

# FOREIGN ANIMAL DISEASE (FAD) INVESTIGATION MANUAL

## FAD PReP

Foreign Animal Disease  
Preparedness & Response Plan

Surveillance, Preparedness,  
and Response Services



**VETERINARY MEDICINE  
& BIOMEDICAL SCIENCES**  
TEXAS A & M UNIVERSITY

United States Department of Agriculture • Animal and Plant Health Inspection Service • Veterinary Services

# Contents

<b>1 FADD FIELD KIT</b>	
1.1 Foreign Animal Disease Diagnostician Field Kit Components.....	1-1
1.2 FADD Field Kit Supply Lists .....	1-5
<b>2 PERSONAL PROTECTIVE EQUIPMENT</b>	
2.1 Introduction to PPE .....	2-1
2.2 PPE Options .....	2-1
2.3 Selecting Appropriate PPE .....	2-2
<b>3 DONNING AND DOFFING PROCEDURES</b>	
3.1 Equipment and Supplies .....	3-1
3.2 Donning and Doffing Procedures .....	3-2
<b>4 DIAGNOSTIC SAMPLING</b>	
4.1 Best Practices for Diagnostic Sample Collection .....	4-1
4.2 Guidelines for Proper Labeling of Samples .....	4-2
4.3 General Supplies and Equipment .....	4-2
4.4 Standard Tissue Samples .....	4-3
4.5 Disease Specific Guide to Sample Collection.....	4-4
4.6 Swine Procedures .....	4-13
4.7 Bovine Procedures.....	4-17
4.8 Sheep Procedures .....	4-25
4.9 Avian Procedures.....	4-27
<b>5 NECROPSY EXAMINATION</b>	
5.1 Necropsy Examination of Cattle.....	5-1
5.2 Necropsy Examination of Swine.....	5-17
5.3 Necropsy Examination of Poultry .....	5-34
<b>6 PROCEDURES FOR FAD/EDI INVESTIGATION</b>	
6.1 Points of Contact .....	6-1
6.2 Routing of Diagnostic Sample Submissions .....	6-2
6.3 Investigation Checklists.....	6-3
6.4 Procedures for the Investigation of Potential Foreign Animal Disease/ Emerging Disease Incidents .....	6-9
6.5 Investigation Classification and Diagnostic Sample Prioritization .....	6-11
<b>7 SHIPPING DIAGNOSTIC SAMPLES</b>	
7.1 Introduction .....	7-1
7.2 What Category of Specimen Do I Have? .....	7-1
7.3 Preparing Diagnostic Specimens for Shipment .....	7-3
7.4 Contact Information .....	7-6
7.5 10-4 Submission Form Sample .....	7-9
7.6 Shipping to NVSL FADDL.....	7-10
7.7 Shipping to NVSL Ames.....	7-12
7.8 Field Shipping Checklist.....	7-15
<b>8 REFERENCE MATERIALS</b>	
8.1 Common Acronyms.....	8-1
8.2 Selected Terrestrial FAD Threats to the United States and Its Territories.....	8-2
8.3 Selected Foreign Pest Threats to the United States and Its Territories .....	8-4
8.4 Slaughter Establishment FAD Investigation Process .....	8-5

This guide is printed on washable synthetic paper. To disinfect it, we recommend using a 1:100 solution of Virkon. If unavailable, ammonium quaternary solutions may also be used at the dilution recommended on the label.

# Acknowledgements

The development of the Foreign Animal Disease (FAD) Investigation Manual was a collaborative effort. Many individuals contributed their time and talents to this project. We wish to thank the following people who made this manual possible.

## PROJECT MANAGEMENT

Elizabeth Clark  
Paula Cowen  
Jodi Korich  
Jonathan Zack

## CONTENT AUTHORS

John Bare  
Aaron Lehmkuhl  
Christina Loiacono  
Timothy Smith  
Bruce Thomsen

## CREATIVE TEAM

Kathleen Apicelli ▪ photography  
Scott Birch ▪ design, videos  
James Fosse ▪ photography  
Ithaca Content Architecture  
and Design ▪ copy editing  
Suzanne Kabat ▪ design, layout,  
illustrations  
Ethan Macnow ▪ photography  
Tonya Miles ▪ coordination  
Sellco Industries Inc. ▪ printing

## REVIEW TEAM

Heather Allen  
Brian Archer  
Consuelo Carrillo  
Randall Crom  
Joanna Davis  
Matthew Erdman  
Andrew Fabian  
Peter Fernandez  
Steven Finch  
Julie Gauthier  
Hallie Hasel  
Stephanie Kordick  
Kristina Lantz  
Rebecca Madison  
Barbara Martin  
Gregory Mayr  
Janice Mogan  
Eileen Ostlund  
Beverly Schmitt  
Brian Sites  
William Stump  
Harley Sutton  
Alexandra Taylor  
Alfonso Torres  
Fernando Torres

## LOGISTICAL ASSISTANCE

Denise Chapman  
Michelle Crocheck  
Heath Stolee  
Robert Wilson

This manual was developed by Texas A&M University, College of Veterinary Medicine & Biomedical Sciences through a cooperative agreement with the United States Department of Agriculture, under Agreement No. 11-9100-1351-CA.

Copyright © 2014 United States Department of Agriculture  
Copyright © 2014 Texas A&M University, College of Veterinary Medicine & Biomedical Sciences

1 FOREIGN ANIMAL DISEASE DIAGNOSTICIAN FIELD KIT COMPONENTS

PERSONAL PROTECTION ATTIRE



RESTRAINT EQUIPMENT



PHYSICAL EXAM EQUIPMENT



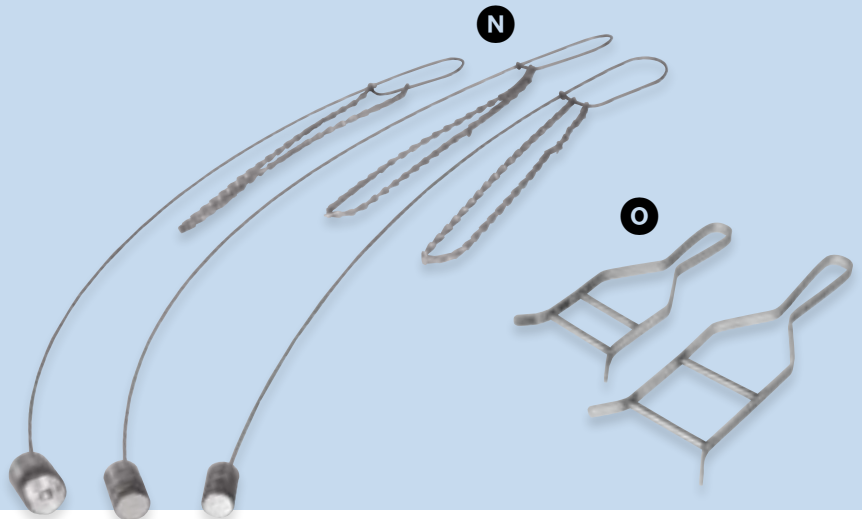
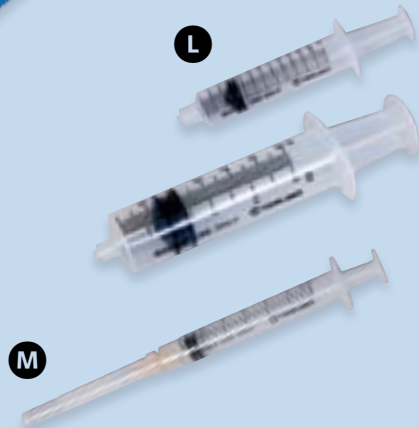
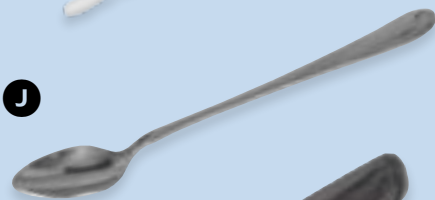
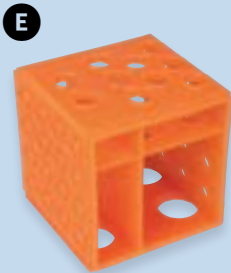
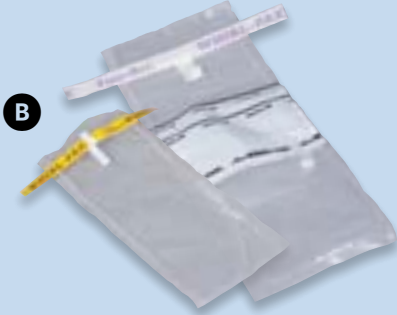
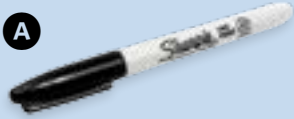


NECROPSY EQUIPMENT



- A** Curved scissors
- B** Tissue forceps
- C** Enterotomy scissors
- D** Bone chisel
- E** Disposable scalpels
- F** Boning knife
- G** Sharpening stone
- H** Butcher saw
- I** Extra saw blade
- J** Hatchet/single-bit axe
- K** Hammer

## DIAGNOSTIC SAMPLING EQUIPMENT



- A** Black Sharpie® pen
- B** Whirl-Pak® or Ziploc® bags
- C** Microscope slides
- D** Slide mailers
- E** Vacutainer® tube holder
- F** Vacutainer® needle adaptors
- G** Vacutainer® needles
- H** Red-, green-, and purple-top Vacutainer® tubes
- I** Dacron®/polyester swabs
- J** Long-handled spoon
- K** Eurospoons
- L** Disposable syringes
- M** Needles and syringes
- N** Probangs
- O** Swine mouth specula

## DISINFECTION AND CLEAN-UP SUPPLIES



- A** Hand and nail brush
- B** Garbage bags
- C** Sharps container

## MISCELLANEOUS SUPPLIES



- A** Plastic tool case
- B** Metal tool case
- C** Merck Veterinary Manual

## 2 FADD FIELD KIT SUPPLY LISTS

### PERSONAL PROTECTION ATTIRE

Disposable gloves (100 pairs, latex or nitrile)

Cut gloves

Safety glasses/goggles (OSHA-approved)

Head lamp

Plastic insulation tape

Duct tape

### RESTRAINT EQUIPMENT

Iowa hog holder (cable attached)

Yorkshire twitch

### PHYSICAL EXAM EQUIPMENT

Stethoscope

Thermometers

### NECROPSY EQUIPMENT

Bone chisel

Butcher saw

Extra blade for saw

Curved scissors

Enterotomy scissors

Tissue forceps (rat tooth)

Hammer

Hatchet/single-bit axe

Boning knife (5" straight blade)

Disposable scalpels

Sharpening stone



**DIAGNOSTIC SAMPLING EQUIPMENT**

Black Sharpie® pen

Microscope slides

Slide mailers

Dacron®/polyester swabs

Eurospoon (for BSE-obex; 1 small & 1 large)

Long-handled spoon (for tonsil scraping)

Probang (large, cattle 1 ¼")

Probang (large, cattle 1")

Probang (medium, calf)

Probang (small, sheep)

Swine mouth speculum (large)

Swine mouth speculum (small)

Vacutainer® tubes (plain)

Vacutainer® tubes with Heparin

Vacutainer® tubes with EDTA

Vacutainer® holders

Vacutainer® adapters

Whirl-Pak® or Ziploc® bags (large, 5 ½" × 9")

Whirl-Pak® or Ziploc® bags (small, 3" × 7")

Disposable needles with syringe (25G ⅝")

Disposable needles (18G 1 ½")

Disposable needles (17G 3 ½" or 16G 4")

Plastic syringes (50 cc)

Plastic syringes (10 cc)

**DISINFECTION AND CLEAN-UP SUPPLIES**

Garbage bags

Hand and nail brush

Sharps container

**MISCELLANEOUS SUPPLIES**

Metal tool case

Plastic tool case

Merck Veterinary Manual

1 INTRODUCTION TO PPE

Personal protective equipment (PPE) must be worn by all FADDs during an animal disease investigation.

IMPORTANT PPE FUNCTIONS



Protects user from exposure to potentially life-threatening infectious agents.

Prevents spread of biological hazards by the user.



*It is the FADD's responsibility to understand how to use PPE appropriately in order to prevent the transmission of infectious agents to animals and humans.*

*The general principles discussed in this chapter are intended to serve as a basis for making sound decisions regarding PPE. As always, it is important to evaluate each situation and adjust procedures to the risks present in the situation.*

2 PPE OPTIONS

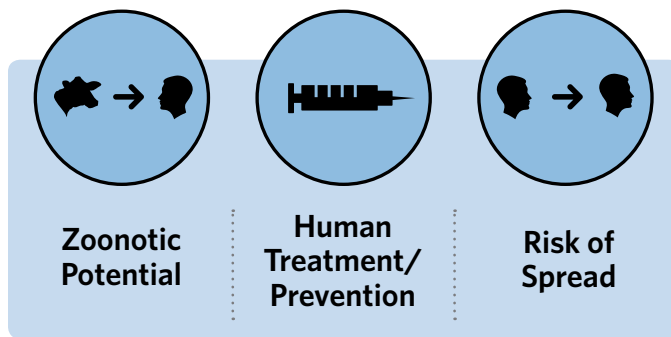
The FADD must assess the risk posed by the suspected biological agent and then select the appropriate level of PPE for a foreign animal disease (FAD) investigation. A range of available PPE options is shown below. ▼

TO PROTECT	EAR	EYE	HAND	FOOT	SKIN	RESPIRATORY
PPE PROTECTION LEVEL FROM LESS TO MORE	Ear plugs	Safety glasses	Latex or nitrile gloves	Shoes or boots	Disposable Tyvek™ suit	Air Purifying Respirator (APR) N95, N98, N100
		Safety goggles	Thick rubber gloves	Washable rubber over-boots	Hair cover or hood	Powered Air Purifying Respirator (PAPR)*
		Full-face shield	Cut-resistant glove	Disposable plastic boot covers	Cut-resistant apron	

\* to be used only during confirmed FAD cases involving a potentially fatal zoonotic agent.

### 3 SELECTING APPROPRIATE PPE

To select the appropriate level of PPE, consider the following risk factors.



#### Suspected Agent Risk Factors

- ✓ Is there zoonotic potential?
- ✓ Is there a vaccine or treatment for humans?
- ✓ What is the infectious dose?
- ✓ What is the mode of transmission (e.g., airborne, parenteral, or ingestion)?
- ✓ What activities might disseminate the agent during handling if it was aerosolized or spilled?

Use the following to categorize the suspected agent and select the corresponding level of PPE. ▼

**SCENARIO:** Routine undiagnosed FAD or emerging animal disease field call. **CATEGORY I**

#### RISK FACTORS

- Unlikely to cause disease in healthy adult workers and animals
- Effective therapy or vaccines available
- Risk of spread is limited

#### RISK LEVEL

- Low individual and community health risk
- Moderate individual risk and limited community risk

#### CLEAN UP

- Dispose of gloves and disposable coveralls
- Disinfect boots
- Wash hands
- Launder washable coveralls before next use
- Shower upon returning home

#### APPROPRIATE PPE

- EYE:** none
- EAR:** ear plugs as needed
- RESPIRATORY:** none to N95 APR

- Street clothes + washable cloth or disposable coveralls
- Disposable latex or nitrile gloves + cut-resistant gloves (during necropsy)

Boots or shoes with rubber over-boots as needed





**SCENARIO:** Clinical/laboratory diagnosed FAD or emerging animal disease with zoonotic potential.

**CATEGORY IIA**

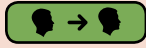
**RISK FACTORS**



Capable of causing serious human or animal disease



Does spread but treatment/vaccine is available



Does not ordinarily spread by casual contact between individuals

**RISK LEVEL**



- High individual risk
- Low community health risk

**CLEAN UP**

- Dispose of PPE (except non-disposable items like PAPR blower/filters)
- Disinfect boots
- Wash hands
- Shower

**APPROPRIATE PPE**

- EYE:** goggles, face mask/shield
- EAR:** ear plugs as needed
- RESPIRATORY:** N95 APR or PAPR, full mask for unknown hazards and zoonoses, half mask for non-zoonotic



Disposable latex or nitrile gloves + cut-resistant gloves (during necropsy)

Disposable Tyvek™ coveralls + hair cover/hood

Boots or shoes with rubber over-boots + disposable plastic boot covers or chemical-resistant steel-toe boots as needed



**1 EQUIPMENT AND SUPPLIES****COLLECTION AND SHIPPING**

Collection containers

Vacutainer® Tubes

Whirl-pak® bags or Ziploc® bags

Needles and syringes

Permanent marker

Portable tote

Black electrical tape (securing lids on tubes)

Sharps container

Shipping boxes

Pre-frozen gel packs

Animal-restraint equipment

**PERSONAL PROTECTION ATTIRE**

Washable coveralls

Tyvek® coveralls

Disposable boot covers

Latex or nitrile gloves

Head cover

Face mask or respirator

Safety glasses, goggles, or shield

Duct tape

**DISINFECTION AND CLEAN-UP**

Hand sanitizer

Hand sprayer containing disinfectant solution

Garden sprayer containing disinfectant solution

Ground tarp

Garbage bags

Boot tub and brush

Buckets



## 2 UNASSISTED DONNING AND DOFFING PROCEDURES

### UNASSISTED DONNING PROCEDURE • STEPS 1-9



1

Arrive at the farm wearing clean cloth coveralls.



2

Park in a "clean" zone, away from the affected farm premises.



3

Record the GPS coordinates of the premises for later documentation of the investigation.



4

Remove your jewelry and watch and leave them in the vehicle.



5

Remove your street shoes and put on rubber boots.



6

Put on disposable boot covers over your boots to protect your feet before exiting the vehicle.



7

Make 4 strips of duct tape approximately 14 inches (35 cm) in length and place them on the inside of the vehicle door. The tape will be used to secure your gloves and boot covers to your Tyvek® coveralls.



8

Create tabs at the ends of the tape strips to facilitate later removal.



9

Create one strip of duct tape long enough to cover the zipper on your Tyvek® coveralls.

## UNASSISTED DONNING PROCEDURE ▪ STEPS 10-18



10

Insert your feet into the Tyvek®. The pant legs should be positioned over your boots and boot covers.



11

Put on a second pair of disposable boot covers, positioning them over the pant legs of the Tyvek®.



12

Exit the vehicle and insert your arms into the sleeves of the Tyvek®.



13

Place hand sanitizer, a hand sprayer containing disinfectant solution, and 2 garbage bags inside the vehicle within easy reach for later use.



14

Using 2 duct tape strips, loosely tape the outer boot covers to the Tyvek®, leaving enough room to bend and walk.



15

Position the tabs on top to help with later removal.



16

You can also wrap your toes with duct tape to hold the boot covers in place while you walk.



17

Put on a pair of inner nitrile or latex gloves and tuck the cuffs under your Tyvek® sleeves.



18

Pop your thumbs through the ends of the Tyvek® sleeves. This will help to keep your sleeves in place while you are working.



## UNASSISTED DONNING PROCEDURE • STEPS 19-27



19

Put on the second layer of gloves, positioning the cuffs so that they cover the ends of your Tyvek® sleeves.



20

Stretch your arms over your head to help provide unrestricted movement before taping the gloves.



21

Zip up the Tyvek®. Using the duct tape, tape down the zipper to prevent the Tyvek® from unzipping during use.



22

Using 2 strips of duct tape, loosely tape the outer gloves to the Tyvek® sleeves at your wrists, positioning the tabs on top to help with later removal.



23

If required, put on a facemask or respirator. Adjust it for a secure fit and proper seal.



24

Don appropriate eye protection such as glasses, goggles, or a face shield.



25

Put on a head cover or raise the Tyvek® hood over your head.



26

Establish a clean/dirty line. To delineate the "clean" and "dirty" zones, you can use washable livestock paint, rope, tape, or a barrier such as a gate.



27

If you are working on concrete, spray down an area with disinfectant solution using the garden sprayer.

## UNASSISTED DONNING PROCEDURE • STEPS 28-36



28

If you are working on a dirt lot, you can lay down a disposable plastic tarp to avoid mud during your clean up.



29

Remove the supplies from your vehicle and set up your clean/dirty line.



30

Set out the boot tub and scrub brush on the "dirty" side and fill the tub with disinfectant solution.



31

Position 2 five-gallon plastic buckets and other clean-up supplies on the edge of the "clean" side of the line.



32

Line the plastic buckets with garbage bags.



33

Place 2 additional garbage bags on the "dirty" side of the line.



34

Place a minimum of 2 extra garbage bags into the buckets for later use during clean-up.



35

Set out the hand sprayer and garden sprayer, pre-filled with disinfectant solution. The garden sprayer should be positioned on the "dirty" side and the hand sprayer goes on the "clean" side of the line.



36

Using a permanent marker, pre-label a set of sample containers with the farm name, date, and other information pertinent to the investigation.

## UNASSISTED DONNING PROCEDURE ▪ STEPS 37-42



37

Place all the sampling supplies you will need for the investigation in the portable carrying tote.



38

If you wish to take photographs as part of your investigation, place a cell phone inside a waterproof bag.



39

It is recommended to include an extra set of gloves, head cover, and a face mask in the tote for use in the event of damage to your PPE. These items can be placed inside a zipper-lock bag to keep them clean.



40

Similarly, a roll of duct tape should be placed in a plastic bag and included in the tote in case you need to cover tears in your Tyvek®.



41

Pick up your tote and any other equipment needed for sample collection and step over the clean/dirty line to approach the facility.



42

Keep in mind that you will be unable to return to the "clean" zone until you have doffed your PPE and decontaminated your supplies.

**PROCEDURE VIDEO**

To view a video demonstrating this procedure, scan the graphic code above with a QR code reader. Doing so will open the video link below on your device.

(<http://www.usdatraining.com/ppe>)



## UNASSISTED DOFFING PROCEDURE • STEPS 1-9



1

Exit the facility and proceed to the clean/dirty line with your supplies and samples. Set down all of your supplies on the "dirty" side of the line.



2

Using your gloved hands, brush off any large debris that may have adhered to the outer surface of your Tyvek®.



3

Place all of the diagnostic samples inside zipper-lock plastic bags and seal the bags.



4

Dunk or spray the sample bags with disinfectant solution.



5

Place the sample bag inside a second plastic bag, seal, and disinfect the outer surface.



6

Without stepping over the clean/dirty line, place the double-bagged samples on the "clean" side of the line.



7

Dunk or spray all equipment and supplies and place them into garbage bags.



8

Seal the bags and spray the outside of the bags with disinfectant.



9

Place the garbage bags on the "clean" side of the line.

## UNASSISTED PROCEDURE • STEPS 10-18



10

Dunk the garden sprayer in the disinfectant tub and place it on the "clean" side of the line.



11

Remove your eye protection, dunk it in the tub, and place it in a garbage bag.



12

Remove your head cover and respirator or face mask and place them in a garbage bag.



13

If you are wearing glasses, remove and dunk them in the disinfectant solution and place them on the "clean" side of the line.



14

Loosen the tape from your outer gloves and boot covers.



15

Remove the tape from the zipper of your Tyvek®.



16

Unzip the Tyvek®.



17

Begin rolling the Tyvek® downward, turning them inside out as you go. Avoid touching any skin or your inner clothing as you do so.



18

Remove the outer gloves by turning the sleeves of the Tyvek® inside out, being careful to keep the inner gloves clean.



## UNASSISTED DOFFING PROCEDURE • STEPS 19-27



19

Peel off the Tyvek® and the outer set of boot covers, being careful to avoid touching the outside of the Tyvek® with your clean inner gloves.



20

Place the used PPE into a garbage bag.



21

Step into the boot tub and scrub the boot covers with the brush.



22

Without letting your foot touch the ground on the "dirty" side, step onto the "clean" side of the line.



23

Empty the disinfectant tub, pouring the solution onto the "dirty" side of the line.



24

Spray the outer surface of the tub with disinfectant.



25

Place the boot tub and brush in a garbage bag, seal, and spray with disinfectant solution.



26

Place the garbage bag inside a second bag, seal, and spray with disinfectant.



27

Carry the diagnostic samples to your vehicle.

## UNASSISTED DOFFING PROCEDURE • STEPS 28-36



28

Immediately place the samples into the shipping container. You may want to do your packaging and paperwork off the farm, but it is critical that perishable samples be placed in a cooler with frozen gel packs as soon as possible.



29

Prior to sending the samples, you should inform the receiving lab that the inner and outer bags were disinfected and left wet. This will prevent the lab from presuming the samples leaked during transit.



30

Spray the buckets, hand and garden sprayer with disinfectant solution.



31

Continue to clean up your supplies. Double-bag all the garbage bags, seal, and spray the outer surface with disinfectant solution.



32

Carry all the clean supplies to your vehicle.



33

Spray the vehicle tires with the garden sprayer.



34

Ensure all equipment and garbage bags are secured for transit.



35

At the driver's side of the vehicle, spray your gloves with disinfectant.



36

Remove the gloves by turning them inside out, and discard them in the garbage bag located in the front of the truck.



## UNASSISTED DOFFING PROCEDURE • STEPS 37-44



37

Begin to remove your cloth coveralls by removing your arms from the sleeves.



38

Sit on the seat of the vehicle and spray the bottom of your boot covers.



39

Remove the boot covers and place them inside the garbage bag.



40

Spray the outside of your rubber boots, remove them, and place them inside a fresh garbage bag.



41

Finish removing your cloth coveralls and place them in the garbage bag with your boots and seal the bag.



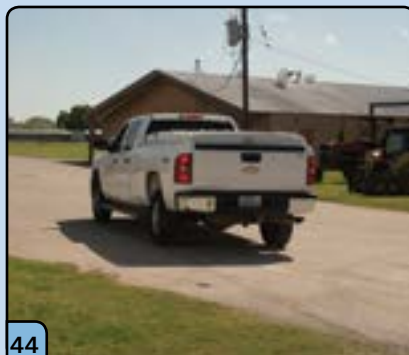
42

Put on your street shoes, being careful not to come in contact with the ground.



43

Use the hand sanitizer to disinfect your hands and arms.



44

This completes the unassisted PPE doffing procedure.

**PROCEDURE VIDEO**

To view a video demonstrating this procedure, scan the graphic code above with a QR code reader. Doing so will open the video link below on your device.

(<http://www.usdatraining.com/ppe>)

### 3 ASSISTED DONNING AND DOFFING PROCEDURES

#### ASSISTED DONNING PROCEDURE • STEPS 1-9



1

You and your assistant arrive at the farm wearing clean cloth coveralls.



2

Park in a "clean" zone, away from the affected farm premises.



3

Record the GPS coordinates of the premises for later documentation of the investigation.



4

Both you and your assistant remove your jewelry and watch and leave them in the vehicle.



5

Both you and your assistant remove your street shoes and put on rubber boots.



6

Both you and your assistant put on a set of disposable boot covers over your boots to protect your feet before exiting the vehicle.



7

Make 4 strips of duct tape approximately 14 inches (35 cm) in length and place them on the inside of the vehicle door. The duct tape will be used to secure your gloves and boot covers to your Tyvek®.



8

Create tabs at the ends of the strips to facilitate easy removal.



9

Create a strip of duct tape long enough to fully cover the zipper on your Tyvek®.



## ASSISTED DONNING PROCEDURE • STEPS 10-18



10

Insert your feet into the Tyvek®. The pant legs of the coveralls should be positioned over your boots and boot covers.



11

Put on a second pair of disposable boot covers, positioning them over the pant legs of the Tyvek®.



12

Exit the vehicle and insert your arms into the sleeves of the Tyvek®.



13

Place 2 garbage bags, hand sanitizer, and a hand sprayer containing disinfectant solution inside the vehicle within easy reach for later use.



14

Using 2 duct tape strips, loosely tape the outer boot covers to the Tyvek®, leaving enough room to bend and walk.



15

Position the tabs on top to help with later removal.



16

You can also wrap your toes with duct tape to hold the boot covers in place while you walk.



17

Put on a pair of inner nitrile or latex gloves and tuck the cuffs under your Tyvek® sleeves.



18

Pop your thumbs through the ends of the Tyvek® sleeves. This will help to keep your sleeves in place while you are working.

## ASSISTED DONNING PROCEDURE • STEPS 19-27



19

Put on the second layer of gloves, positioning the cuffs so that they cover the ends of your Tyvek® sleeves.



20

Stretch your arms over your head to help provide unrestricted movement before taping the gloves.



21

Zip up the Tyvek®.



22

Using the duct tape, tape the zipper to prevent the Tyvek® from unzipping during use.



23

Using 2 duct tape strips, loosely tape the outer gloves to the Tyvek® sleeves at your wrists, positioning the tabs on top to help with later removal.



24

If required, put on a facemask or respirator. Adjust it for a secure fit and proper seal.



25

Don appropriate eye protection such as glasses, goggles, or a face shield.



26

Put on a head cover or raise the Tyvek® hood over your head.



27

While you are donning your PPE, your assistant exits the vehicle, puts on gloves, and begins to set up the clean/dirty line.



## ASSISTED DONNING PROCEDURE ▪ STEPS 28-36



28

The assistant delineates the “clean” and “dirty” zones using washable livestock paint, rope, tape, or a barrier such as a gate.



29

If you are working on concrete, the area can be sprayed down with disinfectant solution using the garden sprayer.



30

If you are working on a dirt lot, a disposable plastic tarp can be used to avoid mud during your clean up.



31

Set out the boot tub and scrub brush on the “dirty” side and fill the tub with disinfectant solution.



32

Line 2 five-gallon plastic buckets with garbage bags. Place a minimum of 2 extra garbage bags into the buckets for later use during clean-up.



33

Position the 2 buckets and other clean-up supplies on the edge of the “clean” side of the line.



34

Place 2 additional garbage bags on the “dirty” side of the line.



35

Set out the hand sprayer and garden sprayer, pre-filled with disinfectant solution. The garden sprayer should be positioned on the “dirty” side and the hand sprayer goes on the “clean” side of the line.



36

Using a permanent marker, pre-label a set of sample containers with the farm name, date, and other information pertinent to the investigation.

## ASSISTED DONNING PROCEDURE • STEPS 37-44



37

Place all the sampling supplies needed for the investigation in the portable carrying tote.



38

If you wish to take photographs as part of your investigation, place a cell phone inside a waterproof bag.



39

It is recommended to include an extra set of gloves, head cover, and a face mask in the tote for use in the event of damage to your PPE. These items can be placed inside a zipper-lock bag to keep them clean.



40

Similarly, a roll of duct tape should be placed in a plastic bag and included in the tote in case you need to cover tears in your Tyvek®.



41

The assistant places the tote on the "clean" side of the line.



42

When donning is complete, the investigator picks up the tote and any other equipment needed for sample collection and steps over the clean/dirty line to approach the facility.



43

The assistant will then don PPE, but remain on the "clean" side of the line where they can retrieve additional supplies for the investigator if necessary.



44

Once the investigator exits the facility, the assistant then crosses the clean/dirty line to assist with doffing.

**PROCEDURE VIDEO**

To view a video demonstrating this procedure, scan the graphic code above with a QR code reader. Doing so will open the video link below on your device.

(<http://www.usdatraining.com/ppe>)



## ASSISTED DOFFING PROCEDURE • STEPS 1-9



1

Exit the facility and proceed to the clean/dirty line where you will hand your assistant your samples and supplies.



2

Using your gloved hands, brush off any large debris that may have adhered to the outer surface of your Tyvek®.



3

Remove your head cover and respirator or face mask and place them into a garbage bag.



4

Remove your eye protection and dunk it in the disinfectant solution.



5

If you are wearing glasses, dunk them in the disinfectant solution and place them on the clean side of the line.



6

Remove the tape from the zipper and unzip the Tyvek®.



7

Loosen the tape at your wrists.



8

The assistant helps you free your shoulders from the Tyvek®.



9

Begin rolling the Tyvek® downward, turning it inside out as you go. Avoid touching any skin or your inner clothing as you do so.

## ASSISTED PROCEDURE • STEPS 10-18



10

Remove the outer gloves by turning the sleeves of the Tyvek® inside out, being careful to keep the inner gloves clean.



11

Peel off the Tyvek® and the outer set of boot covers, being careful to avoid touching the outside of the Tyvek® with your clean inner gloves.



12

The assistant helps you bag all the used PPE materials. Seal the garbage bags and spray the outer surface with disinfectant solution using the garden sprayer.



13

Step into the boot tub and have your assistant scrub your boot covers with the brush, then step onto the "clean" side of the line.



14

The assistant places all of the diagnostic samples inside a zipper-lock bag, and then dunks or sprays the bag with disinfectant solution.



15

The samples are placed inside a second plastic bag and the outer surface is dunked in the disinfectant solution.



16

The assistant hands the samples over to you on the "clean" side of the line.



17

Immediately place the diagnostic samples into the shipping container.



18

You may want to do your packaging and paperwork off the farm, but it is critical that perishable samples be placed in a cooler with frozen gel packs as soon as possible.



## ASSISTED DOFFING PROCEDURE • STEPS 19-27



19

Prior to sending the samples, you should inform the receiving lab that the inner and outer bags were disinfected and left wet. This will prevent the lab from presuming the samples leaked during transit.



20

Dunk or spray all equipment and supplies with disinfectant solution and place them into garbage bags.



21

The bags are sealed and the outside sprayed with disinfectant solution.



22

All garbage bags are placed inside a second bag, sealed, and sprayed with disinfectant.



23

The assistant dunks the garden sprayer in the disinfectant tub and places it on the "clean" side of the line.



24

The assistant doffs their PPE, then steps into the boot tub, scrubs their boot covers, and steps onto the "clean" side of the line.



25

The disinfectant tub is emptied by pouring the solution onto the "dirty" side of the line.



26

Spray the outside surface of the tub with the hand sprayer and use the scrub brush to remove any debris.



27

The tub and brush are placed inside a garbage bag, sealed, and the outer surface sprayed with disinfectant solution.

## ASSISTED DOFFING PROCEDURE • STEPS 28-36



28

The bag is placed inside a second bag, which is also sealed and sprayed with disinfectant solution.



29

Carry all of the clean supplies and sealed bags to the vehicle, where they are loaded up and secured for transit.



30

Spray the vehicle tires with the garden sprayer.



31

Both you and your assistant spray your gloves with disinfectant, remove the gloves by turning them inside out, and discard them in the garbage bag located in the front of the truck.



32

Begin to remove your cloth coveralls by removing your arms from the sleeves.



33

Sit on the seat of the vehicle and spray the bottom of your boot covers with the hand sprayer.



34

Remove the boot covers and place them inside the garbage bag.



35

Spray the outside of your rubber boots with the hand sprayer, remove them, and place them inside a fresh garbage bag.



36

Finish removing your cloth coveralls and place them in the garbage bag with your boots and seal the bag.

## ASSISTED DOFFING PROCEDURE • STEPS 37-40



37

Put on your street shoes, being careful not to come in contact with the ground.



38

Seal the garbage bags and store them inside the vehicle for later disposal.



39

Use the hand sanitizer to disinfect your hands and arms.



40

This completes the assisted PPE doffing procedure.

**PROCEDURE VIDEO**

To view a video demonstrating this procedure, scan the graphic code above with a QR code reader. Doing so will open the video link below on your device.

(<http://www.usdatraining.com/ppe>)



## *After the Investigation*

It is important to take additional cleanup measures to protect yourself and to prevent the spread of pathogens. Follow the four-step process outlined below.

1. Take your vehicle to a car wash
2. Disinfect all tools
3. Disinfect clothing upon arriving home
4. Take a shower once all of the above have been completed



## 1 BEST PRACTICES FOR DIAGNOSTIC SAMPLE COLLECTION

In order to ensure accurate and timely lab results during an FAD investigation, it is important to follow the appropriate protocols when collecting diagnostic samples. Below are nine tips to help you collect and submit samples to the laboratory.

