

SAEMS
CHEST PAIN STANDING ORDER
Self-Learning Module

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TRAINING MODULE FOR CHEST PAIN STANDING ORDER

DATE: November 2008

PURPOSE:

This Training Module has been developed to serve as a template for EMS provider training. The intent is to provide consistent and concise information to all providers practicing in the SAEMS Region and under a Base Hospital. One hour of SAEMS continuing education credit may be issued following successful completion of the module by your Base Hospital Manager/Coordinator.

OBJECTIVES: Upon completion of this learning module the participant will be able to:

1. List three benefits of the Chest Pain Standing Order (SO)
2. Outline inclusion and exclusion criteria for this Standing Order
3. What medications are used for Chest Pain SO by EMS
4. List risks factors for Acute Myocardial Infarction
5. List common methods of entry of substances into the body to cause chest pain

INSTRUCTIONS:

1. Read the accompanying information, standing order and any additional reference material as necessary.
2. Complete the attached post test and return to your Base Hospital Manager/Coordinator.
3. A SAEMS CE Form will be issued to providers scoring greater than ___% on the pretest.
4. Please contact your Prehospital Manager/Coordinator for questions, suggestions or concerns.

CHEST PAIN STANDING ORDER

(Non-traumatic)

Initiate immediate supportive care:

- Oxygen to keep O2 SAT >90%
- Cardiac Monitor

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Use standing orders on patients greater than 35 years of age with these symptoms:

- Dull aching or substernal chest pressure
- Possible radiation of pain/pressure to arm/neck/jaw
- Associated diaphoresis
- Associated shortness of breath
- Past medical history of cardiac disease or angina

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Standing order **should not** be used on patients with these symptoms:

- Pulmonary edema
- Hypotension (S B/P < 90 mm Hg)
- Dysrhythmias - *where ACLS might be considered*

Patient has mixed symptoms or patient wishes to refuse

Contact medical direction
IMMEDIATELY

Patient meets criteria for standing orders; prepare for transport

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- Administer: IV NS TKO
- If S B/P > 110 give one (1) NTG 0.4 mg SL every 5 minutes X 3 or until pain relieved; hold NTG if B/P drops below 90mm Hg
- If pain unrelieved by NTG, administer Morphine Sulfate 2 – 5 mg IV every 5 minutes to a maximum dose of 20 mg
- If S B/P drops below 90mm Hg – place pt in supine position with legs elevated (shock position) & give 250 cc fluid bolus
- Aspirin : 4 pediatric chewable
- Send 12-lead ECG, if available
- For nausea or vomiting administer Ondansetron:
ADULT: IV 4mg over 2-5 min. May repeat once after 15 min if no response.

STEMI Alert:

If the EMS provider or the computerized interpretation identifies ST segment elevation or an acute MI, the facility should be given this information in addition to the usual pre-arrival notification information.
Please specify to MEDS if information is from 3-lead, 12-lead, or clinical impression.

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Myocardial infarction (MI) is the rapid development of myocardial necrosis caused by a critical imbalance between oxygen supply and demand within the myocardium. This usually results from plaque rupture with thrombus formation in a coronary vessel, resulting in an acute reduction of blood supply to a portion of the myocardium.

Although the clinical presentation of a patient is a key component in the overall evaluation of the patient with MI, many events are either "silent" or are clinically unrecognized, evidencing that patients, EMT's, physicians often do not recognize symptoms of a MI.

Cardiac markers help to categorize MI, which is considered part of a spectrum referred to as acute coronary syndrome that includes ST-elevation MI (STEMI), non-ST-elevation MI (NSTEMI), and unstable angina. This categorization is valuable because patients with ischemic discomfort may or may not have STsegment elevations on their electrocardiogram. Those without ST elevations may ultimately be diagnosed with NSTEMI or with unstable angina based on the presence or absence of cardiac markers. Additionally, therapeutic decisions, such as administering an intravenous thrombolytic or performing percutaneous coronary intervention (PCI), are often made based on this categorization.

