Necropsy Kit: Collection & Shipping Instructions for Universities and Diagnostic Laboratories
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Necropsy Goals

- Determine the cause of death.
- Assess the dog’s health status at the time of death via blood, urine and fecal testing.
- Stage malignancy by sampling visibly or commonly affected organs.
- Harvest samples for a tissue bank, providing a valuable resource for future research.
**Necropsy Process Flow Chart**

**MAF GRLS NECROPSY**
- Confirm necropsy kit is available
- Open kit, review instructions with kit and outlines provided, and confirm contents needed (tubes, RNAlater bottles, instructions, shipping materials, etc.)

**NECROPSY**
- Open animal
- Collect STERILE specimens as needed
- Collect CLIN PATH samples if possible
- Examine organs to ID lesions (limit gross contamination if possible)
- Collect RNALATER fresh samples of lesions and normals (not sterile but as clean as possible)
- Collect FORMALIN samples
- DOCUMENT findings in DNQ form and gross report

**SAMPLE HANDLING**
- Label all tubes as needed (dog name, date, tissue at minimum)
- Handle sterile samples as normal
- Package Clin Path samples for Zoetis Ref Labs per instructions
- Package fresh samples and RNAlater samples for Fisher Biorepository per instructions
- Either process histopathology in your facility with all primary and secondary tissues OR package formalin jars per instructions

**HISTOPATHOLOGY**
- Read out, report and close case as normal. Contact GRLS Team to make sure report is communicated and case is logged
- Send blocks and slides to Colorado State for second read. Call GRLS Team at 855-447-3647 for a shipping label
Sample Collection Flow Chart

FORMalin Fixed Tissue

ALL LesionS

NORMAL Tissues:
- Heart, Lung, Liver, Spleen
- Kidney, Esophagus
- Stomach, Duodenum
- & pancreas, Jejunum, Ileoceccal junction,
- Urinary bladder, Skeletal muscle, Brain, Bone marrow

RNALater Fresh Tissue

LesionS AND MATCHing Normal
(if mets, choose two locations for samples)

NORMAL Tissues:
- Heart, Lung, Liver, Kidney, Spleen

CLIN path Samples
(if possible postmortem)

~55ML Blood

~10ML Urine

~4CM Diameter Fecal Ball
Clinical Pathology Sample Collection

Premortem or Postmortem

If blood, urine and fecal collection are feasible, please collect a set of samples for Zoetis Reference Laboratories (clinical testing) and Fisher Bioservices (biorepository) as instructed below.

If you received a necropsy kit from the Study, sample collection tubes will be pre-labeled. If you are using tubes from your clinic, follow labeling instructions below.

Blood Collection

Collect 13 ml of blood into the lavender-top EDTA tubes provided by the study or from your clinic.

- Label a 3 ml tube with dog name, ID# (094-xxxxxx), and date (MM/DD/YYYY).
- Label a 10 ml tube with dog name, ID # (094-xxxxxx), and date (MM/DD/YYYY). If you are using a Study kit, it will have the barcoded whole blood sticker (EDTA 094xxxxxxN1099).

Collect 40 ml of blood into red-top tubes (NOT serum separator tubes) provided by the study or from your facility. If you do not have access to a centrifuge, you may forgo blood collection.

Serum Separation and Collection

Allow serum tubes (red tops) to clot for at least 45 minutes at room temperature, and then centrifuge per your facility’s normal protocol (we recommend 1100–1300 RCF for 10 minutes).

After centrifugation, remove the Vacutainer cap from each serum tube (red top) and using a pipette (DO NOT POUR) transfer the serum into a 3 mL red-top tube and a 10 mL serum transport tube (a red-top can be used.)

- Label a 3 ml tube with dog name, ID# (094-xxxxxx), and date (MM/DD/YYYY).
- Label a 10 ml tube with dog name, ID # (094-xxxxxx), and date (MM/DD/YYYY). If you are using a Study kit, it will have the barcoded serum sticker (SERUM 094xxxxxxN2099).

Please read all instructions before proceeding.
Clinical Pathology Sample Collection (Cont.)

Premortem or Postmortem

Urine Collection
Collect at least 10 ml of urine via cystocentesis or free catch and place into the specimen transport tubes provided by the Study or two red-top tubes from your clinic.

