Clinical Practice Guideline: **Managing Medical Emergencies**

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GUIDELINES

This guideline provides an overview of selected medical emergencies that may occur when providing care, whether in a clinic, in the patient's place of residence, or through telehealth. Recognition of early warning signs and appropriate patient management until emergency services arrive will also be addressed. Proper recognition and management of medical emergencies can reduce the risk of negative outcomes.

These guidelines include the following medical emergencies: syncope (fainting), stroke, heart attack, seizure, anaphylactic shock, asthma, and diabetic coma.

Medical emergencies can manifest in multiple ways, but the most common warning signs and symptoms include:

- Chest pain
- Difficulty breathing
- Uncontrolled bleeding
- Change in level of consciousness
- Sudden changes in ability to speak, hear, see, comprehend, move, walk, etc.
- Severe headache
- Skin changes (e.g., cool, clammy, increase sweating, rash)
- Severe changes in mental status or behavior/violent behavior or threat thereof

If any of these signs or symptoms are present, or there are any other concerns that an emergency is present or imminent, contact emergency services (e.g., 911). It is recommended that someone near the patient contact emergency services so that they can answer any questions from emergency personnel accurately. This will help assure that the correct emergency assistance, in the proper priority, is dispatched. If possible, have someone other than the practitioner call while the practitioner attends to the patient. If no one else is available, the practitioner can make the call. Once the emergency assistance has been obtained and the patient is safe, the practitioner may need to contact the patient's emergency contact or provide the information to emergency services. This information should be kept up to date in the medical records.

A medical emergency may occur when a patient is not in the same location as the practitioner (e.g., telehealth or phone call). In this case, additional steps may be needed to get help for the patient. If possible, confirm the patient's location and if anyone else is with the patient and able to contact 911. If no one else is with the patient, or the other person(s) is not able to call 911, contact the patient's local emergency service. A web search (e.g., Google) may be necessary to find this information. Do not dial 911 or emergency services will be deployed to the location of the caller, not to the patient's location.

In addition, the practitioner should be prepared to answer the most common questions that emergency personnel might ask:

- What happened?
- How old is the patient?
- Does the patient have a pulse?
- Are they breathing?
- Is the patient conscious?
- Is the patient pregnant?
- Any chronic diseases?
- Is the patient taking any medications? When were the last medications taken?
- What treatments has the patient already received and what were the results?

The basics of First Aid, cardiopulmonary resuscitation (CPR), automatic external defibrillator (AED) use, and Advanced Cardiac Life Support (ACLS) may be applicable to medical emergencies described in this document. It is recommended that all clinical personnel be trained and up-to-date on First Aid, CPR/AED, and ACLS depending on their practice scope. Non-clinical personnel may be trained at the practitioner's discretion. Follow the American Heart Association's CPR/AED guidelines. CPR/AED training information can be found at their website: http://www.heart.org/.

If the practitioner or staff are not trained in CPR/AED, and the person is unconscious, the caller should tell the 911 dispatcher. If advised to begin CPR/AED, the 911 dispatcher may be able to instruct the care giver in the proper CPR/AED procedures until help arrives.

In preparation for an emergency, it is recommended that the practitioner have a written emergency plan upon which all staff receive initial training and regular reviews/updates. Any equipment or supplies that might be needed in the event of an emergency, depending on the clinician's training and patient population, should be secured and readily accessible. When preparing for emergencies, it is important to consider the distance and response time between the clinical setting and the available emergency services.

If a medical emergency should occur with a patient, the practitioner should document what occurred in the patient's chart, including the help the practitioner and/or staff provided. This will provide a clinical record when the patient eventually returns, or if there is a need for other future clinical or legal documentation. Documentation requirements can vary depending on type of practitioner and scope of practice. Practitioners should consult their state board, malpractice insurance carrier, state regulations, and appropriate legal counsel to ensure they are fully compliant.

SYNCOPE

Syncope, also known as "fainting" or "passing out" is a temporary loss of consciousness due to a temporary decrease of the blood supply to the brain and may indicate a more serious condition. Syncope is a dramatic event and can be life-threatening if not treated properly. It can occur in otherwise healthy people and affects all age groups, but it occurs more often in the elderly.

