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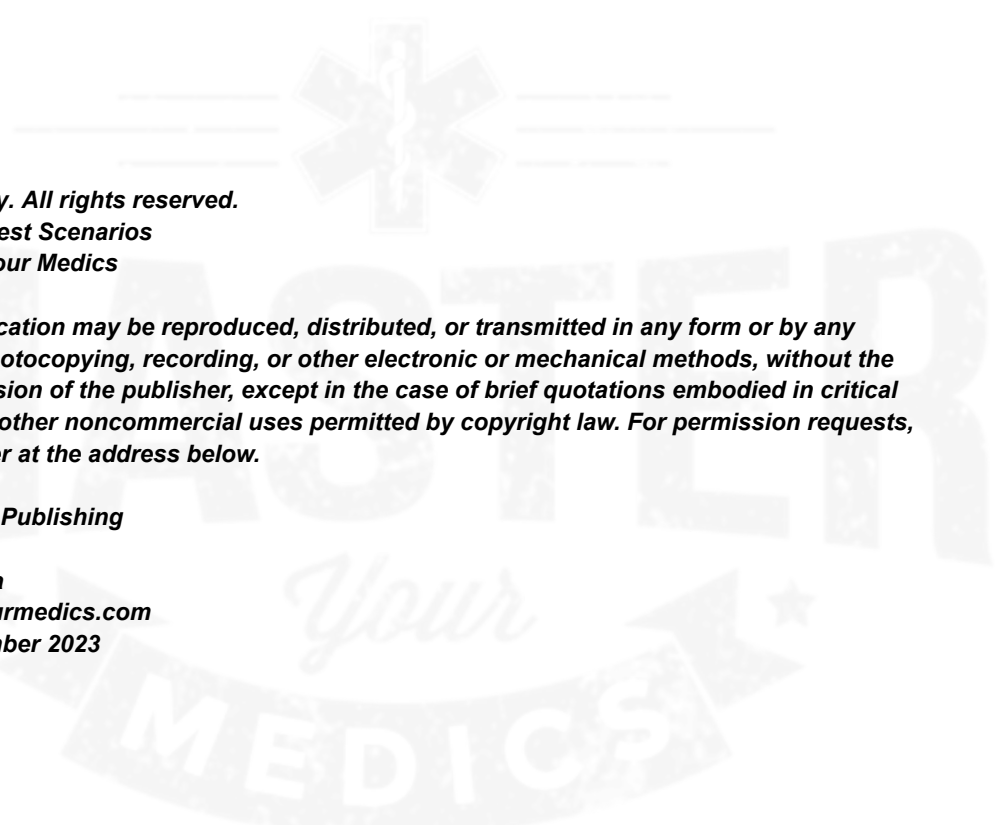
First Edition

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**25**

***Cardiac Arrest  
Scenarios***

*Geoff Murphy*



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Always seek the advice of your physician or other qualified health provider with any questions you may have regarding a medical condition or treatment, and never disregard professional medical advice or delay in seeking it because of something you have read in these scenarios.

Remember, every patient case is unique, and the scenarios presented are generalized. Real-life situations may require different or additional actions than those suggested in our training materials.

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## **Scenario: Ventricular Fibrillation in a Park**

### **Patient Information**

- Age: 45
- Gender: Male

### **Moulage Required**

- Pale, sweaty skin
- Unresponsive and not breathing normally

### **Dispatch Information**

- Caller reports a middle-aged man collapsed while jogging in the park. Unresponsive, not breathing normally.

### **On Arrival Presentation**

- Patient found lying on the ground, unresponsive, agonal breathing.

### **Past Medical History**

- Known hypertensive, on medication
- Family history of cardiac diseases

### **Primary Assessment Findings**

- Airway: Open but ineffective breathing
- Breathing: Agonal respiration
- Circulation: Absent pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: Irregular, ineffective
- SpO2: Not obtainable
- Temperature: Not measured

### **ECG Rhythm**

- Ventricular Fibrillation

### **SAMPLE History Findings**

- Signs & Symptoms: Sudden collapse while jogging
- Allergies: None reported
- Medications: Antihypertensive
- Past Medical History: Hypertension
- Last Oral Intake: Breakfast 2 hours before event

- Events leading to the situation: Jogging in the park

#### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiate CPR
- Use AED as soon as available
- Manage airway and breathing

#### **Paramedic Level Treatment Goals**

- Continue high-quality CPR
- Advanced airway management
- Defibrillation with manual defibrillator
- IV/IO access and administration of epinephrine and antiarrhythmic drugs (e.g., Amiodarone)
- Continual monitoring and reassessment
- Prepare for rapid transport to a hospital

#### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC) with a regular rhythm on ECG, stable blood pressure.
- Presentation: Improved color, possible restoration of consciousness.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continuation of ventricular fibrillation, no pulse.
- Presentation: Deterioration in patient's condition, possibly leading to biological death.

## **Clinical Course for Scenario: Ventricular Fibrillation in a Park**

### **1. Scene Assessment and Safety**

- Upon arrival, assess the scene for safety.
- Determine the number of patients and the need for additional resources.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note the patient's appearance: pale, sweaty skin, unresponsive, and not breathing normally.
- Check for responsiveness and call for help.

### **3. Airway and Breathing Management**

- Open the airway using a head-tilt-chin-lift maneuver.
- Check for breathing and presence of agonal respirations.
- Start rescue breathing if necessary.

### **4. Circulation Assessment and CPR**

- Check for a pulse. If absent, initiate CPR immediately.
- Perform chest compressions at a rate of 100-120 per minute.
- Ensure adequate depth of compressions (at least 2 inches).

### **5. Defibrillation**

- As soon as the AED arrives, apply pads and analyze the rhythm.
- If ventricular fibrillation is confirmed, deliver a shock.
- Continue CPR immediately after the shock for 2 minutes before rechecking the rhythm.

### **6. Advanced Life Support (Paramedics)**

- On paramedics' arrival, continue with high-quality CPR.
- Establish an advanced airway (e.g., endotracheal intubation or supraglottic airway device) if necessary.
- Secure IV/IO access and consider administration of antiarrhythmic drugs like Amiodarone.
- Continue defibrillation efforts as indicated by the patient's rhythm.
- Continuously reassess the patient's vital signs and ECG rhythm.

### **7. Post-ROSC Care**

- If ROSC is achieved, assess and manage airway, breathing, and circulation.
- Provide post-cardiac arrest care, including oxygen therapy to maintain SpO<sub>2</sub> between 94-98%.
- Initiate targeted temperature management if indicated.
- Prepare for rapid transport to the hospital with pre-notification to the emergency department.

### **8. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.

- Provide a thorough handover to the hospital staff, including the patient's medical history, the interventions performed, and the patient's response to those interventions.

## **Debrief Questions**

### **What are the key steps in managing a patient with ventricular fibrillation?**

Immediate recognition and initiation of CPR, early defibrillation, advanced airway management, and administration of appropriate medications.

### **Why is early defibrillation crucial in this scenario?**

Ventricular fibrillation is a shockable rhythm, and early defibrillation significantly increases the chances of successful resuscitation.

### **How does the past medical history of hypertension influence your management of this case?**

It suggests a higher risk of cardiac events. This knowledge emphasizes the need for rapid intervention and close monitoring for potential complications.

**NOTES :**

## **Scenario: Myocardial Infarction Leading to Cardiac Arrest**

### **Patient Information**

- Age: 52
- Gender: Female

### **Moulage Required**

- Patient appearing in distress, clutching chest
- Diaphoretic (sweaty) skin
- Unresponsive upon arrival

### **Dispatch Information**

- Caller reports their spouse complaining of severe chest pain and then collapsing at home.

### **On Arrival Presentation**

- Patient found on the floor, unresponsive, not breathing effectively.

### **Past Medical History**

- Known case of high cholesterol
- Smoker
- Family history of heart disease

### **Primary Assessment Findings**

- Airway: Open
- Breathing: Agonal, ineffective
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: Less than 6/min, ineffective
- SpO2: Not obtainable
- Temperature: Not measured

### **ECG Rhythm**

- Ventricular Fibrillation

### **SAMPLE History Findings**

- Signs & Symptoms: Severe chest pain radiating to the arm, shortness of breath
- Allergies: None reported
- Medications: Statins for cholesterol
- Past Medical History: High cholesterol, smoking

- Last Oral Intake: A meal, 3 hours before the incident
- Events leading to the situation: Sudden chest pain while at rest

#### **EMT Level Treatment Goals**

- Immediate recognition and management of cardiac arrest
- Initiate CPR immediately
- Use AED as soon as possible
- Manage airway and support breathing

#### **Paramedic Level Treatment Goals**

- Continue high-quality CPR
- Advanced airway management
- Defibrillation with manual defibrillator
- Establish IV/IO access for drug administration
- Administer antiarrhythmic drugs as indicated
- Prepare for rapid transport to the hospital, alerting them of a STEMI case

#### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC), stabilized vital signs, possible sinus rhythm on ECG.
- Presentation: Improved color, possible consciousness gain.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Persistent ventricular fibrillation, no pulse.
- Presentation: Continued deterioration, potential irreversible damage.

## **Clinical Course for Scenario: Myocardial Infarction Leading to Cardiac Arrest**

### **1. Scene Safety and Initial Assessment**

- Ensure scene safety upon arrival.
- Quickly assess the patient's responsiveness and breathing.

### **2. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, agonal breathing.
- Begin CPR immediately, ensuring high-quality chest compressions.
- Call for additional assistance and an automated external defibrillator (AED).

### **3. Airway and Breathing Management**

- Ensure the airway is clear.
- Provide rescue breaths as part of CPR if the patient is not breathing effectively.

### **4. Circulation Assessment and Defibrillation**

- Check for a pulse. If absent, continue CPR.
- As soon as the AED arrives, apply it and follow its instructions.
- Deliver a shock if advised by the AED, followed by immediate resumption of CPR.

### **5. Advanced Life Support (Paramedics)**

- On arrival, paramedics take over CPR.
- Establish advanced airway management if necessary (e.g., endotracheal intubation).
- Secure IV/IO access.
- Administer antiarrhythmic drugs (e.g., Amiodarone) as per ACLS guidelines.
- Continue defibrillation efforts as indicated.

### **6. Post-ROSC Management**

- Once ROSC is achieved, assess and stabilize airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Start post-cardiac arrest care, including cooling if indicated.
- Prepare for rapid transport to the hospital with pre-notification for a potential STEMI case.

### **7. Transport and Continuous Care**

- During transport, continuously monitor vital signs and ECG.
- Provide ongoing care as needed, adjusting interventions based on the patient's response.

### **8. Hospital Handover**

- On arrival at the hospital, provide a detailed handover to the emergency department staff, including the patient's medical history, witnessed event, treatment provided, and the patient's response to treatment.



## Debrief Questions

### **Why is immediate CPR and early defibrillation crucial in this scenario?**

Ventricular fibrillation is a life-threatening rhythm requiring immediate CPR and defibrillation to increase the chance of survival and ROSC.

### **How does the patient's past medical history impact the approach to treatment?**

History of high cholesterol and smoking increases the likelihood of a cardiac event, guiding the urgency and intensity of treatment.

### **What are the key differences in treatment goals between EMT and Paramedic levels in this scenario?**

EMTs focus on basic life support, including CPR and AED. Paramedics provide advanced life support, including advanced airway management, drug therapy, and preparation for rapid transport and definitive care.

NOTES :

## **Scenario: Electrolyte Imbalance Leading to Cardiac Arrest**

### **Patient Information**

- Age: 78
- Gender: Male

### **Moulage Required**

- Dry, cracked skin indicating dehydration
- Patient appearing frail and confused

### **Dispatch Information**

- Emergency call from a caregiver reporting an elderly patient collapsed at home.

### **On Arrival Presentation**

- Patient found on the floor, unresponsive, with shallow breathing.

