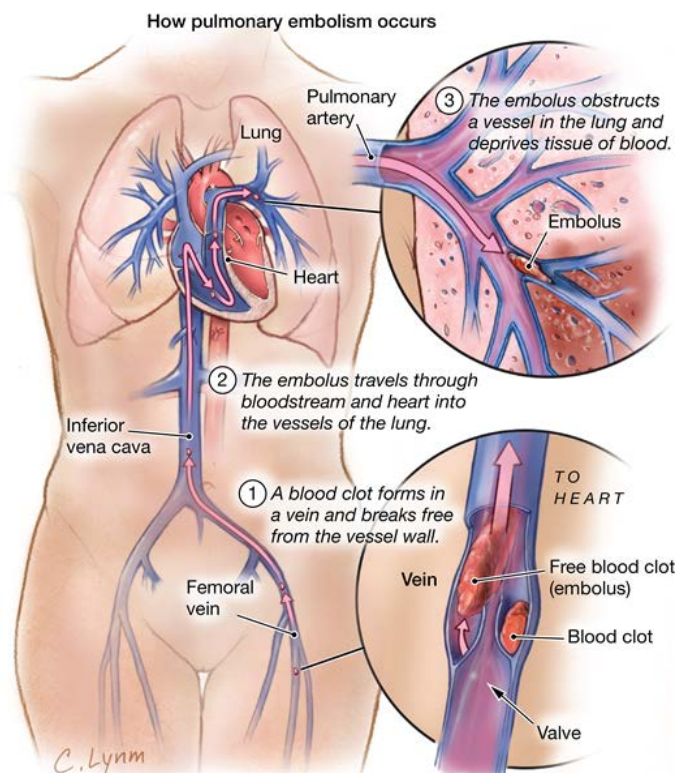
Pathophysiology

Pulmonary thromboembolism is **not a disease** in and of itself. Rather, it is a frequently fatal complication of underlying venous thrombosis. Under normal conditions, microthrombi (tiny collections/clumps of red cells, platelets, and fibrin) are formed and dissolved (lysed) constantly within the venous circulation. This allows for local bleeding control in response to injury without permitting uncontrolled clot formation. Under certain conditions, these microthrombi escape the normal clot breakdown process (fibrinolytic system) to grow and propagate. PE occurs when these growing clots break loose and embolize (travel) to block pulmonary blood vessels.

Signs and Symptoms

The symptoms associated of pulmonary embolism can vary greatly, depending on the degree of lung involvement, the size of the clot and overall health status (especially in the presence or absence of underlying lung or heart disease). Common signs and symptoms include:

- Sudden shortness of breath, either with activity or at rest.
- 96% develop tachypnea (respiratory rate >16/min).
- Chest pain that often mimics a heart attack. The pain can occur anywhere in the chest and may radiate to the shoulder, arm, neck or jaw. It may be sharp and stabbing or aching and dull and may become worse when the patient breathes deeply (often referred to as pleuritic), coughs, eats, bends or stoops. The pain



will get worse with exertion but will not go away at rest.

- A cough that produces bloody or blood-streaked sputum.
- 36% have excessive sweating (diaphoresis).
- 44% have tachycardia (heart rate >100/min).
- Lightheadedness or fainting (syncope).
- Anxiety.
- Wheezing.
- 58% develop rales.
- 43% have fever.
- 32% have clinical signs and symptoms suggesting thrombophlebitis.
- 24% have lower extremity edema.
- 19% have cyanosis.

