CARDIAC SCENARIOS

SCENARIO ONE

You are called to a private residence to evaluate a 58 yo female who is complaining of substernal chest pain and SOB.

SCENE SAFETY: Secure
GENERAL IMPRESSION: The patient appears to be anxious and possibly in pain.
LOC: She is awake, alert, and extremely anxious.
CHIEF COMPLAINT: "My chest hurts and I can't breathe very well."
AIRWAY: Open
BREATHING: Slightly labored and fast respirations
CIRCULATION: Radial pulses are present but are weak and rapid. Capillary refill is <2 seconds. Skin is pale, cool and clammy.
HEAD, FACE, NECK: Neck veins visible but not distended. Pupils at 5 and reactive.
CHEST: Equal rise and fall of the chest with breathing. No accessory muscle use. Heart tones normal – S1 and S2 noted. Breath sounds clear and equal bilaterally.
ABDOMEN: No pulsating masses or other.
PELVIS: Normal.
LEGS: No pedal edema.
UPPER EXTREMITIES: Equal pulses. No edema.
BACK: Breath sounds clear and equal bilaterally.
GCS: 15

VITAL SIGNS: BP: 100/60, P: too fast to count and weak, R 36 and shallow but labored. O2 sat 90%. ECG **SVT.**
SAMPLE: Patient denies allergies or any significant past medical history. She ate lunch about 2 hours ago.
(Critical intervention with O2, IV, vagal maneuvers and then Adenocard.)
LOC/GCS: Still alert and oriented.
AIRWAY: Still open
BREATHING: Respiratory distress seems to be worsening**.** O2 sat now 78%.
CIRCULATION: Radial pulses have disappeared; no brachial or femoral, carotid is weak and faster than before. Skin is pale and moist.
VITAL SIGNS: BP: 80/40, P is still too fast to count with ECG at 200 bpm SVT. R 38.
(Critical intervention now to switch to synchronized cardioversion.)

REASSESSMENT: Patient's condition will improve if critical interventions added at appropriate times. Otherwise, pt can deteriorate to V-fib and doesn't convert with defibs.

GOALS: Immediate application of O2 early in ABC's.
Prompt recognition of SVT.
Establishes large bore IV.
Attempts vagal maneuvers.
Administers Adenocard in proper dose with proper procedure.
Promptly identifies need to premedicate pt with Valium or Versed and administers synchronized cardioversion at 100j.
Reassesses patient between each intervention.

SCENARIO TWO

You respond to a local flea market at the request of a Paramedic first responder. The patient is a 63 yo female who began having chest pain while cooking at a food stand.

SCENE SAFETY: Secure
GENERAL IMPRESSION: The patient appears to be conscious, anxious and sweaty.
LOC: She is awake, alert, and extremely anxious.
CHIEF COMPLAINT: She complains of substernal chest pain radiating to her left arm, some shortness of breath and nausea.
AIRWAY: Open
BREATHING: Regular respirations, slightly fast
CIRCULATION: Strong radial pulses present. Cap refill < 2. Skin is pale, warm, and diaphoretic.
HEAD, FACE, NECK: Unable to see neck veins, as patient is very obese – weighs in at about 210 lbs.
CHEST: Chest rises equally with respirations. No accessory muscle use. Breath sounds are clear and equal bilaterally.
ABDOMEN: Soft and non-tender. No pulsating masses.
PELVIS: Normal
LEGS: Pulses present. No pedal edema.
UPPER EXTREMITIES: Pulses present. No edema.
BACK: Breath sounds clear and equal.
GCS: 15

VITAL SIGNS: BP: 150/100, P: 110 and weak, R 28. O2 sat 95%. **ECG Sinus tach with depressed ST segment.**
SAMPLE: Pt says the pain began about 20 min ago while cooking. The other symptoms started at the same time. No allergies. She takes Nitro PRN but had not had any today until the Paramedic first responder gave her 1 spray. She also takes Glucotrol. She has history of a heart attack about 3 years ago with angioplasty done at that time. She is also a diet controlled diabetic. She ate breakfast about 3 hours ago.
(Critical interventions of continuing O2, Nitro x 2 more with reassessments between, ASA)