### **Past Medical History**

- Chronic kidney disease
- Recent gastroenteritis with vomiting and diarrhea

### **Primary Assessment Findings**

- Airway: Open, but at risk due to decreased consciousness
- Breathing: Shallow, ineffective
- Circulation: Weak or absent pulse

### **Vital Signs**

- Blood Pressure: Low/Not obtainable
- Heart Rate: Erratic/Not palpable
- Respiratory Rate: Low and shallow
- SpO2: Low
- Temperature: Slightly elevated

### **ECG Rhythm**

- Torsades de Pointes (possible due to electrolyte imbalance)

### **SAMPLE History Findings**

- Signs & Symptoms: Confusion, weakness, recent fall
- Allergies: No known allergies
- Medications: Medications for kidney disease
- Past Medical History: Chronic kidney disease, dehydration
- Last Oral Intake: Limited due to illness
- Events leading to the situation: Period of vomiting and diarrhea

### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiate CPR if no pulse is found
- Manage airway and support breathing
- Prepare for rapid transport

### **Paramedic Level Treatment Goals**

- Advanced airway management if necessary
- IV access and fluid resuscitation
- Electrolyte correction (as per protocol, typically in hospital setting)
- Continuous cardiac monitoring
- Consideration of magnesium sulfate for Torsades de Pointes
- Preparation for immediate transport to hospital

### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization of vital signs, resolution of Torsades de Pointes, return to a more normal rhythm.
- Presentation: Possible improvement in consciousness, stabilized respiratory function.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued unstable rhythm, possibly deteriorating into ventricular fibrillation or asystole.
- Presentation: Worsening of patient's overall condition, potential for irreversible damage.

## **Clinical Course for Scenario: Electrolyte Imbalance Leading to Cardiac Arrest**

### **1. Scene Safety and Assessment**

- Ensure scene safety upon arrival.
- Assess the environment for any hazards.

### **2. Primary Assessment**

- Quickly assess the patient's level of consciousness.
- Observe for signs of dehydration and confusion.
- Assess airway, breathing, and circulation.
- Initiate CPR immediately if no pulse is found.

### **3. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide supplemental oxygen if breathing is ineffective.
- Be prepared to initiate advanced airway management if necessary.

### **4. Circulation and Cardiac Monitoring**

- Assess heart rate and rhythm.
- Attach the patient to a cardiac monitor as soon as possible.
- Identify any abnormal rhythms, particularly Torsades de Pointes.

### **5. IV Access and Fluid Resuscitation**

- Establish IV access.
- Begin fluid resuscitation cautiously, considering the patient's renal status.
- Monitor for signs of fluid overload.

### **6. Electrolyte Management**

- Anticipate the need for electrolyte correction, especially potassium and magnesium.
- Consider administering magnesium sulfate if Torsades de Pointes is present or suspected.

### **7. Transport and Continuous Monitoring**

- Prepare for immediate transport to the hospital.
- Continuously monitor vital signs and cardiac rhythm during transport.
- Provide ongoing treatment as per ACLS guidelines.

### **8. Hospital Handover**

- Upon arrival at the hospital, provide a comprehensive handover to the receiving team.
- Include details of the patient's condition, interventions provided, and the patient's response to these interventions.

## Debrief Questions

**What are the key signs of electrolyte imbalance in a patient, and why is it critical in cardiac arrest scenarios?**

Signs include confusion, muscle weakness, and abnormal heart rhythms. Electrolyte imbalances can lead to life-threatening arrhythmias, making their recognition and correction crucial.

**How does the past medical history of chronic kidney disease impact the management of this patient?**

Chronic kidney disease affects the body's ability to regulate electrolytes and fluid balance, making the patient more susceptible to imbalances and their complications.

**What is the importance of IV fluid administration and electrolyte correction in this scenario?**

Fluid administration is vital for treating dehydration, and electrolyte correction is crucial for stabilizing heart rhythms and overall patient stability.

NOTES :

## **Scenario: Hypothermia Leading to Cardiac Arrest in a Hiker**

### **Patient Information**

- Age: 33
- Gender: Female

### **Moulage Required**

- Patient appearing extremely cold, with pale and possibly frostbitten extremities
- Ice or snow on clothing

### **Dispatch Information**

- Call from a fellow hiker reporting a person found unresponsive in a snowy area, possibly suffering from severe cold exposure.

### **On Arrival Presentation**

- Patient found lying in snow, unresponsive, with no visible breathing or movement.

### **Past Medical History**

- No significant history reported by fellow hikers

### **Primary Assessment Findings**

- Airway: Patent but with no apparent breathing
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Extremely low (hypothermic)

### **ECG Rhythm**

- Possible asystole or fine ventricular fibrillation

### **SAMPLE History Findings**

- Signs & Symptoms: Severe cold exposure, unresponsiveness
- Allergies: Unknown
- Medications: Unknown
- Past Medical History: Not available
- Last Oral Intake: Unknown
- Events leading to the situation: Lost during a hike in snowy conditions

### **EMT Level Treatment Goals**

- Handle gently to minimize the risk of ventricular fibrillation
- Initiate CPR if indicated, being cautious of hypothermia protocols
- Provide thermal protection and gradual rewarming
- Avoid rough handling
- Prepare for transport

### **Paramedic Level Treatment Goals**

- Advanced airway management with minimal disturbance
- Careful cardiac monitoring
- Intravenous access with warm fluids if possible
- Consider the use of external warming devices
- Rapid transport to a medical facility equipped for hypothermia treatment

### **Correct Management Outcome**

- Vital Signs / ECG: Gradual improvement in heart rhythm and vital signs with appropriate rewarming and handling.
- Presentation: Stabilization of patient's condition during transport.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Possible deterioration into ventricular fibrillation due to rough handling or inappropriate rewarming.
- Presentation: Worsening of patient's hypothermic state and potential cardiac instability.

## **Clinical Course for Scenario: Hypothermia Leading to Cardiac Arrest in a Hiker**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival.
- Evaluate environmental conditions for risks.

### **2. Initial Patient Assessment**

- Quickly assess the patient's level of consciousness.
- Observe for signs of severe hypothermia: pale, cold skin, potential frostbite.
- Check for responsiveness.

### **3. Airway and Breathing Management**

- Ensure the airway is clear.
- Check for breathing; if absent or ineffective, initiate rescue breathing.

### **4. Circulation Assessment and CPR**

- Check for a pulse. If absent, initiate CPR immediately.
- Be gentle to minimize the risk of triggering ventricular fibrillation due to hypothermia.
- Continue CPR as per current guidelines, being cautious of hypothermia protocols.

### **5. Hypothermia Management**

- Protect the patient from the cold environment.
- Initiate gradual rewarming: cover with blankets, use external warming devices if available.
- Avoid active external rewarming techniques that may cause afterdrop.

### **6. Advanced Life Support (Paramedics)**

- Establish advanced airway management with minimal patient disturbance.
- Secure IV/IO access, consider the infusion of warm fluids.
- Continuous cardiac monitoring, looking for signs of arrhythmias.
- Administer medications cautiously, considering altered pharmacokinetics in hypothermia.

### **7. Transport and Continuous Care**

- Prepare for immediate transport to a medical facility equipped for hypothermia treatment.
- Continue gentle handling and monitoring during transport.
- Provide ongoing thermal protection and gradual rewarming.

### **8. Hospital Handover**

- On arrival at the hospital, provide a detailed handover to the emergency department staff.
- Include information about the patient's exposure time, condition upon finding, interventions performed, and response to those interventions.



## Debrief Questions

**Why is gentle handling crucial in a hypothermia-induced cardiac arrest situation?**

Rough handling can trigger ventricular fibrillation in a hypothermic heart.

**How does hypothermia alter the approach to CPR and defibrillation?**

In hypothermia, CPR might need to be continued for longer, and defibrillation may be less effective until the patient is warmed to a certain temperature.

**What are the key considerations for rewarming a hypothermic patient in cardiac arrest?**

Rewarming should be done gradually and carefully, avoiding rapid or external heat application, to prevent afterdrop and arrhythmias.

NOTES :



## **Scenario: Opioid Overdose Leading to Respiratory Failure and Cardiac Arrest**

### **Patient Information**

- Age: 23
- Gender: Male

### **Moulage Required**

- Evidence of drug use (e.g., empty pill bottles, syringe)
- Patient appears cyanotic and unresponsive

### **Dispatch Information**

- Call from a concerned friend who found the patient unconscious with shallow breathing after suspected drug use.

### **On Arrival Presentation**

- Patient found unresponsive, with very shallow breathing initially, progressing to apnea.

### **Past Medical History**

- History of recreational drug use, specifically opioids, as reported by a friend

### **Primary Assessment Findings**

- Airway: Patent but at risk due to decreased level of consciousness
- Breathing: Initially shallow, progressing to apnea
- Circulation: Initially weak pulse, progressing to no pulse

### **Vital Signs**

- Blood Pressure: Initially low, later not obtainable
- Heart Rate: Initially bradycardic, later 0 (as per monitor)
- Respiratory Rate: Initially very low, later 0
- SpO2: Initially low, later not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Initially bradycardia, progressing to asystole

### **SAMPLE History Findings**

- Signs & Symptoms: Unresponsiveness, shallow breathing
- Allergies: Unknown
- Medications: Suspected opioid overdose
- Past Medical History: Recreational drug use
- Last Oral Intake: Unknown
- Events leading to the situation: Suspected recent drug ingestion

### **EMT Level Treatment Goals**

- Immediate recognition of life-threatening condition
- Support airway and breathing, initiate rescue breathing if necessary
- Administer naloxone if opioid overdose is suspected
- Initiate CPR if pulseless
- Prepare for rapid transport

### **Paramedic Level Treatment Goals**

- Advanced airway management if necessary
- Continuous monitoring and reassessment
- Additional doses of naloxone as needed
- Intravenous access and fluid management
- Consider advanced cardiac life support measures if in cardiac arrest
- Rapid transport to hospital

### **Correct Management Outcome**

- Vital Signs / ECG: Improvement in respiratory rate and heart rhythm post-naloxone administration, stabilization of vital signs.
- Presentation: Possible improvement in consciousness, regular breathing.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Persistence of apnea and asystole, no improvement in vital signs.
- Presentation: Continued deterioration, potential for irreversible damage.

## **Clinical Course for Scenario: Opioid Overdose Leading to Respiratory Failure and Cardiac Arrest**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, particularly checking for any substances or paraphernalia that could pose a risk.
- Assess the environment for additional patients or hazards.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note the presence of drug use indicators (e.g., syringes, pill bottles).
- Check airway, breathing, and circulation.

### **3. Airway and Breathing Management**

- Ensure the airway is clear. Consider airway adjuncts if necessary.
- Initially provide rescue breathing if the patient has inadequate breathing.
- Prepare for potential advanced airway management.

### **4. Circulation Assessment and Naloxone Administration**

- Check for a pulse. If weak or absent, prepare for CPR.
- Administer naloxone if opioid overdose is suspected. Naloxone can be repeated based on local protocols and patient response.
- Monitor for signs of opioid withdrawal post-naloxone administration.

### **5. Advanced Life Support (Paramedics)**

- Paramedics should reassess airway, breathing, and circulation upon arrival.
- If respiratory arrest has progressed to cardiac arrest, initiate CPR immediately.
- Establish advanced airway management if necessary.
- Secure IV/IO access for fluid administration and additional naloxone doses.
- Continuous cardiac monitoring and readiness for defibrillation.

### **6. Recovery and Post-Resuscitation Care**

- If the patient regains a pulse and adequate breathing, continue monitoring vital signs and ECG.
- Provide high-flow oxygen and support ventilation as needed.
- Be prepared to manage potential complications, such as aspiration pneumonia or persistent hypoxia.

### **7. Transport and Continuous Monitoring**

- Prepare for immediate transport to the hospital, continually monitoring the patient's condition.
- Re-administer naloxone as needed, based on patient response and breathing adequacy.

### **8. Hospital Handover**

- Upon arrival at the hospital, provide a comprehensive handover to the receiving medical team.

- Include details of suspected overdose, interventions provided, doses of naloxone administered, and patient response to treatment.