- Label one tube with a dog name, ID# (094-xxxxxx), and date (MM/DD/YYYY).
- Label a second 10 mL tube with dog name, ID# (094-xxxxxx) and date (MM/DD/YYYY). If you are using a Study kit, it will have the barcoded urine sticker (URINE 094xxxxxxN3099).

Fecal Collection
Collect two marble-size (1-2 cm in diameter) samples of feces and transfer each into a separate plastic fecal tube provided by the Study or from your clinic.

- Label one vial with dog name, ID# (094-xxxxxx), and date (MM/DD/YYYY).
- Label the second vial with dog name, ID# (094-xxxxxx) and date (MM/DD/YYYY). If you are using a Study kit, it will have the barcoded fecal sticker (FECES 094xxxxxxN6099).
Tissue Sample Collection

These instructions are for a full necropsy. For conditions under which ideal sample collection is not possible, use your best judgment, but please try to collect as many diseased and core tissues as possible. In addition to any tumors or lesions, or if no lesions are found, collect samples as described below. Please collect the five core tissues listed below and as many of the secondary tissues as possible. Samples may be combined in as few formalin jars as possible, maintaining the ratio of one part sample to 10 parts formalin. Any samples too small to identify on gross examination after fixation, or that have particular importance, should be identified by putting them in a cassette labeled with pencil or by placing them in a separate formalin jar. If you are able, please take digital photos of gross lesions.

For suspected malignant tumors or lesions of interest

- Place a representative tissue sample into a formalin jar, label with the date, "Diseased" tissue type, and the appropriate tissue code.
  - In the case of multiple metastases, select 2–5 representative lesions to harvest.
- Place a 5 mm cube of diseased tissue into a tube of RNAlater, label with the date and appropriate tissue code, and circle "DISEASED."
- Place a 1 cm cube of normal tissue at least 2 cm away from the tumor/lesion into a separate formalin jar, label with the date, "Healthy" tissue type, and the appropriate tissue code.
- Place a 5 mm cube of normal tissue at least 2 cm away from the tumor/lesion into a separate tube of RNAlater, label with the date and appropriate tissue code and circle "HEALTHY."

If clinical features indicate bone marrow disease, please collect into formalin marrow collected from either the rib or proximal tibia. Use ronguers or a bone saw to access the marrow. Marrow scooped from the bone can be applied to a strip of paper for support, then placed in formalin jar.

See Appendix 2 for tissue codes. See tissue sample labeling examples on page 10.

In addition to any tumors or lesions, or if no lesions are found, collect formalin-fixed and RNALater samples as described on the next page.
Tissue Sample Collection (Cont.)

Please collect the five core tissues listed below and as many of the secondary tissues as possible. Samples may be combined in as few formalin jars as possible, maintaining the ratio of one part sample to 10 parts formalin. For each listed tissue, please collect normal representative samples in both RNALater and formalin.

RNALater samples should be 5mm cubed and the sample label completed as indicated on page 10.

Core Tissues

- **Liver**: 1 cm cube of normal liver.
- **Kidney**: 1 cm wedge from either kidney to include cortex, medulla and pelvis and any lesions.
- **Spleen**: 1 cm cube of normal spleen.
- **Heart**: Provide a gross description of the heart in your report. Submit a full thickness 1 cm wide sample from the right ventricular free wall (ideally through the papillary muscle), the left ventricular free wall (ideally through the papillary muscle) and the interventricular septum.
- **Lung**: 1 cm cube of normal lung.

Secondary Tissues

- **Esophagus**: 2 cm x 2 cm portion of normal esophagus.
- **Stomach**: 2 cm x 2 cm portion of normal stomach.
- **Duodenum and Pancreas Together**: 4 cm length of normal tissue. Rinse intestinal contents with water prior to immersion into a formalin jar.
- **Jejunum**: 4 cm length of normal tissue. Rinse intestinal contents with water prior to immersion into a formalin jar.
- **Ileocecocolic Junction**: 4 cm in each of the three directions. Rinse intestinal contents with water prior to immersion into a formalin jar.
- **Urinary Bladder**: 2 cm x 2 cm piece.
- **Skeletal Muscle**: 2 cm x 2 cm crosssection of semimembranosus/semitendinosus muscle from a hind leg.
- **Nervous System**: brain, spinal cord or both.
- **Bone Marrow**: Collect into formalin marrow collected from either the rib or proximal tibia. Use ronguers or a bone saw to access the marrow. Marrow scooped from the bone can be applied to a strip of paper for support, then placed in formalin jar.
Tissue Sample Collection (Cont.)