LOC/GCS: Still alert and oriented.
AIRWAY: Still open
BREATHING: Still the same.
CIRCULATION: No change.
COMPLAINT: Pt says she is hurting more.
VITAL SIGNS: 2nd BP 140/60, P same, R same; 3rd BP 140/78, P 120 and irregular with Sinus tach and occasional unifocal PVC's, R same
HEAD, FACE, NECK: No change
CHEST: No change
(Critical intervention of MS.)
REASSESSMENT: During reassessment, pt suddenly goes unresponsive with rhythm change to **Torsades de Pointes.**

LOC/GCS: Unresponsive – 3
AIRWAY: Open
BREATHING: Pt is not breathing
CIRCULATION: No pulse
(Critical intervention should be to immediately defibrillate pt at 200 j. Pt will convert back to sinus tach and become conscious if this is done. If not done, pt remains in code to V-fib, then to asystole.

LOC/GCS: 14 – pt is slightly confused
AIRWAY: Open
BREATHING: Breathing at 20 bpm
CIRCULATION: Radial pulse present but weaker than before
COMPLAINT: Pt states her chest still hurts and is worse than before but is slightly different now
(Pt returns to Torsades, becoming unresponsive again, but this time has a pulse.)
(Critical intervention is synchronized cardioversion. However, pt should become pulseless afterwards but be in same rhythm. Turn synch off and defibrillate. No change. Should continue through pulseless V-fib/V-tach protocol but adds in Magnesium early. If this occurs, pt will convert back to sinus tach and consciousness.)

GOALS: Recognizes AMI and treats early on with continuation of O2, Nitro and ASA.
Establishes IV line(s)
Administers Morphine Sulfate at appropriate time. If chooses Nubain, is acceptable but explain why AHA prefers MS.
Immediately evaluates and recognizes cardiac arrest and need for defibrillation. Reassess after rhythm change.
Identifies need for synchronized cardioversion versus defib when pulse present and pt is unstable.

Turns off synch button and continues with defib when pulse is lost.

Has partner attempt intubation while giving meds, starting with epinephrine. Magnesium sulfate next or after amiodorone or lidocaine is acceptable.

SCENARIO THREE

You are called to a local assisted living center for an unresponsive 70 yo male pt. A staff member meets you at the door stating that Mr. Lindstrom is a known cardiac patient who was watching TV in the dayroom when he suddenly slumped forward. As you enter the dayroom, you see two other staff members doing CPR. When asked, they say that the patient just lost his pulse about 2 minutes ago.

SCENE SAFETY: Other residents are standing around the room, some crying, all obviously upset.
GENERAL IMPRESSION: CPR in progress. No obvious trauma noted.
LOC: Unresponsive
CHIEF COMPLAINT: No pulse
AIRWAY: Open
BREATHING: Not breathing but the chest rises and falls with ventilations with BVM.
CIRCULATION: No pulses. Skin is ashen.
HEAD, FACE, NECK: Pupils at 8 and non-reactive. Some cyanosis around lips. Trachea midline.
CHEST: Chest rises and falls equally with ventilation with BVM. Breath sounds heard with ventilations – clear.
ABDOMEN: Nothing noted.
PELVIS: Normal
LEGS: Nothing noted. No rigor.
UPPER EXTREMITIES: Nothing noted. No rigor.
BACK: Clear. No dependent lividity.
GCS: 3

VITAL SIGNS: Pulseless and apneic. **ECG shows Sinus rhythm.**
SAMPLE: Staff says the pt has no allergies and wasn't complaining about anything new tonight. He hasn't been eating much lately though. They say that he has had heart attacks but they are not aware of any other medical problems. They can't find the med chart so they don't know what meds he is taking. He was sitting watching TV when he slumped forward.
(CPR continued. Intubation and IV. Should recognize need to try fluid challenge to treat possible underlying hypovolemia since hx so vague.)

REASSESSMENT: Pt goes to **asystole**. No other change in condition. Pt remains in this rhythm until stop scenario.

GOALS: Recognition of need to secure area and have other staff member remove other residents from area.
Immediate evaluation of ABC's and quick look with paddles. Continues CPR.
Intubate.
IV line(s) with initial fluid challenge
Epineprine should be give every 3 to 5 min. Atropine to max 3 mg. Consider termination.

SCENARIO FOUR

This call is at Tyler Junior College. You are led to a classroom to evaluate a 63 yo male EMS instructor. He is sitting in a chair when you arrive, complaining of generalized weakness.