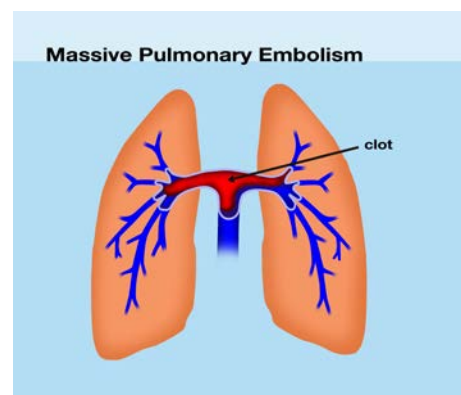
Etiology

Normal function (physiology): Blood is constantly being pumped from the right side of the heart to the lungs and back to the left side of the heart. The lungs allow for the normal transfer of gases: blood picks up oxygen and releases carbon dioxide (a waste product of metabolism). Blood vessels (arteries) take the oxygen-rich (oxygenated) blood to tissues throughout the body, and veins bring oxygen-poor (deoxygenated) blood back to heart. Capillaries (the smallest blood vessels) connect the veins and arteries.

System malfunction (pathophysiology): Clots that form in the veins can dislodge, and travel through the bloodstream to the **right side** of the heart. They then can enter the pulmonary arteries, where they may cause a blockage. A blockage can occur in any small artery, but the lungs are especially vulnerable because all of the blood in the body circulates through the lungs. Most often, a number of clots will develop over a period of minutes or hours and spread to all parts of the lungs; it is unusual for just one clot to occur.

Understanding blood clots: A blood clot is a plug made up of platelets (colorless blood cells that normally repair injured blood vessels) enmeshed in a network of red blood cells and fibrin (a type of protein). Clots normally develop to help stop bleeding after an injury, but on occasion clots form for no apparent reason.

A blood clot that forms and remains in a vein is called a **thrombus**. A clot that travels to another part of the body is an **embolus**. Occasionally other substances, such as pieces of a tumor, globules of fat from fractured bones, or air bubbles, may enter the bloodstream and become an embolus that blocks arteries. Most clots that cause problems originate in a leg or pelvis vein. The affected vein may be near the surface of the skin (superficial thrombosis) or deep within a muscle (deep vein thrombosis, or DVT). Clots in superficial veins usually are not serious and often clear on their own. Clots in the deep veins may detach and migrate through the bloodstream to the lungs. The majority of clots in the legs begin in the veins below the knee, and it is uncommon for these clots to detach. In some cases, clots may extend up into the thigh, and that is when they tend to become dangerous. It is not known what causes clots to detach, and it is not possible to predict which clots will break off or when.



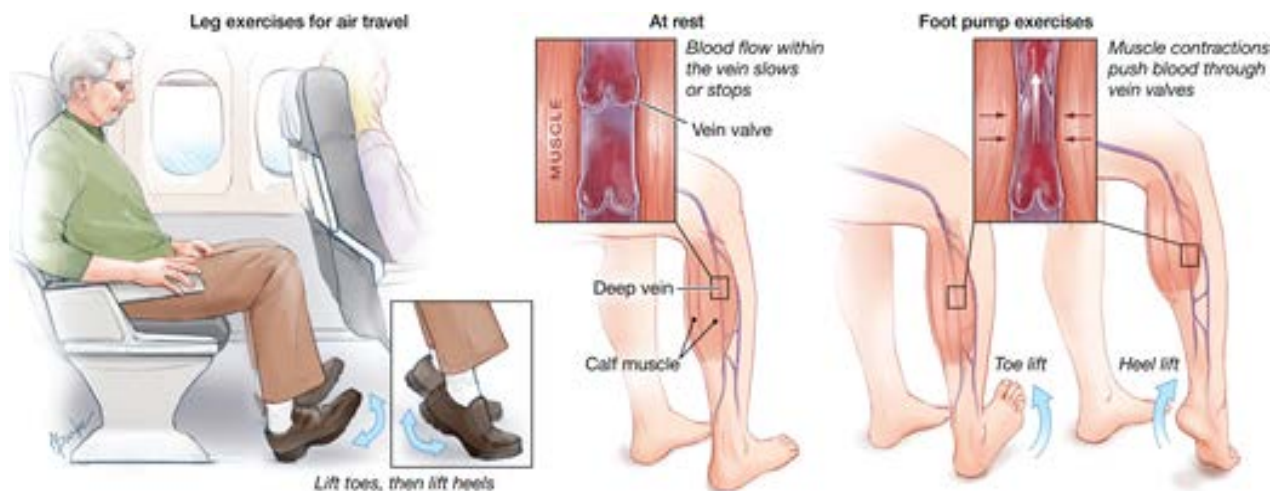
Factors involved in clot formation: About half the people who develop abnormal blood clots have an inherited tendency to develop clots. Other factors that may cause unwanted clots to form include:

