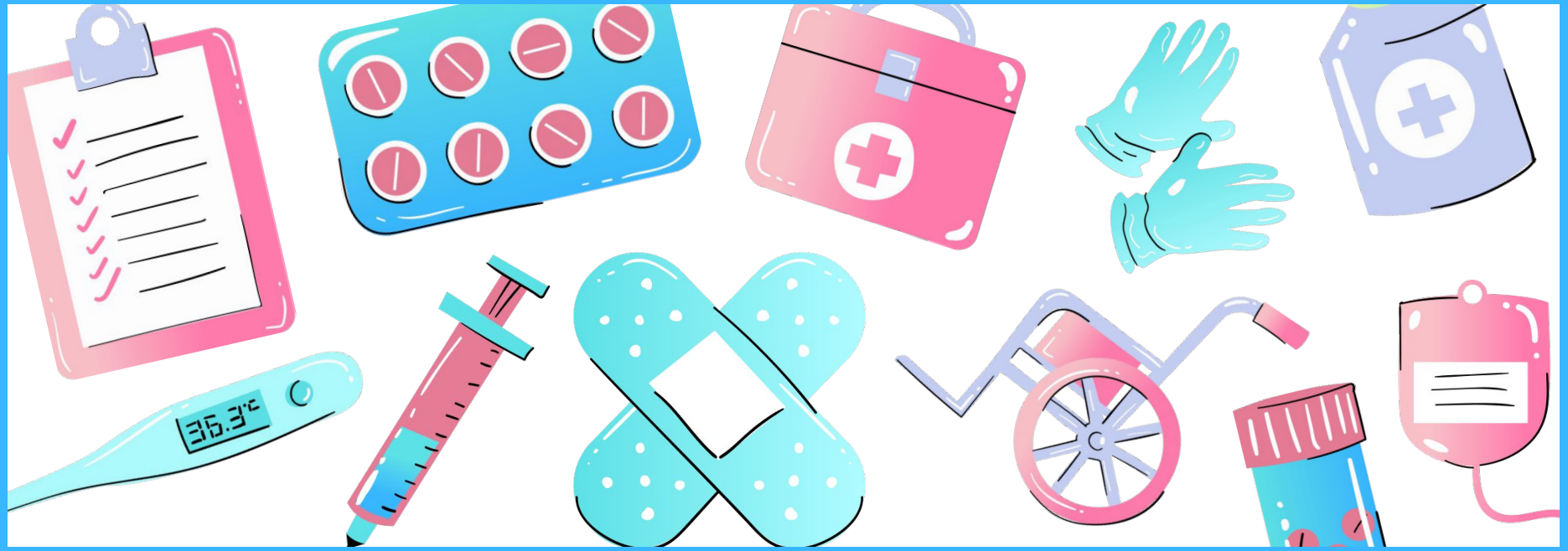


Cardiac Emergencies

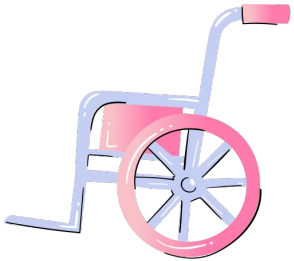
By: David, Grace, Zoha, and Alejandra

Agenda

01

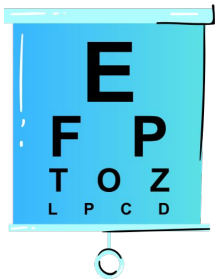
Scenario 1

02



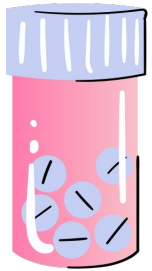
Scenario 2

03



Scenario 3

04



Kahoot!

