

THE TOUCH OF TRIAGE

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Triage is a skill learned through study, training, and doing. Book learning alone is not enough, hands on only is not enough. Triage is not something that should be performed by the newest, out of school technician. It is imperative that the technician responsible for triaging patients has an exceptionally good grasp of what normal looks, feels, and sounds like. If a technician does not have a good grasp of the basics and what normal is, it is therefore going to be exceedingly difficult to be able to differentiate from abnormal. Experience, as well as good instincts, and a good dose of common sense are what combine to make a great triage technician.

Triage is different from a physical exam. Triage is done by rapidly assessing the patient's respiration, alertness, and perfusion. And unless the patient is having an obvious, life-threatening emergency, most of the time, you will have time to perform a basic physical exam. There are three major body systems that are assessed during triage; these are the respiratory, cardiovascular, and neurological systems.

You should begin your observations as you approach the patient – assess their respiratory effort and pattern, note if there are obvious wounds, blood, or foreign material present on animal; note their posture and level of consciousness. Note if the animal responds to you as you approach; ask the owner about the animal's temperament before handling and take any necessary precautions (do NOT muzzle a patient in respiratory distress or that has obvious signs of head trauma). Check for audible airway sounds (with and without a stethoscope).

A good plan to follow is the ABCDE's of emergency care: A – airway, B – breathing, C – circulation, D – dysfunction or disability of the central nervous system, E – examination. When assessing the airway, some of the things you need to do is determine if the airway is patent, and if the oral cavity and throat are clear of obstruction. Determine if the patient needs to be intubated, or even perhaps requires an emergency tracheostomy.

Then, moving on, determine if the patient is breathing, and if they are breathing effectively. Observe if their respiratory effort is increased, or if their respiratory pattern is abnormal. Listen for breath sounds, assess their posture, check to see if their head and neck is extended, or if they are exhibiting orthopnea. Decide if they require supplemental oxygen. Assess them for possible subcutaneous emphysema, check their mucous membrane colour. Look them over quickly and carefully to see if there is a bite wound, or some kind of injury that has compromised the larynx or trachea, or if there is any sign of thoracic trauma or foreign body penetration. Both airway and breathing can be assessed by visualization, palpation, and auscultation. Some of the clinical signs that can point to respiratory distress include absent chest wall motion, increased ventilatory effort, flaring of the nares, head and neck extension, paradoxical breathing.

Circulation is also assessed by visualization, palpation, and auscultation. Determine if the heart is beating, or if there is a need for immediate CPR. Check for pulse deficits as you auscult the heart and assess the pulse quality. Visualize the mucous membrane colour as well as the CRT. Feel the extremities and determine if they are cool to the touch. Look for obvious signs of external hemorrhage.

At this point, one of things the patient may need to be assessed for is shock. Shock is a critical condition brought on by a sudden decrease in the circulating blood flow, causing inadequate delivery of oxygen and nutrients to the body tissues. This is the body's lifesaving mechanism; the body will pull blood from nonessential areas (legs, GI tract) and reroute it to more essential areas (heart, brain, lungs). This abnormal state of blood pooling is why we will sometimes see patients with pale/white mucous membranes when they have not had any blood loss.

There are different types of shock: hypovolemic (blood loss, severe dehydration, trauma), cardiogenic (CHF, cardiac tamponade, severe cardiac dysrhythmias), distributive (sepsis, anaphylaxis, obstructive), metabolic (hypoglycemia, cyanide toxicity, sepsis), hypoxemic (anemia, severe pulmonary disease, methemoglobinemia). When an animal is in a state of shock the circulatory system becomes compromised, causing baroreceptors in the aortic arch and carotid arteries to detect a decrease in cardiac output. These baroreceptors then stimulate the sympathetic nervous system, causing catecholamines (epinephrine) to be released.

There are different stages of shock, the first being early, or compensatory shock. This is when the release of catecholamines causes the heart rate to increase, cardiac contractility increases, vasoconstriction happens, blood flow will decrease to GI tract, muscle, and skin, there is decreased oxygen delivery to tissues. You can also see splenic contraction during blunt trauma (will show falsely elevated PCV by 20%). The physical signs seen during this stage are hyperemic mm, tachycardia, rapid CRT, normal or increased BP. If treatment of shock is not initiated in this early stage, the body may either be able to recover, or the shock will worsen. If the patient sustains a major trauma, like being hit by a car, they can immediately go into the decompensatory or terminal stage of shock.

