

FOREIGN ANIMAL DISEASE (FAD) INVESTIGATION MANUAL

FAD PReP

Foreign Animal Disease Preparedness & Response Plan



TEXAS A&M UNIVERSITY
Veterinary Medicine
& Biomedical Sciences

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

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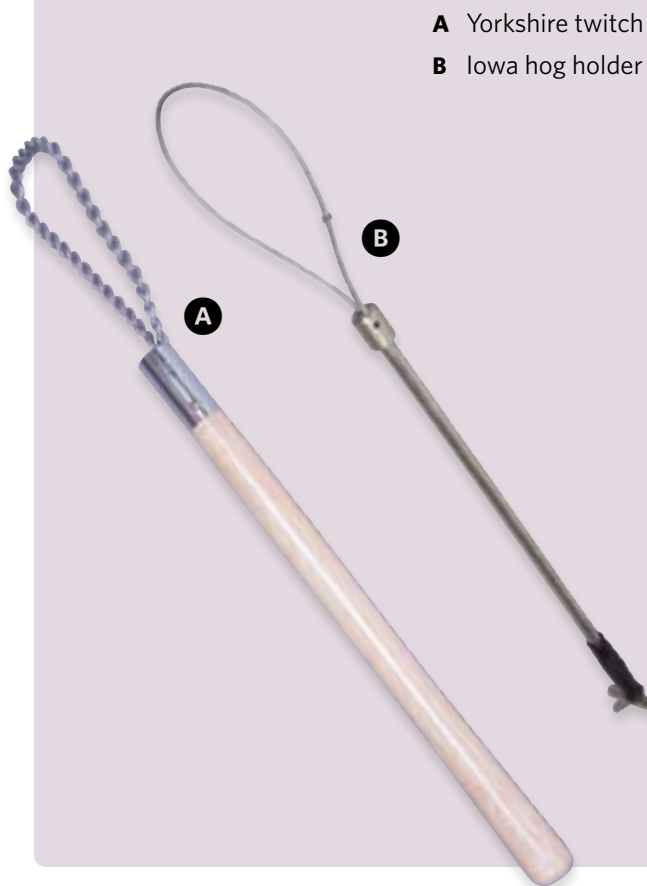
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1 FOREIGN ANIMAL DISEASE DIAGNOSTICIAN FIELD KIT COMPONENTS

PERSONAL PROTECTION ATTIRE



RESTRAINT EQUIPMENT



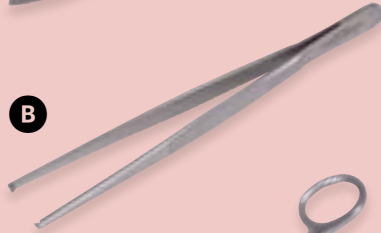
PHYSICAL EXAM EQUIPMENT



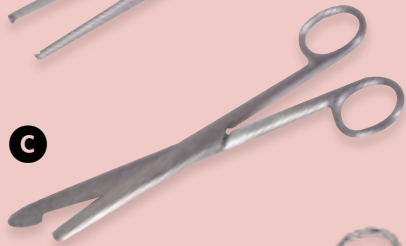
NECROPSY EQUIPMENT



A



B



C

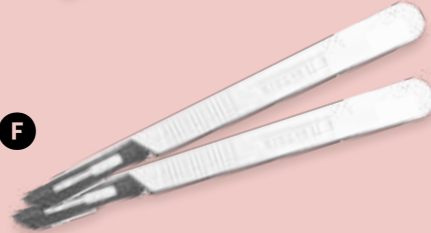


D

E



F



G



H



I



J



K

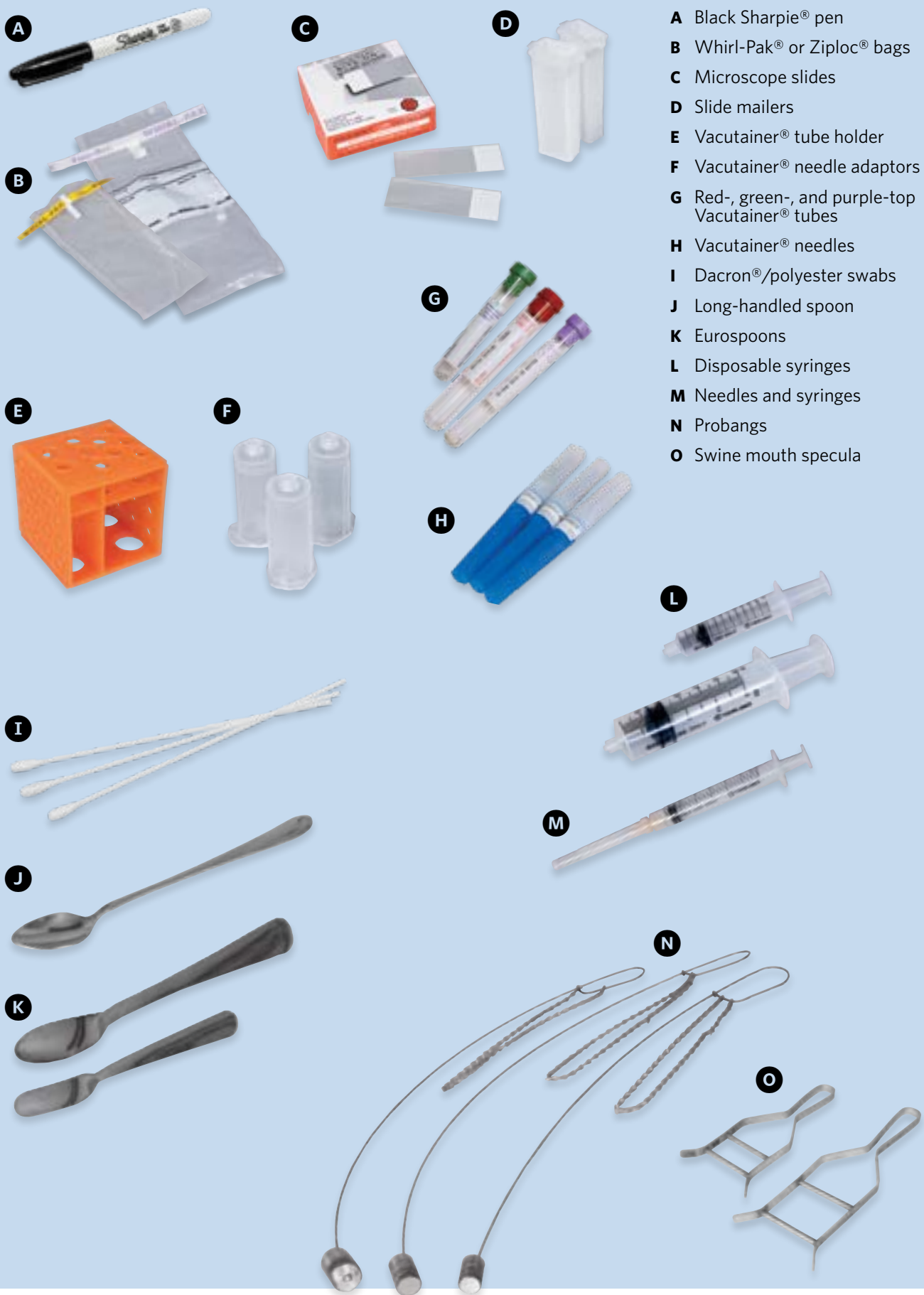


L



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

DIAGNOSTIC SAMPLING EQUIPMENT



DISINFECTION AND CLEAN-UP SUPPLIES



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

MISCELLANEOUS SUPPLIES



- A** Merck Veterinary Manual
- B** Plastic foot locker

2 FADD FIELD KIT SUPPLY LISTS

PERSONAL PROTECTION ATTIRE

Disposable gloves (100 pairs, latex or nitrile)

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

Hemostats

MISCELLANEOUS SUPPLIES

Merck Veterinary Manual

Plastic foot locker

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")

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 5/8")

Disposable needles (18G 1 ½")

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

Plastic syringes (50 cc)

Plastic syringes (10 cc)

Parafilm

DISINFECTION AND CLEAN-UP SUPPLIES

Garbage bags

Hand and nail brush

Sharps container

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

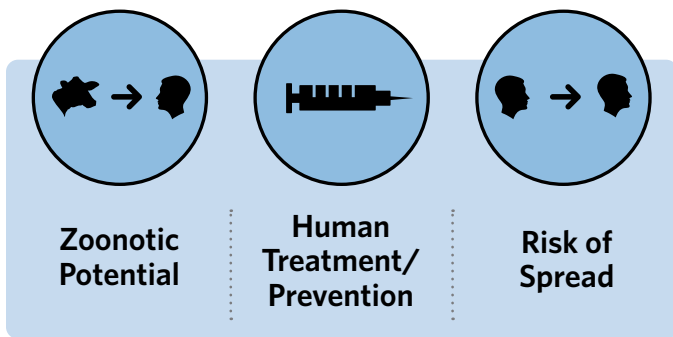
The FADD must assess the risk posed by the suspected biological agent and then select the appropriate level of PPE for a foreign animal disease (FAD) investigation. A range of available PPE options is shown below. ▼

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 overboots	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**

<p>RISK FACTORS</p> <ul style="list-style-type: none"> Unlikely to cause disease in healthy adult workers and animals Effective therapy or vaccines available Risk of spread is limited <hr style="border-top: 1px dashed #ccc;"/> <p>RISK LEVEL</p> <ul style="list-style-type: none"> Low individual and community health risk Moderate individual risk and limited community risk <hr style="border-top: 1px dashed #ccc;"/> <p>CLEAN UP</p> <ul style="list-style-type: none"> ▪ Dispose of gloves and disposable coveralls ▪ Disinfect boots ▪ Wash hands ▪ Launder washable coveralls before next use ▪ Shower upon returning home 	<p>APPROPRIATE PPE</p> <div style="margin-left: 20px;"> <p>EYE: none</p> <p>EAR: ear plugs as needed</p> <p>RESPIRATORY: none to N95 APR</p> </div> <div style="margin-left: 20px; margin-top: 20px;"> <p>Street clothes + washable cloth or disposable coveralls</p> <p>Disposable latex or nitrile gloves + cut-resistant gloves (during necropsy)</p> <p>Boots or shoes with rubber over-boots as needed</p> </div> <div style="text-align: right; margin-top: 20px;"> </div>
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SCENARIO: Clinical/laboratory diagnosed FAD or emerging animal disease with zoonotic potential.