**Tissue Labeling Examples**

**Formalin jars** containing **healthy tissue** should be labeled with a completed dog name, ID#, and date sticker.

```
Acct: 4761       Chart: 094-012345
Smith, Fido
DATE: 12/1/2015
```

**Formalin jars** containing a **tumor, lesion of interest, or normal tissue adjacent to such lesions** should have a completed dog name, ID#, and date sticker with a completed "Diseased [tissue type]" or "Healthy [tissue type]" sticker. Tissue codes are in Appendix 2.

```
Acct: 4761       Chart: 094-012345
Smith, Fido
DATE: 12/1/2015
TISSUE TYPE: diseased liver
TISSUE CODE: 85
```

**RNAlater jars** should each contain a **single tissue sample** and be labeled with the dog name, ID#, date, and tissue code and marked "Diseased" or "Healthy." Tissue codes are in Appendix 2.

```
Chart 094-012345
Smith, Fido
DATE: 12/1/2015
Tissue type code: 85
☐ DISEASED
☐ HEALTHY
```
Placing a Service Call for FedEx Shipment(s)
Place a service call to FedEx directly at 800.463.3339 Monday through Thursday. Let them know you have packages for pickup and tell them that the shipping cost is being billed to the Morris Animal Foundation using a “Billable Stamp”. If your facility is inadvertently charged any fees, please contact the Study team.

Please notify us by calling 855.447.3647 when you perform a necropsy.
Zoetis Reference Laboratories Shipment

Part I: Clinical Pathology Samples

- Verify all tubes are properly filled, labeled and dated. Place the 3 mL EDTA tube, 3 mL serum tube, one of the urine tubes and the large fecal tube into a biohazard zip-closure bag.
- The Zoetis Reference Laboratories Manifest form will already be pre-filled with Morris Animal Foundation's information as well as the Study dog's information.
- The Manifest for clinical pathology will come prepopulated with the test "GRLS Study Bundle."
- Place the manifest into the zip-closure bag containing the necessary samples and seal the bag.
- Place the zip-closure bag inside the shipping box if available.

*Tubes for Zoetis Reference Laboratories DO NOT have barcodes.
Part II: Formalin containers (if submitting to Zoetis Reference Laboratories and not processing within facility)

- Make sure all formalin jars are tightly sealed.
- Tape the lids to the jars.
- Make sure the labels on all formalin jars have the date, the dog’s name, the Study ID# and enclosed tissue type(s) if appropriate.
- Place all formalin containers into a zip-closure bag or bags. Include one absorbing sheet per two jars of formalin. Seal the bag(s).
- Complete the green Zoetis Reference Laboratories pathology form. Include your facility information as well as the clinical history for the Study Dog. **Failure to include the clinical history may delay results.**
- Place the completed green pathology form and the preprinted Zoetis References Laboratories Manifest (code: Histopathology Simple), a copy of your gross necropsy report, and any other documents or photos into a zip-closure bag.
- Place the sealed bag(s) of formalin jars and the sealed documents bag into a large zip-closure bag and seal.

**You MUST include a copy of your gross necropsy findings with the tissue samples.**
Formalin Container Packaging continued

- Place the sealed double bag(s) of formalin jars (if applicable) and documents, and the clinical pathology samples, into a FedEx Clinical Pak, Necropsy Kit box, or any other appropriate size box.
- Close and seal the Clinical Pak or box. If using a box, ensure that a UN3373 Biological Substances sticker is placed on the outside.
- FedEx Clinical Paks provided in the Study kit contain a FedEx shipping label to Zoetis Reference Laboratories. If you don’t have a necropsy kit, the Study will reimburse your shipping expense.
- Call FedEx at 800.463.3339 to arrange for a pick up.