## **Debrief Questions**

### **Why is naloxone administration crucial in this scenario?**

Naloxone reverses the effects of opioid overdose, which can be life-threatening due to respiratory depression leading to cardiac arrest.

### **How does opioid overdose affect the respiratory and cardiac systems?**

Opioids depress the respiratory system, leading to hypoventilation, hypoxia, and eventually cardiac arrest due to lack of oxygen.

### **What are the key differences in the approach to a patient with drug overdose-induced cardiac arrest compared to other causes?**

In addition to standard cardiac arrest management, specific measures such as naloxone administration and attention to potential complications from drug use (like aspiration) are critical.

**NOTES :**

## **Scenario: Massive Pulmonary Embolism Leading to Cardiac Arrest**

### **Patient Information**

- Age: 55
- Gender: Female

### **Moulage Required**

- Patient exhibiting signs of distress (e.g., clutching chest, shortness of breath) before becoming unresponsive

### **Dispatch Information**

- Emergency call regarding a person experiencing severe chest pain and difficulty breathing, then collapsing.

### **On Arrival Presentation**

- Patient found unresponsive, not breathing, no palpable pulse.

### **Past Medical History**

- Recent long-distance flight
- History of deep vein thrombosis (DVT)

### **Primary Assessment Findings**

- Airway: Open
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- PEA (Pulseless Electrical Activity)

### **SAMPLE History Findings**

- Signs & Symptoms: Sudden onset of chest pain, shortness of breath, then collapse
- Allergies: None known
- Medications: Possible anticoagulants for DVT
- Past Medical History: DVT, recent prolonged immobilization
- Last Oral Intake: Breakfast in the morning

- Events leading to the situation: Sudden collapse after symptoms onset

#### **EMT Level Treatment Goals**

- Immediate recognition and management of cardiac arrest
- Initiate CPR
- Provide oxygen, if spontaneous breathing resumes
- Rapid transport

#### **Paramedic Level Treatment Goals**

- Advanced airway management
- Intravenous access
- Continuous cardiac monitoring
- Consideration of thrombolytic therapy if within protocol and capabilities
- Coordination for rapid transport to a facility capable of managing pulmonary embolism

#### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization during transport, maintenance of PEA with potential improvement.
- Presentation: Patient remains critical but stable for hospital handover.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Persistent PEA or deterioration to asystole.
- Presentation: Further deterioration, lack of ROSC.

## **Clinical Course for Scenario: Massive Pulmonary Embolism Leading to Cardiac Arrest**

### **1. Scene Safety and Initial Assessment**

- Ensure scene safety upon arrival.
- Quickly assess the patient's responsiveness and environment.

### **2. Primary Patient Assessment**

- Assess airway, breathing, and circulation.
- Note the patient is unresponsive, not breathing, with no palpable pulse.
- Initiate CPR immediately.

### **3. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR.
- Prepare for potential advanced airway management.

### **4. Circulation Assessment and CPR**

- Continue high-quality chest compressions.
- Attach an AED or cardiac monitor as soon as available.
- Analyze the rhythm; continue CPR based on current ALS guidelines.

### **5. Advanced Life Support (Paramedics)**

- Paramedics take over CPR and advanced life support measures.
- Establish advanced airway management (e.g., endotracheal intubation).
- Secure IV/IO access.
- Administer medications as per ACLS guidelines, considering the possibility of a massive pulmonary embolism.

### **6. Consideration for Thrombolytic Therapy**

- Given the history of DVT and recent long-distance flight, consider the possibility of pulmonary embolism.
- If within protocol and capabilities, prepare for administration of thrombolytic therapy.

### **7. Transport and Continuous Care**

- Continue monitoring and providing care during transport.
- Monitor cardiac rhythm continuously, watching for changes in ECG.
- Provide updates to the receiving hospital, especially about the suspicion of pulmonary embolism.

### **8. Hospital Handover**

- Provide a thorough handover to the emergency department staff.
- Include the patient's medical history, the suspected massive pulmonary embolism, interventions performed, and the patient's response to those interventions.



## Debrief Questions

### **Why is recognition of potential pulmonary embolism important in the pre-hospital setting?**

Early suspicion of pulmonary embolism can guide appropriate treatment and expedite transport to a facility equipped to manage such a critical condition.

### **How does a massive pulmonary embolism lead to cardiac arrest?**

A massive PE can cause acute right heart strain, leading to decreased cardiac output and eventual cardiac arrest due to hemodynamic compromise.

### **What are the key considerations for CPR in a patient with suspected pulmonary embolism?**

High-quality CPR is crucial; however, the underlying cause (PE) often requires definitive hospital-based treatment, like thrombolysis or surgical intervention, highlighting the importance of rapid transport.

**NOTES :**

## **Scenario: Severe Hypoxia Due to Smoke Inhalation Leading to Cardiac Arrest**

### **Patient Information**

- Age: 30
- Gender: Male

### **Moulage Required**

- Soot around nose and mouth
- Burns on skin
- Patient appearing cyanotic and unresponsive

### **Dispatch Information**

- Call from a neighbor about a house fire with a person trapped inside. The fire department has extracted the individual, who is now unresponsive.

### **On Arrival Presentation**

- Patient found outside the house, unresponsive, with burns and signs of smoke inhalation.

### **Past Medical History**

- Asthma
- No other significant medical history

### **Primary Assessment Findings**

- Airway: Compromised due to burns and smoke inhalation
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Elevated due to burns

### **ECG Rhythm**

- Asystole

### **SAMPLE History Findings**

- Signs & Symptoms: Exposure to smoke, difficulty breathing, burns
- Allergies: Allergic to penicillin
- Medications: Inhaler for asthma
- Past Medical History: Asthma

- Last Oral Intake: Unknown
- Events leading to the situation: Trapped in a house fire

#### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiate CPR
- Manage airway, being cautious of potential airway burns
- Provide high-flow oxygen if spontaneous breathing resumes
- Rapid transport to a medical facility

#### **Paramedic Level Treatment Goals**

- Advanced airway management, with consideration for potential airway injury
- IV/IO access for fluid resuscitation and possible medication administration
- Continuous cardiac monitoring
- Treat for possible carbon monoxide and cyanide poisoning (high-flow oxygen, possible use of cyanide antidote kit)
- Immediate transport to a burn center or hospital with emergency services

#### **Correct Management Outcome**

- Vital Signs / ECG: Maintenance of asystole or potential return of a perfusing rhythm during transport.
- Presentation: Stabilized for hospital handover, with appropriate burn and smoke inhalation management initiated.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued asystole, no improvement.
- Presentation: Deterioration of patient's condition, potential complications from inadequate airway and burn management.

## **Clinical Course for Scenario: Severe Hypoxia Due to Smoke Inhalation Leading to Cardiac Arrest**

### **1. Scene Safety and Assessment**

- Ensure the scene is safe upon arrival, especially considering the recent fire.
- Assess the environment for ongoing hazards.

### **2. Initial Patient Assessment**

- Quickly assess the patient's level of consciousness.
- Observe signs of smoke inhalation and burns.
- Check airway, breathing, and circulation.

### **3. Airway and Breathing Management**

- Ensure the airway is clear, being cautious of potential airway burns.
- If the patient is not breathing, initiate rescue breathing.
- Be prepared for advanced airway management due to the risk of airway compromise from burns and smoke inhalation.

### **4. Circulation Assessment and CPR**

- Check for a pulse. If absent, begin CPR immediately.
- Continue CPR as per current guidelines.

### **5. Treatment for Smoke Inhalation and Burns**

- Provide high-flow oxygen, if spontaneous breathing resumes, to treat carbon monoxide and cyanide poisoning.
- Be aware of the potential complications associated with burns, including fluid loss and infection risk.

### **6. Advanced Life Support (Paramedics)**

- Establish advanced airway management considering potential airway injury.
- Secure IV/IO access for fluid resuscitation and medication administration.
- Continuously monitor cardiac activity.
- Consider the administration of antidotes for carbon monoxide and cyanide poisoning if indicated and available.

### **7. Transport and Continuous Monitoring**

- Prepare for immediate transport to a specialized facility capable of treating severe burns and smoke inhalation.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Administer further treatments as necessary, adhering to ACLS guidelines.

### **8. Hospital Handover**

- Provide a comprehensive handover to the receiving medical team at the hospital.

- Include details of the patient's exposure to smoke and burns, treatment provided en route, and the patient's response to these interventions.

## **Debrief Questions**

**Why is it important to consider both cardiac arrest and the complications of smoke inhalation in this scenario?**

Management must address cardiac arrest while also treating complications of smoke inhalation, such as airway injury and poisoning, which can be life-threatening.

**How does smoke inhalation exacerbate the severity of a cardiac arrest situation?**

Smoke inhalation can lead to airway injury, severe hypoxia, and poisoning (carbon monoxide or cyanide), all of which complicate resuscitation efforts and worsen patient outcomes.

**What are the special considerations for managing an airway in a patient with suspected inhalation burns?**

Airway management must be done carefully due to the risk of airway swelling and damage from heat and smoke. Early advanced airway management may be necessary due to the risk of rapid airway compromise.

**NOTES :**

## **Scenario: Commotio Cordis Leading to Cardiac Arrest in a Baseball Player**

### **Patient Information**

- Age: 22
- Gender: Male

### **Moulage Required**

- Uniformed baseball player
- Chest bruising or red mark where the ball impacted

### **Dispatch Information**

- Emergency call from a baseball field. A player was hit in the chest with a baseball and is now unresponsive.

### **On Arrival Presentation**

- Patient found on the ground in a baseball field, unresponsive, with teammates around him.

### **Past Medical History**

- No significant medical history reported by the teammates

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Ventricular Fibrillation

### **SAMPLE History Findings**

- Signs & Symptoms: Sudden collapse after chest impact
- Allergies: None known
- Medications: None
- Past Medical History: None
- Last Oral Intake: Snack before the game
- Events leading to the situation: Struck in the chest by a baseball

### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Start CPR immediately
- Use AED as soon as available
- Prevent further injury
- Prepare for rapid transport

### **Paramedic Level Treatment Goals**

- High-quality CPR
- Advanced airway management
- Defibrillation with manual defibrillator
- Cardiac monitoring
- IV/IO access and possible administration of medications as per ACLS protocol
- Expedited transport to a trauma center

### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC) with a regular rhythm on ECG, stable blood pressure.
- Presentation: Improved color, possible restoration of consciousness.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continuation of ventricular fibrillation, no pulse.
- Presentation: Deterioration in patient's condition, possibly leading to biological death.

## **Clinical Course for Scenario: Commotio Cordis Leading to Cardiac Arrest in a Baseball Player**

### **1. Scene Assessment and Safety**

- Ensure the scene is safe upon arrival.
- Assess the environment for any additional risks.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note the impact mark on the chest from the baseball.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for additional support and an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and Defibrillation**

- Continue chest compressions.
- As soon as the AED arrives, apply it and follow its instructions.
- Deliver a shock if advised by the AED, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish an advanced airway if necessary.
- Secure IV/IO access.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.
- Stabilize the patient for transport.

### **8. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.
- Provide a thorough handover to hospital staff, including details of the event, the treatment provided, and the patient's response to treatment.



## Debrief Questions

### **Why is immediate CPR and defibrillation vital in commotio cordis?**

Commotio cordis often leads to ventricular fibrillation, which is a shockable rhythm. Immediate CPR and defibrillation are critical for increasing survival chances.

### **How does the mechanism of injury in commotio cordis affect the approach to treatment?**

The impact to the chest can cause a lethal heart rhythm disturbance; thus, the treatment focus is on restoring normal heart rhythm while being aware of potential underlying chest injuries.

### **What are the key considerations in the on-field management of a cardiac arrest in a young athlete?**

Rapid assessment and initiation of CPR and defibrillation are crucial. Ensuring cervical spine protection is also important given the sports setting, although chest trauma is the primary concern in commotio cordis.

