From the Editor

The 7th Annual FDNY EMS Competition was held at 9 Metrotech Center on May 22 during National EMS Week. Thirteen teams of EMTs and paramedics representing EMS stations from around the city competed for the opportunity to represent FDNY at the National Competition on July 18-21 in an expenses-paid trip to Orlando, Florida.

This year’s event saw some significant changes:

- as requested by past competitors to prepare participants for the Nationals, scoring was based on the scenario only, omitting any written exam;
- double the number of scenario points for assessment and treatment were available compared to 2006;
- the scenarios incorporated wrecked cars as part of the scene of a MCI;
- the event was held in an open area for better viewing by the public;
- the following individual skills were highlighted in a separate testing area called Sideshow, but remained part of scenario scoring as a function of both speed and skill: rapid take-down immobilization, traction splinting, in-line endotracheal intubation, cardiac pacing, and telemetry presentation (for both medication orders & RMA);
- competitors and the EMS stations they represented were recognized for excellence in the Sideshow skills, apart from the top scenario winners;
- team alternates were offered the chance to participate in Sideshow, contributing scenario points for their team;
- former EMS Competition Coordinator and NYC REMAC Liaison Manny Delgado played a key role as Medical Director at the scene of the MCI.

- continued next page -
The results of this year’s 2007 FDNY EMS Competition: (*Team Captain, +Team Alternate)

**EMT Competition Winners**

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<thead>
<tr>
<th>Bureau of Training</th>
<th>Ruben Berrios</th>
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<tr>
<td>Joseph Fortis*</td>
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<td>Richard Marrone+</td>
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<td>Gilbert Ramos</td>
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**Paramedic Competition Winners**

**1st place**

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<tr>
<th>Bureau of Training</th>
<th>Peter Auricchio+</th>
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<tr>
<td>Joseph Hudak</td>
<td>Donald Hudson</td>
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**2nd place**

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<tr>
<th>Station 46</th>
<th>Hugo Canedo</th>
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<tr>
<td>Andrew Dunn+</td>
<td>Kimberly Marshall</td>
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<td>Konstantinos Skamalos*</td>
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**3rd place**

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<tr>
<th>Station 32</th>
<th>Carlos Lizcano</th>
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<tr>
<td>William O'Neill*</td>
<td>Antonio Quinones</td>
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**EMT Skills**

Traction Splinting (partners)

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**Paramedics Skills**

In-Line Intubation

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**Rapid Immobilization (partners)**

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**Cardiac Pacing (tie score)**

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<tr>
<td>Station 54</td>
<td>Christopher Mahoney</td>
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**Telemetry Presentation for RMA**

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<th>Station 10</th>
<th>Emilio Martinez*</th>
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**Telemetry Presentation for Orders**

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Many thanks to the following individuals for their contributions to this year’s Competition:

Chief of EMSC John Peruggia, OMA Chief Medical Officer Dr. David Prezant, FDNY Chief of Fire Academy Stephen Geraghty, EMS Deputy Chiefs Ross Terranova and Andrew Werner, Directors Lenore Koehler, Frank Buccellato and Mark Aaronberg, EMS Division Chiefs Jace Pinkus and Mark Stone, Drs. Glenn Asaeda, David Ben-Eli, Allen Cherson, John Freese, Doug Isaacs, Bradley Kaufman and Debra Lee, EMS Captains William Merrins, Debra Monte, Denise Werner, EMS Lieutenants James Bayreuther, Gilbert Caicedo, Patrick Dillon, Norberto Monell, John Raftery, Andres Rodriguez, David Russell, Stacy Scanlon, John Scotch and Grant Simmons, Paramedics Althea Benjamin, Dave Gill, Joan Hillgardner, Jing Kong, Wayne Miller, Leo Vanderpool and Craig Zapart, EMTs Prabhleen Bindra, Richard Bracken, Ryan Clunes, Robert Denson, Michael Finneran, John Manning, Nora Murphy, Wendell O'Brien, Julio Padilla, Jeanette Perez, Edgar Pitre, James Reichman and Freda Scott, and Katie Cassano, Cathy McCrorie, Natalie Monte-Swanson and Kerri Muli,

with special gratitude to Lieutenant Steven Goldstein of the Office of Medical Affairs for his months of invaluable support, attention, and creativity in the planning and execution of the Competition.

