Triage

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TRIAGE is the art of rapidly determining whether a life-threatening clinical problem exists. The word triage is derived from the French verb *trie*, which literally means "to sort."[1] There is little room for error; delaying treatment for a patient due to inadequate evaluation can result in decompensation or death.

If immediate intervention is required, the patient should be moved to the "ready area" and the owner assured that someone will be with them right away. To accelerate treatment, permission for initial intervention (eg, intravenous catheter placement, fluid administration, endotracheal intubation, oxygen supplementation) should be obtained from the owner at this time.

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STEP BY STEP TRIAGE

Safety First

The first step in assessment is to observe the patient for signs indicating possible risks to veterinary staff:

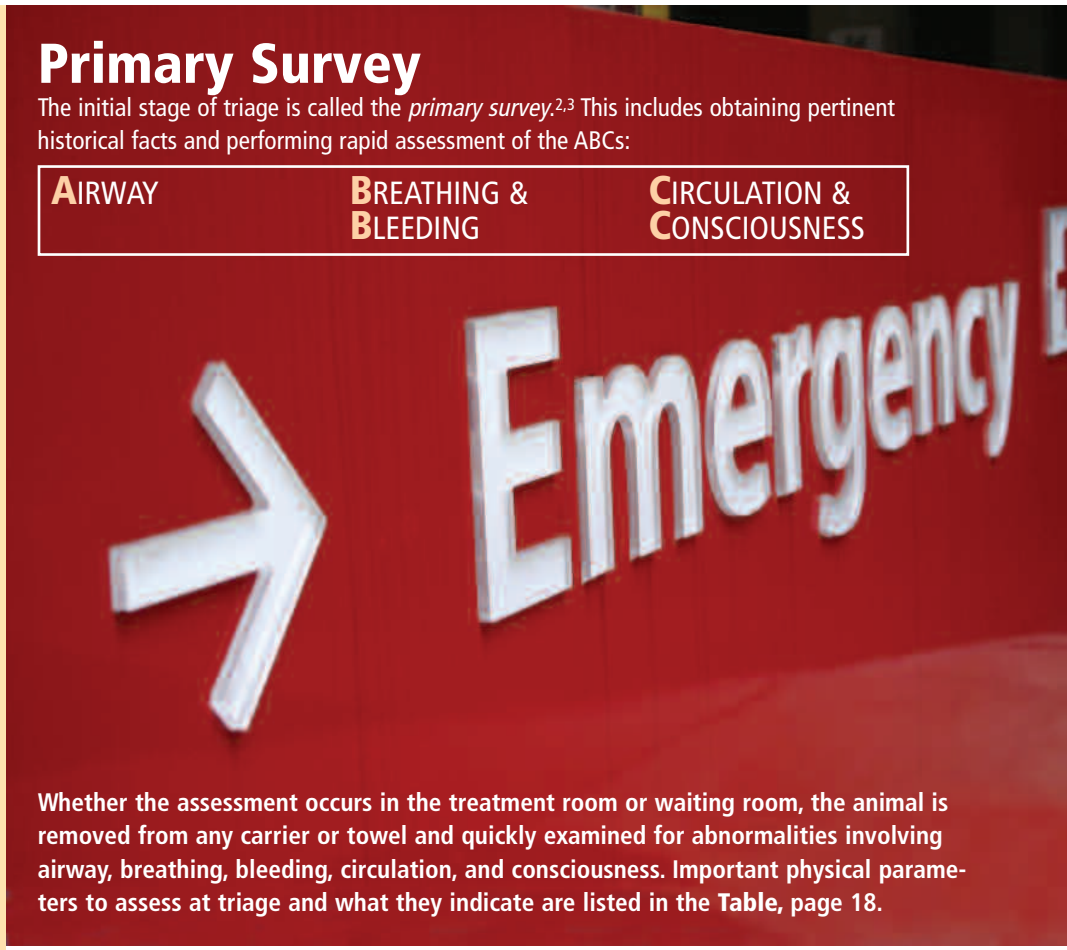
- Fractious, growling, or poorly restrained dogs should not be fully approached until the handler has a muzzle on the pet. Fractious cats should be taken to a secure area and restrained by a trained person with protective gloves.
- If hemorrhage is observed from the patient's nose, then a plastic or wire cage muzzle should be applied; NOT a tight, wrap-around muzzle that may jeopardize the animal's airway.
- If blood on an animal is suspected to be human, gloves and protective eyewear should be worn. Unvaccinated animals presenting with unusual neurologic signs should be handled only by personnel wearing protective gowns, gloves, and eyewear in case the animal is infected with rabies.
- Animals having difficulty breathing should receive oxygen during the assessment to avoid decompensation and prevent injury to veterinary staff should the patient become frantic due to hypoxia.

