

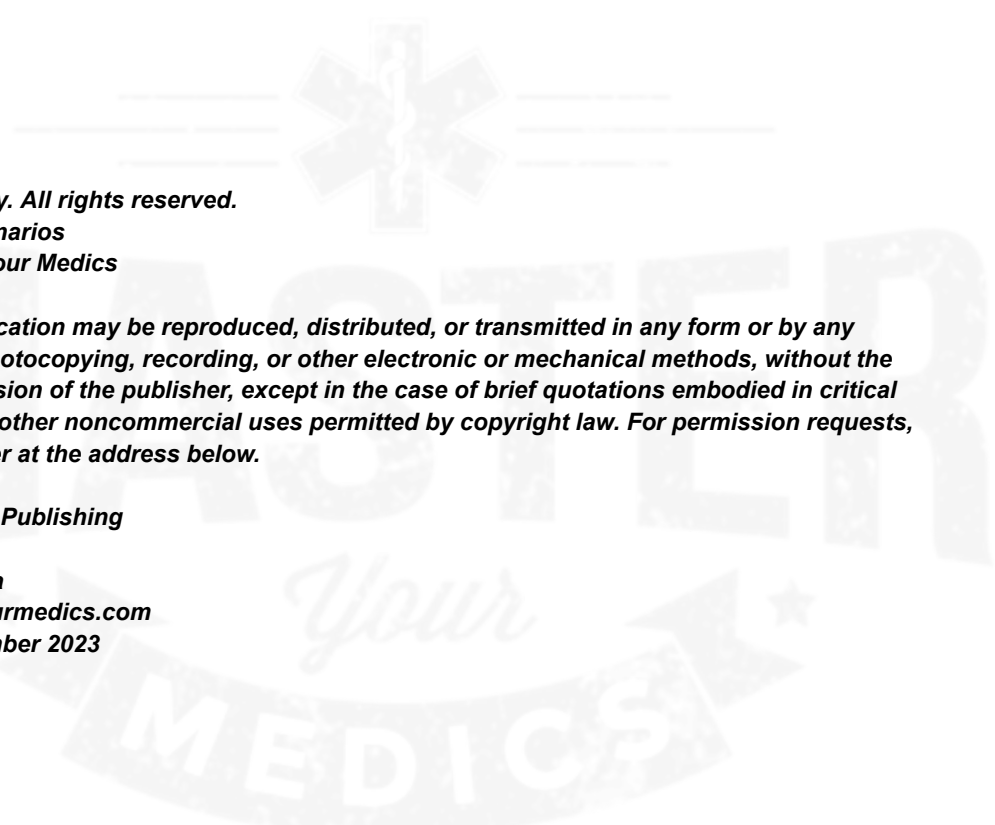
Master Your Medics

E-Book

First Edition

25 Airway Scenarios

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Airway Compromise Scenario: Severe Respiratory Distress in COPD Exacerbation

Patient Information:

Age: 67 years old **Gender:** Male

Moulage Required:

- Cyanosis around lips
- Use of accessory muscles for breathing
- Audible wheezing

Dispatch Information:

- Emergency call for a patient with extreme difficulty breathing and a history of COPD.

On Arrival Presentation:

- The patient is sitting upright, struggling to breathe.
- Audible wheezes, cyanosis noted around lips.
- Appears anxious and unable to speak in full sentences.

Past Medical History:

- Chronic Obstructive Pulmonary Disease (COPD)
- Previous hospital admissions for respiratory issues

Primary Assessment Findings:

- Alert but in severe respiratory distress
- Use of accessory muscles to breathe
- Diminished breath sounds with wheezing

Vital Signs:

- BP: 150/90 mmHg
- HR: 110 bpm
- RR: 30 breaths/min, labored
- SpO2: 88% on room air

SAMPLE History Findings:

- **Symptoms:** Severe shortness of breath, unable to speak in full sentences, wheezing
- **Allergies:** No known drug allergies
- **Medications:** Inhaled bronchodilators (e.g., Salbutamol), oral steroids
- **Past Illnesses:** COPD, hypertension
- **Last Oral Intake:** A few hours ago
- **Events Leading to Incident:** Increasing difficulty in breathing over the past few hours

Paramedic Level Treatment Goals:

- Administer high-flow oxygen
- Prepare for intubation if the patient's condition does not improve with initial management
- Nebulized bronchodilators (e.g., albuterol)
- Consider IV corticosteroids if indicated
- Continuous monitoring of vital signs and SpO2

Scenario Outcomes:

Correct Management:

Vital Signs: BP: 145/85 mmHg, HR: 100 bpm, RR: 24 breaths/min, SpO2: 94% on high-flow oxygen

Presentation: Improved breathing, reduced use of accessory muscles, able to speak in short sentences

Incorrect Management:

Vital Signs: BP: 155/95 mmHg, HR: 120 bpm, RR: 35 breaths/min, SpO2: 85% on room air

Presentation: Increased respiratory distress, confusion, cyanosis worsens

Debrief Questions:

What are the key indicators for intubation in this scenario?

Explanation: Indicators include inability to maintain adequate oxygenation (SpO2 < 90%), increased work of breathing despite maximum medical therapy, altered mental status, and exhaustion.

Why is it crucial to attempt medical management before intubation in COPD exacerbation?

Explanation: Intubation can lead to complications in COPD patients due to their underlying lung pathology. Medical management with bronchodilators and steroids can often reverse the exacerbation without needing invasive ventilation.

What are the risks of delaying intubation in a COPD patient with severe respiratory distress?

Explanation: Delaying intubation can lead to respiratory failure, CO2 retention, and respiratory acidosis, increasing the risk of cardiac arrest and poor outcomes.

Airway Compromise Scenario: Anaphylaxis with Severe Angioedema

Patient Information:

Age: 32 years old **Gender:** Female

Moulage Required:

- Swelling of the face and neck
- Hives on skin
- Agitated and distressed behavior

Dispatch Information:

- Caller reports a female experiencing a severe allergic reaction after eating a meal, possibly containing peanuts.

On Arrival Presentation:

- The patient is struggling to breathe, with noticeable swelling of the face and neck.
- Appears extremely anxious and unable to speak clearly.
- Urticaria (hives) present on exposed skin.

Past Medical History:

- Known allergy to peanuts
- Asthma

Primary Assessment Findings:

- Severe facial and neck swelling
- Audible stridor indicating upper airway obstruction
- Increasing respiratory distress

Vital Signs:

- BP: 100/60 mmHg
- HR: 120 bpm
- RR: 28 breaths/min, labored
- SpO2: 90% on room air

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, swollen face and neck, skin rash
- **Allergies:** Peanuts
- **Medications:** Inhalers for asthma
- **Past Illnesses:** Asthma
- **Last Oral Intake:** Dinner, 30 minutes prior
- **Events Leading to Incident:** Ate a meal that may have contained peanuts

Paramedic Level Treatment Goals:

- Immediate administration of epinephrine
- High-flow oxygen
- Prepare for rapid intubation given the progressive airway edema
- Consider nebulized bronchodilators for bronchospasm
- Intravenous access for fluid resuscitation and administration of additional medications (antihistamines, steroids)

Scenario Outcomes:

Correct Management:

Vital Signs: BP: 110/70 mmHg, HR: 100 bpm, RR: 22 breaths/min, SpO2: 94% on high-flow oxygen

Presentation: Reduced swelling, improved breathing, decreased anxiety

Incorrect Management:

Vital Signs: BP: 90/50 mmHg, HR: 140 bpm, RR: 32 breaths/min, SpO2: 85% on room air

Presentation: Increased swelling, severe respiratory distress, potential for complete airway obstruction

Debrief Questions:

What are the indications for intubation in this scenario?

Explanation: Rapidly progressing angioedema, stridor, and inability to maintain adequate oxygenation are critical indications for intubation in anaphylaxis.

Why is epinephrine the first-line treatment in anaphylaxis?

Explanation: Epinephrine is crucial as it addresses multiple aspects of anaphylaxis, including bronchodilation, vasoconstriction, and reduction of angioedema and urticaria.

What complications can arise from delayed intubation in severe anaphylaxis?

Explanation: Delaying intubation can lead to complete airway obstruction, hypoxia, and cardiovascular collapse, significantly increasing the risk of mortality.

Airway Compromise Scenario: Cardiopulmonary Arrest

Patient Information:

Age: 54 years old **Gender:** Male

Moulage Required:

- Unresponsive patient
- Cyanosis

Dispatch Information:

- Caller reports a middle-aged man collapsed suddenly at home.

On Arrival Presentation:

- The patient is found unresponsive on the floor with no signs of breathing or pulse.
- Bystanders have initiated CPR.