SCENE SAFETY: Secure
GENERAL IMPRESSION: The pt is sitting upright, looking tired.
LOC: Alert and oriented to P,P,T, and E.
CHIEF COMPLAINT: "I feel so weak, and my chest feels a little heavy."
AIRWAY: Open
BREATHING: Normal rate – a little shallow
CIRCULATION: Radial pulses are present. but are weak and slow. Capillary refill is <2 seconds. Skin is pale, cool and a little moist.
HEAD, FACE, NECK: Neck veins visible but not distended. Pupils at 3 and reactive.
CHEST: Equal rise and fall of the chest with breathing. No accessory muscle use. Heart tones normal – S1 and S2 noted. Breath sounds clear and equal bilaterally.
ABDOMEN: No pulsating masses or other.
PELVIS: Normal.
LEGS: No pedal edema.
UPPER EXTREMITIES: Equal pulses. No edema.
BACK: Breath sounds clear and equal bilaterally.
GCS: 15

VITAL SIGNS: BP: 104/70, P: approximately 45 and weak, R 24 and shallow. O2 sat 92% . ECG **2nd degree Mobitz II.**
SAMPLE: Pt says he has no allergies, takes Lopid, Apresoline 50 mg qid, and Lasix 20 mg once daily. He has a hx of hypertension and high cholesterol. He ate about an hour ago and was teaching class when he was suddenly overcome with weakness.

(Critical interventions include O2 via NRB, IV therapy.)

(En route to hospital, pt will become lethargic.)
LOC/GCS: Responsive to loud verbal with inappropriate sounds and words/11
AIRWAY: Open
BREATHING: Is breathing at slower rate of about 14, regular but shallow
CIRCULATION: No radial pulse present, weak brachial is present – slow. Skin is cool and clammy.
VITAL SIGNS: BP 80/42, P 30, R 14
(Critical interventions – atropine and pacing. Pacing will capture. If variance from algorhythm, pt will deteriorate to asystole.)

REASSESSMENT: On reassessment, pt will be more responsive after capture. BP coming up, P rate to rate on pacer, R up.

GOALS: Immediate application of O2 early in ABC's.
IV line.
Recognition of bradycardia requiring no intervention at first.
Immediate recognition of deterioration requiring intervention with Atropine and pacing.

SCENARIO FIVE

A 50 yo female's family called for EMS in Van Zandt County because she is suffering from slurred speech and inability to move her right side.

SCENE SAFETY: Secure
GENERAL IMPRESSION: The patient appears to be awake but a little confused and has difficulty speaking.
LOC: She is awake and seems confused.
CHIEF COMPLAINT: "Can't move…."
AIRWAY: Open
BREATHING: Rate seems to be normal with normal depth.
CIRCULATION: Radial pulses are present and strong. Capillary refill < 2 sec. Skin is warm and pale – dry.
HEAD, FACE, NECK: Neck veins visible but not distended. Pupils at 4 and reactive to light. Pt smile droops on left when assessed. Drooling noted.
CHEST: Equal rise and fall of the chest with breathing. No accessory muscle use. Heart tones normal – S1 and S2 noted. Breath sounds clear and equal bilaterally.
ABDOMEN: No pulsating masses or other.
PELVIS: Normal.
LEGS: No pedal edema. No ability to pull or push with left foot.
UPPER EXTREMITIES: Equal pulses. No edema. No grip on left.
BACK: Breath sounds clear and equal bilaterally.

GCS: 14

VITAL SIGNS: BP: 180/72, P: 108 and regular, R 22 regular. O2 sat 93% . ECG **Sinus tach.**

SAMPLE: Patient's symptoms began about 1 hour ago and got progressively worse. She is allergic to PCN. Her meds include Cozaar and Nortryptiline. She ate supper about 2 hours ago. The family states she was visiting with them and was fine and then things suddenly began to change when she started slurring her speech. Pt has no history of bleeds or recent surgeries or strokes.

(Critical interventions include high flow oxygen, IV with blood draw and d-stick. Early consideration of rapid transport to major facility for possible Code Stroke. Consider helo. Early notification of receiving facility. D-stick will be 70 mg/dcL but treating will not result in change in pt's condition.)

REASSESSMENT: Patient's condition will not change during assessment or treatment.

GOALS: Immediate application of O2 early in ABC's.
Early recognition of possible Code Stroke.
Position patient on left side.
IV line and blood draw with D-stick.

