

Your **PATIENT**  
Didn't Read  
The **TEXTBOOK**



An EMS Differential Diagnosis Guide



**EMS**  
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SUCCESS  
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by: [emsseo.com](http://emsseo.com)

# **Your Patient Didn't Read The Textbook**

**An EMS Differential  
Diagnosis Guide**

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Jim Hoffman – [EMSSEO.com](http://EMSSEO.com)

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## Table of Contents

A Word .....	6
Abdominal Pain .....	9
Allergic Reactions .....	12
Back Pain .....	14
Difficulty Breathing .....	17
Burns .....	21
Cardiac Arrest .....	23
Chest Pain .....	25
Dysrhythmias .....	31
Congestive Heart Failure .....	37
Choking .....	38
Seizures .....	40
Diabetic Patients .....	42
Eye/Vision Problems .....	43
Headache .....	45
Overdose .....	49
OB GYN.....	50
Psychiatric .....	51
General Illness .....	53
Stroke/CVA .....	54
Syncope/Unconscious.....	56
Unknown/Man Down .....	58

## **A word**

My name is Jim Hoffman. I run the EMS Office Hours podcast and EMSSEO which is a study and training website for EMS professionals.

I created and compiled this book to help you as a provider make better decisions in the field.

Let's face it, patients do not follow the textbook and all chest pains are not STEMI.

I have been in EMS over 28 years as of the date of this publication and I have worked in several urban cities like NYC, NJ and country roads in various states in the US.

The bottom line is the patients are the same no matter where you practice EMS. The tricky part is knowing what may be happening with your patients. This is why I wanted to create a book that focuses on the many differential diagnosis's that patients can have.

Keep this book handy on the rig and review it when you are going on calls, during your call report writing and even after call reviews.

Doing so will slowly move the knowledge needle you have for EMS and make you a better clinician.

I hope you find this book useful and I encourage you to visit my websites for more resources in EMS.

Stay safe

- Jim

*Differential diagnosis: The process of weighing the probability of one disease versus that of other diseases possibly accounting for a patient's illness.*



*Remember the content in this resource are suggestions and do not replace or supersede your protocols. These tips are for guidance only and are not suggestive of patient care.*

## Abdominal Pain

Here is a list of diseases and issues that can cause complaints of abdominal pain. This is a common call type in EMS and can be challenging to providers.

Abdominal aortic aneurysm  
Appendicitis  
Bowel obstruction  
Cholelithiasis / cholecystitis  
Diverticulitis  
DKA  
Gastritis  
Gastroenteritis  
Hepatitis  
Hernia  
Ischemic bowel  
Kidney stone  
Myocardial infarction / ischemia  
Pancreatitis  
Pelvic (ovarian cyst, PID)  
Peptic ulcer disease  
Pneumonia  
Pregnancy  
Substance abuse  
Trauma

Things you should consider when assessing patients with abdominal pain.

All women of child-bearing age should be considered pregnant until proven otherwise

Abdominal pain with syncope in female of child-bearing age should be considered an ectopic pregnancy until proven otherwise

Patients with undiagnosed cause of pain or possible need for surgery should have NPO

Consider cardiac etiology of symptoms in patients > 50 years of age, diabetics, and/or women with upper abdominal complaints

“Indigestion” may be the angina equivalent for myocardial ischemia

Older patients with abdominal pain, especially those that are hemodynamically unstable, should be considered critical until proven otherwise

Consider abdominal aortic aneurysm (AAA)

- Age > 50-years
- Bruit on auscultation
- Diminished femoral pulses
- Lower extremity pain
- Pulsatile intraabdominal mass

Vomiting may be the presenting symptom of serious non GI tract pathologies, consider:

- DKA
- Poisoning
- CNS process

## Allergic Reaction

Be sure to consider other causes with allergic reaction calls.

Angioedema

Aspiration / airway obstruction

Asthma / COPD

Cardiac dysrhythmia

Congestive heart failure

Pulmonary embolus

Shock

Some additional things you should think about with allergic reaction patients:

Anaphylaxis symptoms may include:

- Respiratory distress

- Difficulty swallowing

- Sensation of throat swelling

- Altered voice

- Hypotension

- Altered mental status

Allergic reactions may occur with only respiratory and gastrointestinal symptoms and have no rash / skin involvement

Angioedema is seen in moderate to severe reactions and is swelling involving the face, lips or airway structures

- May be seen in patients taking Angiotensin Converting Enzyme Inhibitors (ACE-I) lisinopril (Prinivil®), Zestril®) benazepril (Lotensin®), captopril (Capoten®)

Hereditary Angioedema involves swelling of the face, lips, airway structures, extremities, and may cause moderate to severe abdominal pain.