### 1. Call the lab

Call the lab to discuss the case prior to departing for the investigation if:

- You will be shipping a priority 1, A or 2 diagnostic specimen, or
- You need advice on what to sample, amounts needed for testing, differential diagnosis, shipping information, etc.

### 2. Prepare supplies

Review and prepare your FADD Kit supplies prior to beginning an investigation.

- Ensure all media and Vacutainer® tubes are not expired.
- Label all sample containers.

### 3. Collect two sets of samples

Whenever possible, collect two sets of diagnostic samples:

- One set of samples to be shipped to NVSL FADDL or NVSL Ames, and
- One set of samples to be shipped to your local NAHLN laboratory.

If it is not possible to collect two sets of samples, the priority is to collect the samples to be sent to the appropriate NVSL laboratory.

### 4. Follow guidelines for swab samples

Follow the proper protocols for collecting swab samples:

- Swab samples must be taken using Dacron®/polyester swabs,
- For ruminant swab samples, place swab in tube with 3 ml TBTB media,
- For avian swab samples, place swabs in tube with 3 ml of BHI media, and
- Leave swabs in the tube to ship to the laboratory in appropriate shipping container.

### 5. Use appropriate tissue containers

Collect and prepare tissue samples appropriately to ensure high-quality samples.

- Fresh tissues: Do not pool fresh tissue samples. Each organ must be placed in a separate Whirl-pak® or Ziploc® bag and labeled correctly.
- Fixed tissues: Place a 1 cm thickness piece of tissue in a jar with 10% formalin.

### 6. Label samples properly

Use proper labeling techniques to prevent problems with reporting test results.

- Each sample from each animal should be labeled correctly.

### 7. Use approved shipping containers

- Ship samples in approved shipping containers.
- Use only IATA-approved shipping containers.
- Chill the samples using frozen ice packs. Do not freeze the specimens.
- Refer to Chapter 7: Shipping Diagnostic Samples for additional information.

### 8. Follow EMRS protocols

- Call your ADD for case number and to determine priority.
- EMRS entry must match the specimens submitted.
- Note that EMRS defaults to Priority 2. If your submission is a different priority, change the default setting to the correct priority.

### 9. Complete paperwork

Always complete the 10-4 Specimen Submission Form in its entirety:

- Be certain to include the clinical history in the space provided, and
- You must include FADD contact information, and
- The process for submitting samples for an FAD investigation is different than that for surveillance samples. When submitting samples to the lab, make certain to specify Classical swine fever surveillance or FAD investigation.

## 2 GUIDELINES FOR PROPER LABELING OF SAMPLES



Label the samples with a smear-proof/waterproof pen or marker. On each label include:

**Animal number** \_\_\_\_\_

**Tissue type** \_\_\_\_\_

**Referral number** \_\_\_\_\_

**12** = last 2 digits of the current year

**VA** = the state in which the investigation is taking place

**001** = the FAD investigation number for that state (will stay the same for all samples with that investigation)

**Date** \_\_\_\_\_



## 3 GENERAL SUPPLIES & EQUIPMENT



### ITEMS REQUIRED FOR ALL PROCEDURES

#### Shipping & Labeling

- Supply of shipping containers (use only IATA-approved shipping boxes supplied by NVSL)
- Frozen ice packs
- Whirl-pak® or Ziploc® bags
- Black electrical tape or parafilm to seal specimen tubes
- Paper towels or absorbent material to place between primary and secondary shipping containers
- Fine point permanent marker and ball-point pen
- 10-4 Submission Form (filled out completely)

#### Safety & Clean Up

- Appropriate personal protective equipment
- Disinfectant
- Paper towels
- Garbage bags
- Pan or bucket for rinsing gloved hands and disinfecting instruments





## 4 STANDARD TISSUE SAMPLES

The following guidelines for collecting tissue samples should be followed during all FAD investigations.

**A** Collect a set of standard tissue samples from the trachea, esophagus, heart, lung, thoracic lymph nodes, liver, spleen, kidney, abdominal lymph nodes, bladder, stomach, duodenum, jejunum, ileum, and colon. Please refer to the **Disease-Specific Guide to Sample Collection** for guidelines on how to submit these tissue specimens.

**B** All histologic samples should be trimmed to 1 × 1 cm thickness to ensure proper fixation. The sample should be placed in a 10:1 ratio of 10% buffered formalin.



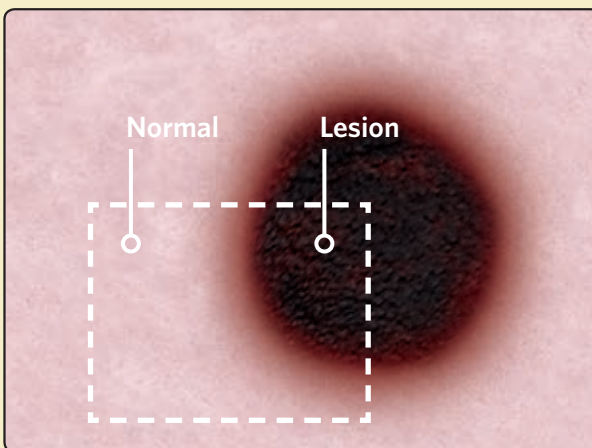
Fresh tissue should be trimmed to 1g and placed in Whirl-pak® or Ziploc® bags or TBTB (e.g., for vesicular lesions).



When using TBTB, ensure the tissue is covered by media, but do not exceed a 4:1 ratio of TBTB to tissue.

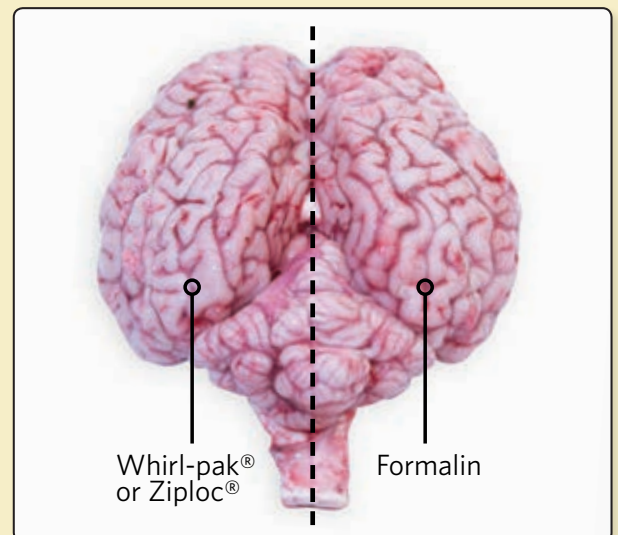


**C** Collect 1 × 1 cm thick sections of any lesions. Your tissue sample should include both “normal” tissue, as well as a portion of the lesion on the same section. Ideally, lesions should be submitted as both fresh tissue and formalin fixed samples. However, if a lesion is small, put the entire lesion in a Whirl-pak® or Ziploc® bag for virology, **not** in formalin.



**D** If an animal shows neurologic signs, collect the brain.

- Place ½ of the brain in a Whirl-pak® or Ziploc® bag.
- Place the other ½ of the brain in formalin for fixation.



\* When testing for rabies, consult with your state laboratory for sample specifications.

**E** When fixing tissues, fix them using a 10:1 ratio of 10% formalin (e.g., 1 cm of tissue to 9 ml of formalin).

**F** Chill tissue samples immediately upon collection using frozen ice packs, not ice cubes. Do NOT freeze the tissue samples.

## 5 DISEASE SPECIFIC GUIDE TO SAMPLE COLLECTION

Not all sampling types and test methods are applicable to all diseases. When in doubt, call the laboratory for guidance.

SPECIES	SPECIMEN	MEDIUM	LAB
<b>African horse sickness</b>			
Equine (including zebra)	Serum	Red top tube (10 ml)	NVSL Ames
	Whole blood	Green top tube (10 ml) Purple top tube (10ml), EDTA preferred	
	Fresh tissue: spleen, LN, lung	Separate Whirl-pak® or Ziploc® bag	
	Set of tissues	Formalin (10:1)	
<b>African swine fever</b>			
Swine	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10ml), EDTA preferred	
	Fresh Tissue: tonsil, gastrohepatic LN, inguinal LN, mesenteric LN, spleen	Separate Whirl-pak® or Ziploc® bag	
	Set of tissues	Formalin (10:1)	
<b>Aino and Akabane<sup>1</sup></b>			
Bovine Ovine Caprine	Serum from fetus and dam	Red top tube (10 ml)	NVSL FADDL and/or NVSL Ames
	Cerebrospinal fluid from fetus also acceptable for Aino testing	Red top tube (2 ml)	
	Fresh tissue: placenta, fetal muscle, and nervous tissue	Separate Whirl-pak® or Ziploc® bag	
	Set of tissues	Formalin (10:1)	
<b>Bluetongue &amp; Epizootic hemorrhagic disease<sup>2</sup></b>			
	Whole blood from dam and newborn	Green top tube (10 ml) Purple top tube (10 ml), EDTA preferred (sample appropriate for FADDL for PCR)	NVSL Ames or NVSL FADDL
	Fresh tissue: spleen	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	

<sup>1</sup>Virus isolation, PCR, and serology are done at the National Veterinary Services Laboratory (NVSL) Ames. PCR and serology are done at NVSL FADDL.

<sup>2</sup>Virus isolation and serology are done at NVSL Ames. PCR is done at FADDL (EDTA blood).

<sup>3</sup>Testing for BT/EHD at FADDL is limited to using EDTA blood.

SPECIES	SPECIMEN	MEDIUM	LAB
<b>Blue eye paramyxovirus</b>			
Swine	Serum	Red top tube (10 ml)	NVSL Ames
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Nasal swab	Dacron®/polyester swab in TBTB (max 3 ml)	
	Fresh tissue: brain, spinal cord, lung, tonsil, spleen, reproductive tissues from sexually mature animals	Separate Whirl-pak® or Ziploc® bag	
	Set of fixed tissues: brain, spinal cord, lung, tonsil, spleen	Formalin (10:1)	
<b>Bovine babesiosis</b>			
Bovine	Serum	Red top tube (10 ml)	NVSL Ames
	Whole blood	Purple top tube (10 ml)	
<b>Bovine spongiform encephalopathy</b>			
Bovine	Minimum for surveillance: fresh obex	50 ml tube or Whirl-pak® or Ziploc® bag	NAHLN
	½ brain fresh tissue in formalin	Formalin (10:1)	NVSL Ames
	If rabies is on your differential diagnosis, check with your state laboratory for sample specifications for rabies testing.		
<b>Classical swine fever</b>			
Swine	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Dacron®/polyester swab: oral/tonsil	TBTB (3 ml)	
	Tonsil scraping (with teaspoon)	TBTB (3 ml)	
	Fresh Tissue: tonsil, gastrohepatic LN, inguinal LN, mesenteric LN, spleen	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues including brain	Formalin (10:1)	

SPECIES	SPECIMEN	MEDIUM	LAB
<b>Contagious agalactia</b>			
	Joint fluid	Sterile tube or red top tube	NVSL FADDL
	Tissue: lung	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Contagious bovine pleuropneumonia</b>			
	Joint fluid	Sterile tube or red top tube	
	Fresh tissue: lung	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Contagious caprine pleuropneumonia</b>			
	Pleural fluid	Sterile tube or red top tube	NVSL FADDL
	Fresh tissue: lung	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Contagious equine metritis</b>			
Equine	Serum	Red top tube (10 ml)	NVSL Ames
	Swabs for culture	Call NVSL Ames for instructions	
<b>Dourine</b>			
Equine	Serum	Red top tube (10 ml)	NVSL Ames
<b>Equine piroplasmiasis</b>			
Equine	Serum	Red top tube (10 ml)	NVSL Ames
	Whole blood	Purple top tube (10 ml)	



SPECIES	SPECIMEN	MEDIUM	LAB
<b>Foot-and-mouth disease</b>			
Bovine Swine Ovine Caprine Camelids Cervid (including cloven-hoofed zoo animals and wildlife)	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Vesicular tissue (vesicular epithelium - as large as practical)	Whirl-pak® or Ziploc® bags or Tube with 3 ml TBTB	
	Vesicular fluid	Sterile tube or red top tube (undiluted) or TBTB (50:50)	
	Dacron®/polyester swabs: lesion, nasal, oral	TBTB (3 ml)	
	Esophageal-pharyngeal fluid (collected by probang for identification of FMD-seropositive carriers)	TBTB (50:50)	
	Crusts/scabs	Tube or Whirl-pak® or Ziploc® bags, no media	
	Fresh tissue (esp. lymph node)	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Glanders</b>			
Equine	Serum	Red top tube (10 ml)	NVSL Ames
	Whole blood	Purple or green top tube (10 ml)	
	Swabs for culture	Call NVSL Ames for instructions	
<b>Heartwater<sup>4</sup></b>			
Bovine Ovine Caprine Cervid	Serum	Red top tube (10 ml)	NVSL Ames
	Whole blood	Purple top tube (10 ml)	
	Brain smear	Air dry before packaging. If receipt at lab to be > 24 hrs, fix with methanol before shipping. Note on paperwork if slide is fixed.	
	Fresh tissue: lymphoid tissues, brain, kidney	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues: lymphoid tissues, brain, kidney	Formalin (10:1)	

SPECIES	SPECIMEN	MEDIUM	LAB
<b>Highly pathogenic avian influenza</b>			
Avian	Serum	Red top tube (2 ml)	NVSL Ames
	Tracheal swab	Dacron®/polyester swab in BHI broth (3.0 ml) (can pool up to 5 swabs); do not pool tracheal and cloacal swabs together	
	Cloacal swab	Dacron®/polyester swab in BHI broth (3.0 ml) (can pool up to 5 swabs); do not pool tracheal and cloacal swabs together	
	Fresh tissue (liver, spleen, kidney, lung, terminal intestine, bursa)	For each bird: 1 Whirl-pak® or Ziploc® with intestine, 1 Whirl-pak® or Ziploc® with pooled lung, liver, spleen, kidney	
<b>Lumpy skin disease</b>			
Bovine	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Skin biopsy	TBTB (3 ml)	
	LN aspirate	TBTB (3 ml)	
	Fresh tissues: skin, LN, lung	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Malignant catarrhal fever</b>			
Bovine (Including wild ruminants)	Serum	Red top tube (10 ml)	NVSL Ames or NVSL FADDL (if vesicular lesions)
	Whole blood	Purple top tube (10 ml)	
	Fresh tissue: spleen, cornea	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	

<sup>4</sup>NVSL FADDL tests import cases from FMD-endemic countries.

SPECIES	SPECIMEN	MEDIUM	LAB
<b>Newcastle disease-exotic</b>			
Avian	Serum	Red top tube (2 ml)	NVSL Ames
	Tracheal swab	Dacron®/polyester swab in BHI broth (3 ml) (can pool up to 5 swabs); do not pool tracheal and cloacal swabs together	
	Cloacal swab	Dacron®/polyester swab in BHI broth (3 ml) (can pool up to 5 swabs); do not pool tracheal and cloacal swabs together	
	Fresh tissue: liver, spleen, kidney, lung, terminal intestine	For each bird: 1 Whirl-pak® or Ziploc® with intestine, 1 Whirl-pak® or Ziploc® with pooled lung, liver, spleen, kidney	
<b>Porcine epidemic diarrhea</b>			
Swine	Serum	Red top tube (10 ml)	NVSL Ames
	Fresh tissue: feces, ileum, jejunum, duodenum, multiple sections of large intestine	Separate Whirl-pak® or Ziploc® bags	
<b>Peste des petits ruminants</b>			
Ovine Caprine (Including wild small ruminants)	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Dacron®/polyester swab: nasal, ocular, oral, fecal	TBTB (3 ml)	
	Fresh tissue: bronchial LN, mesenteric LN, lung, spleen, intestinal mucosa	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Rabbit viral hemorrhagic disease</b>			
Rabbit	Serum	Red top tube (5 ml)	NVSL FADDL
	Fresh tissue: liver	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	

SPECIES	SPECIMEN	MEDIUM	LAB
<b>Rift Valley fever</b>			
Ovine	Serum	Red top tube (10 ml)	NVSL FADDL
Bovine Caprine Camelid	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Fresh tissue: liver, spleen, brain, placenta	Separate Whirl-pak® or Ziploc® bag	
	Set of tissues	Formalin (10:1)	
<b>Schmallenberg virus (SBV)</b>			
Ovine Caprine Bovine	Serum (fetal and adult; fetal cases should be accompanied by dam's serum)	Red top tube (10 ml)	NVSL Ames and NVSL FADDL
	Whole blood (fetal and adult dam)	Purple top tube (10 ml)	
	Fresh fetal tissue: placenta, amniotic fluid, brain (preferred), heart blood	Tissue separated in Whirl-pak® or Ziploc® bag(s)	
<b>Sheep and goat pox</b>			
Ovine Caprine	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Fresh tissues: skin, LN, lung	Separate Whirl-pak® or Ziploc® bags	
	Skin biopsy	TBTB (3 ml)	
	LN aspirate	TBTB (3 ml)	
	Set of tissues	Formalin (10:1)	
<b>Swine vesicular disease</b>			
Swine	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Vesicular tissue (vesicular epithelium - as large as practical)	Tube or TBTB (3 ml)	
	Vesicular fluid	Sterile tube or red top tube (undiluted) or TBTB (50:50)	
	Dacron®/polyester swab: lesion, nasal, fecal	TBTB (3 ml)	
	Fresh tissue: skin, tongue and mucosa with lesions	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Teschen/talfan</b>			



SPECIES	SPECIMEN	MEDIUM	LAB
Swine	Serum	Red top tube (10 ml)	NVSL Ames and/ or NVSL FADDL (if CSF in differential diagnosis)
	Fresh tissue: brain, spinal cord, lung, tonsil, spleen	Separate Whirl-pak® or Ziploc® bags	
	Set of fixed tissues: brain, spinal cord, lung, tonsil, spleen	Formalin (10:1)	
<b>Venezuelan equine encephalomyelitis</b>			
Equine	Serum	Red top tube (5 ml)	NVSL Ames
	Whole blood	Green top tube (5 ml) for virus isolation Purple top tube (5 ml) for PCR	
	Brain, cerebrospinal fluid	Whirl-pak® or Ziploc® bag (brain) and red top tube (CSF)	
<b>Vesicular exanthema of swine</b>			
Swine	Serum	Red top tube (10 ml)	NVSL FADDL
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Vesicular tissue (vesicular epithelium - as large as practical)	Whirl-pak® or Ziploc® bags or TBTB (3 ml)	
	Vesicular fluid	Sterile tube or red top tube (undiluted) or TBTB (50:50)	
	Dacron®/polyester swab: lesion, nasal, oral	TBTB (3 ml)	
	Esophageal-pharyngeal fluid (collected by probang)	TBTB (50:50)	
	Fresh tissues: skin, tongue and mucosa with lesions	Separate Whirl-pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
<b>Vesicular stomatitis</b>			

SPECIES	SPECIMEN	MEDIUM	LAB
Bovine Swine Ovine Caprine Equine Camelid	Serum	Red top tube (10 ml)	NVSL FADDL (Ruminant and Swine) and NVSL Ames (Equine)
	Whole blood (not for equine)	Green top tube (10 ml) Purple top tube (10 ml)	
	Vesicular fluid	Sterile tube or red top tube with TBTB (50:50)	
	Vesicular tissue (vesicular epithelium - as large as practical)	Separate Whirl-pak® or Ziploc® bags or 5 ml tube with TBTB per tissue if sending in media	
	Dacron®/polyester swab: lesion, nasal, oral	TBTB (3 ml)	
	Esophageal-pharyngeal fluid (probang) (not required for equine)	TBTB (50:50)	
	Fresh tissue: skin, tongue and mucosa with lesions	Separate Whirl-pak® or Ziploc® bags	
	Crusts/scabs	TBTB (enough to moisten scab/crust)	
	Set of tissues (not for equine)	Formalin (10:1)	



## Collecting Tissue Samples

Tissue samples for formalin: at a minimum, collect 1 cm thick sections of any lesions, trachea, esophagus, heart, lung, thoracic lymph nodes, liver, spleen, kidney, abdominal lymph nodes, bladder, stomach, duodenum, jejunum, ileum, colon, and bursa for avian species.

If neurologic signs, collect brain, cut in half along midline and submit as fresh and fixed.

If small lesion, put entire lesion in Whirl-pak® or Ziploc® for virology, NOT in formalin.

DO NOT FREEZE SAMPLES - Submit cool on frozen gel packs.

## 6 SWINE PROCEDURES

### Blood Collection (Jugular Vein)



#### SPECIAL EQUIPMENT AND SUPPLIES

- ❑ Restraint equipment such as a snare
- ❑ 18 gauge × 1.5 inch or longer needles or Vacutainer® needles
- ❑ 10 ml - 50 ml syringe
- ❑ 10 ml red, green, and purple top Vacutainer® tubes
- ❑ Approved shipping container for sample submission



#### PROCEDURE



1 Restrain the pig in a hog holder. Back the pig against a wall and position the neck for jugular access.



2 The jugular vein is located visually by drawing an imaginary line between the jugular groove up through the apex of the opposite scapula.



3 Insert the needle (with attached syringe) into the jugular vein, pushing the needle in all the way up to the hub.



4 Pull back on the plunger, filling the syringe with blood. Collect a full 10 ml of blood, since it is ideal to submit 2.0 ml of clear, non-hemolyzed, separated serum per animal.



#### PROCEDURE VIDEO

To view a video demonstrating this procedure, scan the graphic code to the left with a QR code reader. Doing so will open the video link below on your device.

(<http://go.usdatraining.com/swineblood>)



## SPECIAL EQUIPMENT AND SUPPLIES

- ❑ Restraint equipment such as a snare
- ❑ Dacron®/polyester nasal swab
- ❑ Sample tube containing 3 ml of TBTB
- ❑ Approved shipping container for sample submission

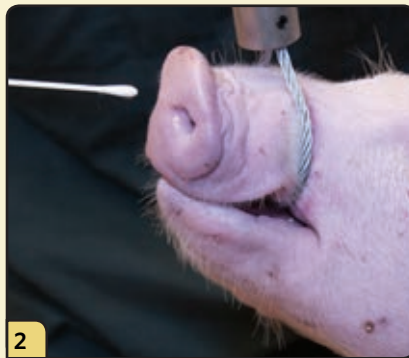


## PROCEDURE



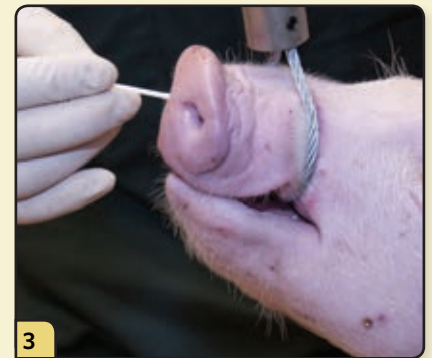
1

Restrain the pig with the head positioned upward to allow easy access to the nasal cavity.



2

Insert a sterile Dacron®/polyester swab into the nasal cavity and make sure to reach the nasal turbinate level of the nose. To prevent sample contamination, avoid touching the skin as you enter the nasal cavity.



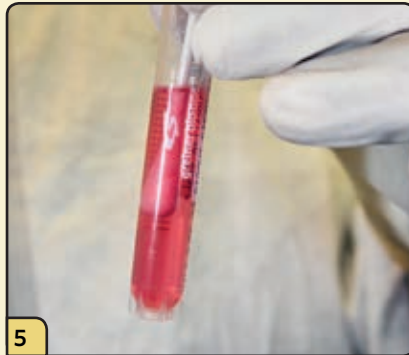
3

Gently swab the surface of the nasal mucosa using a circular and back and forth motion, covering as much of the nasal mucosal surface as possible. Repeat swab in the other nostril.



4

The objective is to collect nasal mucosal secretions and surface epithelium. Therefore, do not scrape too hard as this might contaminate the sample with blood.



5

Place the swab with the sample into the tube containing 3 ml of TBTB.



6

Press the swab against the wall to wash out the sample, then leave the swab in the tube for submission. The media tube shown above is a 5 ml tube containing 3 ml TBTB.





## SPECIAL EQUIPMENT AND SUPPLIES

- ❑ Restraint equipment such as a snare
- ❑ Speculum
- ❑ Sterile, long-handled spoon (facilitates collection in market age or larger swine with longer palate)
- ❑ Dacron®/polyester swab
- ❑ Sample tube containing 3 ml of TBTB
- ❑ Approved shipping container for sample submission



## PROCEDURE



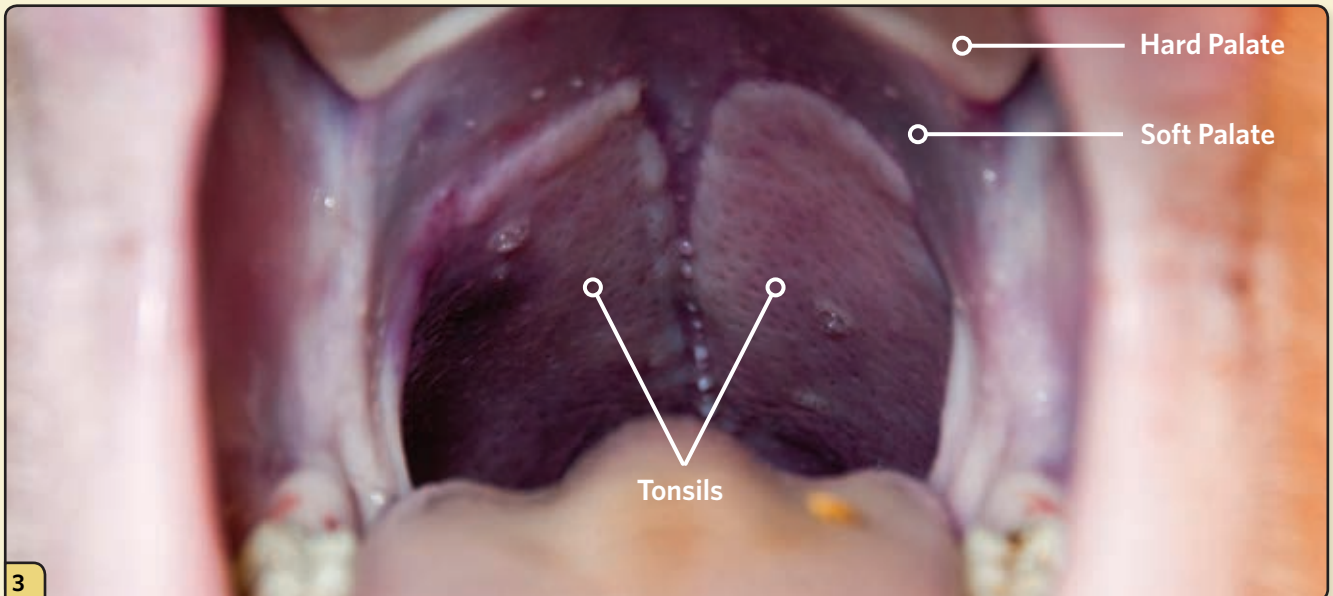
1

Restrain the pig with the head positioned upward to allow easy access to the oral cavity.



2

Insert the speculum into the mouth, and then position it to prop open the mouth.



3

○ — Hard Palate

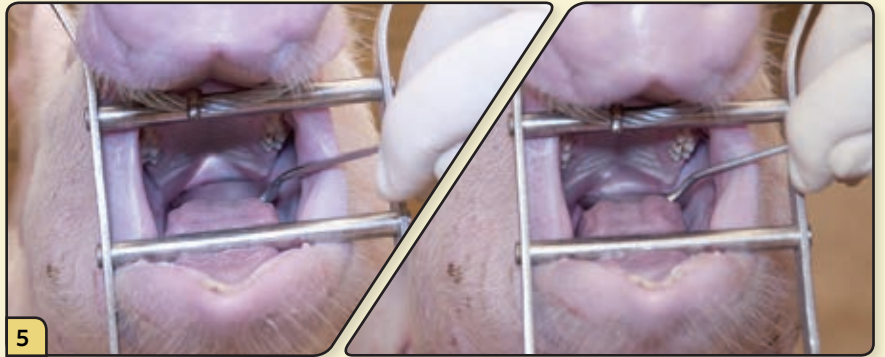
○ — Soft Palate

○ — Tonsils

The tonsils of the soft palate are located caudal to the hard palate. The tonsils can be recognized by the pitted appearance of their surface.



4 Insert the spoon, bowl side up, and position it beneath the tonsil.



5 Scrape the bowl of the spoon over the surface of the tonsils in a back-to-front motion, 3 or 4 times. This will cause the tonsil to exude a mucosal excretion from the crypts, sometimes as much as 1-2 ml. Do not scrape too hard since drawing blood is not desirable.



6 Remove the spoon from the mouth, taking care to avoid dragging the spoon full of sample across the hard palate.



7 With a Dacron®/polyester swab, collect the specimen from the scraping onto the swab.



8 Place the swab into the tube containing 3 ml of TBTB.



### PROCEDURE VIDEO

To view a video demonstrating this procedure, scan the graphic code to the left with a QR code reader. Doing so will open the video link below on your device.

(<http://go.usdatraining.com/tonsil>)

## 7 BOVINE PROCEDURES

### Blood Collection (Jugular Vein)



#### SPECIAL EQUIPMENT AND SUPPLIES

- ❑ Restraint equipment such as a cattle chute and rope halter
- ❑ 18 gauge × 1.5 inch or longer needles or Vacutainer® needles
- ❑ 10 ml - 50 ml syringe
- ❑ 10 ml red, green, and purple top Vacutainer® tubes
- ❑ Approved shipping container for sample submission



#### PROCEDURE



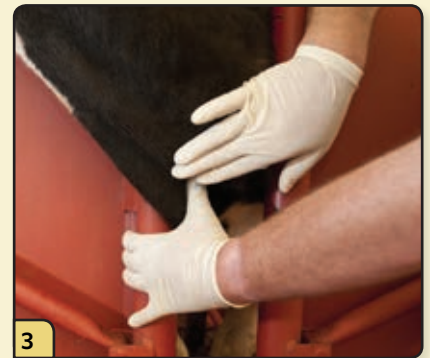
1

Restrain the animal using a cattle chute, as shown here, or a similar method.



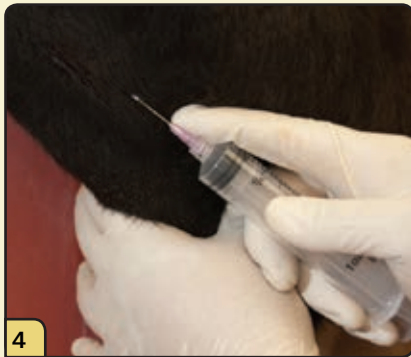
2

Using a rope halter, tie the head securely to prevent movement. Note, do not keep the head tied for long periods as this can lead to complications.



3

Using your non-dominant hand, apply pressure over the jugular groove to distend the vein with blood. After several seconds, the vein will distend and a fluid line can be palpated, if necessary, to aid in localizing the vein.



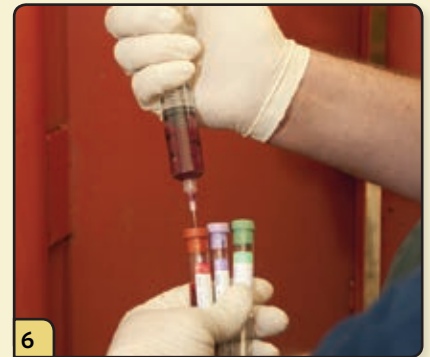
4

With the bevel of the needle facing outward, insert the needle all the way up to the hub. If preferred, a Vacutainer™ tube can be used in place of a needle and syringe



5

Pull back on the plunger, filling the syringe with blood. Collect a full 10 ml of blood, since it is ideal to submit 2.0 ml of clear, non-hemolyzed, separated serum per animal.



6

Transfer the blood to the appropriate Vacutainer® tubes. Do not push the plunger; let the vacuum work to prevent hemolysis. Gently invert the purple- and green-top tubes.



#### PROCEDURE VIDEO

To view a video demonstrating this procedure, scan the graphic code to the left with a QR code reader. Doing so will open the video link below on your device.

(<http://go.usdatraining.com/bovineblood>)



## Blood Collection (Tail Bleeding)



## SPECIAL EQUIPMENT AND SUPPLIES

- ❑ Restraint equipment such as a cattle chute and rope halter
- ❑ 18 gauge × 1.5 inch or longer needles or Vacutainer® needles
- ❑ 10 ml - 50 ml syringe
- ❑ 10 ml red, green, and purple top Vacutainer® tubes
- ❑ Approved shipping container for sample submission



## PROCEDURE



1 You can use either a Vacutainer® needle or a syringe and needle for a tail bleed. Restrain the animal to prevent it from moving away during the procedure. Raise the tail as vertically as possible with your non-dominant hand.



2 Approximately 3 to 6 inches from the base of the tail, locate a depression lying in the ventral mid-line of the tail. In this depression lies the middle coccygeal artery and vein. Wipe the underside of the tail clean, removing any fecal material that may be present.



3 Place the 18-gauge needle perpendicular to the tail, and direct the needle straight in, puncturing the skin. Insert the needle  $\frac{1}{2}$  to  $\frac{3}{4}$  inches deep.



4 If you have gone too far and hit bone, pull back on the needle. You might need to manipulate the needle and syringe to find blood.



5 If using a syringe, fill the Vacutainer® tube with the blood.



6 Mark the blood tube with the animal ID and place the blood tubes in a blood-tube box to prevent breakage. Place the blood-tube box in an approved shipping box with an ice pack. Make sure the VS Form 10-4 is filled out appropriately.





## SPECIAL EQUIPMENT AND SUPPLIES

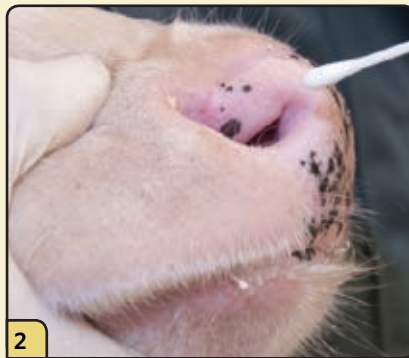
- ❑ Restraint equipment such as a cattle chute
- ❑ Dacron®/polyester nasal swab
- ❑ Sample tube containing 3 ml of TBTB
- ❑ Approved shipping container for sample submission

## PROCEDURE



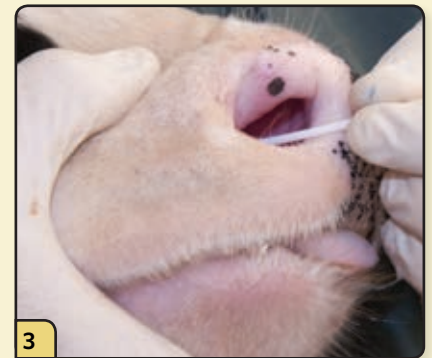
1

Restrain the animal using a cattle chute, as shown here, or a similar method.



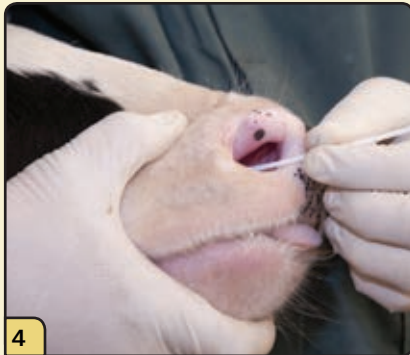
2

Insert a sterile Dacron®/polyester swab into the nasal cavity. To prevent sample contamination, avoid touching the skin as you enter the nasal cavity.



