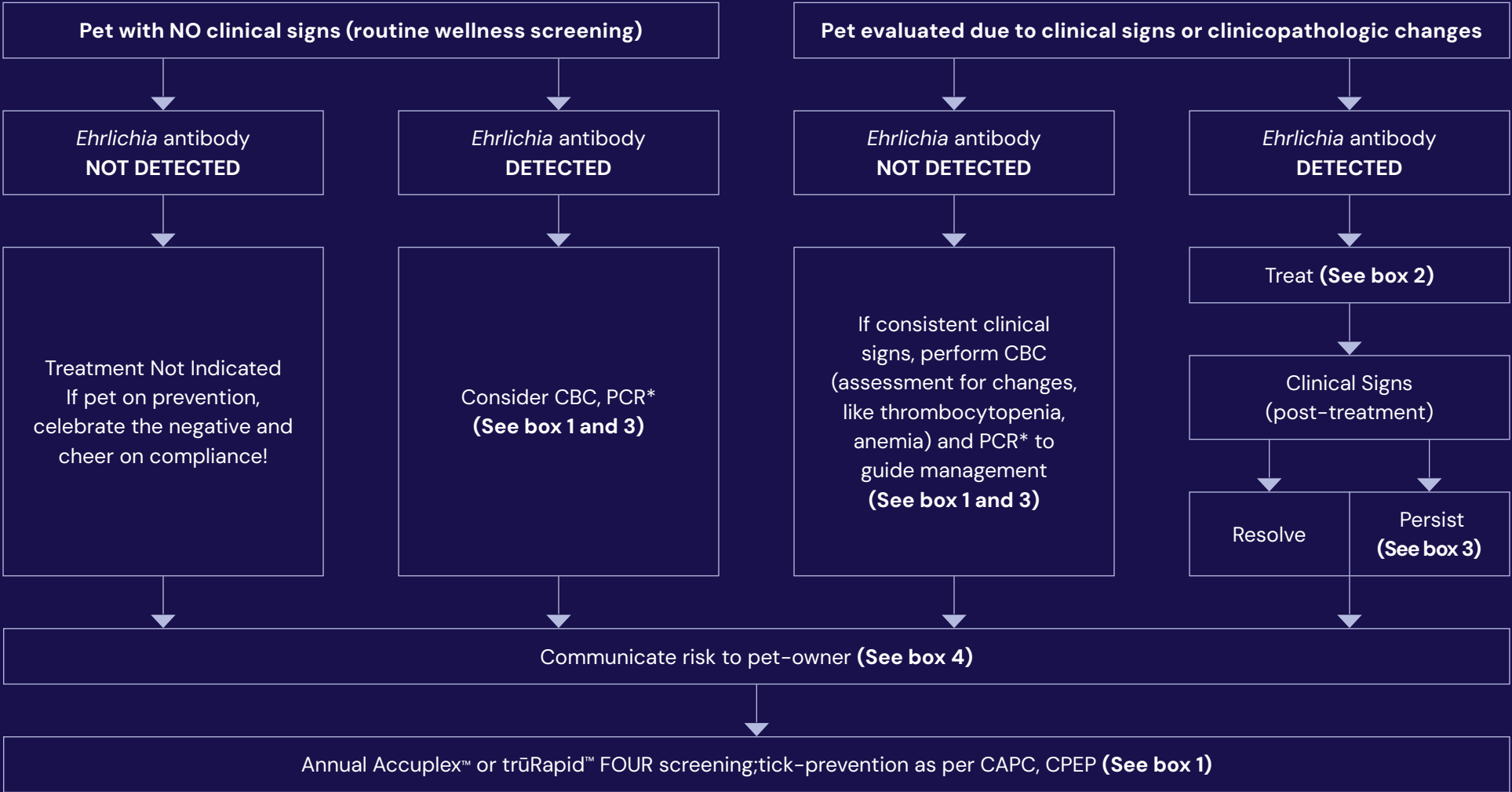


Antech™ Ehrlichia spp. Algorithm

Clinical Decision-Making Workflow

Pet signalment, history (clinical, treatment), test results, risk, and pet-owner specific factors will inform individual case treatment decisions. Consideration should be given to appropriate antimicrobial use/stewardship and One Health.