## Back Pain

You must consider both medical and trauma when assessing patients with back pain. While transport is most often the one we can do. We can also manage pain in the field. Follow your local protocols and think of these back pain causes.

Abdominal aortic aneurysm

Acute coronary syndrome

Aortic dissection

Epidural abscess

Herniated disc

Kidney stone

Metastatic cancer

Musculoskeletal strain / muscle spasm

Pneumonia

Pulmonary embolus

Pyelonephritis

Vertebral fracture

Check out these suggestions to consider when assessing patients with back pain:

Analgesia may be required prior to patient movement

Elderly patients with back pain, especially those that are hemodynamically unstable, should be considered critical until proven otherwise

Back pain in diabetic patients may be cardiac in etiology

Women of child-bearing age should be considered pregnant until proven otherwise

- Pregnancy/ectopic should be considered

#### Potential Etiologies

- Abdominal aortic aneurysms
  - May present as isolated back pain or abdominal pain radiating to the back
  - May present with pulsatile abdominal mass, bruit and /or diminished lower extremity pulses

#### Aortic dissection

- Hypertension and thoracic back pain
  - Blood pressure and pulses should be checked in both extremities



### Cholecystitis

- May present as right upper quadrant pain with radiation to back and/or the scapula

### Kidney stones

- May present as unilateral flank pain that radiates to the groin

### Sciatica

- May present as low back pain radiating down posterior aspect of one leg

### Spinal Cord Compression

- May present with saddle anesthesia, bowel/bladder dysfunction, lower extremity motor weakness and decreased reflexes

## Shortness of Breath/Difficulty Breathing

Arguably one the most common calls in EMS. This is where your assessment, history taking and knowledge of patient care will be vital when treating and transporting these patients.

There are various differential diagnoses you should think about. There are also several that are pediatric specific.

Keep these in mind during your assessment.

### **Adult**

Anaphylaxis

Asthma

Cardiac dysrhythmia

Congestive heart failure

COPD

Epiglottitis

Myocardial infarction

Peri-tonsillar abscess

Pneumonia

Pneumothorax

Pulmonary embolus  
Upper respiratory infection

## **Pediatric**

Asthma  
Epiglottitis  
Cardiac dysrhythmia  
Croup  
Foreign body aspiration  
Pneumonia  
Pneumothorax  
Retropharyngeal abscess  
Tonsillitis  
Upper respiratory infection

Some considerations for patients with difficulty breathing:

The benefits of administering supplemental oxygen to patients with exacerbated COPD outweigh the risks of suppressing the hypoxic respiratory drive

This phenomenon does not occur in the acute care or prehospital setting

Bronchospasm may be severe enough – especially in pediatric patients where no

wheezing is heard on auscultation as air flow is minimal

When patients present with impending respiratory failure or when patients continue to deteriorate, treatment should be initiated before transport

### Epiglottitis

- Typically presents with sudden onset of sore throat, drooling, stridor, and fever
- This is a bacterial infection involving the epiglottis causing it to swell and partially or totally obstruct the upper airway
- Total airway occlusion is a catastrophic possibility that can be precipitated by invasive oral exams (using tongue blades or laryngoscopes), finger sweeps, and/or supine positioning
- Prehospital treatment includes quiet transportation with the parent or guardian accompanying the child  
Oxygen should be utilized if tolerated

It is important to consider the patient's history of or risk for coronary artery disease prior to the administration of epinephrine

For intubated patients:

Allow for adequate time for exhalation with increased I:E ratios

Plan for lower respiratory rates and lower tidal volumes than typical normal levels in patients with asthma/COPD

The goal of treatment should be to maximize medical therapy early to avoid intubation

Consider acute myocardial ischemic event, especially in patients with any chest pain

## Burns

While there are no differential diagnosis for burn patients. There are some considerations when treating and transporting you should think about.

Remember to always follow your local protocols.