CATEGORY IIA

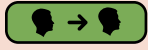
RISK FACTORS



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

Black Sharpie pen

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 two 5-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.

https://go.usdatraining.com/unassisted_don

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 DOFFING 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 it 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 it, and spray it with disinfectant solution.



26

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



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.



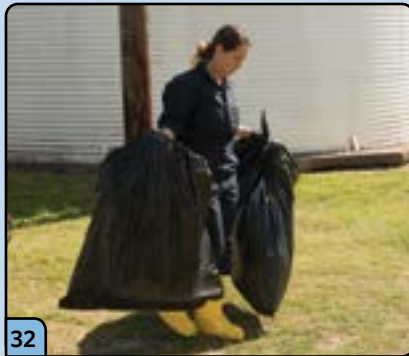
30

Spray the buckets and hand and garden sprayers with disinfectant solution.



31

Continue to clean up your supplies. Double-bag all the garbage bags, seal, and spray the outer surfaces 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.

https://go.usdatraining.com/unassisted_doff

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 watches 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.



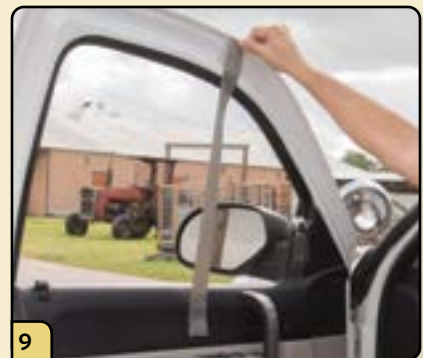
7

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 two 5-gallon plastic buckets with garbage bags. Place a minimum of 2 extra garbage bags into the buckets for later use during cleanup.



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.

https://go.usdatraining.com/assisted_don

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 DOFFING 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, and 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 and 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, 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.

https://go.usdatraining.com/assisted_doff

ADDITIONAL VIDEO GUIDANCE ON PPE

To view videos containing additional guidance on PPE, scan the graphic code above with a QR code reader. Doing so will open the video link below on your device.

<https://go.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,
- Place swab in tube with 3 ml TBTB media, for ruminant swab samples,
- Place swabs in the tube with 3 ml of BHI media, for avian swab samples,
- 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 AVIC 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 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 _____

21 = 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 ballpoint 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

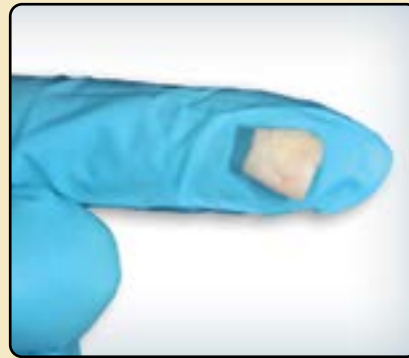
The following guidelines for collecting tissue samples should be followed during all FAD investigations.

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.



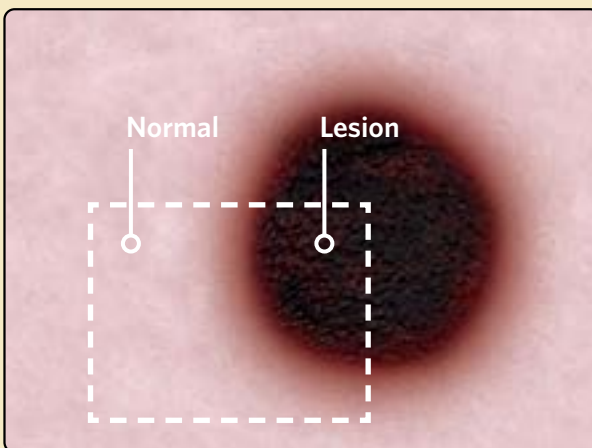
Fresh tissue should be trimmed to 1 g and placed in Whirl-Pak® or Ziploc® bags or TBTB (e.g., for vesicular lesions).



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

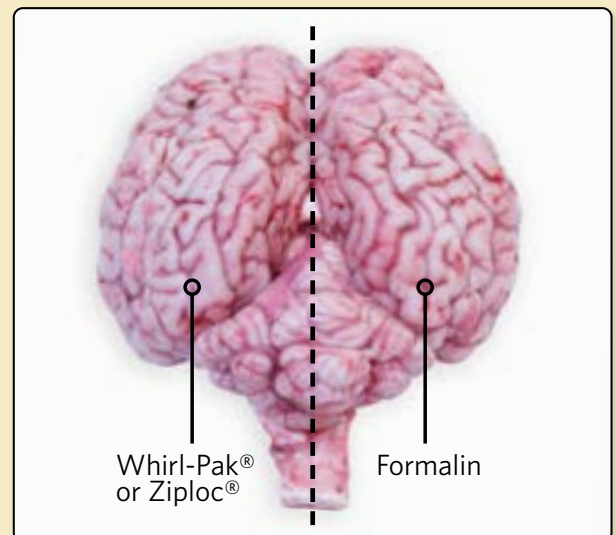


C Collect 1 × 1 cm thick sections of any lesions. Your tissue sample should include both “normal” tissue as well as a portion of the lesion on the same section. Ideally, lesions should be submitted as both fresh tissue and formalin-fixed samples. However, if the lesion is small, put the entire lesion 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 10% 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
African horse sickness			
Equine (including zebra)	LIVE ANIMALS		NVSL Ames
	Serum	Red top tube (10 ml)	
	Whole blood	Purple top tube (10ml) (preferred) Green top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue: spleen, lymph node, lung, liver	Separate Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Set of tissues	Formalin (10:1)	
African swine fever			
Swine	LIVE ANIMALS		NVSL FADDL
	Tonsil scraping	Sterile tube	
	Whole blood	Green top tube (10ml) (for virus isolation)	
	Serum	Red top tube	
	DECEASED ANIMALS		
	Fresh tissues: spleen, tonsil, gastrohepatic, renal, and inguinal lymph nodes	Separate Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Set of tissues	Formalin (10:1)	
Aino and Akabane¹			
Bovine Ovine Caprine	LIVE ANIMALS		NVSL Ames
	Serum from fetus or neonate	Red top tube (2-5 ml minimum)	
	Serum from dam	Red top tube (2-5 ml minimum)	
	DECEASED ANIMALS		
	Fresh tissue: placenta, fetal muscle, and nervous tissue	Separate Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Set of tissues	Formalin (10:1)	

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

SPECIES	SPECIMEN	MEDIUM	LAB
Bluetongue & Epizootic hemorrhagic disease^{2,3}			
Bovine Ovine Caprine	LIVE ANIMALS		NVSL Ames FADDL
	Serum	Red top tube (5 ml minimum)	
	Whole blood	Purple top tube (10 ml) (preferred for PCR) (only sample for FADDL testing)	
	DECEASED ANIMALS		
	Fresh tissue: spleen, liver, lung, lymph node	Separate Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Set of tissues	Formalin (10:1)	
Blue eye paramyxovirus			
Swine	LIVE ANIMALS		NVSL Ames
	Nasal swab	Dacron®/polyester swab in TBTB (max 3 ml)	
	Serum	Red top tube (10 ml)	
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue: brain, spinal cord, lung, tonsil, reproductive tissues from sexually mature animals	Separate Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Set of fixed tissues: brain, spinal cord, lung, tonsil, spleen	Formalin (10:1)	
Bovine babesiosis			
Bovine	LIVE ANIMALS		NVSL Ames
	Whole blood	Purple top tube (10 ml)	
	Serum	Red top tube (10 ml)	
Bovine spongiform encephalopathy			
Bovine	DECEASED ANIMALS		NAHLN or NVSL Ames
	Minimum for surveillance: fresh obex For clinical suspects: ½ brain collected fresh and the other ½ collected in formalin	50 ml tube, Whirl-Pak®, or Ziploc® bag	
	Fresh tissue: ½ brain	Formalin (10:1)	
	If rabies is on your differential diagnosis, sample must be rabies-negative before testing for BSE—check with your state public health laboratory for sample specs for rabies.		

