

Patient assessment—Getting back to basics

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Photo illustration by Audra Horton

Over the years, I've noticed that almost every clinical issue in EMS discussions comes back to patient assessment. Whether it's a semi-annual online discussion about allowing EMS providers to refuse transport to so-called "frequent flyers" or whether it's a debate about spinal motion restriction, the underlying theme uniting all of these discussions is the weakness or perceived weakness in EMS providers' assessment abilities. Therefore, a review of assessment strategies is always a good idea. My goal is to offer EMS providers an organized method for conducting patient assessments and making critical decisions or interventions.

Initial assessment: The view from the door

The initial assessment can be summed up with one question, "Sick or not sick?" Your eyes will provide the first clues for answering the basic questions of airway, breathing and circulation. Is the patient conscious? How is the patient positioned? A patient in a tripod position may be having respiratory distress. How is the patient breathing? Too fast? Too slow? How is the patient's color? Blue? Grey? Bright red? Any change in a patient's color

could indicate that he or she is "sick" and requires immediate interventions to stabilize airway, breathing or circulation. In some cases, you may not even be in a position to continue your assessment until after you stabilize an immediate life threat.

Is the patient looking at you as you approach? Is the patient talking? A talking patient (or a crying baby) is a great sign, as it shows an open, patent airway, breathing and circulation. The patient may still be "sick," but conditions that might prevent the assessment from continuing are much less likely to exist.

Scene survey

The scene survey is much more than the standard skills testing line of "Is the scene safe?" A check for safety is an important step, but a good scene survey can provide much more information. It provides a comprehensive view of the call and the patient's surroundings.¹ A scene survey might help you notice the oxygen tubing running throughout the patient's home, giving you a strong index of suspicion for a patient with a chronic respiratory condition, such as COPD. Similarly, a bottle of wine and several pill

bottles lying next to an unresponsive patient might provide clues indicating an overdose.

When responding to a trauma call, a good scene survey will offer valuable clues regarding the mechanism of injury. A quick look at the damage to a vehicle can indicate what possible injuries a patient might have. Determining the mechanism of injury is only a part of patient assessment, but the initial scene survey will often provide a good starting point.

ABC(D)(E)

We all know about “A” for airway, “B” for breathing, and “C” for circulation. But let’s add to that: “D” for disability and “E” for exposure (expose and evaluate any irregularities).² Answering these questions and making observations based on this basic mnemonic are essential elements in patient assessment.

A – Airway

Is the airway intact and is the patient moving air? If not, the patient requires immediate interventions, appropriate to the provider’s training and protocols, to maintain or establish a patent airway.

B – Breathing

What is the patient’s respiratory rate (fast, slow or normal)? What is the quality of her breathing (deep, normal or shallow)? What are the lung sounds? Are the lung sounds present bilaterally? It is almost always appropriate, if a patient’s respiratory status allows it, to provide supplemental oxygen or to assist ventilations with positive pressure ventilation (PPV), typically a bag valve mask. Other options for assisting breathing include continuous positive airway pressure (CPAP) or a nebulized medications such as Albuterol.

C – Circulation

Is a radial pulse present? What is the rate (fast, normal or slow)? What is the quality (thready, bounding, regular or irregular)? Circulatory status can also be determined by assessing skin temperature, moisture and turgor. Patients with profuse bleeding likely need aggressive bleeding control, through either direct pressure or the application

of a tourniquet. Patients suffering from hypovolemia may require administration of intravenous fluids, as authorized by the EMS provider’s training and/or protocols.

D – Disability

“Disability” is the term often used to indicate an evaluation of the need for spinal motion restriction (SMR). Some EMS systems allow medics to selectively apply SMR protocols; other systems require providers to apply SMR in most traumatic injuries. If your protocols allow for selective SMR application, then a thorough disability assessment will be necessary. Aspects of disability include evaluating pupil reaction and reactivity, determining mental status (normally determined by asking person, place and time), and noting presence of pulse, motor function and sensation in all extremities. In some cases, a prehospital stroke screening test may be warranted as well.

E – Exposure/Evaluation

Quite simply, identified injuries need to be exposed to be evaluated. In the case of multi-system trauma patients who require evaluation at a designated trauma center, it is common to remove all clothing to look for other injuries, particularly entry *and* exit wounds for penetrating trauma, such as shootings and stabbings.