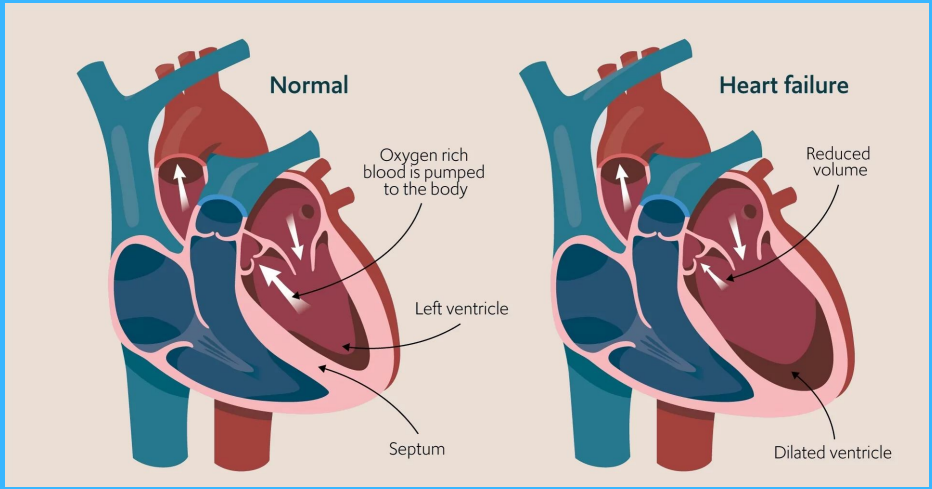
Scenario 1:

65 y/o male with difficulty breathing & chest pain.

What is your field impression?

Correct answer: Congestive Heart Failure.

What is CHF?



Weakened pumping strength of the heart usually caused by another health condition that damages the heart like hypertension or heart attacks

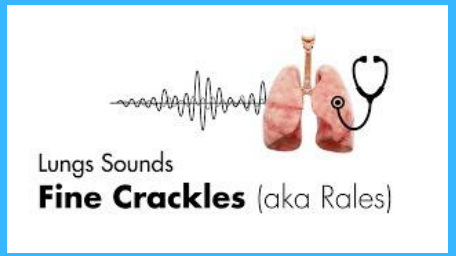
Signs & Symptoms

- Chest pain described as pressure, squeezing (may or may not present with)
- Discomfort in other areas of the body
- SOB
- Edema (pulmonary for left-side, dependent for right-side)
- JVD
- Tachycardia
- Crackles and wheezing in the lungs
- Cyanosis
- Cough

Left vs. Right Sided CHF

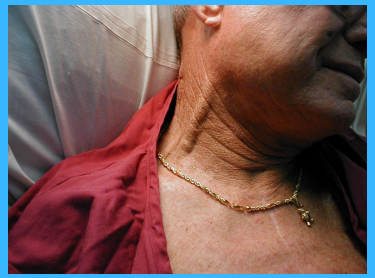
Left

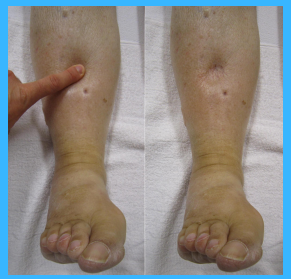
- Most common type of CHF
- Pressure builds in the left atria and then in the pulmonary vein
- Pulmonary edema
- Crackles: fine crackles in early stages, coarse crackles in late stages



Right

- Pressure builds up in the right atrium and in the superior and inferior vena cava
- Jugular Vein Distention (JVD)
- Pedal Edema





Did this patient have left or right CHF?

Trick Question!