Christopher Swanson, EMT-P
FDNY Office of Medical Affairs
EMS Competition Coordinator
ePCR Tips

Uninsured patients may consider refusing care for fear of ambulance fees.

Please direct them to the green Patient Copy sheet of the FDNY ePCR, which advises the availability of free or low-cost health insurance (see figure at right).

Certification & CME Information

- Effective June 1, 2007: 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/QI Session (after 6/1/07, 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
    - 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.

REMAC Challenge (written and orals) examinations are held every January, April, July & October. Registration is limited to the first 50 applicants. The next available Challenge examination is scheduled for January 24 & 31. To register, call 718-999-2671 by December 24.

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

REMISCO website: www.NYCREMSCO.org
FDNY ALS Division Coordinators

- **Citywide ALS:** 718-999-1738
  Lt. Patrick Dillon
- **Division 1:** 212-964-4518
  Paramedic Andrea Katsanakos
- **Division 2:** 718-829-6069
  Paramedics Steve Pilla & Cesar Escobar
- **Division 3:** 718-968-9750
  Paramedics Gary Simmonds & Al Navarro
- **Division 4:** 718-883-2150
  Paramedic Lisa DeSena
- **Division 5:** 718-979-7175
  Paramedic Russell Shewchuk
- **Bureau of Training:** 718-281-8325
  Paramedic James "Bubba" Fallar
- **EMS Pharmacy:** 718-571-7620
  Paramedic Andrew Batho

FDNY Division Medical Directors

- **Division 1 and OLMC:** 718-999-2665
  Dr. John Freese
- **Division 2 and BOT:** 718-281-8473
  Dr. Dario Gonzalez
- **Divisions 3 and 5:** 718-999-2666
  Dr. Glenn Asaeda
- **Division 4, EMD & PASU:** 718-999-1872
  Dr. Bradley Kaufman
- **EMS Fellows:**
  Dr. David Ben-Eli 718-999-2670
  Dr. Doug Isaacs 718-999-0749

FDNY OLMC Physicians and ID Numbers

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<td>Acosta, Juan</td>
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<td>Isaacs, Doug</td>
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<td>Silverman, Lewis</td>
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News & Information from the EMS Bureau of Training

EMS Training Supervision

Chief of EMS Training     Division Chief James P. Martin
Executive Officer EMS Training   Deputy Chief Scott C. Holliday
Commanding Officer EMS Academy  Captain John Quigley
ALS Program Coordinator    Lieutenant Andres Rodriguez
Tour 2 BLS Program Coordinator Lieutenant Lillian Bonsignore
Tour 2 Program Coordinator   Lieutenant John Scotch
Tour 3 BLS Program Coordinator Lieutenant Arthur Lester
Tour 3 BLS Program Coordinator Lieutenant David Russell
EVOC Program Coordinator        Lieutenant Robert Raheb

Important Contact Numbers for the Bureau of Training

EMS Academy Main Number  718-281-8325    Haz Tac Training     718-281-8310
EMS Academy Fax          718-352-3954    EMS Training Administration  718-281-8460
CFR Training              718-281-8405    Training Schedule Coordinator  718-281-8466
EVOC Training             718-281-8317    Registrar                    718-281-8467

Academic Schedule

Paramedic Basic Program: The Academy currently has 145 EMT and 15 officers in paramedic basic training. Class 6 is scheduled to graduate right after Memorial Day. Class 7 and 8 are in session until after Thanksgiving. Screening for Class 9 scheduled to begin in the fall will begin in late spring.

Trainee Orientation Program: TOP07-02 has 72 students enrolled and will graduate the first week of June.

CME Cycle: The 5 year CME program cycle 1 begins February 1. Each member will receive one day per cycle and each year has two cycles. Cycle 1 runs from February 1 to June 30 and Cycle 2 runs from September 1 to January 31 of the next year.

CFR Programs: The staff of the CFR Unit continues to train and refresh FDNY firefighters in the CFR-D program. Original, refresher and probationary firefighter training is on going.

EVOC: Continues to run classes to clear up the backlog of driving restricted employees. Tour 3 EVOC classes on the new lighted field will begin in April.