- **Surgery:** Operations are one of the leading causes of problem blood clots, especially operations to replace major joints, such as the hip and knee. Although people slated for high-risk operations are treated with anti-clotting drugs both before and after surgery, many still develop clots.
- **Long periods of inactivity:** Inactivity caused by prolonged bed rest or long car trips decreases blood flow in the veins, making clots more likely. People who are immobilized after surgery, a heart attack or serious injuries are more apt to develop blood clots and pulmonary embolism than are people who are able to get up and walk around. The highest incidence of pulmonary embolism occurs among people in hospitals, where it is the third leading cause of death. Recent attention has also focused on the increasing incidence of deep vein thrombosis and pulmonary embolism among otherwise healthy travelers on long plane trips. Cramped seats with little legroom have contributed to the problem, to such an extent that deep vein thrombosis is sometimes referred to as "economy class syndrome." Not everyone who has DVT goes on to develop pulmonary embolism, however. For many people, the DVT causes few symptoms and is diagnosed long after the episode has passed.
- **Increased levels of clotting factors in the blood (hypercoagulable):** Some types of cancer, especially pancreatic, lung and ovarian cancers, cause increased blood levels of procoagulants (substances that contribute to blood clotting). The female hormone estrogen found in birth control pills and hormone therapy (HT) increases the amount of clotting factors in the blood.
- **Medical conditions:** People who have cardiovascular disease associated with clot formation, such as heart attack (myocardial infarction) or stroke, are more likely to develop blood clots in their veins.
- **Injury to the veins:** This may occur during certain surgical procedures, especially hip surgery or knee replacement. It may also result from direct injuries to the legs or from leg or pelvic fractures.

Risk Factors

Although anyone can develop blood clots and subsequent pulmonary embolism (venous thromboembolism (VTE)), the following factors increase the PE risk:

- **Inactivity:** Prolonged sitting in a cramped position during lengthy plane or car trip.



- **Prolonged bed rest:** Confined bed rest for an extended period after surgery, a heart attack, leg fracture or any serious illness makes an individual more vulnerable to blood clot formation. Pulmonary embolism is

a leading cause of hospital deaths; it is also a serious problem for nursing home residents, who are likely to have a number of risk factors for DVT, as well as for people immobilized at home.

- *Certain surgical procedures:* Especially likely to cause blood clots are hip or knee replacements, some obstetric or gynecological procedures and extensive abdominal operations.
- *Some medical conditions:* Certain cancers, especially pancreatic, ovarian and lung cancers can increase levels of substances that help blood clot, and chemotherapy further increases the risk. Menopausal women with a history of breast cancer who are taking tamoxifen or raloxifene also are at risk. High blood pressure and cardiovascular disease make clot formation more likely, as does having an inflammatory bowel disease such as ulcerative colitis or Crohn's disease.
- *Being overweight:* Weighing more than normal increases the risk of blood clots, one theory links the formation of clots to leptin, a hormone produced by fat cells in the body. People who are overweight have more leptin-producing cells than slender people do, and may be more prone to develop clots.
- *Pacemakers or venous catheters:* Having a pacemaker or catheter in a central vein makes the formation of clots more likely.
- *Pregnancy and childbirth:* Pulmonary embolism is the most frequent cause of death associated with childbirth. Some women who have pregnancy-related venous thromboembolism also have an inherited clotting disorder.
- *Birth control pills:* Estrogen in birth control pills can increase clotting factors in the blood, especially smoking and are overweight. On the other hand, the risk of clots from birth control pills is small compared with the risks associated with pregnancy.
- *Family history:* Previous history or family history of venous thromboembolism increases the risk of blood clots. More than half the cases of VTE are the result of an inherited clotting disorder.
- *Smoking:* Tobacco use predisposes some people to blood clot formation, especially when combined with other risk factors.