Decision: Critical or non-critical

By now, a fairly clear decision regarding the patient’s acuity can be made. In the vast majority of cases, acute patients can benefit most from immediate transport to an appropriate hospital, with most interventions performed en route. Patients who present with less acute signs and symptoms should still be moved to the ambulance, if possible, for access to additional equipment and better surroundings to conduct a more thorough assessment and for possible treatment.

Vitals and monitors

Pulse

In most cases, a radial pulse checking for heart rate, regularity and quality should provide a thorough picture of a patient’s



perfusion status. Abnormal findings, if not previously addressed during the ABCDE process, may require intervention.

Respiratory rate

Now is the time and place to determine an actual respiratory rate. Again, if necessary, supplemental oxygen, positive pressure ventilation, CPAP, or respiratory medications may be used to assist the patient's breathing.

Blood pressure

You should, if possible, obtain a manual blood pressure. Hypotension may be indicative of hypovolemia, particularly if associated with other signs, such as tachycardia or skin changes. Hypertension may be indicative of a long-term disease process or may be a response to pain. In the event of a suspected brain attack or aneurysm, it may be necessary to obtain blood pressures bilaterally to note any difference in blood pressures between the two arms.

Oxygen saturation

Although oxygen saturation (as measured through pulse oximetry) is considered an additional vital sign by many EMS providers, it is actually not always an accurate or early indicator of oxygenation, much less respiratory status. For hypothermic patients as well as patients exposed to carbon monoxide, the pulse oximeter may give an incorrect reading. However, because oxygen saturation is a lagging indicator, a patient with an oxygen saturation outside the normal range definitely warrants oxygen therapy and an in-depth assessment. The provider should never fail to ignore classic signs of respiratory difficulty, such as intercostal muscle retraction, nasal flaring, tripod position, tachypnea or speaking in short sentences, merely because the oxygen saturation falls in a normal range.

EKG

For the ALS provider, an EKG can provide valuable insight into the patient's cardiac status. It can help the ALS provider identify dysrhythmias and can monitor the

patient for cardiac abnormalities following administration of medications. Further, in the event of a suspected acute coronary syndrome, obtaining a 12-lead EKG, where authorized, may be invaluable.

Blood glucose

For the patient with altered mental status, a blood glucose reading is invaluable for evaluating for possible hypoglycemia. Additionally, for patients with a history of diabetes, a blood glucose reading is to be expected. Considering the growing number of obese patients and undiagnosed diabetics, taking the additional time to perform a blood glucose check on any medical patient can provide important information.

Temperature

Obtaining a temperature is one of the most overlooked vital signs in prehospital care. A patient with an elevated temperature may be suffering from an infectious disease. Additionally, some CVA patients lose the ability to self-regulate body temperature in later stages of their stroke.

Capnography

Although capnography is still new to the EMS world, it is rapidly becoming an accepted standard for confirmation of endotracheal tube placement. However, waveform capnography's potential is recognized only for the assessment of respiratory patients, particularly for asthmatics and those patients with other obstructive airway diseases.

Examination

For many patients, a focused assessment of the injured or impacted area will suffice, especially if the patient has no other complaints. Critical and/or unresponsive patients will require a complete examination, commonly referred to as either a detailed exam or a "head to toe."

At a minimum, the head to toe includes the following:

- Assessing the head, including skull, scalp, eyes, ears, nose and mouth
- Assessing the neck, including checking for jugular venous distention

and tracheal deviation

- Assessing the chest, including visual inspection and auscultation with stethoscope
- Assessing the abdomen and pelvis, which should include palpation of the abdomen
- Assessing the extremities, including visual inspection, palpation and checking for pulse, motor function and sensation
- Assessing the posterior
- Management of secondary, non-life-threatening injuries
- Reassess vital signs³

When performing the assessment, the mnemonic DCAP-BTLS is helpful for remembering possible traumas to look for. It stands for:

- D – Deformities
- C – Contusions
- A – Abrasions
- P – Punctures/Penetrations
- B – Burns
- T – Tenderness
- L – Lacerations
- S – Swelling⁴

SAMPLE: Actually, a powerful tool

Most of us remember trying to master the mnemonic SAMPLE during our first EMS classes. This simple tool is actually much more powerful than you might realize.⁵ In the event that the patient is unable to provide a SAMPLE history, you may be able to obtain some information from the patient's family or other bystanders.

S – Signs/symptoms

I often ask the patient to describe, in one sentence, what's wrong. Or, you can simply ask, "Why did you call the ambulance today?" The answer is what is often referred to as the chief complaint. Sometimes, when assessing chronic or ongoing conditions, a provider may need a more specific answer. Asking, "What changed that made you call the ambulance now?" may help the patient better explain why it was necessary to call for assistance at that moment.