News:
- Paramedics interested in precepting medic students during ER rotations should contact Lt. Andres Rodriguez at the EMS Academy at 718-281-8330.
June 2007 Journal CME

Paramedics are increasingly required to manage patients who have a history of heart valve replacement surgery. Understandably, this may cause significant trepidation as the fact the paramedic may be unfamiliar with the physiology and potential complications of prosthetic valves.

We identified an excellent review of prosthetic heart valves by Dr. Eric Kardon on www.emedicine.com and reproduce it here (with some edits) for this month’s CME article. While the epidemiology and pathophysiology presented are important, your prehospital assessment and treatment require that you can appropriately obtain the pertinent history, understand the physical exam and ECG findings, and thereby be able to provide potentially life-saving treatments.

Preface by: Bradley Kaufman, MD
FDNY EMSC Medical Director
Division Four, EMD & PASU

---------------------------------------------------------------

**Prosthetic Heart Valves**

**Background:** Implantation of prosthetic cardiac valves to treat hemodynamically significant valvular disease has become an increasingly common procedure. It is estimated that more than 60,000 patients per year are undergoing heart valve replacement in the United States. Replacement of diseased valves reduces the morbidity and mortality associated with native valvular disease but comes at the expense of risking complications unique to the implanted prosthetic device. These complications include primary valve failure, prosthetic valve endocarditis (PVE), prosthetic valve thrombosis (PVT), thromboembolism, anticoagulant-related hemorrhage, and mechanical hemolytic anemia.

Emergency medical providers must be able to rapidly identify patients at risk and begin appropriate diagnostic testing, stabilization, and treatment. Even when promptly recognized and treated, acute prosthetic valve failure is associated with a high mortality rate.

More than 80 models of artificial valves have been introduced since 1950. In clinical emergency practice, however, it is necessary to be familiar with only a few. Prosthetic valves are either created from synthetic material (mechanical prosthesis) or fashioned from biological tissue (bioprosthesis).

Three main designs of mechanical valves exist: the caged ball valve, the tilting disc (single leaflet) valve, and the bileaflet valve. Bioprosthetic (xenograft) valves are made from porcine valves or bovine pericardium. Homografts or preserved human aortic valves are used in a minority of patients.

**Pathophysiology: Valve failure** Primary valve failure may occur abruptly from the tearing or breakage of components or from a thrombus suddenly impinging on leaflet mobility. More commonly, valve failure presents more gradually from calcifications or thrombus formation. Bioprostheses are less thrombogenic than mechanical valves, but this advantage is balanced by their diminished durability when compared with mechanical...
Valves. Although 30-35% of bioprostheses will fail within 10-15 years, it can be anticipated that most mechanical valves will remain functional for 20-30 years.

Stenosis or incompetence of prosthetic valves occurs and may be due to a tear or perforation of the valve cusp, valvular thrombosis, pannus formation, valve calcification, or stiffening of the leaflets.

Primary failure of mechanical valves may be caused by suture line dehiscence, thrombus formation, or breakage or separation of the valve components. Acute valvular regurgitation or embolization of the valve fragments may result.

When the mitral valve acutely fails, rapid left atrial volume overload causes increased left atrial pressure. Pulmonary venous congestion and, ultimately, pulmonary edema occur. Cardiac output is decreased because a portion of the output is being regurgitated into the left atrium. The compensatory mechanism of increased sympathetic tone increases the heart rate and the systemic vascular resistance (SVR). This may worsen the situation by decreasing diastolic filling time and impeding left ventricular outflow, thereby increasing the regurgitation.

Acute failure of a prosthetic aortic valve causes a rapidly progressive left ventricular volume overload. Increased left ventricular diastolic pressure results in pulmonary congestion and edema. The cardiac output is reduced substantially. The compensatory mechanism of an increased heart rate and a positive inotropic state, mediated by increased sympathetic tone, partly helps to maintain output. However, this is hampered by an increase in SVR, which impedes forward flow. Increased systolic wall tension causes a rise in myocardial oxygen consumption. Myocardial ischemia in acute aortic regurgitation is common, even in the absence of coronary artery disease.

Biological prosthetic valves often slowly degenerate over time, become calcified, or suffer from thrombus formation. These events result in the slowly progressive failure of the valve. The presentation is usually that of gradually worsening congestive heart failure, with increasing dyspnea. Alternatively, patients may present with unstable angina or systemic embolization, or they may be entirely asymptomatic.