Correct answer: Both Right & Left CHF

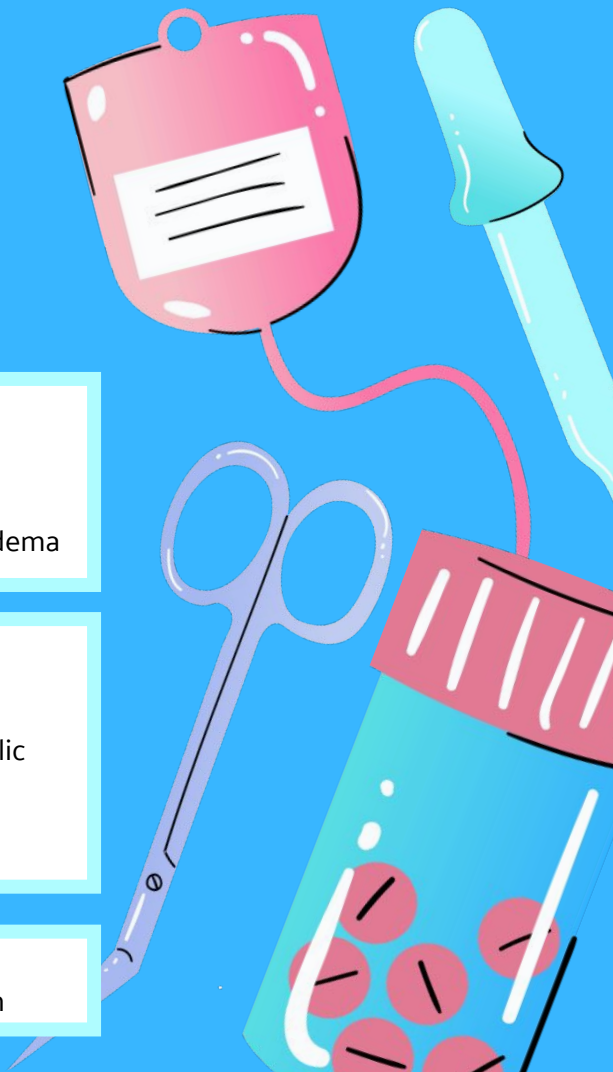
- Pulmonary edema (left)
- JVD & dependent edema (right)

Note: Left CHF can lead to Right CHF

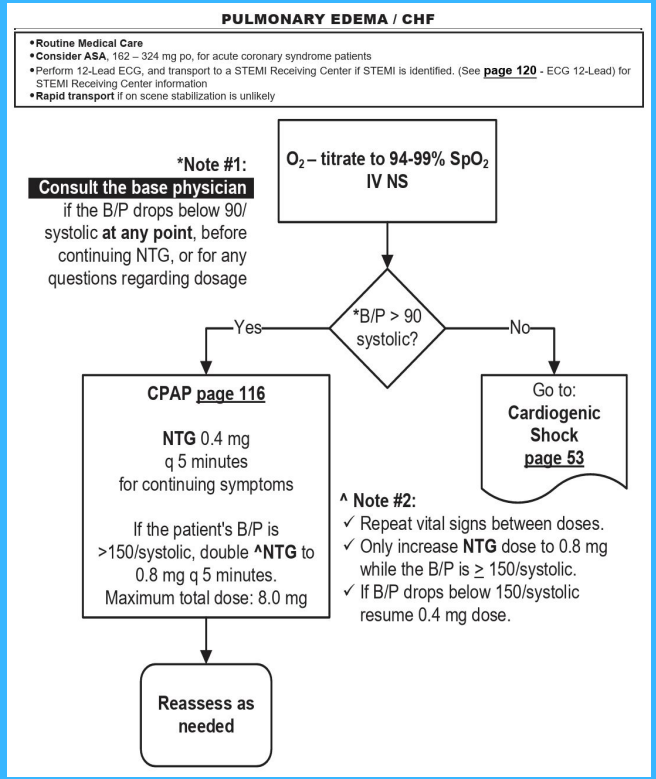
Considerations for this patient

Oxygen and position of comfort	• Continuous O2 at 15 L/min via NRB since SpO2 is at 89%
	  ○ Consider CPAP if available & pt tolderates
	• Let pt sit upright with legs down
	  ○ Makes it easier for pt to breathe due to pulmonary edema

Assist with nitroglycerin	• PT is prescribed NTG and has not taken a dose, assist with medication • Nitro contraindications include: allergy, no prescription, systolic BP <90, recent use (within 24-72 hours) of phosphodiesterase inhibitors (erectile dysfunction drugs)
Aspirin	• Give pt 324 mg of aspirin (4 81 mg tablets) • Recall that if pt has had a dose of aspirin already, maximum daily dosage is 324 mg