SCENARIO SIX

Your next call is for a head on MVA on Hwy 31 E. You arrive on scene to find two vehicles in the middle of the highway, both with major front end damage. There appears to be a single occupant in each vehicle, still seated in the drivers' seats.

SCENE SAFETY: Secure.

GENERAL IMPRESSION: Neither patient is moving as you approach – neither appears to be older than about 25.

LOC: Neither pt is responsive to even painful stimuli.

(Critical intervention – call for another EMS unit and FD and law enforcement assistance. Dispatch tells you that another unit has already been dispatched and will be on scene in about 4 or 5 minutes.)

CHIEF COMPLAINT: Unresponsive patients

AIRWAY: Open in both patients

BREATHING: **Patient 1** = not breathing. **Patient 2** = breathing rapidly and shallow

CIRCULATION: Both patients have weak carotid pulses, no radial. Capillary refill > 2 on both. Skin pale, cool and clammy.

(FD is on scene. Patient 1 requires rapid extrication and immediate ventilation and then intubation to secure airway.)

BACK: Breath sounds clear and equal bilaterally.

HEAD, FACE, NECK: **Patient 1** = No signs of trauma to the head. Pupils constricted and non-reactive at 2. Trachea is midline.

Patient 2 = Scalp lac about 3 inch long on upper hairline of forehead. No depression or instability at site. Pupils unequal with left pupil at 7 and non-reactive and right pupil at 4. Trachea is midline.

CHEST: **Patient 1** = Equal rise and fall of the chest with ventilatory assistance. Heart tones normal – S1 and S2 noted. Breath sounds clear and equal bilaterally

Patient 2 =.Equal rise and fall of the chest. Heart tones normal – S1 and S2 noted. Breath sounds clear and equal bilaterally.

(EMS unit 2 arrives and takes pt 2 so partner can now rejoin patient 1 care.)

ABDOMEN: Bruising noted over the left upper quadrant with some distention.

PELVIS: Stable.

LEGS: No obvious external trauma. No pulses or movement noted.

UPPER EXTREMITIES: No obvious external trauma. No pulses or movement noted. Scarring along veins on both ventral surfaces.

GCS: 3

VITAL SIGNS: Pt has now lost his carotid pulse. ECG is **V-fib.**

(Critical interventions – defibrillate x 3. Reassess. Still same condition. IV lines – large bore – wide open. Epinephrine or Vasopressin. Reassess. Shock. Reassess. Pt will not convert until recognition and treatment of possible narcotic overdose – constricted pupils.)

GOALS: Immediate recognition need for 2nd unit for 2nd critical pt and associated departments.

Both students should be able to function independently until 2nd crew arrives.

Patient 2 should have C-collar placed, high flow O2. Student should recognize that Patient 1 takes precedence for extrication due to limited personnel.

Patient 1 should be moved as soon as assessed with mercy jerk and immediate airway control using spinal precautions.

When 2nd unit arrives and pt 2 is turned over, student should immediately join his partner so transport of pt 1 is not delayed.

When Pt 1 codes, student should prioritize care with defibs and fluid replacement therapy. Then drugs.

Proper assessment should lead the student to consider possible underlying cause of narcotic overdose and treat this possible cause.

SCENARIO SEVEN

You are working today in the local clinic in Big Bend National Park. Your closest ambulance for transport is Terlingua, about 30 miles away. The closest hospital is 120 miles away in Alpine. Helicopter service is out of El Paso or Midland. Your doctor has a good case of food poisoning and can't get away from the bathroom, so she told you to handle things. If you need something, you can call her on the radio – but she trusts you to make good judgments.

The clerk tells you that a 40-year-old male is in the waiting room complaining of weakness and dizziness.

SCENE SAFETY: Secure
GENERAL IMPRESSION: The patient is awake and alert, sitting in the waiting room in a chair. He appears to be a little anxious, but in no apparent distress otherwise.
LOC: Alert and Oriented x 4 and able to answer all questions.
CHIEF COMPLAINT: "I don't feel good today. I have been so dizzy I almost fall down."
AIRWAY: Open
BREATHING: Rate seems to be normal with normal depth.
CIRCULATION: Radial pulses are present, rapid and weak.. Capillary refill < 2 sec. Skin is warm and pale – a little moist.
HEAD, FACE, NECK: Neck veins visible but not distended. Pupils at 3 and reactive to light. Nothing further to be noted.
CHEST: Equal rise and fall of the chest with breathing. No accessory muscle use. Heart tones normal – S1 and S2 noted. Breath sounds clear and equal bilaterally.
ABDOMEN: No pulsating masses or other.
PELVIS: Normal.
LEGS: No pedal edema. Equal pulses present – weak.
UPPER EXTREMITIES: Equal pulses but weak. No edema.
BACK: Breath sounds clear and equal bilaterally.
GCS: 15