Cooling with water is considered useless and potentiates hypothermia if performed outside of the first 1 – 2 minutes from time of exposure

Do NOT apply ice

Carbon monoxide, cyanide, or other toxic gases may exacerbate the patient's clinical condition

Consider associated carbon monoxide toxicity

Administer high flow oxygen via face mask

Consider associated cyanide toxicity

Patient may complain of headache, nausea, vomiting, chest pain, dizziness, altered mental status, or a syncopal event

High flow oxygenation is paramount for these patients

Pulse oximetry measurements may be falsely elevated

Always consider the possibility of abuse, particularly in pediatric patients

## Cardiac Arrest

While there is not much to think about on this one. Be sure to check some additional considerations below.

Asystole

Pulseless Electrical Activity

Ventricular fibrillation

Ventricular tachycardia without a pulse

### **Considerations**

Medical vs. trauma

Estimated downtime

Events preceding cardiac arrest

Past medical history

Current medications

Pre-arrival treatment

DNR order

Opioid associated cardiac arrest:

Naloxone is not associated with improved outcome once cardiac arrest has occurred and its administration is not recommended without ROSC



Attention must be on airway,  
oxygenation, ventilation, and cardiac  
arrest care

Patients at risk for hyperkalemia

Renal failure

Especially if patient has missed  
scheduled dialysis

DKA

Crush syndrome/rhabdomyolysis

Severe burns

Rate of rhythm associated with hyperkalemia  
may be slow, normal, or fast

## Chest Pain

This is for non cardiac etiology chest pain. There is more on chest pain and arrhythmias in the Cardiac Problems section.

### Differential Diagnosis

Angina

Aortic dissection

Asthma

Bronchitis

Bronchospasm

Cocaine abuse

COPD

Dysrhythmia

Esophageal spasm

Esophagitis

Marijuana abuse

Musculoskeletal pain

Myocardial infarction

Pericarditis

Pneumonia

Pneumothorax

Pulmonary embolus

Rib contusion/fracture

Sickle cell anemia crisis

Try to think about these other issues when assessing and treating patients with chest pain.

Patients with suspected cardiac chest pain should have the 12-lead ECG performed immediately while on the scene

Patients > the age of 30-years with chest pain or any patient with a recent history of cocaine or crack use with chest pain should be considered at risk for cardiac disease

These patients should have a 12-lead ECG performed

An on-scene 12-lead ECG that appears normal or interpreted as normal should never be used to convince a patient that their condition is stable

> 50% of acute myocardial infarctions will present with a normal ECG

Pain from an aortic dissection may be described as ripping or tearing in nature

In this context, the examination should include bilateral blood pressures along with upper and lower extremity pulse assessments

Patients at risk for pulmonary embolism (patients on oral contraceptives, prolonged immobilization, recent surgery, prior history of clotting disorders) may show signs of tachycardia and tachypnea

### Cardiac Problems

This section is for patients with actual heart problems and arrhythmias.

Some major differential diagnosis:

Angina

Aortic dissection

Asthma

Cardiac arrest

Chest wall injury

Cocaine abuse

Congenital heart abnormality

COPD

Esophageal spasm

Electrolyte abnormality

GI pathology

Marijuana abuse

Methamphetamine abuse

Musculoskeletal pain

Myocardial infarction

Pericarditis

Pneumothorax

Pulmonary embolus

Try to consider the following with these chest pain patients:

Female, geriatric, and patients with diabetes with myocardial ischemia (or infarction) often present with atypical symptoms and not frank chest pain

Dyspnea, weakness/fatigue, jaw pain

Patients with suspected cardiac chest pain should have the 12-lead ECG performed immediately while on the scene

Any patient > 35-years of age with chest pain or any patient with a recent history of cocaine or crack use with chest pain should be considered at risk for cardiac disease

These patients should have a 12-lead ECG performed

Patients considered to have an Acute Coronary Syndrome should have aspirin and nitroglycerin administered immediately and transport performed expeditiously

Nitroglycerin is contraindicated for any patient who has taken Viagra®, Cialis®, or Levitra® within the past 24 hours

Chest pain is the most common manifestation of acute MI

Discomfort may be described as burning, heaviness, pain, pressure, tightness or squeezing

Angina equivalent may include:

- Neck, jaw, epigastric pain

- Nausea, fatigue

- Shortness of breath, dyspnea on exertion

12-lead ECG assessment

- Inferior – leads II, III, aVF

- Septal – leads V1, V2

- Anterior – leads V3, V4

- Lateral – leads V5, V6, I, aVL

- Posterior – leads V1, V2, V3

Patients with suspected myocardial chest pain and a 12-lead ECG that reflects > 1 mm of ST-segment elevation in 2 or more contiguous

precordial leads, or a suspected new left bundle branch block should be transported immediately

Patients with acute myocardial infarction and a left bundle branch block are at an increased risk for poor outcome unless aggressively managed  
New LBBB may be a clinical marker for a proximal left anterior descending artery occlusion with a significant portion of the left ventricle in jeopardy

An on-scene 12-lead ECG that appears normal or interpreted as normal should never be used to convince a patient that their condition is stable

50% of acute myocardial infarctions will initially present with a normal ECG (non-ST elevation MI)

Patients with an inferior MI are at risk for right ventricle infarct and nitroglycerin should be used with caution as patients are prone to develop hypotension

Nitroglycerin is NOT contraindicated, but increased caution must be used  
Inferior infarctions typically require normal saline IVF boluses

## **Dysrhythmias**

Some differentials:

Sinus tachycardia

PSVT

Atrial fibrillation

Atrial flutter

Multifocal atrial tachycardia

Consider the following for SVT patients.

(Remember to follow your local protocols)

Diltiazem may be harmful in patients with a history of pre-excitation syndromes (WPW)

Judicious use of cardioversion should be used in patients currently on digitalis or digoxin

Restoration of normal sinus rhythm in a patient who has been in chronic atrial fibrillation without therapeutic anticoagulation increases the risk for embolism

Sedation should be attempted before cardioversion unless the patient is extremely unstable or unconscious



If cardioversion performed, ensure equipment for airway management is available

Rapid ventricular response with possible accessory pathway conduction that is irregular, wide complex or polymorphic (WPW with atrial fib) should NOT be treated with adenosine, beta blockers, or calcium channel blockers which may increase conduction through the accessory pathway

Cardioversion is the preferred treatment for these patients.

Supraventricular tachycardia is the most common dysrhythmia causing cardiovascular instability during infancy

Supraventricular tachycardia with aberrant conduction that produces a wide complex tachycardia is rare in infants and children

Wide complex tachycardia should be treated as ventricular in origin

### **Signs of unstable patient**

Hypotension

Altered mental status

Ischemic chest pain

Acute congestive heart failure

Syncope

Seizure

Consider the following for Bradycardic patients

Asymptomatic sinus bradycardia and/or first-degree heart block usually do not require any treatment

Symptoms necessitating treatment

Hypotension

Altered mental status

Ischemic chest pain

Syncope

Always consider early application of pacing pads in elderly patients having bradycardic rhythms

Any patient noted to be hemodynamically unstable and in Type II second degree or third-degree heart block should be paced immediately

Provide sedation and analgesia in patients undergoing transcutaneous pacing

2nd degree AVB type II and 3rd degree AVB may deteriorate to asystole

Lidocaine and amiodarone are contraindicated with these blocks

Patients at risk for brady-dysrhythmias

Anterior or Inferior wall MI

Patients taking: beta-blockers, calcium channel blockers, or digoxin

Consider treatable causes for bradycardia

Beta Blocker OD

Calcium Channel Blocker OD

Hypoxia is a common etiology for symptomatic bradycardia in children, therefore, attention to airway is of paramount importance

Sinus bradycardia is a common pre-terminal event in children, therefore attention to airway is of paramount importance

Most maternal medications pass through breast milk to the infant so maintain high-index of suspicion for OD-toxins

Hypoglycemia, severe dehydration and narcotic effects may produce bradycardia

Consider the following for Ventricular Tachycardia with a pulse:

When ventricular escape beats are observed in the presence of bradycardia, you should not treat with lidocaine

Escape beats are attempting to sustain the patient

Treat the bradycardia with atropine

If unable to differentiate the rhythm between supraventricular and ventricular, treat as if ventricular

Bolus of lidocaine is more efficacious and safer than lidocaine drips in suppressing ventricular ectopy

Prophylactic lidocaine therapy is NOT indicated for routine use when PVC's are associated with acute MI