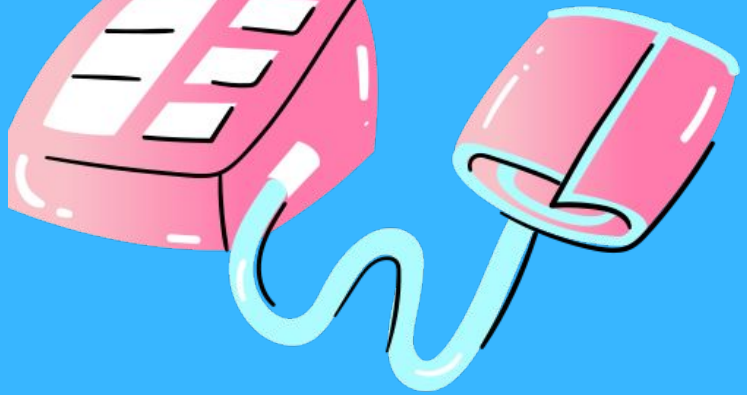


Alameda County (ALCO) protocols



BMRC First Aid protocol

- Obtain OPQRST and SAMPLE
- Place patient in a position of comfort
- Assist with prescribed nitroglycerin
- Closely monitor vitals every 3-5 minutes
- Call UCPD or 911
- Be ready to give a report to a higher-level-of-care provider.



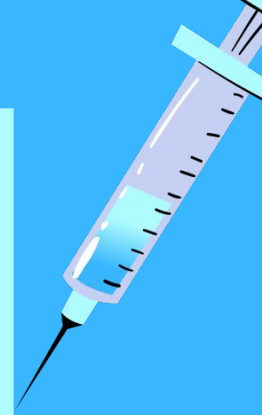
Scenario 2: 68 YOM w/SOB and Bilateral Leg Swelling

What is your field impression?

Correct answer: Right-Sided Congestive Heart Failure!

What is Right-Sided Congestive Heart Failure?

- Right ventricle cannot effectively pump blood to the lungs, causing blood to back up
- Commonly caused by left-sided heart failure, pulmonary hypertension, or chronic lung disease



Common Physical Findings of Right CHF

General appearance

- Sitting upright
- **Pitting Edema/Pedal Edema/Dependant Edema**
- **Distended abdomen**