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

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

SPECIES	SPECIMEN	MEDIUM	LAB
Classical swine fever			
Swine	LIVE ANIMALS		NVSL FADDL
	Dacron®/polyester swab: oral/tonsil	TBTB (3 ml)	
	Tonsil scraping	Sterile tube	
	Whole blood	Green top tube (10ml) (for virus isolation)	
	Serum	Red top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue: tonsil, spleen, retropharyngeal, submandibular, and mesenteric lymph nodes	Separate Whirl-Pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	
Contagious agalactia			
Caprine Ovine	DECEASED ANIMALS		NVSL FADDL
	Tissue: lung	Whirl-Pak® or Ziploc® bags	
	Joint fluid	Sterile tube or red top tube	
	Set of tissues	Formalin (10:1)	
Contagious bovine pleuropneumonia			
Bovine	DECEASED ANIMALS		NVSL FADDL
	Fresh tissue: lung	Whirl-Pak® or Ziploc® bags	
	Joint fluid	Sterile tube or red top tube	
	Set of tissues	Formalin (10:1)	
Contagious caprine pleuropneumonia			
Caprine	DECEASED ANIMALS		NVSL FADDL
	Fresh tissue: lung	Whirl-Pak® or Ziploc® bags	
	Pleural fluid	Sterile tube or red top tube	
	Set of tissues	Formalin (10:1)	

SPECIES	SPECIMEN	MEDIUM	LAB
Contagious equine metritis			
Equine	LIVE ANIMALS		NVSL Ames
	Swabs for culture	Call NVSL Ames for instructions	
	Serum	Red top tube (10 ml)	
Dourine			
Equine	LIVE ANIMALS		NVSL Ames
	Whole blood	Purple top tube (10 ml)	
	Serum	Red top tube (10 ml)	
Equine piroplasmiasis			
Equine	LIVE ANIMALS		NVSL Ames
	Whole blood	Purple top tube (10 ml)	
	Serum	Red top tube (10 ml)	
Foot-and-mouth disease			
Bovine Swine Ovine Caprine Camelid Cervid (including cloven-hoofed zoo animals and wildlife)	LIVE ANIMALS		NVSL FADDL
	Dacron®/polyester swabs: oral or vesicular lesions	TBTB (3 ml) (small tissue tags from the edges of a ruptured vesicle may be added to the swab)	
	Vesicular tissue (vesicular epithelium— as large as practical) Animal should be restrained	Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Vesicular fluid	Sterile tube or red top tube (undiluted) or TBTB (50:50)	
	Crusts/scabs Animal "shoud" be restrained	Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Serum	Red top tube (10 ml)	
	Esophageal-pharyngeal fluid (collected by probang for identification of FMD-seropositive carriers)	TBTB (50:50)	
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue (esp. lymph node)	Separate Whirl-Pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	

SPECIES	SPECIMEN	MEDIUM	LAB
Glanders			
Equine	LIVE ANIMALS		NVSL Ames
	Serum	Red top tube (10 ml)	
	Whole blood	Purple or green top tube (10 ml)	
	Swabs for culture	Call NVSL Ames for instructions	
Heartwater⁴			
Bovine Ovine Caprine Cervid	LIVE ANIMALS		NVSL Ames
	Serum	Red top tube (10 ml)	
	Whole blood	Purple top tube (10 ml)	
	DECEASED ANIMALS		
	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	Formalin (10:1)		
Highly pathogenic avian influenza⁵			
Avian	LIVE ANIMALS		NVSL Ames
	Tracheal/Oropharyngeal swab	Dacron [®] /polyester swab in BHI (3.0 ml) (can pool up to 5 swabs)	
	Cloacal swab	Dacron [®] /polyester swab in BHI (3.0 ml) (can pool up to 5 swabs)	
	For commercial poultry do NOT pool TR /OP with cloacal swabs.		
	Serum	Red top tube (2 ml)	
	DECEASED ANIMALS		
	Swab collection as above; tissues as below if needed.		
Fresh tissue: trachea, lung, liver, spleen, kidney, terminal intestine	For each bird: Whirl-Pak [®] or Ziploc [®] pooled by system (respiratory, enteric, reproductive)		

⁴NVSL FADDL tests import cases from FMD-endemic countries.

⁵Refer to https://www.aphis.usda.gov/animal_health/lab_info_services/downloads/WIAV0020.pdf



SPECIES	SPECIMEN	MEDIUM	LAB
Lumpy skin disease			
Bovine	LIVE ANIMALS		NVSL FADDL
	Skin biopsy	TBTB (3 ml)	
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	Lymph node aspirate	TBTB (3 ml)	
	DECEASED ANIMALS		
	Lymph node aspirate	TBTB (3 ml)	
	Fresh tissues: skin, lymph node, lung	Separate Whirl-Pak® or Ziploc® bags	
Set of tissues	Formalin (10:1)		
Malignant catarrhal fever			
Bovine (including wild ruminants)	LIVE ANIMALS		NVSL Ames or NVSL FADDL (if vesicular lesions)
	Whole blood	Purple top tube (10 ml) (preferred for PCR)	
	Serum	Red top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue: spleen, eye	Separate Whirl-Pak® or Ziploc® bags or screw-cap plastic tubes	
Set of tissues	Formalin (10:1)		
Peste des petits ruminants			
Ovine Caprine (including wild small ruminants)	LIVE ANIMALS		NVSL FADDL
	Dacron®/polyester swab: nasal, ocular, oral	TBTB (3 ml)	
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue: bronchial lymph node, mesenteric lymph node, lung, spleen, intestinal mucosa	Separate Whirl-Pak® or Ziploc® bags	
Set of tissues	Formalin (10:1)		
Rabbit viral hemorrhagic disease			
Rabbit	LIVE ANIMALS		NVSL FADDL
	Serum (import/export only)	Red top tube (5 ml)	
	DECEASED ANIMALS		
	Fresh tissue: liver	Whirl-Pak® or Ziploc® bags	
Set of tissues	Formalin (10:1)		

SPECIES	SPECIMEN	MEDIUM	LAB
Rift Valley fever			
Ovine	LIVE ANIMALS		NVSL FADDL
Bovine	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
Caprine	DECEASED ANIMALS		
Camelid	Fresh tissue: liver, spleen, brain, placenta	Separate Whirl-Pak® or Ziploc® bag	
	Set of tissues	Formalin (10:1)	
Schmallenberg virus (SBV)			
Ovine	LIVE ANIMALS		NVSL Ames
Caprine	Whole blood	Purple top tube (10 ml)	
Bovine	Serum (fetal and adult; fetal cases should be accompanied by dam's serum)	Red top tube (2-5 ml)	
	DECEASED ANIMALS		
	Fresh fetal tissue: placenta, amniotic fluid, brain (preferred), heart blood	Separate Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
Screwworm			
All species	LIVE ANIMALS		NVSL Parasitology (Use VS Form 5-38)
	Maggots from all parts of wounds. Include different sizes and appearances.	70% ethanol or isopropyl alcohol - not formalin	
Ovine	LIVE ANIMALS		NVSL FADDL
Caprine	Skin/Pox lesion biopsy	TBTB (3 ml)	
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissues: skin, lymph node, lung	Separate Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes	
	Set of tissues	Formalin (10:1)	
Swine vesicular disease			
Swine	LIVE ANIMALS		NVSL FADDL
	Dacron®/polyester swab: lesion, nasal, fecal	TBTB (3 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)	
	Serum	Red top tube (10 ml)	
	Whole blood	Green top tube (10 ml) Purple top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue: skin, tongue, and mucosa with lesions	Separate Whirl-Pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	

SPECIES	SPECIMEN	MEDIUM	LAB
Teschovirus encephalomyelitis (Teschen/Talfan disease)			
Swine	DECEASED ANIMALS		NVSL Ames and/ or NVSL FADDL (if CSF in differential diagnosis)
	Fresh tissue: brain, spinal cord	Separate Whirl-Pak® or Ziploc® bags	
	Set of fixed tissues: brain, spinal cord	Formalin (10:1)	
Venezuelan equine encephalomyelitis			
Equine	LIVE ANIMALS		NVSL Ames
	Serum	Red top tube (5 ml)	
	DECEASED ANIMALS		
	Brain, cerebrospinal fluid	Whirl-Pak® or Ziploc® bag or screw-cap plastic tubes and red top tube (CSF)	
Vesicular stomatitis			
Bovine Swine Ovine Caprine Equine Camelid Cervids (including cloven-hoofed zoo animals and wildlife)	LIVE ANIMALS		NVSL FADDL (Ruminant and Swine) and NVSL Ames (Equine)
	Dacron®/polyester swab: oral lesions	TBTB (3 ml)	
	Vesicular tissue (vesicular epithelium— as large as practical) Animal should be restrained	Separate Whirl-Pak® or Ziploc® bags or tubes with 3ml TBTB Tissue tags from the edges of a ruptured vesicle may be added to the swab tube.	
	Vesicular fluid	Sterile tube or red top tube with TBTB (50:50)	
	Crusts/scabs Animal should be restrained	Whirl-Pak®, Ziploc® bags, or tubes (no media)	
	Serum	Red top tube (10 ml)	
	Esophageal-pharyngeal fluid (collected by probang for identification of FMD- seropositive carriers)	TBTB (50:50)	
	Whole blood (not needed for equine)	Green top tube (10 ml) Purple top tube (10 ml)	
	DECEASED ANIMALS		
	Fresh tissue (esp. lymph node)	Separate Whirl-Pak® or Ziploc® bags	
	Set of tissues	Formalin (10:1)	

SPECIES	SPECIMEN	MEDIUM	LAB
Virulent Newcastle Disease (vND)⁶			
Avian	LIVE ANIMALS		NVSL Ames
	Tracheal/Oropharyngeal swab	Dacron®/polyester swab in BHI (3.0 ml) (can pool up to 5 swabs)	
	Cloacal swab	Dacron®/polyester swab in BHI (3.0 ml) (can pool up to 5 swabs)	
	For commercial poultry do NOT pool TR /OP with cloacal swabs.		
	DECEASED ANIMALS		
	Swab collection as above; tissues as below if needed.		
Fresh tissue: trachea, lung, liver, spleen, kidney, terminal intestine, brain (if neurologic signs)	For each bird: Whirl-Pak® or Ziploc® pooled by system (respiratory, enteric, reproductive)		

⁶Refer to https://www.aphis.usda.gov/animal_health/lab_info_services/downloads/WIAV0020.pdf



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. For the fixed brain sample, ensure sufficient volume of formalin is included to maintain the 10:1 ratio of formalin to tissue.