Figure 1
Fisher Biorepository Shipment

Part I: Clinical Pathology Samples
- Fill out the Shipment Inventory Form (Fisher BioServices) – Golden Retriever Lifetime Study and include the patient information, collection date, collection times, sample shipment inventory and any optional comments.
- Place the following three samples into the Styrofoam shipping container if available:
  - Urine
  - EDTA blood (10 mL purple-top tube)
  - Serum (red-top tube or pre-labeled serum transport tube)
- Close the Styrofoam shipping container and place it inside the zip-closure Biohazard bag.
  (If the Styrofoam shipping container is not available, place all tubes directly into the Biohazard bag).
- Also place the following five items inside the zip-closure Biohazard bag:
  - Fecal sample
  - Absorbent paper towel
  - Shipping inventory form
  (If using a Study kit, all tubes in the biorepository shipment should have a barcode).

Part II: RNAlater tubes
- Place RNAlater tubes into the small padded envelope(s). Include one absorbing sheet per envelope and seal the envelope(s).
- Place the sealed padded envelope(s) and completed Submission Form(s) for Tissues in RNAlater into a biohazard zip-closure bag and seal the bag.
Part III: Fisher Biorepository Packaging (see Fig 1)

- Place the plastic bag containing the clinical pathology samples and the biohazard bag(s) containing the RNAlater samples into the provided FedEx Clinical Pak pre-addressed to Fisher BioServices and seal the envelope by removing the clear seal to expose the adhesive strip.

- FedEx Clinical Paks provided in the Study kit contain a FedEx shipping label to the Fisher Biorepository. If you don’t have a necropsy kit, the Study will reimburse your shipping expense. Please contact the Study team for shipping information or to request a shipping label.

- Call FedEx at 800.463.3339 to arrange for a pickup.
Test results from Zoetis Reference Laboratories will be available to the patient’s registered study veterinarian at morrisanimalfoundation.org within 3-5 business days. From the homepage, click on the GRLS icon in the upper right corner, and scroll down to log in. Alternatively, if you have bookmarked the Study log in page, your bookmark will still work. The results are posted under the “Lab Results” dropdown. If histopathology samples were sent to Zoetis Reference Laboratories, the results will come as two separate reports - one report for the histopathology and a second for the clinical pathology results.

If the submitting veterinarian is not a Study veterinarian, they will receive an emailed copy of the report. If histopathology samples were processed at your facility, please be sure to send all histopathology reports to grdogs@caninelifetimehealth.org or fax the report to 303-713-3399.
Death and Necropsy Questionnaire

A Death and Necropsy Questionnaire is requested whenever a Study dog passes, regardless of cause of death. A hard copy of the questionnaire can be found at the end of this booklet for notetaking purposes. The questionnaire will need to be completed in our online database.

If you are not a Study Veterinarian, you will need to contact the Study Team to set up online access to the questionnaire. Email the Study team at grdogs@caninelifetimehealth.org or call toll-free at 855.4GR.DOGS (855.447.3647). Once you are set up, log on at morrisanimalfoundation.org to complete a Death and Necropsy Questionnaire (DNQ) form for your patient. You can access the form by selecting the appropriate patient from your portal page. If you have any questions, please do not hesitate to email the Study team at grdogs@caninelifetimehealth.org or call toll-free at 855.4GR.DOGS (855.447.3647). We are here to help!
## Appendix 1: Presumed Cause of Death

Consider the following list when completing the cause of death questions within the Death and Necropsy Questionnaire.