ABC = airway, breathing & bleeding, circulation & consciousness; AVPUP = alert, voice, pain, unresponsive, pupils; CRT = capillary refill time

Primary Survey

The initial stage of triage is called the *primary survey*.[2,3] This includes obtaining pertinent historical facts and performing rapid assessment of the ABCs:

AIRWAY	**B**REATHING & **B**LEEDING	**C**IRCULATION & **C**ONSCIOUSNESS



Whether the assessment occurs in the treatment room or waiting room, the animal is removed from any carrier or towel and quickly examined for abnormalities involving airway, breathing, bleeding, circulation, and consciousness. Important physical parameters to assess at triage and what they indicate are listed in the Table, page 18.

1 History

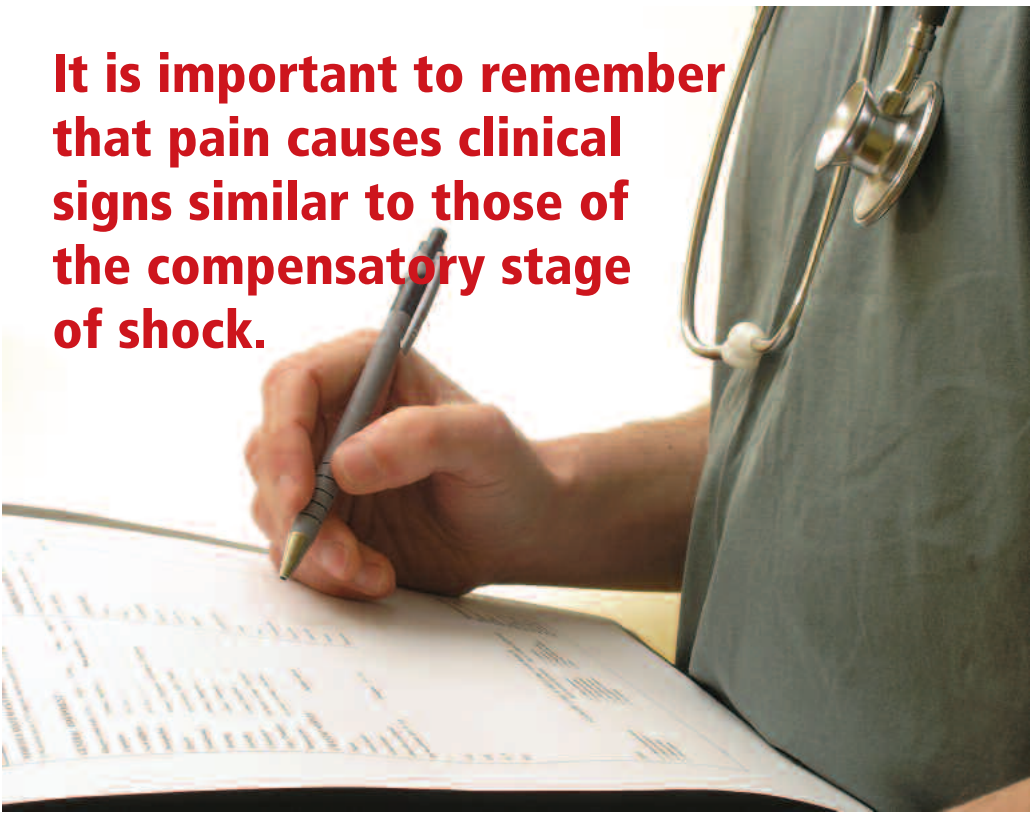
The primary complaint, time of onset, and past pertinent medical conditions should be obtained from the owner. Historical complaints that should motivate the veterinary team to anticipate life-threatening physical problems include:

- Not breathing, labored breathing, or airway foreign body
- Profuse bleeding
- Abdominal distension, prolapsed organs, or dystocia
- Inability to urinate
- Seizures, collapse, altered consciousness, or unconsciousness
- Heat stroke, severe cold exposure, or burns
- Potential toxicities or snakebite
- Trauma—hit by car, dog fight, falling from height, gunshot wound(s), stab wound(s).