Past Medical History:

- History of coronary artery disease
- Previous myocardial infarction

Primary Assessment Findings:

- No pulse or breathing detected
- No response to verbal or painful stimuli

Vital Signs:

- Absent (Cardiopulmonary arrest)

SAMPLE History Findings:

- **Symptoms:** Collapsed suddenly
- **Allergies:** N/A
- **Medications:** Aspirin, atorvastatin
- **Past Illnesses:** Coronary artery disease
- **Last Oral Intake:** Unknown
- **Events Leading to Incident:** Watching TV when collapsed

Paramedic Level Treatment Goals:

- Immediate continuation of CPR
- Application of defibrillator pads and assessment for shockable rhythm
- Secure airway via intubation to ensure effective ventilation during CPR
- Establish IV access for administration of emergency medications (epinephrine, amiodarone)
- Continue Advanced Cardiac Life Support (ACLS) protocols

Scenario Outcomes:

Correct Management:

- Vital Signs: Remain absent (CPR ongoing)
- Presentation: Properly secured airway, effective chest compressions, and ventilation

Incorrect Management:

- Vital Signs: Remain absent
- Presentation: Ineffective or interrupted CPR, complications from delayed or failed intubation

Debrief Questions:

What is the importance of securing the airway during CPR in cardiopulmonary arrest?

Explanation: Securing the airway ensures proper oxygenation and ventilation during CPR, which is critical for maintaining tissue oxygenation and increasing the chance of return of spontaneous circulation (ROSC).

What are the risks of delaying intubation in this scenario?

Explanation: Delaying intubation can lead to inadequate ventilation, prolonged hypoxia, and decreased effectiveness of CPR, reducing the chances of successful resuscitation.

How can incorrect intubation technique impact patient outcomes in cardiopulmonary arrest?

Explanation: Incorrect intubation can cause trauma, esophageal intubation, or interruption of CPR, all of which can negatively impact the patient's chance of survival. Continuous monitoring and confirmation of tube placement are essential.

Airway Compromise Scenario: Traumatic Brain Injury

Patient Information:

Age: 30 years old **Gender:** Female

Moulage Required:

- Unresponsive patient with visible head injury
- Bruising and swelling on the head

Dispatch Information:

- Caller reports a young woman who fell from a ladder and is now unresponsive.

On Arrival Presentation:

- The patient is found lying on the ground, unresponsive with shallow breathing.
- Evidence of a head injury with scalp laceration.

Past Medical History:

- No significant past medical history

Primary Assessment Findings:

- Glasgow Coma Scale (GCS) score of 6 (E1V2M3)
- Irregular breathing pattern
- Pupils are unequal

Vital Signs:

- BP: 140/90 mmHg
- HR: 110 bpm
- RR: 12 breaths/min, shallow
- SpO2: 92% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Unresponsive after fall
- **Allergies:** N/A
- **Medications:** N/A
- **Past Illnesses:** None
- **Last Oral Intake:** Unknown
- **Events Leading to Incident:** Fell from a ladder

Paramedic Level Treatment Goals:

- Assess and manage the airway immediately due to low GCS
- Pre-oxygenate and prepare for rapid sequence intubation
- Monitor and maintain cervical spine stabilization
- Establish IV access for administration of medications and fluids
- Prepare for transport to a trauma center

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilized post-intubation
- Presentation: Airway secured, breathing supported, cervical spine protected

Incorrect Management:

- Vital Signs: Possible deterioration, hypoxia
- Presentation: Increased intracranial pressure, worsening of neurological status

Debrief Questions:

Why is intubation critical in a patient with a GCS < 8 due to traumatic brain injury?

Explanation: A GCS < 8 is indicative of a decreased level of consciousness, which compromises airway protection and breathing. Intubation is essential to secure the airway, prevent aspiration, and ensure adequate ventilation, especially in the context of potential brain injury.

What are the consequences of delayed intubation in this scenario?

Explanation: Delaying intubation can lead to hypoxia, hypercapnia, aspiration pneumonia, and further neurological deterioration due to inadequate oxygenation and ventilation.

How does the management of the cervical spine impact intubation in traumatic brain injury?

Explanation: In cases of traumatic brain injury, particularly with a mechanism suggestive of potential spinal injury, maintaining cervical spine stabilization during intubation is crucial to prevent further spinal cord damage. This requires careful technique and potentially the use of adjuncts to aid in visualization during intubation.

Airway Compromise Scenario: Burns Involving the Face or Neck

Patient Information:

Age: 45 years old **Gender:** Male

Moulage Required:

- Burn injuries on the face and neck
- Swelling and redness around the airway

Dispatch Information:

- Caller reports a man with severe burns to the face and neck following a fire accident.

On Arrival Presentation:

- The patient is conscious, in severe pain, with burns on the face and neck.
- Difficulty speaking and signs of respiratory distress.

Past Medical History:

- No significant past medical history

Primary Assessment Findings:

- Hoarse voice, stridor
- Swelling around the mouth and neck
- Singed nasal hairs and soot in the oropharynx

Vital Signs:

- BP: 120/80 mmHg
- HR: 130 bpm
- RR: 24 breaths/min, labored
- SpO2: 89% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, pain
- **Allergies:** None
- **Medications:** None
- **Past Illnesses:** None
- **Last Oral Intake:** Lunch earlier that day
- **Events Leading to Incident:** Involved in a fire accident

Paramedic Level Treatment Goals:

- Immediate assessment of airway patency and risk of airway compromise due to edema
- Administer high-flow oxygen, consider early intubation before airway edema worsens
- Monitor for signs of inhalation injury
- Start IV fluids for burn management
- Transport to a burn center or appropriate facility

Scenario Outcomes:

Correct Management:

- Vital Signs: Improved oxygen saturation post-intubation
- Presentation: Airway secured, preventing obstruction from edema

Incorrect Management:

- Vital Signs: Potential deterioration, hypoxia
- Presentation: Progressive airway obstruction due to edema, potential for respiratory arrest

Debrief Questions:

Why is early intubation crucial in burns involving the face or neck?

Explanation: Burns to the face or neck can rapidly lead to airway edema, making intubation increasingly difficult or impossible. Early intubation secures the airway before significant swelling occurs.

What are the risks of delaying intubation in this scenario?

- **Explanation:** Delay in intubation can result in complete airway obstruction due to progressive edema, leading to hypoxia, hypercapnia, and potentially respiratory arrest.

How do the signs of inhalation injury impact the decision to intubate?

- **Explanation:** Signs of inhalation injury, such as singed nasal hairs, soot in the oropharynx, hoarseness, and stridor, indicate a high risk of airway compromise. These findings necessitate early intubation to secure the airway and prevent respiratory distress.

Airway Compromise Scenario: Near-Drowning Incident

Patient Information:

Age: 32 years old **Gender:** Female

Moulage Required:

- Wet clothing, signs of respiratory distress

Dispatch Information:

- Caller reports a female pulled from water, unconscious and barely breathing.

On Arrival Presentation:

- The patient is semi-conscious, gasping for air, with frothy sputum around the mouth.
- Cyanosis around lips and fingertips.

Past Medical History:

- Asthma

Primary Assessment Findings:

- Decreased level of consciousness (GCS: 11)
- Crackles and wheezes upon auscultation
- Labored breathing

Vital Signs:

- BP: 110/70 mmHg
- HR: 145 bpm
- RR: 30 breaths/min, ineffective
- SpO2: 85% on room air
- Temperature: 97°F (36.1°C)

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, altered mental status
- **Allergies:** None
- **Medications:** Inhaler for asthma
- **Past Illnesses:** Asthma
- **Last Oral Intake:** Breakfast earlier that day
- **Events Leading to Incident:** Swimming in a lake

Paramedic Level Treatment Goals:

- Immediate assessment of airway and breathing
- Administer high-flow oxygen, prepare for rapid sequence intubation
- IV access and monitor for signs of secondary drowning or pulmonary edema
- Consider in-line cervical stabilization if trauma is suspected
- Urgent transport to the nearest emergency facility

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilized post-intubation, improved oxygen saturation
- Presentation: Secured airway, prevention of aspiration and worsening of respiratory status

Incorrect Management:

- Vital Signs: Continued deterioration, worsening hypoxia
- Presentation: Risk of aspiration, respiratory failure, and possible cardiac arrest

Debrief Questions:

Why is immediate intubation considered in a near-drowning patient with compromised respiratory function?

Explanation: In near-drowning incidents, patients are at high risk for respiratory failure due to aspiration, pulmonary edema, and hypoxia. Intubation secures the airway and allows for controlled ventilation.

What complications can arise from delayed intubation in this scenario?