3

Gently swab the surface of the nasal mucosa using a circular and back and forth motion, covering as much of the nasal mucosal surface as possible. Repeat swab in the other nostril.



4

The objective is to collect nasal mucosal secretions and surface epithelium. Therefore, do not scrape too hard as this might contaminate the sample with blood.



5

Place the swab with the sample into the tube containing TBTB.



6

Press the swab against the wall to wash out the sample, then leave the swab in the tube for submission.



## SPECIAL EQUIPMENT AND SUPPLIES

- Necropsy knife
- Surgical scissors
- Bone saw and blades
- Hammer
- Chisel
- Forceps
- Screw-top plastic tubes (50 ml)
- Approved shipping container for sample submission



## PROCEDURE



1

To collect an obex sample, begin by removing the head. Make a cut ventral and caudal to the ramus of the mandible.



2

Move the head up and down to locate the junction between the 1st cervical vertebrae and the occipital junction by digital palpation.



3

Insert the knife into the tissue over the C1-occipital junction.



4

Rotate the blade ventrally and cut the soft tissue attachments.



5

Continue to dissect dorsally through the soft tissues until the foramen magnum is exposed.



6

Transect the spinal cord.

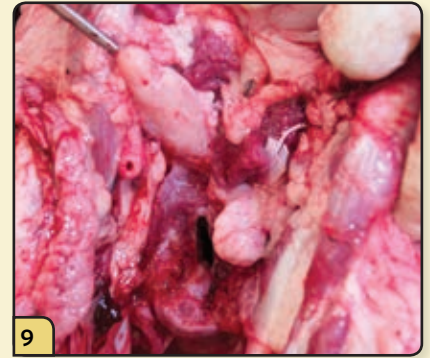




7 Make a cut between the 1st cervical vertebra and the occipital bone of the skull.



8 Continue to cut the soft tissues until the head is completely disarticulated.



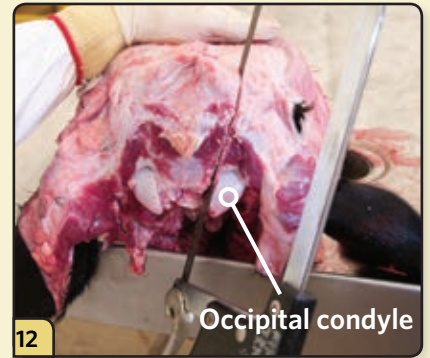
9 Examine the retropharyngeal lymph nodes, located ventral to the occipital condyles and lateral to the oropharynx.



10 To remove the brain for testing, make a midline cut through the skin of the forehead.



11 Remove the skin to expose the underlying skull.



12 To facilitate opening the skull, the head can be placed on an elevated table. Using a bone saw, make the first cut medial to the occipital condyle.



13 Make the second cut on the opposite side



14 The third cut is an extension of the first and should be made in a caudal to rostral direction, toward the medial canthus.



15 The fourth cut is made on the opposite side in a caudal to rostral direction, toward the medial canthus.



16

The final cut connects the two lateral cuts caudal to the frontal sinus. Note that the exact location will be age-dependent.



17

Insert the chisel into the cuts to separate the bone.



18

Reflect the calvaria caudally to expose the brain.



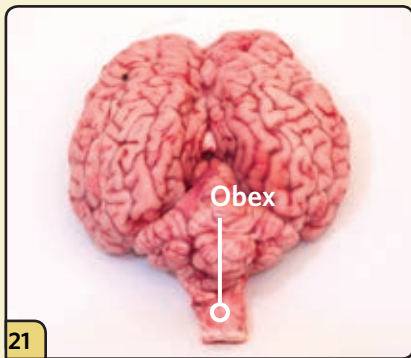
19

Use forceps and scissors to cut away the meninges.



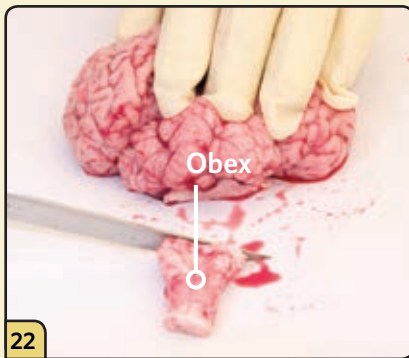
20

Use a combination of gentle blunt dissection and transection of the cranial nerves to remove the brain.



21

Place the brain on a clean work surface. Identify the obex, which is the V-shaped structure located beneath the cerebellum, where the 4th ventricle narrows into the spinal cord.



22

Remove the obex by making a transverse cut rostral to the obex.



23

Place the fresh obex in a labeled tube for laboratory submission. It is best to use a 50 ml conical tube.





Make a midline sagittal cut through the cerebrum and cerebellum to divide the brain in half.



Submit one half as fresh tissue for microbiology and the other half fixed in formalin for histopathology.

*\* When testing for rabies, consult with your state laboratory for sample specifications.*



### Special Considerations

- In order for a sample to be tested for BSE, the appropriate brainstem sample (including the obex) must be submitted with little contamination or postmortem decomposition.
- Samples that are taken from the wrong location or that are significantly autolyzed are not testable and should not be submitted.
- However, samples should be collected and submitted from ALL cattle condemned by FSIS upon antemortem inspection for CNS signs and rabies, and from all cattle that are highly suspicious for BSE, regardless of the apparent tissue quality.

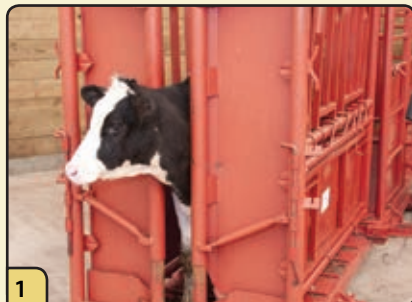


## SPECIAL EQUIPMENT AND SUPPLIES

- Restraint equipment such as a cattle chute and rope halter
- Cattle probang
- Plastic screw-top tube containing TBTB transport media
- Approved shipping container for sample submission



## PROCEDURE



1

Restrain the animal using a cattle chute, as shown here, or a similar method.



2

Stand on one side of the animal and wrap your arm up and over the head.



3

Insert fingers into the diastoma (between the teeth) to safely hold the mouth open.



4

The probang will be inserted into the esophagus to the level shown.



5

Insert the probang into the oral cavity. Feed the probang down to the appropriate level of the esophagus. Then push the probang in and out several inches at a time to collect a sample.



6

Remove the probang, keeping the head upright to prevent sample loss. Transfer the sample to a plastic screw top-tube.



7

Add appropriate transport media to a volume equal to that of the sample. Assess color of media. If the sample turns yellow (too acidic) or purple (too basic), the sample should be repeated because the FMDV will be inactivated. Cap and label the sample for submission.



8



## PROCEDURE VIDEO

To view a video demonstrating this procedure, scan the graphic code to the left with a QR code reader. Doing so will open the video link below on your device.

(<http://go.usdatraining.com/probang>)

## 8 SHEEP PROCEDURES

## Blood Collection &amp; Serum Submission



## SPECIAL EQUIPMENT AND SUPPLIES

- ❑ 18 gauge × 1.5 inch or longer needles or Vacutainer® needles
- ❑ 10 ml red, green, and purple top Vacutainer® tubes
- ❑ 10 ml - 50 ml syringe
- ❑ Approved shipping container for sample submission



## PROCEDURE



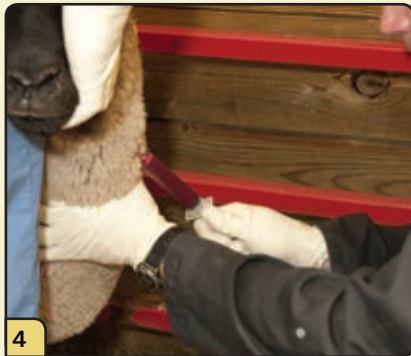
1  
Restrain the animal for blood collection. A common method is to have an assistant back the sheep into a corner of the barn.



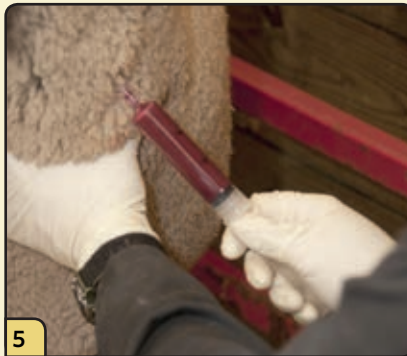
2  
Have the assistant restrain the head and expose the jugular vein.



3  
Using your non-dominant hand, apply pressure over the jugular groove to distend the vein with blood. In heavy coated animals, you can palpate the vein to verify its exact location.



4  
With the bevel of the needle facing outward, insert it into the jugular vein all the way up to the hub.



5  
Pull back on the plunger, filling the syringe with blood. Collect a full 10 ml of blood, since it is ideal to submit 2.0 ml of clear, non-hemolyzed, separated serum per animal.



6  
Remove the needle and syringe and transfer the blood to the appropriate Vacutainer® tubes. Gently invert the purple- and green-top tubes.



## PROCEDURE VIDEO

To view a video demonstrating this procedure, scan the graphic code to the left with a QR code reader. Doing so will open the video link below on your device.  
(<http://go.usdatraining.com/ovineblood>)





## SPECIAL EQUIPMENT AND SUPPLIES

- Sheep probang
- Plastic screw-top tube containing TBTB transport media
- Approved shipping container for sample submission



## PROCEDURE



1

Restrain the animal for the probang procedure. A common method is to have an assistant back the sheep into a corner of the barn.



2

Use your non-dominant hand to elevate and immobilize the head.



3

The probang will be inserted into the esophagus to the level shown.



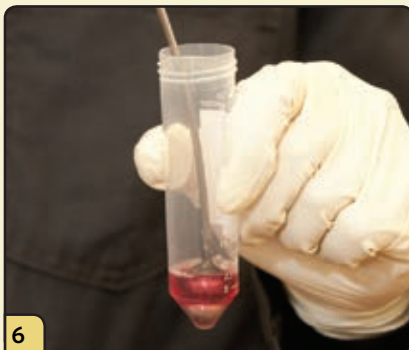
4

Use your thumb to open the mouth and insert the probang into the oral cavity. Feed the probang down to the appropriate level of the esophagus. Then push the probang in and out several inches at a time to collect a sample.



5

Remove the probang, which should now contain the sample.



6

Insert the probang into a screw-top tube containing appropriate transport media and swirl to mix the contents.



7

Withdraw the probang to the mouth of the tube and tip it to empty the remains of the sample into the tube. Ensure that the tube contains a 1:1 ratio of sample to media.



8

Cap the sample and label it for submission.



## 9 AVIAN PROCEDURES

### Blood Collection

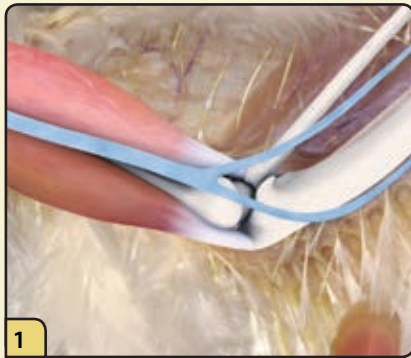


#### SPECIAL EQUIPMENT AND SUPPLIES

- 3 or 6 ml syringes
- 20 - 25 gauge needles
- Gauze
- 70% alcohol
- Red top Vacutainer® tubes
- Approved shipping container for sample submission



#### PROCEDURE



1

In adult chickens, blood is most commonly obtained from the brachial vein in the wing.



2

Place the chicken on a steady surface, like a table.



3

Using your non-dominant hand, place your middle finger along the chicken's spine.



4

Place your other fingers under each wing.



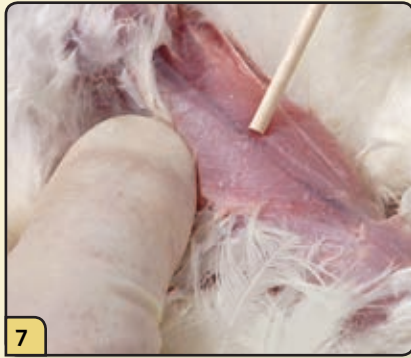
5

Lift the chicken by the wings and grasp both legs in your other hand.



6

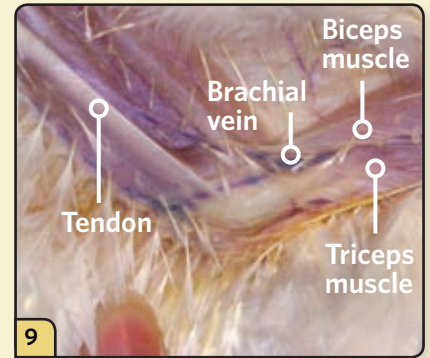
Turn the chicken on its side with the legs facing you. Lay your arm over the neck and press the neck lightly against the table.



Expose the brachial vein, located in the ventral humeral region.



If necessary, you can pluck a few feathers to improve visualization.



The vein is located in the V-shaped depression between the biceps and triceps muscles. The tendon of the pronator muscle should be visible running across the V.



Disinfect the area by wiping it with an alcohol swab.



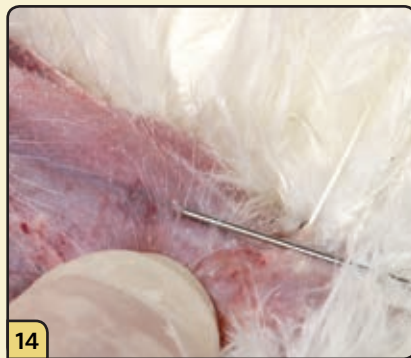
Use your thumb to stabilize the vein and apply pressure to distend it with blood.



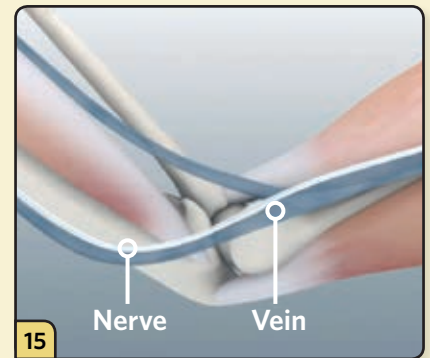
You will use your dominant hand to bleed the chicken. Pull back on the plunger to break the seal. This will help prevent the vein from collapsing when you withdraw the blood.



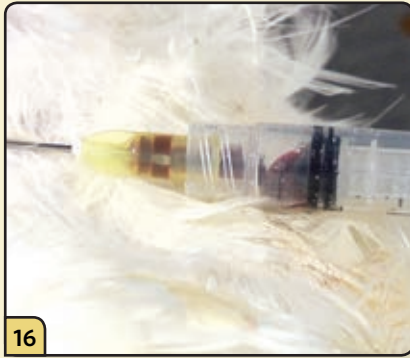
Rotate the needle so that the bevel is facing up.



Insert the needle through the skin, parallel to the vein, with the needle pointing toward the tip of the wing.



Take care to avoid the adjacent nerve.



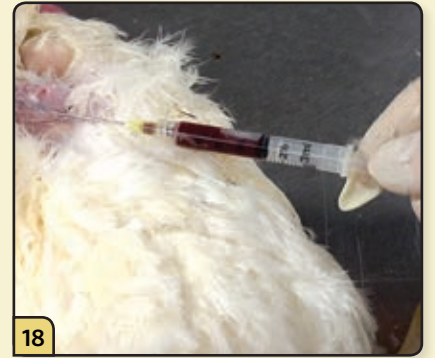
16

Slowly reposition the tip of the needle until you see a flashback of blood appear in the base of the syringe.



17

Gently pull back on the plunger and slowly fill the syringe with blood. Avoid excess suction as this can collapse the vein.



18

If blood stops flowing, rotate the needle to move the beveled opening off the vessel wall. Collect 3 to 4 ml of blood.



19

If a hematoma develops, remove the needle and try again on the opposite wing, using a fresh needle and syringe.



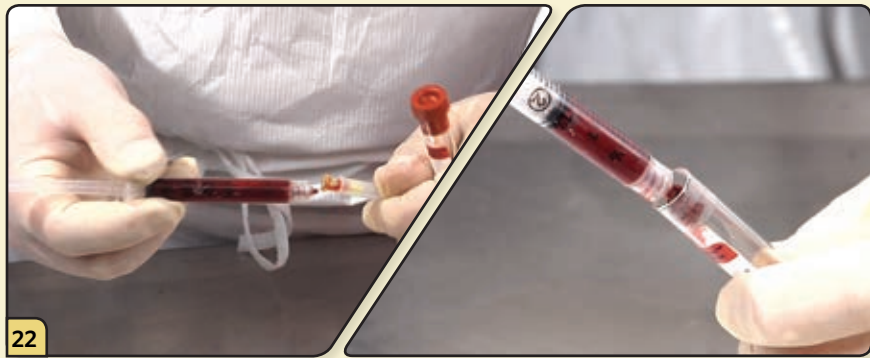
20

Once finished, withdraw the needle and apply pressure over the puncture site until clotting occurs.



21

Be aware that chickens are prone to developing hematomas no matter how careful you are.



22

Transfer the blood sample directly from the syringe to a blood tube without using a needle.



23

Lastly, make certain that all the tubes are properly labeled with the pertinent information, such as farm name, flock number, and date.





## SPECIAL EQUIPMENT AND SUPPLIES

- Dacron®/polyester nasal swab
- Sample tube containing 3 ml BHI transport media
- Approved shipping container for sample submission



## PROCEDURE



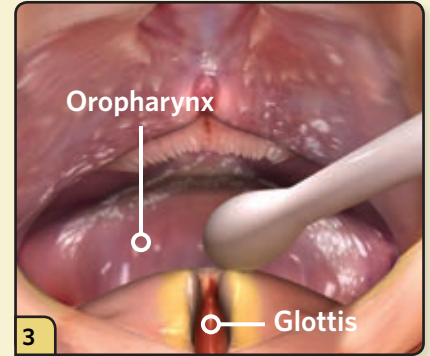
1

Open the beak to expose the oropharyngeal cavity for swabbing.



2

Insert the swab in and out of the choana (located on the dorsal palate) several times to retrieve as much mucus as possible.



3

Swab around the caudal oropharynx, and then insert the swab into the opening of the glottis to swab the proximal trachea.



4

Place the swab with the sample into the tube containing appropriate transport media and stir.



5

Press the swab against the wall to wash out the sample, and then leave the swab in the tube for submission.



6

Cap the sample and label it for submission.





## SPECIAL EQUIPMENT AND SUPPLIES

- Dacron®/polyester nasal swab
- Sample tube containing 3 ml BHI transport media
- Approved shipping container for sample submission



## PROCEDURE



1

Insert the swab into the vent (the terminal opening of the GI tract).



2

Rotate the swab around the cloaca several times to collect a sample.



3

Place the swab with the sample into the tube containing the transport media and stir. Press the swab against the wall to wash out the sample, and then leave the swab in the tube for submission.



## General Guidelines for Submitting Swab Samples for AI and END

- Do not put more than 5 swabs (i.e., from 5 different birds) into one tube.
- Do not mix swab samples from more than one species into one tube (e.g., avian and swine).
- Do not mix samples from different body regions into one tube (e.g., tracheal and cloacal).

## 1 NECROPSY EXAMINATION OF CATTLE



1

Position the animal in left lateral recumbency so that the rumen is on the “down” side.



2



Perform an external examination. Look for vesicular lesions on the nostrils, lips, tongue, gums, feet, and claws.



3

Elevate the right forelimb and insert the knife into the axillary region.



4

Cut the soft tissues to free the limb. To prevent the knife from becoming dull, cut from the subcutaneous to the external side to minimize cutting through the hair.



5

Reflect the forelimb dorsally.



6 Elevate the right hind limb and insert the knife into the inguinal region.



7 Cut through the soft tissues until you expose the head of the femur. Open the coxofemoral joint and transect the ligament of the head of the femur.



8 Reflect the hind limb dorsally.



9 Connect the hind limb and forelimb cuts ventrally.



10 Continue to undermine the subcutaneous tissue until the skin flap can be reflected dorsally.



11 Open the abdominal cavity by incising along the caudal edge of the last rib.



12 Cut through the muscle until you expose the peritoneum.



13 Cut through the peritoneal lining, being careful to avoid cutting visceral structures.



14 Check the diaphragm for cranial doming, then incise it and listen for the loss of negative pressure as air penetrates the thoracic cavity. Open the diaphragm and look for effusion and adhesions in the thoracic cavity.





15

The thoracic wall can be removed using a variety of techniques.



16

Rib cutters can be used to isolate and cut the ribs ventrally at the sternum and dorsally at the vertebrae.



17

Once the ribs are cut, they can be removed *en bloc*. Alternative methods to remove the ribs include the use of a bone saw or ax, or by isolating each rib with a knife, fracturing it, and reflecting it dorsally.



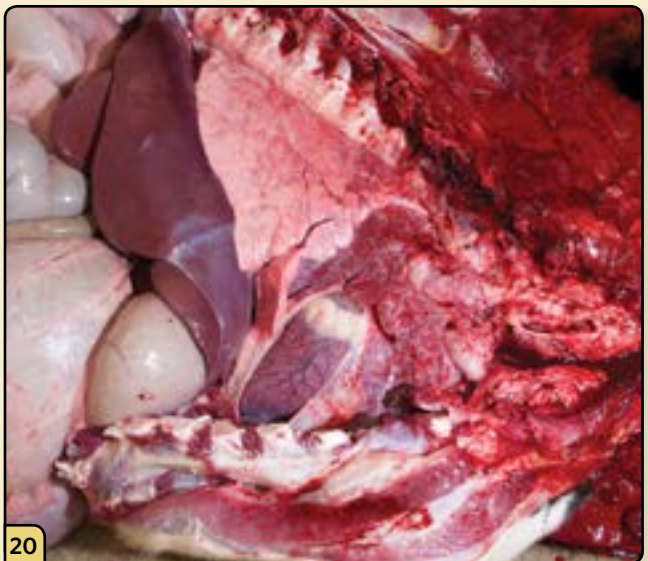
18

The thoracic wall can be set aside and used as a clean work surface on which to prepare tissue samples.



19

Cut the pericardium to expose the heart for inspection.



20

Examine the thoracic viscera *in situ*.





21

Open the abdominal cavity.



22

If necessary, tear or cut the omentum to expose the abdominal viscera.



23

Examine the abdominal viscera *in situ*. Before handling the organs, stop to collect all “clean” tissue samples for microbiology and histopathology. At a minimum, collect samples from lung, liver, spleen, kidney, and lymph nodes, as well as samples of any lesions present.



24

Extend the cut from the axilla up along the ventral neck.



25

Continue the cut between the mandibles.



26

To remove the pluck, begin by cutting along the medial aspect of both mandibles to free up the tongue.



27

Pull the tongue ventrally and caudally to expose the oral cavity for inspection.



28

Cut the hyoid bones bilaterally to disarticulate the hyoid apparatus.



29

Retract the tongue and cut the attachments along the trachea and esophagus.





30

Continue to remove the trachea and esophagus, working from the oropharynx down to the level of thoracic inlet.



31

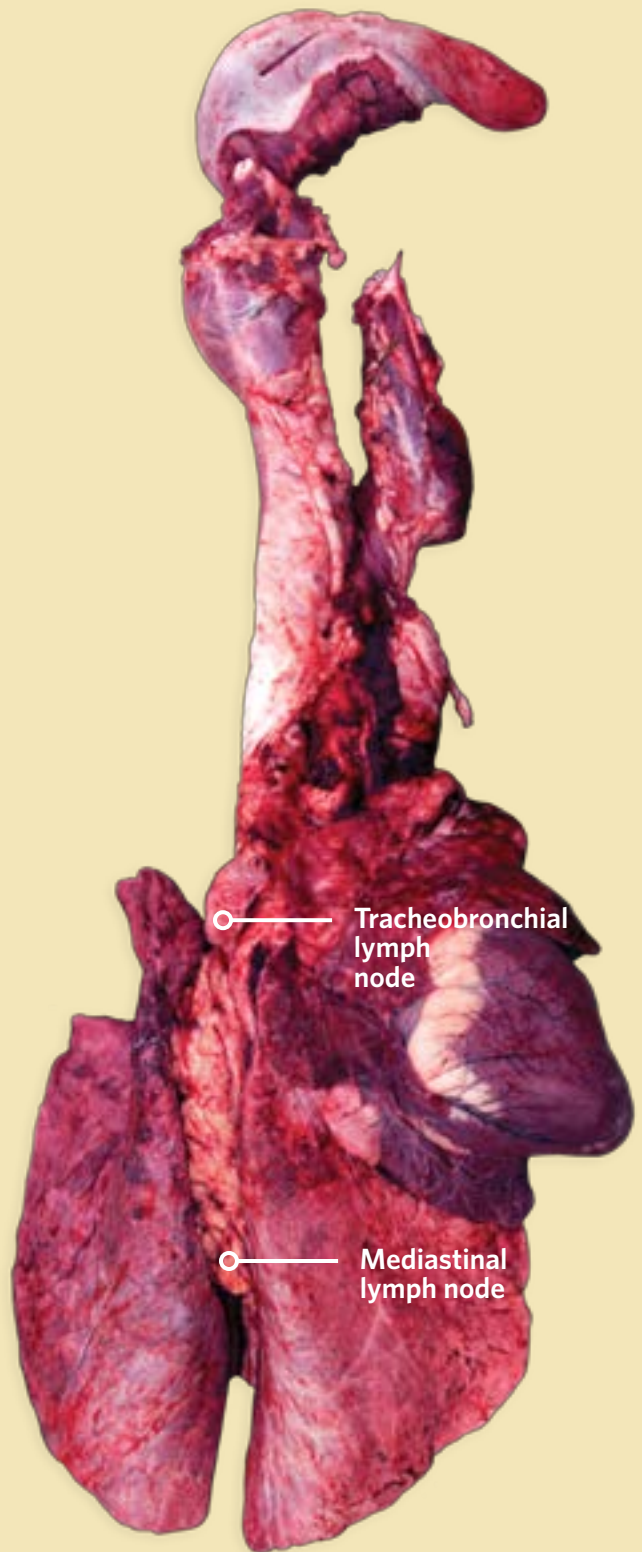
Dissect around the lungs and heart to free up the pluck.



32

Remove the pluck and set it aside for a more detailed examination.

33 Identify the tracheobronchial lymph node, located on the trachea at the first tracheal bifurcation, and the mediastinal lymph node, distributed within the mediastinum.





34

Incise and examine the lymph nodes.



35

Collect sections of the lymph node for microbiology and histopathology.



36

Open and examine the esophagus.



37

Open and examine the trachea.





38

Palpate the entire lung field to assess for any abnormalities.



39

Incise the lungs by making a series of "bread loaf" slices across the entire lung field. Palpate and examine each slice, assessing for masses and consolidation.



40

Open and evaluate the large airways of the bronchi.



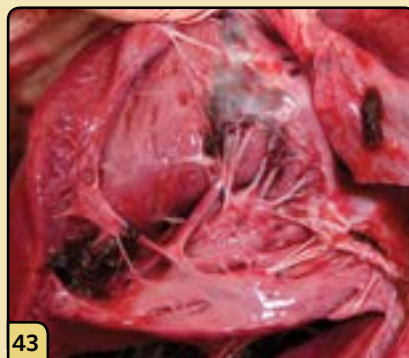
41

Collect a section of lung.



42

Open the left side of the heart by cutting through the free wall of the left atria and left ventricle.



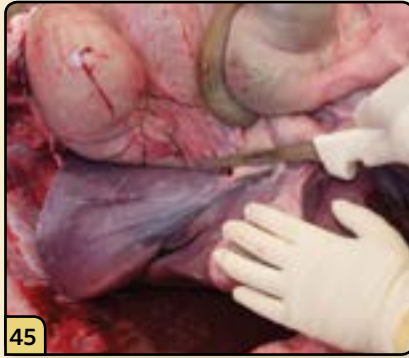
43

Follow the course of blood flow from atria to ventricle, evaluating the chambers, valves, and myocardial walls.



44

Repeat the process on the right side of the heart.



45

Cut the attachment of the liver and set the liver aside for a more detailed inspection.



46

Make a series of "bread loaf" slices across the entire liver.



47

Evaluate each slice, assessing for any abnormal areas that require sampling. Collect a representative section of liver for diagnostic testing.



48

Identify the spleen, located on the left side of the abdomen, adjacent to the rumen.



49

Remove the spleen. Make a series of "bread loaf" slices, evaluate the slices, and collect tissue samples.



50

Identify the kidneys, located on the left side of the abdomen, subjacent to the lumbar vertebrae. Remove each kidney and set it aside.



51

Make a sagittal cut along the kidney. Peel and remove the outer capsule of the kidney.



52

Open and examine the kidney, and collect tissue samples.





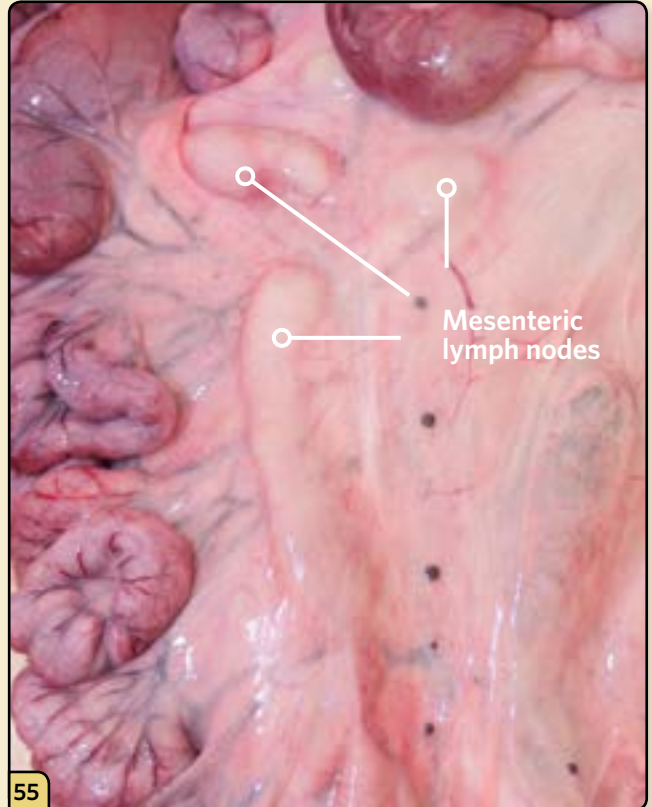
53

Find the ileoceco colic junction, located at the proximal end of the cecum.



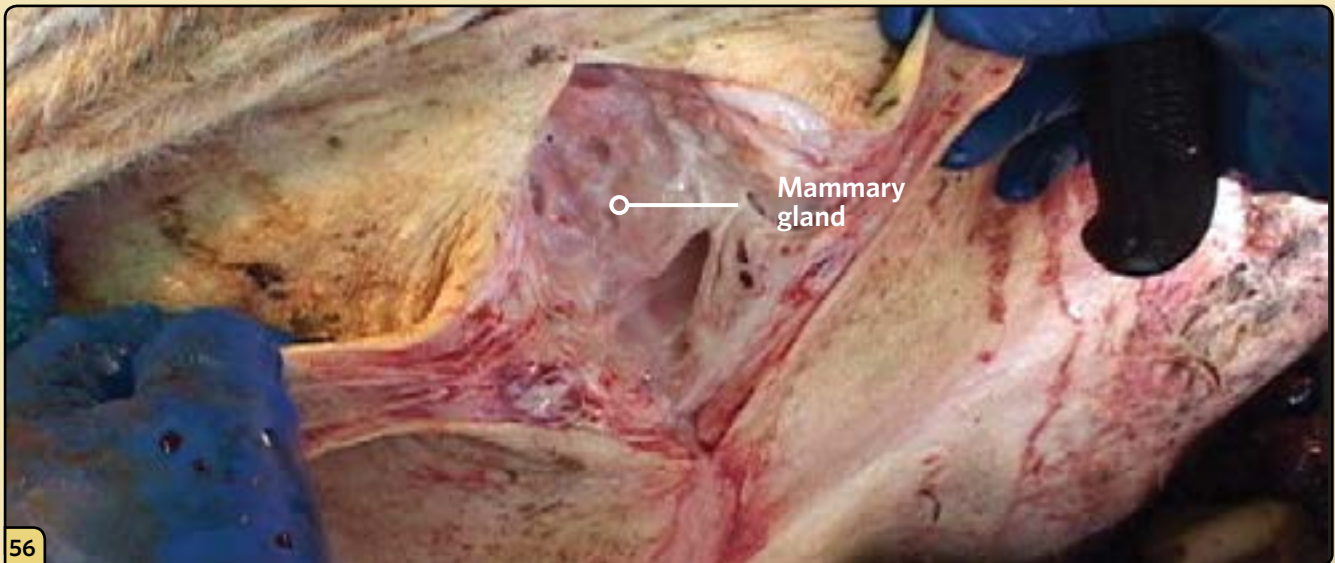
54

Identify and evaluate the ileocolic lymph nodes, located next to the ileocolic junction within the ileocecal fold.



55

Identify and evaluate the mesenteric lymph nodes, located within the mesentery of the small intestines.



56

Incise and examine the reproductive tract when indicated.





57

The GI tract is now examined in detail. This is generally done after the other organs have been examined to prevent tissue contamination caused by high levels of bacteria.



58

Segmentally open and examine the representative sections of normal appearing intestine.



59

Examine and sample the Peyer's patches. This gut-associated lymphoid tissue (GALT) is located in patches along the intestine. Open the Peyer's patches and look for gross lesions that indicate the presence of disease.



60

Any sections of intestines that appear to have gross lesions should also be opened, examined, and sampled.



61

Open the rumen.



62

Gently scrape away the ingesta and examine the pillars of the rumen, looking for erosions.



63

To remove the head, begin by making a cut ventral and caudal to the ramus of the mandible.



64

Move the head up and down to locate the junction between the 1st cervical vertebrae and the occipital junction by digital palpation.



65

Insert the knife into the tissue over the C1-occipital junction.



66

Rotate the blade ventrally and cut the soft tissue attachments.





67

Continue to dissect dorsally through the soft tissues until the foramen magnum is exposed.



68

Transect the spinal cord.



69

Make a cut between the 1st cervical vertebra and the occipital bone of the skull.



70

Continue to cut the soft tissues until the head is completely disarticulated.



71

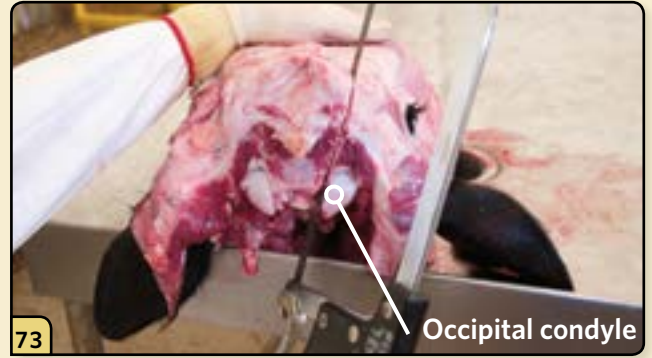
Examine the retropharyngeal lymph nodes, located ventral to the occipital condyles and lateral to the oropharynx.





72

To remove the brain for testing, begin by making a midline cut through the skin of the forehead. Remove the skin to expose the underlying skull.



73

Occipital condyle

To facilitate opening the skull, the head can be placed on an elevated table. Using a bone saw, make the first cut medial to the occipital condyle.



74

Make the second cut on the opposite side.



75

The third cut is an extension of the first. Make this cut in a caudal to rostral direction, toward the medial canthus.



76

Make the fourth cut on the opposite side in a caudal to rostral direction, toward the medial canthus.



77

The final cut connects the two lateral cuts caudal to the frontal sinus. Note that the exact location will be age-dependent.