There are several types of syncope. *Vasovagal* syncope usually has a clear trigger such as emotional stress, trauma, pain, or prolonged standing. This includes syncope that happens during micturition, defecation, coughing, or from gastrointestinal stimulation. *Carotid sinus* syncope is attributed to carotid artery constriction and can occur after turning the head, while shaving, or when wearing restrictive clothing around the neck. Syncope can also be a symptom of heart disease or abnormalities that create an irregular heartbeat, temporarily affecting blood volume and its distribution to the brain. Syncope is not usually a primary sign of a neurological disorder, but it may indicate the presence of neurologic

disorders such as Parkinson's disease, diabetic neuropathy, or other neuropathies. Certain classes of drugs have also been correlated with an increased risk of syncope (e.g., diuretics, antihistamines, narcotics, alcohol).

Syncope Signs, Symptoms and Emergency Management

It is important to treat loss of consciousness as a medical emergency until the signs and symptoms are relieved and the cause is known. For an adult, call for emergency medical services (e.g., 911) immediately. Next, check to see if the person's airway is open and they are breathing and follow the American Heart Association's CPR/AED/ACLS guidelines as appropriate. If the person is breathing, raising their legs about one foot (30 centimeters) above heart level will help restore blood flow to the brain. Loosening belts, collars or other constrictive clothing can also help.

CEREBROVASCULAR ACCIDENT (CVA) OR "STROKE" AND TRANSIENT ISCHEMIC ATTACK (TIA) OR "MINI STROKE"

A CVA (stroke) is defined as an acute loss of neurological function due to an abnormal blood perfusion of brain tissue. A CVA can be categorized as:

- Ischemic - deprivation of blood flow to an area of the brain, generally as a result of thrombosis, embolism, or reduced blood pressure.
- Intracerebral hemorrhage - caused by rupture or leak of a blood vessel either within the primary brain tissue or ventricles.
- Subarachnoid hemorrhage - condition in which blood collects beneath the arachnoid mater, a membrane that covers the brain.

A TIA is a transient episode of neurologic dysfunction caused by focal brain, spinal cord, or retinal ischemia, ***without*** acute infarction. A TIA is a "warning stroke" or "mini-stroke" that produces stroke-like symptoms.

CVA (Stroke) and TIA Signs, Symptoms and Emergency Management

Spot a Stroke F.A.S.T.

- Face Drooping: Does one side of the face droop or is it numb? Ask the person to smile.
- Arm Weakness: Is one arm weak or numb? Ask the person to raise both arms. Does one arm drift downward?
- Speech Difficulty: Is speech slurred, are they unable to speak, or are they hard to understand? Ask the person to repeat a simple sentence, like "the sky is blue." Is the sentence repeated correctly?
- Time to call 911: If the person shows any of these symptoms, even if the symptoms go away, call 911 and get them to the hospital immediately.

Other possible symptoms of a stroke or TIA to be aware of include sudden:

- Numbness or weakness of the arm and/or leg
- Confusion or trouble understanding
- Trouble seeing in one or both eyes
- Trouble walking, dizziness, loss of balance or coordination
- Severe headache with no known cause

Depending on the location or type of the CVA or TIA, the patient may also have severe occipital and/or neck pain. One type of CVA results from spontaneous Vertebral Artery Dissection (sVAD). sVAD can present as occipital head and/or neck pain days or weeks before the onset of acute neurologic dysfunction. Because of this tendency, patients may seek the care of healthcare practitioners who typically manage head and neck pain. While it is unlikely that cervical spine manipulation or mobilization can cause a sVAD in an otherwise healthy individual, the evidence is unclear whether such manipulation/mobilization can cause progression of an existing dissection. If a patient's symptoms indicate they may be caused by a sVAD, cervical spine manipulation/ mobilization procedures are contraindicated until sVAD has been appropriately ruled out. If a patient begins to exhibit signs of a sVAD following a cervical spine manipulation, the practitioner should not perform further manipulation/mobilization. Follow the procedures outlined for the management of stroke.

If a practitioner or staff believes someone in the clinical setting is having a CVA or TIA, immediately call for emergency medical services (e.g., 911) Medications to dissolve a blood clot that might have caused the stroke may improve the chances of getting better after a CVA, but only if they are administered within certain time limits depending on the medication. This is why it is important to check and document the time when the first symptoms appeared. TIA symptoms usually only last a few minutes but can last up to 24 hours. If left untreated, people who have TIAs have a higher risk of stroke. Recognizing and treating TIAs can reduce the risk of a major stroke. While waiting for emergency services to arrive, the person with the suspected CVA or TIA symptoms should lie down in a safe area. If the person is *conscious*, the practitioner should do his/her best to keep the patient comfortable and provide reassurance. It may help to loosen constricting clothing such as a necktie or jewelry. If the person is having difficulty swallowing, try to turn them onto their side. Do not give them anything to eat or drink.