NOTES :

## **Scenario: Cardiac Arrest Following Electrocution in a Construction Worker**

### **Patient Information**

- Age: 38
- Gender: Male

### **Moulage Required**

- Burn marks at the site of electrical entry and exit
- Construction uniform

### **Dispatch Information**

- Emergency call from a construction site reporting a worker electrocuted after touching a live wire, now unresponsive.

### **On Arrival Presentation**

- Patient found on the ground at a construction site, unresponsive, with visible burn marks.

### **Past Medical History**

- No significant medical history known

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Not measured

### **ECG Rhythm**

- Asystole

### **SAMPLE History Findings**

- Signs & Symptoms: Electrocution followed by collapse
- Allergies: None known
- Medications: None
- Past Medical History: None
- Last Oral Intake: Lunch, 1 hour prior to incident
- Events leading to the situation: Accidental contact with a live wire

### **EMT Level Treatment Goals**

- Ensure scene safety (e.g., electrical hazard has been controlled)
- Immediate recognition of cardiac arrest
- Initiation of CPR
- Use of AED as soon as available
- Prevent further injury
- Rapid transport to a medical facility

### **Paramedic Level Treatment Goals**

- Continued high-quality CPR
- Advanced airway management
- Cardiac monitoring
- IV/IO access for possible fluid resuscitation and medication administration
- Consideration of potential complications from electrical injury
- Immediate transport to a trauma center

### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC) with a stable rhythm on ECG, stabilized blood pressure.
- Presentation: Improvement in patient's condition.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued asystole or other arrhythmic activity, no pulse.
- Presentation: Deterioration in patient's condition, potential for irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Following Electrocution in a Construction Worker**

### **1. Scene Safety and Assessment**

- First, ensure that the scene is safe, particularly from electrical hazards.
- Assess the environment for additional risks.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note the presence of burn marks indicative of electrical injury.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for additional support and an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and Defibrillation**

- Continue chest compressions.
- As soon as the AED arrives, apply it and follow its instructions.
- Deliver a shock if advised by the AED, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish an advanced airway if necessary.
- Secure IV/IO access.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Consideration of Electrical Injury Complications**

- Be aware of the potential complications associated with electrical injuries, including arrhythmias, muscle breakdown, and internal injuries.
- Continuously monitor the cardiac rhythm for any changes.

### **8. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.
- Stabilize the patient for transport.

## 9. Transport and Handover

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.
- Provide a thorough handover to hospital staff, including details of the electrical injury, the treatment provided, and the patient's response to treatment.

## Debrief Questions

### Why is scene safety particularly important in electrocution cases?

There is a risk of ongoing electrical danger, making it vital to ensure the scene is safe for rescuers and the patient to prevent further injury.

### How can electrocution lead to cardiac arrest?

Electrocution can cause immediate cardiac arrest due to the electrical current's direct impact on the heart, disrupting normal cardiac rhythm and leading to arrhythmias or asystole.

### What are special considerations in managing a patient who has been electrocuted?

Alongside standard cardiac arrest management, it's important to look for entry and exit burns, be aware of potential internal injuries, and consider the effects of electricity on the heart and other organs.

## NOTES :

## **Scenario: Cardiac Arrest Following Anaphylactic Shock**

### **Patient Information**

- Age: 27
- Gender: Female

### **Moulage Required**

- Hives or rash on skin
- Swelling around the face and neck

### **Dispatch Information**

- Emergency call from a restaurant about a customer who collapsed after eating, suspected allergic reaction.

### **On Arrival Presentation**

- Patient found unresponsive in a restaurant with facial swelling and hives.

### **Past Medical History**

- Known severe allergy to peanuts

### **Primary Assessment Findings**

- Airway: Compromised due to swelling
- Breathing: Severely compromised, wheezing
- Circulation: Weak or absent pulse

### **Vital Signs**

- Blood Pressure: Low/Not obtainable
- Heart Rate: Rapid initially, later 0 (as per monitor)
- Respiratory Rate: Low due to airway compromise
- SpO2: Low
- Temperature: Normal

### **ECG Rhythm**

- Tachycardia initially, progressing to asystole

### **SAMPLE History Findings**

- Signs & Symptoms: Difficulty breathing, skin rash, swelling of the face
- Allergies: Peanuts
- Medications: Carries an epinephrine autoinjector
- Past Medical History: Severe peanut allergy
- Last Oral Intake: Meal at the restaurant
- Events leading to the situation: Accidental ingestion of peanuts

### **EMT Level Treatment Goals**

- Recognition of anaphylactic shock
- Immediate administration of epinephrine (autoinjector)
- Initiation of CPR if in cardiac arrest
- High-flow oxygen if breathing
- Rapid transport to medical facility

### **Paramedic Level Treatment Goals**

- Advanced airway management due to severe swelling
- Intravenous access for administration of additional epinephrine, antihistamines, and steroids
- Continuous monitoring of cardiac rhythm
- Aggressive management of anaphylactic shock and cardiac arrest
- Coordination for rapid transport to emergency care

### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization of vital signs, possible return of spontaneous circulation, improved cardiac rhythm.
- Presentation: Improvement in airway and breathing, reduced swelling.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Persistent asystole, no improvement in vital signs.
- Presentation: Continued deterioration, failure to manage anaphylaxis effectively.

## **Clinical Course for Scenario: Cardiac Arrest Following Anaphylactic Shock**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, especially in a public place like a restaurant.
- Assess the environment for potential allergen exposure risks.

### **2. Initial Patient Assessment**

- Quickly assess the patient's level of consciousness.
- Observe signs of anaphylaxis: facial swelling, hives, skin rash.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of anaphylactic shock leading to cardiac arrest: severely compromised airway, weak or absent pulse.
- Begin CPR immediately if the patient is in cardiac arrest.
- Call for additional support and an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open, but be cautious of severe swelling.
- If the patient is still breathing, provide high-flow oxygen.
- Prepare for potential advanced airway management due to severe swelling.

### **5. Circulation Assessment and Epinephrine Administration**

- Administer epinephrine immediately if an autoinjector is available.
- Continue chest compressions if in cardiac arrest.
- Monitor cardiac rhythm and be prepared to use AED if a shockable rhythm is identified.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management if necessary.
- Secure IV/IO access.
- Administer additional doses of epinephrine, antihistamines, and steroids as indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Continue to administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.
- Stabilize the patient for transport.

### **8. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.



- Provide a thorough handover to hospital staff, including details of the allergic reaction, the treatment provided, and the patient's response to treatment.

## **Debrief Questions**

### **Why is early administration of epinephrine crucial in anaphylactic shock?**

Epinephrine reverses the effects of anaphylaxis by reducing swelling, opening airways, and improving blood circulation, which can be life-saving.

### **How does anaphylactic shock lead to cardiac arrest?**

Severe anaphylaxis can cause profound circulatory collapse (shock) and respiratory failure, both of which can lead to cardiac arrest.

### **What are the key considerations for the management of anaphylaxis in the pre-hospital setting?**

Rapid recognition and treatment with epinephrine, airway management, and continuous monitoring for complications like cardiac arrest are key. Transport to a medical facility for further treatment is also crucial.

## **Scenario: Cardiac Arrest Following Drowning**

### **Patient Information**

- Age: 21
- Gender: Male

### **Moulage Required**

- Wet clothing and hair
- Foam at the mouth

### **Dispatch Information**

- Emergency call from a beach where a swimmer was found unresponsive in the water after struggling in rough seas.

### **On Arrival Presentation**

- Patient found on the beach, bystanders performing CPR, unresponsive, and not breathing.

### **Past Medical History**

- No significant history, healthy swimmer

### **Primary Assessment Findings**

- Airway: Compromised, possible aspiration
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Lower than normal (hypothermia risk)

### **ECG Rhythm**

- Ventricular fibrillation (VF)

### **SAMPLE History Findings**

- Signs & Symptoms: Difficulty in water, unresponsiveness after being rescued
- Allergies: None known
- Medications: None
- Past Medical History: None
- Last Oral Intake: Unknown
- Events leading to the situation: Struggling in rough seas

### **EMT Level Treatment Goals**

- Immediate CPR continuation
- Use AED as soon as available
- Protection from elements (e.g., removing wet clothing, covering with blankets)
- Airway management, with caution for aspiration
- Rapid transport to medical facility

### **Paramedic Level Treatment Goals**

- Advanced airway management with consideration for potential water aspiration
- Defibrillation for VF
- Intravenous access for fluid management and medication administration
- Continuous monitoring of vital signs and cardiac rhythm
- Hypothermia management
- Coordination for rapid transport to an emergency department

### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation with a regular rhythm, stable blood pressure.
- Presentation: Improvement in patient's condition, hypothermia managed.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continuation of VF or asystole, no pulse.
- Presentation: Deterioration in patient's condition, potential hypothermia complications.

## **Clinical Course for Scenario: Cardiac Arrest Following Drowning**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the beach.
- Assess for any additional hazards in the environment.

### **2. Initial Patient Assessment**

- Assess the patient's level of consciousness.
- Note the presence of wet clothing and foam at the mouth.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, absent breathing, and pulse.
- Continue CPR initiated by bystanders.
- Call for additional support and an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is clear, being cautious of potential water aspiration.
- Provide rescue breaths as part of CPR.
- Be prepared for advanced airway management.

### **5. Circulation Assessment and Defibrillation**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management considering potential water aspiration.
- Secure IV/IO access.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Hypothermia Management**

- Protect the patient from further heat loss.
- Remove wet clothing and cover with blankets.
- Be cautious with active rewarming techniques in severe hypothermia cases.

### **8. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.

- Stabilize the patient for transport.

## **9. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.
- Provide a thorough handover to hospital staff, including details of the drowning event, the treatment provided, and the patient's response to treatment.

## **Debrief Questions**

### **Why is it important to consider the possibility of hypothermia in a drowning patient?**

Prolonged exposure to cold water can lead to hypothermia, which affects the body's responses and the effectiveness of resuscitation efforts.

### **How does drowning lead to cardiac arrest?**

Drowning causes hypoxia due to the inability to breathe underwater, which can quickly lead to cardiac arrest.

### **What are the key considerations in managing a drowning victim in terms of resuscitation?**

Management includes immediate CPR, careful airway management to address potential aspiration, monitoring and managing hypothermia, and rapid transport for advanced care.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Severe Sepsis**

### **Patient Information**

- Age: 65
- Gender: Female

### **Moulage Required**

- Patient appears confused and feverish
- Possible skin discoloration or rash

### **Dispatch Information**

- Emergency call from a family member concerned about a relative with high fever, confusion, and now unresponsiveness.

### **On Arrival Presentation**

- Patient found in bed, unresponsive, with signs of a severe infection (e.g., fever, rash).

### **Past Medical History**

- Recent urinary tract infection
- Diabetes

### **Primary Assessment Findings**

- Airway: Open but at risk due to decreased level of consciousness
- Breathing: Labored and shallow
- Circulation: Weak or absent pulse

### **Vital Signs**

- Blood Pressure: Low/Not obtainable
- Heart Rate: Tachycardic initially, later 0 (as per monitor)
- Respiratory Rate: Elevated but ineffective
- SpO2: Low
- Temperature: High

### **ECG Rhythm**

- Initially sinus tachycardia, progressing to pulseless electrical activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Fever, confusion, increased heart rate, difficulty breathing
- Allergies: No known allergies
- Medications: Insulin for diabetes, antibiotics for UTI
- Past Medical History: Diabetes, recent UTI
- Last Oral Intake: Unable to eat due to illness

- Events leading to the situation: Worsening infection symptoms

#### **EMT Level Treatment Goals**

- Immediate recognition and management of cardiac arrest
- Initiate CPR
- Provide high-flow oxygen if breathing
- Rapid transport to medical facility

#### **Paramedic Level Treatment Goals**

- Advanced airway management
- IV/IO access for fluid resuscitation
- Continuous cardiac monitoring
- Administration of vasopressors if indicated
- Immediate transport to a hospital with critical care facilities

#### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization of vital signs, potential return of spontaneous circulation, improved cardiac rhythm.
- Presentation: Stabilization during transport.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Persistence of PEA or deterioration to asystole.
- Presentation: Continued deterioration, multi-organ failure.