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.

Contact FADDL about sample submissions at: fad.submissions@usda.gov

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.

Tonsil Scraping


 SPECIAL EQUIPMENT AND SUPPLIES

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

 PROCEDURE

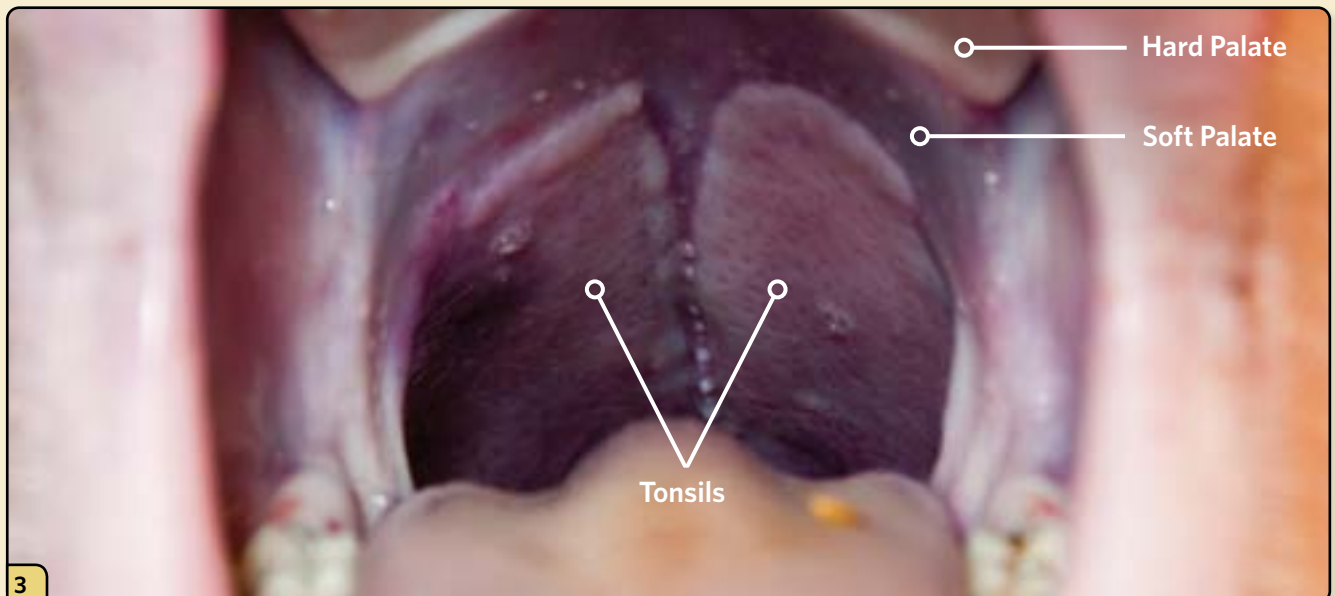

1

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

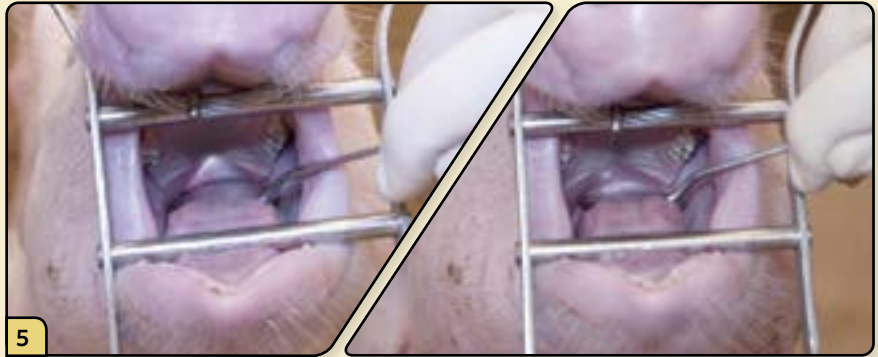
○ ——— Soft Palate

○ ——— 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.

Nasal Swab



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.

Brain Removal for Obex Sampling


 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.



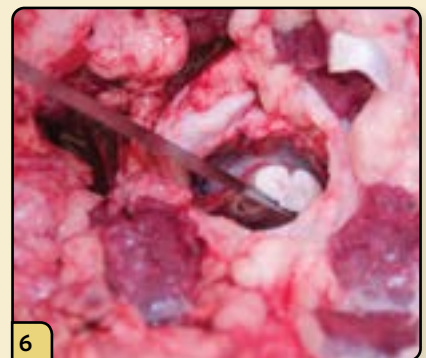
3
Insert the knife into the tissue over the C1-occipital junction.



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.



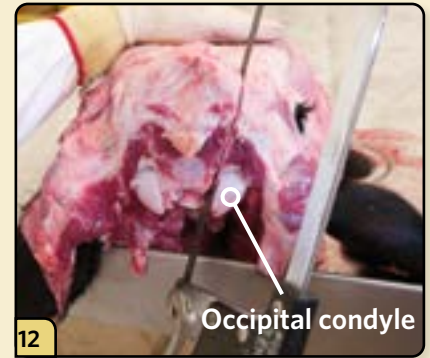
9
Examine the retropharyngeal lymph nodes, located ventral to the occipital condyles and lateral to the oropharynx.



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.



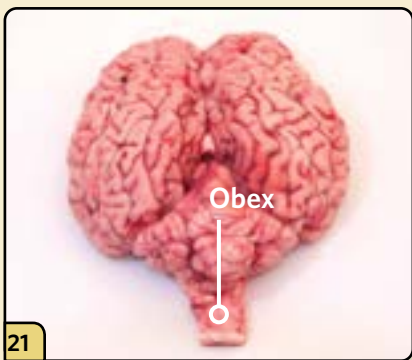
18 Reflect the calvaria caudally to expose the brain.



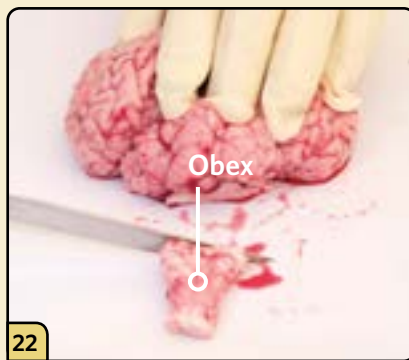
19 Use forceps and scissors to cut away the meninges.



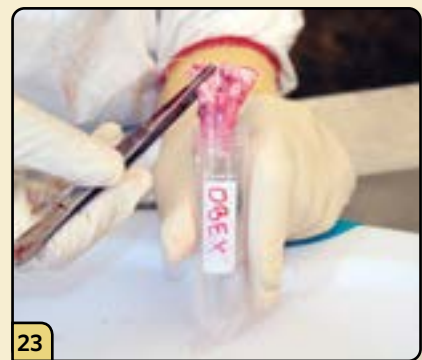
20 Use a combination of gentle blunt dissection and transection of the cranial nerves to remove the brain.



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 & 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

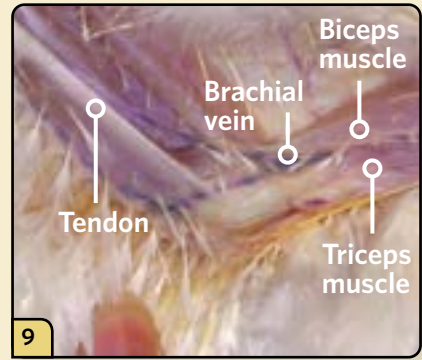
Turn the chicken on its side with the legs facing you. Lay your arm over the neck and press the neck lightly against the table.



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.



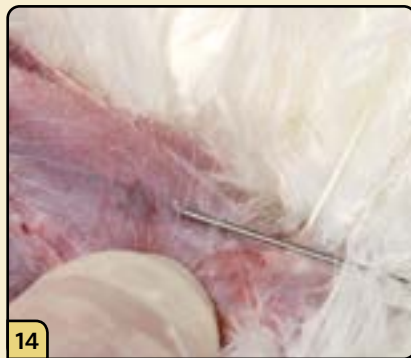
Use your thumb to stabilize the vein and apply pressure to distend it with blood.



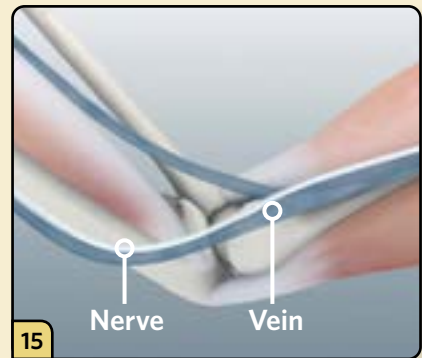
You will use your dominant hand to bleed the chicken. Pull back on the plunger to break the seal. This will help prevent the vein from collapsing when you withdraw the blood.



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 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

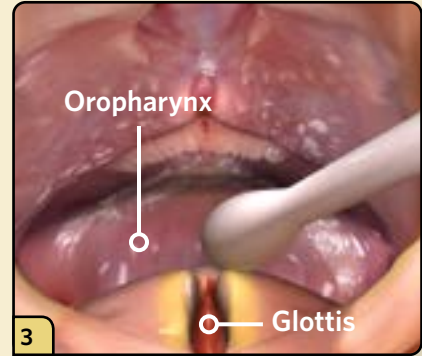
PROCEDURE



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.