VITAL SIGNS: BP: 108/50, P: too fast to count, R 26 regular. O2 sat 95% . ECG **V-tach.**
SAMPLE: Patient's symptoms began when he got up this morning and was preparing breakfast. He says this has never happened this bad before, but it has been happening more and more frequently over the last couple of weeks. He has never been seen by a Dr. for it though. He is allergic to Amitriptyline and Atenolol. He currently takes

propranolol. His only history includes migraine headaches. He ate breakfast about an hour ago.

(Critical interventions include high flow oxygen, IV. Early consideration of rapid transport to major facility. Ambulance is on a call and won't be available for at least another 30 minutes over their normal response time. Consider helo. Amioderone - Amioderone is 150 mg over 10 min - in either order is to be used. Pt will not convert unless Cordorone is used. A maintenance infusion should then be hung at 0.5 mg/min.)

REASSESSMENT: Patient's dizziness will disappear when the rhythm changes. BP 130/82, P is in the 90's with **Sinus tach**, R 20 clear and equal. Pulses are now much stronger. Skin is warm, dry and pink.

GOALS: Immediate application of O2 early in ABC's.
Early recognition of need to call for help. Helo is most likely transport mechanism due to times for ground transport vehicle to arrive.
IV therapy.
Use of appropriate ventricular antidysrhythmics.

SCENARIO EIGHT

Dispatch tones you out to a difficulty breathing call at a private residence.

SCENE SAFETY: Secure
GENERAL IMPRESSION: The adult patient is sitting in a chair, leaning forward, having obvious trouble breathing.
LOC: Alert and Oriented x 4 but having difficulty answering questions between breaths.
CHIEF COMPLAINT: "I can't breathe…"
AIRWAY: Open
BREATHING: Rate seems to be tachypneic and extremely labored.
CIRCULATION: Radial pulses are present, rapid and weak. Capillary refill > 2 sec. Skin is cool, pale and wet.
HEAD, FACE, NECK: Neck veins visible but not distended. Pupils at 5 and reactive to light. The patient has nasal flaring and is using accessory muscles to breathe.
CHEST: Equal rise and fall of the chest with breathing. Accessory muscle use. Heart tones normal – S1 gallop. Breath sounds noted to have diffuse rales (crackles) throughout all lung fields.
ABDOMEN: No pulsating masses or other.
PELVIS: Normal.

LEGS: No pedal edema. Equal pulses present – weak.
UPPER EXTREMITIES: Equal pulses but weak. No edema.
BACK: Breath sounds with significant rales heard.
GCS: 15

VITAL SIGNS: BP: 82/40, P: 138 and irregular, R 40 and labored. O2 sat 87% . ECG **Sinus tach with PVC's.**
SAMPLE: Patient's symptoms began about 2 hours ago and have been getting progressively worse. He was watching TV when it started. He denies chest pain or nausea. Pt is allergic to sulpha drugs. He has a history of MI x 2 with CABG x 4 5 years ago. His meds include Digoxin and Cardizem. He says he hasn't eaten today because he hasn't felt like it.
(Critical interventions include high flow oxygen, IV TKO. Early consideration of rapid transport to major cardiac facility. Fluid challenge not indicated due to wet lungs. Dopamine is preferred to increase BP due to s/s of shock. Used in conjunction with Nitro, Lasix, and Morphine.

REASSESSMENT: Patient's BP will improve with Dopamine to 100/systolic allowing use of other agents. Pt's respiratory status and s/s will improve if all agents used. If not, pt will deteriorate into respiratory arrest.

GOALS: Immediate application of high flow O2 early in ABC's.
Early recognition of need for rapid transport to cardiac facility.
Position patient in High Fowler's as pt allows.
IV line TKO – preferably 2 lines. One line is to be used for piggyback for Dopamine drip.
Students should recognize need to increase BP to approximately 100/systolic as target and then give vasodilators and diuretic.