Any dysrhythmia can provoke a pulmonary edema/CHF exacerbation in a patient with a compromised heart

Treat the dysrhythmia first

If patient demonstrates signs of respiratory distress and is considered to be in congestive heart failure or pulmonary edema, obtain 12-lead ECG on-scene

If acute injury or infarction noted, immediately transport

Patients with a history of congestive heart failure, liver disease, shock, or advanced age (>70 years old) should receive half the normal bolus of lidocaine. (Follow your protocols)

Consider hypoglycemia in any patient progressing into cardiac arrest

Use of magnesium sulfate is contraindicated in patients with renal insufficiency or on dialysis except in cases of Torsades

Hyperkalemia is a dangerous electrolyte abnormality and can lead to peaked T-waves, PR segment prolongation, and a widening QRS interval

Causes include renal failure, noncompliance with dialysis, acidosis, medications and cell death as a result of crush or burn injuries

Calcium chloride and sodium bicarbonate are emergently required as treatment

## Congestive Heart Failure (CHF/APE)

Any patient noted to be in congestive heart failure should be considered at risk for cardiac disease

Consideration should be given as to the etiology (myocardial ischemia or infarction, dysrhythmia)

Patients should have a 12-lead ECG performed

When hypotension is present in patients suspected of being in congestive heart failure, judicious use of IV fluid is important

Dopamine may be considered as initial intervention in these particular instances

## Choking

Differential diagnosis considerations:

Anaphylaxis

Angioedema

Asthma

Cerebrovascular accident

Croup

Epiglottitis

Foreign body aspiration

Upper respiratory infection

Try and also consider other issues with choking patients.

Many choking episodes will be resolved prior to EMS arrival on the scene

A thorough assessment should be performed on all patients regardless of symptoms

Any infant choking episode associated with a period of apnea or cyanosis should be transported regardless of appearance on arrival

Choking may be an early sign for stroke onset  
Aspiration is often associated with a choking episode

This should especially be a consideration in nursing homes or assisted living facilities

In situations where a complete obstruction is below the level of the vocal cords, the only option may be to perform intubation via standard technique and advance the endotracheal tube into a mainstem bronchus in an effort to advance the foreign body into that bronchus

Then withdrawal the endotracheal tube so the distal end is at typical depth within the trachea and ventilate as usual

Provider will only be ventilating one lung in this instance but effective oxygenation and ventilation can still occur utilizing a single lung



## Convulsions or Seizures

Think of these differentials:

- CNS mass lesions
- CNS trauma
- CVA
- Drug intoxication/overdose
- Drug withdrawal
- Eclampsia
- Epilepsy
- Fever (age: 6 mos. – 6 years)
- Hyperthermia
- Hypoglycemia
- Hyponatremia
- Hypotension/Hypertension
- Hypoxia
- Infection (meningitis/encephalitis)
- Metabolic

Some things to consider with seizure patients

Do not force objects into the oral cavity during a seizure or during the post-ictal period.

Consider a cardiac etiology or stroke in patient > 50-years of age with seizure activity

Partial seizures may involve muscle twitching in an isolated digit or extremity, various neurological complaints (auditory or visual hallucinations), or repetitive movements (chewing, repetitive hand movements or speech patterns)

Complex or generalized seizures are more common and involve full-body movements

## Diabetic Patients

### **Hyperglycemia & DKA**

Differentials for both Hyperglycemia and DKA

Burns	Infection
Myocardial infarction	Non-compliance
Pregnancy	Stroke
Surgery	Trauma

### **Hypoglycemia**

Adrenal insufficiency	Hypothermia
Inadequate intake	Infection (sepsis)
Insulinoma	Medication overdose

Also consider that blood glucose should be assessed on all patients with an altered level of consciousness

Hyperglycemia resulting in diabetic ketoacidosis may be associated with hyperkalemia  
This may result in cardiac dysrhythmias, therefore cardiac monitoring is essential in these patients

## Eye and Vision Problems

While calls for eye or vision problems may seem minor. You must be aware of conditions that might warn you of more critical underlying issues.

### Eye problem differentials

Allergies	CVA
Foreign body	Glaucoma
Infection	Trauma
Vision blurred/loss	

So what else should you consider for patients with eye or vision complaints?