## **Clinical Course for Scenario: Cardiac Arrest Due to Severe Sepsis**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival.
- Assess the environment for potential infectious hazards.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Observe signs of severe infection, such as fever and rash.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, labored and shallow breathing, weak or absent pulse.
- Begin CPR immediately if the patient is in cardiac arrest.
- Call for additional support and an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide high-flow oxygen if the patient is breathing but inadequate.
- Prepare for potential advanced airway management.

### **5. Circulation Assessment and CPR**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management if necessary.
- Secure IV/IO access.
- Begin fluid resuscitation cautiously, considering the risk of fluid overload.
- Continuous cardiac monitoring and administer vasopressors if indicated.

### **7. Sepsis Management**

- Consider the need for early antibiotics, although administration may occur at the hospital.
- Monitor for signs of septic shock and multi-organ failure.
- Maintain adequate ventilation and oxygenation.

### **8. Transport and Continuous Care**

- Prepare for immediate transport to a medical facility with critical care capabilities.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital regarding the patient's condition and interventions.



## 9. Hospital Handover

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.
- Include details of the patient's sepsis signs, treatment provided en route, and the patient's response to those interventions.

## Debrief Questions

### **Why is rapid identification and treatment of sepsis crucial in pre-hospital care?**

Early recognition and treatment of sepsis can prevent progression to severe sepsis and septic shock, which significantly increases the chances of survival.

### **How does severe sepsis lead to cardiac arrest?**

Severe sepsis can lead to systemic inflammatory response syndrome (SIRS), causing widespread tissue damage, organ failure, and circulatory collapse, resulting in cardiac arrest.

### **What are the key considerations in managing a patient with sepsis in the pre-hospital setting?**

Management includes aggressive fluid resuscitation, careful monitoring of vital signs, early antibiotic administration if possible, and rapid transport to a facility equipped to treat septic patients.

## **Scenario: Cardiac Arrest Due to Cardiac Tamponade in a Trauma Victim**

### **Patient Information**

- Age: 40
- Gender: Male

### **Moulage Required**

- Signs of recent chest trauma (e.g., bruising, deformity)
- Distended neck veins

### **Dispatch Information**

- Call from a bystander at the scene of a car accident. One person with severe chest injuries, now unresponsive.

### **On Arrival Presentation**

- Patient found next to a damaged vehicle, unresponsive, with obvious chest trauma.

### **Past Medical History**

- No significant history known at the scene

### **Primary Assessment Findings**

- Airway: Patent but compromised due to injury
- Breathing: Labored and ineffective
- Circulation: Weak or absent pulse

### **Vital Signs**

- Blood Pressure: Low/Not obtainable
- Heart Rate: Tachycardic initially, later 0 (as per monitor)
- Respiratory Rate: Rapid and shallow
- SpO2: Low
- Temperature: Not measured

### **ECG Rhythm**

- Electrical alternans or low voltage QRS, progressing to pulseless electrical activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Chest pain, difficulty breathing, altered mental status
- Allergies: Unknown
- Medications: Unknown
- Past Medical History: Unknown
- Last Oral Intake: Unknown
- Events leading to the situation: Car accident with chest trauma

### **EMT Level Treatment Goals**

- Rapid assessment and management of life-threatening injuries
- High-flow oxygen administration
- Initiation of CPR if indicated
- Rapid transport to trauma center

### **Paramedic Level Treatment Goals**

- Advanced airway management
- IV/IO access for fluid resuscitation
- Cardiac monitoring
- Prehospital notification to trauma center for possible pericardiocentesis
- Careful monitoring and preparation for rapid transport

### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization during transport, maintenance of PEA.
- Presentation: Patient remains critical but stable for hospital handover.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued PEA or asystole.
- Presentation: Deterioration in patient's condition, potential irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Cardiac Tamponade in a Trauma Victim**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, particularly at a car accident site.
- Assess for any additional hazards or patients.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note signs of chest trauma, such as bruising, deformity, and distended neck veins.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of cardiac tamponade: labored breathing, weak or absent pulse.
- Begin CPR immediately if the patient is in cardiac arrest.
- Call for additional support and equipment.

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear, considering potential airway compromise due to chest injury.
- Provide high-flow oxygen if the patient is breathing inadequately.
- Prepare for potential advanced airway management.

### **5. Circulation Assessment and CPR**

- Continue chest compressions if in cardiac arrest.
- Be aware that standard CPR may be less effective due to increased intrathoracic pressure from cardiac tamponade.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management if necessary.
- Secure IV/IO access for fluid resuscitation.
- Continuous cardiac monitoring, looking for signs of cardiac tamponade such as electrical alternans.
- Prehospital notification to the trauma center for potential pericardiocentesis.

### **7. Transport and Continuous Monitoring**

- Prepare for immediate transport to a trauma center.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital about the patient's condition and interventions.

### **8. Hospital Handover**

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.

- Include details of the trauma, suspected cardiac tamponade, interventions performed, and the patient's response to those interventions.

## **Debrief Questions**

### **Why is recognition of cardiac tamponade crucial in trauma patients?**

Cardiac tamponade is a life-threatening condition that requires immediate recognition and intervention to prevent circulatory collapse and cardiac arrest.

### **How does cardiac tamponade lead to cardiac arrest?**

Accumulation of fluid in the pericardial sac leads to increased intrapericardial pressure, hindering the heart's ability to pump effectively, resulting in decreased cardiac output and potential cardiac arrest.

### **What are the key prehospital interventions for a patient with suspected cardiac tamponade?**

Prehospital interventions include ensuring adequate oxygenation, initiating fluid resuscitation, rapid transport to a trauma center, and early notification to the receiving facility for potential emergent intervention.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Tension Pneumothorax**

### **Patient Information**

- Age: 35
- Gender: Male

### **Moulage Required**

- Signs of chest trauma (e.g., bruising, possible wound)
- Uneven chest rise, tracheal deviation

### **Dispatch Information**

- Emergency call from a construction site reporting an individual with a chest injury after a fall, now having trouble breathing.

### **On Arrival Presentation**

- Patient found with labored breathing, increasingly distressed, then becomes unresponsive.

### **Past Medical History**

- No significant medical history

### **Primary Assessment Findings**

- Airway: Open but compromised
- Breathing: Severely labored, decreased breath sounds on one side
- Circulation: Rapid, weak pulse, progressing to no pulse

### **Vital Signs**

- Blood Pressure: Initially low, later not obtainable
- Heart Rate: Tachycardic, later 0 (as per monitor)
- Respiratory Rate: Rapid and labored, later 0
- SpO2: Low, decreasing
- Temperature: Normal

### **ECG Rhythm**

- Sinus tachycardia, progressing to pulseless electrical activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Severe shortness of breath, chest pain, altered level of consciousness
- Allergies: None known
- Medications: None
- Past Medical History: None
- Last Oral Intake: Lunch before the incident
- Events leading to the situation: Fell from a height at a construction site

### **EMT Level Treatment Goals**

- Immediate recognition of life-threatening chest injury
- High-flow oxygen administration
- Preparation for needle decompression by Paramedics
- Rapid transport to medical facility

### **Paramedic Level Treatment Goals**

- Needle decompression of the affected side
- Advanced airway management if necessary
- IV/IO access for fluid resuscitation
- Continuous cardiac monitoring
- Rapid transport to trauma center

### **Correct Management Outcome**

- Vital Signs / ECG: Improvement in vital signs post-decompression, maintenance of PEA.
- Presentation: Stabilization during transport.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued PEA or asystole.
- Presentation: Deterioration in patient's condition, potential irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Tension Pneumothorax**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, particularly at a construction site.
- Assess the environment for additional hazards.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Observe signs of chest trauma, such as bruising, possible wound, and uneven chest rise.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of tension pneumothorax: severely labored breathing, rapid weak pulse, progressing to no pulse.
- Begin CPR immediately if the patient is in cardiac arrest.
- Call for additional support and equipment.

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide high-flow oxygen if the patient is breathing but inadequately.
- Prepare for potential advanced airway management.

### **5. Circulation Assessment and CPR**

- Continue chest compressions if in cardiac arrest.
- Be aware that standard CPR may be less effective due to increased intrathoracic pressure from tension pneumothorax.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Perform needle decompression on the affected side to relieve tension pneumothorax.
- Establish advanced airway management if necessary.
- Secure IV/IO access for fluid resuscitation.
- Continuous cardiac monitoring.

### **7. Transport and Continuous Monitoring**

- Prepare for immediate transport to a trauma center.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital about the patient's condition and interventions.

### **8. Hospital Handover**

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.



- Include details of the trauma, suspected tension pneumothorax, interventions performed, and the patient's response to those interventions.

## **Debrief Questions**

### **Why is rapid identification and intervention critical in tension pneumothorax?**

Tension pneumothorax can rapidly progress to life-threatening respiratory compromise and cardiac arrest, making timely recognition and decompression vital.

### **How does a tension pneumothorax lead to cardiac arrest?**

Accumulation of air in the pleural space increases intrathoracic pressure, impairing venous return to the heart and decreasing cardiac output, potentially leading to cardiac arrest.

### **What are the key steps in the prehospital management of tension pneumothorax?**

Key steps include rapid identification, high-flow oxygen administration, needle decompression (by trained personnel), continuous monitoring, and expedited transport to a trauma facility.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Hypertrophic Cardiomyopathy in a Young Athlete**

### **Patient Information**

- Age: 20
- Gender: Female

### **Moulage Required**

- Athletic clothing, such as a basketball uniform
- No visible injuries

### **Dispatch Information**

- Emergency call from a sports arena where a young basketball player collapsed during a game.

### **On Arrival Presentation**

- Patient found on the basketball court, unresponsive, surrounded by coaches and teammates.

### **Past Medical History**

- No known medical history; patient is a seemingly healthy athlete

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Ventricular fibrillation (VF)

### **SAMPLE History Findings**

- Signs & Symptoms: Sudden collapse during physical activity
- Allergies: None known
- Medications: None
- Past Medical History: None reported
- Last Oral Intake: Pre-game meal
- Events leading to the situation: Intense physical exertion during the game

### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiation of CPR
- Use of AED as soon as available
- Rapid transport to medical facility

### **Paramedic Level Treatment Goals**

- Continuous high-quality CPR
- Advanced airway management
- Defibrillation with manual defibrillator
- IV/IO access and possible administration of medications per ACLS protocol
- Continuous cardiac monitoring
- Immediate transport to a hospital with cardiology services

### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC) with a stable rhythm, stabilized blood pressure.
- Presentation: Improvement in patient's condition.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continuation of ventricular fibrillation, no pulse.
- Presentation: Deterioration in patient's condition, potential for irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Hypertrophic Cardiomyopathy in a Young Athlete**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the sports arena.
- Assess for any additional hazards or patients.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note the athletic setting and the patient's attire, indicating physical exertion.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and Defibrillation**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish an advanced airway if necessary.
- Secure IV/IO access.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.
- Stabilize the patient for transport.

### **8. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.

- Provide a thorough handover to hospital staff, including details of the event, the treatment provided, and the patient's response to treatment.

## **Debrief Questions**

### **Why is immediate CPR and defibrillation critical in athletes experiencing cardiac arrest?**

Immediate CPR and defibrillation are crucial in cases of sudden cardiac arrest, especially in ventricular fibrillation, to restore a normal heart rhythm and improve survival chances.

### **How does hypertrophic cardiomyopathy contribute to cardiac arrest in young athletes?**

Hypertrophic cardiomyopathy can lead to abnormal heart rhythms, particularly during intense physical activity, increasing the risk of sudden cardiac arrest.