Respirations

- Mild to moderate **SOB**
- Worse lying flat

Pain

- Chest pressure or tightness
- Leg/ankle tightness or pain

Mental status

- Usually alert early
- Anxious or restless with worsening hypoxia

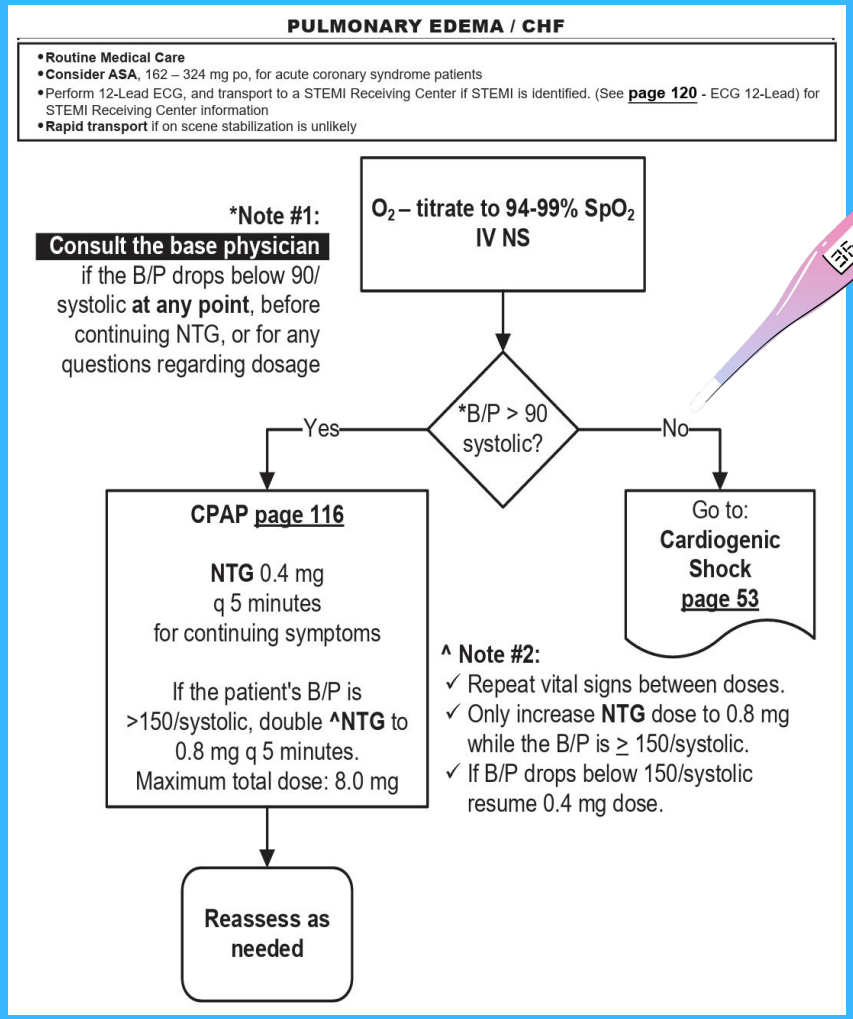
Considerations for this patient

Positioning	• Keep patient upright • Reduces venous return and breathing effort

Assist with Nitroglycerin	• Contradictions: [53 BASH]
	  ○ **5** mins ago took last dose
	  ○ **3** dose had been taken already prior per this episode
	  ○ Systolic **B**P <100
	  ○ **A**llergy
	  ○ Recent use (within 24-72 hours) of **phosphodiesterase** inhibitors (erectile dysfunction drugs)
	  ○ **H**ead Injury

Oxygen	Continuous O2 at 4 L/min via NC since SpO2 already 94%

ALCO Protocols



BMRC First Aid Protocol

- Obtain OPQRST and SAMPLE
- Place patient in a position of comfort
- Closely monitor vitals every 5 minutes
- Call UCPD or 911
- Be ready to give a report to a higher-level-of-care provider.

Scenario 3: 67 YOF with chest discomfort after walking upstairs, seated on a bench near Haas Library

What is your field impression?

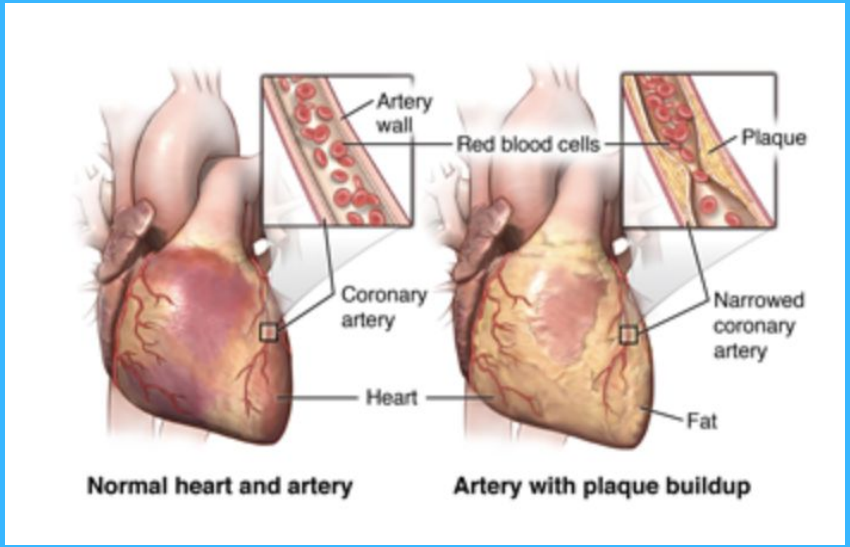
Correct answer:
Angina Pectoris

What is Angina Pectoris?

Angina pectoris is chest pain or discomfort caused by reduced blood flow and oxygen to the heart. It occurs when the heart muscle needs more oxygen than it is receiving, most commonly due to coronary artery disease (CAD).