PATHOPHYSIOLOGY

The most common cause of MI is narrowing of the epicardial blood vessels due to atheromatous plaques. Plaque rupture with subsequent exposure of the basement membrane results in platelet aggregation, thrombus formation, fibrin accumulation, hemorrhage into the plaque, and varying degrees of vasospasm. This can result in partial or complete occlusion of the vessel and subsequent myocardial ischemia. Total occlusion of the vessel for more than 4-6 hours results in irreversible myocardial necrosis, but reperfusion within this period can salvage the myocardium and reduce morbidity and mortality.

Non atherosclerotic causes of MI include coronary vasospasm as seen in variant (Prinzmetal) angina and in patients using cocaine and amphetamines; coronary emboli from sources such as an infected heart valve; occlusion of the coronary arteries due to vasculitis; or other causes leading to mismatch of oxygen supply and demand, such as acute anemia from GI bleeding. Myocardial infarction induced by chest trauma has also been reported, usually following severe chest trauma such as motor vehicle accidents and sports injuries.

FREQUENCY

United States

Myocardial infarction is a leading cause of morbidity and mortality in the United States. Approximately 1.3 million cases of nonfatal MI's are reported each year, for an annual

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incidence rate of approximately 600 cases per 100,000 people. The proportion of patients diagnosed with NSTEMI compared with STEMI has progressively increased.

International

Cardiovascular diseases account for 12 million deaths annually worldwide. Myocardial infarction continues to be a significant problem in industrialized countries and is becoming an increasingly significant problem in developing countries.

MORTALITY/MORBIDITY

Approximately 500,000-700,000 deaths are caused by ischemic heart disease annually in the United States.

One third of patients who experience STEMI die within 24 hours of the onset of ischemia, and many of the survivors experience significant morbidity. For many patients, the first manifestation of coronary artery disease is sudden death likely from malignant ventricular dysrhythmia.

- More than one half of deaths occur in the prehospital setting.
- In-hospital fatalities account for 10% of all deaths. An additional 10% of deaths occur in the first year post infarction.
- A steady decline has occurred in the mortality rate from STEMI over the last several decades. This appears to be due to a combination of a fall in the incidence of MI (replaced in part by an increase in the incidence of unstable angina) and a reduction in the case-fatality rate once an MI has occurred.

Sex

A male predilection exists in persons aged 40-70 years. Evidence exists that women more often have MI's with atypical symptoms. The atypical presentation in women might explain the sometimes delayed diagnosis of MI's in women.

In persons older than 70 years, no sex predilection exists.

Age

MI most frequently occurs in persons older than 45 years.

Certain subpopulations younger than 45 years are at risk, particularly cocaine users, persons with type 1 diabetes mellitus, patients with hypercholesterolemia, and those with a positive family history for early coronary disease. A positive family history includes any first-degree male relative aged 45 years or younger or any first-degree female relative aged 55 years or younger who experienced a myocardial infarction. In younger patients, the diagnosis may be hampered if the physician does not maintain a high index of suspicion.

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PATIENT HISTORY

The history is critical in making the diagnosis of MI and sometimes may provide the only clues that lead to the diagnosis in the initial phases of the patient presentation.

- Chest pain, usually across the anterior precordium is typically described as tightness, pressure, or squeezing.
- Pain may radiate to the jaw, neck, arms, back, and epigastrium. The left arm is more frequently affected; however, a patient may experience pain in both arms.
- Dyspnea, which may accompany chest pain or occur as an isolated complaint, indicates poor ventricular compliance in the setting of acute ischemia. Dyspnea may be the patient's anginal equivalent, and, in an elderly person or a patient with diabetes, it may be the only complaint.
- Nausea, abdominal pain, or both often are present in infarcts involving the inferior or posterior wall.
- Anxiety
- Lightheadedness with or without syncope
- Cough
- Nausea with or without vomiting
- Diaphoresis
- Wheezing
- Elderly patients and those with diabetes may have particularly subtle presentations and may complain of fatigue, syncope, or weakness. The elderly may also present with only altered mental status. Those with preexisting altered mental status or dementia may have no recollection of recent symptoms and may have no complaints whatsoever.
- As many as half of MIs are clinically silent in that they do not cause the classic symptoms described above and consequently go unrecognized by the patient. A high index of suspicion should be maintained for MI especially when evaluating women, patients with diabetes, older patients, patients with dementia, and those with a history of heart failure. Patients with a permanent pacemaker in place may confound recognition of STEMI by 12-lead ECG due to the presence of paced ventricular contractions.