Cloacal Swab



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 vND

- Do not mix swab samples from more than one species into one tube (e.g. separate tubes for chicken vs duck)
- May pool up to 5 swabs (one per bird, and from the same collection route e.g. oropharyngeal or cloacal) in the 3ml BHI tubes (blue cap tube)
- Refer to https://www.aphis.usda.gov/animal_health/lab_info_services/downloads/WIAV0020.pdf



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 using a bone saw or ax or isolating each rib with knife, fracturing it, and reflecting it dorsally.



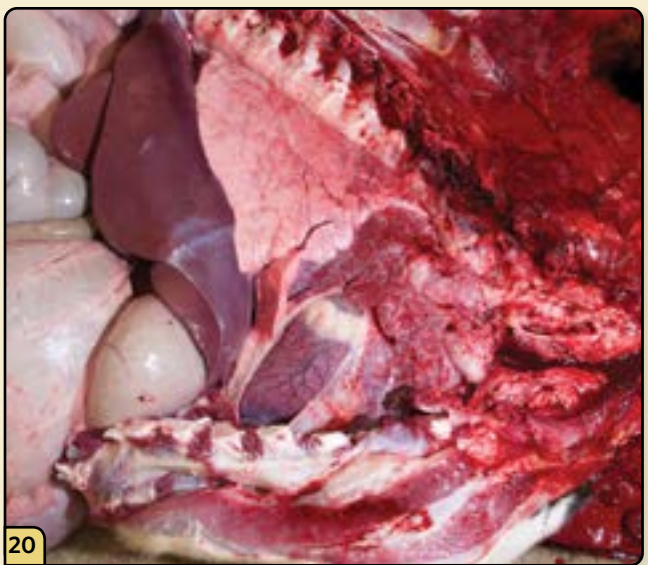
18

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

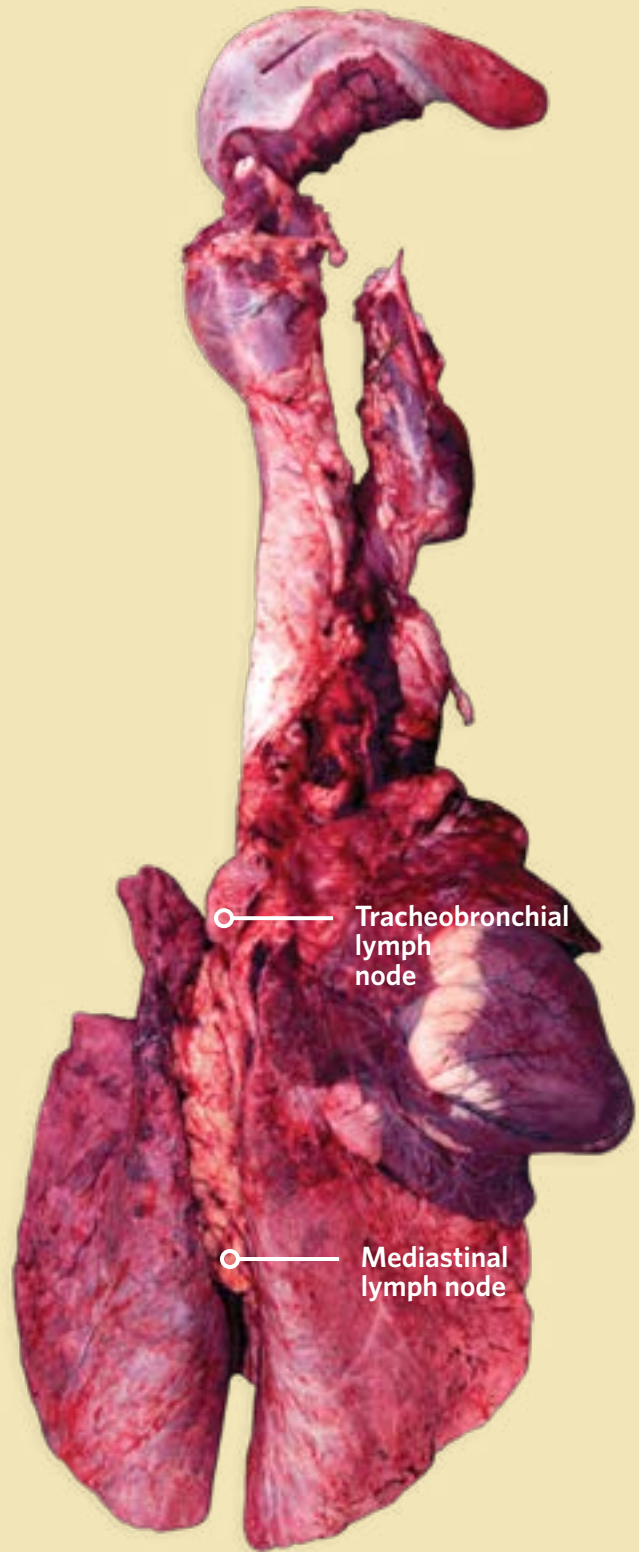
Dissect around the lungs and heart to free up the pluck.



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.



Tracheobronchial lymph node

Mediastinal lymph node



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.



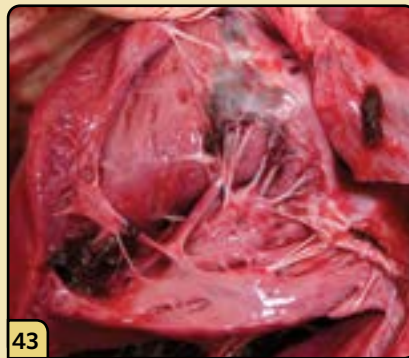
41

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.



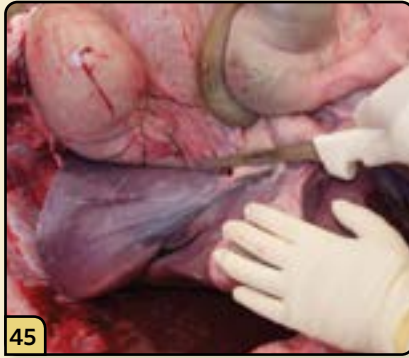
43

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.



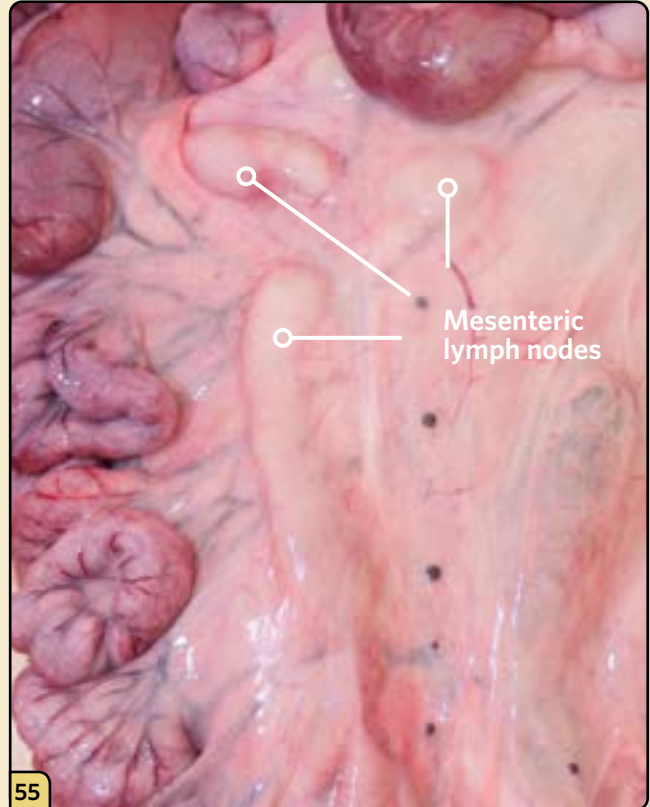
53

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



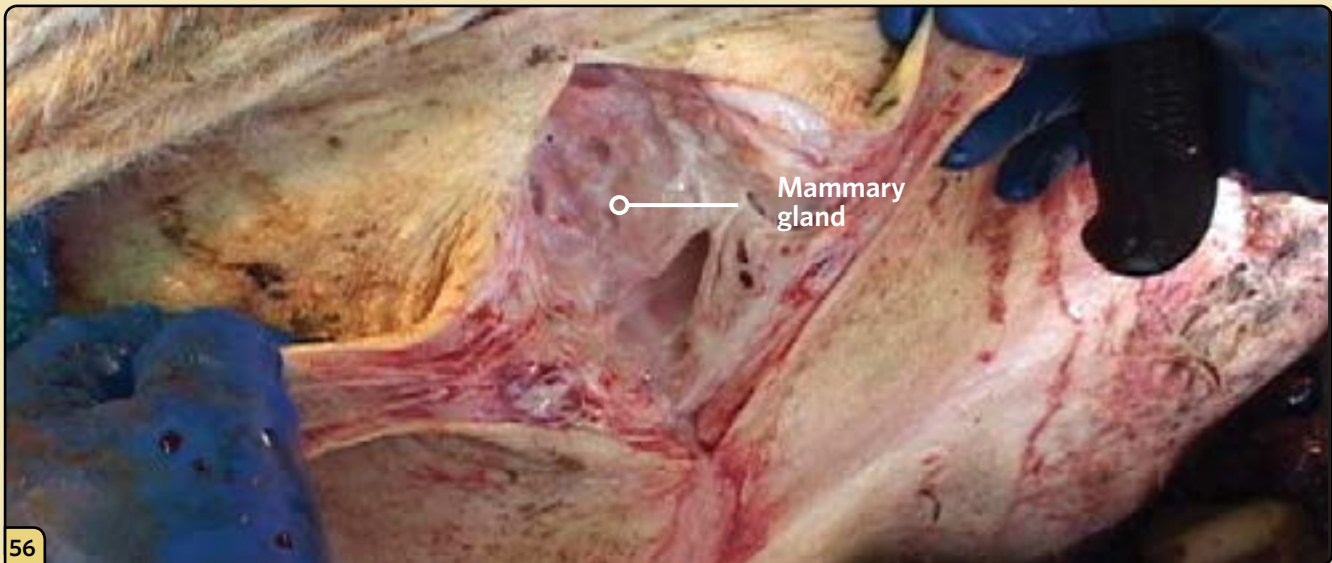
54

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 as necessary.