Explanation: Delay in intubation can lead to aspiration pneumonia, worsening pulmonary edema, hypoxia, hypercapnia, and potentially cardiac arrest due to respiratory failure.

How does a history of asthma affect the management of a near-drowning patient?

Explanation: Asthma increases the risk of bronchospasm and respiratory complications following near-drowning. Early intubation can help manage these complications effectively and prevent further deterioration of the patient's respiratory status.

Airway Compromise Scenario: Drug Overdose

Patient Information:

Age: 26 years old **Gender:** Male

Moulage Required:

- Pinpoint pupils
- Evidence of drug use (e.g., syringes, pills nearby)

Dispatch Information:

- Caller reports finding a young male unconscious, with shallow breathing.

On Arrival Presentation:

- The patient is found unresponsive with shallow, infrequent breathing.
- Drug paraphernalia present at the scene.

Past Medical History:

- Previous episodes of substance abuse

Primary Assessment Findings:

- Decreased level of consciousness (GCS: 6)
- Respiratory depression
- Pinpoint pupils, suggesting opioid overdose

Vital Signs:

- BP: 90/50 mmHg
- HR: 55 bpm
- RR: 6 breaths/min, shallow
- SpO2: 80% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Unresponsiveness, respiratory depression
- **Allergies:** No known allergies
- **Medications:** Unknown
- **Past Illnesses:** History of drug abuse
- **Last Oral Intake:** Unknown
- **Events Leading to Incident:** Likely drug overdose

Paramedic Level Treatment Goals:

- Immediate airway assessment and preparation for intubation
- Administer Naloxone (Narcan) if opioid overdose is suspected
- Secure IV access and monitor vitals
- Prepare for rapid sequence intubation due to depressed consciousness and respiratory failure
- Urgent transport to the nearest emergency facility

Scenario Outcomes:

Correct Management:

- Vital Signs: Improved post-intubation and Naloxone administration, stabilized respiratory rate and oxygen saturation
- Presentation: Secured airway, prevention of hypoxia and aspiration

Incorrect Management:

- Vital Signs: Continued deterioration, worsening hypoxia, potential cardiac arrest
- Presentation: Risk of aspiration, respiratory failure, and possible overdose complications

Debrief Questions:

Why is intubation crucial in a patient with a drug overdose leading to respiratory depression?

Explanation: In cases of drug overdose causing respiratory depression, intubation is vital to manage the airway, support breathing, and prevent aspiration, especially when the patient's level of consciousness is significantly decreased.

What role does Naloxone play in this scenario, and how does it affect the decision to intubate?

Explanation: Naloxone reverses the effects of opioids. If the patient responds to Naloxone with improved breathing and consciousness, intubation might be avoided. However, if there is no response or inadequate improvement, intubation remains necessary.

How do pinpoint pupils help in the assessment of this patient, and what are the implications for treatment?

Explanation: Pinpoint pupils are a classic sign of opioid overdose, guiding the use of Naloxone and the urgency of airway management. It suggests the cause of respiratory depression and aids in the rapid initiation of appropriate treatment.

Airway Compromise Scenario: Severe Head or Facial Trauma

Patient Information:

Age: 34 years old **Gender:** Female

Moulage Required:

- Facial swelling and bruising
- Blood from the nose and mouth
- Possible deformity of facial bones

Dispatch Information:

- Caller reports a pedestrian struck by a vehicle, with visible facial injuries.

On Arrival Presentation:

- The patient is semi-conscious with evident severe facial trauma.
- Struggling to breathe, with blood and swelling in the oral and nasal passages.

Past Medical History:

- No significant past medical history reported

Primary Assessment Findings:

- Altered mental status (GCS: 9)
- Obstructed airway due to facial injuries
- Irregular breathing pattern

Vital Signs:

- BP: 110/70 mmHg
- HR: 120 bpm
- RR: 22 breaths/min, labored
- SpO₂: 88% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, altered consciousness
- **Allergies:** None reported
- **Medications:** None reported
- **Past Illnesses:** None reported
- **Last Oral Intake:** Unknown
- **Events Leading to Incident:** Struck by a vehicle while walking

Paramedic Level Treatment Goals:

- Immediate airway assessment, including manual maneuvers to open the airway
- Preparation for rapid sequence intubation, considering potential cervical spine injury
- Secure IV access, monitor vitals, and administer oxygen
- Consideration of alternative airway devices if intubation is not feasible
- Urgent transport to a trauma center

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization post-intubation, improved oxygen saturation
- Presentation: Secured airway, prevention of aspiration, and stabilization of breathing

Incorrect Management:

- Vital Signs: Deterioration of respiratory and cardiovascular status
- Presentation: Increased risk of hypoxia, aspiration, and further airway compromise

Debrief Questions:

What are the key challenges in managing a patient with severe head or facial trauma in terms of airway management?

Explanation: Such trauma often leads to airway obstruction due to blood, swelling, or disrupted anatomy. Managing the airway requires careful consideration of cervical spine protection, dealing with obstructions, and potentially difficult intubation.

How does the presence of facial trauma influence the decision and technique of intubation?

Explanation: Facial trauma can make intubation more challenging due to anatomical distortions, bleeding, and the risk of causing further injury. Rapid sequence intubation may be necessary, and alternative airway devices should be ready.

Why is rapid transport to a trauma center a critical part of the management in this scenario?

Explanation: Severe head or facial trauma often requires specialized care, including surgery, that can only be provided at a trauma center. Early transport ensures timely definitive care, which can be crucial for the patient's outcome.

Airway Compromise Scenario: Status Epilepticus

Patient Information:

Age: 29 years old **Gender:** Male

Moulage Required:

- Convulsive movements
- Excessive salivation
- Possible incontinence

Dispatch Information:

- Caller reports an individual experiencing continuous seizures for over 5 minutes.

On Arrival Presentation:

- The patient is actively convulsing, with ongoing tonic-clonic movements.
- Unable to protect their airway due to prolonged seizure activity.

Past Medical History:

- Known history of epilepsy

Primary Assessment Findings:

- Unresponsive, in the middle of a seizure
- Risk of airway compromise due to inability to manage secretions and protect airway

Vital Signs:

- BP: 130/80 mmHg
- HR: 140 bpm
- RR: Irregular due to seizure activity
- SpO2: 92% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Continuous seizures
- **Allergies:** No known allergies
- **Medications:** Carbamazepine (antiepileptic)
- **Past Illnesses:** Epilepsy
- **Last Oral Intake:** Unknown
- **Events Leading Up to Incident:** No specific trigger identified

Paramedic Level Treatment Goals:

- Immediate management of seizures using antiepileptic drugs (e.g., benzodiazepines)
- Preparation for rapid sequence intubation to protect the airway
- Secure IV access, monitor vitals, and administer oxygen
- Consider advanced airway management if seizures are refractory to initial medication
- Urgent transport to a medical facility

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization post-medication and intubation, improved oxygen saturation
- Presentation: Cessation of seizure activity, secured airway, prevention of aspiration

Incorrect Management:

- Vital Signs: Possible worsening of the respiratory status, hypoxia
- Presentation: Continued risk of aspiration, prolonged seizure activity, potential for secondary injury

Debrief Questions:

Why is intubation crucial in managing a patient with status epilepticus?

Explanation: In status epilepticus, the prolonged seizure activity impairs the patient's ability to protect their airway, manage secretions, and maintain adequate ventilation, making intubation necessary to prevent aspiration and ensure oxygenation.

What are the immediate pharmacological interventions for status epilepticus, and how do they impact the decision to intubate?

Explanation: Benzodiazepines are the first-line treatment for status epilepticus. While they can stop seizure activity, they may also depress the respiratory drive, increasing the need for airway management and intubation.

What are the risks of delaying intubation in a patient with prolonged seizure activity?

Explanation: Delaying intubation in status epilepticus increases the risk of hypoxia, aspiration pneumonia, and secondary brain injury due to prolonged seizures and inadequate ventilation. Prompt airway management is essential to avoid these complications.

Airway Compromise Scenario: Severe Stroke

Patient Information:

Age: 72 years old **Gender:** Female

Moulage Required:

- Facial droop
- Slurred speech
- Unilateral weakness

Dispatch Information:

- Caller reports an elderly woman suddenly unable to speak properly and falling to the ground.

On Arrival Presentation:

- The patient is semi-conscious with a noticeable facial droop and slurred speech.
- Unable to follow commands or protect the airway adequately.