Angina

- Stable angina pectoris is classified as a reproducible pattern of anginal symptoms that occur during states of increased exertion.
- Unstable angina pectoris manifests either as an increasing frequency of symptoms or as symptoms occurring at rest.
- Prinzmetal angina or variant angina occurs as a result of transient coronary artery spasms. These spasms can occur either at rest or with exertion. Unlike stable or unstable angina, no pathological plaque or deposition is present within the coronary arteries that elicits the presentation. On angiography, the coronary arteries are normal in appearance.

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- Cardiac syndrome X occurs when a patient has all of the symptoms of angina pectoris without coronary artery disease or spasm.

PHYSICAL

The physical examination can often be unremarkable.

- Patients with ongoing symptoms usually lie quietly in bed and appear pale and diaphoretic.
- Hypertension may precipitate MI.
- Hypotension may indicate ventricular dysfunction due to ischemia. Hypotension in the setting of MI usually indicates a large infarct secondary to either decreased global cardiac contractility or a right ventricular infarct.
- Rales may represent congestive heart failure.
- Neck vein distention may represent pump failure.
- Dysrhythmias may present as an irregular heartbeat or pulse.
- Low-grade fever is not uncommon.

CAUSES

The most frequent cause of MI is rupture of an atherosclerotic plaque within a coronary artery with subsequent arterial spasm and thrombus formation.

Other causes include the following:

- Coronary artery vasospasm
- Ventricular hypertrophy (e.g., left ventricular hypertrophy [LVH], idiopathic hypertrophic subaortic stenosis [IHSS], underlying valve disease)
- Hypoxia due to carbon monoxide poisoning or acute pulmonary disorders (Infarcts due to pulmonary disease usually occur when demand on the myocardium dramatically increases relative to the available blood supply.)
- Coronary artery emboli, secondary to cholesterol, air, or the products of sepsis
- Cocaine, amphetamines, and ephedrine
- Arteritis
- Coronary anomalies, including aneurysms of the coronary arteries Increased afterload or inotropic effects, which increase the demand on the myocardium.

Risk factors for atherosclerotic plaque formation include the following:

- Age
- Male gender
- Smoking
- Hypercholesterolemia and hypertriglyceridemia
- Diabetes mellitus
- Poorly controlled hypertension
- Type A Personality
- Family history

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- Sedentary lifestyle

PREHOSPITAL CARE

All patients being transported for chest pain should be managed as if the pain were ischemic in origin unless clear evidence to the contrary exists.

Specific prehospital care includes the following:

- Supplemental oxygen
- Monitor (if available)
- IV access (if applicable)
- pulse oximetry
- Immediate administration of four 81mg aspirin
- Nitroglycerin given sublingually (SL) or by spray
- Morphine Sulfate if no relieve from Nitroglycerin
- Ondansetron HCL as needed for nausea/vomiting
- 12 lead EKG (if available) to determine ST Elevation (STEMI)
- If patient has mixed symptoms or patient wishes to refuse contact medical direction

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GLOSSARY

Ischemia: localized tissue oxygen depression due to obstruction of the inflow of arterial blood (as by the narrowing of arteries by spasm or disease)

Necrosis: death of living tissue - death of a portion of tissue differentially affected by local injury

Plaque: an atherosclerotic lesion

Thrombus: a clot of blood formed within a blood vessel and remaining attached to its place of origin

Atheroma: fatty degeneration of the inner coat of the arteries

Atheromatous: an abnormal fatty deposit in an artery

Thrombolytic: destroying or breaking up a thrombus (a thrombolytic agent - thrombolytic therapy)

Recumbency: the state of leaning, resting, or reclining; also: a recumbent position (emphasized that *recumbency* may ... be harmful to the patient who is acutely ill with cardiac disease)

Aggregation: a crowded mass of independent but similar units (platelets)

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-026-PHS-EMS: Drug Profile for Acetylsalicylic Acid, Aspirin, ASA

GENERIC NAME: ACETYLSALICYLIC ACID, ASPIRIN, ASA
112.01

BRAND NAME: Bufferin, Anacin, APC, among others

CLASS: analgesic; antipyretic; anti-inflammatory

Mechanism of Action:

In small doses aspirin blocks thromboxane A₂, a potent platelet aggregant and vasoconstrictor.