When injuries are noted to one eye, both eyes should be covered

This will limit bilateral or consensual eye movements.

Chemical injuries

Bases (lye) cause more severe injuries than acids

In both circumstances, the eyes should be flushed gently with copious amounts of normal saline

A retinal detachment is a serious threat to the patient's vision, and may or may not result from a traumatic insult

The patient may describe seeing flashes of light, floating strands or particles, or a visual field defect described as a shadow or a curtain

Detachment is typically not painful.

Unilateral, transient, painless blurred vision may be the warning sign for impending cerebrovascular accident

Unilateral, painless blindness may be the result of an embolic event to the retinal artery

This must be evaluated immediately

Acute glaucoma is an emergency

Patient will complain of severe pain, headache, blurred vision, halos around lights, and nausea and vomiting

Blindness may result

## Headache

Some of the various differentials are:

Brain abscess  
Brain tumor  
Cerebrovascular accident  
Cluster headache  
Encephalitis  
Epidural hemorrhage  
Hypertensive crisis  
Intracerebral hemorrhage  
Meningitis  
Migraine  
Sinus infection  
Subarachnoid hemorrhage  
Subdural hemorrhage  
Tension headache

Some additional things you should consider with headache complaints

### Migraine headache

Typically unilateral and described as  
pounding or throbbing pain  
Often associated with photophobia or  
sensitivity to noise or odors

Often associated with blurred vision,  
nausea or vomiting  
Sometimes preceded by an aura

#### Tension headache

Typically constant band-like pain or  
pressure  
Affects the front, top or sides of the  
head  
Usually begins gradually, and often  
occurs in the middle of the day

#### Cluster headache

Recurrs over a period of time  
Typically intense one-sided pain  
described as having a burning or  
piercing  
Usually located behind one eye or in the  
eye region, without changing sides  
Persons experience an episode one to  
three times per day during a period of  
time (the cluster period), which may last  
from two weeks to three months  
Headaches may disappear completely  
for months or years, only to recur  
Often respond to high flow oxygen via  
non-rebreather

### Sinus infection headache

Typically associated with a deep and constant pain in the cheekbones, forehead, or bridge of the nose  
Pain usually intensifies with sudden head movement or leaning forward  
Usually accompanied by nasal discharge, fever, and/or facial swelling

### Subarachnoid hemorrhage

Classically presents as a sudden onset of “the worst headache of my life”  
Usually caused by ruptured aneurysm  
May occur as the result of head trauma  
Often associated with nausea or vomiting  
May present with photophobia, altered mental status, or focal neurologic deficit

### Meningitis, encephalitis, brain abscess

Associated symptoms of include sudden fever, headache, vomiting, photophobia, stiff neck, confusion, impaired judgment, and/or altered mental status  
Necessary precautions should be considered



## Epidural, subdural hemorrhage

Result of head trauma (subdural may occur with minor head trauma in patients on anticoagulation)

Epidural: classically loss of consciousness, a lucid interval, then decline in mental status as hemorrhage enlarges

Subdural: may be slowly progressive or associated with rapid symptoms; typically older patients; may present with frequent falls

## Overdose Patients

What are your differentials?

Acetaminophen

Anticholinergics

Cardiac medications

Caustics

Opioids

Organophosphates

Solvents

Stimulants

Tricyclic Antidepressants

Other medication / illicit drug

## OB/GYN Emergencies

Consider these differentials with pregnancy and childbirth calls.

Vaginal Bleeding – Labor, Placenta previa,  
Placental abruption and Trauma

Abdominal Pain – Labor (preterm or term),  
Trauma or other causes

Hypertension – Can be pregnancy induced

Pre-eclampsia or Eclampsia

## Psychiatric Patients

Keep these differential diagnoses in mind.