Past Medical History:

- Hypertension
- Previous transient ischemic attack (TIA)

Primary Assessment Findings:

- Altered mental status
- Gurgling respirations indicating potential aspiration
- Unilateral weakness on the left side

Vital Signs:

- BP: 180/100 mmHg
- HR: 90 bpm
- RR: 16 breaths/min, irregular
- SpO₂: 89% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Sudden onset of weakness, difficulty speaking
- **Allergies:** No known drug allergies
- **Medications:** Aspirin, Lisinopril
- **Past Medical History:** Hypertension, previous TIA
- **Last Oral Intake:** Breakfast, 3 hours ago
- **Events Leading Up:** Watching TV when symptoms started

Paramedic Level Treatment Goals:

- Airway assessment and preparation for intubation
- Administer oxygen, monitor vitals
- IV access, blood glucose level check
- Consider rapid sequence intubation if GCS < 8 or inability to protect airway
- Urgent transport to a stroke center

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization post-intubation, improved oxygen saturation
- Presentation: Airway protected, risk of aspiration minimized

Incorrect Management:

- Vital Signs: Possible worsening respiratory status, hypoxia
- Presentation: Increased risk of aspiration, further decline in neurological status

Debrief Questions:

Why is intubation indicated in a patient with a severe stroke and decreased consciousness?

Explanation: Patients with severe strokes may have impaired consciousness and inability to protect their airway. Intubation ensures airway patency, reduces the risk of aspiration, and facilitates controlled ventilation, crucial in the management of severe stroke patients.

What are the signs that indicate the need for intubation in a stroke patient?

Explanation: Signs include altered mental status (e.g., GCS < 8), inability to follow commands, ineffective cough or gag reflex, irregular or labored breathing, and any signs of respiratory distress or failure.

What complications can arise from delayed or improper airway management in stroke patients?

Explanation: Delayed or improper airway management can lead to aspiration pneumonia, hypoxia, hypercarbia, and secondary brain injury due to inadequate oxygenation and ventilation. These complications can significantly worsen the patient's outcome.

Airway Compromise Scenario: Massive Hemoptysis

Patient Information:

- **Age:** 55 years old
- **Gender:** Male

Moulage Required:

- Fake blood to simulate hemoptysis
- Distressed and anxious appearance

Dispatch Information:

- Caller reports a male coughing up large amounts of blood.

On Arrival Presentation:

- The patient is sitting up, coughing up copious amounts of blood.
- He is struggling to breathe and appears extremely anxious.

Past Medical History:

- Chronic bronchitis
- History of tuberculosis

Primary Assessment Findings:

- Audible gurgling sounds indicating blood in the airway
- Difficulty speaking between coughs
- Cyanosis around lips

Vital Signs:

- BP: 130/85 mmHg
- HR: 110 bpm
- RR: 28 breaths/min, labored
- SpO2: 88% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Coughing up blood, shortness of breath
- **Allergies:** No known allergies
- **Medications:** Inhalers for bronchitis
- **Past Medical History:** Chronic bronchitis, tuberculosis
- **Last Oral Intake:** Lunch, 2 hours ago
- **Events Leading Up:** Sudden onset while at home

Paramedic Level Treatment Goals:

- Immediate airway assessment
- High-flow oxygen, prepare for intubation
- IV access, fluid resuscitation
- Position patient to allow drainage of blood from the non-affected lung
- Rapid transport to hospital with thoracic surgery capabilities

Scenario Outcomes:

Correct Management:

- Vital Signs: Slight improvement in oxygen saturation, stabilization of vital signs post-intubation
- Presentation: Secured airway, reduced risk of aspiration

Incorrect Management:

- Vital Signs: Worsening hypoxia, potential for hypovolemic shock
- Presentation: Increased risk of aspiration, compromised airway

Debrief Questions:

Why is intubation critical in a case of massive hemoptysis?

Explanation: Intubation in massive hemoptysis is vital to maintain airway patency, prevent aspiration of blood, and enable positive pressure ventilation. It also helps in isolating the bleeding lung if necessary.

What are the challenges faced during intubation in a patient with massive hemoptysis?

Explanation: Challenges include managing the blood in the airway, maintaining adequate oxygenation, and the risk of worsening bleeding during the procedure. Rapid and skillful intervention is necessary.

How does the position of the patient affect the management of massive hemoptysis during intubation?

Explanation: Positioning is crucial. The patient should be placed in a way that allows blood to drain from the affected lung (usually the lateral decubitus position, with the bleeding lung down), reducing the risk of flooding the healthy lung and ensuring better ventilation.

Airway Compromise Scenario: Sepsis with Respiratory Failure

Patient Information:

Age: 68 years old **Gender:** Female

Moulage Required:

- Pale, clammy skin
- Rapid, shallow breathing

Dispatch Information:

- Caller reports an elderly female with altered mental status and difficulty breathing.

On Arrival Presentation:

- The patient is lying in bed, confused, with rapid shallow breathing.
- She is febrile and has a known urinary tract infection.

Past Medical History:

- Diabetes mellitus
- Chronic kidney disease

Primary Assessment Findings:

- Altered mental status (confused, disoriented)
- Increased work of breathing, use of accessory muscles
- Possible signs of infection (e.g., fever, localized pain)

Vital Signs:

- BP: 90/60 mmHg
- HR: 120 bpm
- RR: 30 breaths/min, shallow
- SpO₂: 85% on room air
- Temperature: 102°F (38.9°C)

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, confusion
- **Allergies:** Penicillin
- **Medications:** Metformin, Lisinopril
- **Past Medical History:** As above
- **Last Oral Intake:** Unable to ascertain
- **Events Leading Up:** Progressive weakness over two days

Paramedic Level Treatment Goals:

- Immediate airway assessment and high-flow oxygen
- IV access, fluid resuscitation
- Prepare for rapid sequence intubation (RSI) given altered mental status and respiratory distress
- Transport to hospital with intensive care capabilities

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization post-intubation, improved oxygen saturation
- Presentation: Secured airway, reduced risk of aspiration, adequate ventilation

Incorrect Management:

- Vital Signs: Progressive hypoxia, possible hypotension
- Presentation: Increased risk of respiratory arrest and aspiration pneumonia

Debrief Questions:

Why is intubation necessary in a septic patient with respiratory failure?

Explanation: Intubation provides a secure airway and allows for mechanical ventilation, which is crucial in managing patients with sepsis-induced respiratory failure. It ensures adequate oxygenation and offloads the work of breathing from the patient.

What are the key indicators for intubation in this scenario?

Explanation: Indicators include altered mental status (suggesting inadequate cerebral oxygenation), hypoxia (low SpO₂), increased respiratory rate with shallow breaths, and use of accessory muscles indicating respiratory distress.

How does sepsis contribute to respiratory failure, and what are the implications for management?

Explanation: Sepsis can lead to acute respiratory distress syndrome (ARDS) and septic shock, both of which impair oxygenation and ventilation. Management focuses on reversing hypoxia, supporting circulation, and treating the underlying infection. Intubation facilitates this by ensuring a patent airway and effective ventilation.

Airway Compromise Scenario: Neurological Disorder (Guillain-Barré Syndrome)

Patient Information:

Age: 45 years old **Gender:** Male

Moulage Required:

- Difficulty in moving limbs
- Shallow breathing

Dispatch Information:

- Caller reports a male with progressive weakness in arms and legs, now having trouble breathing.

On Arrival Presentation:

- Patient is in bed, appearing anxious.
- Reports progressive muscle weakness over the past few days, now with increasing difficulty in breathing.

Past Medical History:

- Recently recovered from a gastrointestinal infection.

Primary Assessment Findings:

- Weakness in the limbs, more pronounced in the lower extremities.
- Shallow respirations, use of accessory muscles for breathing.
- Slightly slurred speech.

Vital Signs:

- BP: 120/80 mmHg
- HR: 88 bpm
- RR: 24 breaths/min, shallow
- SpO2: 92% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Muscle weakness, difficulty breathing
- **Allergies:** None
- **Medications:** None
- **Past Medical History:** None significant
- **Last Oral Intake:** Light meal several hours ago
- **Events Leading Up:** Progressive weakness starting a few days after gastrointestinal illness

Paramedic Level Treatment Goals:

- Immediate airway assessment, oxygen therapy, and monitoring.
- Preparation for rapid sequence intubation (RSI) considering the risk of respiratory failure due to muscle weakness.
- Transport to a facility equipped to handle neurological disorders.

Scenario Outcomes:

Correct Management:

- Vital Signs: Stable post-intubation, improved oxygen saturation.
- Presentation: Airway secured, adequate ventilation, reduced risk of respiratory arrest.

Incorrect Management:

- Vital Signs: Progressive respiratory distress, possible deterioration to respiratory arrest.
- Presentation: Increased risk of hypoxia and complications from inadequate ventilation.