Ischemic CVA is the most common type and may be responsive to treatment with anti-thrombolytic, anticoagulant, and antiplatelet medications. The possibility of effectiveness of these medications decreases over several hours, so it is important to have the patient taken to an appropriate treatment facility as soon as possible.

If the person becomes unconscious, the practitioner should follow standard CPR/AED/ACLS training recommendations. Heart attacks and strokes may occur together and necessitate CPR/AED/ACLS procedures.

MYOCARDIAL INFARCTION (MI) OR "HEART ATTACK"

A myocardial infarction (MI) is myocardial necrosis (heart cell tissue death) from myocardial ischemia (lack of blood flow to the heart). If a patient is thought to be having a heart attack, contact emergency services immediately. The practitioner should follow standard CPR/AED/ACLS guidelines for responders commensurate with their training and specialty scope. As with stroke, the faster the person can get definitive evaluation and treatment for possible MI, the better their chances of survival. The arrhythmia ventricular fibrillation is often associated with MI and use of the AED to normalize the cardiac rhythm in the pre-hospital setting can substantially increase survival rates.

Heart Attack Signs, Symptoms and Emergency Management

The signs and symptoms of a heart attack can vary in character and severity from one individual to another depending on factors such as age, sex and co-morbidities. Women, older adults, and people with diabetes for example may have atypical symptoms. In a study by the National Institutes of Health, only about half of the women who had a heart attack reported chest pain (McSweeney et al., 2003). These women reported other symptoms including weakness, unusual fatigue, cold sweats, and dizziness. Women are also more likely than men to report pain between the shoulder blades, nausea and vomiting, and/or shortness of breath (van Oosterhout et al., 2020). It is very common for people to deny their symptoms or their importance, but if a practitioner has concerns that an emergency is present or impending, then emergency assistance should be contacted immediately for the patient. The practitioner should not let the patient, or their family deny the symptoms, try to persuade the practitioner to not call for emergency help, or to wait to see if the symptoms go away.

Common symptoms of heart attack in an adult can include:

- Chest pain – this can be described as pressure, squeezing, or fullness; the pain is usually in the center of the chest, but may also be felt in the jaw, shoulder, arms, back, and stomach.; the pain usually lasts for more than a few minutes, but may be intermittent
- Shortness of breath
- Cold sweats, clammy skin
- Changes in mental status (particularly in the elderly)
- Changes in consciousness
- Pallor
- Light-headedness
- Nausea and/or vomiting (more common in women)
- Numbness, aching, or tingling in the arm (usually the left arm)

- Weakness or fatigue (especially among the elderly)
- Palpitations (feeling a rapid or irregular heartbeat)

While waiting for the ambulance to arrive the practitioner should have the person sit/lay down, rest, and remain as calm as possible. It is also helpful to have the person loosen any tight clothing. The practitioner should ask if the person has physician recommendations to take any medication for chest pain for a known heart condition (e.g., nitroglycerin) and if so, assist them in locating and retrieving their medication if needed. In addition, the practitioner should apply the standard recommendations from CPR/AED/ACLS and first aid appropriate for his/her training and scope.

SEIZURE

A seizure is a sudden disruption of the brain's normal electrical activity accompanied by altered consciousness and/or other neurological and behavioral manifestations such as uncontrollable muscle contractions of all or part of the body or tingling sensations. Seizures can have many causes including medicines, high fevers, head injuries, alcoholism, genetic conditions, and certain other diseases. People who have recurring seizures are most often diagnosed with epilepsy, but there may be other conditions that cause recurring seizures. Undergoing a seizure can be a scary experience for the person having it, as well as for those around the person. Knowing what to do can help the seizure patient avoid physical and emotional trauma.

Seizure Signs, Symptoms and Emergency Management

While seizure manifestations can vary, some common symptoms during a seizure include:

- Alteration of consciousness
- Lip smacking
- Involuntary muscle contraction of one or more limbs or the entire body, followed by relaxation; tongue biting from jaw muscles contracting
- Difficulty breathing and secretion of saliva from the mouth

If someone in a practitioner’s office is experiencing a seizure, it is important to keep the following in mind:

- Remain calm
- Make sure someone stays with the person having the seizure
- Move chairs and other hard surfaces away from the person to protect from injury
- Lower or turn off the lights in the room
- Do not open their mouth (it is not possible to choke on one’s own tongue)
- Gently put a pad (e.g., pillow or jacket) under their head to protect it from injury
- Carefully turn the person onto their side and allow any fluid (saliva or rarely vomit) to come out of their mouth