78

Insert the chisel into the cuts to separate the bone.



79

Reflect the calvaria caudally to expose the brain.



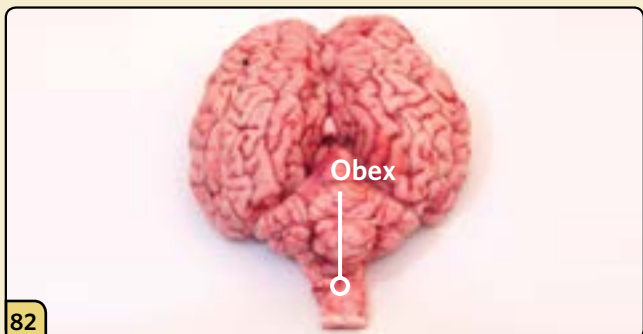
80

Use forceps and scissors to cut away the meninges.



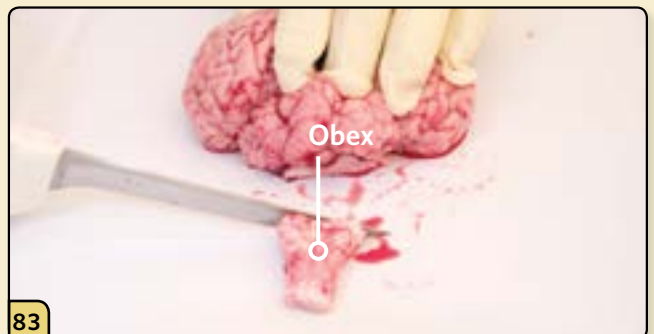
81

Use a combination of gentle blunt dissection and transection of the cranial nerves to remove the brain.



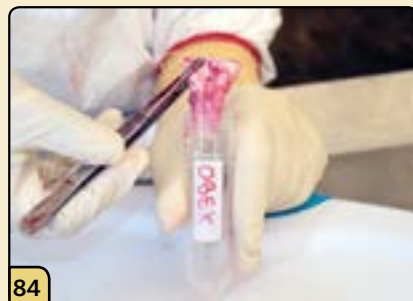
82

Place the brain on a clean work surface. Identify the obex, which is the V-shaped structure located beneath the cerebellum, where the 4th ventricle narrows into the spinal cord.



83

Remove the obex by making a transverse cut rostral to the obex.



84

Place the fresh obex in a labeled tube for laboratory submission. It is best to use a 50 ml conical tube.



85

Make a midline sagittal cut through the cerebrum and cerebellum to divide the brain in half.



86

Submit one half as fresh tissue for microbiology and the other half fixed in formalin for histopathology.





Open several joints, such as the carpus and stifle, and examine the joint fluid and cartilage surfaces.



## 2 NECROPSY EXAMINATION OF SWINE



1



Perform an external examination. Look for vesicular lesions on the nostrils, lips, tongue, gums, feet, and claws.



2

Examine the perianal region, assessing for evidence of diarrhea.



3

Position the animal in either dorsal or lateral recumbency. Most swine necropsies are done with the animal in dorsal recumbency. Generally, only mature pigs greater than 2 years of age, which are too large to position in dorsal recumbency, are necropsied in left lateral recumbency.



4

Elevate the right forelimb and insert the knife between the axilla and the thorax.



5

To prevent the knife from becoming dull, cut from the subcutaneous to the external side.



6

Reflect the right forelimb laterally.



7

Elevate the left forelimb and insert the knife between the axilla and the thorax.

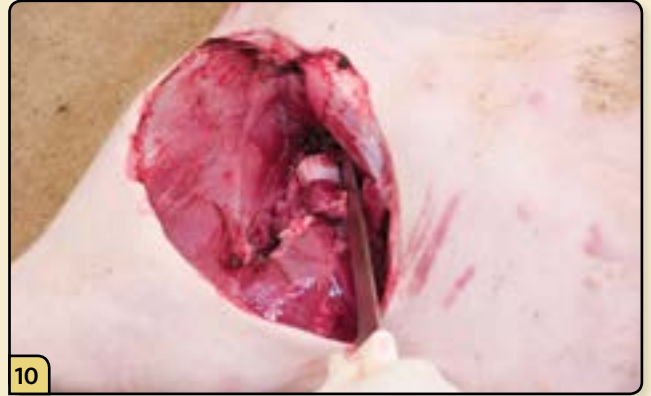


8

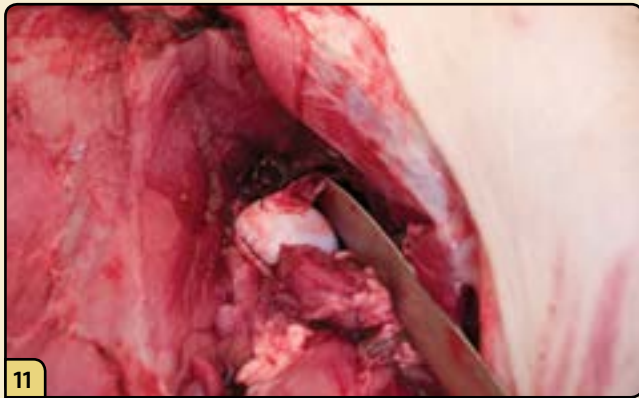
Reflect the left forelimb laterally.



Insert the knife into the inguinal region of the left hindlimb.



Extend the cuts into the soft tissue until the coxofemoral joint is exposed and opened.



Transect the ligament of the head of the femur.



Repeat the same procedure on the right hind limb and reflect both hind limbs laterally so they can lie flat.





13

In younger pigs, the thoracic cavity can be entered by removing the sternum. Begin by inserting the knife (sharp blade facing cranially) beneath the skin over the manubrium.



14

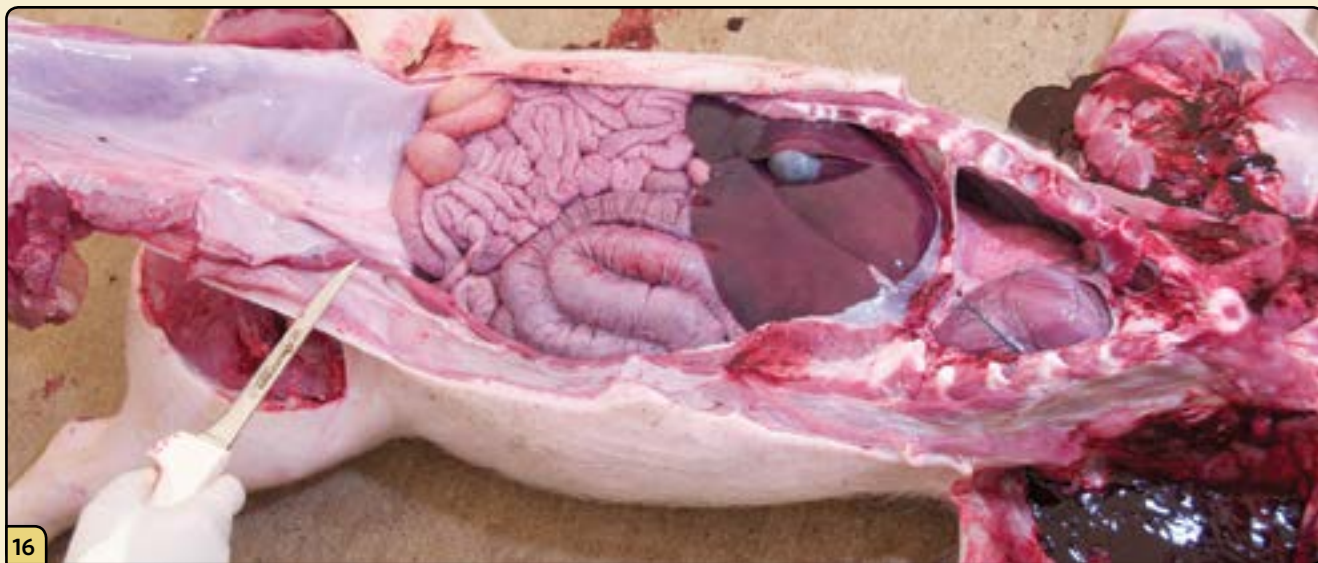
Rotate the blade ventrally and cut the skin.



15



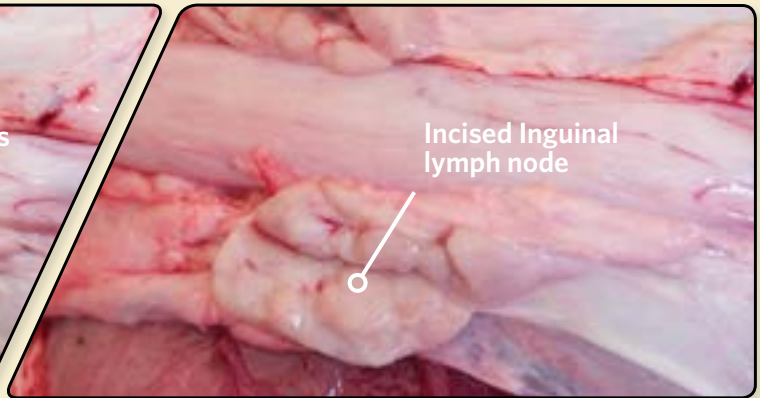
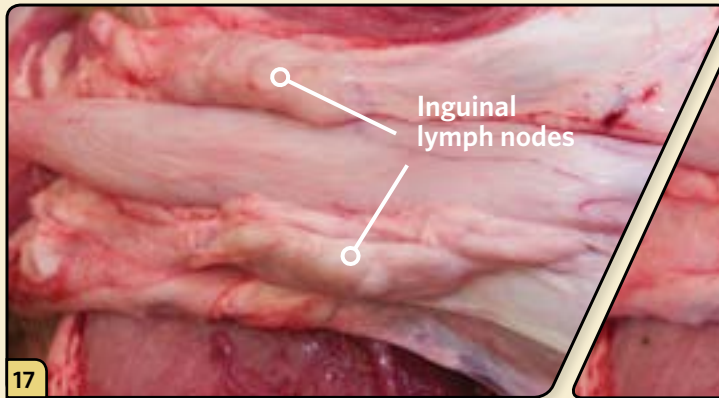
Starting at the manubrium, cut along the costochondral junctions of the ribs, working your way to the caudal thorax.



16

Continue the cuts caudally to the level of the inguinal incisions.





Identify the inguinal lymph nodes, located caudally on either side of the reflected abdominal flap. Incise and exam the lymph nodes.



Cut the mediastinum and pericardium to expose the lungs and heart for visual inspection. Examine the thoracic viscera *in situ*.



Examine the abdominal viscera *in situ*. Before handling the organs, stop to collect all "clean" tissue samples for microbiology and histopathology. At a minimum, collect samples from lung, liver, spleen, kidney, and lymph nodes, as well as samples of any lesions present.





20

Extend the cut up to the level of the mandibles.



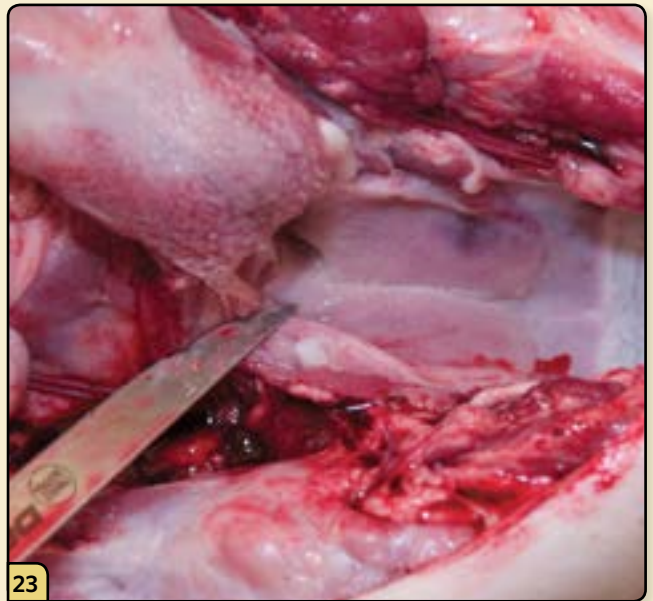
21

Cut along the medial aspect of both mandibles to free up the tongue.



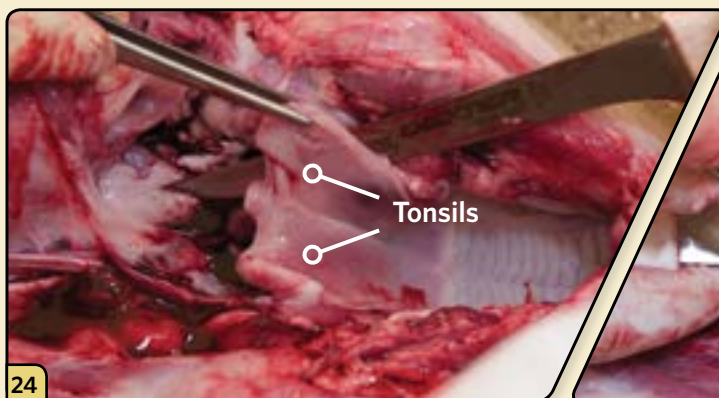
22

Pull the tongue ventrally and caudally to expose the oral cavity for inspection.



23

Cut between the hyoid bones to disarticulate the hyoid apparatus.



24

Tonsils



Identify the tonsils, located on the dorsal aspect of the oral cavity, caudal to the hard palate. Remove the tonsils and submit them for microbiology and histopathology.





25

Retract the tongue and cut the attachments along the trachea and esophagus, working your way down to the level of the thoracic inlet.



26

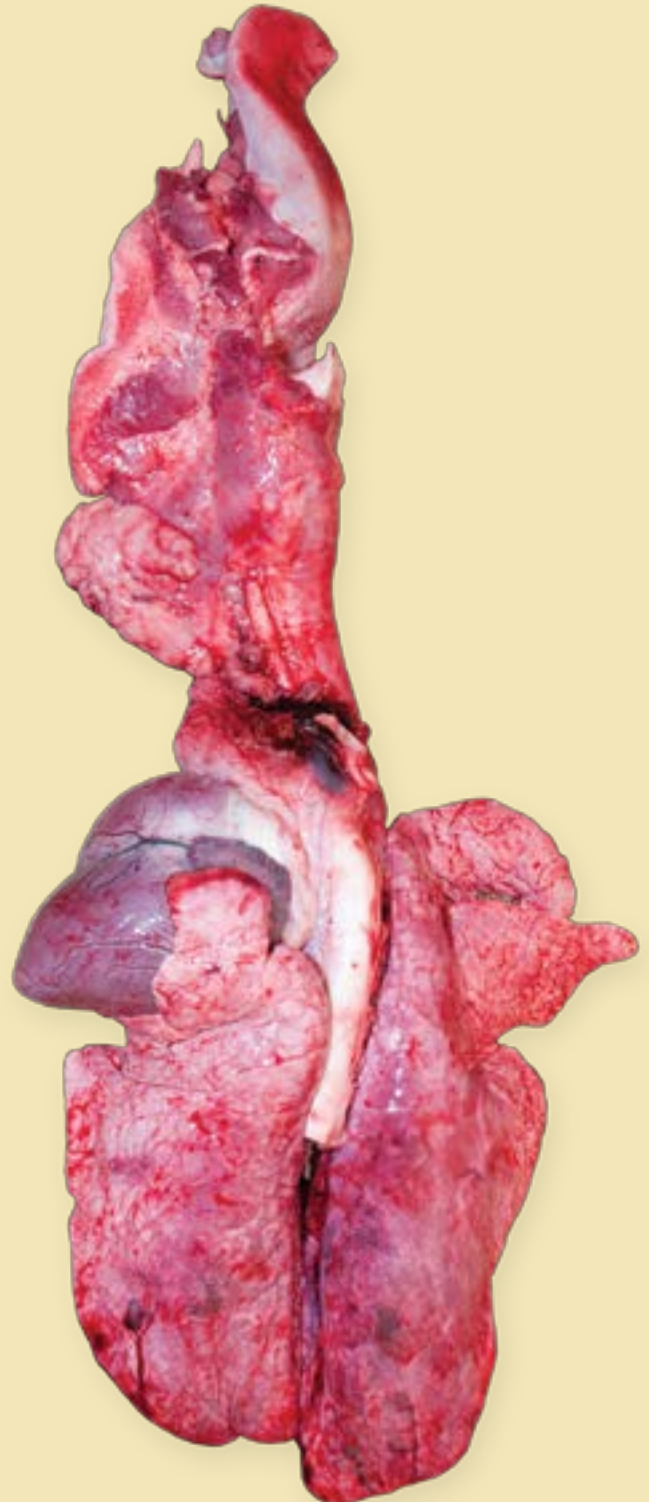
Dissect around the lungs and heart to free up the pluck. Set the pluck aside for a more detailed examination.



27

Locate and examine the tracheobronchial and mediastinal lymph nodes. The tracheobronchial lymph nodes are located at the bifurcation of the primary bronchi.

Mediastinal lymph nodes are often scattered, but can be found in the cranial mediastinum, associated with the large blood vessels, trachea, and esophagus; in the middle mediastinum, dorsal to the aortic arch; and in the caudal mediastinum, caudal to the aortic arch and ventral to the aorta.





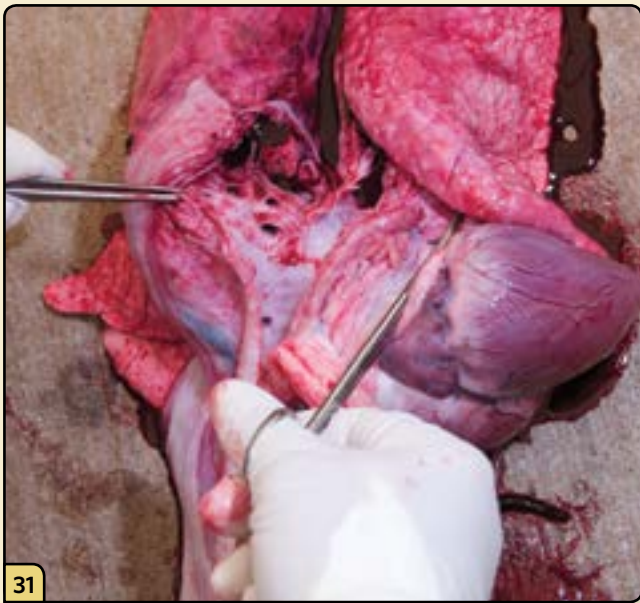
29

Open and examine the lumen of the esophagus.



30

Open and examine the lumen of the trachea.



31

Open and evaluate the large airways of the bronchi.



32

Palpate the entire lung field to assess for any abnormalities.



33

Incise the lungs by making a series of "bread loaf" slices across the entire lung field.



34

Palpate and examine each slice, assessing for masses and consolidation.





35

Open the left side of heart by cutting through the free wall of the left atria and left ventricle.



36

Follow the course of blood flow from atria to ventricle, evaluating the chambers, valves, and myocardial walls.



37



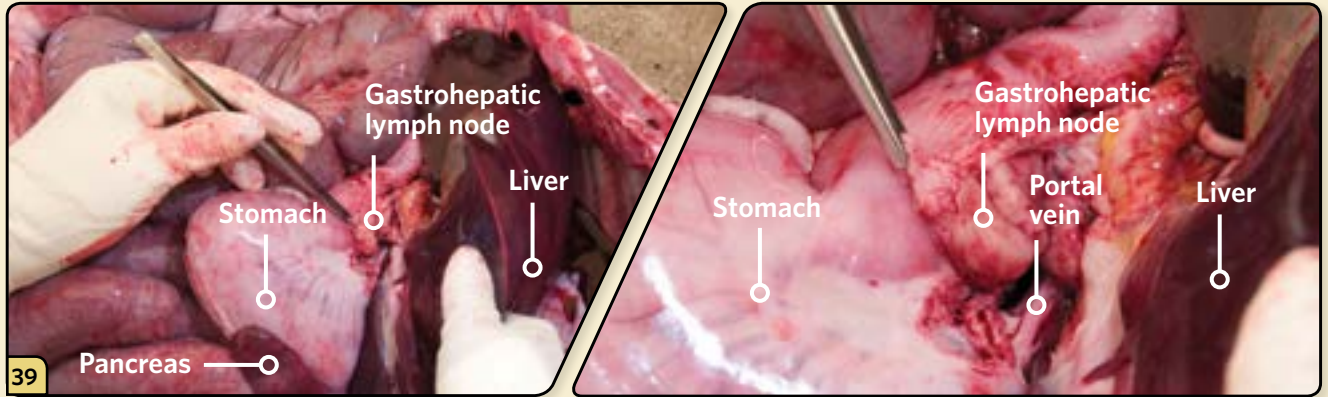
Repeat the process on the right side of the heart.



38

Observe abdominal viscera *in situ*.





Identify and inspect the gastrohepatic lymph nodes, located between the stomach and liver, adjacent to the portal vein.



Cut the attachment of the liver and set the liver aside for a more detailed inspection.



Make a series of slices across the entire liver.



Evaluate each slice, assessing for abnormal areas that require sampling. Collect a representative section of liver for diagnostic testing.



Identify the spleen, located under the stomach. Remove the spleen and set it aside for a detailed inspection.

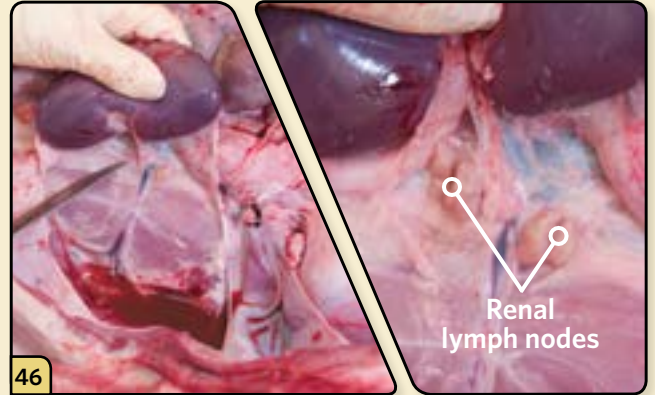


Make a series of slices across the spleen, evaluate the sections, and collect tissue samples.



45

Identify the kidneys, located dorsally in the retroperitoneal space.



46

Dissect around the kidneys, and reflect them medially to expose the renal vessels. Identify the two renal lymph nodes on either side of the blood vessels, close to the kidneys.



47

Remove the kidneys.



48

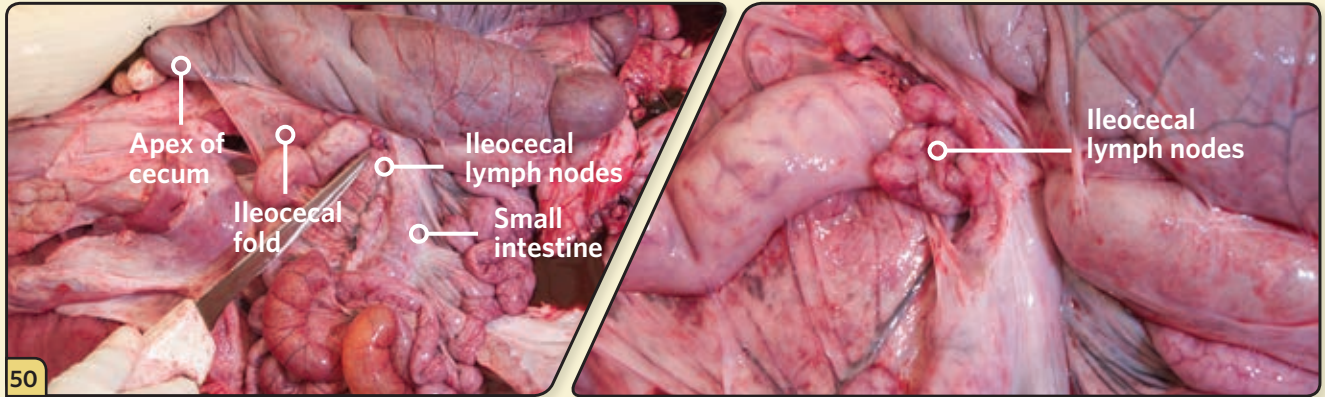
Peel and remove the outer capsule of the kidney.



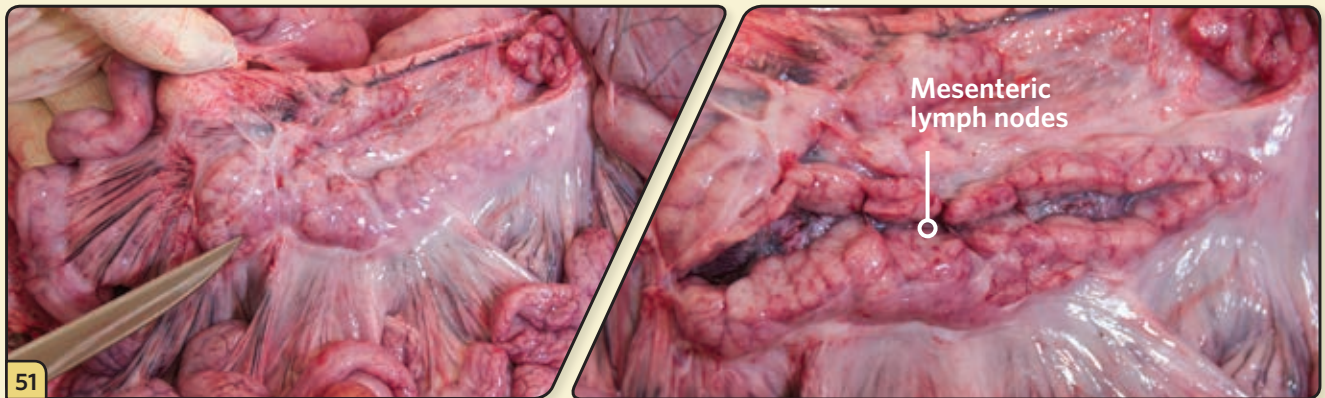
49

Make a sagittal cut through each kidney. Examine the inner kidneys and collect tissue samples.

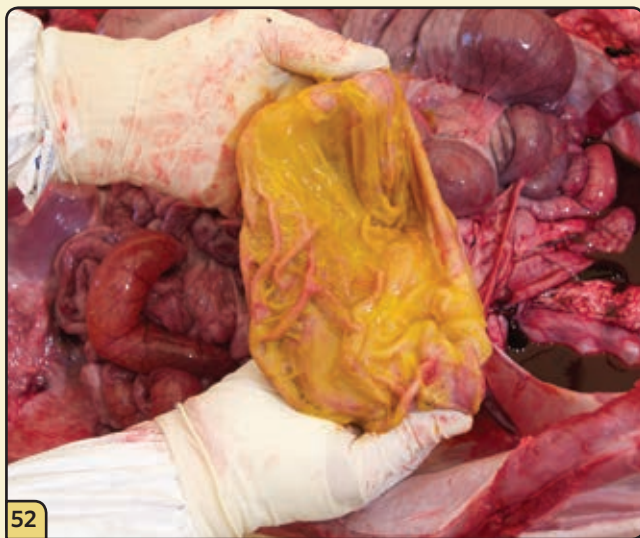




Identify and evaluate the ileocecal lymph nodes, located at the ileocecal junction. To find the lymph nodes, grasp the apex of the cecum in one hand, and the small intestine at the level of the ileocecal fold in the other, then tear the intervening mesentery to expose the lymph nodes.



Identify and examine the mesenteric lymph nodes, located in the mesentery of the jejunum and ileum.



The GI tract is now examined in detail. This is generally done after the other organs have been examined to prevent tissue contamination caused by high levels of bacteria. Open the stomach and evaluate the contents and lumen.

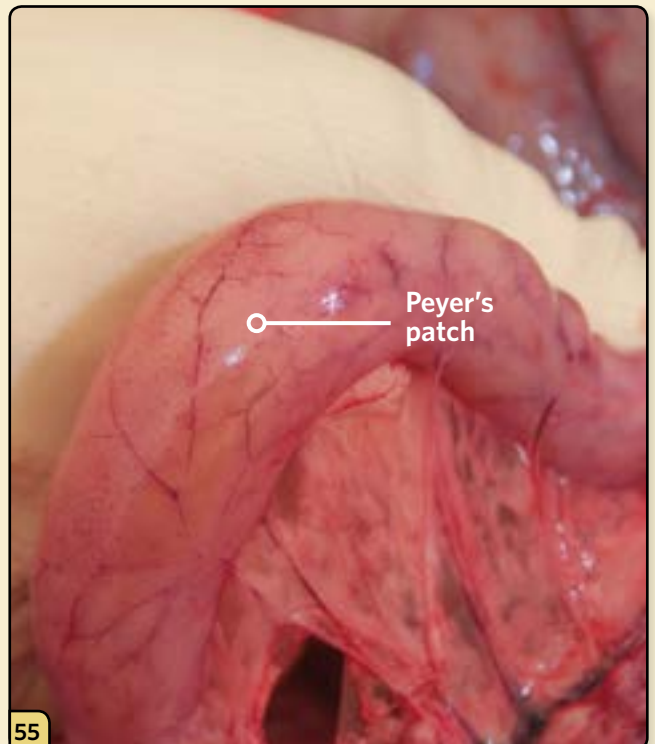


Working from oral to aboral, segmentally open and examine representative sections of normal appearing intestine.





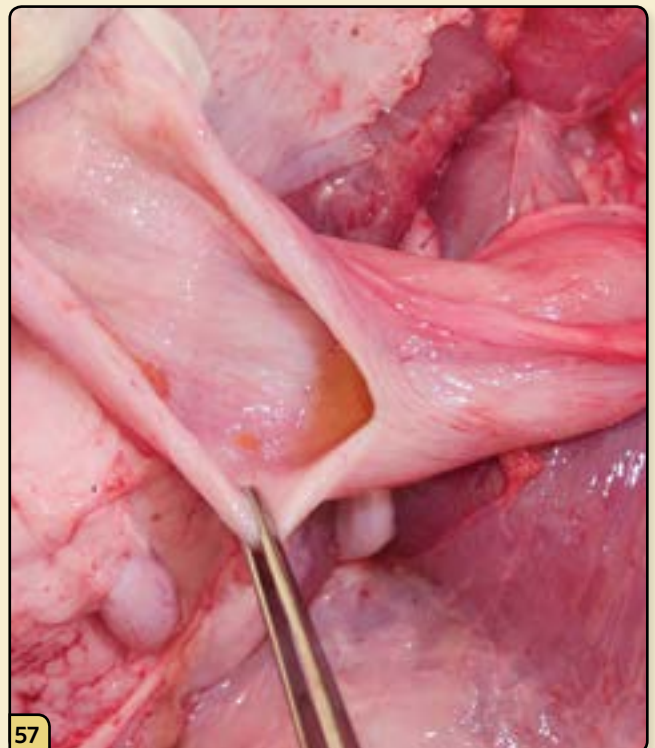
54 Any sections of intestines that appear to have gross lesions should also be opened, examined, and sampled.



55 Locate and examine the Peyer's patches. This gut-associated lymphoid tissue (GALT) can be found along the antimesenteric border of the small intestinal wall.



56 Open and assess several Peyer's patches, especially those at the ileocecal junction.



57 Open and examine the urinary bladder.



58

To remove the head, identify the atlanto-occipital joint by palpation. Flexing and extending the head can aid in identifying the location of the joint.



59

Cut the soft tissues caudal to the atlanto-occipital joint and the ramus of the mandibles.



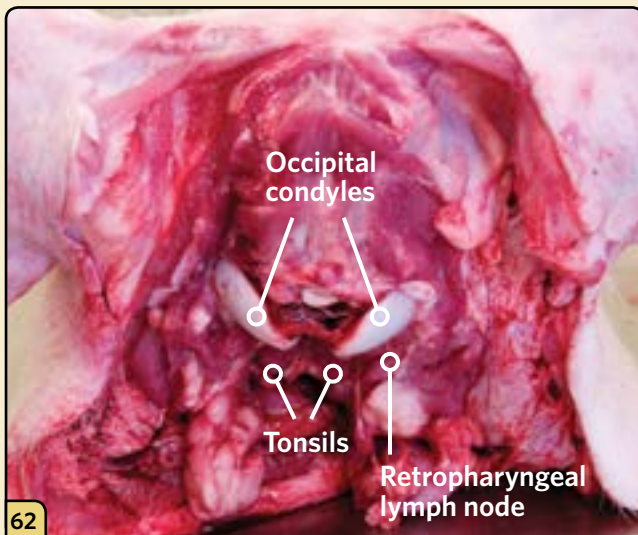
60

Cut the junction between the 1st cervical vertebrae and the occipital junction.



61

Cut the spinal cord and disarticulate the head.



62

Identify and examine the retropharyngeal lymph nodes, located ventral to the occipital condyles and dorsolateral to the tonsils.



63

To facilitate opening the skull, the head can be placed on an elevated table.





64

To remove the brain for testing, begin by making a mid-line cut through the skin.



65

Peel the skin bilaterally to expose the underlying skull bone.



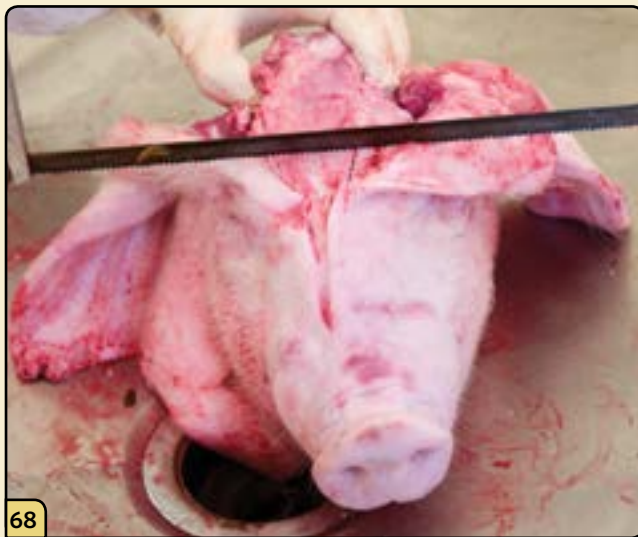
66

Using the bone saw, make a cut on the medial aspect of both occipital condyles.



67

Continue the first two cuts by extending them vertically along the frontal sinuses



68

Make a final cut to connect the two vertical cuts along the sinuses.



69

Use a hammer to drive the chisel into the cut made in the skull bone.





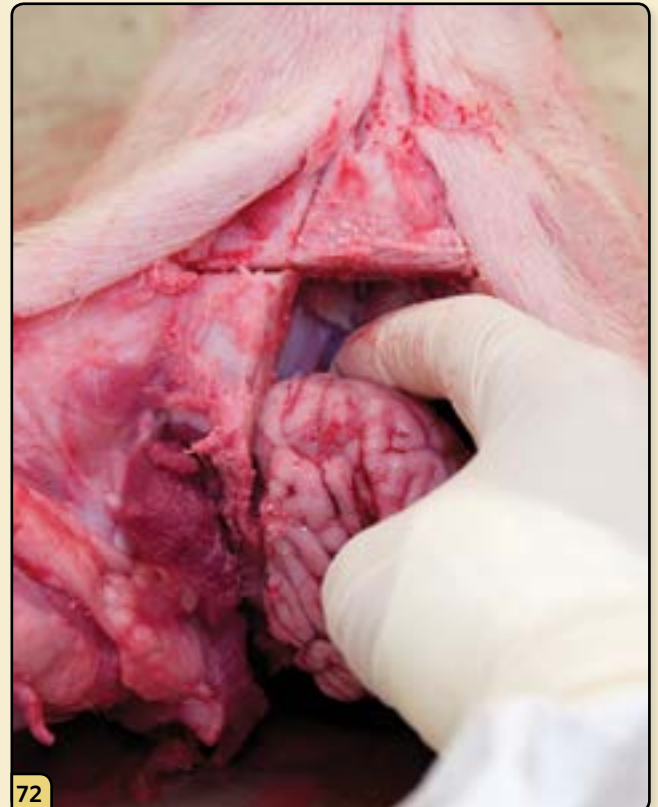
70

Use the chisel to pry open the skull bone and expose the brain.