Medical Intervention/Assessment

It is possible to have DVT without any signs or symptoms; a clot often causes redness, swelling or tenderness over a leg vein. This may require a medical evaluation to determine the origin and/or cause of the swelling, since other (non-clotting) conditions can cause similar problems.

Once a clot has reached the lungs, the situation can be life-threatening, and immediate medical intervention is critical. About 1 in 10 people with pulmonary embolism die within the first hour, so prompt treatment is crucial. Pulmonary embolism is seldom fatal when diagnosed and treated promptly.

Although symptoms of pulmonary embolism vary widely and often resemble those of other conditions, they classically include sudden shortness of breath and chest pain.

Screening and Diagnosis

Pulmonary embolism can be difficult to diagnose, especially in people who have underlying heart or lung disease. Assessment tests may include the following:

- *Chest X-ray:* This noninvasive test images the heart and lungs. X-rays cannot diagnose pulmonary embolism (they may even appear normal when pulmonary embolism exists), but they can rule out conditions that mimic the disease.

- *Lung scan*: Also known as a ventilation/perfusion scan (V/Q scan). This uses small amounts of radioactive tracers (radioisotopes) to study airflow (ventilation) and blood flow (perfusion) in the lungs. The patient first inhales a small amount of radiopharmaceutical (radioactive tracers) while movement of radioactive substance movement (in the inhaled air) is monitored in the lung. A small amount of a different radiopharmaceutical is then injected into a vein in the arm and blood flow in the blood vessels of the lung is monitored. Comparing the results of the two studies helps provide a more accurate diagnosis of pulmonary embolism than does either study alone.
- *Spiral (helical) computerized tomography (CT) scan*: A CT scan allows the visualization of organs in two-dimensional "slices." Split-second computer processing creates these images as a series of very thin X-ray beams pass through the body. A dye (contrast medium) is commonly used to help visualize the area. Newer CT scanners (spiral or helical) are fast becoming the first-line test for diagnosing suspected pulmonary embolism. A spiral CT differs from conventional computerized tomography in several ways: the scanner rotates continuously around the body, following a spiral path to create three-dimensional images; it can detect abnormalities with a greater degree of accuracy, and it is faster, scanning the pulmonary arteries in less than 20 seconds as opposed to 20 minutes or more for a standard CT. Speed is important because it allows the dye to be "captured" while still in the arteries. Spiral CT is sensitive in detecting most cases of pulmonary embolism and much more sensitive than a lung scan.
- *Tests to detect blood clots*: In addition to tests that check for pulmonary embolism, other tests that help detect blood clots in the veins, such as:
 - *Ultrasound*: A noninvasive "sonar" test known as duplex venous ultrasonography uses high-frequency sound waves to check for blood clots in the leg veins. The test is quick and painless, but it is not very useful for detecting clots below the knee.
 - *Magnetic resonance imaging (MRI)*: This uses no X-rays, but rather a computer creates tissue "slices" from data generated by a powerful magnetic field and radio waves. This is usually reserved for pregnant women and people whose kidneys may be harmed by dyes used in other tests.

Complications

Pulmonary embolism can be life threatening. About one-third of people with undiagnosed and untreated pulmonary embolism do not survive. When the condition is diagnosed and treated promptly, this number significantly decreases. Once the patient has had one pulmonary embolism, they are at increased risk of more, and many of these recurrences can be fatal. In addition to fatality, pulmonary embolism can lead to several serious complications, including:

- *High blood pressure in the lungs (pulmonary hypertension)*: A number of conditions can contribute to pulmonary hypertension. One occurs when a large number of clots obstruct blood flow in the blood vessels in the lungs for months or years, making the right side of the heart work especially hard against great resistance. This condition is reversible if the embolism is treated appropriately. The most common symptoms of pulmonary hypertension are breathlessness (dyspnea) on exertion and general fatigue. Fainting (syncope), dizziness, swollen legs or ankles, and pressure or chest pain are common.
- *Heart damage*: In a condition called "cor pulmonale", the right ventricle becomes enlarged and eventually fails as a result of the pulmonary problems. Blood normally flows from the right side of the heart into the lungs where it carbon dioxide-oxygen transfer takes place. Normally, it takes very little pressure to push blood through the lungs, so the walls of the right ventricle are not as strong as those on the left side of the heart, which pumps to the rest of the body. When clots obstruct blood flow in the lungs, the heart has to pump harder. The heart can compensate for a time; eventually the extra strain causes the muscle of the right ventricular wall to fail. This failure can occur within hours or even minutes if the blood clots are very large. It may occur over months or years if the obstruction is smaller.

Treatment

- *Oxygen therapy* is required to maintain normal oxygen concentrations until the acute injury to the lungs has resolved.
- *Anticoagulation*: Prompt treatment of venous thromboembolism (both pulmonary embolism and deep vein thrombosis) is essential in order to prevent serious complications or death. Initial management is anticoagulant (i.e. heparin) therapy; this helps prevent existing clots from enlarging and stops the formation of new ones. This is followed by long-term anticoagulant **warfarin** (coumadin). This helps stop clot formation, but because it works less quickly than heparin it is not used in the initial medical management. In general this is continued for at least six months. The benefits of anticoagulants need to be weighed against the risks. Heparin and warfarin reduce the development of blood clots, but they also may prevent normal blood coagulation; therefore they increase the risk of bleeding complications. Many of these complications are minor, such as bleeding from the gums, but some may be severe and life threatening (e.g., intracerebral bleeding). During anticoagulant therapy, patients should avoid using aspirin and other nonsteroidal anti-inflammatory drugs such as ibuprofen, which also affect the blood's ability to clot. Because more than 100 other drugs, including over-the-counter medications and some herbs, can interact with anticoagulants, caution must be used with all additional medications. Anticoagulant therapy is preventive by inhibiting further clot formation and therefore should only be discontinued by a physician.
- *Vein filter (umbrella)*: To prevent clots from being carried into the pulmonary artery, a radiologist may surgically place a filter in the main vein (inferior vena cava) in the abdomen leading from the legs and pelvis to the right side of the heart.

Conclusion

The death rate is 30% with undiagnosed pulmonary embolism. After diagnosis and treatment, the death rate drops to 3%. Although PE may be fatal, prompt prehospital diagnosis that results in appropriate treatment can significantly reduce the morbidity and mortality rate.

Approximately 10% of patients in whom acute PE is diagnosed die within the first 60 minutes. In the remainder, the condition is eventually diagnosed and treated in one-third and remains undiagnosed in two-thirds. Among the group whose PEs are correctly diagnosed and treated, only about one-twelfth die from massive PE or its complications. Among the group whose PEs are undiagnosed and therefore untreated, roughly one-third die. The diagnosis of PE is missed more than 400,000 times in the US each year, and approximately 100,000 patients die who would have survived. These patients should all be transported to a medical facility for definitive management.