This property has led to its use in the acute phase of management of the myocardial infarction.

Decreased platelet aggregation.

Indications and Field Use:

Chest pain or other signs/symptoms suggestive of acute myocardial infarction

ECG changes suggestive of acute myocardial infarction

Unstable angina

Pain, discomfort, fever in adult patient only

Contraindications:

Bleeding ulcer, hemorrhagic states, hemophilia

Known hypersensitivity to salicylates or other non-steroidal anti-inflammatories that has led to hypotension and/or bronchospasm

Children and adolescents (prehospital personnel should not administer ASA to this age group)

Adverse Reactions:

Use with caution in the patient with history of asthma. Anaphylactic reactions in sensitive patients have occurred; skin eruptions

Other side effects rare with single dose

NOTES ON ADMINISTRATION

Incompatibilities/Drug Interactions:

Not applicable with single dose therapy

Adult Dosage:

Cardiac: 160- 325 mg (2-4 pediatric chewable tabs), chew or swallow

Pain/discomfort/fever: 325 mg po (4 pediatric chewable tablets), chew or swallow

05/15/03

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-026-PHS-EMS: Drug Profile for Acetylsalicylic Acid, Aspirin, ASA

Pediatric Dosage:

Not recommended for prehospital use in children

Routes of Administration:

Oral

Onset of Action:

20-30 minutes

Peak Effects:

2 hours

Duration of Action:

4-6 hours

Dosage Forms/Packaging:

81 - 325 mg tablet individually packaged

Arizona Drug Box Supply Range:

PARAMEDIC:	36 - 100 Tablets
INTERMEDIATE:	36 - 100 Tablets
BASIC:	36 - 100 Tablets

Special Notes:

- > Baby ASA is heat and light sensitive. The odor of acetic acid (vinegar-like smell) indicates degradation of product

05/15/03

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-050-PHS-EMS: Drug Profile for Nitroglycerin

GENERIC NAME:

NITROGLYCERIN

112.21

BRAND NAME: Nitrostat, Tridil

CLASS: vasodilator, organic nitrate, antianginal

Mechanism of Action:

Smooth muscle relaxant acting on vascular, uterine, bronchial, and intestinal smooth muscle

Reduces workload on the heart by causing blood pooling (decreased preload)

Arteriolar vasodilation (decreased afterload)

Coronary artery vasodilation

Increases blood flow to myocardium

Decreases myocardial O₂ demand

Indications and Field Use:

Angina

Myocardial infarction

Congestive heart failure with pulmonary edema

Contraindications:

Hypovolemia

Increased Intra cranial pressure

Adverse Reactions:

CV: Hypotension, reflex tachycardia, bradycardia, decreased coronary perfusion at high doses (secondary to hypotension), headache secondary to dilation of meningeal vessels.

NOTES ON ADMINISTRATION

Incompatibilities/Drug Interactions:

Other vasodilators

Viagra

Adult Dosage:

SL for Chest pain: 1/150 gr (0.4 mg) tablet or one full spray, may repeat x 3

SL for Pulmonary edema: 1-2 of the 1/150 gr (0.4 mg) tablets may be given SL every 5-10 minutes as long as the systolic BP is greater 90-100 systolic

01/99

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-050-PHS-EMS: Drug Profile for Nitroglycerin

** **IV infusion during interfacility transport must be given via infusion pump:** Start at low range of 5 µg/min and increase in increments of 5 µg, monitoring pain and blood pressure until desired hemodynamic or clinical response is achieved (fall in SVR, relief of chest pain); most patients respond to 50-200 µg/min

Pediatric Dosage:

Not used

Routes of Administration:

IV or SL
** IV infusion on interfacility transports; special training and infusion pump required

Onset of Action:

Seconds

Peak Effects:

5-10 minutes

Duration of Action:

1-10 minutes after IV discontinued

Dosage Forms/Packaging:

Bottles of 25 1/150 grain/tablets
Spray Bottle with 200 metered doses, each 0.4 mg
IV form not carried on drug box, must use infusion pump for interfacility transfers

Arizona Drug Box Supply:

PARAMEDIC: 1 - 2 bottles of tablets, or 1 - 2 spray bottles

INTERMEDIATE: 1 - 2 bottles of tablets, or 1 - 2 spray bottles

Special Notes:

- > NTG is heat and light sensitive; stock rotation assures fresh supply.
- > SL: Cautiously administer NTG to a patient who has never received it, consider establishing an IV prior to administration.
- > Patients with hypotension should be administered this drug with caution.
- > Closely monitor vital signs, cardiac rhythm.

01/99

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-050-PHS-EMS: Drug Profile for Nitroglycerin

Bradycardias and hypotension usually respond to Trendelenburg position; atropine and vasopressors may be administered if needed.

- > Monitoring IV nitroglycerin on patients during interfacility transport requires an infusion pump and is limited to prehospital providers that have completed a special training curriculum in accordance with their medical control authorities.

** Indicates special training requirement

01/99

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-048-PHS-EMS: Drug Profile for Morphine Sulfate

GENERIC NAME:

MORPHINE SULFATE

112.19

BRAND NAME: Morphine Sulfate

CLASS: narcotic agonist

Mechanism of Action:

Alleviates pain by acting on the pain receptors in the brain; elevates pain threshold.
Depresses central nervous system; depresses brainstem respiratory centers; decreases responsiveness to changes in PaCO₂.
Increases venous capacitance (venous pooling), vasodilates arterioles, reducing preload and afterload.
Histamine release.

Indications and Field Use:

Analgesia, especially in patients with burns, myocardial infarction, or renal colic.
Pulmonary edema (cardiogenic).

Contraindications:

Respiratory depression
Head injuries
Elevated Intra cranial pressure
Asthma, relative
Abdominal pain, relative

Adverse Reactions:

CV: Brady or tachydysrhythmias, orthostatic hypotension
Resp: Respiratory depression or arrest
CNS: Excess sedation, seizures to coma and arrest, pupillary constriction
GI: Nausea and vomiting, GI spasm
Derm: Histamine release may cause local urticaria

NOTES ON ADMINISTRATION

Incompatibilities/Drug Interactions:

CNS side effects (including respiratory depression) can be reversed by naloxone.

Adult Dosage:

IV Dose: Administer 1-3 mg increments slow IV PUSH (over 1-5 minutes) until desired effect.

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TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-048-PHS-EMS: Drug Profile for Morphine Sulfate

Pediatric Dosage:

100-200 µg/kg slow IV push

Routes of Administration:

Usually given IV in the field, can be given IM or SC.

** IV infusion may be transported on interfacility transfers, infusion pump required.

Onset of Action:

Seconds

Peak Effects:

20 minutes

Duration of Action:

2-4 hours

Dosage Forms/Packaging:

10 mg/ml ampules, **only**

Arizona Drug Box Supply Range:

PARAMEDIC: 2 (20 mg)

INTERMEDIATE: 2 (20 mg)

Special Notes:

- > Schedule II narcotic.
- > Watch for histamine effects (wheals, urticaria) proximal to IV site; contact medical control
- > Correct hypotension before administration.
- > Maximum respiratory depression 7-10 minutes after administration; can be reversed with naloxone; use caution in patients with emphysema.
- > Infusions: IV infusions of morphine sulfate may be transported, however an infusion pump is required.