Pathophysiology: Prosthetic valve endocarditis. PVE occurring within 60 days of implantation (early PVE) usually is due to perioperative contamination or hematogenous spread. PVE occurring after 60 days (late PVE) usually is caused by hematogenous spread.

The pathologic hallmark of PVE in mechanical valves is ring abscesses. Ring abscess may lead to valve dehiscence and perivalvular leakage. Local extension results in the formation of myocardial abscesses. Further extension to the conduction system often results in a new atrioventricular block. Valve stenosis and purulent pericarditis occur less frequently.

Bioprosthetic valve PVE usually causes leaflet tears or perforations. Valve stenosis is more common with bioprosthetic valves than with mechanical valves. Ring abscess, purulent pericarditis, and myocardial abscesses are much less frequent in bioprosthetic valve PVE.
Finally, glomerulonephritis, mycotic aneurysms, systemic embolization, and metastatic abscesses also may complicate PVE.

**Frequency in the US:** Prosthetic valve thrombosis is more common in mechanical valves. With proper anticoagulation, the rate of thrombosis in all valves is within the range of 0.1-5.7% per patient-year. Caged ball valves have the highest rate of thromboembolic complications, and bileaflet valves have the lowest. Valve thrombosis is increased with valves in the mitral position and in patients with subtherapeutic anticoagulation.

- Anticoagulant-related hemorrhagic complications of mechanical valves include major hemorrhage in 1-3% of patients per year and minor hemorrhage in 4-8% of patients per year.
- Low-grade hemolytic anemia occurs in 70% of prosthetic heart valve recipients, and severe hemolytic anemia occurs in 3%. The incidence increases with caged ball valves and in those with perivalvular leaks.
- Primary valve failure occurs in 3-4% of patients with bioprostheses within 5 years and in up to 35% of patients within 15 years. Mechanical valves have a much lower incidence of primary failure.
- PVE occurs in 2-4% of patients: 3% in the first postoperative year, then 0.5% for subsequent years. The incidence is higher in mitral valves. Mechanical and biological valves are equally susceptible.

**Mortality/Morbidity:** Acute failure of a prosthetic aortic valve usually leads to sudden or near-sudden death. Prompt recognition and treatment of acute prosthetic mitral valve failure can be lifesaving.

- PVE has an overall mortality rate of 50%. In early PVE, the mortality rate is 74%. In late PVE, the mortality rate is 43%. The mortality rate with a fungal etiology is 93%. The mortality rate for staphylococcal infections is 86%.
- Fatal anticoagulant-induced hemorrhage occurs in 0.5% of patients per year.

**Age:** In children, bioprostheses rapidly calcify and, therefore, undergo rapid degeneration and valve dysfunction. Incidence of bioprosthesis failure is much higher in patients younger than 40 years. The incidence of having any prosthetic valve complication decreases with age.

**History:** In patients with malfunctioning prosthetic valves, symptoms are dependent on the type of valve, its location, and the nature of the complication. With valvular breakage or dehiscence, failure occurs acutely with rapid hemodynamic deterioration. Failure occurs more gradually with valve thrombosis, calcification, or degeneration.

- Information about the type of valve is important; the potential for complications depends on valve type and position. Sources include a wallet-sized identification card (typically given to the patient at the time of surgery) and/or a review of medical records.
- Review of the operative report may be useful. If the native valve annulus is described as being heavily calcified or infected, the chance of a perivalvular leak is greater.
- Patients with acute prosthetic valve failure often present in extremis with the sudden onset of dyspnea, syncope, or precordial pain.
Patients with acute aortic valve failure often experience sudden death. Those surviving have acute severe dyspnea, sometimes accompanied by precordial pain, or syncope.

Patients with subacute valvular failure present with symptoms of gradually worsening congestive heart failure. This includes increasing dyspnea with exertion, orthopnea, paroxysmal nocturnal dyspnea, and fatigue. They also may present with unstable angina or, at times, be entirely asymptomatic.

Patients with embolic complications have symptoms related to the site of embolization. Stroke syndromes are the most common presentation, although patients may present with myocardial infarction (MI), sudden death, or symptoms of visceral or peripheral embolization.

Symptoms due to anticoagulant-related hemorrhage are related to the site of hemorrhage.

A history of fever should alert the provider’s suspicion to the possibility of PVE.