### **What are the key considerations in the prehospital management of a young athlete who has collapsed during a game?**

Key considerations include rapid assessment and initiation of CPR and defibrillation, awareness of the potential for underlying cardiac conditions, and expeditious transport to a facility capable of advanced cardiac care.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Acute Aortic Dissection in a Hypertensive Patient**

### **Patient Information**

- Age: 58
- Gender: Male

### **Moulage Required**

- Patient appears in severe pain, clutching the chest or back
- No external bleeding visible

### **Dispatch Information**

- Emergency call reporting a middle-aged man suddenly collapsed at home after complaining of severe chest and back pain.

### **On Arrival Presentation**

- Patient found on the floor at home, unresponsive, with a history of severe pain prior to collapse.

### **Past Medical History**

- Known history of hypertension

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Pulseless Electrical Activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Sudden onset of severe chest and back pain, followed by collapse
- Allergies: No known allergies
- Medications: Antihypertensive drugs
- Past Medical History: Hypertension
- Last Oral Intake: Breakfast earlier in the day
- Events leading to the situation: Sudden, severe pain and collapse

### **EMT Level Treatment Goals**

- Immediate recognition and management of cardiac arrest
- Initiation of CPR
- Rapid transport to medical facility

### **Paramedic Level Treatment Goals**

- Advanced airway management
- IV/IO access for possible medication administration
- Continuous cardiac monitoring
- Immediate transport to a hospital with capability for treating aortic dissection

### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization during transport, maintenance of PEA.
- Presentation: Patient remains critical but stable for hospital handover.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued PEA or asystole.
- Presentation: Deterioration in patient's condition, potential irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Acute Aortic Dissection in a Hypertensive Patient**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, especially in a home environment.
- Assess the environment for any additional risks or patients.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note signs of distress and severe pain, as indicated by clutching the chest or back.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for additional support and an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and CPR**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management if necessary.
- Secure IV/IO access for potential medication administration.
- Continuous cardiac monitoring, looking for signs of pulseless electrical activity (PEA).

### **7. Transport and Continuous Monitoring**

- Prepare for immediate transport to a medical facility capable of treating aortic dissection.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital about the patient's condition and interventions.

### **8. Hospital Handover**

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.
- Include details of the patient's symptoms suggestive of aortic dissection, treatment provided en route, and the patient's response to those interventions.



## Debrief Questions

### **Why is the identification of aortic dissection important in the pre-hospital setting?**

Recognizing the possibility of aortic dissection is crucial for directing appropriate hospital transport and care, as it is a life-threatening condition requiring specific interventions.

### **How does acute aortic dissection lead to cardiac arrest?**

Acute aortic dissection can cause catastrophic internal bleeding and compromise blood flow to vital organs, including the heart, leading to cardiac arrest.

### **What are the key prehospital management strategies for a patient suspected of having an aortic dissection?**

Key strategies include rapid initiation of CPR in case of cardiac arrest, careful monitoring, minimizing patient movement to prevent worsening of the dissection, and prompt transport to an appropriate medical facility.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Brugada Syndrome**

### **Patient Information**

- Age: 29
- Gender: Male

### **Moulage Required**

- Patient found in bed, suggesting the event occurred during sleep
- No visible injuries or signs of trauma

### **Dispatch Information**

- Emergency call from a spouse who woke up to find their partner unresponsive in bed.

### **On Arrival Presentation**

- Patient found in bed, unresponsive, with no signs of breathing or movement.

### **Past Medical History**

- No significant medical history; undiagnosed Brugada Syndrome

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Ventricular fibrillation (VF)

### **SAMPLE History Findings**

- Signs & Symptoms: None observed, sudden cardiac arrest during sleep
- Allergies: None known
- Medications: None
- Past Medical History: None reported
- Last Oral Intake: Dinner the previous evening
- Events leading to the situation: Sudden collapse during sleep

### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiation of CPR
- Use AED as soon as available
- Rapid transport to medical facility

### **Paramedic Level Treatment Goals**

- Continuous high-quality CPR
- Advanced airway management
- Defibrillation with manual defibrillator
- IV/IO access and possible administration of medications per ACLS protocol
- Continuous cardiac monitoring
- Immediate transport to a hospital with cardiology services

### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC) with a stable rhythm, stabilized blood pressure.
- Presentation: Improvement in patient's condition.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continuation of ventricular fibrillation, no pulse.
- Presentation: Deterioration in patient's condition, potential for irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Brugada Syndrome**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, particularly in a home setting.
- Assess the environment for any potential hazards.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note the patient's location in bed, indicating the event likely occurred during sleep.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and Defibrillation**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish an advanced airway if necessary.
- Secure IV/IO access.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.
- Stabilize the patient for transport.

### **8. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.
- Provide a thorough handover to hospital staff, including details of the sudden cardiac arrest, the treatment provided, and the patient's response to treatment.

## Debrief Questions

### **Why is early defibrillation crucial in Brugada Syndrome presenting with cardiac arrest?**

Brugada Syndrome often leads to ventricular fibrillation, a shockable rhythm. Early defibrillation is critical to restore a normal heart rhythm and improve survival chances.

### **How does Brugada Syndrome contribute to sudden cardiac arrest, especially during sleep?**

Brugada Syndrome is a genetic condition that causes abnormal electrical activity in the heart, leading to arrhythmias like VF, especially during rest or sleep.

### **What are the key considerations in the prehospital management of a patient with suspected sudden cardiac arrest due to Brugada Syndrome?**

Key considerations include rapid initiation of CPR, defibrillation, continuous cardiac monitoring, and consideration of underlying genetic conditions in seemingly healthy patients, especially when cardiac arrest occurs at rest or during sleep.

NOTES :

## **Scenario: Cardiac Arrest Due to Hyperkalemia in a Patient with Renal Failure**

### **Patient Information**

- Age: 62
- Gender: Female

### **Moulage Required**

- Patient appears fatigued and in distress
- Dialysis access site (e.g., fistula) on the arm

### **Dispatch Information**

- Emergency call from a patient's home reporting that a renal failure patient has become unresponsive.

### **On Arrival Presentation**

- Patient found in a chair, unresponsive, with a history of missed dialysis sessions.

### **Past Medical History**

- Chronic renal failure requiring dialysis
- Hypertension

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Shallow, ineffective
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: Low, ineffective
- SpO2: Low
- Temperature: Normal

### **ECG Rhythm**

- Peak T waves initially, progressing to sine wave pattern, then asystole

### **SAMPLE History Findings**

- Signs & Symptoms: Weakness, palpitations, shortness of breath
- Allergies: None known
- Medications: Antihypertensives, phosphate binders
- Past Medical History: Chronic renal failure, hypertension
- Last Oral Intake: Light meal

- Events leading to the situation: Missed recent dialysis sessions

#### **EMT Level Treatment Goals**

- Immediate recognition of life-threatening condition
- Initiation of CPR
- Provision of high-flow oxygen if breathing
- Rapid transport to medical facility

#### **Paramedic Level Treatment Goals**

- Advanced airway management
- IV/IO access for administration of emergency medications
- Continuous cardiac monitoring
- Preparation for administration of calcium, bicarbonate, or insulin with glucose (as per protocol)
- Immediate transport to a hospital with renal and cardiology services

#### **Correct Management Outcome**

- Vital Signs / ECG: Possible improvement in ECG, maintenance of asystole or return to a perfusing rhythm.
- Presentation: Stabilization during transport.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued asystole or arrhythmic activity.
- Presentation: Deterioration in patient's condition, potential irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Hyperkalemia in a Patient with Renal Failure**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the patient's home.
- Assess the environment for any additional risks.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note signs of chronic illness, such as a dialysis access site.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, shallow and ineffective breathing, no palpable pulse.
- Begin CPR immediately.
- Call for an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide high-flow oxygen if the patient has inadequate breathing.
- Prepare for potential advanced airway management.

### **5. Circulation Assessment and CPR**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management if necessary.
- Secure IV/IO access.
- Be prepared to administer emergency medications for hyperkalemia, such as calcium, bicarbonate, or insulin with glucose, as per protocol.
- Continuous cardiac monitoring, looking for changes in ECG indicative of hyperkalemia improvement.

### **7. Transport and Continuous Monitoring**

- Prepare for immediate transport to a medical facility with renal and cardiology services.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital about the patient's condition and interventions.



## 8. Hospital Handover

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.
- Include details of the patient's renal failure, missed dialysis sessions, potential hyperkalemia, treatment provided en route, and the patient's response to those interventions.

## Debrief Questions

### **Why is rapid identification of hyperkalemia important in patients with renal failure?**

Hyperkalemia can quickly lead to life-threatening cardiac arrhythmias, so early identification and treatment are crucial to prevent cardiac arrest.

### **How does hyperkalemia lead to cardiac arrest?**

Elevated potassium levels disrupt the normal electrical activity of the heart, which can lead to dangerous arrhythmias or cardiac arrest.

### **What are the key prehospital interventions for a patient with suspected hyperkalemia-induced cardiac arrest?**

Key interventions include CPR, advanced airway management, cardiac monitoring, rapid transport, and, where protocols permit, administration of medications to stabilize heart rhythms and lower potassium levels.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Carbon Monoxide Poisoning**

### **Patient Information**

- Age: Father (45), Mother (42), Child (10)
- Gender: Male (Father), Female (Mother and Child)

### **Moulage Required**

- Patients found in bed or collapsed in the home
- Cherry-red skin coloration, particularly noticeable in the child

### **Dispatch Information**

- Emergency call from a neighbor reporting that a family hasn't been responding since the previous evening. Concerns about a faulty heater were mentioned.

### **On Arrival Presentation**

- All three family members found unresponsive in different areas of the house. The house has a faint smell of gas.

### **Past Medical History**

- No significant history for all members

### **Primary Assessment Findings**

- Airway: Open but unprotected in all patients
- Breathing: Shallow or absent in all patients
- Circulation: No palpable pulse in all patients

### **Vital Signs**

- Blood Pressure: Not obtainable for all patients
- Heart Rate: 0 (as per monitor) for all patients
- Respiratory Rate: Very low or 0 for all patients
- SpO2: Not obtainable for all patients
- Temperature: Normal for all patients

### **ECG Rhythm**

- Asystole in all patients

### **SAMPLE History Findings**

- Signs & Symptoms: Unresponsiveness, possible headache or flu-like symptoms before collapse
- Allergies: None known for all patients
- Medications: None significant for all patients
- Past Medical History: None significant for all patients
- Last Oral Intake: Dinner the previous night for all patients

- Events leading to the situation: Likely prolonged exposure to carbon monoxide from a faulty heater

#### **EMT Level Treatment Goals**

- Immediate recognition of potential carbon monoxide poisoning and cardiac arrest
- Removal from the contaminated environment
- Initiation of CPR for all patients
- Provision of high-flow oxygen if spontaneous breathing is present
- Rapid transport to medical facility with hyperbaric oxygen therapy capability

#### **Paramedic Level Treatment Goals**

- Advanced airway management for all patients
- IV/IO access for possible medication administration
- Continuous cardiac monitoring for all patients
- Aggressive oxygen therapy
- Immediate transport to a hospital with hyperbaric oxygen therapy facilities

#### **Correct Management Outcome**

- Vital Signs / ECG: Potential return of spontaneous circulation with aggressive oxygen therapy, stabilized vital signs during transport.
- Presentation: Improvement in patient's condition en route.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued asystole or arrhythmic activity, no pulse.
- Presentation: Deterioration in patients' conditions, potential irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Carbon Monoxide Poisoning**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, particularly checking for ongoing carbon monoxide (CO) exposure.
- Use carbon monoxide detectors if available and ensure proper ventilation.

### **2. Initial Patient Assessment**

- Assess each patient's level of consciousness.
- Note the cherry-red skin coloration, a sign of CO poisoning.
- Check airway, breathing, and circulation for each family member.

### **3. Immediate Life Support**

- Recognize signs of CO poisoning leading to cardiac arrest: unresponsiveness, shallow or absent breathing, no palpable pulse.
- Begin CPR immediately for each patient in cardiac arrest.
- Call for additional support and equipment, including AEDs for each patient.

### **4. Airway and Breathing Management**

- Ensure the airways are open and clear for all patients.
- Provide rescue breaths as part of CPR if the patients are not breathing adequately.
- Be prepared for potential advanced airway management.