** Indicates special training requirement

01/99

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-093-PHS-EMS: Drug Profile for Ondansetron

Generic Name: **Ondansetron**

Class: **Antiemetic agent**

Mechanism of Action:

Selectively blocks serotonin 5-HT₃ receptors located in the CNS at the chemoreceptor trigger zone and in the peripheral nervous system on nerve-terminals of the vagus nerve

Indications for use:

Nausea and vomiting

Contraindications:

Hypersensitivity
Use with caution in patients with hepatic impairment

Adverse Reactions:

<u>CNS:</u>	Headache, malaise, fatigue, dizziness, fever, sedation, extrapyramidal syndrome
<u>Cardiovascular:</u>	Chest pain, arrhythmias
<u>Respiratory:</u>	Hypoxia
<u>GI & Hepatic:</u>	Diarrhea, constipation, abdominal pain, xerostomia, decreased appetite
<u>Skin:</u>	Rash

Notes on Administration

Incompatibilities/Drug Interactions:

Inducers or inhibitors of P450 drug metabolizing enzymes may alter the clearance of Ondansetron. No dosage adjustment is recommended.

Adult Dosage:

4 – 8 mg IV slow push over 2 – 5 minutes
8 mg PO ODT or tablet

Pediatric Dosage: (1 month to 12 years old)

Greater than 40 kg- 4 mg IV slow push over 2 – 5 minutes
Less than 40 kg- 0.1 mg/kg IV slow push over 2 – 5 minutes

09/19/08

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

GD-093-PHS-EMS: Drug Profile for Ondansetron

4-12 years old 4 mg PO ODT or ODT

Route of Administration:

IV, IM, PO

Onset of Action:

Unknown but probably 10 to 30 minutes

Peak effects:

Unknown

Duration of Action:

Half life is approximately 4 hours. Exact duration unknown but appears to be prolonged compared to half-life

Dosage Forms/Packaging:

4 mg/2 mL vial
4 or 8 mg ODT or tablet

Arizona Drug Box Standard Minimum Supply:

Optional- 4 mg

Special Notes:

Instructions for Use/Handling ZOFTRAN ODT Orally Disintegrating Tablets: Do not attempt to push ZOFTRAN ODT Tablets through the foil backing. With dry hands, PEEL BACK the foil backing of 1 blister and GENTLY remove the tablet. IMMEDIATELY place the ZOFTRAN ODT Tablet on top of the tongue where it will dissolve in seconds, then swallow with saliva. Administration with liquid is not necessary.

Bottles: Store between 2° and 30°C (36° and 86°F). Protect from light. Dispense in tight, light-resistant container as defined in the USP.

Unit Dose Packs: Store between 2° and 30°C (36° and 86°F). Protect from light. Store blisters in cartons.

09/19/08

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TRAINING MODULE FOR CHEST PAIN STANDING ORDER

TRAINING MODULE FOR STANDING ORDER CHEST PAIN POST TEST FOR EMT-Basic

NAME: _____ UNIT: _____ DATE: _____

1. Signs and symptoms of an acute myocardial infarction (MI) include:
 - a. Back pain radiating to neck and posterior chest, nausea.
 - b. Epigastric pain radiating to legs and arms
 - c. Substernal chest pain, possible radiation to neck and arms, nausea
dyspnea.
 - d. Pain in neck, head, and anterior chest when palpated.

2. The Types of angina are:
 - a. Resolution and inhibited
 - b. Stable, unstable
 - c. Positional, exertional
 - d. Positive, negative

3. What is a thrombus?
 - a. Dead tissue
 - b. Fatty buildup in an artery
 - c. Clot formed within a blood vessel and attached to its place of origin
 - d. Narrowed vein that has no blood supply

4. What population younger than 45 years old is at risk for an MI?
 - a. Ethanol abuser
 - b. Patient with liver and lung disease
 - c. Patient with osteoporosis, high cholesterol
 - d. Cocaine users, insulin dependent diabetic

5. Immediate pre-hospital care by B-EMT for the patient complaining of chest pain includes:
 - a. Supplemental oxygen, pulse oximetry, assists with a nitroglycerin (if applicable), and administer aspirin
 - b. Use of patient inhaler, assist with nitroglycerin if patient takes regularly
 - c. Urgent transport (Code 3) to closest facility or meet with ALS unit
 - d. Call base hospital and request orders for aspirin