- Look for a medical id bracelet or tag (to verify the person has epilepsy and obtain emergency contact information)
- Do not give the person anything to eat or drink during or right after a seizure (choking hazard)

Most seizures last from 30 seconds to 2 minutes. However, it is a medical emergency if any of the following occur:

- The seizure is prolonged (e.g. more than 5 minutes)
- A second seizure begins shortly after the first has ended (multiple seizures)
- Consciousness does not start to return after the shaking has stopped
- The person is pregnant, injured, or diabetic
- The seizure has happened in water
- There is no medical id bracelet or tag and there is no way of knowing whether the person has had a history of seizures previously
- The person is having difficulty breathing

Seizure(s) can also be caused by other conditions. Immediate medical attention is required especially if the person experiencing the seizure also has any of the following: diabetes; brain infection, heat exhaustion, high fever, head trauma, or hypoglycemia (low blood sugar).

If the person remains unconscious after the seizure, the practitioner should apply the standard recommendations from CPR/AED/ACLS and first aid appropriate for his/her training and scope while contacting and waiting for emergency assistance.

ANAPHYLAXIS (ANAPHYLACTIC SHOCK)

A life-threatening allergic reaction (anaphylaxis) can progress to shock, causing a sudden drop in blood pressure and trouble breathing. In people with an allergy to a given substance, anaphylaxis can occur within minutes of exposure. In some cases, the reaction is delayed, or anaphylaxis may occur without an apparent trigger. The most common triggers are medications, foods, and insect bites/stings.

Anaphylaxis Signs, Symptoms and Emergency Management

Signs and symptoms of anaphylactic shock can include the following: skin reactions including hives, itching, and flushed, bluish or pale skin; swelling of the face, eyes, lips, tongue or throat; nasal congestion; difficulty swallowing; tightening of the airways (leads to wheezing and difficulty breathing); slurred speech; coughing; a weak and rapid pulse; abdominal pain, nausea, vomiting or diarrhea; low blood pressure; confusion; anxiety; and/or dizziness, fainting or unconsciousness.

If a practitioner or staff suspect someone in the clinical setting is having an anaphylactic reaction, call for emergency medical services (e.g., 911) immediately. If the person has an

anaphylaxis action plan from a doctor for injecting epinephrine and other emergency measures, the practitioner should follow it. Ask the person if they are carrying an autoinjector (e.g., EpiPen) to treat their allergic reaction. An autoinjector is a device preloaded with medicine (e.g., epinephrine) to reverse the effects of the body's allergic reaction. The practitioner should provide assistance if needed or desired using the patient's medication as appropriate to the circumstances. The person should lie still on their back and loosen any tight clothing. The person should be covered with a blanket, and not given anything to drink. If the person should vomit or bleed from their mouth, turn them onto their side to prevent choking. Do not place a pillow under the person's head if they are having trouble breathing. This can block the airways.

It is critical to get emergency treatment even if symptoms start to improve. After an episode of anaphylaxis that appears to resolve, symptoms can return so patients are typically observed for at least 24 hours. Even if a person uses their epinephrine injector, they must still be seen by medical personnel on an emergent basis for further treatment and to prevent resurgence of the symptoms.

ASTHMA

During an asthma episode, the airways that lead into the lungs become inflamed. This inflammation of the airways leads to swelling and muscle spasms, narrowing the airways and reducing the air flow into and out of the lungs. More mucous is also produced in response to the inflammation. When this occurs, it becomes difficult to breathe and can be fatal.

Exposure to an allergy-causing substance (i.e. allergen) or irritant (e.g., cigarette smoke) can trigger an asthma episode. In addition, respiratory issues (e.g., a cold or sinus infection), gastroesophageal reflux (i.e. heartburn), severe stress, or severe pain can also trigger asthma.

Asthma Signs, Symptoms and Emergency Management

Symptoms of an acute asthma episode include:

- Shortness of breath
- Chest tightness
- Difficulty talking or walking because of shortness of breath
- Lips or fingernails turning blue
- Coughing
- For children, inability to play
- Vomiting
- Convulsions

As soon as a practitioner or staff suspect a person is having an asthma episode, call for emergency medical services (e.g., 911) immediately. If the patient has asthma medication

to be used in an acute situation (e.g., an inhaler), then the patient should use it immediately. The patient should sit upright comfortably and loosen any tight clothing.