**Physical:**

Normal prosthetic heart valve sounds

- Mechanical valves: Tilting disc and bileaflet valves have a loud, high-frequency, metallic closing sound. This frequently can be heard without a stethoscope. Absence of this distinct closing sound is abnormal and implies valve dysfunction. These valves also may have a soft opening sound. Caged ball valves (Starr-Edwards) have low-frequency opening and closing sounds of nearly equal intensity.
- Tissue valves: Closing sounds are similar to those of native valves. A low-frequency early opening sound may present in the mitral position.
- Muffled or absent normal prosthetic heart sounds may be a clue to valve failure or thrombosis.

Prosthetic heart valve murmurs

- Aortic prosthetic valves: Because of their smaller orifice size, all aortic valves produce some degree of outflow obstruction with a resultant systolic ejection murmur. Caged ball and small porcine valves produce the loudest murmurs. The intensity of the murmur increases with rising cardiac output. Tilting disc valves and bileaflet valves do not occlude their outflow tract completely when closed, allowing some back flow. This causes a low-intensity diastolic murmur. Suspect prosthetic aortic valve failure in a patient with a greater than 2/6 diastolic murmur. Caged ball and tissue valves cause no diastolic murmur since they completely occlude their outflow tract in the closed position. Consider any degree of diastolic murmur in these patients pathologic until proven otherwise.
- Mitral prosthetic valves: Caged ball valves may cause a low-grade systolic murmur due to the turbulent flow caused by the cage projecting into the left ventricle. Consider any holosystolic murmur greater than 2/6 pathologic in a patient with an artificial mitral valve. Short diastolic murmurs may be heard with bioprostheses and, occasionally, with the St. Jude bileaflet valve. These are best heard at the apex with the patient in the left lateral decubitus position.
• Patients with acute valvular failure present with cardiogenic shock and severe hypotension.
  o Evidence of poor tissue perfusion is present, including diminished peripheral pulses, cool or mottled extremities, confusion or unresponsiveness, and decreased urine output.
  o A hyperdynamic precordium and right ventricular impulse is present in 50% of patients with acute valvular failure.
  o Absence of a normal valve closure sound or presence of an abnormal regurgitant murmur is an important clue to the presence of prosthetic valvular failure.
• Patients with subacute valvular failure often present with signs of gradually worsening left-sided congestive heart failure.
  o Rales and jugular venous distention may be present.
  o Patients with subacute valvular failure may present with a new regurgitant murmur or absence of normal closing sounds.
  o A new or worsening hemolytic anemia may be the only presenting abnormality in patients with subacute valvular failure.
• The clinical manifestations of PVE are often obscure.
  o Fever occurs in 97% of patients with PVE.
  o A new or changing murmur is present in 56% of patients. Absence of a murmur does not exclude the diagnosis. Valvular dehiscence, stenosis, or perforation causes the murmur. They may not occur early in the course of the illness.
  o Signs considered classic for native valve endocarditis, including petechiae, Roth spots, Osler nodes, and Janeway lesions, often are absent in PVE.
  o Splenomegaly supports the diagnosis but is present in only 26% of early PVE cases and in 44% of late PVE cases.
  o PVE may present as congestive heart failure, septic shock, or primary valvular failure.
  o Systemic emboli may be the presenting symptom in 7-33% of cases of PVE. This is more common with fungal etiologies.
• Thromboembolic complications: Patients with complications related to embolization present with signs related to the site of embolization. Stroke syndromes are the most common; however, patients may present with MI, sudden death, or visceral or peripheral embolization. Systemic embolization should alert the physician to suspect valve thrombosis or PVE.
• Anticoagulant-related hemorrhage: Signs due to anticoagulant-related hemorrhage depend on the site of hemorrhage.

  **Electrocardiography:**
  • An atrioventricular (AV) block may indicate the presence of a myocardial abscess. A fever and new AV block is considered PVE until proven otherwise.
• Atrial fibrillation is common in mitral valve replacement and may cause hemodynamic compromise.

Emergency Care: In patients with acute valvular failure, diagnostic studies must be performed simultaneously with resuscitative efforts.