Debrief Questions:

Why is intubation considered in a patient with Guillain-Barré Syndrome presenting with respiratory distress?

Explanation: Guillain-Barré Syndrome can cause rapid progression to respiratory muscle paralysis. Intubation is necessary to secure the airway and provide mechanical ventilation support as the disease can quickly lead to respiratory failure.

What are the signs that indicate impending respiratory failure in this scenario?

Explanation: Key indicators include increasing muscle weakness (especially bulbar muscles affecting speech and swallowing), use of accessory muscles for breathing, shallow respirations, and deteriorating oxygen saturation.

How does the progression of Guillain-Barré Syndrome influence the decision to intubate?

Explanation: The progressive nature of Guillain-Barré Syndrome, particularly after a recent infection, suggests the likelihood of rapid deterioration. Early intubation is often preferable to emergency intubation in a rapidly deteriorating patient, as it allows controlled airway management and reduces the risk of complications.

Airway Compromise Scenario: Acute Respiratory Distress Syndrome (ARDS)

Patient Information:

Age: 55 years old **Gender:** Female

Moulage Required:

- Rapid, labored breathing
- Cyanosis (bluish skin tone, particularly around lips and fingertips)

Dispatch Information:

- Caller reports a female with severe difficulty breathing, history of recent pneumonia.

On Arrival Presentation:

- Patient is in bed, extremely dyspneic and struggling to breathe.
- Utilizing accessory muscles to breathe, appears cyanotic and fatigued.

Past Medical History:

- Recent hospitalization for pneumonia.

Primary Assessment Findings:

- Severe respiratory distress, decreased breath sounds bilaterally.
- Patient unable to speak in full sentences due to dyspnea.

Vital Signs:

- BP: 130/85 mmHg
- HR: 115 bpm
- RR: 30 breaths/min, labored
- SpO₂: 85% on room air
- Temperature: 99.5°F (37.5°C)

SAMPLE History Findings:

- **Symptoms:** Severe shortness of breath, worsening over the past 24 hours.
- **Allergies:** None
- **Medications:** Antibiotics for pneumonia
- **Past Medical History:** Recent pneumonia
- **Last Oral Intake:** Minimal due to dyspnea
- **Events Leading Up:** Increasing dyspnea post-pneumonia

Paramedic Level Treatment Goals:

- Immediate oxygen therapy, preferably high-flow nasal cannula or non-rebreather mask.
- Rapid assessment for intubation readiness given the severe hypoxia and respiratory distress.
- Preparation for rapid sequence intubation (RSI) with appropriate sedation and paralysis.
- Transport to a facility capable of managing ARDS, likely an intensive care unit.

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization of oxygen saturation post-intubation, controlled ventilation.
- Presentation: Airway secured, improved respiratory mechanics with mechanical ventilation.

Incorrect Management:

- Vital Signs: Further deterioration of respiratory function, severe hypoxia, potential cardiac arrest.
- Presentation: Increased risk of respiratory failure and multi-organ dysfunction due to prolonged hypoxia.

Debrief Questions:

What are the key indications for intubation in this ARDS scenario?

Explanation: Severe hypoxia (SpO₂ 85% on room air), increased work of breathing, and inability to maintain adequate oxygenation despite supplemental oxygen are clear indications for intubation in ARDS.

How does the history of recent pneumonia play into the management of this case?

Explanation: A history of recent pneumonia that has progressed to ARDS suggests a severe pulmonary pathology requiring aggressive management, including mechanical ventilation to ensure adequate oxygenation and ventilation.

What complications can arise from delayed intubation in a patient with ARDS?

Explanation: Delayed intubation can lead to progressive hypoxemia, hypercapnia, respiratory acidosis, and eventual respiratory failure. This can exacerbate the patient's condition, leading to multi-organ dysfunction and increased mortality risk.

Airway Compromise Scenario: Severe Metabolic or Respiratory Acidosis

Patient Information:

Age: 48 years old **Gender:** Male

Moulage Required:

- Rapid, deep (Kussmaul) breathing
- Diaphoretic (sweaty) and visibly distressed

Dispatch Information:

- Caller reports a male with extreme breathing difficulty and confusion, history of diabetes.

On Arrival Presentation:

- Patient appears lethargic, with rapid and deep respirations.
- Strong fruity odor on the breath (indicative of ketoacidosis).

Past Medical History:

- Type 1 Diabetes Mellitus, not well controlled.

Primary Assessment Findings:

- Altered mental status, possibly due to metabolic derangement.
- Deep, rapid respirations indicative of compensatory mechanism for acidosis.

Vital Signs:

- BP: 110/70 mmHg
- HR: 130 bpm
- RR: 35 breaths/min, deep
- SpO₂: 98% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Nausea, abdominal pain, shortness of breath.
- **Allergies:** None
- **Medications:** Insulin
- **Past Medical History:** As above
- **Last Oral Intake:** Unable to eat due to nausea
- **Events Leading Up:** Poor medication compliance, increased urination and thirst over past days.

Paramedic Level Treatment Goals:

- High-flow oxygen therapy and preparation for intubation.
- Intubation to control and protect airway, as well as to manage ventilation.
- IV access for fluid resuscitation and potential insulin administration.
- Rapid transport to hospital for further management of diabetic ketoacidosis.

Scenario Outcomes:

Correct Management:

- Vital Signs: Improved respiratory status post-intubation, stabilizing vitals.
- Presentation: Airway secured, improved systemic condition with controlled ventilation.

Incorrect Management:

- Vital Signs: Continued deterioration due to acidosis, potential progression to respiratory failure.
- Presentation: Increased risk of coma, cardiovascular collapse, and multi-organ failure.

Debrief Questions:

What are the indications for intubation in this scenario of severe metabolic or respiratory acidosis?

Explanation: Intubation is indicated due to altered mental status, inability to protect airway, and the need for controlled ventilation to correct severe acidosis, particularly in diabetic ketoacidosis.

How does the patient's diabetes history influence the management of this case?

Explanation: The history of poorly controlled Type 1 Diabetes suggests the likelihood of diabetic ketoacidosis, necessitating aggressive management including airway control, fluid resuscitation, insulin therapy, and electrolyte correction.

What are the risks of delaying intubation in this patient?

Explanation: Delayed intubation can lead to further deterioration of the patient's respiratory and metabolic status, increasing the risk of coma, respiratory failure, and potential cardiac arrest due to severe acidosis.

Airway Compromise Scenario: Carbon Monoxide Poisoning

Patient Information:

Age: 35 years old **Gender:** Female

Moulage Required:

- Cherry-red skin coloration
- Confusion or altered mental status

Dispatch Information:

- Caller reports a woman found unconscious in a house with suspected carbon monoxide leakage.

On Arrival Presentation:

- Patient is semi-conscious, with a cherry-red complexion and respiratory distress.
- Reports headache and dizziness before losing consciousness.

Past Medical History:

- None significant.

Primary Assessment Findings:

- Altered level of consciousness.
- Respiratory effort inadequate, with shallow breathing.

Vital Signs:

- BP: 120/80 mmHg
- HR: 90 bpm
- RR: 10 breaths/min, shallow
- SpO₂: Reading inaccurately high due to carbon monoxide binding.
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Headache, dizziness, nausea.
- **Allergies:** None
- **Medications:** None
- **Past Medical History:** None
- **Last Oral Intake:** Breakfast, several hours ago.
- **Events Leading Up:** Suspected carbon monoxide exposure in a closed space.

Paramedic Level Treatment Goals:

- Administer 100% high-flow oxygen immediately.
- Prepare for rapid sequence intubation due to altered mental status and inadequate respiratory effort.
- Secure the airway to ensure adequate ventilation and oxygenation.
- Transport to a facility with hyperbaric oxygen therapy capabilities if available.

Scenario Outcomes:

Correct Management:

- Vital Signs: Improved respiratory status and oxygenation post-intubation.
- Presentation: Stabilized patient, reduced risk of hypoxia-related complications.

Incorrect Management:

- Vital Signs: Worsening hypoxia, potential progression to respiratory failure.
- Presentation: Increased risk of coma, cardiovascular instability, and brain damage.

Debrief Questions:

Why is intubation critical in severe cases of carbon monoxide poisoning?

Explanation: Intubation is crucial due to the risk of respiratory failure and the need to ensure maximal oxygen delivery to counteract the effects of carbon monoxide, which impairs oxygen delivery to tissues.

How does carbon monoxide poisoning affect pulse oximetry readings, and what implications does this have for patient management?

Explanation: Carbon monoxide falsely elevates pulse oximetry readings by binding to hemoglobin. This necessitates clinical assessment of oxygenation and the use of high-flow oxygen, regardless of SpO2 readings.