The care giver should stay with the patient until emergency help arrives, as well as, be prepared to describe to the emergency services personnel what help the patient has received until the ambulance arrived. The practitioner should apply the standard recommendations from CPR/AED/ACLS and first aid appropriate to their training and scope.

DIABETIC EMERGENCIES

Diabetic emergencies are due to hypoglycemia (low blood sugar) or hyperglycemia (high blood sugar). A diabetic coma is a life-threatening complication of diabetes caused by a dangerously high or low blood sugar. If a patient is totally dependent on insulin injections for their diabetes treatment (Type I diabetes), lack of insulin can keep glucose from entering the body's cells. The body begins to break down fat stores in order to get nutrients. This process forms toxic acids known as ketones. Left untreated, ketones can accumulate and cause diabetic ketoacidosis (DKA). DKA can lead to coma and death. For diabetics a very low blood sugar level can also cause coma and death. Most of the time low blood sugars can be treated with glucose sources such as sugar or glucose tablets which diabetics often carry with them. Diabetics may also carry and take glucagon to increase blood sugar as needed.

Diabetic Emergency Signs, Symptoms and Management

Patients may experience signs and symptoms of:

High blood sugar (*hyperglycemia*)

Increased thirst, frequent urination, fatigue, nausea and vomiting, shortness of breath, abdominal pain, fruity breath odor, very dry mouth, and/or rapid heartbeat.

OR

Low blood sugar (*hypoglycemia*)

Shakiness or nervousness, fatigue, sweating, hunger, nausea, irritability, an irregular or racing heartbeat, drowsiness, dizziness, loss of coordination, double vision, convulsions, difficulty speaking, and/or confusion.

If a patient experiences any symptoms of high or low blood sugar, they should test their blood sugar and follow their diabetes treatment plan based on their test results. If they don't start to feel better quickly, or they start to feel worse or think they might pass out, a practitioner should call for emergency help (e.g., 911). Hypo- or hyper-glycemia that does not respond to usual diabetes treatment plans are medical emergencies. A practitioner should apply the standard recommendations from CPR/AED/ACLS and first aid appropriate for their training and scope.

OPIOID OVERDOSE

Opioid overdoses are becoming more common with the increased usage of illicit substances and inappropriate usage of medications for pain. This can include substances such as hydrocodone, hydromorphone, oxycodone, oxymorphone, morphine, codeine, fentanyl and heroin. People experiencing an opioid overdose may exhibit:

- Unconsciousness/unresponsiveness/drowsiness
- Shallow, slowed, weak, or no breathing
- Pinpoint pupils that don't react to light
- Snoring, choking, or gurgling sounds
- Cold and clammy skin
- Cyanosis of lips and fingernails
- Dizziness
- Confusion
- Slow heartbeat
- Low blood pressure

If you believe someone in your practice setting is showing signs of an opioid overdose, contact emergency services (911) immediately. Try to wake the person up by calling their name or rubbing their sternum vigorously. If you have naloxone (opioid antagonist) available, administer it to the patient right away. Try to keep the person awake and breathing. Lay the person on their side to prevent choking. Stay with the person until emergency personnel arrive. Follow standard procedures for CPR/AED/ACLS, etc. as dictated by the situation and your scope of training and practice.

PRACTITIONER SCOPE AND TRAINING

Practitioners should practice only in the areas in which they are competent based on their education training and experience. Levels of education, experience, and proficiency may vary among individual practitioners. It is ethically and legally incumbent on a practitioner to determine where they have the knowledge and skills necessary to perform such services.

It is best practice for the practitioner to appropriately render services to a patient only if they are trained, equally skilled, and adequately competent to deliver a service compared to others trained to perform the same procedure. If the service would be most competently delivered by another health care practitioner who has more skill and expert training, it would be best practice to refer the patient to the more expert practitioner.

Best practice can be defined as a clinical, scientific, or professional technique, method, or process that is typically evidence-based and consensus driven and is recognized by a majority of professionals in a particular field as more effective at delivering a particular

outcome than any other practice (Joint Commission International Accreditation Standards for Hospitals, 2020).

Depending on the practitioner's scope of practice, training, and experience, a member's condition and/or symptoms during examination or the course of treatment may indicate the need for referral to another practitioner or even emergency care. In such cases it is prudent for the practitioner to refer the member for appropriate co-management (e.g., to their primary care physician) or if immediate emergency care is warranted, to contact 911 as appropriate. See the *Managing Medical Emergencies (CPG 159 – S)* clinical practice guideline for information.

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