• Primary valve failure: Patients with valvular failure due to breakage or abrupt tearing of the components usually present with acute hemodynamic deterioration. They need emergent valve replacement. Adjunctive therapy may be initiated while these arrangements are being made. A less dramatic presentation of valvular failure may be seen in patients with valve thrombosis or in those with more gradual deterioration of bioprosthetic valves.
  o Begin afterload reduction and inotropic support in order to reduce the impedance to forward flow and improve peripheral perfusion. If the mean arterial pressure is higher than 70 mm Hg, sodium nitroprusside may be used. If the mean arterial pressure is lower than 70 mm Hg, dobutamine alone or in combination with inamrinone may be used.
  o Avoid inotropic agents with vasoconstricting properties.
  o Intra-aortic balloon counterpulsation may be useful in cases of acute mitral regurgitation where the patient is in extremis and surgical facilities are not immediately available. Intra-aortic balloon counterpulsation is relatively contraindicated in the presence of an incompetent aortic valve.

• Prosthetic valve endocarditis
  o Administer intravenous antibiotics as soon as 2 sets of blood cultures are drawn. Vancomycin and gentamicin may be used empirically pending blood cultures and determination of methicillin resistance.
  o Consider anticoagulation in PVE, since the incidence of systemic embolization is as high as 40%.
  o Consider emergency surgery in patients with moderate-to-severe heart failure or in patients with an unstable prosthesis noted on echocardiography or fluoroscopy.

• Thromboembolic complications
  o Patients presenting with embolization need to be anticoagulated if they are not already taking anticoagulants or have a nontherapeutic INR.
  o Assessment of valve function is needed.

• Prosthetic valve thrombosis
  o Surgery had historically been the mainstay of treatment but is associated with a high mortality.
  o Thrombolytic therapy may be used to treat select patients with thrombosed prosthetic valves.
  o Patients with right-sided prosthetic valve thrombosis (PVT) and those with left-sided PVT and New York Heart Association (NYHA) class III and IV, pulmonary edema, or hypotension may benefit from thrombolysis due to the higher operative mortality.
  o Thrombolytic therapy should be done in conjunction with cardiovascular surgical consultation.
  o The chance of a successful thrombolysis is inversely related to the size of the thrombus and the amount of time that has elapsed since the onset of symptoms.
Outcomes are superior in patients who are relatively stable, although thrombolysis is often performed in patients who are poor surgical candidates.

- Anticoagulant-related hemorrhage
  - Patients with major anticoagulant-related hemorrhage require reversal of their anticoagulation with fresh frozen plasma and vitamin K.
  - The time off anticoagulants should be as short as possible to avoid valve thrombosis.

Written by:  Eric Kardon, MD, FACEP  
Consulting Staff, Department of Emergency Medicine  
Athens Regional Medical Center  
Available at: http://www.emedicine.com/emerg/topic797.htm

Bibliography:
1. A myocardial abscess must be considered for a patient with an artificial heart valve who presents with a fever and new AV block on ECG?
   A. True       B. False

2. Peripheral embolization should make you consider prosthetic valve endocarditis?
   A. True       B. False

3. Vasoconstricting inotropic agents are contraindicated in the presence of acute valvular regurgitation?
   A. True       B. False

4. Any systolic murmur in a patient with an aortic prosthetic valve is abnormal?
   A. True       B. False

5. Patients with subacute valvular failure commonly present with all of the following except:
   A. Rales
   B. Jugular Venous Distention
   C. Hypoglycemia
   D. New regurgitant murmur or absence of normal closing sounds.

6. Atrial Fibrillation is uncommon in patients who have mitral valve replacements?
   A. True       B. False

7. Dopamine is a vasopressor and should therefore be avoided in patients with acute valvular failure?
   A. True       B. False

8. Nitroglycerin should be avoided in patients with acute valvular failure who have pulmonary edema and elevated blood pressure?
   A. True       B. False

9. A patient maintained on anticoagulant medication for a mechanical valve is bleeding from an extremity laceration. Appropriate prehospital treatment includes all of the following except:
   A. direct pressure to bleeding site
   B. prophylactic nitroglycerin to prevent pulmonary edema from valve failure
   C. bolus of intravenous normal saline solution if hypotensive
   D. elevation of extremity

10. When the mitral valve fails acutely, we might expect all of the following except:
    A. ring abscess from prosthetic valve endocarditis
    B. increased left atrial pressure
    C. pulmonary edema
    D. increased heart rate and systemic vascular resistance

**SEND ANSWER SHEET (page 14) BY JUNE 30**
After reading the article, place your answers to the following quiz on this answer sheet

Paramedics receiving 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:

- FDNY INTER-OFFICE MAIL (pony express) to **Office of Medical Affairs**
- FAX to **718-999-0119**
- U.S. MAIL to **FDNY OMA, 9 MetroTech Center 4th flr, Brooklyn, NY 11201**

Direct inquiries to Paramedic Allison Fry at **718-999-2790**

*You are strongly advised to keep a copy for your records*

---

**FDNY members only:**

Enter your Payroll Reference # (see your paystub or supervisor)

*To receive CME credit, this number must be accurate & legible.