What are the potential complications of delayed intubation in this patient?

Explanation: Delaying intubation can lead to worsening hypoxia and carbon monoxide toxicity, increasing the risk of permanent neurological damage, cardiac dysfunction, and potentially fatal outcomes.

Airway Compromise Scenario: High Spinal Cord Injury

Patient Information:

Age: 28 years old **Gender:** Male

Moulage Required:

- Neck brace and spinal immobilization
- Paralysis from the neck down

Dispatch Information:

- Caller reports a male who fell from a height and is unable to move his arms or legs.

On Arrival Presentation:

- Patient is conscious but unable to move below the neck.
- Complains of difficulty in breathing and numbness.

Past Medical History:

- Healthy, no significant history.

Primary Assessment Findings:

- Alert but increasingly anxious due to breathing difficulty.
- No movement or sensation below the neck.

Vital Signs:

- BP: 130/85 mmHg
- HR: 110 bpm
- RR: 8 breaths/min, shallow and labored
- SpO2: 92% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, numbness below the neck.
- **Allergies:** None
- **Medications:** None
- **Past Medical History:** None
- **Last Oral Intake:** Lunch, 3 hours prior.
- **Events Leading Up:** Fell from a ladder.

Paramedic Level Treatment Goals:

- Maintain spinal precautions.
- Administer high-flow oxygen and prepare for rapid sequence intubation.
- Secure the airway to ensure adequate ventilation, given the patient's inability to breathe effectively due to paralysis.
- Transport to a trauma center for further management.

Scenario Outcomes:

Correct Management:

- Vital Signs: Improved respiratory rate and oxygen saturation post-intubation.
- Presentation: Stabilized respiratory status, preventing respiratory arrest.

Incorrect Management:

- Vital Signs: Progressive respiratory failure, worsening hypoxia.
- Presentation: Increased risk of cardiac arrest and irreversible brain damage.

Debrief Questions:

Why is immediate intubation critical in patients with high spinal cord injuries?

Explanation: High spinal cord injuries can paralyze the respiratory muscles, leading to inadequate ventilation. Intubation is essential to take over the work of breathing and prevent hypoxia and respiratory arrest.

What are the considerations for maintaining spinal precautions during intubation in this scenario?

Explanation: It's crucial to maintain spinal alignment and use manual in-line stabilization during intubation to avoid exacerbating the spinal injury.

How might delayed intubation affect the prognosis of a spinal cord injury patient?

Explanation: Delay in securing the airway can lead to hypoxia, which can worsen neurological outcomes and increase the risk of secondary spinal cord injury due to inadequate perfusion.

Airway Compromise Scenario: Rapidly Progressive Infectious Disease (Severe Pneumonia/COVID-19)

Patient Information:

Age: 55 years old **Gender:** Female

Moulage Required:

- Coughing, difficulty in breathing, signs of respiratory distress (use of accessory muscles, nasal flaring)

Dispatch Information:

- Caller reports a female with a severe cough, high fever, and difficulty breathing.

On Arrival Presentation:

- Patient is sitting up, struggling to breathe, and coughing frequently.
- Reports worsening shortness of breath over the past few days.

Past Medical History:

- Hypertension, controlled with medication.
- No history of respiratory diseases.

Primary Assessment Findings:

- Increased work of breathing, use of accessory muscles.
- Bilateral crackles on auscultation.

Vital Signs:

- BP: 145/90 mmHg
- HR: 125 bpm
- RR: 30 breaths/min, labored
- SpO2: 88% on room air
- Temperature: 102°F (38.9°C)

SAMPLE History Findings:

- **Symptoms:** Severe cough, shortness of breath, fever.
- **Allergies:** None
- **Medications:** Antihypertensives
- **Past Medical History:** Hypertension
- **Last Oral Intake:** Unable to eat due to illness.
- **Events Leading Up:** Symptoms started a week ago, progressively worsened.

Paramedic Level Treatment Goals:

- Administer high-flow oxygen.
- Prepare for rapid sequence intubation due to severe respiratory distress and hypoxia.
- Consider contact precautions if infectious disease (like COVID-19) is suspected.
- Immediate transport to the hospital for further respiratory support and treatment.

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization of respiratory rate and improvement in oxygen saturation post-intubation.
- Presentation: Decreased respiratory effort and improved oxygenation.

Incorrect Management:

- Vital Signs: Progressive respiratory failure, worsening hypoxia.
- Presentation: Increased risk of respiratory arrest and multi-organ failure.

Debrief Questions:

Why is rapid intubation critical in severe pneumonia or COVID-19 cases causing respiratory failure?

Explanation: Patients with severe respiratory infections can deteriorate quickly. Intubation is necessary to ensure adequate oxygenation and ventilation, especially when they are unable to maintain sufficient oxygen levels on their own.

What are the key signs indicating the need for intubation in this scenario?

Explanation: Indicators for intubation include labored breathing, use of accessory muscles, hypoxia (SpO₂ below 90%), and signs of respiratory fatigue.

How do personal protective measures play a role in managing patients with suspected infectious respiratory illnesses?

Explanation: Paramedics should use appropriate personal protective equipment (PPE) to minimize the risk of infection transmission, especially with diseases like COVID-19. This is crucial to protect both the patient and healthcare providers.

Airway Compromise Scenario: Thermal Inhalation Injury

Patient Information:

Age: 42 years old **Gender:** Male

Moulage Required:

- Soot around the nose and mouth, signs of facial burns, hoarseness, stridor.

Dispatch Information:

- Caller reports an individual rescued from an enclosed space fire, experiencing difficulty breathing and burns.

On Arrival Presentation:

- Patient is coughing, has hoarse voice, and appears anxious.
- Visible burns on face and neck.
- Complains of throat pain and difficulty breathing.

Past Medical History:

- No significant medical history.

Primary Assessment Findings:

- Stridor and hoarseness.
- Swelling noted around the neck and face.
- Burns on face and neck.

Vital Signs:

- BP: 130/80 mmHg
- HR: 110 bpm
- RR: 28 breaths/min, labored
- SpO2: 92% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, throat pain, cough.
- **Allergies:** None.
- **Medications:** None.
- **Past Medical History:** None.
- **Last Oral Intake:** Not significant.
- **Events Leading Up:** Trapped in a fire in an enclosed space.

Paramedic Level Treatment Goals:

- High-flow oxygen administration.
- Prepare for immediate intubation due to risk of airway edema and obstruction.
- Monitor for signs of carbon monoxide poisoning.
- Intravenous fluid resuscitation for burn management.
- Rapid transport to a burn center or appropriate facility.

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization post-intubation, improved oxygenation.
- Presentation: Reduced respiratory effort and protected airway.

Incorrect Management:

- Vital Signs: Deterioration of respiratory function, hypoxia, potential airway obstruction.
- Presentation: Increased risk of respiratory arrest and asphyxia due to airway edema.

Debrief Questions:

Why is early intubation crucial in thermal inhalation injuries?

Explanation: In thermal inhalation injuries, especially from enclosed space fires, the airway can rapidly swell and lead to obstruction. Early intubation is critical to secure the airway before edema makes it impossible.

What are the key indicators for intubation in this patient?

Explanation: The presence of facial burns, soot around the nose and mouth, stridor, and hoarseness are strong indicators of airway injury requiring intubation.

How does the enclosed space of the fire impact the patient's treatment and prognosis?

Explanation: Inhalation injuries in enclosed spaces often involve exposure to toxic gases and lack of oxygen, leading to more severe injuries. This necessitates prompt and aggressive airway management, along with monitoring for carbon monoxide poisoning and other complications.

Airway Compromise Scenario: Severe Pulmonary Edema

Patient Information:

Age: 65 years old **Gender:** Female

Moulage Required:

- Cyanosis around the lips, neck vein distention, frothy pink sputum.

Dispatch Information:

- Caller reports an elderly female having extreme difficulty breathing and coughing up pink frothy sputum.

On Arrival Presentation:

- Patient is sitting upright, extremely distressed, gasping for air.
- Audible wheezing and crackles in the chest.
- Frothy pink sputum evident.

Past Medical History:

- Chronic heart failure
- Hypertension

Primary Assessment Findings:

- Severe respiratory distress
- Use of accessory muscles for breathing
- Crackles heard on auscultation of the lungs

Vital Signs:

- BP: 180/100 mmHg
- HR: 120 bpm
- RR: 32 breaths/min, labored
- SpO₂: 85% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Severe shortness of breath, cough with pink sputum.
- **Allergies:** None.
- **Medications:** Furosemide, lisinopril.
- **Past Medical History:** Chronic heart failure, hypertension.
- **Last Oral Intake:** Dinner, 3 hours ago.
- **Events Leading Up:** Increasing shortness of breath over the past few hours.