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6. The EMT-B assisting with delivery of a medication (permitted by SAEMS protocol) is required to:
- Know who manufactured the drug and why it is used
 - Be familiar with the dosage, route of administration, actions of drug
 - Reassess patient only if the patient doesn't feel better
 - Assure the patient normally takes the medication and has taken several doses already
7. The primary mechanism of action of aspirin related to managing a patient with a suspected MI is to:
- Increase platelets to increase blood volume
 - Dilate coronary arteries
 - Decrease blood volume by thinning the blood
 - Break the action of thromboxane and decrease platelets building
8. How many milligrams are in one pediatric chewable aspirin?
_____ per tablet
9. What is the dose of pediatric chewable aspirin for a patient with chest pain with suspicion of an MI?
- One adult as it equals the pediatric dose
 - 4 chewable baby aspirin
 - 1 chewable baby aspirin
 - 4 tsp. liquid Tylenol if unable to give chewable baby aspirin
10. Aspirin can also be given for temperatures and sprains.
- True False
11. How long does it take for ASA to begin reducing clot formation?
- One hour
 - A few minutes
 - 20 to 30 minutes
 - 4 hours
12. Aspirin can be administered to children and adolescents?
- True False
13. Two contraindications why you would not give pediatric chewable aspirin include:
1. _____
 2. _____

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

14. The B-EMT should give the patient the 4 Pediatric chewable aspirin and a glass of water and tell the patient to swallow them whole.

True

False

15. Documentation of the use of pediatric chewable aspirin includes:
- a. Route, manufacturer, if patient was allergic to the drug
 - b. Time, color of the pills, if the patient chewed or swallowed the drug
 - c. Dosage, route, time of drug given

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

TRAINING MODULE FOR STANDING ORDER CHEST PAIN POST TEST FOR PARAMEDICS

NAME: _____ UNIT: _____ DATE: _____

1. You are following the Chest Pain SO for a 68 year old female with no previous cardiac history. She is complaining of epigastric pain with a pain scale of 10:10. You have given three nitroglycerin tabs and aspirin. The patient continues to complain of epigastric pain with a pain scale 10:10, with no relief. Skin is pale, cool, and dry. Vital Signs: BP 90/p, heart rates 140 irregular, respiratory rate 28, Lung sounds are equal bilaterally. What do you do next?
 - a. Contact medical direction authority
 - b. Administer a 250 cc fluid bolus
 - c. Begin transporting the patient to nearest hospital
 - d. Administer morphine sulfate per protocol

2. You are evaluating a 65 year old male who called 911 because he is experiencing “heavy chest pressure” with a pain scale of 10:10, SOB and diaphoresis. He states he is diabetic and a smoker. Vital signs: BP 150/70, heart rate 100 and regular, RR 18. Lung sounds are clear and equal. EKG shows sinus rhythm without ectopy. This patient is a candidate for the Chest Pain SO.
 - a. True
 - b. False

3. A 34 year old male patient has called 911 because he is experiencing chest pain radiating into his arms, SOB and diaphoresis. Vital Signs: BP 148/98, HR 110, RR 28. On assessment, lungs are clear in all fields. Patient states no cardiac history. You may implement the Chest Pain SO on this patient.
 - a. True
 - b. False

4. You are evaluating a 50 year old male who called 911 because he has a complaint of crushing substernal chest pain. He is diaphoretic and complaining of shortness of breath. Vital signs: BP 170/100, heart rate 100 and regular, respiratory rate 32 and labored. Oxygen saturation 90% on RA, lungs sounds are coarse with crackles bilaterally. Patient states he has a history of hypertension but is noncompliant with meds, and has noted swelling in his ankles today. This patient is a candidate for the Chest Pain SO.
 - a. True
 - b. False

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

5. You respond to a 911 call with a patient complaining of sudden chest pain radiating to left shoulder and into jaw with diaphoresis, SOB and a past medical history of cardiac stent placement. Vital Signs: BP 144/90, HR 120 and regular, RR 24. You have no 12 lead available but per your clinical impression this patient meets a STEMI ALERT.
 - a. True
 - b. False

6. You have initiated the Chest Pain SO; then the patient tells you he is allergic to aspirin. You withhold the aspirin, which constitutes a “deviation” from the SO and requires medical direction authority contact.
 - a. True
 - b. False

7. You are called out at 2000 for a 66 year old male experiencing sudden onset of substernal chest pain with SOB. He does not have a cardiac history but his father died of sudden cardiac death. You notice that both the patient and his wife present with signs of recent sexual activity. Which question would be most appropriate at this time?
 - a. What age was your father when he died?
 - b. When was your last EKG?
 - c. Have you taken Viagra?
 - d. Do you take any medications for high BP?

