Financial Considerations

Coagulation testing as part of a pre-anesthetic protocol is well accepted by clients (up to 80% in some clinics even when offered as an option), especially when they are educated and when the price of the test is reasonable. There are two important considerations to successfully integrate coagulation testing into a pre-anesthetic program:

1. Properly educate the client as to the benefits of the test
2. Include the test cost in the procedure estimate

An example of a customer education piece is available for your use.

Acceptable price points:
- Are often geographically dependent
- In general are well accepted for pre-anesthetic testing at two to two and a half times cost
- A higher price can be charged when the tests are used for diagnostics such as suspicion of rodenticide poisoning

Coagulation Testing Worksheet—Example

<table>
<thead>
<tr>
<th>Procedure</th>
<th>% Acceptance</th>
<th>Test Cost</th>
<th>Charge</th>
<th>Cost/Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hemorrhage</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bleeding</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thrombosis</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diagnostics</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For questions: 800-822-2947  www.abaxis.com/veterinary  vetscan@abaxis.com

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Coagulation testing includes the evaluation of both the prothrombin time (PT) and the Activated Partial Thromboplastin Time (aPTT). Testing determines if a significant coagulation factor deficiency exists, and if so, where it may originate. PT is used to evaluate the extrinsic and common pathways, while aPTT is used to evaluate the intrinsic and common pathways.

The VetScan V5pro makes in-house coagulation testing easy, fast and affordable. Immediate point-of-care PT and aPTT test results offer numerous clinical benefits for veterinary patients and, in addition, financial benefits for the veterinary practice.

**Test Interpretation**

**PT (Prothrombin Time):** Measures the Extrinsic and Common Pathways

**aPTT (Activated Partial Thromboplastin Time):** Measures the Intrinsic and Common Pathways

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**Other Disease States Where Coagulation Testing is Valuable**

- Any patient with unexplained bleeding, bruising or petechial hemorrhage
- Snake bite
- Infectious disease (e.g., leptospirosis)
- Immune-mediated disease
- Severe systemic disease (potential for DIC)
- Actively bleeding patients (e.g., bleeding splenic neoplasm)

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**VetScan V5pro Coagulation Testing | Utilization Guide**

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**Test Utilization**

**Presurgical Testing**

Presurgical testing should be considered for any patient, regardless of age. Inherited or congenital hemophilia cannot be determined through any other testing methods or via physical examination. Many of these deficiencies cause mild prolongation of clotting times without clinical signs.

Hemophilia A and B have been described in many dog breeds, including mixed breeds. Hemophilia A has been detected in cats. Hemophilia C is more common in cats than in other species. PT/aPTT testing also is an excellent screen for toxin ingestions (often low-grade, subclinical) that may cause prolonged bleeding times. This is frequently detected during a presurgical coagulation screen.

As the liver produces most of the coagulation factors, any patient with increased liver enzymes, possible hepatic dysfunction, or confirmed hepatopathy will benefit from presurgical coagulation testing. This becomes imperative should the patient require invasive surgery or biopsy of an internal organ.

**Wellness/Senior Testing**

Baseline values are as important for coagulation testing as they are for any other analyte. Stress, illness, injury, medications and surgery can all affect coagulation test results, so baseline values are vital for interpretation.

**Hepatic Disease**

Liver disease can affect the coagulation cascade in multiple ways:
- Many of the clotting factors are synthesized as well as cleared by the liver
- Vitamin K is fat soluble, so its absorption depends on adequate bile production and flow
- Severe liver disease may lead to disseminated intravascular coagulation (DIC)

Any disease state that affects the liver can lead to a coagulation abnormality including:
- Inflammation (hepatitis, cholangiohepatitis)
- Neoplasia
- Bilirubin levels
- Use of chronic medications (NSAIDs, anesthetics, chemotherapeutics, etc.)

**Vitamin K Deficiency or Antagonism**

Vitamin K is an essential cofactor for coagulation Factors II, VII, IX and X. Factor VII is the most sensitive, so PT is often prolonged first. Some causes of Vitamin K deficiency are:
- Rodenticide toxicosis
- Cholestasis (reduced bile flow reduces absorption)
- Malabsorption disorders such as exocrine pancreatic insufficiency
- Medications

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