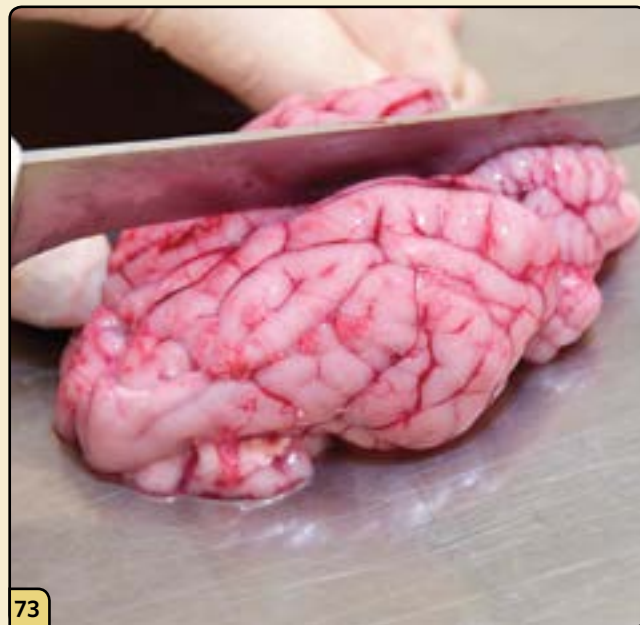
71

Use forceps and scissors to cut away the dura mater overlying the brain.



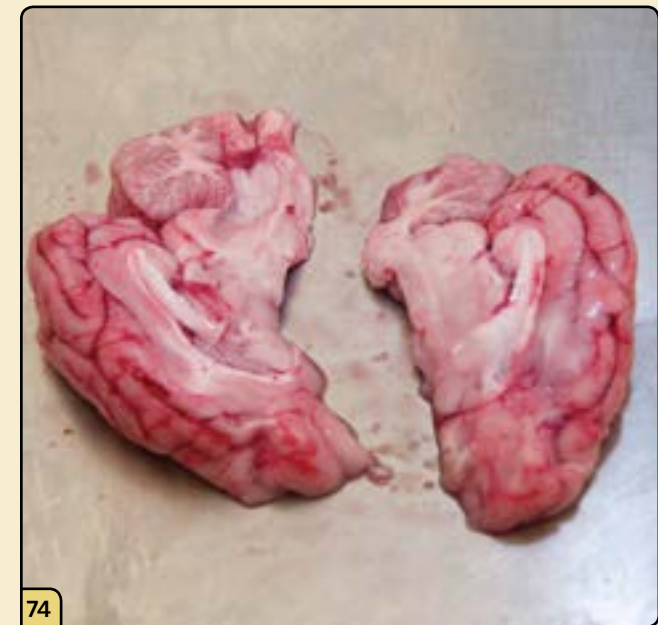
72

Using your fingers, gently work the brain from the skull. Sever the cranial nerves and remove the brain.



73

Place the brain on a clean work surface. Make a sagittal cut down the middle of the cerebrum and cerebellum to divide the brain in half.



74

Submit one half as fresh tissue for virology and the other half fixed in formalin for histopathology.



75

Open several joints, including the carpus and stifle, and examine the joint fluid and cartilage surfaces.

### 3 NECROPSY EXAMINATION OF POULTRY



1

Prepare a solution of detergent and water, mixed at the concentration stated on the label.



2

To keep the examination field free of feathers and dander, dip the body of the chicken from the neck down in the solution.



3

For ease, the poultry necropsy exam may be performed on an elevated table that can be disinfected.



4



Perform an external examination of the chicken. Examine the infraorbital sinuses and nares, eyelids and conjunctiva, oral cavity, and vent.

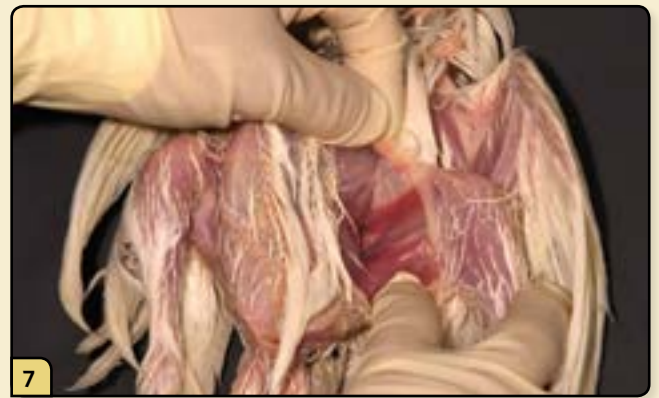




To remove the skin, begin by elevating the legs.



Cut the skin between the leg and abdomen on both sides.



With your fingers, expand the opening.



Lift and cut the strip of skin over the abdomen.



Disarticulate the femurs from the coxofemoral joints.



10

Peel the skin toward the entrance of the chest to expose the breast.



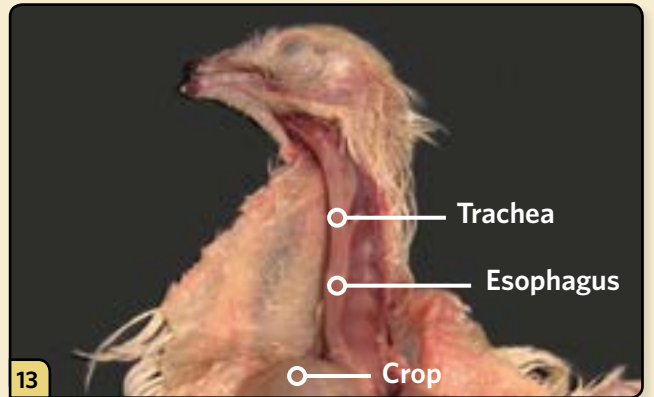
11

Separate the skin on the neck from the underlying neck tissues, alternating between the use of fingers and scissors.



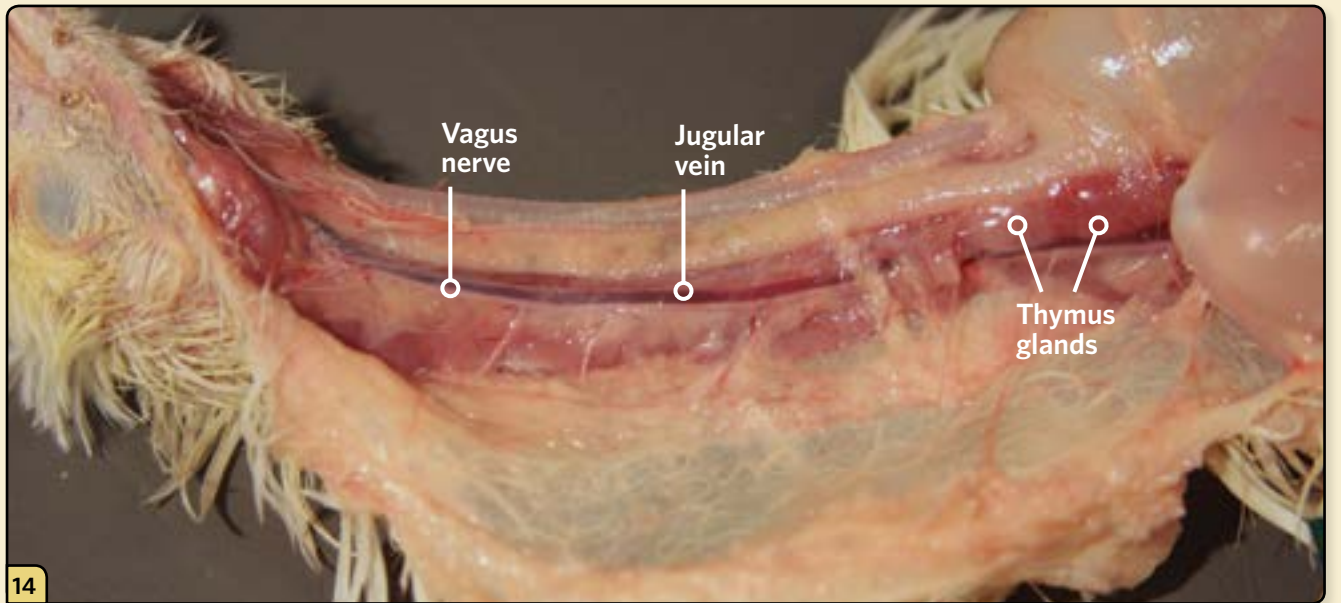
12

Using scissors, fully expose the underlying tissues of the neck.



13

Examine the tissues in the neck, including the serosal surfaces of the trachea, esophagus, and crop.



14

Examine the thymus glands, present in immature poultry only, as well as the nerves and great vessels of the neck.

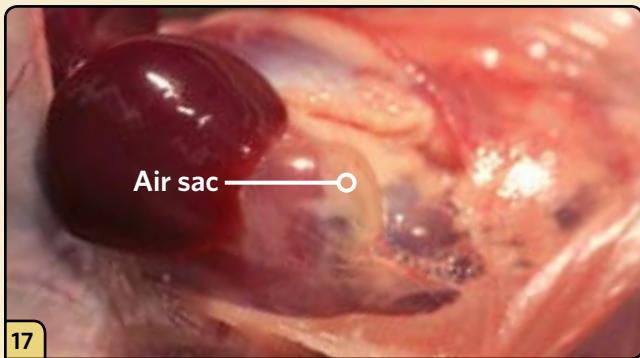




15 Make a small cut through the abdominal wall at the tip of the keel.



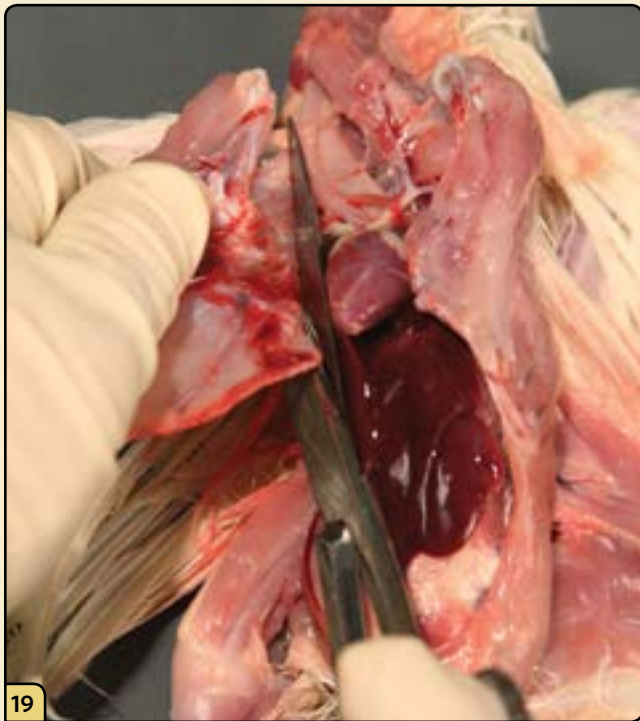
16 Place your thumb under the edge of the keel and lift carefully to avoid tearing the air sacs.



17 Examine the thoracic and abdominal air sacs looking for foam, fibrin, veins, fluid, and exudate.



18 Make a longitudinal cut above the rib joints on both sides of the keel.



19 Cut the cranial attachments and remove the breastplate.



20 Make a visual inspection of the thoracoabdominal cavity *in situ*.





21

Elevate the heart and cut the great vessels.



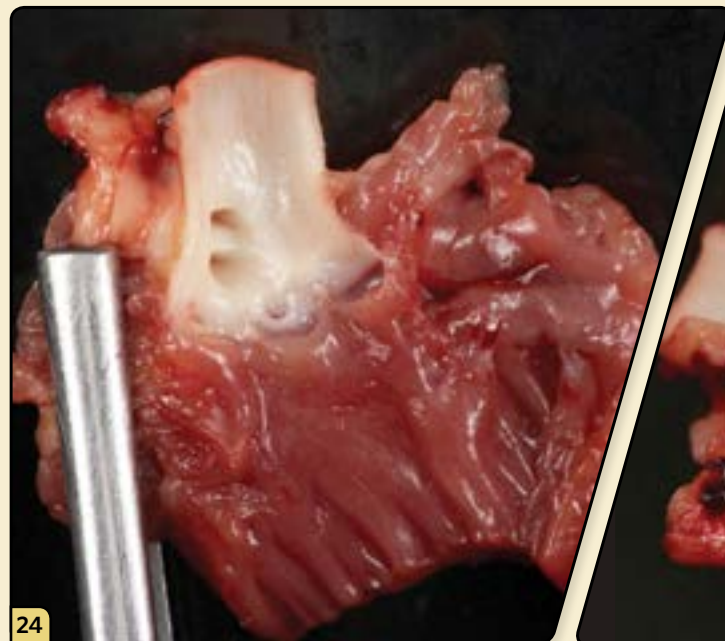
22

Remove the apex of the heart.



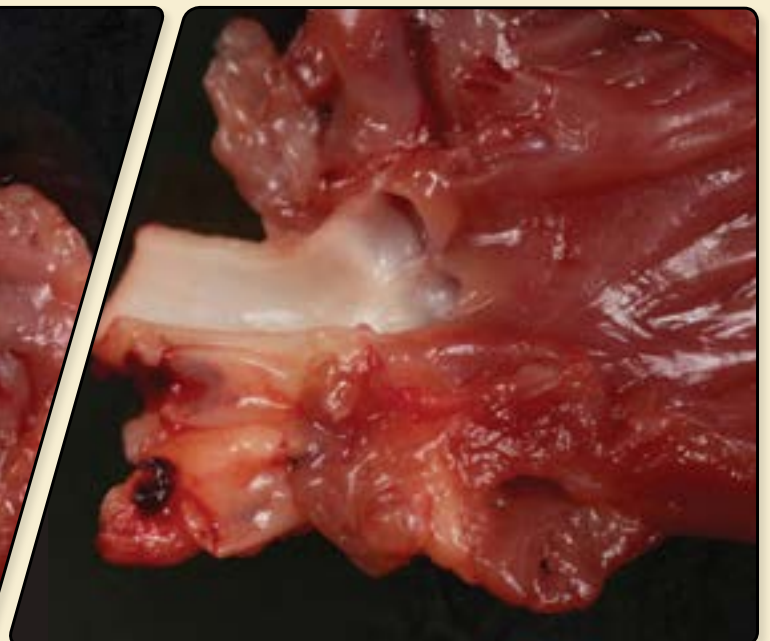
23

Cut the left and right lumen, opening the heart chambers for inspection.



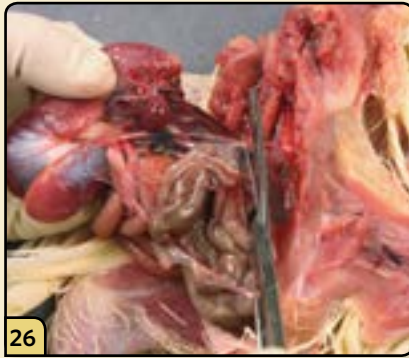
24

Examine the myocardial muscles, heart valves, and endocardium.





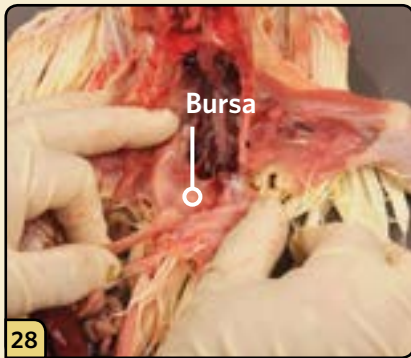
25 Sever the proventriculus from the esophagus.



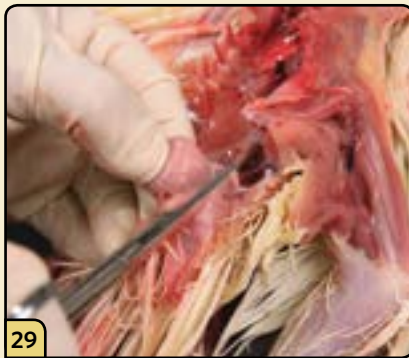
26 Cut the attachments anchoring the proventriculus, ventriculus, liver, and intestine.



27 Gently pull and linearize the intestine, being careful not to tear and leak its contents.



28 Locate the bursa on the dorsal wall of the cloaca. Evaluate its size, assessing the immunocompetency of the bird with respect to its age.



29 Separate the bursa from the cloaca.



30 Open the bursa and examine its lumen for lesions.



31 Sever the posterior end of the intestine from the cloaca. Set the GI tract aside for a more detailed examination after the remaining aseptic tissues have been processed.





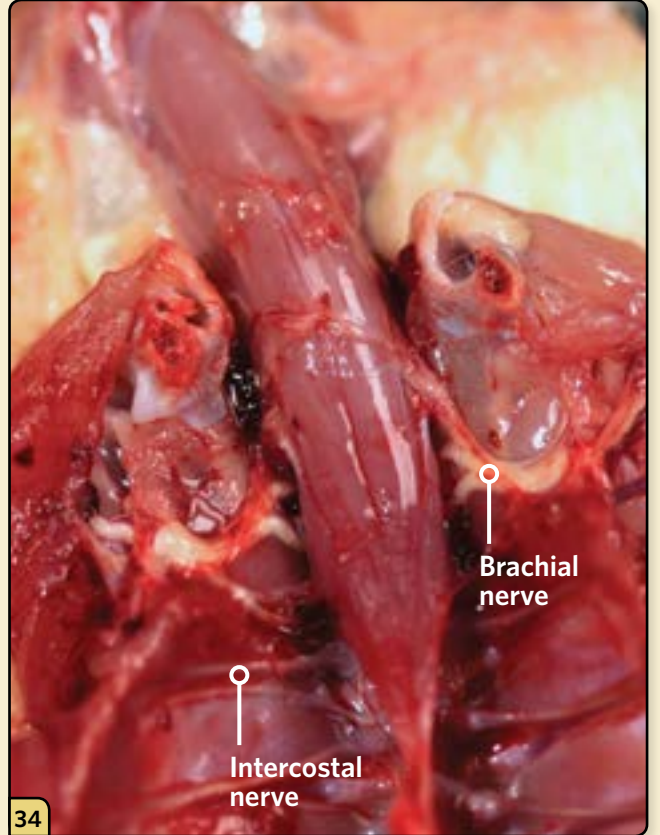
32

Use the edge of the scissors to bluntly dissect the lungs from the rib cage.



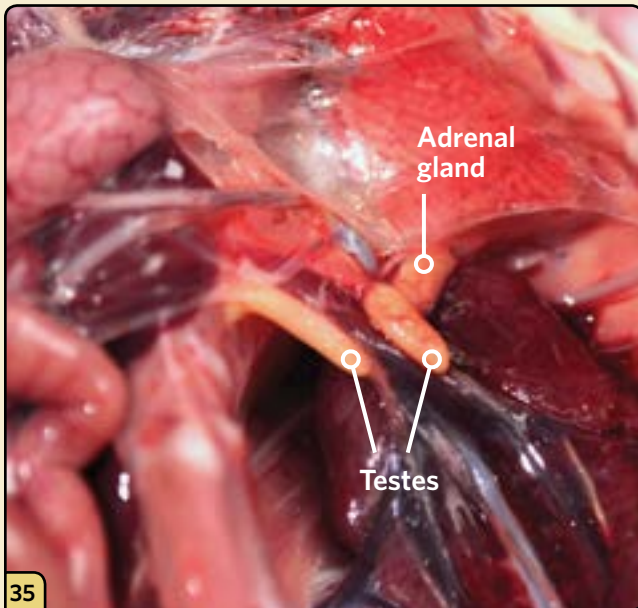
33

Visually inspect and palpate the lungs for lesions.



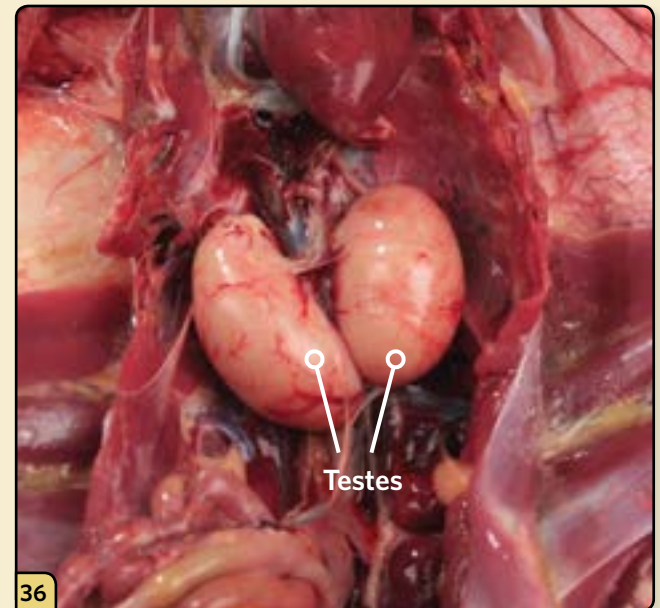
34

At the thoracic inlet, examine the brachial and intercostal nerves.



35

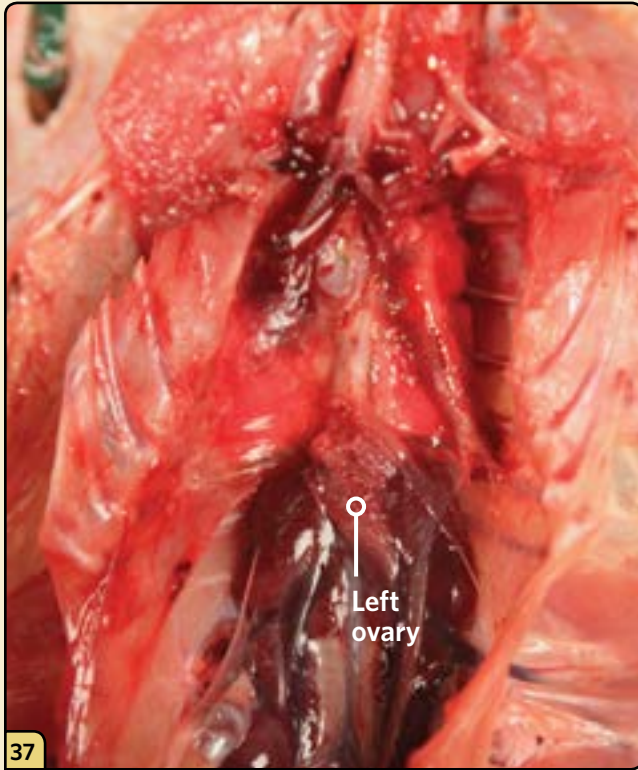
In male birds, examine the testes, located on the cranial aspect of the kidneys. The testes depicted here are from a sexually immature male. The adrenal glands are located at the cranial poles of the kidneys.



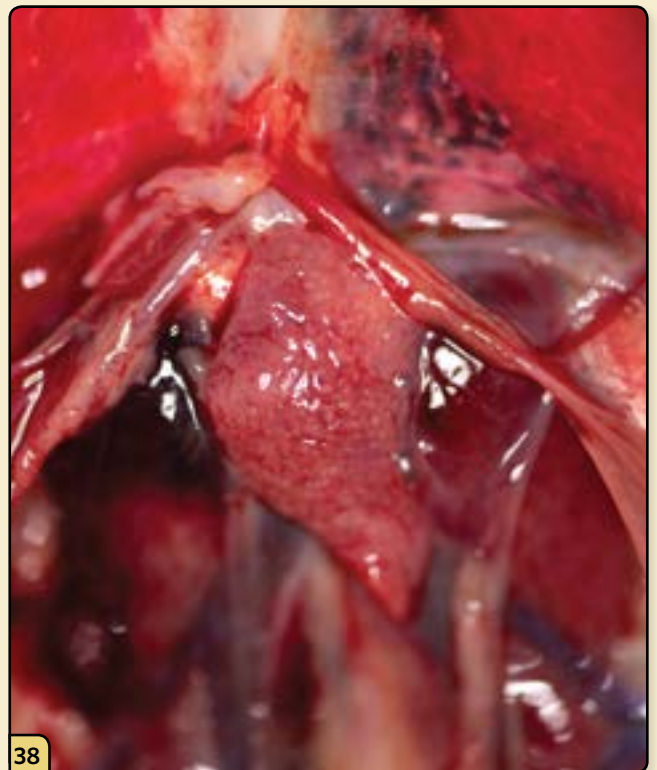
36

The testes depicted here are from a sexually mature male.

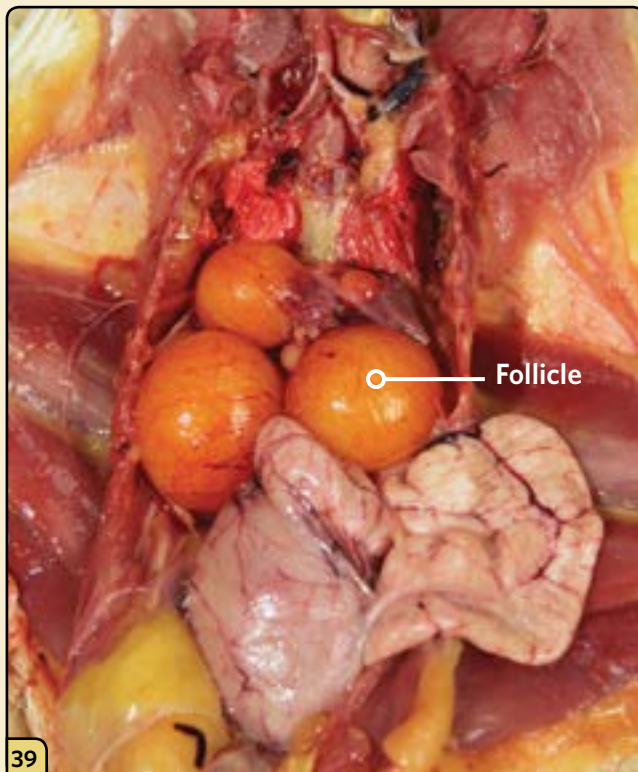




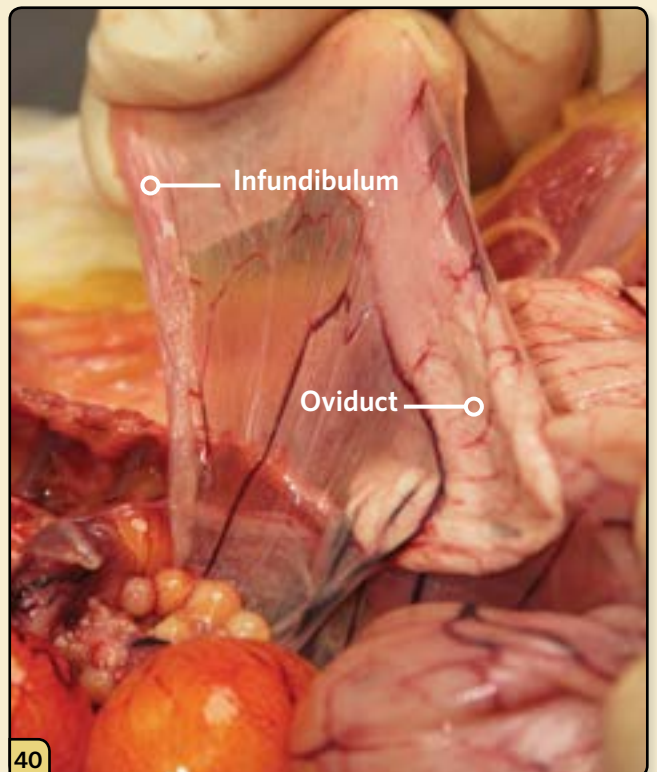
In female birds, examine the ovary, located at the cranial aspect of the left kidney.



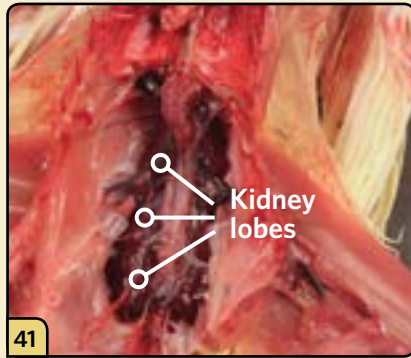
In sexually immature females, the ovary is a small structure with a fine nodular appearance.



In an active ovary, follicles in various stages of development will be visible.



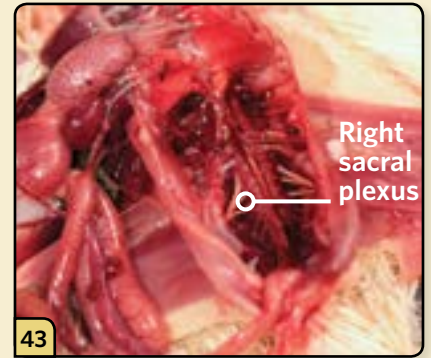
Examine the infundibulum and serosal surface of the oviduct.



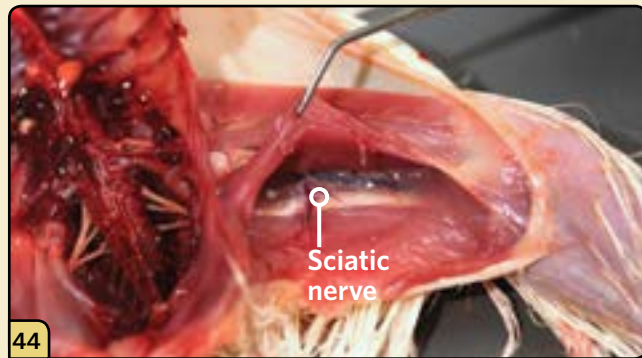
41 Examine the 3 lobes of the bilateral kidneys. They are located within the ventral recesses of the synsacrum (vertebrae) and contact the lungs cranially.



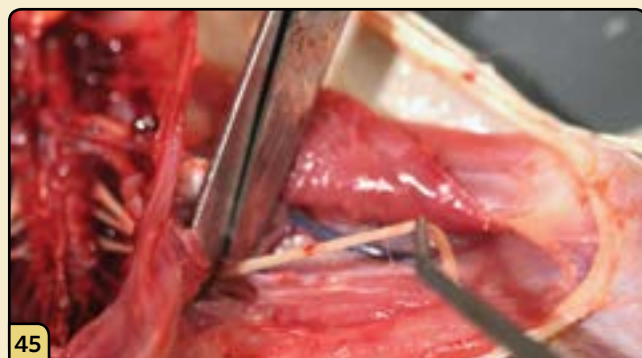
42 Use your fingers to gently dissect and remove the renal tissue to expose the sacral plexus for examination.



43 Compare the symmetry of the right and left sacral plexus.



44 Follow the plexus through the abdominal wall, where it emerges as the sciatic nerve in the leg.



45 Remove a section of the right and left sciatic nerves.



46 Lay sections of the nerves side by side for a comparison of the diameter and appearance. These nerve segments can also be submitted for laboratory testing.





47

Cut through the commissure of the beak.



48

Inspect the oropharynx for lesions.



49

Continue cutting down the length of the esophagus and crop.



50



Inspect the mucosal surfaces of the esophagus (left) and crop (right) for lesions.



51

Using scissors, open the proventriculus and ventriculus.



52

Gently wash away the ingesta with water.



53

Assess the mucosa of the proventriculus and the muscle walls of the ventriculus for lesions and abnormalities.





54

Peel and remove the koilin.



55

Assess the mucosal surface of the ventriculus for lesions.



56

Using scissors, open the duodenum.



57

Inspect the mucosal surface for lesions.



58

Moving from oral to aboral, continue to open the intestine.



59

The consistency of the ingesta should gradually become more solid as you work down to the level of the rectum. The ingesta depicted here is from the ceca.



60

At the base of the ceca, pay close attention to the appearance of the cecal tonsils.



61

These lymphoid structures often become hemorrhagic or necrotic during an infection and are important to diagnostic testing. Depicted here is a cecal tonsil that has been incised to reveal hemorrhage, a common lesion in exotic Newcastle disease.



62

To expose the brain for sample collection, begin by removing the comb.



63

Peel the skin laterally to fully expose the top of the skull.



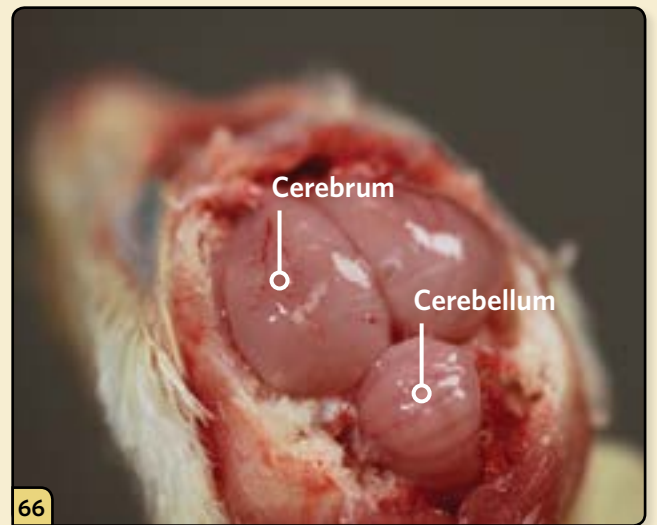
64

Starting at the foramen magnum, cut the top of the skull around the brain with shallow snips of the scissors.



65

Lift and remove the skull top



66

Examine the surfaces of the cerebrum and cerebellum *in situ*.



67

Gently separate the brain from the cranial nerves and spinal cord.



68

Place the brain on a sterile surface for inspection, then divide the brain down the middle for diagnostic sample submission.



Open several joints, such as the tarsal joint depicted here.



Examine the joint fluid and cartilage surfaces for abnormalities and lesions.