Written by: **DR. DARIO GONZALEZ**
FDNY Division Medical Director

CME JOURNAL 2015 QUIZ J8-9: PULMONARY EMBOLISM

All 10 questions for ALS and BLS Providers

1. All pulmonary embolisms (PEs) are universally fatal conditions that are a leading cause of death in all age groups.
 - a) True
 - b) False
2. Pulmonary emboli are caused by clots from the venous circulation, from the:
 1. Right side of the heart.
 2. Tumors that have invaded the circulatory system.
 3. Amniotic fluid.
 4. Fat.
 - a) All of the above
 - b) 1, 2, 4
 - c) 1, 3, 4
 - d) 2, 3, 4
3. Pulmonary thromboembolism is a disease in and of itself, but may also be a consequence of other disease entities.
 - a) True
 - b) False
4. Oxygen therapy is required to maintain normal oxygen concentrations until the acute injury to the lungs has resolved.
 - a) True
 - b) False
5. During anticoagulant therapy, avoid using aspirin and other nonsteroidal anti-inflammatory drugs such as ibuprofen.
 - a) True
 - b) False
6. Which of the following regarding PE is true?
 1. Third most common cause of death in the US.
 2. First or Second most common cause of unexpected death in most age groups.
 3. 60% of patients dying in the hospital have had a PE.
 4. Diagnosed in about 70% of the cases.
 5. Surgical patients are at special risk for DVT and PE.
 - a) All of the above
 - b) 1, 2, 3, 4
 - c) 1, 3, 4
 - d) 1, 2, 3, 5

7. A blood clot is:
1. A plug made up of platelets enmeshed in a network of red blood cells and fibrin (a type of protein).
 2. Colorless blood cells that normally repair injured blood vessels.
 3. Normally develop to help stop bleeding after an injury.
 4. May form for no apparent reason.
- a) All of the above
b) 1, 2, 4
c) 1, 3, 4
d) 2, 3, 4
8. PE risk factors include:
1. Inactivity: Prolonged sitting in a cramped position during lengthy trip.
 2. Prolonged bed rest (post-surgery, a heart attack, leg fracture).
 3. Nursing home residents.
 4. Menopausal women with a history of breast cancer who are taking tamoxifen or raloxifene also are at risk.
 5. Pacemakers or venous catheters.
- a) All of the above
b) 1, 2, 3, 4
c) 1, 3, 4
d) 1, 2, 3, 5
9. In medicine, a complication is an unanticipated problem that arises following, and is a result of, a procedure, treatment, or illness. It is so named because it complicates the situation. PE complications, include:
1. Pulmonary hypertension.
 2. Syncope.
 3. Cor pulmonale.
 4. CVA.
- a) All of the above.
b) 1, 2, 3
c) 1, 3, 4
d) 2, 3, 4
10. Approximately 10% of patients in whom acute PE is diagnosed die within the first 60 minutes. In the remainder:
1. It remains undiagnosed in two-thirds of patients.
 2. Correctly diagnosed and treated, only about one-twelfth die from massive PE or its complications.
 3. When PEs are undiagnosed and therefore untreated, roughly one-third die.
 4. The diagnosis of PE is missed more than 400,000 times yearly in the US.
- a) All of the above
b) 2, 3, 4
c) 1, 3, 4
d) 1, 2, 3

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 **1 hour** 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 September 2015**

August – September 2015 CME Quiz		
1.		Questions 1-10 for all providers
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

Regional CME – Sessions are subject to change. Please confirm through the listed contact.

See other opportunities at www.nycremsco.org under News & Announcements

Note: A plentiful source of **Call Review** is **E.D. Teaching Rounds** (maximum of 18 hours)
See any hospital E.D. Administrator for availability (especially HHC hospitals)