### **5. Circulation Assessment and CPR**

- Continue chest compressions.
- Apply AEDs as soon as available and follow instructions for each patient.
- Deliver shocks if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR for each patient.
- Establish advanced airway management if necessary.
- Secure IV/IO access for each patient.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by each patient's rhythm.

### **7. CO Poisoning Management**

- Remove all patients from the CO-contaminated environment immediately.
- Administer high-flow oxygen to each patient to displace CO from hemoglobin, even if spontaneous breathing resumes.
- Be prepared to manage complications associated with CO poisoning, including neurological symptoms.

## 8. Transport and Continuous Monitoring

- Prepare for immediate transport of all patients to a medical facility capable of hyperbaric oxygen therapy.
- Continuously monitor vital signs and cardiac rhythms during transport.
- Provide updates to the receiving hospital about each patient's condition and interventions.

## 9. Hospital Handover

- Upon arrival at the hospital, provide a comprehensive handover for each patient to the emergency department staff.
- Include details of suspected CO poisoning, cardiac arrest management, treatment provided en route, and each patient's response to those interventions.

## Debrief Questions

### **Why is recognizing the environment as a cause of cardiac arrest important in cases of carbon monoxide poisoning?**

Identifying environmental causes, such as carbon monoxide, is crucial for the safety of both the patients and responders, and guides appropriate treatment like oxygen therapy.

### **How does carbon monoxide lead to cardiac arrest?**

Carbon monoxide binds to hemoglobin more effectively than oxygen, leading to hypoxia and, subsequently, cardiac arrest due to oxygen deprivation at the cellular level.

### **What are the key prehospital management steps for patients with suspected carbon monoxide poisoning?**

Key steps include removing patients from the exposure environment, administering high-flow oxygen, monitoring for arrhythmias, and transporting to a facility equipped with hyperbaric oxygen therapy.

## NOTES :

## **Scenario: Cardiac Arrest Due to Acute Myocarditis**

### **Patient Information**

- Age: 32
- Gender: Male

### **Moulage Required**

- Patient appears fatigued and distressed
- No external signs of trauma

### **Dispatch Information**

- Emergency call from a spouse who reports that their partner, recently recovering from a viral infection, is now having severe chest pain and difficulty breathing.

### **On Arrival Presentation**

- Patient found on the couch, unresponsive, with a history of recent viral illness.

### **Past Medical History**

- Recent upper respiratory tract infection

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Slightly elevated

### **ECG Rhythm**

- Ventricular fibrillation (VF)

### **SAMPLE History Findings**

- Signs & Symptoms: Chest pain, shortness of breath, fatigue
- Allergies: None known
- Medications: Over-the-counter cold remedies
- Past Medical History: Recently had a viral infection
- Last Oral Intake: Light meal
- Events leading to the situation: Sudden onset of severe chest pain

### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiation of CPR
- Use of AED as soon as available
- Rapid transport to medical facility

### **Paramedic Level Treatment Goals**

- Continuous high-quality CPR
- Advanced airway management
- Defibrillation with manual defibrillator
- IV/IO access and possible administration of medications per ACLS protocol
- Continuous cardiac monitoring
- Immediate transport to a hospital with cardiology services

### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC) with a stable rhythm, stabilized blood pressure.
- Presentation: Improvement in patient's condition.

### **Incorrect Management Outcome**

- Vital Signs / ECG: Continuation of ventricular fibrillation, no pulse.
- Presentation: Deterioration in patient's condition, potential for irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Acute Myocarditis**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival, especially in a home environment.
- Assess the environment for any additional risks.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note signs of recent illness, such as fatigue and distress.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and Defibrillation**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish an advanced airway if necessary.
- Secure IV/IO access.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.
- Stabilize the patient for transport.

### **8. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.
- Provide a thorough handover to hospital staff, including details of the recent viral illness, the treatment provided, and the patient's response to treatment.



## Debrief Questions

### **Why is it important to consider recent illness history in a cardiac arrest scenario?**

A recent history of illness, particularly viral infections, can be a key indicator of conditions like myocarditis, which can lead to sudden cardiac arrest.

### **How can acute myocarditis lead to cardiac arrest?**

Acute myocarditis can cause inflammation of the heart muscle, leading to arrhythmias such as ventricular fibrillation, which can result in cardiac arrest.

### **What are the key considerations in the prehospital management of a patient with suspected myocarditis-induced cardiac arrest?**

Key considerations include rapid initiation of CPR and defibrillation, advanced airway management, continuous cardiac monitoring, and transport to a facility capable of providing specialized cardiac care.

NOTES :

## **Scenario: Cardiac Arrest Due to Stress-Induced Cardiomyopathy (Takotsubo)**

### **Patient Information**

- Age: 55
- Gender: Female

### **Moulage Required**

- Patient appears in a state of emotional distress
- No visible injuries

### **Dispatch Information**

- Emergency call from a residence. The caller reports that a family member collapsed after receiving very upsetting news.

### **On Arrival Presentation**

- Patient found on the floor at home, unresponsive, with family members indicating she just received devastating news.

### **Past Medical History**

- No significant cardiac history
- History of anxiety

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Ventricular fibrillation (VF)

### **SAMPLE History Findings**

- Signs & Symptoms: Sudden collapse following emotional distress
- Allergies: None known
- Medications: Anti-anxiety medication
- Past Medical History: Anxiety, no known heart disease

- Last Oral Intake: Unknown
- Events leading to the situation: Received distressing news

#### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiation of CPR
- Use of AED as soon as available
- Rapid transport to medical facility

#### **Paramedic Level Treatment Goals**

- Continuous high-quality CPR
- Advanced airway management
- Defibrillation with manual defibrillator
- IV/IO access and possible administration of medications per ACLS protocol
- Continuous cardiac monitoring
- Immediate transport to a hospital with cardiology services

#### **Correct Management Outcome**

- Vital Signs / ECG: Return of spontaneous circulation (ROSC) with a stable rhythm, stabilized blood pressure.
- Presentation: Improvement in patient's condition.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continuation of ventricular fibrillation, no pulse.
- Presentation: Deterioration in patient's condition, potential for irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Stress-Induced Cardiomyopathy (Takotsubo)**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the residence.
- Assess the environment for any potential hazards.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note signs of emotional distress prior to collapse.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and Defibrillation**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish an advanced airway if necessary.
- Secure IV/IO access.
- Administer medications as per Advanced Cardiac Life Support (ACLS) protocols, if indicated.
- Continue defibrillation efforts as indicated by the patient's rhythm.

### **7. Post-ROSC Care**

- If ROSC is achieved, assess and manage the airway, breathing, and circulation.
- Administer high-flow oxygen and monitor oxygen saturation.
- Provide post-cardiac arrest care, including cooling if indicated.
- Stabilize the patient for transport.

### **8. Transport and Handover**

- Transport the patient carefully, continuing to monitor vital signs and cardiac rhythm.
- Provide a thorough handover to hospital staff, including details of the emotional event, the treatment provided, and the patient's response to treatment.

## Debrief Questions

**Why is understanding the potential impact of extreme stress important in cardiac arrest cases?**

Extreme emotional stress can trigger stress-induced cardiomyopathy, which can mimic heart attack symptoms and lead to cardiac arrest, making it important to consider in the differential diagnosis.

**How does stress-induced cardiomyopathy lead to cardiac arrest?**

The condition can lead to temporary weakening of the heart's left ventricle, causing life-threatening arrhythmias like ventricular fibrillation, which can result in cardiac arrest.

**What are the key considerations in the prehospital management of a patient with suspected stress-induced cardiomyopathy?**

Key considerations include rapid initiation of CPR and defibrillation, psychological support, advanced airway management, continuous cardiac monitoring, and transport to a facility capable of providing specialized cardiac care.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Traumatic Hemorrhage from Popliteal Artery Rupture**

### **Patient Information**

- Age: 38
- Gender: Male

### **Moulage Required**

- Significant bleeding from a leg wound
- Signs of shock (pale, cold, clammy skin)

### **Dispatch Information**

- Emergency call from a warehouse reporting a worker who has been severely injured in an accident and is bleeding heavily from the leg.

### **On Arrival Presentation**

- Patient found on the warehouse floor with massive bleeding from the leg, unresponsive.

### **Past Medical History**

- No significant medical history

### **Primary Assessment Findings**

- Airway: Open but at risk due to decreased level of consciousness
- Breathing: Rapid and shallow
- Circulation: Weak or absent pulse

### **Vital Signs**

- Blood Pressure: Very low/Not obtainable
- Heart Rate: Rapid initially, later 0 (as per monitor)
- Respiratory Rate: Elevated but ineffective
- SpO2: Low
- Temperature: Normal to cool

### **ECG Rhythm**

- Initially tachycardia, progressing to pulseless electrical activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Severe bleeding from the leg, loss of consciousness
- Allergies: None known
- Medications: None
- Past Medical History: None
- Last Oral Intake: Lunch earlier in the day

- Events leading to the situation: Accident at the warehouse leading to leg injury

#### **EMT Level Treatment Goals**

- Immediate control of bleeding (direct pressure, tourniquet application)
- High-flow oxygen administration
- Initiation of CPR if indicated
- Rapid transport to a trauma center

#### **Paramedic Level Treatment Goals**

- Advanced hemorrhage control (e.g., hemostatic agents, additional tourniquets)
- Advanced airway management
- IV/IO access for fluid resuscitation
- Continuous cardiac monitoring
- Expedited transport to a trauma center

#### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization during transport, maintenance of PEA or return to a perfusing rhythm.
- Presentation: Hemorrhage control, stabilization of vitals.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued PEA or asystole, no pulse.
- Presentation: Deterioration in patient's condition, failure to control hemorrhage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Traumatic Hemorrhage from Popliteal Artery Rupture**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the warehouse.
- Assess the environment for potential hazards related to the accident.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note significant bleeding from the leg and signs of shock (pale, cold, clammy skin).
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of life-threatening hemorrhage leading to shock and cardiac arrest: rapid shallow breathing, weak or absent pulse.
- Begin CPR immediately if the patient is in cardiac arrest.
- Call for additional support and equipment.

### **4. Hemorrhage Control**

- Apply immediate direct pressure to the bleeding site.
- Use a tourniquet if the bleeding is severe and not controlled by direct pressure.

### **5. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide high-flow oxygen if the patient has inadequate breathing.
- Prepare for potential advanced airway management.

### **6. Circulation Assessment and CPR**

- Continue chest compressions if in cardiac arrest.
- Monitor the effectiveness of hemorrhage control measures.

### **7. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Apply additional hemorrhage control measures, such as hemostatic agents or additional tourniquets, as necessary.
- Establish advanced airway management if necessary.
- Secure IV/IO access for fluid resuscitation.
- Continuous cardiac monitoring.

### **8. Transport and Continuous Monitoring**

- Prepare for immediate transport to a trauma center.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.



- Provide updates to the receiving hospital about the patient's condition and interventions.

## **9. Hospital Handover**

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.
- Include details of the traumatic injury, hemorrhage control measures taken, CPR performed, and the patient's response to those interventions.

## **Debrief Questions**

### **Why is rapid hemorrhage control critical in traumatic injuries leading to cardiac arrest?**

Rapid hemorrhage control is essential to prevent exsanguination and improve the chances of survival. It is a key part of managing traumatic cardiac arrest.

### **How does severe bleeding lead to cardiac arrest?**

Severe bleeding causes significant blood loss, leading to hypovolemic shock and decreased perfusion to vital organs, including the heart, which can result in cardiac arrest.

### **What are the key prehospital interventions for a patient with traumatic hemorrhage?**

Key interventions include immediate bleeding control using direct pressure and tourniquets, fluid resuscitation, advanced airway management, and rapid transport to a trauma center for surgical intervention.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Congestive Heart Failure (CHF)**

### **Patient Information**

- Age: 67
- Gender: Male

### **Moulage Required**

- Patient appears in respiratory distress, possibly with pulmonary edema (frothy sputum)
- Evidence of chronic illness (e.g., medication bottles for heart failure)

### **Dispatch Information**

- Emergency call from a family member stating that the patient with a history of heart failure is having trouble breathing and has become unresponsive.