## 1 POINTS OF CONTACT

**NVSL FADDL CONTACT INFORMATION****DURING BUSINESS HOURS** (MONDAY-FRIDAY, 8:30 AM-4:15 PM EASTERN)

Main Office	(631) 323-3256
-------------	----------------

**AFTER HOURS AND WEEKENDS**

Diagnostic Services Section Head	(631) 375-5314
----------------------------------	----------------

Acting Diagnostic Services Section Head	(631) 405-0218
---	----------------

Courier	(631) 566-0073
---------	----------------

**AFTER HOURS AND WEEKENDS 24/7** (IF UNABLE TO REACH SOMEONE LISTED ABOVE)

National Centers for Animal Health Dispatch	(515) 337-7200
---	----------------

**NVSL AMES CONTACT INFORMATION****DURING BUSINESS HOURS** (MONDAY-FRIDAY, 8:00 AM-4:30 PM CENTRAL)

NVSL Director	(515) 337-7301
---------------	----------------

Diagnostic Virology	(515) 337-7551
---------------------	----------------

Pathobiology	(515) 337-7526
--------------	----------------

Diagnostic Bacteriology	(515) 337-7568
-------------------------	----------------

**AFTER HOURS AND WEEKENDS 24/7** (IF UNABLE TO REACH SOMEONE LISTED ABOVE)

National Centers for Animal Health Dispatch	(515) 337-7200
---	----------------

**NPIC AND DISTRICT OFFICES CONTACT INFORMATION****DURING BUSINESS HOURS** (MONDAY-FRIDAY, 8:00 AM-4:30 PM EASTERN)

Jon Zack	(240) 252-8074
----------	----------------

Julie Gauthier	(919) 219-8433
----------------	----------------

Barbara Porter-Spalding	(919) 637-4409
-------------------------	----------------

Aaron Scott	(970) 481-8214
-------------	----------------

Nathan Birnbaum	(240) 508-9888
-----------------	----------------

**AFTER HOURS AND WEEKENDS**

NPIC/NVS 24-7 Emergency Answering Service	(800) 940-6524
---	----------------

**APHIS VS DISTRICT OFFICES**

District One	(508) 363-2290
--------------	----------------

District Two	(352) 313-3060
--------------	----------------

District Three	(517) 337-4700
----------------	----------------

District Four	(512) 383-2400
---------------	----------------

District Five	(970) 494-7400
---------------	----------------

District Six	(916) 854-3950
--------------	----------------

## 2 ROUTING OF DIAGNOSTIC SAMPLE SUBMISSIONS

DIAGNOSTIC SPECIMEN TYPE	NVSL AMES	NVSL FADDL
<b>Avian</b>		
All	✓ Diagnostic Virology Lab	
<b>Entomologic</b>		
All	✓ Pathobiology Lab	
<b>Equine</b>		
African horse sickness (AHS)	✓ Diagnostic Virology Lab	
Contagious equine metritis (CEM)	✓ Diagnostic Bacteriology Lab	
Dourine & Glanders	✓ Diagnostic Bacteriology Lab	
Equine piroplasmiasis	✓ Diagnostic Bacteriology Lab	
Venezuelan equine encephalitis	✓ Diagnostic Virology Lab	
Vesicular stomatitis	✓ Diagnostic Virology Lab	
<b>Ruminants</b>		
Bovine babesiosis	✓ Diagnostic Bacteriology Lab	
Bovine spongiform encephalopathy (BSE)	✓ Pathobiology Lab	
Heartwater	✓ Diagnostic Virology Lab	
Small ruminant diseases	✓	
Other		✓
<b>Swine</b>		
African swine fever (ASF)		✓
Classical swine fever (CSF)		✓
Foot-and-mouth disease (FMD)		✓
Swine vesicular disease (SVD)		✓
Other	✓ Diagnostic Virology Lab	

• For a comprehensive list of diseases see Chapter 4 Diagnostic Sampling.



**NOTE:** If the reference laboratory is NVSL Ames, and the differential diagnosis for the suspected FAD agent includes both bacterial and viral diseases, separate sets of diagnostic samples must be collected and labeled for each NVSL Ames laboratory (Diagnostic Bacteriology Lab [DBL], Diagnostic Virology Lab [DVL], or Pathobiology Lab [PL]).

NVSL strongly recommends that, if CSF or ASF is suspected, and non-FAD conditions are included in the differential diagnoses, then one set of diagnostic samples be sent to NVSL FADDL, and a second set of samples be sent to NVSL Ames DVL.

Any samples submitted to NVSL Ames DVL must be clearly marked “Hold until cleared for exotic disease by FADDL.” Notify NVSL FADDL and NVSL Ames when two or more sets of samples are being shipped or transported for the same investigation.

### 3 INVESTIGATION CHECKLISTS

The following checklists provide role-specific instructions for use during the investigation of a potential FAD/EDI. The checklists provided have been adapted from VS Guidance Document 12001 (formerly VS Memorandum 580.4).

#### FADD

##### INITIATING AND CONDUCTING AN INVESTIGATION

- 1. Initiate an investigation.**

  - Initiate an investigation within 8 hours of assignment.
  - Obtain a Referral Control Number from the AD, Case Coordinator, or designee.
  - Complete a site visit or field investigation with examination within 24 hours of assignment.
- 2. Consult with laboratory personnel regarding sample collection, preparation, and handling.**

Call NVSL Ames or NVSL FADDL laboratory personnel to ensure that any diagnostic samples collected during the investigation are correctly collected, prepared, and handled.
- 3. Assign classification of investigation and diagnostic sample priority.**

Agree with the Assistant Director (AD) and/or State Animal Health Official (SAHO) on the classification of investigation and the designation for diagnostic sample Priority 1, 2, 3, or A during or following the initiation of the investigation.

  - Any questions, concerns, or disagreements at the District, State, or territory level regarding the classification of investigation or the diagnostic sample priority designation must be immediately discussed via conference call with the District Director or designee, National Preparedness and Incident Coordination (NPIC), NVSL Director, and NAHLN Laboratory Director.
- 4. Make recommendations regarding intrastate quarantine or hold order.**

Contact the SAHO, AD, and Tribal Officials with a recommendation regarding establishing an intrastate quarantine or hold order during the investigation period (which is the authority of the SAHO).
- 5. Complete and upload an Initial Contact Report in the EMRS2GO Mobile application.**

  - Utilize the EMRS2GO Mobile application to complete an Initial Contact Report.
    - Create a new Contact Report, complete all required fields, and save the form.
    - Utilize the "Forms" feature to print a completed VS 10-4 Specimen Submission Form for inclusion in the shipping container with the samples.
    - Utilize the "Attachments" feature to attach pictures/documents/etc. relevant to the investigation
  - Upload the completed Initial Contact Report to EMRS.

*Note: The FADD may refer to the EMRS2GO Mobile application training document – Field User training guide for additional information.*
- 6. Contact the appropriate laboratory prior to shipping.**

Call the appropriate NVSL Laboratory and/or NAHLN Laboratory prior to shipping or transport of diagnostic samples regardless of diagnostic sample priority. Include the following information:

  - Airbill tracking number or other transport identification,
  - Estimated time of arrival, and
  - Classification of investigation and diagnostic sample Priority 1, 2, 3, or A.



**7. Complete EMRS data entry.**

*NOTE: If the EMRS2GO Application was utilized as directed in Step 5, this step is unnecessary. If the FADD or Case Coordinator manually created the investigation, exam, and lab submission forms in EMRS, then the following steps will be required:*

Create and complete the following EMRS forms in a timely manner, preferably prior to samples arriving at the laboratory:

- Examination Form (create and complete the form),
- Lab Submission Form (create and complete to the "submitted" status),
- Investigation Form (e-mail or transmit to AD and SAHO utilizing the "Email a Link" hot button from the Investigation record).

**NOTIFICATIONS DURING AN FAD/EDI INVESTIGATION****1. Immediately contact NPIC and District Director when any of the following are assigned:**

- High suspicion of an FAD/EDI classification, or
- Priority 1 diagnostic sample designation, or
- Priority A diagnostic sample designation.

**2. Discuss sample collection, transport, and potential response needs.**

Discuss the following by conference call with the AD, District Director, NVSL Director, NAHLN Laboratory Director, NPIC, SAHOs, and Tribal Officials, within 2 hours of notifying NPIC of a High Suspicion of FAD/EDI classification or Priority 1 or A diagnostic sample designation:

- The rapid to extraordinary methods used to collect and transport diagnostic samples, and
- The appropriate communications, veterinary medical countermeasures, and regulatory actions recommended and implemented during the investigation period, as necessary, to prevent and/or mitigate the dissemination of an FAD/EDI agent by interstate or international commerce of animals, animal products, meat, articles, or conveyances.

**3. Make a recommendation regarding interstate movement restrictions.**

In consultation with the AD, District Director, NVSL Director, NPIC, VS ADAs, and VS DA, make a recommendation regarding interstate movement restrictions (authority of the Secretary of Agriculture) during the investigation period. These discussions are conducted in close communication and cooperation with the SAHO of the affected State(s) and the NAHLN Laboratory Director.

**4. Report on the situation.**

Provide written and verbal situation reports, operational updates, and diagnostic updates at regular intervals, as requested by the District Director, the VS ADAs, and the VS DA.

**AD/SAHO****INITIATING AND CONDUCTING AN INVESTIGATION****1. Determine the need for an investigation.**

Determine if the report of a potential FAD/EDI is credible, if it constitutes a threat to associated livestock, poultry, and other animals, and if it warrants an investigation.

**2. Assign a Foreign Animal Disease Diagnostician (FADD).**

Assign the most readily available FADD to complete an investigation.

- In the event that an FADD is not available, dispatch the most qualified person and report incident to NPIC and the District Director or designee.
- For credible reports where interstate or international commerce might be affected and an FADD is not immediately available, contact NPIC and the District Director or designee to determine an action plan to rapidly conduct the investigation.

**3. Assign FAD/EDI Case Coordinator(s).**

Assign the FAD/EDI Case Coordinator(s) for communication, investigation support, and EMRS data entry as needed or required by the location, scale, complexity, or urgency of the investigation.

**4. Conduct a timely investigation.**

Ensure that the investigation is initiated within 8 hours of assignment to the FADD, and ensure that the site visit or field investigation with examination is conducted within 24 hours of assignment.

**5. Assign classification of investigation and diagnostic sample priority.**

Agree with the FADD on the classification of investigation and the designation of diagnostic sample Priority 1, 2, 3, or A either during or following the initial investigation.

- In the event a consensus cannot be reached or questions or concerns are raised, discuss via conference call with the District Director or designee, NPIC, NVSL Director, and NAHLN Laboratory Director.

**6. Ensure initial case report is prepared and transmitted.**

An initial case report must be prepared and transmitted (e-mail, fax, or phone as needed) to the FADD. Ensure the report includes as much of the following information as possible:

- The date and time of initial report,
- Contact information for producer, owner, manager, agent, veterinary practitioner, or diagnostic lab making the report,
- Primary clinical complaints and/or suspected disease agent, number of species and animals on premises, number of animals and species affected, duration of illness, and the concentration point or distribution center where animal products, meats, articles, or conveyances that might be involved or engaged in interstate or international commerce; and
- The initial EMRS Exam Form and Investigation Form.

**NOTIFICATIONS DURING AN FAD/EDI INVESTIGATION****1. Discuss sample collection, transport, and potential response needs.**

Discuss the following by conference call with the FADD, District Director, NVSL Director, NAHLN Laboratory Director, NPIC, SAHOs of affected States, and Tribal Officials within 2 hours of notifying NPIC of a High Suspicion of FAD/EDI classification or Priority 1 or A diagnostic sample designation:

- The rapid to extraordinary methods used to collect and transport diagnostic samples, and
- The appropriate communications, veterinary medical countermeasures, and regulatory actions recommended and implemented during the investigation period, as necessary, to prevent and/or mitigate the dissemination of an FAD/EDI agent by interstate or international commerce of animals, animal products, meat, articles, or conveyances.

**2. National Veterinary Stockpile (NVS) services.**

Work in close communication and cooperation with NPIC, SAHOs of affected States, and Tribal Officials if there is a request for extraordinary methods of transportation for diagnostic samples.

**CLOSING AN FAD/EDI INVESTIGATION****1. Ensure all electronic EMRS documentation is complete and the investigation is closed.**

**This requires the following:**

- Completed Exam Form, including clinical findings on animal subjects examined.
- Completed Lab Submission Form, including test results on specimens taken.
- Completed Investigation Form, including premises diagnostic status.

**AD SPECIFIC TASKS****1. Assign FAD Referral Control Number.**

Assign the FAD Referral Control Number in EMRS and transmit to the FADD and SAHO.

**2. Immediately contact NPIC and District Director when any of the following are assigned:**

- High Suspicion of an FAD/EDI classification, or
- Priority 1 diagnostic sample designation, or
- Priority A diagnostic sample designation.

**3. Make a recommendation regarding interstate movement restrictions.**

In consultation with the FADD, District Director, NVSL Director, NPIC, VS ADAs, and VS DA, make a recommendation concerning interstate movement restrictions (authority of the Secretary of Agriculture) during the investigation period. These recommendations are conducted in close communication with the SAHO of the affected State and the NAHLN Laboratory Director.

**4. Report on the situation.**

Provide written and verbal reports, operational updates, and diagnostic updates at intervals requested by the District Director, the VS ADAs, and the VS Deputy Administrator.

**5. Close the investigation.**

Give approval to the FAD/EDI Case Coordinator to close the investigation in EMRS.

**6. Provide follow-up action and case closure.**

For investigations open longer than 30 days, as identified by the District Director, Field Operations Office, provide follow-up action as well as case closure.

**SAHO SPECIFIC TASKS****1. Establish an intrastate quarantine or hold order.**

Based on the recommendation or decision by the FADD, establish an intrastate quarantine or hold order during the investigation period, if necessary.



## FAD/EDI Case Coordinator

1. **The FAD/EDI Case Coordinator is responsible for follow up with the FADD regarding activities on site, as well as responsible for ensuring all records are properly uploaded and entered into EMRS.**
  - The FAD/EDI Case Coordinator will ensure the FADD has received a Referral Control Number for the investigation.
  - Within 24 hours of the completion of the initial field investigation by the FADD, the FAD/EDI Case Coordinator or designee will log into EMRS and verify that the Initial Contact Report was successfully uploaded and all documents are in order (*FADD utilized the EMRS2GO Mobile Application to upload the information*).
  - *NOTE: If the FADD did not utilize the EMRS2GO Mobile Application, the Case Coordinator must ensure that all relevant forms in EMRS are created and properly completed, to include the Premise, Animal Business, Investigation, Exam, and Lab Submission records at a minimum.*
  
2. **The FAD/EDI Case coordinator or designee is responsible for closing the FAD/EDI investigation in EMRS.**
  - *Ensure all electronic EMRS documentation and data entry is complete* to include but not limited to: movement records, written or verbal quarantines, test results, etc.
  - Close any open forms at the appropriate time, such as lab submission forms when test results are received, lab accessions when final accessions are received, etc.
  - Close the Investigation once all associated records are closed and the investigation is complete.

## NPIC/District Director, Field Operations Office

### INITIATING AND CONDUCTING AN INVESTIGATION

1. **Determine an action plan.**  
In the event that no FADD is immediately available to investigate a credible report of a potential FAD/EDI incident that involves interstate or international commerce, determine an action plan in collaboration with the AD and District Director.
  
2. **Assist FADD, AD, AND SAHO.**  
Consult with the FADD, AD, SAHOs, District Director or designee, NVSL Director, and NAHLN Laboratory Director when questions, concerns, or disagreements arise regarding the classification of investigation or the designation of diagnostic sample priority.

### NOTIFICATIONS DURING AN FAD/EDI INVESTIGATION

1. **Discuss sample collection, transport, and potential response needs.**  
Discuss the following by conference call with the AD, FADD, District Director, NVSL Director, NAHLN Laboratory Director, NPIC, SAHOs, and Tribal Officials, within 2 hours of notifying NPIC of a High Suspicion of FAD/EDI classification or Priority 1 or A diagnostic sample designation:
  - The rapid to extraordinary methods used to collect and transport diagnostic samples, and
  - The appropriate communications, veterinary medical countermeasures, and regulatory actions recommended and implemented during the investigation period, as necessary, to prevent and/or mitigate the dissemination of an FAD/EDI agent by interstate or international commerce of animals, animal products, meat, articles, or conveyances.

**2. Report to the VS DA, VS ADAs, Legislative and Public Affairs, and USDA Homeland Security Office all reports of the following:**

- High Suspicion of an FAD/EDI investigation, or
- Priority 1 diagnostic sample submissions, or
- Priority A diagnostic sample submissions.

**3. Report recommendations regarding interstate movement restrictions.**

Report recommendations made by the AD regarding interstate movement restrictions (authority of the Secretary of Agriculture) during the investigation period to the VS DA and VS ADAs.

**4. Report on the situation.**

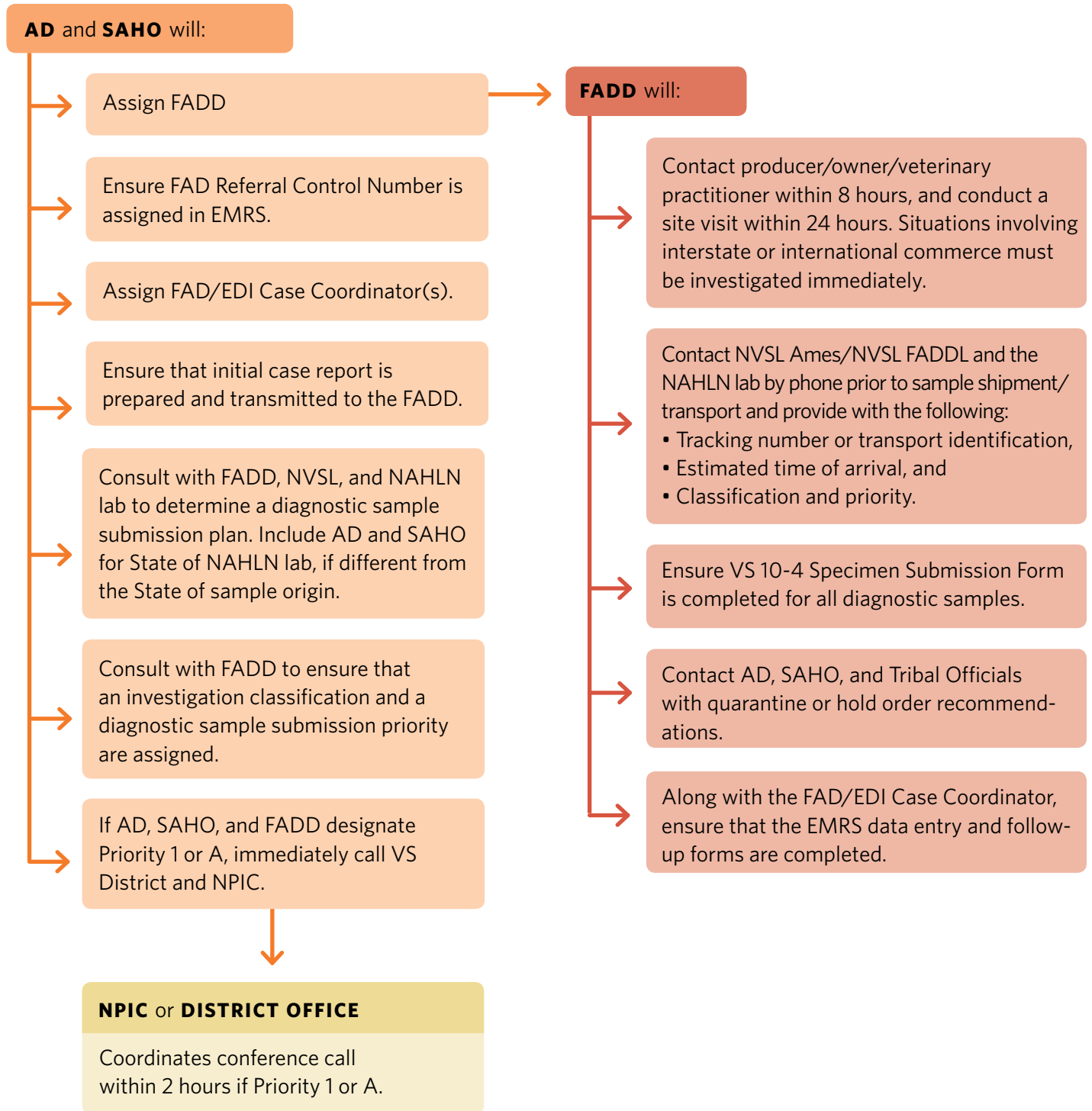
In addition to using EMRS, provide written and verbal situation reports, operational updates, and diagnostic updates at intervals requested by the District Director, the VS ADAs, and the VS DA.

**5. Utilize National Veterinary Stockpile (NVS) services**

When requested by the District Director or designee, VS ADAs, or the VS DA, use NVS services for the extraordinary methods of transporting diagnostic samples. This activation is conducted in close cooperation and communication with the AD, SAHOs, and Tribal Officials.

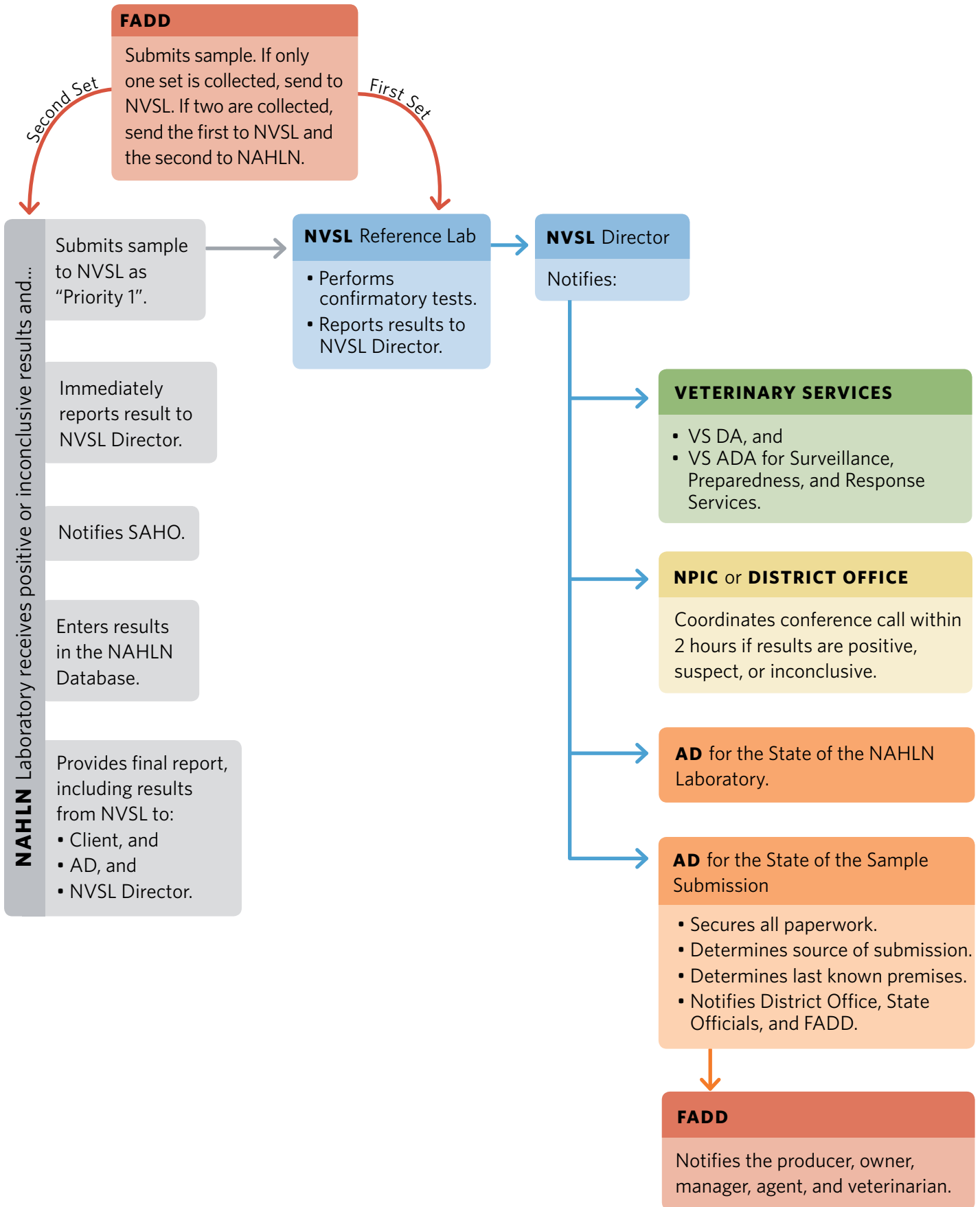
## 4 PROCEDURES FOR THE INVESTIGATION OF POTENTIAL FOREIGN ANIMAL DISEASE/EMERGING DISEASE INCIDENTS

### FOREIGN ANIMAL DISEASE (FAD) INVESTIGATION IS INITIATED





## DIAGNOSTIC SAMPLE REPORTING PROCEDURES



## 5 INVESTIGATION CLASSIFICATION AND DIAGNOSTIC SAMPLE PRIORITIZATION

# 1

### PRIORITY 1

- High Suspicion
- NPIC or District Office coordinates conference call within 2 hours
- Rapid or extraordinary methods for sample collection and transport
- Testing conducted immediately upon arrival (overtime services as needed)

# 2

### PRIORITY 2

- Intermediate Suspicion
- Rapid methods for sample collection and transport
- Testing conducted as necessary (overtime services as needed)
  - If sample arrives:
    - Before close of business — test immediately
    - After close of business — test immediately
    - Saturday — test on weekends only with prior notification and approval

# 3

### PRIORITY 3

- Low Suspicion
- Routine methods for sample collection and transport
- Testing conducted in accession order (no overtime services)

# A

### PRIORITY A

- Intermediate or Low Suspicion
- NPIC or District Office coordinates conference call within 2 hours
- Potential circumstances of investigation indicate need for rapid or extraordinary methods for sample collection and transport
- Testing conducted immediately upon arrival (overtime as needed)

### Definitions/Notes

**Extraordinary methods**—hand-carried samples, couriers, counter-to-counter services, and complete commercial services (e.g., Quick International Courier)

**Rapid methods**—express shipping services (e.g., FedEx priority overnight)

**Note:** Priority 1 and A may use extraordinary methods

## 1 INTRODUCTION

Diagnostic specimens might contain potentially infectious agents. To ensure public safety, international regulations for the transport of infectious materials, including dangerous goods, by any mode of transport, have been established. These regulations include detailed protocols for the proper packaging and shipping of diagnostic specimens to diagnostic laboratories. To be qualified to ship Category A substances, shippers must successfully complete an IATA (International Air Transportation Association) Dangerous Goods training course. Because regulations change over time, Dangerous Goods shippers must pass a re-certification exam every two years.

The information provided within this chapter is intended for field reference only and is not a substitute for the IATA training course. The following summaries were prepared based on regulations in place effective June, 2010, available from the International Air Transportation Association.

### *What Constitutes a Diagnostic Specimen?*

- ✓ Diagnostic specimen means material collected directly from animals or the environment and transported for research, diagnosis, investigational activities, or disease treatment or prevention.
- ✓ Diagnostic specimens include excreta, secretions, blood and its components, tissue and tissue swabs, body parts, and specimen in transport media (e.g., swabs, culture media).

## 2 WHAT CATEGORY OF SPECIMEN DO I HAVE?

The first step in preparing diagnostic specimens for shipment to a diagnostic laboratory is to determine which category of specimen you need to ship. There are three categories of specimens defined below: ▼

### CATEGORY A SUBSTANCES

An infectious substance that is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, or life-threatening or fatal disease in otherwise healthy humans or animals.

### CATEGORY B SUBSTANCES

A Category B substance is an infectious substance that does not meet the criteria for inclusion in Category A. A category B infectious substance is not in a form generally capable of causing permanent disability, or life-threatening or fatal disease in otherwise healthy humans or animals.

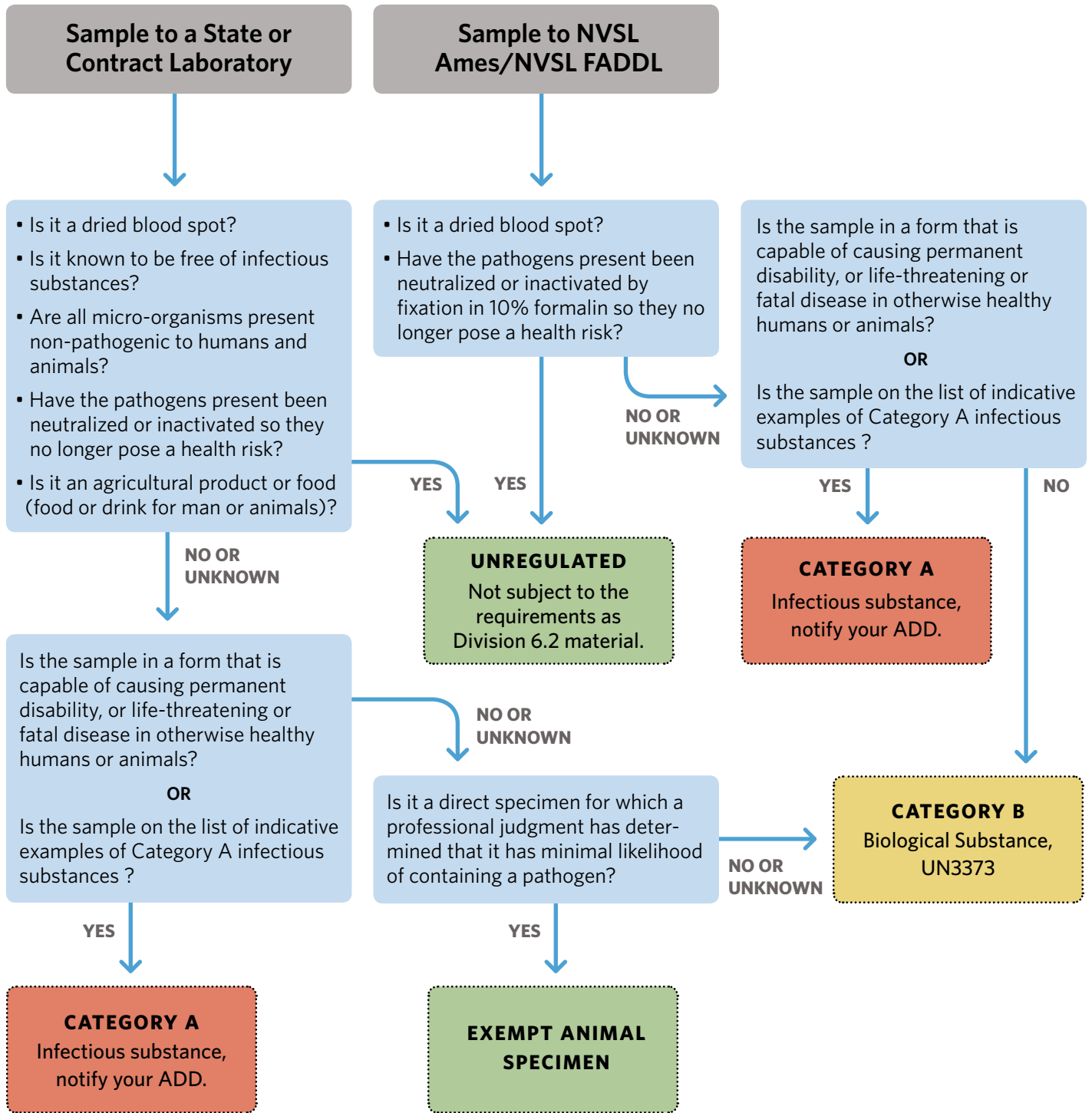
### EXEMPT ANIMAL SPECIMENS

Animal specimens for which there is minimal likelihood that pathogens are present are not subject to these regulations if the specimen is packed in a material that will prevent any leakage and is marked with the words "Exempt animal specimen."

Once you have identified the category of diagnostic specimens you are shipping, refer to the appropriate section for instructions on proper packaging and shipping methods for your specimens.



**SAMPLE CLASSIFICATION FLOWCHART**



### 3 PREPARING DIAGNOSTIC SPECIMENS FOR SHIPMENT

#### CATEGORY A SUBSTANCES (UN2814, UN2900)

Category A shipments require special-rated triple packaging, labeling, and documentation. Because these samples are considered dangerous goods, the shipper must have received training and certification in an IATA Dangerous Goods course. If you are suspicious of infection with a Category A pathogen in animals, it is appropriate to notify either the local or state public health department, USDA Assistant District Director (ADD), or State Animal Health Official (SAHO) who can provide assistance with sample packaging and shipping. Note that many carriers, including the UPS and the US Post Office, will not accept these packages.