Paramedic Level Treatment Goals:

- High-flow oxygen therapy.
- Position patient in an upright posture.
- Prepare for rapid sequence intubation to secure the airway and provide mechanical ventilation.
- Intravenous diuretics if protocols allow.
- Monitor and manage blood pressure.

Scenario Outcomes:

Correct Management:

- Vital Signs: Improved oxygenation, stabilization of respiratory rate post-intubation.
- Presentation: Reduced respiratory distress, improved ventilation.

Incorrect Management:

- Vital Signs: Worsening hypoxia, potential progression to respiratory failure.
- Presentation: Increased work of breathing, risk of respiratory arrest.

Debrief Questions:

Why is intubation critical in severe pulmonary edema?

Explanation: Severe pulmonary edema can rapidly progress to life-threatening respiratory failure. Intubation is necessary to provide adequate oxygenation and ventilation, especially in patients who are not responding to conventional oxygen therapy.

What are the specific indications for intubation in this scenario?

Explanation: Indications include severe respiratory distress, hypoxia (SpO₂ 85% on room air), use of accessory muscles, and presence of frothy pink sputum indicating fluid in the airways.

How does the patient's past medical history of heart failure influence treatment decisions?

Explanation: The history of heart failure suggests that the pulmonary edema is likely cardiogenic in nature. This necessitates not only airway management but also careful fluid balance and blood pressure control, potentially with the use of diuretics and other heart failure medications.

Airway Compromise Scenario: Complications after Oral Surgery

Patient Information:

Age: 45 years old **Gender:** Male

Moulage Required:

- Swelling around the neck and jaw, drooling, difficulty speaking.

Dispatch Information:

- Caller reports a male patient experiencing severe swelling and difficulty breathing following oral surgery.

On Arrival Presentation:

- Patient is struggling to breathe, with audible stridor.
- Significant swelling in the neck and jaw area, making speech difficult.
- Drooling and unable to swallow effectively.

Past Medical History:

- Recent oral surgery (e.g., wisdom tooth extraction, dental implants).

Primary Assessment Findings:

- Severe difficulty in breathing.
- Stridor and increased work of breathing.
- Swollen tongue and oral cavity.

Vital Signs:

- BP: 130/80 mmHg
- HR: 110 bpm
- RR: 26 breaths/min, labored
- SpO2: 90% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Breathing difficulty, swelling in the mouth and neck.
- **Allergies:** None reported.
- **Medications:** Post-surgery painkillers.
- **Past Medical History:** Recent oral surgery.
- **Last Oral Intake:** Water, 1 hour ago.
- **Events Leading Up:** Swelling and pain worsening post-surgery.

Paramedic Level Treatment Goals:

- High-flow oxygen therapy.
- Prepare for rapid sequence intubation, considering potential airway anatomy challenges due to swelling.
- Intravenous corticosteroids if protocols allow, to reduce swelling.
- Closely monitor for signs of complete airway obstruction.

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization of oxygen saturation and respiratory rate post-intubation.
- Presentation: Airway secured, reduced risk of complete obstruction.

Incorrect Management:

- Vital Signs: Deterioration of respiratory status, potential hypoxia.
- Presentation: Increased risk of airway obstruction, potential for respiratory arrest.

Debrief Questions:

What are the key challenges in managing airway complications after oral surgery?

Explanation: Oral surgery can lead to swelling, bleeding, or anatomical changes, making airway management challenging. Recognizing the need for intubation and executing it skillfully while considering altered anatomy is critical.

How do the patient's symptoms and presentation guide the decision to intubate?

Explanation: The presence of stridor, severe swelling, difficulty speaking, and drooling indicate a compromised airway. These symptoms, coupled with declining oxygen saturation, necessitate intubation for airway protection and ventilation.

What additional considerations should be taken into account due to recent surgery?

Explanation: Recent oral surgery increases the risk of airway edema and altered anatomy. This necessitates careful consideration during intubation, such as choosing appropriate equipment and techniques, and possibly administering medications to reduce swelling.

Airway Compromise Scenario: Toxic Inhalation

Patient Information:

Age: 32 years old **Gender:** Female

Moulage Required:

- Respiratory distress, coughing, wheezing, cyanosis around lips and fingernails.

Dispatch Information:

- Caller reports a female exposed to unknown toxic gases in an industrial accident.

On Arrival Presentation:

- Patient is coughing violently, gasping for air, with audible wheezing.
- Cyanosis noted around lips and fingernails.
- The patient is anxious and struggling to speak.

Past Medical History:

- Asthma (mild, controlled with inhalers).

Primary Assessment Findings:

- Severe respiratory distress with wheezing.
- Use of accessory muscles for breathing.
- Cough with scanty sputum production.

Vital Signs:

- BP: 120/75 mmHg
- HR: 135 bpm
- RR: 30 breaths/min, labored
- SpO2: 88% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Difficulty breathing, cough, throat irritation.
- **Allergies:** Penicillin.
- **Medications:** Asthma inhalers.
- **Past Medical History:** Asthma.
- **Last Oral Intake:** Lunch 2 hours prior.
- **Events Leading Up:** Exposure to toxic fumes at work.

Paramedic Level Treatment Goals:

- High-flow oxygen therapy.
- Immediate assessment for airway burns and injury.
- Prepare for rapid sequence intubation due to progressive respiratory distress and hypoxia.
- Intravenous line for fluid and medication administration.
- Transport to a facility with capabilities for treating toxic inhalation.

Scenario Outcomes:

Correct Management:

- Vital Signs: Improvement in oxygen saturation and stabilization of respiratory rate post-intubation.
- Presentation: Secured airway and improved ventilation.

Incorrect Management:

- Vital Signs: Further deterioration in oxygen saturation and increased respiratory distress.
- Presentation: Potential for respiratory failure and worsening hypoxia.

Debrief Questions:

What are the indications for intubation in a patient with toxic inhalation?

Explanation: Indications include severe respiratory distress, hypoxia (low oxygen levels), altered mental status, and signs of upper airway burns or swelling. Early intubation is critical in preventing airway compromise.

How does the history of asthma affect the management of this patient?

Explanation: Asthma history suggests pre-existing reactive airways, which can exacerbate the effects of toxic inhalation, leading to increased bronchospasm and respiratory distress. This necessitates careful airway management and possibly bronchodilator therapy.

What are the potential complications of toxic inhalation that paramedics should be aware of?

Explanation: Potential complications include airway burns, pulmonary edema, bronchospasm, and systemic toxicity. Paramedics should monitor for these complications and manage them proactively, with a high index of suspicion for airway compromise.

Airway Compromise Scenario: Hypothermia with Altered Mental State

Patient Information:

Age: 46 years old **Gender:** Male

Moulage Required:

- Pale, cold skin with possible frostbite on extremities. Shivering and lethargic.

Dispatch Information:

- Caller reports a male found unresponsive in a snow-covered area, possibly hypothermic.

On Arrival Presentation:

- Patient is semi-conscious, shivering violently, and unable to answer questions coherently.
- Mumbled speech and slow movements.

Past Medical History:

- No known past medical history.

Primary Assessment Findings:

- Altered level of consciousness.
- Shivering and signs of frostbite on fingers and toes.
- Slow respiratory rate with shallow breaths.

Vital Signs:

- BP: 90/60 mmHg
- HR: 50 bpm, weak
- RR: 8 breaths/min, shallow
- SpO₂: 92% on room air
- Temperature: 91°F (32.8°C) (hypothermia)

SAMPLE History Findings:

- **Symptoms:** Confusion, cold exposure.
- **Allergies:** None known.
- **Medications:** None known.
- **Past Medical History:** None.
- **Last Oral Intake:** Unknown.
- **Events Leading Up:** Found in the snow, duration of exposure unknown.

Paramedic Level Treatment Goals:

- Immediate passive and active rewarming strategies.
- High-flow oxygen therapy.
- Preparation for rapid sequence intubation due to altered mental status and compromised respiratory effort.
- Intravenous line for fluid resuscitation and warm IV fluids.
- Transport to a facility capable of advanced hypothermia management.

Scenario Outcomes:

Correct Management:

- Vital Signs: Gradual improvement in heart rate and respiratory rate post-intubation.
- Presentation: Secured airway and controlled ventilation, aiding in rewarming efforts.

Incorrect Management:

- Vital Signs: Continued deterioration in mental status, further decrease in heart and respiratory rates.
- Presentation: Increased risk of cardiac arrest and other hypothermia-related complications.

Debrief Questions:

Why is intubation necessary in severe hypothermia with altered mental state?