Boro	Facility	Topic	Location	Contact
BK	Kingsbrook	contact to inquire →	ED Conference Room	Aaron Scharf 718-363-6644
	Lutheran	contact to inquire → Call Review	Inquire →	Dale Garcia 718-630-7230 dgarcia@lmcmc.com
MN	Lenox Hill & Health Plex	contact to inquire → Call Review, Lecture	Inquire →	Brian Lynch 512-589-9128 Lenox Hill Hospital EMS
	Mt Sinai Hosp	contact to inquire →	Inquire →	Eunice Wright eunice.wright@mountsinai.org
	NY Presbyterian	contact to inquire →	Inquire →	Steven M. Samuels 212-746-0596
	NYU School of Medicine	contact to inquire → Call Review, Lecture	Inquire →	danielle.milbauer@nyumc.org http://cme.med.nyu.edu/course
QN	Elmhurst Hosp	Call Review: Trauma Rounds	A1-22 Auditorium 3 rd Wednesdays, 0830-0930	Anju Galer, RN 718-334-5724 galera@nychhc.org
	Mt Sinai Qns	Call Review, Lecture	25-10 30 Ave, conf room last Tuesdays, 1800-2100	Donna Smith-Jordon 718-267-4390
	NYH Queens	contact to inquire →	East bldg, courtyard flr	Mary Ellen Zimmermann RN 718-670-2929
	Queens Hosp	Call Review	Emergency Dept 2 nd & 4 th Thurs 1615-1815	Maria Jones or Julia Fuzailov 718-883-3070
	St John's University	contact to inquire → Call Review	175-05 Horace Harding Expwy	718-990-8436 www.stjohns.edu/ems/cme
	St John's Episcopal	contact to inquire → Lecture	1 st floor Board Room	Michelle Scarlett mscarlet@ehs.org
SI	RUMC	contact to inquire → Call Review, Lecture	Inquire →	Tony McKay NRP amckay@rumcsi.org
	SIUH North & South	contact to inquire → Call Review	Inquire →	718-226-5032 www.statenislandem.com

2015 NYC REMAC Examination Schedule

updated 5/22/15

Month	Registration Deadline	Refresher exams ¹				Basic exams ²	NYS/DOH Written ³
		No fee for exam					
January	1/1/15	1/12 @18:00	1/15 @18:00	1/21 @10:00	1/21 @18:00	1/14 @18:00	1/15/15
February	2/1/15	2/18 @10:00	2/18 @18:00	2/19 @18:00	2/23 @18:00	2/11 @18:00	2/19/15
March	3/1/15	3/18 @10:00	3/18 @18:00	3/23 @18:00	3/26 @10:00	3/16 @18:00	3/19/15
April	4/1/15	4/22 @10:00	4/22 @18:00	4/23 @18:00	4/27 @18:00	4/20 @18:00	4/16/15
May	5/1/15	5/15 @18:00	5/18 @18:00	5/20 @10:00	5/20 @18:00	5/13 @18:00	5/21/15
June	6/1/15	6/17 @10:00	6/17 @18:00	6/19 @18:00	6/22 @18:00	6/15 @18:00	6/18/15
July	7/1/15	7/17 @18:00	7/20 @18:00	7/22 @10:00	7/22 @18:00	7/15 @18:00	7/16/15
August	8/1/15	8/17 @18:00	8/19 @10:00	8/19 @18:00	8/21 @18:00	8/24 @18:00	8/20/15
September	9/1/15	9/16 @10:00	9/16 @18:00	9/17 @18:00	9/21 @18:00	9/14 @18:00	9/17/15
October	10/1/15	10/15 @18:00	10/19 @18:00	10/21 @10:00	10/21 @18:00	10/14 @18:00	10/15/15
November	11/1/15	11/18 @10:00	11/18 @18:00	11/19 @18:00	11/23 @18:00	11/16 @18:00	11/19/15
December	12/1/15	12/11 @18:00	12/14 @18:00	12/16 @10:00	12/16 @18:00	12/9 @18:00	12/17/15

¹ **REMCA Refresher examination** is offered for paramedics who meet CME requirements **and** whose REMCA certifications are either current or expired **less** than 30 days. To enroll, go to the REGISTER link under “News & Announcements” at nycremasco.org before the registration deadline above. Candidates may attend an exam no more than 6 months prior to expiration. Early testing is **strongly** encouraged; there is no loss of certification time.

² **REMCA Basic examination** is for initial certification, **or** inadequate CME, **or** certifications expired **more** than 30 days. Seating is limited. Registrations **must** be postmarked by the deadline above. Exam fee by \$100 **money order** to **NYC REMSCO** is required.

All Basic candidates must meet new education requirements. Email Christopher.Swanson@fdny.nyc.gov for instructions.

³ **NYS/DOH exam dates** are listed for information purposes only. Scheduling is through your paramedic program or contact NYS DOH for more information.