---

**All respondents:** * Required information to receive your CME

*Name

---------------------------------------------------------------

NY State / REMAC #

---------------------------------------------------------------

*Work Location

---------------------------------------------------------------

*Email address

---------------------------------------------------------------

Please submit answer sheet by June 30, 2007

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**June 2007**

**Heart Valves**

**Quiz Answers**

1. 

2. 

3. 

4. 

5. 

6. 

7. 

8. 

9. 

10.
## Citywide CME – June 2007

<table>
<thead>
<tr>
<th>Boro</th>
<th>Facility</th>
<th>Date</th>
<th>Time</th>
<th>Topic</th>
<th>Location</th>
<th>Host</th>
<th>Contact</th>
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<td>BK</td>
<td>Brookdale</td>
<td>6/11/07</td>
<td>1300-1400</td>
<td>Call Review [ next: July 2 ]</td>
<td>EMS Crew Room</td>
<td>Dr Cherson</td>
<td>Mordechai Lax 718-240-5570</td>
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<td>6/13/07</td>
<td>1700-1900</td>
<td>Call Review [ next: July 11 ]</td>
<td>Station 2-20</td>
<td>Dr Stolyar</td>
<td>Dale Garcia 718-630-7230</td>
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<td>BK</td>
<td>Lutheran</td>
<td>6/27/07</td>
<td>0900-1100</td>
<td>Call Review [ next: July 25 ]</td>
<td>ED Nurses Lounge</td>
<td>Dr Stolyar</td>
<td>Dale Garcia 718-630-7230</td>
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<td>FDNY-Station 18</td>
<td>---</td>
<td>---</td>
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<td>1647 Washington Ave</td>
<td>Dr Gonzalez</td>
<td>ALS Coordinator 718-829-6069</td>
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<td>Montefiore</td>
<td>6/5/07</td>
<td>1930-2230</td>
<td>Call Review [ next: July 3 ]</td>
<td>Cherkasky Auditorium</td>
<td>Dr Wollowitz</td>
<td>Don Cardone 718-763-8888x506</td>
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<td>Our Lady of Mercy</td>
<td>6/21/07</td>
<td>1500-1600</td>
<td>Call Review: Airway/Resp Emerg</td>
<td>E 233 St, Conf Room A</td>
<td>Dr Leviton</td>
<td>Ken Reardon 718-920-9945</td>
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<td>Our Lady of Mercy</td>
<td>6/21/07</td>
<td>1600-1700</td>
<td>Call Review: Respiratory Distress</td>
<td>E 233 St, Conf Room A</td>
<td>Dr Leviton</td>
<td>Ken Reardon 718-920-9945</td>
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<td>1700-1830</td>
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<td>E 233 St, Conf Room A</td>
<td>Dr Leviton</td>
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<td>6/22/07</td>
<td>0900-1200</td>
<td>Call Review: Resusc. &amp; ACS</td>
<td>South St at Clinton St</td>
<td>Dr Freese</td>
<td>ALS Coordinator 212-964-4518</td>
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<td>6/28/07</td>
<td>1500-1800</td>
<td>Call Review: Resusc. &amp; ACS</td>
<td>Bellevue Hosp</td>
<td>Dr Freese</td>
<td>ALS Coordinator 212-964-4518</td>
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<tr>
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<td>6/18/07</td>
<td>2100-2400</td>
<td>Call Review: Resusc. &amp; ACS</td>
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<td>1600-1900</td>
<td>Call Review: Resusc. &amp; ACS</td>
<td>15 W 136 St</td>
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<td>ED Conference 1st flr</td>
<td>Dr Hew</td>
<td>Donell Harvin 212-523-6532</td>
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<td>Dr Hew</td>
<td>Donell Harvin 212-523-6532</td>
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<td>0800-1100</td>
<td>Call Review</td>
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<td>Dr Hew</td>
<td>Donell Harvin 212-523-6532</td>
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<td>QN</td>
<td>FDNY-BOT</td>
<td>6/20/07</td>
<td>1030-1400</td>
<td>Call Review [ next: July 18 ]</td>
<td>Fort Totten Building 325</td>
<td>Dr Freese</td>
<td>REMAC Liaison 718-999-2671</td>
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<td>QN</td>
<td>Flushing Hosp</td>
<td>6/7/07</td>
<td>1800-2100</td>
<td>Lecture: Stroke [ register --&gt;]</td>
<td>Board Room</td>
<td>Dr Crupi</td>
<td>Mordechai Lax 718-240-5570</td>
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<td>1400-1500</td>
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<td>Dr Crupi</td>
<td>Mordechai Lax 718-240-5570</td>
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<td>ED Admin Conference Rm</td>
<td>Dr Silberman</td>
<td>Mordechai Lax 718-240-5570</td>
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<td>NY Hosp Queens</td>
<td>Mondays</td>
<td>1600-1800</td>
<td>Trauma Rounds</td>
<td>East building, courtyard level</td>
<td>Dept of Surgery</td>
<td>George Benedetto 718-670-2929</td>
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<td>Parkway Hosp</td>
<td>6/20/07</td>
<td>1830-2130</td>
<td>Call Review [ next: July 18 ]</td>
<td>Board Room, 1st flr</td>
<td><a href="mailto:pabruzino@capitolhealthmgmt.com">pabruzino@capitolhealthmgmt.com</a></td>
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<td>QN</td>
<td>Queens Hosp</td>
<td>6/14/07</td>
<td>1615-1815</td>
<td>Call Review [ next: July 5 &amp; 19 ]</td>
<td>Emergency Dept</td>
<td>718-883-3070</td>
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<td>SJU-EMSI</td>
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<td>1700-2000</td>
<td>Call Review</td>
<td>175-05 Horace Harding</td>
<td>Dr Politi</td>
<td>Robert Hou 718-990-8441</td>
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<td>SI</td>
<td>RUMC</td>
<td>6/20/07</td>
<td>1600-1800</td>
<td>Call Review [ next: July 25 @1100 ]</td>
<td>355 Bard Ave, MLB Conf Rm</td>
<td>Dr. Adrian</td>
<td>Bill McDonald 718-818-1364</td>
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</table>
# 2007 NYC REMAC Examination Schedule