8. In the above question, patient states he did take Viagra about 2 hours ago. Which drug might you use cautiously in the above patient?
 - a. Morphine Sulfate
 - b. Ondansetron HCL
 - c. Aspirin
 - d. NTG

9. The most frequent cause of Myocardial Infarction (MI) is rupture of an atherosclerotic plaque within a coronary artery with subsequent arterial spasm and thrombus formation. What are other causes?
 - a. Coronary artery vasospasm
 - b. Ventricular hypertrophy
 - c. Coronary artery emboli
 - d. Cocaine, amphetamines and ephedrine
 - e. All the above

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

10. Hypoxia can result in arterial spasm and result in an acute MI.
 - a. True
 - b. False

11. A 70 year old male patient has called 911 because he was experiencing chest pain. When you arrive, he states he has taken three of his own nitro and successfully controlled his chest pain. You may implement the Chest Pain SO despite his denial of pain at this time.
 - a. True
 - b. False

12. You are called to a 75 year old female complaining of substernal chest pain, which is rated as a 9:10. Vital signs: blood pressure 89/p, heart rate 120, regular, palpable radial heart rate, respiratory rate 24 and shallow. Lung sounds are diminished in the bases. Skin is cool and dry. Patient also has a history of COPD. You are unable to initiate an IV, but can still implement the Chest Pain Standing Order
 - a. True
 - b. False

13. You are called out for a 42 year old male complaining of substernal chest pain rated at 8:10. He appears quite agitated, has a BP of 180/100, heart rate of 130 and regular, respiratory rate of 28 and shallow. He states he has no cardiac history but 30 minutes ago snorted cocaine, ingested other drugs and drank alcohol. What do you do next?
 - a. Initiate the Chest Pain Standing Order
 - b. Administer nitroglycerin to reduce the BP
 - c. Make medical direction authority contact
 - d. Prepare to administer adenosine

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

14. You respond to a 50 year old male patient with dull aching chest pain centered over the left chest wall associated with SOB and diaphoresis. The patient rates the ache at 8:10, and states he had a stress test done last week and is scheduled for an angioplasty at the end of the week. Vital Signs: BP 143/94, HR 88 and regular, monitor shows ST Elevation in lead I and V4-6. You start the Chest Pain SO placing patient on O2 at 3L NC, giving 4 baby aspirin, and nitro SL x3 with pain scale now at 4:10. Vital Signs BP 115/72, HR 77. What would your next move be?
- Give Morphine Sulfate 2-5 mg IV
 - Call for Medical Direction
 - Give Morphine Sulfate 2-5mg IV and call STEMI Alert
 - Monitor patient continue to transport patient
15. If the above patient after receiving Morphine Sulfate complaints of nausea you should:
- Call for medical direction to give Ondanstron HCl
 - Administer Ondanstron HCl per SO
 - Divert to the closest hospital
 - Call for helicopter to transport patient

TRAINING MODULE FOR CHEST PAIN STANDING ORDER

SAEMS EVALUATION FORM

EVALUATION

Please answer the following questions by marking the appropriate response:

	Lowest Worst Least				Highest Best Most
1. To what extent did this module meet your needed?	1	2	3	4	5
2. There was a balance between theoretical and practical information.	1	2	3	4	5
3. The time required was appropriate to content.	1	2	3	4	5
4. The module increased my knowledge and understanding of the topic.	1	2	3	4	5
5. References or audiovisuals were adequate.	1	2	3	4	5
6. Overall, this program was worthwhile.	1	2	3	4	5
7. Additional comments:	1	2	3	4	5