<table>
<thead>
<tr>
<th>Cancer/Neoplasia</th>
<th>Behavioral</th>
<th>Cardiovascular/Respiratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrenal Tumor</td>
<td>Melanoma</td>
<td>Arrhythmia</td>
</tr>
<tr>
<td>Basal Cell Tumor</td>
<td>Multiple Myeloma</td>
<td>Cardiomyopathy</td>
</tr>
<tr>
<td>Bile Duct Tumor</td>
<td>Nasal Tumor</td>
<td>Congestive Heart Failure</td>
</tr>
<tr>
<td>Bladder Tumor</td>
<td>Osteosarcoma</td>
<td>Heartworm Infection</td>
</tr>
<tr>
<td>Brain/Spinal Cord Tumor</td>
<td>Pancreatic Tumor</td>
<td>Pneumonia</td>
</tr>
<tr>
<td>Eye Tumor</td>
<td>Perianal</td>
<td>Pulmonary Hypertension</td>
</tr>
<tr>
<td>Heart Tumor</td>
<td>Adenocarcinoma</td>
<td>Pulmonic Stenosis</td>
</tr>
<tr>
<td>Hemangiosarcoma</td>
<td>Soft Tissue</td>
<td>Subaortic Stenosis</td>
</tr>
<tr>
<td>Histiocytic Sarcoma</td>
<td>Sarcoma</td>
<td>Valvular Disease</td>
</tr>
<tr>
<td>Kidney Tumor</td>
<td>Squamous Cell</td>
<td></td>
</tr>
<tr>
<td>Leukemia</td>
<td>Carcinoma</td>
<td></td>
</tr>
<tr>
<td>Liver Tumor</td>
<td>Stomach/Intestinal Tumor</td>
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</tr>
<tr>
<td>Lung Tumor</td>
<td>Testicular Tumor</td>
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<tr>
<td>Lymphoma</td>
<td>Thyroid Tumor</td>
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<tr>
<td>Mammary Tumor</td>
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<td></td>
</tr>
<tr>
<td>Mast Cell Tumor</td>
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<th>Dermatologic</th>
<th>Ear-Nose-Throat</th>
<th>Endocrine</th>
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<td>Atopy</td>
<td>Epistaxis</td>
<td>Addison’s Disease (Hypoadrenocorticism)</td>
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<tr>
<td>Dermatitis</td>
<td>Hearing Problem</td>
<td>Cushing’s Disease (Hyperadrenocorticism)</td>
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<td>Sarcoptic Mange</td>
<td>Otitis Externa/Media/Interna</td>
<td>Diabetes Insipidus</td>
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<td></td>
<td>Upper Respiratory Infection</td>
<td>Diabetes Mellitus</td>
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**Consider the following list when completing the cause of death questions within the Death and Necropsy Questionnaire.**
## Appendix 1: Presumed Cause of Death (Cont.)

