**Feline Anemia Diagnostic Algorithm**

- Anemia can be categorized as regenerative or nonregenerative based upon the presence or absence of reticulocytosis. An absolute reticulocyte count of greater than 50,000/mm$^3$ in cats is evidence of a regenerative response. It can take 3 to 5 days for the bone marrow to mount a regenerative response to an acute anemia.

- There are 2 main causes of a regenerative anemia: blood loss or hemolysis. The first step is generally to rule out bleeding, which is not always apparent, especially when bleeding is occurring into a body cavity or into the gastrointestinal tract. Once it has been determined the cat is not bleeding, then causes of hemolytic anemia should be investigated. In cats, one of the most common causes of a hemolytic anemia is feline hemotropic mycoplasmosis (FHM, formerly hemobartonellosis or feline infectious anemia).

- There are 2 main causes of a nonregenerative anemia: a primary bone marrow disorder or erythropoietic depression. Coinfections with FeLV may exacerbate the more typical hemolytic anemia seen with FHM. Coinfection may also result in nonregenerative anemias by increasing the likelihood of development of hemopoietic neoplasia in these cats or the development of a macrocytic nonregenerative anemia.

**Common Clinical Signs**
- Depression and weakness
- Pale mucous membranes
- Dehydration
- Inappetence
- Weight loss
- Tachycardia
- Cardiac murmur
- Fever
- Tachypnea ± dyspnea
- Splenomegaly
- Icterus
- Syncope
- Moribund state and hypothermia

**Regenerative anemia**
- Reticulocytosis/ polychromasia present

- **Blood loss**
  - External blood loss: trauma, gastrointestinal bleeding resulting from endoparasites, gastric ulceration or GI neoplasia, flea infestation
  - Bleeding into body cavity: splenic rupture

- **Coagulopathies**
  - vitamin K antagonist: rodenticide toxicity, vitamin K malabsorption resulting from severe GI disease, liver disease, DIC

- **Thrombocytopenia**
  - FeLV, FIV, ITP, DIC

- **Thrombopathies**
  - uremia, drug induced e.g. NSAID therapy

- **Hemolysis**
  - Feline hemotropic mycoplasmosis (FHM)
    - Mycoplasma haemofelis, Candidatus Mycoplasma turicensis, and, in immunocompromised cats, Candidatus Mycoplasma haemominutum
  - Cytarazoonosis
    - Cytarazoon felis
  - Heinz body anemia
    - onion/acetaminophen ingestion, lymphoma
  - Immune-mediated
    - primary or often secondary to FeLV, FHM or lymphoma
  - Fragmentation (microangiopathic)
    - DIC, vasculitis, hemangiosarcoma
  - Severe hypophosphatemia
    - DKA with insulin therapy, starvation-refeeding syndrome
  - Inherited disorders
    - Increased osmotic fragility and PK deficiency in Abyssinians and Somalis

- **Bone marrow disorder**
  - Myeloproliferative disorders
    - leukemias, lymphoma, FeLV, FHM and FeLV coinfection
  - Aplastic anemia
    - FeLV infection, ehrlichiosis, chloramphenicol
  - Myelofibrosis
    - toxins, estrogen
  - Myelodysplasia
    - maturation defects, immune-mediated

- **Erythropoietic depression**
  - Decreased erythropoietin renal failure
  - Anemia of chronic disease
    - neoplasia, liver failure, chronic infections
  - FeLV infection alone
    - FHM and FeLV coinfection
  - Hemoglobin synthesis defects
    - iron deficiency

**Nonregenerative anemia**
- Reticulocytosis/ polychromasia not present

**Please note:** This diagnostic algorithm addresses the more common causes of feline anemia but is not a fully comprehensive list of all causes of anemia in this species. Clinical discretion should be used with each patient based upon complete evaluation of the patient, including history, physical examination and laboratory data.