Antech Consultation Services is available to provide case support.
800-872-1001, option 2, us 800-341-3440, option 2, CA



1: Ehrlichia spp. antibody testing

Antech’s Accuplex and trūRapid FOUR tests can be used for:

1. Routine vector-borne pathogen screening in well pets:
 - The Companion Animal Parasite Council (CAPC) recommends annual screening (serology — antibody) for canine exposure to agents of *Ehrlichia*, *Anaplasma*, and Lyme and for heartworm antigen in adult dogs.
 - Please see the Canadian Parasitology Expert Panel (CPEP) guidelines for regional recommendations.
 - **Note:** Seropositive, clinically normal dogs don’t typically require antimicrobial treatment. Additional diagnostics (CBC and PCR*) may be indicated to guide management (See box 3).
2. Testing of patients with clinical signs suggestive of ehrlichiosis (*E. canis*, *E. ewingii*, *E. chaffeensis*) and multi-system tick-borne disease presentations, like fever, non-specific lethargy, weakness, and bleeding tendencies — particularly dogs in endemic regions or with travel history to these regions.
3. Investigation for ehrlichiosis in dogs with CBC abnormalities (e.g., thrombocytopenia, cytopenias).

2: Management

Treatment goals in dogs with clinical ehrlichiosis: Improvement of clinical signs and prevention of *E. canis* chronic monocytic ehrlichiosis (CME).

- Pharmaceutical treatment:**
- Drug (doxycycline 10 mg/kg PO q24h for 28 days) and other treatment recommendations: capcvet.org/guidelines/ehrlichia-spp-and-anaplasma-spp
- Non-pharmaceutical treatment:**
- Prompt tick removal, +/- tick identification
 - Supportive care, analgesia
 - Ongoing monitoring of CBC (particularly with *E. canis*) after recovery at one and three months, or more frequently based on concern (e.g., significant thrombocytopenia)
 - Ongoing tick prevention
 - Use of risk mapping may encourage tick prevention compliance – See link to CAPC Parasite Prevalence Maps and navigate to the ehrlichiosis map: capcvet.org/maps#
 - Blood donor screening, as per ACVIM Consensus Guidelines 2016: onlinelibrary.wiley.com/doi/10.1111/jvim.13823

3: Test Interpretation

Positive results indicate antibodies against *E. canis*, *E. ewingii*, and/or *E. chaffeensis*. This can occur with acute, chronic, or resolved (historical) infection. In the acute phase of infection, serology may be negative in some dogs. A CBC (i.e., thrombocytopenia, morulae) and PCR* should be performed to detect early, active infection. Rapid resolution of clinical signs with doxycycline (within 24 – 48 hours) may be used to assist with clinical diagnosis.

Clinical and CBC monitoring can be used to differentiate acute, chronic, and resolved infection, along with PCR*. This is particularly important for *E. canis* to prevent chronic monocytic ehrlichiosis (CME), which can last for months to years, through ensuring appropriate treatment compliance.

Note: Antibodies are not eliminated immediately after infection and seropositivity may persist for long periods in some dogs (months to years). This can be due to slow elimination of previously produced antibodies (individual variation) or ongoing infection.

Dogs with persistent positive antibody tests, clinical signs, and/or CBC abnormalities that do not respond to management may have:

- An alternate underlying disease, or co-infection, causing (or contributing to) the clinical signs (e.g., alternate tick-borne disease agent, like *Anaplasma* or *Babesia*)
- Compliance issues (e.g., medication, dosing, duration)
- Immunosuppression

4: Risk Assessment — Dogs as Sentinels for Human Risk

Dogs who test positive can inform disease risk for humans due to their common environmental exposure to ticks that may transmit human pathogens. This is an important communication point, particularly for pet owners with young children, as well as for the elderly, immunocompromised people, and pregnant individuals who may be at higher risk.

- Additional risk assessment resources from the CPEP: research-groups.usask.ca/cpep

Tick-borne pathogen risk maps can inform human risk and guide tick prevention: cdc.gov/ehrlichiosis/data-research/facts-stats/index.html

- *E. ewingii* transmitted by *Amblyomma americanum* – Human granulocytic ehrlichiosis
- *E. chaffeensis* transmitted by *Amblyomma americanum* – Human monocytic ehrlichiosis
- *E. canis* transmitted by *Rhipicephalus sanguineus*