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



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



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.



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



Open the rumen.



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.



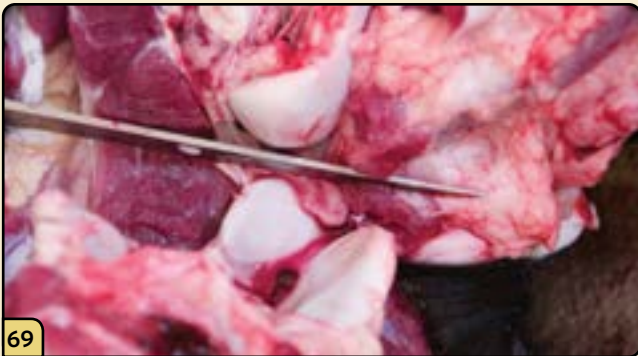
67

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



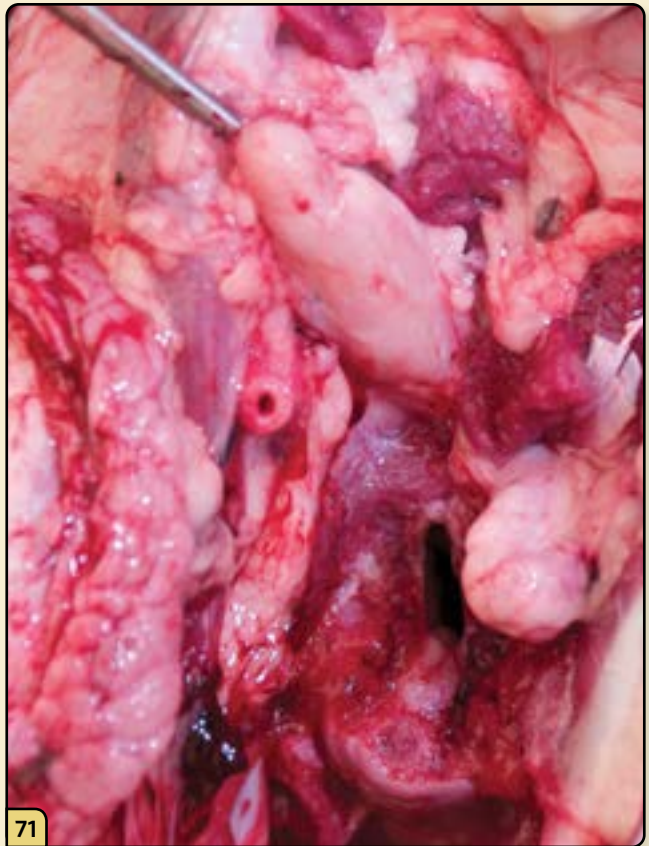
68

Transect the spinal cord.



69

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



71

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

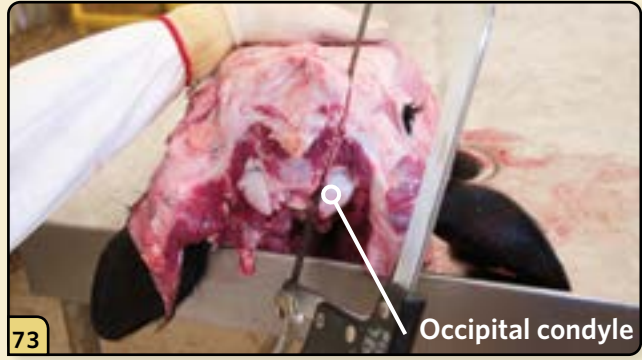


70

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



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 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.



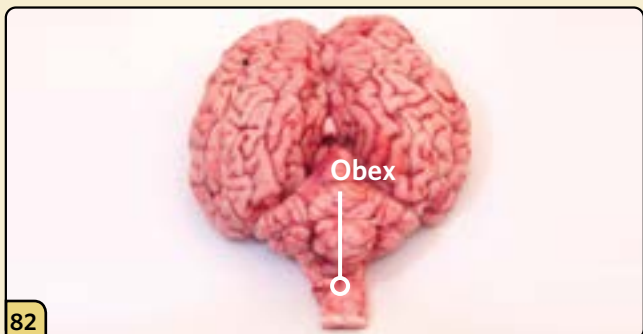
80

Use forceps and scissors to cut away the meninges.



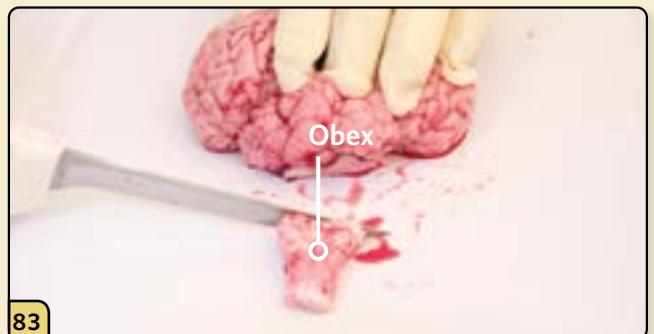
81

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



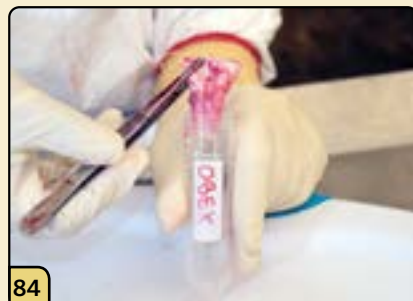
82

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.



87

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

2 NECROPSY EXAMINATION OF SWINE



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



Examine the perianal region, assessing for evidence of diarrhea.



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.



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.

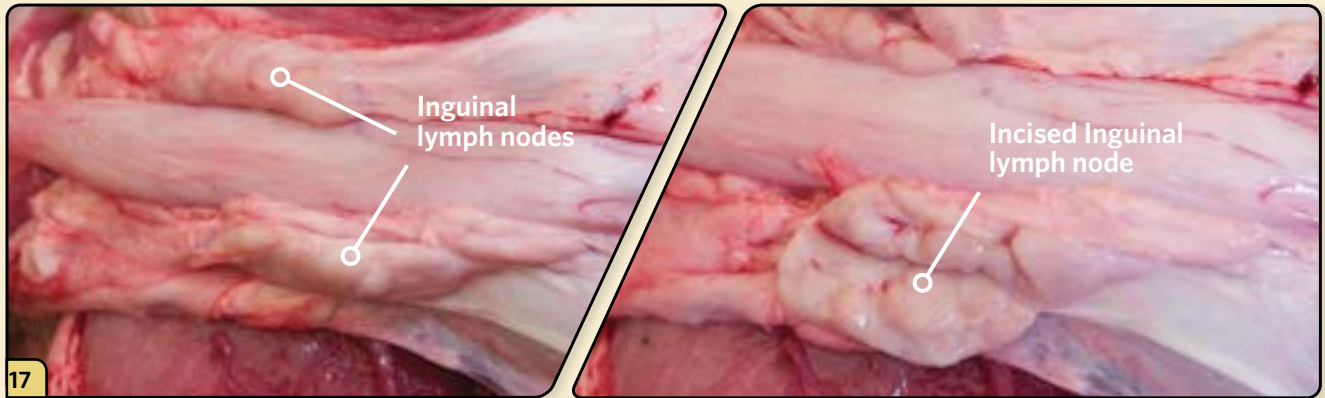
Rotate the blade ventrally and cut the skin.



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



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 examine 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 the lungs, liver, spleen, kidney, and lymph nodes, as well as samples of any lesions present.



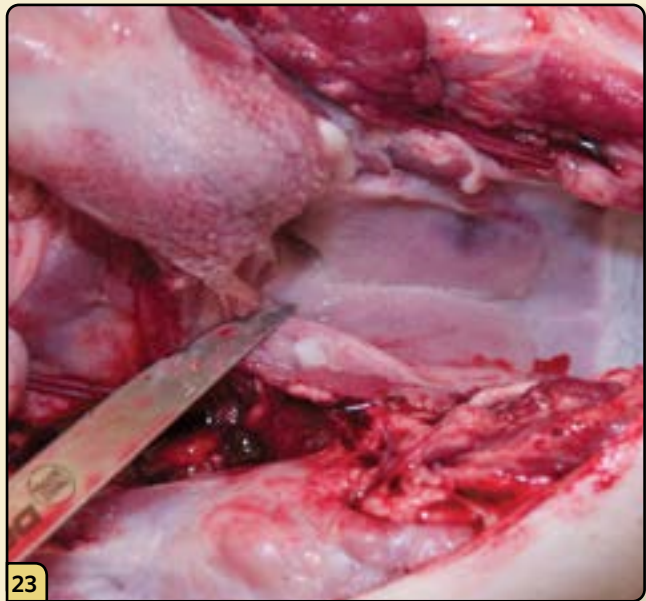
20 Extend the cut up to the level of the mandibles.