2 Airway

Complete airway obstruction is a catastrophic problem—the patient is moved to the top of the triage list for rapid resuscitation. This includes establishing a patent airway by relieving airway obstruction, oxygen supplementation, intubation and ventilation as needed, and restoration of circulation as quickly as possible.

Partial airway obstruction is suspected when the patient has loud, noisy breathing that is easily heard without the aid of a stethoscope. Inspiratory stridor suggests upper airway partial obstruction; expiratory stridor suggests intrathoracic tracheal partial obstruction. The severity of obstruction will determine where on the triage priority list the animal is placed: partial airway obstruction can be mild (such as in "normal" brachycephalic breed dogs), putting the pet lower on the list, or life-threatening (cyanosis, increased effort to breathe).



It is important to remember that pain causes clinical signs similar to those of the compensatory stage of shock.

3 Breathing

Signs of respiratory compromise, in order from mild to severe to catastrophic include: increased breathing rate, change in breathing pattern, assuming a postural position for relief, open-mouth breathing, and cyanosis. Careful observation of breathing patterns helps identify whether pathology is due to diseases of the lung parenchyma, pleural space, large airway, or small airway.

Prioritizing patients with breathing abnormalities depends upon degree of hypoxia (ie, life-threatening respiratory hypoxia causes physical signs of cyanosis) and the patient's effort to breathe. Rapid respiratory rate, abdominal movement, flared nostrils, lips drawn back, abducted elbows, and open-mouth breathing demonstrate increased effort. Patients with any of these signs should be moved to the top of the priority list; resuscitation is initiated with oxygen support and relief of the underlying problem.

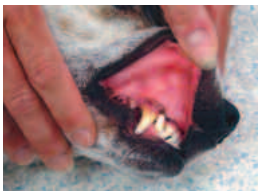
4 Bleeding

A quick assessment of the entire body surface (including skin, gums, nostrils, and rectal/anal areas) is made to identify ongoing hemorrhage or past bleeding. Significant findings consist of fresh blood, dried blood, petechiae, ecchymosis, and swellings with bruising. Evidence of ongoing hemorrhage necessitates immediate hemostasis. When bleeding is found, careful assessment of the circulatory system is warranted.

5 Circulation

Abnormal circulation results in tissue hypoxia. Examination of mucous membrane color, capillary refill time (CRT), and peripheral pulse quality provides an assessment of peripheral perfusion. In the initial shock process, the body compensates by increasing the sympathetic output, resulting in increased heart rate, heart contractility, and mild peripheral vasoconstriction. Clinical signs include tachycardia, rapid CRT, bright pink mucous membranes, and bounding peripheral pulses. This stage is common in dogs but rarely seen in cats.

The middle stage or early decompensatory stage of shock—where peripheral perfusion is minimized in order to provide more blood and oxygenation to core circulation—results in tachycardia (dogs), prolonged CRT, pale mucous membranes, and weak or absent peripheral pulses. As shock progresses to the preterminal stage or late decompensatory stage, the heart rate is slow to normal and there is no evidence of peripheral perfusion (white mucous membranes, absent CRT, no peripheral pulses, and cold extremities).



All forms of shock warrant triage for further assessment and resuscitation, with the middle stage or preterminal stages warranting aggressive therapeutic intervention. It is important to remember that pain causes clinical signs similar to those of the compensatory stage of shock.

6 Consciousness

Human medicine uses the acronym AVPUP when assessing level of consciousness.

- Patient is **A**lert
- Responsive to **V**oice
- Responsive only to **P**ain
- **U**nresponsive; and **P**upils are checked for symmetry and reactivity.[4]

When a patient is unconscious; having seizures, uncontrolled tremors, or myoclonus; or has uncontrolled hyperexcitability, it is moved up the triage list and moved to the ready area for further evaluation and therapeutic intervention as indicated for stabilization.

7 Pain

Once the ABCs have been assessed, the pet is observed for any evidence of severe pain. The presence of pain moves the patient up the triage list and indicates that further assessment is required. Analgesics should be provided as soon as it is determined that the patient can tolerate medication.