A – Allergies

This is almost self-explanatory. In order to treat the patient, especially with medications, it is crucial to find out what allergies the patient has. Because few patients have medical training, they may not understand the difference between a true allergic reaction and side effects. As such, it's important to also ask them what their "allergic reaction" is like. For example, a patient who states that his allergic reaction to nitroglycerin involves a headache may benefit from a detailed explanation of the side effects of the medication and the benefits of receiving that medication for certain cardiac emergencies.

M – Medications

Ask the patient what medications she takes. This questioning should also include non-prescription (over-the-counter) medications as well as vitamins, dietary supplements and herbals. In addition to the safety aspects of identifying potential drug interactions, knowing the patient's medications can also aid in determining her medical history. For instance, a patient who takes a beta-blocker may have a history of cardiac problems or hypertension. Knowing a patient's medications may also provide insight regarding the potential effectiveness of prehospital interventions. In the example of the patient who takes beta-blockers, a provider might recognize that the initial dose of epinephrine in anaphylaxis or asthma may not be effective and that an alternative dosage or medication may be more effective. When treating an unresponsive patient at her home, it may well be worth it to check popular storage areas (bedroom, bathroom, kitchen and refrigerator) for medications.

P – Prior medical history

Simply put, patients who have had a condition once are often more likely to have that condition again. Also, patients who have certain conditions are more likely to develop other illnesses. One example is the relationship between hypertension and cardiovascular conditions such as stroke, heart attack and congestive heart failure.

L – Last oral intake

Last oral intake is just that—what did the patient last eat? This is important for two cases in particular. First, it may provide insight into any allergic or anaphylactic reactions that the patient is experiencing. Additionally, in the event that a patient requires surgery, surgeons need to know the last time the patient ate. This knowledge may make a difference in overcoming complications with aspiration and anesthesia.

E – Events

The events leading up to the call for EMS are equally important. The events can provide valuable clues regarding the patient's underlying condition(s). Knowing that the patient experienced crushing chest pain while watching a television show (unstable angina) versus experiencing chest pain after mowing the lawn (stable angina) may even help the attending physician offer an actual diagnosis.

OPQRST: Not just for pain and trauma

Although many EMS providers consider the OPQRST mnemonic to be strictly for injuries or pain, the truth is that it can be applied to virtually any chief complaint.⁶

O – Onset

What was the patient doing when the pain (or chief complaint) started? Was the onset sudden or gradual? A gradual onset is more typical of a chronic illness or condition.

P – Provocation/Palliation – and palpation too!

What makes the situation better (palliation) or worse (provocation)? For example, knowing that rest provides some relief may help the provider distinguish between stable and unstable angina for an acute coronary syndrome (ACS) event. And particularly in the event of an injury or pain, it's probably a good idea to palpate the site of pain. You might feel an injury. Additionally, some illnesses can be found by palpation. For example, rebound tenderness may be a sign of appendicitis. And of course, injuries (or the possibilities thereof) require palpation too. Trauma patients

in particular require extensive palpation to find fractures and possible signs of internal bleeding.

Asking about provocation or palliation can also be helpful in medical cases not involving pain. For example, it may be useful to ask the patient what makes her breathing difficulty better or worse.

Q – Quality

This is, quite simply, a description of the pain (or chief complaint). Ask the patient open-ended questions to determine what the patient is experiencing. Can the patient describe the pain? Dull, sharp, stabbing?

R – Region/Radiation

Asking a patient where his pain is located goes without saying. However, it is also important to delve into radiation, or where the pain moves to. The radiation of pain can help in determining etiologies of certain pain. The classic example is chest pain that radiates to the arm. Such pain is typically associated with acute coronary syndrome. Several abdominal conditions also involve referred pain.

S – Severity

By now, most EMS providers should be familiar with the pain scale that asks the patient to rate the severity of his or her pain on a scale from one to ten, with ten representing the worst pain ever experienced.

T – Time

How long has the pain or chief complaint been occurring?

Conclusion

Patient assessment is the great equalizer between all levels of EMS providers. With the exception of interpreting certain instruments and machines (such as capnography and EKG strips), any EMS provider, regardless of level, can perform a full and complete assessment of a patient. A well-documented, thorough patient assessment is the standard of care for any EMS provider and is something that we must all strive to achieve and master.

References

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