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 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.



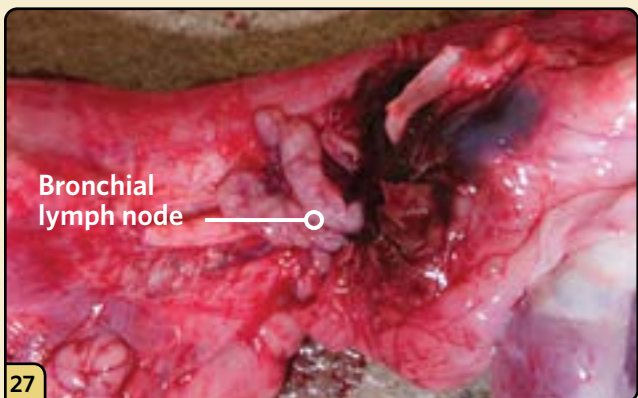
25

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



26

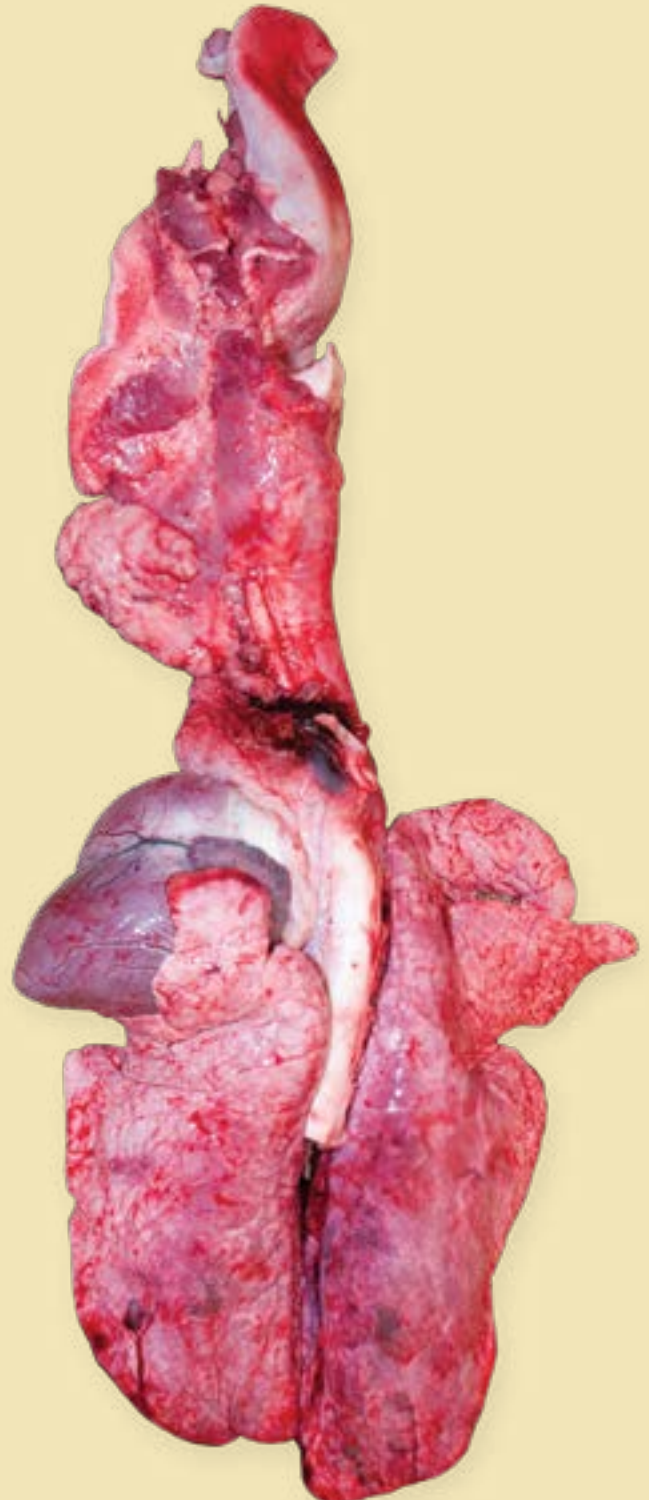
Dissect around the lungs and heart to free up the pluck. Set the pluck aside for a more detailed examination.



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.





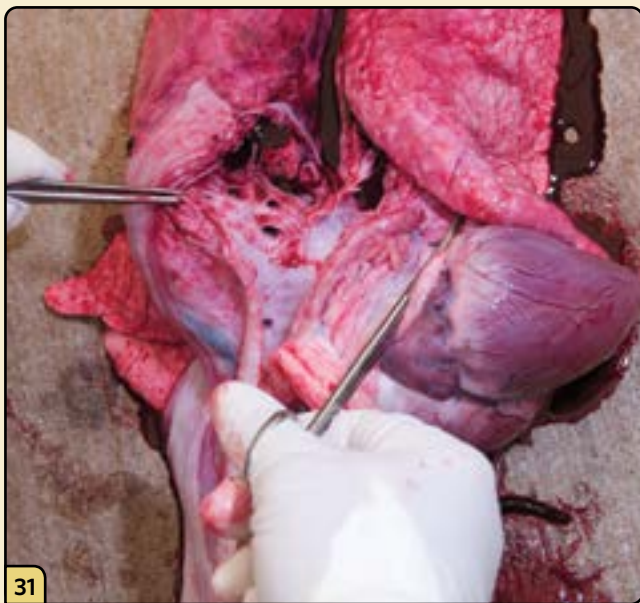
29

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

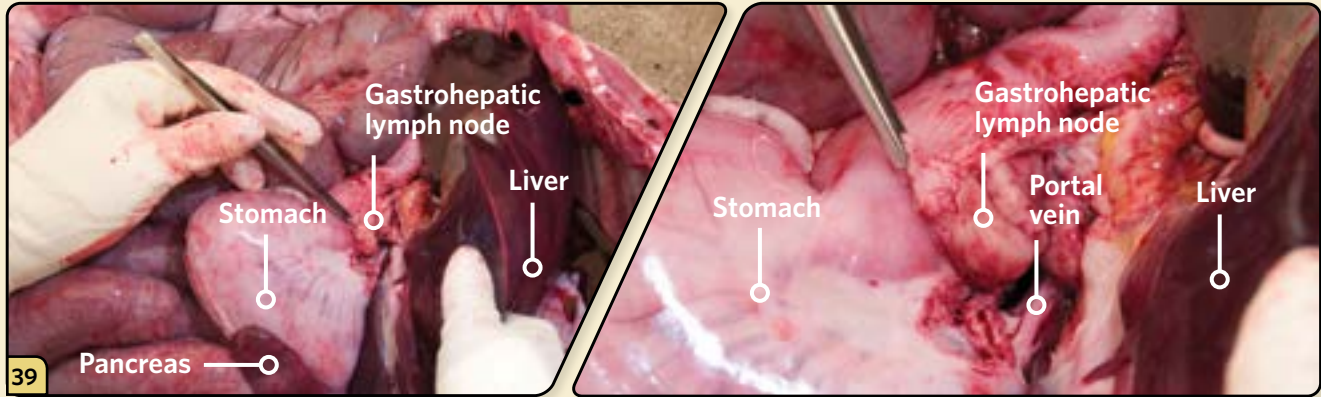


Repeat the process on the right side of the heart.



38

Observe abdominal viscera *in situ*.



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



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



41 Make a series of slices across the entire liver.



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



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

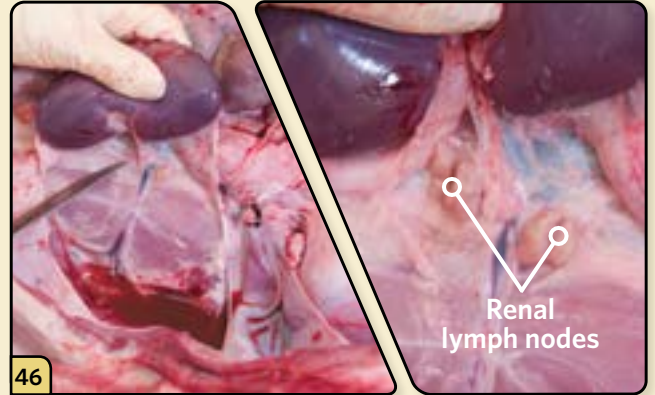


44 Make a series of slices across the spleen, evaluate the sections, and collect tissue samples.



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.