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<tr>
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<th>Gastrointestinal</th>
<th>Hematologic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract(s)</td>
<td>Bloat with Torsion (GDV)</td>
<td>Hemophilia</td>
</tr>
<tr>
<td>Corneal Ulcer</td>
<td>Bloat without Torsion</td>
<td>Immune-mediated Hemolytic Anemia</td>
</tr>
<tr>
<td>Glaucoma</td>
<td>Chronic Colitis</td>
<td>Immune-mediated Thrombocytopenia</td>
</tr>
<tr>
<td>Keratoconjunctivitis Sicca (KCS)</td>
<td>Food Allergy/Sensitivity</td>
<td>Pancytopenia</td>
</tr>
<tr>
<td>Pigmentary Uveitis</td>
<td>Gastritis/Gastroenteritis</td>
<td>Von Willebrand Disease</td>
</tr>
<tr>
<td>Progressive Retinal Atrophy/Degeneration</td>
<td>Gastrointestinal Foreign Body</td>
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</tr>
<tr>
<td>Trauma/Injury</td>
<td>Inflammatory Bowel Disease</td>
<td></td>
</tr>
<tr>
<td>Uveitis (Other Than Pigmentary)</td>
<td>Megasoophagus</td>
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<tr>
<td></td>
<td>Pancreatitis</td>
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<th>Musculoskeletal</th>
<th>Nervous</th>
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<tr>
<td>Babesia</td>
<td>Bone Fracture(s)</td>
<td>Cervical Spondylomyelopathy</td>
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<td>Ehrlichia</td>
<td>Cruciate Ligament Rupture</td>
<td>Degenerative Myelopathy</td>
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<td>Epilepsy</td>
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<td>Growth Deformity</td>
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<td>Hip Dysplasia</td>
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<td>Ehrlichia</td>
<td>Cruciate Ligament Rupture</td>
<td>Degenerative Myelopathy</td>
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<tr>
<td>Fungal infection (specify)</td>
<td>Elbow Dysplasia</td>
<td>Epilepsy</td>
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<td>Influenza</td>
<td>Growth Deformity</td>
<td>Laryngeal Paralysis</td>
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<td>Hip Dysplasia</td>
<td>Limb Paralysis</td>
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<tr>
<td>Leptospirosis</td>
<td>Immune-mediated Polyarthropathy</td>
<td>Lumbosacral Stenosis</td>
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<tr>
<td>Lyme disease</td>
<td>Intervertebral Disc Disease</td>
<td>Meningitis</td>
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<tr>
<td>Rocky Mountain Spotted Fever</td>
<td>Osteoarthritis</td>
<td>Myasthenia Gravis</td>
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<tr>
<td></td>
<td>Osteochondrosis Dessecans (OCD)</td>
<td>Steroid-responsive Meningitis-arteritis</td>
</tr>
<tr>
<td></td>
<td>Panosteitis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Patellar Luxation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rheumatoid Arthritis</td>
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</tr>
<tr>
<td></td>
<td>Spondylitis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Trauma/Injury</td>
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<tr>
<th>Reproductive</th>
<th>Toxicosis</th>
<th>Trauma</th>
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<tr>
<td>Dystocia</td>
<td>Anticoagulant Rodenticide</td>
<td>Bite Wounds</td>
</tr>
<tr>
<td>Mastitis</td>
<td>Chocolate</td>
<td>Hit By Car</td>
</tr>
<tr>
<td>Prostate Abscess</td>
<td>Ethylene Glycol (Antifreeze)</td>
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<tr>
<td>Prostatitis</td>
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<tr>
<td>Pyometra</td>
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<th>Urinary</th>
<th>Other</th>
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<tr>
<td>Acute Renal Failure</td>
<td>Specify</td>
<td></td>
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<td>Chronic Renal Failure</td>
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<tr>
<td>Cystitis</td>
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<tr>
<td>Bladder Stones</td>
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</tr>
<tr>
<td>Crystaluria</td>
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<td></td>
</tr>
<tr>
<td>Ectopic Ureter</td>
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<tr>
<td>Glomerulonephritis</td>
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<tr>
<td>Incontinence</td>
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<tr>
<td>Kidney Infection/Pyelonephritis</td>
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<tr>
<td>Kidney Stones</td>
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# Appendix 2: Tissue Coding

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<tr>
<th>Code</th>
<th>Description</th>
<th>Additional Indications</th>
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<tbody>
<tr>
<td>70</td>
<td>Other tissue, source</td>
<td>Tissue: Diseased</td>
</tr>
<tr>
<td>71</td>
<td>Adrenal Gland</td>
<td>Left</td>
</tr>
<tr>
<td>72</td>
<td>Bone</td>
<td>None</td>
</tr>
<tr>
<td>73</td>
<td>Bone Marrow</td>
<td>None</td>
</tr>
<tr>
<td>74</td>
<td>Brain</td>
<td>None</td>
</tr>
<tr>
<td>75</td>
<td>Colon</td>
<td>None</td>
</tr>
<tr>
<td>76</td>
<td>Duodenum</td>
<td>None</td>
</tr>
<tr>
<td>77</td>
<td>Esophagus</td>
<td>None</td>
</tr>
<tr>
<td>78</td>
<td>Eye</td>
<td>Left</td>
</tr>
<tr>
<td>79</td>
<td>Gonads</td>
<td>Left</td>
</tr>
<tr>
<td>80</td>
<td>Heart</td>
<td>None</td>
</tr>
<tr>
<td>81</td>
<td>Ileoceccolic Junction</td>
<td>None</td>
</tr>
<tr>
<td>82</td>
<td>Ileum</td>
<td>None</td>
</tr>
<tr>
<td>83</td>
<td>Jejunum</td>
<td>None</td>
</tr>
<tr>
<td>84</td>
<td>Kidney</td>
<td>Left</td>
</tr>
<tr>
<td>85</td>
<td>Liver</td>
<td>None</td>
</tr>
<tr>
<td>86</td>
<td>Lung</td>
<td>Specify Lobe:</td>
</tr>
<tr>
<td>87</td>
<td>Lymph Node</td>
<td>Left</td>
</tr>
<tr>
<td>88</td>
<td>Oral Cavity</td>
<td>None</td>
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<tr>
<td>89</td>
<td>Pancreas</td>
<td>None</td>
</tr>
<tr>
<td>90</td>
<td>Parathyroid Gland</td>
<td>None</td>
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<tr>
<td>91</td>
<td>Prostate</td>
<td>None</td>
</tr>
<tr>
<td>92</td>
<td>Rectum</td>
<td>None</td>
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<tr>
<td>93</td>
<td>Skeletal Muscle</td>
<td>None</td>
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<tr>
<td>94</td>
<td>Skin</td>
<td>None</td>
</tr>
<tr>
<td>95</td>
<td>Spinal Cord</td>
<td>None</td>
</tr>
<tr>
<td>96</td>
<td>Spleen</td>
<td>None</td>
</tr>
<tr>
<td>97</td>
<td>Stomach</td>
<td>None</td>
</tr>
<tr>
<td>98</td>
<td>Thyroid</td>
<td>None</td>
</tr>
<tr>
<td>99</td>
<td>Urinary Bladder</td>
<td>None</td>
</tr>
</tbody>
</table>
Appendix 3: Death and Necropsy Questionnaire