**Most veterinarians will not have a need to routinely ship Category A substances.**

#### UN2814 Infectious substances affecting humans and animals.



<i>Bacillus anthracis</i> *	Highly pathogenic avian influenza virus *
<i>Brucella abortus</i> *	Japanese encephalitis virus *
<i>Brucella melitensis</i> *	Junin virus
<i>Brucella suis</i> *	Kyasanur Forest disease virus
<i>Burkholderia mallei</i> — <i>Pseudomonas mallei</i> —Glanders *	Lassa virus
<i>Burkholderia pseudomallei</i> — <i>Pseudomonas pseudomallei</i> *	Machupo virus
<i>Chlamydia psittaci</i> —avian strains *	Marburg virus
<i>Clostridium botulinum</i> *	Monkey pox virus
<i>Coccidioides immitis</i> *	<i>Mycobacterium tuberculosis</i> *
<i>Coxiella burnetii</i> *	Nipah virus
Crimean-Congo hemorrhagic fever virus	Omsk hemorrhagic fever virus
Dengue virus *	Poliovirus *
Eastern equine encephalitis virus *	Rabies virus *
<i>Escherichia coli</i> , verotoxigenic *	<i>Rickettsia prowazekii</i> *
Ebola virus	<i>Rickettsia rickettsii</i> *
Flexal virus	Rift Valley fever virus *
<i>Francisella tularensis</i> *	Russian spring-summer encephalitis virus *
Guanarito virus	Sabia virus
Hantaan virus	<i>Shigella dysenteriae</i> type I *
Hantaviruses causing hemorrhagic fever with renal syndrome	Tick-borne encephalitis virus *
Hendra virus	Variola virus
Hepatitis B virus *	Venezuelan equine encephalitis virus *
Herpes B virus *	West Nile virus *
Human immunodeficiency virus *	Yellow fever virus *
	<i>Yersinia pestis</i> *

#### UN2900 Infectious substances affecting animals only.



African swine fever virus \*

Avian paramyxovirus Type 1—Velogenic Newcastle disease virus \*

Classical swine fever virus \*

Foot-and-mouth disease virus \*

Lumpy skin disease virus \*

*Mycoplasma mycoides*—Contagious bovine pleuro pneumonia \*

Peste des petits ruminants virus \*

Rinderpest virus \*

Sheep pox virus \*

Goat pox virus \*

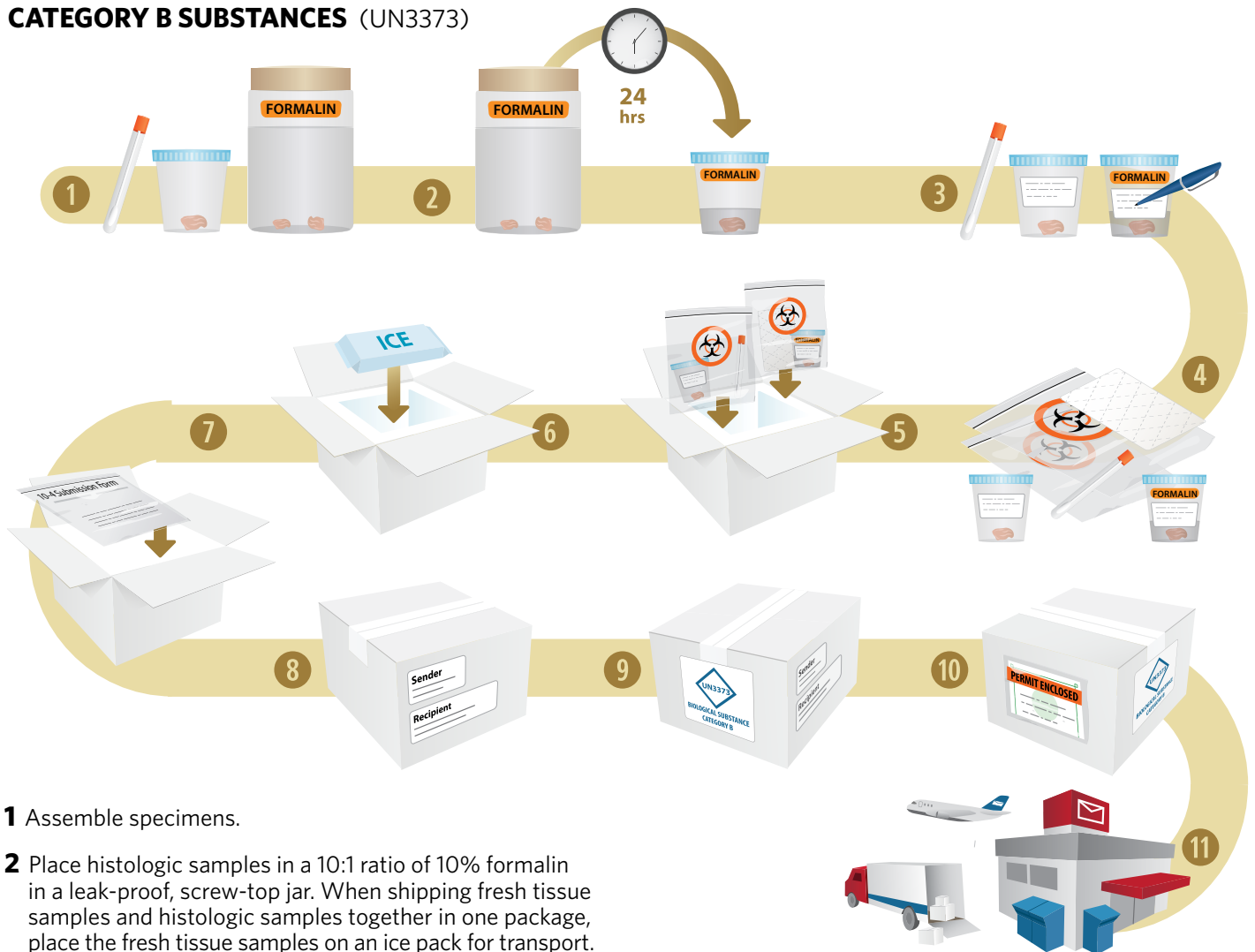
Swine vesicular disease virus \*

Vesicular stomatitis virus \*

Lists Updated: 2009

\* Cultures only

## CATEGORY B SUBSTANCES (UN3373)



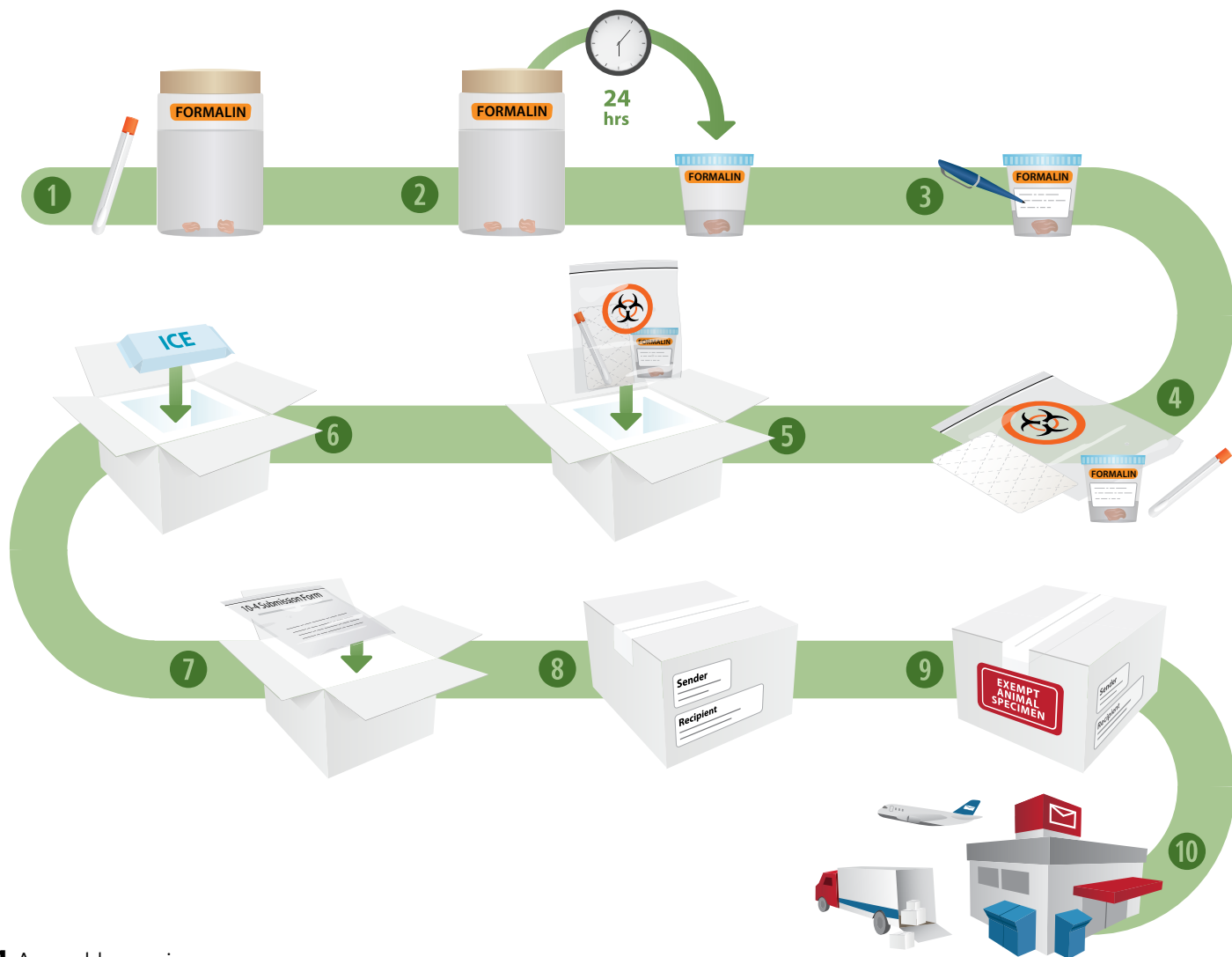
- 1 Assemble specimens.
- 2 Place histologic samples in a 10:1 ratio of 10% formalin in a leak-proof, screw-top jar. When shipping fresh tissue samples and histologic samples together in one package, place the fresh tissue samples on an ice pack for transport.
- 3 Label all specimens with the tissue source, date, and relevant farm information.
- 4 Place jars containing 10% formalin in an approved secondary container, separate from samples intended for microbiological analysis. Protect fragile items (like glass) with padding. Add absorbent material capable of absorbing the entire liquid contents.
- 5 Place all secondary containers in an approved leak-proof package capable of protecting the contents. If shipping by air transport, use containers rated to an internal pressure of 95 kPa to withstand aircraft cargo hold pressure changes.
- 6 When shipping fresh tissues and/or swab samples, place a frozen ice pack (NOT dry ice) in the shipping container. Ice packs are unnecessary when shipping histologic samples only.
- 7 The paperwork should be placed between the primary and secondary containers or between the lid of the cooler and cardboard lid of the box.
- 8 Seal shipping container and label with sender and recipient's name, address, and phone number.
- 9 Affix package with a "Biological Substance, Category B, UN3373" diamond label. Cover labels with clear tape.
- 10 For international shipments (i.e., those arriving from outside the U.S.) contact the laboratory for a copy of an import permit and instructions for proper packaging to clear customs. Arrange all international shipments in advance with the receiving laboratory.
- 11 Ship package, preferably by overnight delivery.

### Air cargo shipment limits:

- Primary containers cannot exceed 1 liter or 4 kg (solids).
- Entire package cannot exceed 4 liters or 4 kg total.
- To ship large body parts, organs, or whole bodies exceeding these limits, seek a Special Provision A82. On the waybill accompanying the shipment, note: "Special Provision A82 (Title 49 CFR 172.102) or A81 (IATA) to exceed volume and weight limit. The quantity limits do not apply to animal body parts, whole organs, or whole bodies known to contain or suspected of containing an infectious substance, UN 3373, Biological Substance, Category B."



## EXEMPT DIAGNOSTIC SPECIMENS



**1** Assemble specimens.

**2** Place histologic samples in a 10:1 ratio of 10% formalin in a leak-proof, screw-top jar. When shipping fresh tissue samples and histologic samples together in one package, place the fresh tissue samples on an ice pack for transport.

**3** Label all specimens with the tissue source, date, and relevant farm information.

**4** Place jars containing 10% formalin in an approved secondary container, separate from samples intended for microbiological analysis. Protect fragile items (like glass) with padding. Add absorbent material capable of absorbing the entire liquid contents.

**5** Place all secondary containers in an approved leak-proof package capable of protecting the contents.

**6** When shipping fresh tissues and/or swab samples, place a frozen ice pack (NOT dry ice) in the shipping container. Ice packs are unnecessary when shipping histologic samples only.

**7** The paperwork should be placed between the primary and secondary containers or between the lid of the cooler and cardboard lid of the box.

**8** Seal shipping container and label with sender and recipient's name, address, and phone number.

**9** Label package with "Exempt Animal Specimen." Cover labels with clear tape.

**10** Ship package, preferably by overnight delivery.

**Air cargo shipment limits:**

- Primary containers cannot exceed 1 liter or 4 kg (solids).
- Entire package cannot exceed 4 liters or 4 kg total.
- To ship large body parts, organs, or whole bodies exceeding these limits, seek a Special Provision A82. On the waybill accompanying the shipment, note: "Special Provision A82 (Title 49 CFR 172.102) or A81 (IATA) to exceed volume and weight limit. The quantity limits do not apply to animal body parts, whole organs, or whole bodies known to contain or suspected of containing an infectious substance, UN 3373, Biological Substance, Category B."

## 4 CONTACT INFORMATION

### NVSL FADDL

#### PRIOR TO SHIPPING:

**NVSL FADDL must be contacted by phone prior to shipment or transport of diagnostic samples for a Priority 1, 2, or A diagnostic sample designation.**

Arrangements must always be made to pick up the diagnostic samples from the Federal Express office, or meet a courier using counter-to-counter service at an airport or other location. Unless FADDL is notified by phone prior to the shipment or transport, the diagnostic samples will be delayed in delivery to FADDL.

#### *If you have a Priority 1 or Priority A Diagnostic Sample:*

If transported by courier, counter-to-counter service, or complete commercial carrier such as FedEx Custom Critical, AirNet, or UPS Express Critical:

- ✓ Call NPIC and VS District Director or designee immediately to arrange transportation details,
- ✓ Call NVSL FADDL immediately to arrange diagnostic sample and transportation details.

### NVSL FADDL CONTACT INFORMATION

#### DURING BUSINESS HOURS (MONDAY-FRIDAY, 8:30 AM-4:15 PM EST)

Main Office	(631) 323-3256
-------------	----------------

#### AFTER HOURS AND WEEKENDS

Diagnostic Services Section Head	(631) 375-5314
----------------------------------	----------------

Acting Diagnostic Services Section Head	(631) 405-0218
---	----------------

Courier	(631) 566-0073
---------	----------------

#### AFTER HOURS AND WEEKENDS 24/7 (IF UNABLE TO REACH SOMEONE LISTED ABOVE)

National Centers for Animal Health Dispatch	(515) 337-7200
---	----------------

**NVSL AMES****PRIOR TO SHIPPING:**

**NVSL AMES must be contacted by phone prior to shipment or transport of diagnostic samples for a Priority 1, 2, or A diagnostic sample designation.**

*If you have a Priority 1 or Priority A Diagnostic Sample:*

If transported by courier, counter-to-counter service, or complete commercial carrier such as FedEx Custom Critical, AirNet, or UPS Express Critical:

- ✓ Call NPIC and VS District Director or designee immediately to arrange transportation details,
- ✓ Call NVSL Ames immediately to arrange diagnostic sample and transportation details.

**NVSL AMES CONTACT INFORMATION****DURING BUSINESS HOURS (MONDAY-FRIDAY, 8:00 AM-4:30 PM CST)**

NVSL Director	(515) 337-7301
Diagnostic Virology	(515) 337-7551
Pathobiology	(515) 337-7526
Diagnostic Bacteriology	(515) 337-7568

**AFTER HOURS AND WEEKENDS 24/7 (IF UNABLE TO REACH SOMEONE LISTED ABOVE)**

National Centers for Animal Health Dispatch	(515) 337-7200
---	----------------



## NPIC

### PRIOR TO SHIPPING

NPIC must be contacted by phone prior to shipment or transport of diagnostic samples for a Priority 1, 2, or A diagnostic sample designation.

#### NPIC CONTACT INFORMATION

##### DURING BUSINESS HOURS (MONDAY-FRIDAY, 8:00 AM-4:30 PM EST)

---

NPIC/NVS 24/7 Emergency Answering Service	(800) 940-6524
---	----------------

##### VS APHIS DISTRICT OFFICES

---

District One	(508) 363-2290
District Two	(352) 313-3060
District Three	(517) 337-4700
District Four	(512) 383-2400
District Five	(970) 494-7400
District Six	(916) 854-3950

# 5 10-4 SUBMISSION FORM SAMPLE

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0579-0090, 0101, and 0212. The time required to complete this information collection is estimated to average .5 hours per response for 0579-0090, 1 hour per response for 0579-0101, and .333 hours per response for 0579-0212, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

OMB Approved  
0579-0090, 0579-0101,  
and 0579-0212

<b>UNITED STATES DEPARTMENT OF AGRICULTURE ANIMAL AND PLANT HEALTH INSPECTION SERVICE NATIONAL VETERINARY SERVICES LABORATORIES P.O. BOX 844, 1920 DAYTON AVENUE, AMES, IA 50010 (515) 337-7514</b>	<h2 style="margin:0;">SPECIMEN SUBMISSION</h2>	PAGE <b>1 OF 1</b>
---	--	-----------------------

INSTRUCTIONS: Use a separate form for each species and each owner/broker. See "Instructions for Completing VS Form 10-4" for definitions.

1. SUBMITTER NAME (including Business Name) <b>Jack Sparrow</b>	2. NVSL SUBMITTER ID <b>12345</b>	3. NAME OF OWNER <input type="checkbox"/> Check if wildlife (no owner) <b>Johnson</b>
EMAIL ADDRESS <b>Jack.Sparrow@hotmail.com</b>		OWNER CITY <b>City</b>
PHONE NO. <b>555-456-1234</b> FAX NO. <b>555-456-5678</b>		STATE/COUNTRY <b>ST</b>
<b>4. LOCATION OF ANIMALS</b>		
MAILING ADDRESS (Street, City, State, ZIP Code) <b>1 Mailing St, City, ST 99999</b>		PREMISES ID
		COUNTY <b>County</b>
		STATE/COUNTRY <b>ST</b>

<b>5. PAYMENT METHOD</b>		
<input type="checkbox"/> USER FEE ACCOUNT NO.	<input type="checkbox"/> CHECK/MONEY ORDER (Enclosed, payable to USDA in US dollars)	<input type="checkbox"/> CREDIT CARD Number: Exp. Date:
6. HERD/FLOCK SIZE <b>200</b>	9. EXAMINATIONS REQUESTED <b>FAD Rule Outs</b> (list suspects - for example: FMD - PCR, VS - PCR, Elisa) <b>Priority #</b>	10. COLLECTED BY <b>Jack Sparrow</b>
7. NO. IN HERD/FLOCK AFFECTED <b>100</b>		11. DATE COLLECTED <b>mm/dd/yy</b>
8. NO. IN HERD/FLOCK DEAD <b>0</b>		12. AUTHORIZED BY <b>ADD</b>
13. PURPOSE OF SUBMISSION (See instructions for definitions)		14. COUNTRY OF ORIGIN/DESTINATION <b>USA</b>
<input type="checkbox"/> Interstate Movement <input type="checkbox"/> Import <input type="checkbox"/> TB <input type="checkbox"/> Reagent Evaluation <input type="checkbox"/> Export <input checked="" type="checkbox"/> FAD/EP Diagnostic <input type="checkbox"/> General Diagnostic <input type="checkbox"/> NVSL Intralab <input type="checkbox"/> Pre-Import <input type="checkbox"/> Surveillance <input type="checkbox"/> Developmental Research		15. REFERRAL NUMBER <b>1234567</b>
16. PRESERVATION <input type="checkbox"/> None <input checked="" type="checkbox"/> Ice Pack <input type="checkbox"/> Dry Ice <input checked="" type="checkbox"/> Formalin <input type="checkbox"/> Borax <input type="checkbox"/> Alcohol <input type="checkbox"/> Other (Specify)		

17. SPECIMENS SUBMITTED ("X" applicable item(s))		18. TOTAL NUMBER OF SPECIMENS SUBMITTED <b>10</b>
<input type="checkbox"/> Blood <input type="checkbox"/> Feces <input type="checkbox"/> Parasite <input checked="" type="checkbox"/> Serum <input checked="" type="checkbox"/> Tissue (specify) <input type="checkbox"/> Whole Animal <input checked="" type="checkbox"/> Other (specify) <input type="checkbox"/> Culture <input type="checkbox"/> Feed <input type="checkbox"/> Plant <input type="checkbox"/> Soil <input type="checkbox"/> Urine <input type="checkbox"/> Fetus <b>oral swab &amp; tissue, foot tissue, &amp; fixed</b> <input type="checkbox"/> Extract <input type="checkbox"/> Milk <input type="checkbox"/> Semen <input checked="" type="checkbox"/> Swab (specify) <input type="checkbox"/> Water <input type="checkbox"/> DNA/RNA		
19. SPECIES OR SOURCE ("X" ONLY one)		20. NUMBER OF ANIMALS SAMPLED <b>2</b>
<input checked="" type="checkbox"/> Cattle <input type="checkbox"/> Goat <input type="checkbox"/> Chicken <input type="checkbox"/> Bison <input type="checkbox"/> Fish <input type="checkbox"/> Other (specify) <input type="checkbox"/> Swine <input type="checkbox"/> Horse <input type="checkbox"/> Turkey <input type="checkbox"/> Deer (specify) <input type="checkbox"/> Environment <input type="checkbox"/> Sheep <input type="checkbox"/> Donkey <input type="checkbox"/> Other bird (specify) <input type="checkbox"/> Elk <input type="checkbox"/> Reagent		

21. IDENTIFICATION (See instructions <250 samples per form)					IDENTIFICATION				
Sample ID	Animal ID	Breed	Age	Sex	Sample ID	Animal ID	Breed	Age	Sex
1-serum	555	cow	2	M	6-serum	666	cow	1	F
2-oral swab	555	cow	2	M	7-o. swab	666	cow	1	F
3-oral tissue	555	cow	2	M	8-o.tissue	666	cow	1	F
4-foot tissue	555	cow	2	M	9-ft.tissue	666	cow	1	F
5-fixed	555	cow	2	M	10-fixed	666	cow	1	F

22. ADDITIONAL DATA (History, clinical signs, post mortem findings, remarks, tentative diagnosis, special instructions. Use additional sheets if necessary).

Date of onset, clinical signs, disease progression, post mortem findings, epidemiologic information.

Attach separate sheet if necessary.

23. SIGNATURE OF SUBMITTER AND DATE				<b>NVSL USE ONLY</b>	
X					
<b>NVSL USE ONLY</b>					
CONDITION	PRIORITY	DISTRIBUTION	RECEIVED BY		

# 6 SHIPPING TO NVSL FADDL



## IMPORTANT

All samples to be shipped to NVSL FADDL must be shipped via FedEx® Priority Overnight. Phone contact or notification must be made with NVSL FADDL prior to shipment.

### FEDEX® PRIORITY WEEKDAY OVERNIGHT (For samples to be received Monday-Friday)

#### A. RECIPIENT INFO

Name: **FAD Priority 1,2,A**  
 Phone: **(631) 323-3256**  
 Company: **USDA/APHIS/FADDL**  
 Address: **Orient Point Warehouse, 40550 Rte 25**  
 City: **Orient Point** State: **NY** Zip: **11957**

#### B. HOLD LOCATION (REQUIRED)

Hold Location Address:  
**579 Edwards Ave., Calverton, NY 11933**  
**This address must be included;** It enables NVSL FADDL personnel to pick up the package as soon as possible in the morning, therefore allowing a full day of laboratory testing and studies.

#### C. BILLING

Bill to Sender, using the **billing number or account number** obtained from the ADD.

#### D. BILLING REFERENCE

For Internal Billing Reference, use the **accounting code** obtained from the ADD.

#### E. HOLDING

Samples received Monday-Friday:  
 Check **HOLD Weekday**.

#### F. SERVICE

Check **FedEx® Priority Overnight**.

#### G. SPECIAL HANDLING

Check **Direct Signage**.  
 Check **Yes, Shipper's Declaration not required**.

Remember to retain the **Sender's Copy** of the **airbill** for your records.

FedEx Tracking Number: 8986 9057 0473

**1 From** Please print and press hard.

Date: \_\_\_\_\_ Sender's FedEx Account Number: \_\_\_\_\_ SENDER'S FEDEX ACCOUNT NUMBER ONLY

Sender's Name: \_\_\_\_\_ Phone: ( ) \_\_\_\_\_

Company: \_\_\_\_\_

Address: \_\_\_\_\_ Dept./Floor/Suite/Room: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ ZIP: \_\_\_\_\_

**D Your Internal Billing Reference** (First 24 characters will appear on invoice) OPTIONAL

**3 To**

Recipient's Name: **FAD Priority 1,2,A** Phone: **(631) 323-3256**

Company: **USDA/APHIS/FADDL**

Address: **Orient Point Warehouse, 40550 Rte 25** We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room: \_\_\_\_\_

Address: **579 Edwards Ave, Calverton, NY 11933** Use this line for the HOLD location address or for continuation of your shipping address.

City: **Orient Point** State: **NY** ZIP: **11957**

SAMPLE

Form ID No. **0200** Sender's Copy

**F Express Package Service** \*To most locations. NOTE: Service order has changed. Please select carefully.

Next Business Day	2 or 3 Business Days
<input type="checkbox"/> FedEx First Overnight <small>Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.</small>	<input type="checkbox"/> NEW FedEx 2Day A.M. <small>Second business morning.* Saturday Delivery NOT available.</small>
<input checked="" type="checkbox"/> FedEx Priority Overnight <small>Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.</small>	<input type="checkbox"/> FedEx 2Day <small>Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.</small>
<input type="checkbox"/> FedEx Standard Overnight <small>Next business afternoon.* Saturday Delivery NOT available.</small>	<input type="checkbox"/> FedEx Express Saver <small>Third business day.* Saturday Delivery NOT available.</small>

**5 Packaging** \*Declared value limit \$500.

FedEx Envelope\*  
  FedEx Pak\*  
  FedEx Box  
  FedEx Tube  
  Other

**G Special Handling and Delivery Signature Options**

SATURDAY Delivery  
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required  
Package may be left without obtaining a signature for delivery.

Direct Signature  
Someone at recipient's address may sign for delivery. Fee applies.

Indirect Signature  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

Does this shipment contain dangerous goods?  
Use box must be checked.

No  
  Yes As per attached Shipper's Declaration  
  Yes Shipper's Declaration not required  
  Dry Ice Dry Ice, UN 1845 \_\_\_\_\_ x \_\_\_\_\_ lb  
  Cargo Aircraft Only

**7 Payment Bill to:** Enter FedEx Acct. No. or Credit Card No. below.

Sender Acct. No. in Section I will be billed.  
  Recipient  
  Third Party  
  Credit Card  
  Cash/Check

FedEx Acct. No. Credit Card No. Bill to: Bill to:

Total Packages: **1** Total Weight: **10** lbs. Total Declared Value\*: \$ \_\_\_\_\_

\*Our liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.



**FEDEX® PRIORITY WEEKEND OVERNIGHT** (For samples to be received Saturday)

**A. RECIPIENT INFO**

Name: **FAD Priority 1,2,A**  
 Phone: **(631) 323-3256**  
 Company: **USDA/APHIS/FADDL**  
 Address: **Orient Point Warehouse, 40550 Rte 25**  
 City: **Orient Point** State: **NY** Zip: **11957**

**B. HOLD LOCATION (REQUIRED)**

Hold Location Address:  
**579 Edwards Ave., Calverton, NY 11933**  
**This address must be included;** It enables NVSL FADDL personnel to pick up the package as soon as possible in the morning, therefore allowing a full day of laboratory testing and studies.

**C. BILLING**

Bill to Sender, using the **billing number or account number** obtained from the ADD.

**D. BILLING REFERENCE**

For Internal Billing Reference, use the **accounting code** obtained from the ADD.

**E. HOLDING**

Samples received Saturday:  
 Check **HOLD Saturday**.  
 Priority 1, 2, or A diagnostic samples sent on Friday for Saturday delivery will be held at the FedEx® office until Monday unless prior arrangements for Saturday diagnostic testing are made with FADDL personnel.

**F. SERVICE**

Check **FedEx® Priority Overnight**.

**G. SPECIAL HANDLING**

For Priority 1, 2, and A samples sent on Friday:  
 Check **Saturday Delivery**.  
 Check **Direct Signage**.  
 Check **Yes, Shipper's Declaration not required**.

**Remember to retain the Sender's Copy of the airbill for your records.**

**FedEx Express US Airbill** FedEx Tracking Number **8986 9057 0473** Form ID No. **0200** Sender's Copy

**1 From Please print and press hard.** Date \_\_\_\_\_ Sender's FedEx Account Number **SENDER'S FEDEX ACCOUNT NUMBER ONLY**

Sender's Name \_\_\_\_\_ Phone ( ) \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_ Dept./Floor/Suite/Room \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

**D Your Internal Billing Reference** First 24 characters will appear on invoice. OPTIONAL

**3 To** Recipient's Name **FAD Priority 1,2,A** Phone ( **631** ) **323-3256**

Company **USDA/APHIS/FADDL**

Address **Orient Point Warehouse, 40550 Rte 25** HOLD Weekday FedEx location address REQUIRED NOT available for FedEx First Overnight. Dept./Floor/Suite/Room \_\_\_\_\_

Address **579 Edwards Ave, Calverton, NY 11933** HOLD Saturday FedEx location address REQUIRED Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations. \_\_\_\_\_

City **Orient Point** State **NY** ZIP **11957**

**F Express Package Service** \*To most locations. Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

**Next Business Day**  FedEx First Overnight Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.  FedEx Priority Overnight Next business morning.\* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.  FedEx Standard Overnight Next business afternoon.\* Saturday Delivery NOT available.

**2 or 3 Business Days**  NEW FedEx 2Day A.M. Second business morning.\*  FedEx 2Day Second business afternoon.\* Transcon shipments will be delivered on Monday unless SATURDAY Delivery is selected.  FedEx Express Saver Third business day.\* Saturday Delivery NOT available.

**5 Packaging** \*Declared value limit \$500.  FedEx Envelope\*  FedEx Pak\*  FedEx Box  FedEx Tube  Other

**G Special Handling and Delivery Signature Options**

SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required Package may be left without obtaining a signature for delivery.  Direct Signature Someone at recipient's address may sign for delivery. Fee applies.  Indirect Signature If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

**Does this shipment contain dangerous goods?** One box must be checked.  No  Yes As per attached Shipper's Declaration not required.  Yes Shipper's Declaration not required.  Dry Ice Dry ice, 5, UN 1845 \_\_\_\_\_ x \_\_\_\_\_ kg.  Cargo Aircraft Only

**7 Payment Bill to:** Enter FedEx Acct. No. or Credit Card No. below.

Sender Acct. No. in Section 1 will be billed.  Recipient  Third Party  Credit Card  Cash/Check

FedEx Acct. No. \_\_\_\_\_ Credit Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Total Packages **1** Total Weight **10** lbs. Total Declared Value\$ \_\_\_\_\_

Your liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.

# 7 SHIPPING TO NVSL AMES



## IMPORTANT

All samples to be shipped to NVSL Ames must be shipped via UPS Next Day Air® or FedEx® Priority Overnight. Phone contact or notification must be made with NVSL Ames prior to shipment.

### UPS NEXT DAY AIR®

#### A. SHIPMENT FROM

Sender Information

#### B. EXTREMELY URGENT DELIVERY TO

Name: **Sample Processing**  
 Company: **USDA/NVSL/LRU**  
 Phone: **(515) 337-7212**  
 Street Address: **1920 Dayton Ave**  
 City: **Ames** State: **IA** Zip: **50010**

#### C. TYPE OF SERVICE

Check **Next Day Air**.

#### D. METHOD OF PAYMENT

Check **Bill Shipper's Account Number**.

**Remember to retain the Sender's Copy of the shipping document for your records.**

UPS Next Day Air® UPS Worldwide Express™ Shipping Document		3 WEIGHT		4 SHIPPER RELEASE	
See instructions on back. Visit UPS.com® or call 1-800-PICK-UPS® (800-742-5877) for additional information and Tariff/Terms and Conditions.		LTR <input type="checkbox"/> PAK <input type="checkbox"/>		WEIGHT	
TRACKING NUMBER		5 TYPE OF SERVICE		DIMENSIONAL WEIGHT If Applicable	
1 SHIPMENT FROM		<input checked="" type="checkbox"/> NEXT DAY AIR <input type="checkbox"/> EXPRESS (INT'L)		LARGE PACKAGE <input type="checkbox"/>	
SHIPPER'S UPS ACCOUNT NO.		FOR INTERNATIONAL SHIPMENTS		6 CHARGES	
REFERENCE NUMBER		<input type="checkbox"/> SATURDAY PICKUP <input type="checkbox"/> SATURDAY DELIVERY		\$ CUSTOMS VALUE \$ DECLARED VALUE FOR CARRIAGE \$ C.O.D. \$ TOTAL CHARGES	
NAME		7 ADDITIONAL HANDLING CHARGE		8 METHOD OF PAYMENT	
TELEPHONE		<input type="checkbox"/> An Additional Handling Charge applies for certain items. See instructions.		<input checked="" type="checkbox"/> SHIPPER'S ACCOUNT NUMBER <input type="checkbox"/> BILL RECEIVER <input type="checkbox"/> BILL THIRD PARTY <input type="checkbox"/> CREDIT CARD <input type="checkbox"/> CHECK	
COMPANY		9 RECEIVER'S/THIRD PARTY'S UPS ACCT. NO. OR MAJOR CREDIT CARD NO.		EXPIRATION DATE	
STREET ADDRESS		THIRD PARTY'S COMPANY NAME		STREET ADDRESS	
CITY AND STATE		CITY AND STATE		CITY AND STATE	
ZIP CODE		ZIP CODE		ZIP CODE	
2 EXTREMELY URGENT DELIVERY TO		10 SHIPPER'S SIGNATURE		DATE OF SHIPMENT	
NAME		X		/ /	
TELEPHONE					
Sample Processing					
COMPANY					
USDA/NVSL/LRU					
STREET ADDRESS					
1920 Dayton Ave.					
CITY AND STATE (INCLUDE COUNTRY IF INTERNATIONAL)					
Ames, IA					
ZIP CODE					
50010					

SAMPLE

This form not needed with UPS Internet Shipping at UPS.com

**FEDEX® PRIORITY WEEKDAY OVERNIGHT** (For samples to be received Monday–Friday)

**A. RECIPIENT INFO**

Name: **Sample Processing**  
 Phone: **(515) 337-7212**  
 Company: **USDA/NVSL/LRU**  
 Recipient's Address: **1920 Dayton Ave**  
 City: **Ames** State: **IA** Zip: **50010**

**B. BILLING**

Bill to Sender, using the **billing number** or **account number** obtained from the ADD.

**C. BILLING REFERENCE**

For Internal Billing Reference, use the **accounting code** obtained from the ADD.


**D. SERVICE**

Check **FedEx® Priority Overnight**.

**E. SPECIAL HANDLING**

Check **Direct Signage**.  
 Check **Yes, Shipper's Declaration** not required.

Remember to retain the **Sender's Copy** of the airbill for your records.



FedEx Tracking Number **8986 9057 0473**

**1 From** Please print and press hard.

Date \_\_\_\_\_ **B** Sender's FedEx Account Number SENDER'S FEDEX ACCOUNT NUMBER ONLY

Sender's Name \_\_\_\_\_ Phone ( ) \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_ Dept./Floor/Suite/Room \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

**C** Your Internal Billing Reference First 24 characters will appear on invoice. OPTIONAL

**3 To**

Recipient's Name **Sample Processing** Phone ( **515** ) **337-7212**

**A** Company **USDA/NVSL/LRU**

Address **1920 Dayton Ave.** HOLD Weekday: FedEx location address REQUIRED NOT available for FedEx First Overnight. We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept./Floor/Suite/Room \_\_\_\_\_

Address \_\_\_\_\_ HOLD Saturday: FedEx location address REQUIRED Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

City **Ames** State **IA** ZIP **50010**

SAMPLE

Form ID No. **0200** **Sender's Copy**

**D Express Package Service** \*To most locations. NOTE: Service order has changed. Please select carefully. Packages up to 150 lbs. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

<p><b>Next Business Day</b></p> <p><input type="checkbox"/> FedEx First Overnight <small>Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.</small></p> <p><input checked="" type="checkbox"/> <b>FedEx Priority Overnight</b> <small>Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.</small></p> <p><input type="checkbox"/> FedEx Standard Overnight <small>Next business afternoon.* Saturday Delivery NOT available.</small></p>	<p><b>2 or 3 Business Days</b></p> <p><input type="checkbox"/> <b>NEW FedEx 2Day A.M.</b> <small>Second business morning.* Saturday Delivery NOT available.</small></p> <p><input type="checkbox"/> FedEx 2Day <small>Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.</small></p> <p><input type="checkbox"/> FedEx Express Saver <small>Third business day.* Saturday Delivery NOT available.</small></p>
--	---

**5 Packaging** \*Declared value limit \$500.

FedEx Envelope\*  FedEx Pak\*  FedEx Box  FedEx Tube  **Other**

**E Special Handling and Delivery Signature Options**

SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required Package may be left without obtaining a signature for delivery.  **Direct Signature** Someone at recipient's address may sign for delivery. Fee applies.  Indirect Signature If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

**Does this shipment contain dangerous goods?** One box must be checked.

No  Yes As per attached Shipper's Declaration  Yes Shipper's Declaration not required.  Dry Ice Dry ice, E UN 1945 \_\_\_\_\_ x \_\_\_\_\_ kg

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.  Cargo Aircraft Only

**7 Payment Bill to:** Enter FedEx Acct. No. or Credit Card No. below.

Sender Acct. No. in Section 1 will be billed.  Recipient  Third Party  Credit Card  Cash/Check

FedEx Acct. No. \_\_\_\_\_ Credit Card No. \_\_\_\_\_ Exp. Date \_\_\_\_\_

Total Packages **1** Total Weight **10** lbs. Total Declared Value! \$ \_\_\_\_\_

\*Our liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including terms that limit our liability.

**612**



**FEDEX® PRIORITY WEEKEND OVERNIGHT** (For samples to be received Saturday)

**A. RECIPIENT INFO**

Name: **Sample Processing**

Phone: **(515) 337-7212**

Company: **USDA/NVSL/LRU**

Recipient's Address: **1920 Dayton Ave**

City: **Ames** State: **IA** Zip: **50010**

**B. BILLING**

Bill to Sender, using the **billing number** or **account number** obtained from the ADD.

**C. BILLING REFERENCE**

For Internal Billing Reference, use the **accounting code** obtained from the ADD.

**D. SERVICE**

Check **FedEx® Priority Overnight**.


**E. SPECIAL HANDLING**

For Priority 1, 2, and A samples sent on Friday:  
Check **Saturday Delivery**.

Check **Direct Signage**.