The next stage is decompensatory shock; in this stage you will usually see multiple organ failure, low body temperature (due to poor perfusion and hypotension), depressed mentation. The physical signs seen during this stage can include pale/muddy MM, tachycardia, prolonged CRT, normal to decreased BP, poor pulse quality.

The final stage is terminal shock. Most patients are not responsive to treatment if they are in this stage of shock. This stage is characterized by bradycardia (heart is no longer able to keep up with the demand), heart failure, severe mental depression, and cardiopulmonary arrest. The physical signs generally seen during this stage are pale/grey mm, prolonged CRT, decreased HR, weak pulse quality, decreased MAP, hypothermia, and abnormal respiratory pattern.

Shock does need to be treated, and we need to keep in mind that not all types of shock are fluid responsive!! Sometimes the underlying problem needs to be addressed first. For shock fluid rates the dose is 90ml/kg/hr dogs, 60ml/kg/hr cats - give ¼ dose, then re-evaluate. We always want to give shock doses of fluids in increments, and then reassess. We would never give them all at once without re-evaluating.

One especially important thing to keep in mind is that shock and trauma are not reasons to withhold pain meds! Pain causes an increase in the stress response, which can then lead to tachycardia. This increases the workload placed on the cardiovascular system. So always give pain medication to patients that require it.

A little bit about shock in cats as clinical signs of shock can be difficult to recognize in this species. We do not always see tachycardia; the heart rate may be normal or bradycardic. Cats in traumatic shock need to be cautiously fluid resuscitated. Many cats in shock are hypothermic, so warming the IV fluids and providing active warming to the cat is a good idea. Traumatized cats often experience vasodilation, and therefore cannot handle aggressive fluid therapy without first being rewarmed.

Moving on to the E of our ABCDE formula – full body examination! This means performing a quick but thorough exam of the whole patient looking for wounds, lacerations, punctures, bruises, fractures, abdominal pain or distension, and any other signs of debilitation. Once the primary survey is done, and emergency treatments initiated, then a secondary survey is performed. This includes performing a full, detailed exam, starting basic monitoring (BP, ECG, SPO2), and obtaining baseline lab values (blood gas, CBC, chemistry panel, lactate, PT/aPTT, PCV/TS). Pain control is also an especially important component of this secondary survey. Pain increases an animal's stress response and puts more pressure on an already stressed cardiovascular system. A close evaluation of each body system should be done at this juncture. The abdomen should be assessed via ultrasound, radiographs, abdominocentesis may be necessary, and assessing the patient's posture is also important. The thorax can also be assessed via ultrasound, radiographs, possibly a thoracocentesis. To assess the neurological system, a cranial nerve exam should be performed, they should be checked for motor and pain, and potentially get a lesion location. Serial neuro exams are critical as there can be rapid changes in this system. The musculoskeletal system needs to be checked for fractures, and these should be immobilized if possible. The integumentary system also requires assessment, checking for lacerations, punctures, abrasions, any penetrating wounds into the chest or abdomen. Then of course check your patient's eyes, ears, nose, and throat.

It is particularly important to be able to assess emergency patients accurately and rapidly. In some emergencies, minutes count. The goal is to rapidly evaluate and then intervene for hypoxia and shock, then perform a rapid assessment of other systems to identify and treat any other potentially life-threatening conditions.

Being able to accurately triage patients, means you need to have a good grasp of all the normal vitals. For body temperature normal is considered 37.7 – 39°C (100 – 102.5°F). Once temperature falls below 35.5°C (96°F), or above 41°C (106°F), there is concern for life-threatening emergencies, including organ failure. If a patient is

hypothermic, and they are not thermoregulating, this can indicate serious illness, and is usually due to poor perfusion (shock, metabolic disease, cardiac disease). Hyperthermia is usually associated with an inflammatory process, infection, or heat stroke.

Pulse is not the same as heart rate. A patient can have a normal heart rate, and not a normal pulse rate. You should always feel a pulse at the same time you are auscultating the heart. If a patient has pulse deficits, it can indicate that they have dysrhythmia that requires further assessment. Normal heart rate for dogs is 60-120bpm. It should be considered an emergency if the heart rate is greater than 150bpm, or less than 70bpm (these numbers can vary a little depending on size of dog). Normal heart rate for cats is 160-200bpm and should be considered an emergency if HR is less than 130bpm, or greater than 230bpm.