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Table. Triage: Physical Parameters to Evaluate

Parameter	Abnormality & Interpretation
Airway	**No air passage:** Total obstruction or respiratory arrest **Loud sounds:** Partial airway obstruction **Inspiratory stridor:** Pharyngeal/laryngeal obstruction **Expiratory stridor:** Intrathoracic tracheal obstruction
Breathing pattern	**Loud sounds:** Upper airway obstruction **Dysynchronous:** Pleural space disease **Synchronous:** Parenchymal origin **Expiratory push:** Small airway origin
External hemorrhage	**Pulsing blood:** Arterial **Slow-oozing blood:** Venous
Capillary refill time	**< 1 second:** Hyperdynamic state or peripheral vasodilation **> 2 seconds:** Poor peripheral constriction
Mucous membrane color	**White:** Anemia, severe shock **Blue:** Cyanosis **Brown:** Methemoglobinemia **Petechiation:** Thrombocytopenia **Brick red:** Hyperdynamic shock **Yellow:** Icterus
Pulse intensity	**Weak femoral:** Poor peripheral perfusion **Bounding femoral:** Hyperdynamic perfusion
Heart rate	Dog: **> 200 bpm:** Poor coronary diastolic filling **< 60 bpm:** Impaired cardiac output Cat: **> 250 bpm:** Poor coronary diastolic filling **< 150 bpm:** Impaired cardiac output
Level of consciousness	**Uncontrolled hyperexcitability:** Phase of unconsciousness, consider toxins **Seizures, stupor, coma:** Increased intracranial pressure
Wound or fracture	**Open, unstable:** Bacterial invasion, nerve & muscle damage

ABC = airway, breathing & bleeding, circulation & consciousness; bpm = beats per minute; CRT = capillary refill time; EENT = eyes, ears, nose, throat

Secondary Survey

After initial triage and resuscitation, a secondary survey is performed. This reassessment of vital signs (ABCs) and thorough physical examination is not complete until all catastrophic problems involving the ABCs are addressed. The mnemonic "**A CRASH PLAN**" can aid in the secondary survey.[2,3,5]

A **Airway & breathing** (nose, mouth, trachea, thoracic inlet, all lung fields)

C **Cardiovascular** (mucous membranes, CRT, toe temperature, central/peripheral pulses, heart tones)
R **Respiratory** (breathing effort, chest & abdominal movement, percussion)
A **Abdomen** (wounds, bruises of inguinal/retroperitoneal region; visualize, listen, & percuss)
S **Spine** (wounds, bruises, pain; palpate entire spine & note general movement)
H **Head & EENT** (nose, face, skull, jaw, teeth, eyes, ears, tongue, pharynx)

P **Pelvis** (ilial wings, tuber ischium, greater trochanters, rectal area, genitals)
L **Legs** (distal to proximal; check movement, feeling, function, joints, skin)
A **Arteries & veins** (clip neck and examine jugular vein filling, check pulses)
N **Nerves** (assess level of consciousness, cranial nerves, spinal function, peripheral nerves)

Taking rectal temperature is avoided in animals with bradycardia or severe mental depression to avoid vasovagal-induced cardiac arrest or near arrest. Arterial blood pressure (taken by oscillometrics or Doppler) and pulse oximetery data are also considered part of triage vital signs in some hospitals.

At this stage of triage, any abnormalities that are found that can result in total or partial disability or that are suggestive of impending decompensation move the animal up the triage list, falling just behind patients with severe or catastrophic changes in their ABCs.

Triage Classification

In human medicine, a triage classification system has been developed to standardize the process of triage. This system provides a means for medical staff to rapidly and sequentially triage many patients at one time, such as in a disaster setting (see **Box**).[2,3] In all situations, a detailed triage protocol should be developed and followed by the entire veterinary staff.

Example of Triage Classification

- **Class I patients (catastrophic):**
  Must receive treatment immediately (traumatic respiratory or cardiorespiratory arrest/failure or airway obstruction, also unconsciousness); catastrophic patient may be described as "dying before your eyes"
- **Class II patients (very severe, critical):**
  Need attention within minutes to an hour (multiple injuries, shock, or bleeding; adequate airway function)
- **Class III patients (serious, urgent):**
  Action within a few hours (severe open fractures, severe open wounds or burns, penetrating wounds to abdomen without active bleeding, blunt trauma; no shock or altered state of consciousness)
- **Class IV patients (less serious but still pressing):**
  Require action within 24 hours; does not apply to most trauma patients

See Aids & Resources, back page, for references, contacts, and appendices.