### **On Arrival Presentation**

- Patient found in a recliner, unresponsive, with signs of respiratory distress and frothy sputum at the mouth.

### **Past Medical History**

- Chronic congestive heart failure
- Hypertension
- Diabetes

### **Primary Assessment Findings**

- Airway: Compromised due to fluid
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Pulseless Electrical Activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Severe shortness of breath, fatigue, swelling of legs
- Allergies: No known allergies
- Medications: Diuretics, ACE inhibitors, beta-blockers

- Past Medical History: CHF, hypertension, diabetes
- Last Oral Intake: Light meal
- Events leading to the situation: Increasing shortness of breath over the past few days

#### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiation of CPR
- Rapid transport to medical facility

#### **Paramedic Level Treatment Goals**

- Advanced airway management
- IV/IO access for potential medication administration
- Continuous cardiac monitoring
- Administration of diuretics if indicated and within protocol
- Immediate transport to a hospital with cardiac care facilities

#### **Correct Management Outcome**

- Vital Signs / ECG: Possible return of spontaneous circulation with improved cardiac rhythm, stabilization of vital signs during transport.
- Presentation: Improvement in patient's condition en route.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued PEA or asystole.
- Presentation: Deterioration in patient's condition, potential irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Congestive Heart Failure (CHF)**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the patient's residence.
- Assess the environment for any additional risks or patients.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note signs of respiratory distress and chronic illness, such as pulmonary edema (frothy sputum) and medication bottles for heart failure.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of cardiac arrest due to CHF: compromised airway, absent breathing, and pulse.
- Begin CPR immediately.
- Call for an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear, being cautious of fluid in the airway.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and CPR**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management due to potential pulmonary edema.
- Secure IV/IO access for potential medication administration.
- Continuous cardiac monitoring, looking for signs of improvement or deterioration in cardiac rhythm.

### **7. CHF Management**

- Be prepared to administer diuretics if indicated and within protocol, post-ROSC.
- Monitor and manage potential complications associated with CHF, such as fluid overload.

### **8. Transport and Continuous Monitoring**

- Prepare for immediate transport to a medical facility with cardiac care capabilities.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital about the patient's condition and interventions.

## 9. Hospital Handover

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.
- Include details of the patient's CHF, signs of acute exacerbation, CPR performed, and the patient's response to those interventions.

## Debrief Questions

### **Why is early recognition of CHF exacerbation important in preventing cardiac arrest?**

Early recognition and treatment of CHF exacerbation, such as managing fluid overload, can prevent progression to cardiac arrest.

### **How can CHF lead to cardiac arrest?**

CHF can lead to fluid accumulation in the lungs (pulmonary edema), reducing oxygen exchange and leading to hypoxia, arrhythmias, and ultimately cardiac arrest.

### **What are the key prehospital interventions for a patient with CHF in severe distress?**

Key interventions include airway management, oxygen therapy, initiation of CPR if necessary, fluid management, and rapid transport to a facility equipped to manage acute cardiac conditions.

NOTES :

## **Scenario: Cardiac Arrest Due to Postpartum Hemorrhage After Home Birth**

### **Patient Information**

- Age: 31
- Gender: Female

### **Moulage Required**

- Signs of recent childbirth (e.g., birthing supplies, signs of labor at home)
- Massive bleeding evident

### **Dispatch Information**

- Emergency call from a home where a woman has just given birth and is now bleeding heavily.

### **On Arrival Presentation**

- Patient found in a bedroom with signs of a recent home birth, experiencing massive hemorrhage, unresponsive.

### **Past Medical History**

- Uncomplicated pregnancy
- Opted for a home birth

### **Primary Assessment Findings**

- Airway: Open but at risk due to decreased level of consciousness
- Breathing: Shallow, ineffective
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Very low/Not obtainable
- Heart Rate: Rapid initially, later 0 (as per monitor)
- Respiratory Rate: Rapid and shallow, later 0
- SpO2: Low
- Temperature: Normal

### **ECG Rhythm**

- Initially tachycardia, progressing to pulseless electrical activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Severe vaginal bleeding post-delivery
- Allergies: No known allergies
- Medications: Prenatal vitamins
- Past Medical History: Healthy pregnancy
- Last Oral Intake: Fluids during labor

- Events leading to the situation: Home birth with subsequent hemorrhage

#### **EMT Level Treatment Goals**

- Immediate recognition and management of life-threatening hemorrhage
- Initiation of CPR if indicated
- Application of high-flow oxygen
- Rapid transport to medical facility

#### **Paramedic Level Treatment Goals**

- Advanced hemorrhage control (e.g., uterine massage, medications if within scope)
- Advanced airway management
- IV/IO access for fluid / blood resuscitation
- Continuous cardiac monitoring
- Immediate transport to a hospital with obstetric care

#### **Correct Management Outcome**

- Vital Signs / ECG: Stabilization during transport, maintenance of PEA or return to a perfusing rhythm.
- Presentation: Hemorrhage control, stabilization of vitals.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued PEA or asystole.
- Presentation: Deterioration in patient's condition, failure to control hemorrhage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Postpartum Hemorrhage After Home Birth**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the home.
- Assess the environment for any additional risks or patients (e.g., the newborn).

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note signs of recent childbirth and massive hemorrhage.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of life-threatening hemorrhage leading to shock and cardiac arrest: shallow, ineffective breathing, no palpable pulse.
- Begin CPR immediately if the patient is in cardiac arrest.
- Call for additional support and equipment.

### **4. Hemorrhage Control**

- Attempt Fundal Massage / Give TXA
- Be prepared for postpartum-specific hemorrhage control measures, such as uterine massage.

### **5. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide high-flow oxygen if the patient has inadequate breathing.
- Prepare for potential advanced airway management.

### **6. Circulation Assessment and CPR**

- Continue chest compressions if in cardiac arrest.
- Monitor the effectiveness of hemorrhage control measures.

### **7. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Perform postpartum-specific hemorrhage control measures, such as uterine massage, if within the scope of practice.
- Establish advanced airway management if necessary.
- Secure IV/IO access for fluid resuscitation.
- Continuous cardiac monitoring.

### **8. Transport and Continuous Monitoring**

- Prepare for immediate transport to a medical facility with obstetric care.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital about the patient's condition and interventions.



## 9. Hospital Handover

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.
- Include details of the postpartum hemorrhage, CPR performed, and the patient's response to those interventions.

## Debrief Questions

### **Why is rapid hemorrhage control essential in a postpartum hemorrhage scenario leading to cardiac arrest?**

Rapid control of hemorrhage is crucial to prevent exsanguination, the leading cause of maternal death, and to improve the chances of survival in cardiac arrest.

### **How can postpartum hemorrhage lead to cardiac arrest?**

Severe postpartum hemorrhage causes significant blood loss, leading to hypovolemic shock and decreased perfusion to vital organs, including the heart, which can result in cardiac arrest.

### **What are the key prehospital interventions for a patient with postpartum hemorrhage?**

Key interventions include aggressive bleeding control, fluid resuscitation, advanced airway management, and rapid transport to a facility equipped to handle obstetric emergencies.

**NOTES :**

## **Scenario: Cardiac Arrest Due to Air Embolism After Childbirth**

### **Patient Information**

- Age: 28
- Gender: Female

### **Moulage Required**

- Patient in a post-delivery setting (e.g., home birthing environment, birthing supplies present)
- No visible external injuries

### **Dispatch Information**

- Emergency call from a residence where a woman has just delivered a baby and suddenly lost consciousness.

### **On Arrival Presentation**

- Patient found in a bedroom, recently delivered a baby, now unresponsive with no signs of external bleeding.

### **Past Medical History**

- Uncomplicated pregnancy and planned home birth

### **Primary Assessment Findings**

- Airway: Open but unprotected
- Breathing: Absent
- Circulation: No palpable pulse

### **Vital Signs**

- Blood Pressure: Not obtainable
- Heart Rate: 0 (as per monitor)
- Respiratory Rate: 0
- SpO2: Not obtainable
- Temperature: Normal

### **ECG Rhythm**

- Pulseless Electrical Activity (PEA)

### **SAMPLE History Findings**

- Signs & Symptoms: Sudden loss of consciousness post-delivery
- Allergies: No known allergies
- Medications: Prenatal vitamins
- Past Medical History: Healthy pregnancy, no prior medical issues
- Last Oral Intake: Earlier in the day

- Events leading to the situation: Childbirth at home

#### **EMT Level Treatment Goals**

- Immediate recognition of cardiac arrest
- Initiation of CPR
- Provision of high-flow oxygen if spontaneous breathing is present
- Rapid transport to medical facility

#### **Paramedic Level Treatment Goals**

- Advanced airway management
- IV/IO access for fluid resuscitation and possible medication administration
- Continuous cardiac monitoring
- Immediate transport to a hospital with obstetric and emergency care

#### **Correct Management Outcome**

- Vital Signs / ECG: Possible return of spontaneous circulation, stabilized vital signs during transport.
- Presentation: Improvement in patient's condition en route.

#### **Incorrect Management Outcome**

- Vital Signs / ECG: Continued PEA or asystole.
- Presentation: Deterioration in patient's condition, potential irreversible damage.

## **Clinical Course for Scenario: Cardiac Arrest Due to Air Embolism After Childbirth**

### **1. Scene Assessment and Safety**

- Ensure scene safety upon arrival at the residence.
- Assess the environment, particularly noting it's a post-delivery setting.

### **2. Initial Patient Assessment**

- Rapidly assess the patient's level of consciousness.
- Note the absence of external injuries but the recent delivery setting.
- Check airway, breathing, and circulation.

### **3. Immediate Life Support**

- Recognize signs of cardiac arrest: unresponsive, absent breathing, and pulse.
- Begin CPR immediately.
- Call for an automated external defibrillator (AED).

### **4. Airway and Breathing Management**

- Ensure the airway is open and clear.
- Provide rescue breaths as part of CPR if the patient is not breathing adequately.

### **5. Circulation Assessment and CPR**

- Continue chest compressions.
- Apply the AED as soon as available and follow its instructions.
- Deliver a shock if advised, followed by immediate resumption of CPR.

### **6. Advanced Life Support (Paramedics)**

- Paramedics take over with high-quality CPR.
- Establish advanced airway management if necessary.
- Secure IV/IO access for fluid resuscitation and potential medication administration.
- Continuous cardiac monitoring.

### **7. Consideration for Air Embolism**

- Be aware that an air embolism is a potential complication after childbirth, especially in a home birth setting.
- Monitor and manage complications associated with air embolism, such as cardiac arrhythmias.

### **8. Transport and Continuous Monitoring**

- Prepare for immediate transport to a medical facility with obstetric and emergency care capabilities.
- Continuously monitor the patient's vital signs and cardiac rhythm during transport.
- Provide updates to the receiving hospital about the patient's condition and interventions.

## 9. Hospital Handover

- Upon arrival at the hospital, provide a comprehensive handover to the emergency department staff.
- Include details of the recent childbirth, the onset of cardiac arrest, CPR performed, and the patient's response to those interventions.

## Debrief Questions

### **Why is understanding the potential for air embolism important in postpartum scenarios?**

Recognizing the potential for air embolism in the postpartum period is vital as it is a rare but life-threatening complication that requires immediate treatment.

### **How can an air embolism lead to cardiac arrest following childbirth?**

Air can enter the bloodstream during delivery, potentially through a ruptured vein or uterus. The air can then travel to the heart, obstructing blood flow and leading to cardiac arrest.

### **What are the key prehospital interventions for a patient with suspected postpartum air embolism?**

Key interventions include immediate CPR if in cardiac arrest, providing high-flow oxygen, advanced airway management, rapid transport, and alerting the receiving hospital to prepare for potential advanced interventions.

## NOTES :