Adverse medication reaction

Anxiety disorder                      Bipolar disorder

Depression disorder

Drug / Alcohol intoxication

Drug withdrawal                      Hemodynamic

instability

Hypoglycemia                      Hypoxia

Infection                      Medication effect

Medication overdose      Post-ictal seizure

Psychosis disorder (schizophrenia)

Trauma

Additional elements you should consider with psychiatric emergencies:

Excited delirium is a syndrome with paranoia, disorientation, hyper-aggression, hallucinations, tachycardia, hyperthermia, and possibly increased strength

Most commonly seen in males with history of mental illness and/or drug use

Especially with cocaine, crack, methamphetamine, or amphetamine use

Requires aggressive sedation with benzodiazepines and IVF

Sedation for patients noted to be extremely agitated should be emergently considered because rapid decompensation is possible

Dystonic reactions are characterized as an altered mental status displaying features of anxiety, facial grimacing, and torticollis (rigidity) of the neck

Consider medical or trauma causes for altered mental status prior to defining psychiatric condition

Combative patients resulting from acute psychosis or intoxication who are restrained in the prone position are at increased risk for lactic acidosis, positional asphyxiation, and subsequent cardiac arrest

If physical restraints are necessary, such patients will always be placed and transported in the lateral or supine position

Always be suspicious of domestic violence and abuse.

## General Illness

While the “Sick” or “General Illness” call is common. There is a wide spectrum of illness and differential diagnosis you should be thinking about. Here some below.

- Apparent life-threatening event (ALTE)
- Behavioral disorder
- Cancer
- Cerebrovascular accident
- Cholecystitis
- Diabetic condition
- Gastroenteritis
- Hepatitis
- HIV or AIDS
- Hypertension
- Infection or sepsis
- Inflammatory illness
- Medication reaction
- Pancreatitis
- Pneumonia
- Renal Failure
- Sepsis
- Sickle Cell Pain Crisis
- Ulcer disease
- Viral syndrome

## Stroke (CVA)

Be aware of potential stroke imposters

- Drug ingestion
- Electrolyte abnormality
- Environmental exposure
- Hypoglycemia
- Hypoxia
- Post-ictal (Todd's) paralysis
- Psychiatric
- Seizure
- Shock
- Transient ischemic attack (TIA)
- Trauma
- Tumor

Follow your local guidelines for patient inclusion for CODE Stroke type protocols involving time, onset etc.

Also consider ischemic strokes are more common in patients greater than 45 years of age

Hemorrhagic strokes can be seen in any age group

If the patient cannot provide historical information, it is imperative to obtain as much information as possible from family members or friends.

Acute ischemic strokes typically do not cause seizures, hypotension, or hypoglycemia

Seizures are a common presentation for other intracerebral conditions (intracerebral or subarachnoid hemorrhage, tumor, meningitis or other infections, or toxins)



## Syncope or Unconscious

The cause of a syncopal episode or patient unconsciousness can vary due to age, medical conditions, medications etc.

Consider the following when assessing these patients.

- Adverse medication reaction
- Cardiac abnormality (MI, CHF)
- CNS lesion
- Hemorrhage
- Stroke
- Tumor
- Diabetes related
  - Hypoglycemia
  - Hyperglycemia (NKHC, DKA)
- Drug overdose
- Dysrhythmia
- Electrolyte abnormality
- Environmental
  - Hyperthermia
  - Hypothermia
- Head trauma
- Hypotension
- Hypoxemia

- Infection
  - Meningitis
  - Sepsis
- Metabolic Acidosis/Alkalosis
- Psychiatric disorder
- Thyroid abnormality
- Toxin Exposure
- Vasovagal

You should also think about any patient > 65 with syncope is cardiac until proven otherwise

Female patients of child-bearing age consider ectopic pregnancy or other pregnancy related complication

Consider pulmonary embolus for unexplained syncope in patient with risk factors for thromboembolic disease

Multiple causes may be present simultaneously

You should always rule out medical causes prior to determining behavioral condition as cause

## Unknown or “Man Down”

Vague call types often require more thought in to what is going on including scene safety.

Try and think about the following as a start to what may be the actual cause of the call to 911.

- Abdominal Pain
- Allergic Reaction
- Behavioral Problem
- Breathing Problem
- Cardiac arrest
- Chest Pain
- Choking
- Convulsions
- Diabetic Problem
- General Illness
- HazMat exposure
- Headache
- Heart Problem
- Hemorrhage
- Overdose
- Pregnancy/childbirth
- Stroke
- Traumatic Injury

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## **Links and engagement**

**Be sure to visit the main website to get more study and training resources, downloads and videos at: [EMSSEO.com](https://emsseo.com)**

**Check out the blog including the EMS Office Hours podcast at [EMSOOfficeHours.com](https://EMSOOfficeHours.com)**

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