Explanation: Intubation is required due to the risk of airway compromise from depressed protective reflexes, decreased respiratory drive, and the need for controlled rewarming. It ensures airway patency and effective ventilation.

How does hypothermia affect vital signs and the patient's response to treatment?

Explanation: Hypothermia can cause bradycardia, hypotension, and shallow breathing. These conditions may respond slowly to treatment due to decreased metabolic rate and impaired physiological functions.

What are the key considerations for managing a hypothermic patient during transport?

Explanation: Key considerations include continuous monitoring of vital signs, gentle handling to prevent cardiac arrhythmias, continued rewarming efforts, and preparation for potential complications like ventricular fibrillation. Airway management and ventilation support are crucial during transport.

Airway Compromise Scenario: Barbiturate or Sedative Overdose

Patient Information:

Age: 32 years old **Gender:** Female

Moulage Required:

- Drowsy appearance, pinpoint pupils, and a bottle of barbiturates or sedatives nearby.

Dispatch Information:

- Caller reports finding a female unresponsive with a bottle of pills.

On Arrival Presentation:

- Patient is lethargic, barely responsive to painful stimuli, and has shallow breathing.
- Open bottle of sedatives near the patient.

Past Medical History:

- History of depression and insomnia.

Primary Assessment Findings:

- Altered level of consciousness.
- Slow, shallow respirations.
- Pinpoint pupils.

Vital Signs:

- BP: 110/70 mmHg
- HR: 60 bpm, weak
- RR: 6 breaths/min, shallow
- SpO₂: 88% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Lethargy, respiratory depression.
- **Allergies:** No known allergies.
- **Medications:** Sedatives and antidepressants.
- **Past Medical History:** Depression and insomnia.
- **Last Oral Intake:** Unknown.
- **Events Leading Up:** Possible intentional overdose.

Paramedic Level Treatment Goals:

- Secure the airway via rapid sequence intubation due to significantly depressed respiratory effort and altered consciousness.
- Administer high-flow oxygen.
- Establish IV access for potential antidote administration (e.g., flumazenil for benzodiazepine overdose, if appropriate) and fluid resuscitation.
- Prepare for transport to a medical facility with the capability for intensive care.

Scenario Outcomes:

Correct Management:

- Vital Signs: Stabilization of respiratory rate and SpO₂ post-intubation.
- Presentation: Secured airway with controlled ventilation, preventing hypoxia and further respiratory compromise.

Incorrect Management:

- Vital Signs: Further deterioration in respiratory status, leading to hypoxia and potential respiratory arrest.
- Presentation: Increased risk of aspiration and worsening of CNS depression.

Debrief Questions:

Why is intubation critical in cases of severe barbiturate or sedative overdose?

Explanation: Intubation is vital to manage the airway due to the high risk of respiratory depression, altered consciousness, and potential loss of airway protective reflexes, which could lead to aspiration and further complications.

What are the key indicators that intubation is required in this scenario?

Explanation: Key indicators include significantly depressed respiratory rate (RR < 8 breaths/min), low SpO₂, altered level of consciousness, and inability to protect the airway, as indicated by the patient's response to painful stimuli.

How does the management of an overdose patient differ from other causes of airway compromise?

Explanation: In addition to airway management, overdose patients may require specific antidotes, careful monitoring for complications related to the ingested substance, and considerations for potential polypharmacy effects. The approach to these patients often involves a balance between supportive care and specific pharmacological interventions.

Airway Compromise Scenario: Severe Metabolic Acidosis (Non-DKA)

Patient Information:

Age: 45 years old **Gender:** Male

Moulage Required:

- Patient appears lethargic, with rapid, deep breathing (Kussmaul respirations).

Dispatch Information:

- Caller reports a male with confusion and difficulty breathing.

On Arrival Presentation:

- The patient is disoriented, breathing rapidly and deeply.
- There is a medical history form nearby indicating chronic kidney disease.

Past Medical History:

- Chronic kidney disease
- Hypertension

Primary Assessment Findings:

- Alert but confused
- Deep, labored breathing
- Skin is warm and dry

Vital Signs:

- BP: 130/85 mmHg
- HR: 110 bpm
- RR: 32 breaths/min, deep
- SpO₂: 95% on room air
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Confusion, deep breathing, fatigue.
- **Allergies:** No known allergies.
- **Medications:** Antihypertensives, phosphate binders.
- **Past Medical History:** As above.
- **Last Oral Intake:** A meal several hours ago.
- **Events Leading Up:** Progressive lethargy and altered breathing pattern over the past day.

Paramedic Level Treatment Goals:

- Assess the need for intubation due to altered mental status and inability to maintain adequate ventilation, indicated by the deep and rapid breathing pattern.
- Administer high-flow oxygen.
- Establish IV access for fluid and electrolyte management.
- Prepare for rapid transport to the hospital with capabilities for renal support and critical care.

Scenario Outcomes:

Correct Management:

- **Vitals and Presentation:** Stabilization of respiratory rate and improvement in mental status post-intubation. Controlled ventilation assists in managing acidosis.

Incorrect Management:

- **Vitals and Presentation:** Further deterioration in mental status, potential respiratory muscle fatigue, and worsening acidosis due to inadequate ventilation.

Debrief Questions:

Why is intubation indicated in severe metabolic acidosis?

Explanation: Intubation is indicated to control ventilation, correct acid-base imbalance, and protect the airway, especially in patients with altered mental status and inadequate compensatory respiratory efforts.

What are the signs that suggest the need for intubation in this scenario?

Explanation: Signs include altered mental status (confusion), inability to maintain adequate ventilation as evidenced by rapid, deep breathing (Kussmaul respirations), and a medical history that supports a chronic condition leading to metabolic acidosis.

How does controlled ventilation help in the management of metabolic acidosis?

Explanation: Controlled ventilation helps correct the acid-base imbalance by increasing the elimination of CO₂. In metabolic acidosis, the body compensates by increasing respiratory rate and depth to blow off CO₂; mechanical ventilation can help achieve this more effectively and consistently.

Airway Compromise Scenario: Severe Respiratory Acidosis

Patient Information:

Age: 60 years old **Gender:** Female

Moulage Required:

- Patient appears drowsy, with shallow and slow breathing.

Dispatch Information:

- Caller reports a female with extreme drowsiness and difficulty breathing.

On Arrival Presentation:

- The patient is lying in bed, barely responsive, with slow and shallow breathing.
- An oxygen concentrator is noticed in the room.

Past Medical History:

- Chronic Obstructive Pulmonary Disease (COPD)
- Sleep apnea

Primary Assessment Findings:

- Drowsy, responds only to painful stimuli
- Shallow, ineffective respiratory effort
- Use of accessory muscles for breathing

Vital Signs:

- BP: 145/90 mmHg
- HR: 88 bpm
- RR: 8 breaths/min, shallow
- SpO₂: 86% on 2 liters of oxygen
- Temperature: 98.6°F (37°C)

SAMPLE History Findings:

- **Symptoms:** Drowsiness, shortness of breath.
- **Allergies:** No known allergies.
- **Medications:** Bronchodilators, steroids.
- **Past Medical History:** As above.
- **Last Oral Intake:** Unable to ascertain.
- **Events Leading Up:** Increased difficulty in breathing over the past few days.

Paramedic Level Treatment Goals:

- Immediate assessment for intubation due to altered mental status and inadequate respiratory effort, indicative of impending respiratory failure.
- Administer high-flow oxygen.
- Establish IV access for potential medication administration and fluid management.
- Rapid transport to the nearest hospital with respiratory support facilities.

Scenario Outcomes:

Correct Management:

- **Vitals and Presentation:** Improvement in oxygen saturation and stabilization of respiratory status post-intubation. Ventilatory support helps correct the respiratory acidosis.

Incorrect Management:

- **Vitals and Presentation:** Continued deterioration in mental status, further drop in oxygen saturation, and potential respiratory arrest.

Debrief Questions:

What are the indications for intubation in a patient with severe respiratory acidosis?

Explanation: Indications include significant hypoventilation leading to respiratory failure (evidenced by shallow, slow breathing), severe hypoxemia (low SpO₂), and altered mental status (drowsiness, reduced responsiveness).

How does mechanical ventilation assist in correcting respiratory acidosis?

Explanation: Mechanical ventilation helps by ensuring adequate ventilation (removal of CO₂), which is impaired in severe respiratory acidosis. It stabilizes breathing, improves oxygenation, and helps normalize blood pH.

What are the risks of delaying intubation in this scenario?

Explanation: Delaying intubation can lead to worsening of respiratory acidosis, hypoxemia, and eventual respiratory arrest due to respiratory muscle fatigue and further deterioration in mental status.