Signs & Symptoms

- Chest pressure, squeezing, or crushing pain
- Pain radiating to arms, shoulders, jaw, neck, or back
- Shortness of breath
- Weakness or fatigue
- Dizziness or feeling faint
- Nausea



Stable Angina Vs. Unstable Angina

	Stable	Unstable
O	Gradual onset, triggered by exertion or stress	Sudden onset, may occur at rest or with minimal exertion
P	Worse with activity, relieved by rest or nitro	Not relieved by rest or nitro
Q	Tightness, pressure, squeezing	Tightness, pressure, crushing pain
R	May radiate to left shoulder, arm, jaw, neck, or back	May radiate to jaw, neck, shoulder, arm, or back
S	Mild to moderate, predictable	Severe, increasing, or different from baseline
T	Lasts <15 minutes, resolves with rest	asts >20–30 minutes, may persist or worsen

Unstable Angina vs. MI

- Angina pectoris is the overall category of ischemic chest pain
    - Stable angina, unstable angina, and MI are different presentations within this category
- Unstable angina serves as a warning that an MI may occur
- Unstable angina is used to represent an MI-level emergency, but is not an MI
- Symptoms may overlap with myocardial infarction
- Managed with the same urgency as an MI until ruled out

Did this patient have Stable or Unstable Angina?

Correct answer: Stable Angina

- Chest pain with exertion
- Relieved by rest

Considerations for this patient

Oxygen and position of comfort	• Oxygen only if indicated (SpO_2 < 94% or respiratory distress) • Place patient in a position of comfort (usually upright) • Helps reduce cardiac workload and discomfort

Assist with nitroglycerin	• Patient prescribed NTG, no dose taken
	• Assist only if within EMT scope
	• Contraindications:
	  ○ No prescription, Allergy, SBP < 90
	  ○ (EMT / ALCO scope only)

Aspirin & Nitro	• 324 mg aspirin if no contraindications • Nitroglycerin, 0.4 mg SL Max 3 doses

Alameda County (ALCO) protocols

CHEST PAIN - SUSPECTED CARDIAC/STEMI

- **Routine Medical Care**
- **Signs of Shock** - 2 or more of the following:
  - → Pulse > 120/minute
  - → BP < 90/systolic
  - → Pale, cool and/or diaphoretic skin signs
  - → Altered Mental Status
- If cardiac chest pain is suspected and the patient is able to swallow, give **Aspirin 162 - 324 mg** po as soon as possible (tablet or chewable – not enteric coated)
- NTG may be prioritized as needed based on patient presentation
- Perform 12-Lead ECG, as appropriate, and transport to a STEMI Receiving Center if STEMI is identified. See **page 120** - ECG 12-Lead for ECG transmission and STEMI Receiving Center information
- **Note:** If the patient has taken ***erectile dysfunction (ED) medication within the last 24 hours (Viagra/Levitra) or 36 hours (Cialis), withhold nitroglycerin***

Patients who have oxygen saturations of greater than 94% without signs or symptoms of hypoxia or impending airway compromise should not receive oxygen.

Monitor
Assess ABC's
O_2 – titrate to 94-99%
Aspirin 162-324 mg
IV/IO NS

↓

12-lead EKG

↓

*** NTG** 0.4 mg
up to 3 doses, q 3-5 minutes for continuing pain/discomfort

If unresponsive to nitrates:
Pain Management
(see **page 42**)

(^^see note)

↓

^^ Note: If **B/P** drops below 90 systolic or drops > 30 mm/Hg from baseline at any point; or, **heart rate** is < 50 or > 120 bpm, **contact the base physician** before administering/ continuing NTG and/or Pain Management

BMRC First Aid protocol

- Obtain OPQRST and SAMPLE
- Place patient in a position of comfort
- Reassess vitals every 5 minutes
- Call UCPD or 911
- Be ready to give a report to a higher-level-of-care provider.

Key Points

- Stable Angina is exertional chest pain relieved by rest
  - It can progress to unstable angina or MI
    - Early EMS activation is crucial

Thank you!