Check **Yes, Shipper's Declaration not required...**

**Remember to retain the Sender's Copy of the airbill for your records.**



FedEx Tracking Number **8986 9057 0473**

**1 From** Please print and press hard.

Date \_\_\_\_\_ Sender's FedEx Account Number **B** SENDER'S FEDEX ACCOUNT NUMBER ONLY

Sender's Name \_\_\_\_\_ Phone ( \_\_\_\_\_ ) \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_ Dept./Floor/Suite/Room \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ ZIP \_\_\_\_\_

**C Your Internal Billing Reference** OPTIONAL  
First 24 characters will appear on invoice.

**3 To** Recipient's Name **Sample Processing** Phone ( **515** ) **337-7212**

Company **USDA/NVSL/LRU**

Address **1920 Dayton Ave.** HOLD Weekday  
We cannot deliver to P.O. boxes or P.D. ZIP codes. FedEx location address REQUIRED NOT available for FedEx First Overnight. Dept./Floor/Suite/Room \_\_\_\_\_

Address \_\_\_\_\_ HOLD Saturday  
Use this line for the HOLD location address or for continuation of your shipping address. FedEx location address REQUIRED Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations. \_\_\_\_\_

City **Ames** State **IA** ZIP **50010**

SAMPLE

Form ID No. **0200** Sender's Copy

**D Express Package Service** \*To most locations. Packages up to 150 lbs. NOTE: Service order has changed. Please select carefully. For packages over 150 lbs., use the new FedEx Express Freight US Airbill.

Next Business Day	2 or 3 Business Days
<input type="checkbox"/> FedEx First Overnight Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.	<input type="checkbox"/> NEW FedEx 2Day A.M. Second business morning.* Saturday Delivery NOT available.
<input checked="" type="checkbox"/> FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.	<input type="checkbox"/> FedEx 2Day Second business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
<input type="checkbox"/> FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT available.	<input type="checkbox"/> FedEx Express Saver Third business day.* Saturday Delivery NOT available.

**5 Packaging** \*Declared value limit \$500.

FedEx Envelope\*  FedEx Pak\*  FedEx Box  FedEx Tube  Other

**E Special Handling and Delivery Signature Options**

SATURDAY Delivery  
NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.

No Signature Required  
Package may be left without obtaining a signature for delivery.

Direct Signature  
Someone at recipient's address may sign for delivery. Fee applies.

Indirect Signature  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.

**Does this shipment contain dangerous goods?**  
One box must be checked.

No  Yes As per attached Shipper's Declaration  Yes Shipper's Declaration not required.  Dry Ice Dry Ice, 5, UN 1845 \_\_\_\_\_ x \_\_\_\_\_ lb

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.  Cargo Aircraft Only

**7 Payment Bill to:** \_\_\_\_\_ Enter FedEx Acct. No. or Credit Card No. below.


Sender Acct. No. in Section 1 will be billed.  Recipient  Third Party  Credit Card  Cash/Check

FedEx Acct. No. \_\_\_\_\_ Rec. Date \_\_\_\_\_

Total Packages **1** Total Weight **10** lbs. Total Declared Value\* \$ \_\_\_\_\_

\*Our liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and to the current FedEx Service Guide, including terms that limit our liability.

## 8 FIELD SHIPPING CHECKLIST *(based on 49 CFR 173.199 and IATA PI 650)*

A. PACKAGING	CATEGORY B SUBSTANCE	EXEMPT ANIMAL SPECIMEN
Manufacturer's (or NVSL) instructions followed		
Good quality packaging		
Primary receptacles sealed and leak-proof		
Primary container closures secured with secondary means		
Multiple fragile primaries wrapped individually		
Sufficient absorbent inside each secondary		
Secondary packaging properly sealed and leak-proof		
Itemized list of contents between secondary and outer packaging		Not required, but recommended
Rigid outer packaging		Not required, but must pack to prevent any leakage
Minimum external dimensions of outer packaging	One surface at least 100 mm by 100 mm (3.9 inches)	One surface at least 100 mm by 100 mm (3.9 inches)
Maximum quantity (for air shipments)	Liquid – per primary: 1 L (34 oz) Liquid – per outer: 4 L (1 gal) Solid – per outer: 4 kg (8.8 lb)	N/A
<b>B. MARKING, LABELING, DOCUMENTATION</b>		
Name and address of shipper		
Name and address of recipient		
Hazard mark 		N/A
UN number	UN3373 (already on hazard mark)	N/A
Proper shipping name (letters at least 6 mm high)	Biological substance, Category B	N/A
Other markings required	N/A	
Name and telephone number of a person responsible	(on package or waybill)	N/A
<b>C. AIR WAYBILL</b>		
Nature and quantity of goods box must show:	UN 3373 Biological substance, Category B Number of packages	N/A

## 1 COMMON ACRONYMS

<b>ADA (VS)</b>	Associate Deputy Administrator	<b>GI</b>	gastrointestinal
<b>AHPA</b>	Animal Health Protection Act	<b>IATA</b>	International Air Transportation Association
<b>AI</b>	avian influenza	<b>LN</b>	lymph node
<b>APHIS</b>	Animal and Plant Health Inspection Service	<b>LPA</b>	Legislative and Public Affairs
<b>APR</b>	air purifying respirator	<b>NAHLN</b>	National Animal Health Laboratory Network
<b>ASF</b>	African swine fever	<b>ND</b>	Newcastle disease
<b>ADD</b>	Assistant District Director	<b>NPIC</b>	National Preparedness and Incident Coordination
<b>BHI</b>	brain heart infusion	<b>NVS</b>	National Veterinary Stockpile
<b>BSE</b>	bovine spongiform encephalopathy	<b>NVSL</b>	National Veterinary Services Laboratories - Foreign Animal Disease Diagnostic Laboratory
<b>CFR</b>	Code of Federal Regulations	<b>FADDL</b>	
<b>CNS</b>	central nervous system	<b>PAPR</b>	power air purifying respirator
<b>CSF</b>	classical swine fever	<b>PL</b>	Pathobiology Laboratory
<b>CVO</b>	Chief Veterinary Officer	<b>PPE</b>	personal protective equipment
<b>DA (VS)</b>	Deputy Administrator	<b>RCN</b>	Reference Control Number
<b>DBL</b>	Diagnostic Bacteriology Laboratory	<b>SAHO</b>	State Animal Health Official (or Designee)
<b>DVL</b>	Diagnostic Virology Laboratory	<b>SPRS</b>	Surveillance, Preparedness, and Response Services
<b>EDI</b>	emerging disease incident	<b>SVD</b>	swine vesicular disease
<b>EMRS</b>	Emergency Management Response System	<b>USC</b>	United States Code
<b>FAD</b>	foreign animal disease	<b>USDA</b>	United States Department of Agriculture
<b>FADD</b>	Foreign Animal Disease Diagnostician	<b>VS</b>	Veterinary Services
<b>FMD</b>	foot and mouth disease		
<b>FMDV</b>	foot and mouth disease virus		



## 2 SELECTED TERRESTRIAL FAD THREATS TO THE UNITED STATES AND ITS TERRITORIES

FAD	DISEASE AGENT	PRIMARY TYPES	HIGHLY CONTAGIOUS	VECTOR-BORNE DISEASE	ZOOBOTIC POTENTIAL
African horse sickness (AHS)	AHS virus	Equine	No	Yes	No
African swine fever (ASF)	ASF virus	Swine	Yes	Yes	No
Akabane	Akabane virus	Bovine, ovine, caprine	No	Yes	No
Bovine babesiosis	<i>Babesia bigemina</i> , <i>B. bovis</i>	Bovine	No	Yes	No
Classical swine fever (CSF)	CSF virus	Swine	Yes	No	No
Contagious bovine pleuropneumonia (CBPP)	<i>Mycoplasma mycoides</i> , <i>mycoides</i> small-colony type	Bovine	Yes	No	No
Contagious caprine pleuropneumonia (CCPP)	<i>Mycoplasma capricolum</i> <i>capripneumoniae</i>	Caprine	Yes	No	No
Contagious equine metritis (CEM)	<i>Taylorella equigenitalis</i>	Equine	No	No	No
Dourine	<i>Trypanosoma equiperdum</i>	Equine	No	No	No
Equine piroplasmiasis	<i>Babesia caballi</i> , <i>Theileria equi</i>	Equine	No	Yes	No
Foot-and-mouth disease (FMD)	FMD virus	Cloven-hoofed animals	Yes	No	No
Glanders	<i>Burkholderia mallei</i>	Equine	Yes	No	Yes
Heartwater	<i>Ehrlichia ruminantium</i>	Bovine, other ruminants	No	Yes	No
Highly pathogenic avian influenza (HPAI)	HPAI virus	Avian, others	Yes	No	Yes
Japanese encephalitis (JE)	JE virus	Equine, swine	No	Yes	Yes
Lumpy skin disease	Capripox virus	Bovine	No	Yes	No
Nairobi sheep disease (NSD)	NSD virus	Ovine, caprine	No	Yes	Yes, minor

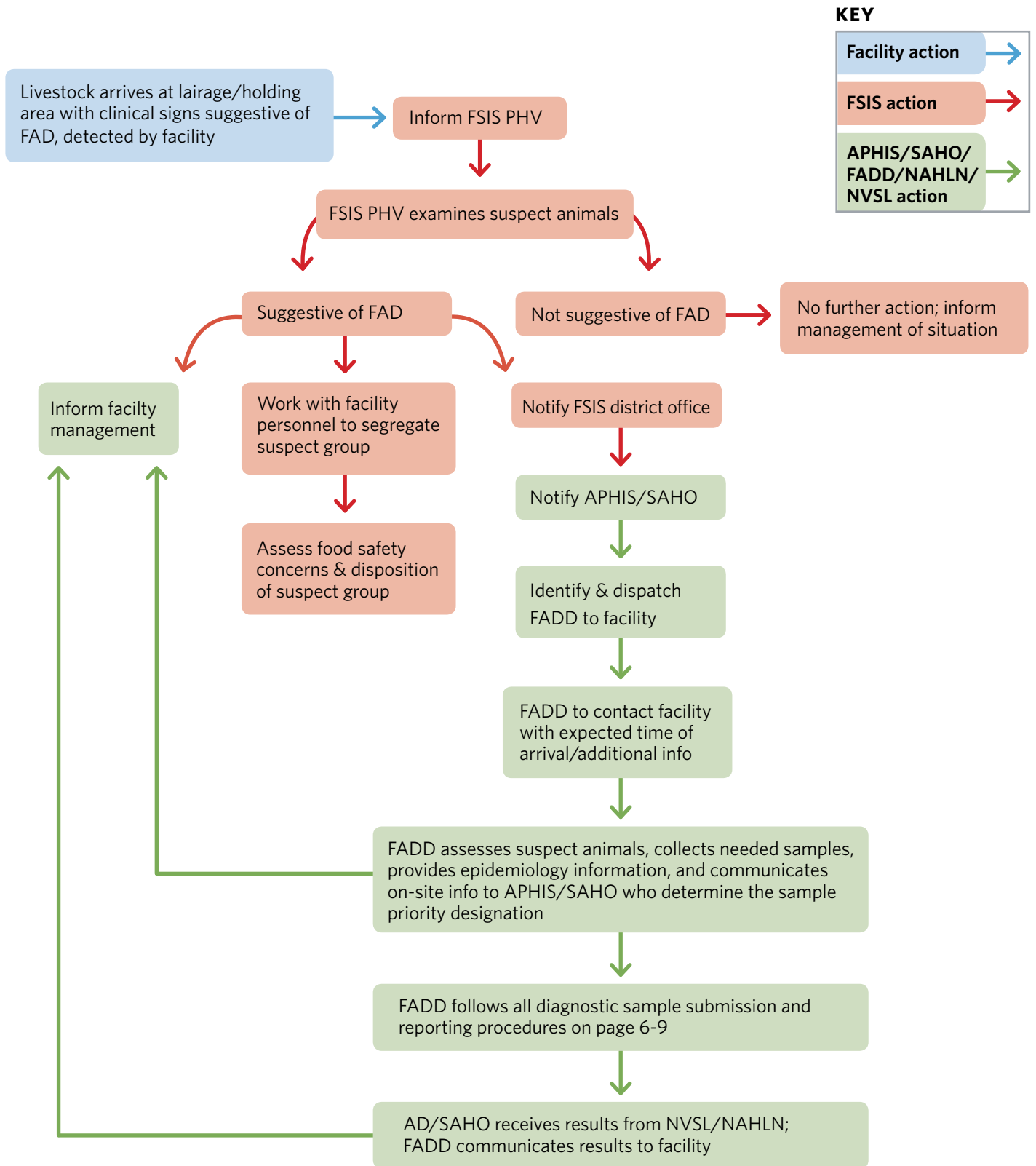
FAD	DISEASE AGENT	PRIMARY TYPES	HIGHLY CONTAGIOUS	VECTOR-BORNE DISEASE	ZOONOTIC POTENTIAL
Newcastle disease (ND)	virulent ND virus	Avian	Yes	No	Yes, minor
Nipah, Hendra	Henipavirus	Swine, equine, respectively	Yes, Nipah	No	Yes
Peste des petits ruminants (PPR)	PPR virus	Caprine, ovine	Yes	No	No
Rabbit hemorrhagic disease (RHD)	RHD virus	Domestic rabbits (European breeds)	Yes	No	No
Rift Valley fever (RVF)	RVF virus	Bovine, caprine, canine, ovine	No	Yes	Yes
Schmallenberg	Schmallenberg virus	Bovine, caprine, ovine	No	Yes	No
Sheep pox, goat pox	Capripox viruses	Ovine, caprine	Yes	No	No
Surra	<i>Trypanosoma evansi</i>	Equine, bovine, others	No	Yes	No
Swine vesicular disease (SVD)	SVD virus	Swine	Yes	No	No
Theileriosis (East Coast fever)	<i>Theileria parva</i> , <i>T. annulata</i>	Bovine	No	Yes	No
Venezuelan equine encephalitis (VEE)	VEE virus	Equine, avian	No	Yes	Yes
Vesicular stomatitis	Vesicular stomatitis viruses (New Jersey, Indiana-1)	Equine, cloven-hoofed animals	No	Yes	Yes, rare

### 3 SELECTED FOREIGN PEST THREATS TO THE UNITED STATES AND ITS TERRITORIES

FOREIGN PEST COMMON NAME	FOREIGN PEST SCIENTIFIC NAME	PRIMARY TYPE OF ANIMAL AFFECTED	DISEASE TRANSMITTED; CONDITION CAUSED	ZOONOTIC POTENTIAL
Bont tick	<i>Amblyomma hebraeum</i>	Bovine, reptiles, other species	Heartwater	African tick fever, Tick typhus
Tropical bont tick	<i>Amblyomma variegatum</i>	Bovine, reptiles, other species	Heartwater, Nairobi sheep disease, bovine dermatophilosis	Tick typhus, Crimean Congo hemorrhagic fever (CCHF), yellow fever
Screwworm—Old World	<i>Chrysomya bezziana</i>	Warm-blooded animals	Myiasis	Myiasis
Screwworm—New World	<i>Cochliomyia hominivorax</i>	Warm-blooded animals	Myiasis	Myiasis
Louse fly	<i>Hippobosca longipennis</i>	Canine, livestock, other species	Bite only	Bite only
European castor bean tick	<i>Ixodes ricinus</i>	Bovine, ovine, caprine, other species	Bovine babesiosis	CCHF, Lyme disease, Bovine babesiosis (splenectomized population)
Licking fly	<i>Musca vitripennis</i>	Bovine	Bovine filariosis	No
Sheep scab, sheep mange	<i>Psoroptes ovis</i>	Ovine, bovine, other species	Mange	No
Cattle fever tick	<i>Rhipicephalus annulatus</i> (formerly <i>Boophilus annulatus</i> )	Bovine, ovine, caprine, other species	Bovine babesiosis	No
Brown ear tick	<i>Rhipicephalus appendiculatus</i>	Bovine, ovine, caprine, other species	East Coast fever, Nairobi sheep disease	Tick typhus
Southern cattle tick	<i>Rhipicephalus microplus</i> (formerly <i>Boophilus microplus</i> )	Bovine, deer, ovine, caprine, other species	Bovine babesiosis, anaplasmosis	No



## 4 SLAUGHTER ESTABLISHMENT FAD INVESTIGATION PROCESS



**Policy for the Investigation of Potential Foreign Animal Disease/Emerging Disease Incidents (FAD/EDI)**

**1. Purpose and Background**

This document provides Veterinary Services (VS) policy for the field investigation and communication of a potential Foreign Animal Disease/Emerging Disease Incident (FAD/EDI). Specific communication and operational procedures are provided in the *Foreign Animal Disease Investigation Manual*.

This guidance document represents the Agency's position on this topic. It does not create or confer any rights for or on any person and does not bind the U.S. Department of Agriculture (USDA) or the public. The information it contains may be made available to the public. While this document provides guidance for users outside VS, VS employees may not deviate from the directions provided herein without appropriate justification and supervisory concurrence.

**2. Document Status**

A. Review date: 07/10/2020

B. This document replaces VS Guidance 12001.2 (June 5, 2014).

**3. Reason for Reissuance**

Expiration of prior VS Guidance 12001.2.

**4. Authority and References**

A. Authorities (*Code of Federal Regulations* (CFR)):

[7 CFR part 331](#)

[7 CFR 371.4](#)

[9 CFR part 53](#)

[9 CFR part 71](#)

[9 CFR part 82](#)

[9 CFR part 94](#)

[9 CFR part 121](#)

[9 CFR part 122](#)

[9 CFR part 161](#)

[49 CFR part 173](#)

## **VS Guidance**

12001.3

---

### **B. References:**

- VS Guidance 12000, "Foreign Animal Disease Diagnostician Certification Requirements,"
- [Foreign Animal Disease Investigation Manual](#)
- [Emerging Animal Disease Preparedness and Response Plan \(Draft\)](#)

### **C. Definitions:**

- 1) An FAD is a terrestrial animal disease or pest, or an aquatic animal disease or pest, not known to exist in the United States or its territories. An EDI is defined as any terrestrial animal, aquatic animal, or zoonotic disease not yet known or characterized, or any known or characterized terrestrial animal or aquatic animal disease, in the United States or its territories, that changes or mutates in pathogenicity, communicability, distribution, or zoonotic potential to become a threat to terrestrial animals, aquatic animals, or humans. An FAD/EDI may involve livestock, poultry, other animals, or wildlife.

In the event of an FAD/EDI investigation involving wildlife, VS will work in close collaboration, communication, and coordination, with State, Tribal, and Federal wildlife agencies with primary jurisdictional authority and subject matter expertise for wildlife.

- 2) A Foreign Animal Disease Diagnostician (FADD) is a Federal or State employed veterinarian who has successfully completed specialized FAD diagnostician training at the National Veterinary Services Laboratories (NVSL); as well as any other specialized training and continuing education as required and administered by VS, including requirements as specified in VS Guidance Document 12000.

The Professional Development Services in VS maintains a national roster of currently available or active FADDs. VS District Directors or designees will maintain District rosters of currently available and equipped FADDs. Assistant District Directors (AD) will maintain a roster of currently available and equipped FADDs in the jurisdiction(s) for which they are responsible.

## **5. Audience**

VS employees, other affected Federal and State agencies, and affected members of the public.

## **6. Guidance**

The FAD/EDI investigation period is defined as the time from when the investigation is initiated until the time an FAD/EDI is ruled out or confirmed by an FADD field investigation, official NVSL laboratory diagnostic testing or study results, or by official VS case



## 6. Guidance

The FAD/EDI investigation period is defined as the time from when the AD, or designee, and State animal health official (SAHO), or designee, initiates a field investigation until the time an FAD/EDI is ruled out or confirmed by an FADD field investigation, official NVSL laboratory diagnostic testing or study results, or by official VS case definitions.

### A. Objectives

- 1) Provide a veterinary medical assessment that consists of the following:
  - a. Differential diagnosis;
  - b. Classification of investigation, which is necessary to rank and prioritize the differential diagnosis in terms of the magnitude of suspicion for an FAD, in relation to the magnitude of suspicion for an endemic disease or condition; and
  - c. Designation of diagnostic sample priority, which is necessary to rank and prioritize the speed at which diagnostic samples are to be collected, transported, and tested; the FADD, AD, and SAHO must concur on the designation of diagnostic sample priority.
- 2) Provide presumptive and confirmatory diagnostic testing results as rapidly as required by the designation of diagnostic sample priority, in order to rule out or confirm a suspected FAD/EDI agent.
  - a. The FADD, as part of the required site visit or field investigation, will determine if diagnostic sample testing or studies are necessary to rule out or confirm the FAD/EDI. The AD and SAHO retain the right to request diagnostic sample collection during an FAD/EDI investigation. The AD and SAHO along with the FADD, NVSL, and laboratory director of the State National Animal Health Laboratory Network (NAHLN) laboratory will determine a diagnostic sample submission plan that may include a duplicate set of samples being submitted to a NAHLN lab.
- 3) Ensure the appropriate veterinary medical countermeasures, regulatory actions, and communications are recommended and implemented during the investigation period, as necessary, to prevent and/or mitigate the dissemination of an FAD/EDI agent by interstate or international commerce of animals, animal products, meat, articles, or conveyances. Examples of interstate or international commerce include but are not limited to slaughter or harvest facilities; processing or packing facilities; auction markets; exhibitions or shows; and interstate or international import-export-facilities. The appropriate veterinary medical countermeasures, regulatory actions, and communications will depend on factors such as:

## **VS Guidance**

12001.3

---

- a. The epidemiology of the suspected FAD/EDI agent (such as a highly contagious disease).
- b. The clinical and epidemiological findings obtained during the investigation as they correspond to the case definition for the suspected FAD/EDI disease agent (before obtaining presumptive or confirmatory diagnostic testing results).
- c. The State, Federal, territory, and Tribal jurisdictions and authorities as applied to the specific situation.

### **B. Critical Elements**

Critical elements of an investigation include but are not limited to: interviewing persons for incident history; observing clinical signs; performing physical examination of animals; collecting and analyzing epidemiological information; collecting diagnostic samples as necessary; performing necropsy studies as necessary; investigating trace backs and trace forwards of animals, animal products, meat, articles, or conveyances as necessary; recommending and establishing intrastate quarantine as necessary (the authority of the SAHO); and recommending and establishing interstate quarantines during the investigation period as necessary (the authority of the Secretary of Agriculture).

Critical data and information collected during an investigation includes but is not limited to: species affected, clinical signs, lesions observed, herd/flock morbidity and mortality rates, duration of illness, vaccination history, diagnostic test history, nutritional status, premises conditions, movement history, contact history, evidence or indication of pest or vector, and evidence or indication of zoonotic disease.

### **C. Classification of Investigations and Correlation to Designation of Diagnostic Sample Priority**

#### **1) Classification of FAD/EDI investigations and definitions**

Classification of investigation, one of the FAD/EDI investigation objectives, represents the degree of suspicion for an FAD/EDI in relation to the degree of suspicion for an endemic disease or condition. Table 1 presents the three options for the classification of FAD/EDI investigations and their definitions.

*Table 1: Classification of FAD/EDI Investigations and Definitions*

<b>Classification of Investigations</b>	<b>Definition</b>
High Suspicion	The veterinary medical and regulatory assessments conducted are consistent with an FAD/EDI and are generally inconsistent with an endemic disease/condition.
Intermediate Suspicion	The veterinary medical and regulatory assessments conducted are consistent with an FAD/EDI but are also consistent with an endemic disease/condition.
Low Suspicion	The veterinary medical and regulatory assessments conducted are generally inconsistent with an FAD/EDI and are consistent with an endemic disease/condition.

2) Diagnostic sample priority designations

There are four diagnostic sample designations used during an FAD/EDI investigation. Designations take into account the magnitude of suspicion for a foreign animal disease, as well as the investigation location and consequences related to the speed of the investigation. Designations determine the speed with which sample collection, transportation, and diagnostic study is completed.

- a. Samples designated as Priority 1 are only used for investigations where there is a High Suspicion of an FAD/EDI. Sample collection, transportation, and diagnostic testing are completed using rapid to extraordinary rapid methods. NVSL and NAHLN personnel will perform diagnostic testing and studies as rapidly as possible on sample arrival at the laboratory, whether during regular business hours, nights, weekends, and holidays. NVSL will use overtime as necessary to begin and complete diagnostic testing and studies. The NAHLN laboratories will perform testing as requested. Payment of overtime to NAHLN laboratory personnel will vary by State. Extraordinary collection and transportation methods will be required when the Priority 1 investigation includes a highly contagious FAD/EDI in the differential diagnosis, or when animals, animal products, meat, articles, or conveyances are involved or engaged in interstate or international commerce. This includes but is not limited to animals, animal products, meat, articles, or conveyances currently held in slaughter or harvest facilities, processing or packing facilities, auction markets, exhibitions or shows, and interstate or international import-export facilities. Telephone notification to the National Preparedness and Incident Coordination (NPIC) Center is required for High Suspicion classification.



## VS Guidance

12001.3

---

- b. Priority 2 sample designations are used for investigations where there is an Intermediate Suspicion of an FAD/EDI. Rapid methods must be used to collect, transport, and study diagnostic samples. NVSL and NAHLN personnel will perform diagnostic testing and studies immediately if the samples arrive at the laboratory before the close of the work day. NVSL will use overtime to complete testing and studies. The NAHLN laboratories will perform testing as necessary. Payment of overtime to NAHLN laboratory personnel will vary by State. Diagnostic samples arriving after the close of the work day will be examined first thing the following day. Diagnostic samples received Saturday will be tested or studied on Saturday only with prior notification and discussion with NVSL and NAHLN laboratory personnel. Telephone notification to NPIC is not required for Intermediate Suspicion classification.
- c. The Priority 3 designation is only used for investigations where there is a Low Suspicion of an FAD/EDI. Investigations with this designation will use routine methods of collection, transport, and diagnostic study. NVSL and NAHLN personnel will perform diagnostic testing and studies in accession order as received. NVSL and NAHLN overtime services will not be used for Priority 3 investigations. The Priority 3 designation is also used for routine surveillance samples. Telephone notification to NPIC is not required for Low Suspicion classification.
- d. The Priority A designation is only used for Intermediate Suspicion of an FAD/EDI classification or Low Suspicion of an FAD/EDI classification when animals, animal products, meat, articles, or conveyances in interstate or international commerce are involved and/or are potentially held, delayed or quarantined pending the results of diagnostic testing or studies for an FAD. It is also used when other known or potential circumstances associated with the investigation indicate it is prudent to obtain diagnostic sample testing results as rapidly as possible. Telephone notification to NPIC is required for Priority A designation. Rapid to extraordinary methods must be employed to collect, transport, and study diagnostic samples. NVSL and NAHLN personnel will perform diagnostic testing and studies as rapidly as possible upon sample arrival at the laboratory, whether during regular business hours, nights, weekends, and holidays. NVSL will use overtime as necessary to begin and complete diagnostic testing and studies. The NAHLN laboratories will perform testing as necessary. Payment of overtime to NAHLN laboratory personnel will vary by State.
- e. Extraordinary transportation methods include the use of hand carried samples, couriers, counter-to-counter services, and contracted commercial services. Rapid transportation methods include express shipping services such as FedEx® priority overnight. Routine transportation methods include express shipping services such as FedEx® priority overnight (to ensure preservation of diagnostic sample quality).

**VS Guidance**

12001.3

Table 2 presents the three diagnostic sample priority designations and their associated use and relative speed of sample collection, transportation, and diagnostic study

*Table 2: Diagnostic Sample Priority Designations, Correlation to Classification of Investigations and Speed of Sample Collection, Transportation, and Diagnostic Study*

<b>Priority</b>	<b>Investigation Classification</b>	<b>Speed of Sample Collection, Transportation, and Diagnostic Study</b>
Priority 1	High Suspicion	Rapid to extraordinary methods.
Priority 2	Intermediate Suspicion	Rapid methods.
Priority 3	Low Suspicion	Routine methods.
Priority A	Intermediate or Low Suspicion	Rapid to extraordinary methods.

The FADD, AD, and SAHO must concur on the classification of investigation, and designation of diagnostic sample priority 1, 2, 3, or A. and if a duplicate sample will be collected and sent to an approved NAHLN laboratory in addition to NVSL. If there are questions, concerns, or disagreements regarding the classification of an investigation or the designation of diagnostic sample Priority 1, 2, 3, or A by the FADD, AD, and the SAHO, then there must be an immediate conference call of the FADD, AD, and SAHOs with the District Office, NVSL Director, and NPIC staff. The NPIC staff and the District Office will provide the capability to host and coordinate conference calls.

**D. Diagnostic Case Definitions**

For more information on diagnostics, please see the Foreign Animal Disease Investigation Manual.

The classification and designation of FAD/EDI diagnostic case definitions are the responsibility and authority of the VS Deputy Administrator. Examples of case definitions include “presumptive” and “confirmed” FAD/EDI cases and vary by disease. Refer to the Animal Health Surveillance SharePoint Site for disease specific case definitions.

**E. National Veterinary Services Laboratories (NVSL)**

The NVSL safeguards U.S. animal health and contributes to public health by ensuring that timely and accurate laboratory support is provided by their nationwide animal-health diagnostic system.

## **VS Guidance**

12001.3

---

NVSL is the official reference laboratory for FAD/EDI diagnostic testing and study in the United States. NVSL must perform or officially confirm the results of all diagnostic testing and studies related to FAD/EDI investigations in the United States unless otherwise specified by the Animal and Plant Health Inspection Service (APHIS) Administrator, or as delegated to the VS Deputy Administrator.

NVSL has two locations for FAD/EDI diagnostic testing: Ames, Iowa (NVSL Ames) and Plum Island, New York (NVSL FADDL). The transport and shipping of FAD/EDI diagnostic samples to NVSL Ames or NVSL FADDL by species or suspected disease is found in the Foreign Animal Disease Investigation Manual.

Additional information regarding [NVSL](#) can be found online.

### **F. National Animal Health Laboratory Network (NAHLN)**

The NAHLN, created in 2002, is a comprehensive, coordinated, and modernized network of Federal and State animal health laboratories and public agricultural institutions that address emergency biological and chemical threats to animal agriculture and the security of the food supply.

The purpose of the NAHLN is to enhance early detection of FAD agents and newly emerging diseases and to better respond to animal health emergencies (including bioterrorist events) that threaten the nation's food supply and public health.

Personnel in NAHLN laboratories are trained, proficiency tested, and approved to test for multiple FADs of high consequence. With the approval of the SAHO and AD, FAD samples can be collected in duplicate to send one to the local NAHLN laboratory and the other to NVSL.

A current roster of the [NAHLN laboratories](#) and the testing they are approved to perform can be found online.

The AD and SAHO along with the FADD and NAHLN laboratory director will determine a diagnostic sample submission plan that may include a duplicate set of samples being submitted to the NAHLN lab.

### **G. Guidelines for Diagnostic Testing**

However diagnostic testing is completed, NVSL is the official confirmatory laboratory for FAD/EDI testing in the United States unless otherwise specified by the Chief Veterinary Officer (CVO).

- 1) At the discretion of the FADD, AD, and SAHO in collaboration with the NVSL and NAHLN Laboratory Directors, two sets of diagnostic samples may be obtained.



## VS Guidance

12001.3

---

- a. The first set of diagnostic samples must always be sent to the appropriate NVSL Laboratory (NVSL Ames or NVSL FADDL).
  - b. The second set of diagnostic samples will be sent to an approved NAHLN laboratory to provide preliminary FAD/EDI diagnostic information before NVSL receives the diagnostic samples.
  - c. If a second set of diagnostic samples cannot be collected, the samples that can be collected must be sent to the appropriate NVSL laboratory, not the NAHLN laboratory.
- 2) In the event of an emergency situation in which the appropriate NVSL Laboratory cannot perform FAD/EDI diagnostic testing, one set of diagnostic samples may be sent to the other NVSL Laboratory, and a second set of samples may be obtained for testing at a NAHLN Laboratory, or sent to another international reference laboratory.
  - 3) If the decision is made to submit a second set of diagnostic samples to the NAHLN laboratory, then the AD and/or SAHO must instruct the FADD to follow the procedures for submitting a second set of diagnostic samples to the NAHLN laboratory. The AD, SAHO, and/or FADD will notify the NAHLN Laboratory Director if there is a change in the NAHLN laboratory submission plan after the FADD performs the investigation.

If an FAD/EDI outbreak occurs, VS will provide further guidance on diagnostic sample submissions to a NAHLN laboratory.

### H. Packaging and Labeling

Packaging and labeling of biological substances for shipment requires familiarity with and training in current rules and regulations, which frequently change. Shippers are responsible for proper packaging, marking, labeling, documentation, classification, and identification of each shipment. **Failure to follow regulations can result in substantial financial penalties.**

For more information, please refer to the [“Packing and Labeling Submissions” page](#).

### I. State-Federal-Tribal Communication and Cooperation

The coordinated State-Federal-Tribal response to a potential FAD/EDI requires close communication and cooperation among all stakeholders and jurisdictions. The AD and the SAHO (or designee) must closely communicate and cooperate on all aspects of an FAD/EDI investigation from initiation to completion.

## **VS Guidance**

12001.3

---

All FAD/EDI investigations must be initiated by the AD and/or the SAHO. All FAD/EDI investigations must be assigned by the AD and/or the SAHO to an FADD. The AD and/or the SAHO is responsible for initiating a timely investigation of all credible reported or suspected FAD/EDI, including assigning an FADD to complete a site visit or field investigation as a required part of the investigation.

The AD and/or SAHO will assign an FAD/EDI Case Coordinator(s) to assist with investigation support, communications, and Emergency Management Response System (EMRS) data entry, as required by the location, scale, complexity, or urgency of the investigation.

### **J. Emergency Management Response System (EMRS)**

The EMRS “Routine FAD/EDI Reporting” is a web-enabled database that is the official USDA APHIS database to record all FAD/EDI investigations. The EMRS database allows automatic email notices to be sent to selected VS personnel when FAD/EDI investigations are initiated in EMRS. This capability enables the field office and NPIC to monitor potential national “clusters” of FAD/EDI investigations on a real- time basis.

The AD, or their designee, will ensure the EMRS Referral Control Number is assigned and transmitted to the FADD and the SAHO. EMRS must be used for all FAD/EDI investigations.

[EMRS](#) is accessed through the internet and permits approved State, VS, and NAHLN Laboratory personnel access to enter and view investigations from their State or territory. All entries are confidential. EMRS database access at the State or Territory level is controlled and maintained by approval of the AD and the SAHO.

### **K. Requirements**

Situation reports, spot reports, diagnostic updates, and regulatory assessments will be produced as required by the urgency or complexity of the investigation, or at intervals requested by the Field Office, the VS Associate Deputy Administrator for NPIC, and the VS Chief Veterinary Officer (CVO).

Because of the rapid exchange of information required during FAD/EDI investigations, communications such as phone calls, conference calls, email, and fax must be used when required in addition to the official EMRS database to record information.

## **7. Inquiries**

Any questions regarding these procedures or instructions should be directed to the National Preparedness and Incident Coordination (NPIC) staff.

### Main Office

(NPIC, One Health Coordination Center, SPRS Logistics Center)  
Please refer to the FAD Investigation Manual for contact numbers.  
Fax: 301-734-7817

Normal Business Hours: Monday – Friday 8:00 a.m. to 4:30 p.m. ET

NPIC/National Veterinary Stockpile (NVS) 24/7 Emergency Answering Service  
Foreign Animal Disease Investigations or Emerging Disease Incidents NVS Activation  
1-800-940-6524



**Acronyms**

ADA	Associate Deputy Administrator
AD	Assistant District Director
APHIS	Animal and Plant Health Inspection Service
CFR	Code of Federal Regulations
CVO	Chief Veterinary Officer
EDI	emerging disease incident
EMRS	Emergency Management Response System
FAD	foreign animal disease
FADD	Foreign Animal Disease Diagnostician
FADDL	Foreign Animal Disease Diagnostic Laboratory
NAHLN	National Animal Health Laboratory Network
NPIC	National Preparedness and Incident Coordination
NVS	National Veterinary Stockpile
NVSL	National Veterinary Services Laboratories
OIE	World Organization for Animal Health
SAHO	State Animal Health Official
SPRS	Surveillance, Preparedness, and Response Services
USDA	United States Department of Agriculture
VS	Veterinary Services