Use this copy of the questionnaire to take notes regarding the end of life visit. Then log in at grls.morrisanimalfoundation.org to enter these notes into the database.

GENERAL INFORMATION

Dog Name: 
Study ID: 094-
Dog Sex Status:  
- Intact Female  
- Spayed Female  
- Intact Male  
- Neutered Male  
Date of Death: __/__/__  
Was the dog euthanized?  
- Yes  
- No
Drug Name:  
- Unknown  
- Fatal-Plus Solution  
- Beuthanasia-D Special  
- Euthasol  
- Other: 

Amount administered and units: _____________________________ ml  
- Not noted
Drug concentration and units: _____________________________ mg/ml  
- Not noted

In your opinion, what was the primary cause of death?: _____________________________

What was the primary organ system involved in the cause of death? Select only one.

- Cardiovascular  
- Dermatologic  
- Endocrine  
- Gastrointestinal  
- Hematopoietic/lymphoid  
- Hepatic  
- Musculoskeletal  
- Neurologic  
- Ear/eye/nose/throat  
- Respiratory

What was the primary pathophysiologic involved in the cause of death? Select only one.

- Cardiovascular  
- Congenital  
- Degenerative  
- Infectious  
- Inflammatory  
- Metabolic  
- Neoplastic  
- Toxic  
- Traumatic  
- Unknown  
- Other: _____________________________

List any factors contributing to the cause of death: _____________________________
NECROPSY

Was a necropsy performed? □ Yes □ No
Necropsy performed by: □ Registered study veterinarian □ Other veterinarian
□ Veterinary Pathologist / Under Supervision of Veterinary Pathologist

If not the Study Veterinarian, please fill out the following:
Veterinarian Name: __________________________________________
Clinic Name: _______________________________________________
Clinic Email: _______________________________________________
Clinic Address: ______________________________________________
Clinic Phone Number: ___________________ Clinic Fax Number: _______

Date of Necropsy: ___/___/___
Approximate number of whole hours between time of death and time of necropsy:
_________ hrs □ Unknown

Do you have any gross findings? □ Yes □ No
If yes, please complete the Gross Necropsy Findings section. Otherwise, skip ahead to page 29.

GROSS NECROPSY FINDINGS

Skin
□ Normal □ Abnormal □ Not Evaluated Comments if Abnormal: ____________________________
________________________________________

Subcutaneous Fat - Quality
□ Normal □ Abnormal □ Not Evaluated Comments if Abnormal: ____________________________
________________________________________

Left Eye - Dissected Evaluation
□ Normal □ Abnormal □ Not Evaluated Comments if Abnormal: ____________________________
________________________________________

Right Eye - Dissected Evaluation
□ Normal □ Abnormal □ Not Evaluated Comments if Abnormal: ____________________________
________________________________________
Thyroid Gland

□ Normal  □ Abnormal  □ Not Evaluated  Comments if Abnormal:________________________

Parathyroid Glands:

□ Normal  □ Abnormal  □ Not Evaluated  Comments if Abnormal:________________________