When a patient is bradycardic, the body is failing. When a patient is tachycardic, the body is compensating. So, therefore, a low heart rate is the most concerning.

Normal respiratory rate in dogs and cats is 20-30bpm (at rest). Panting is normal in an active dog; panting is not normal in cats. The point to become concerned is if respiratory rate is consistently over 50bpm, or if there is any effort or abnormality to the breathing pattern.

Mucous membrane colour is of course pink normally, and there are several colours that should be considered an emergency. Blue can indicate hypoxia, dark red can be indicative of infection, inflammation, or sepsis. White/pale MMs are usually seen if the patient is anemic or in shock. Icteric, or yellow MMs are usually an indication of liver disease. Grey/muddy gums can indicate poor perfusion. There is also a brown/muddy colour that can be seen in patients with methemoglobinemia. Cherry red MMs can be seen in cases of carbon monoxide toxicity. The mucous membranes should also be checked for their tactility; and categorize them as dry, tacky, moist, drooly. Capillary refill time is normally 1-2 seconds. If you see 1 second or less, this can be due to fever, excitement, or stress; and greater than 2 seconds is usually because of poor perfusion or hypotension.

The vitals that are considered the six perfusion parameters are heart rate, pulse quality, MM colour, CRT, core and extremity temperature, and mentation.

Mentation also needs to be assessed. Mentation is considered normal if the patient is alert and active, responds appropriately to visual, environmental, tactile, and auditory stimuli. It should be considered an emergency if the patient is not alert, and or has a declining level of consciousness. There are some levels of consciousness to be aware of so you can appropriately inform the doctor of the patient's status. Alert (normal behaviour, responsive to stimuli), depressed (awake, but subdued, uninterested in environment), delirious (awake, altered perception, inappropriate response to stimuli), obtunded (decreased state of responsiveness, less responsive to visual/tactile stimuli, quiet, dull), stuporous (can only be aroused with painful stimuli), comatose (deep unconsciousness, cannot be aroused even with painful stimuli).

After a patient has been hospitalized, it is going to require ongoing nursing care, treatments, and diagnostics. It is important to remember that every time you enter a patient's cage or run, you are essentially triaging it. You are the one that spends the most time with the patient, and therefore are in the best position to assess if there are even subtle changes in their vitals, demeanor, and what their response to treatment is.

Once you have obtained vitals and assessed your patient, you are armed with enough information to draw conclusions and therefore contribute to the plan for the ongoing high-quality nursing care all your patients deserve. Part of this plan includes anticipating the patient's needs, based on your knowledge of the patient, as well as any changes in their status. It is also important that you understand the underlying disease process, illness, injury, or surgical procedure that is the reason for your patient being in hospital.

It is essential that you are able to evaluate the effectiveness of any current treatments and communicate this to the veterinarian and other members of the health care team. You need to be able to accurately assess your patient's response to treatment and let the veterinarian know of any changes in their status, or if you feel the current treatments are not meeting expectations.

Veterinary medicine, and triage in particular, is a combination of science and art. Science uses research and data to guide it. Art relies on clinical experience, observation, patient feedback, and the ability to accurately assess your patient's status.

As a veterinary technician you are expected to have a good understanding of physiology, pharmacology, hematology, and be comfortable performing sometimes advanced procedures. Especially if you are looking

after critical patients, providing excellent patient care can be the difference between your patients surviving and thriving.

Many clinics have all kinds of up-to-date monitoring equipment, which is great, and that should definitely be utilized. But this does not take away from the fact that the most important aspect of patient monitoring is careful and diligent hands-on nursing! Repeated assessment of patients by a skilled veterinary technician is the most important monitoring tool and does not require expensive equipment.

It is also important to remember that no matter how many monitors and tools you have to tell you how a patient is, you need to always use your skills of observation. As a technician, you can anticipate what might come next; a monitor can only tell you what is happening right now. Rely on your observations – are the mucous membranes less pink than they were an hour ago? Do the pulses feel weaker than they did when the patient was first admitted? Has there been a change in the breathing pattern? These are clues that even the fanciest monitoring equipment cannot detect.

Veterinary technicians are a vital part of patient care because of our brain, our ability to think, our keen observation and nursing skills. Constantly strive to hone all your skills and increase your knowledge. This way, you will not only be a valuable asset to your hospital, but your patients will benefit greatly!

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