<table>
<thead>
<tr>
<th>Month</th>
<th><strong>REMAC Refresher Exam</strong> (written only - CME letter required)</th>
<th><strong>REMAC Challenge Exam</strong> (written &amp; 3 oral scenarios)</th>
<th><strong>NYS/DOH Written Exam</strong></th>
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<tr>
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<td>Exam Date (on Wednesdays)</td>
<td>Registration Deadline</td>
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<td>1/17/07</td>
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<td>1/31/07</td>
<td>2/21/07</td>
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<tr>
<td>March</td>
<td>2/28/07</td>
<td>3/21/07</td>
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<td>3/31/07</td>
<td>4/18/07</td>
<td>Thursday 4/12/07</td>
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<tr>
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<td>10/31/07</td>
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<tr>
<td>December</td>
<td>11/30/07</td>
<td>12/19/07</td>
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The REMAC Refresher examination (written only) is offered monthly for paramedics who meet CME requirements, and whose REMAC certifications are either current or have expired less than 30 days. They may attend an exam no more than 6 months prior to expiration. Call 718-999-7074 before the registration deadline. Refresher exams are held at 07:00 or 18:00 hours at FDNY-EMS Bureau of Training, Fort Totten, Queens.

The REMAC Challenge examination (written and orals) is offered quarterly, for initial certification, or for paramedics with either inadequate CME or whose certifications have expired more than 30 days. Call 718-999-2671 before the registration deadline. You are encouraged to register at least 30 days prior to the exam as seating is limited. Part A (written) is held at 18:00 and Part B (orals) at 09:00 at FDNY-EMS Bureau of Training, Fort Totten, Queens.

Send correspondence to: FDNY Office of Medical Affairs, Attn: REMAC Liaison, 9 MetroTech Center - 4th Floor, Brooklyn, New York 11201-3857