Esophagus:

□ Normal  □ Abnormal  □ Not Evaluated  Comments if Abnormal:________________________

Thoracic Cavity - In Situ:

□ Normal  □ Abnormal  □ Not Evaluated  Comments if Abnormal:________________________

Heart:

□ Normal  □ Abnormal  □ Not Evaluated  Comments if Abnormal:________________________

Pericardial fluid present?:  □ Yes  □ No  □ Not evaluated

Estimated volume of fluid in milliliters: _______________mL

Color of pericardial fluid:

□ Black  □ Clear  □ Yellow
□ Brown  □ Red  □ Other: ________________

Clarity of pericardial fluid:  □ Clear  □ Opaque  □ Other

Lungs:

□ Normal  □ Abnormal  □ Not Evaluated  Comments if Abnormal:________________________

Abdominal Cavity - In Situ:

□ Normal  □ Abnormal  □ Not Evaluated  Comments if Abnormal:________________________
### GROSS NECROPSY FINDINGS

Abdominal fluid present?
- [ ] Normal
- [ ] Abnormal
- [ ] Not evaluated

Estimated volume of fluid in milliliters: ____________mL

Color of pericardial fluid:
- [ ] Black
- [ ] Brown
- [ ] Clear
- [ ] Red
- [ ] Yellow
- [ ] Other: ____________

Clarity of pericardial fluid:
- [ ] Blood
- [ ] Bile
- [ ] Urine
- [ ] Ascites
- [ ] Other: ____________________

---

**Duodenum**
- [ ] Normal
- [ ] Abnormal
- [ ] Not Evaluated

Comments if Abnormal: ____________________

---

**Pancreas**
- [ ] Normal
- [ ] Abnormal
- [ ] Not Evaluated

Comments if Abnormal: ____________________

---

**Jejunum**
- [ ] Normal
- [ ] Abnormal
- [ ] Not Evaluated

Comments if Abnormal: ____________________

---

**Ileum**
- [ ] Normal
- [ ] Abnormal
- [ ] Not Evaluated

Comments if Abnormal: ____________________

---

**Cecum**
- [ ] Normal
- [ ] Abnormal
- [ ] Not Evaluated

Comments if Abnormal: ____________________

---

**Colon**
- [ ] Normal
- [ ] Abnormal
- [ ] Not Evaluated

Comments if Abnormal: ____________________
GROSS NECROPSY FINDINGS

Liver
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Spleen
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Right Kidney
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Right Adrenal Gland
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Left Kidney
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Left Adrenal Gland
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Urinary System (Bladder, Prepuce, Vulva, etc.)
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Reproductive System
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________

Skeletal Muscles
☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal: __________________________
# GROSS NECROPSY FINDINGS

**Bones** Identify specific bones in comments.
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:

**Bone Marrow**
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:

**Stomach**
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:

**Synovial Fluid**
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:

**Lymph Nodes**
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:

**Brain**
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:

**Spinal Cord**
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:

**Nervous System** Other Lesions
- Normal □ Abnormal □ Not Evaluated Comments if Abnormal:
GROSS NECROPSY FINDINGS

Tumors, Masses, or Other Lesions of Interest

☐ Normal  ☐ Abnormal  ☐ Not Evaluated  Comments if Abnormal:__________________________

Additional General Gross Necropsy Findings

Comments:__________________________________________________________________________
______________________________________________________________________________________

SUPPLEMENTAL INFORMATION

Do you have photographs?

☐ Yes  ☐ No

Do you have radiographs?

☐ Yes  ☐ No

Do you have clinical pathology results?

☐ Yes  ☐ No

Additional Remarks/Comments:___________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________
______________________________________________________________________________________

Thank you again for supporting the Golden Retriever Lifetime Study.
About Morris Animal Foundation

Morris Animal Foundation is a nonprofit organization that invests in science to advance animal health. The foundation is a global leader in funding scientific studies for companion animals, horses and wildlife. Since its founding in 1948, Morris Animal Foundation has invested in studies that have led to significant breakthroughs in diagnostics, treatments, preventions and cures to benefit animals worldwide. Learn more at morrisanimalfoundation.org.

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