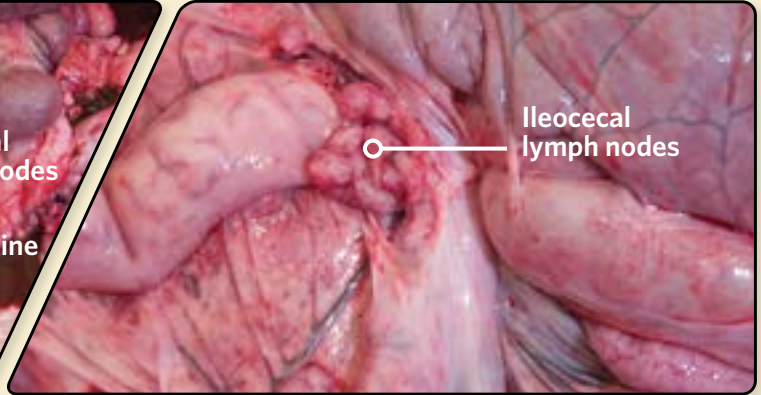
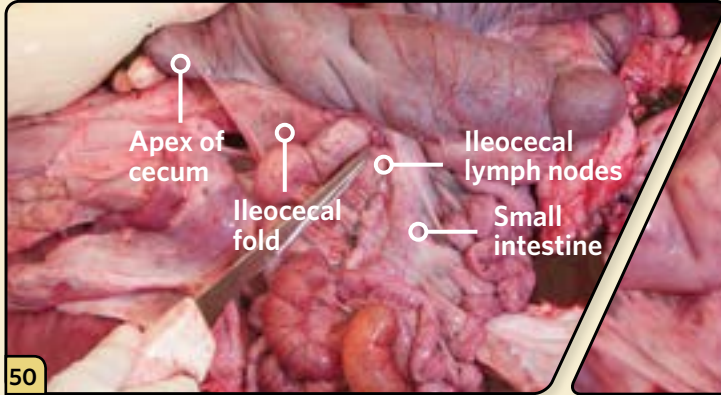
48

Peel and remove the outer capsule of the kidney.

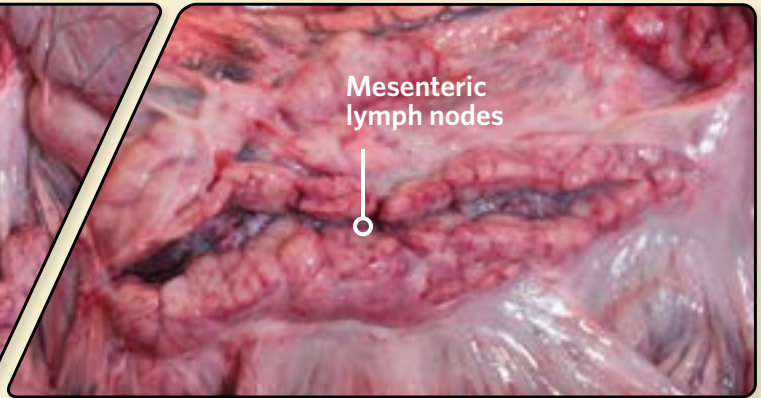


49

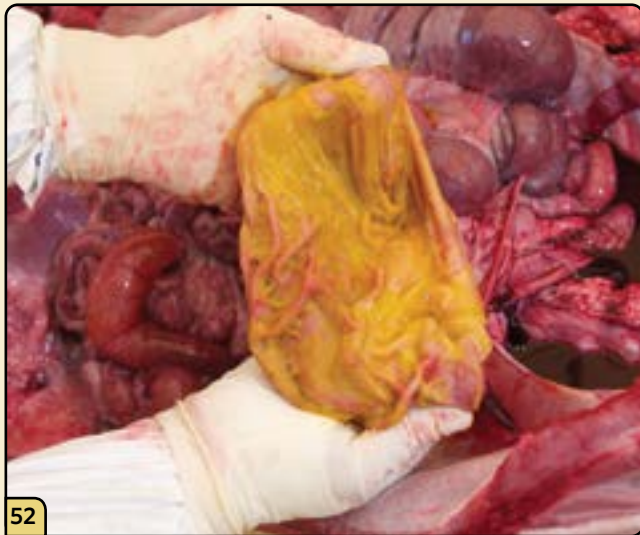
Make a sagittal cut through each kidney. Examine the inner kidneys and collect tissue samples.



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.



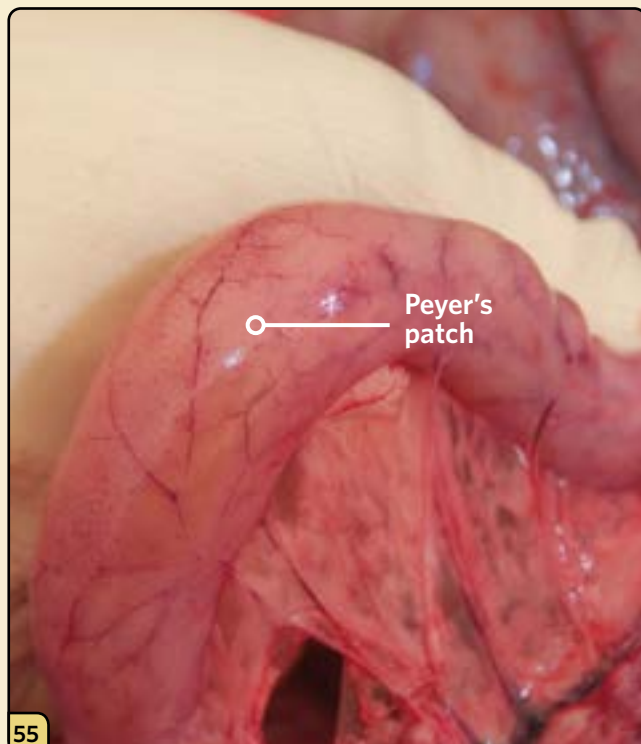
Now examine the GI tract in detail. This is generally done after the other organs have been examined to prevent tissue contamination caused by high levels of bacteria. Open the stomach and evaluate the contents and lumen.



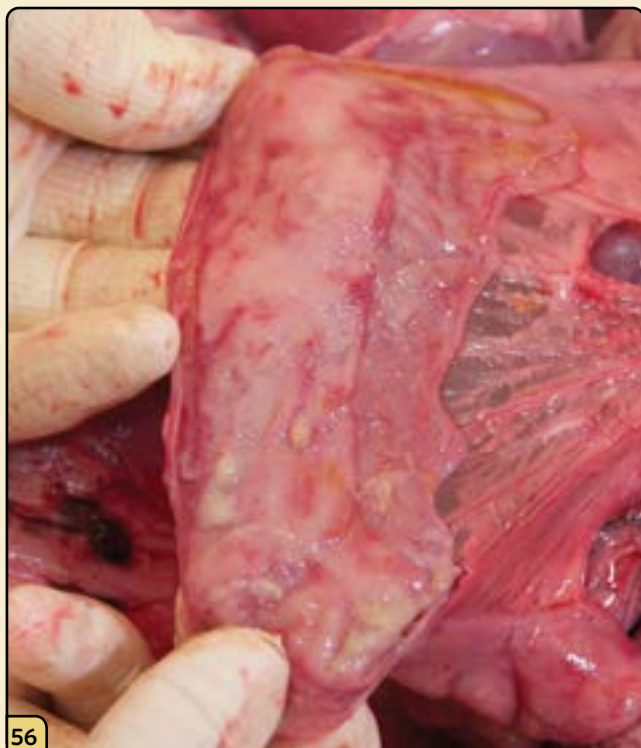
Working from oral to aboral, segmentally open and examine representative sections of normal-appearing intestine.



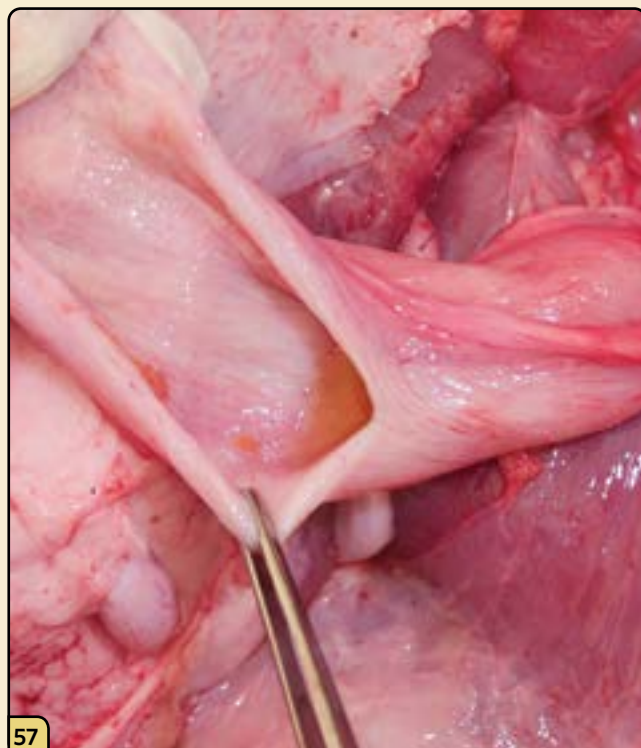
Any sections of intestines that appear to have gross lesions should also be opened, examined, and sampled.



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.



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



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.



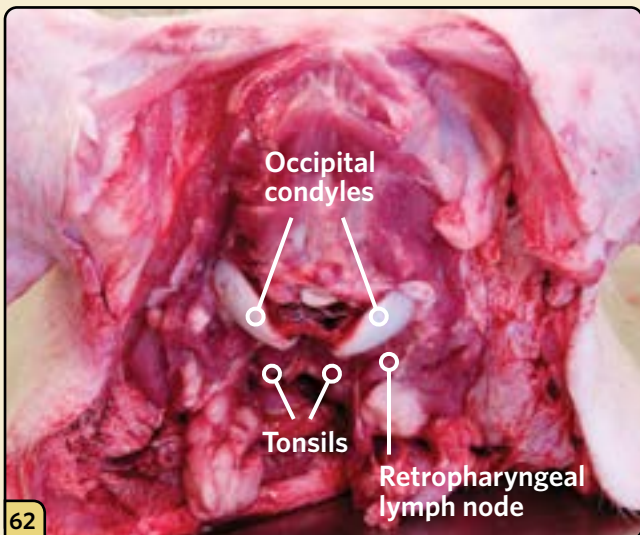
60

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.



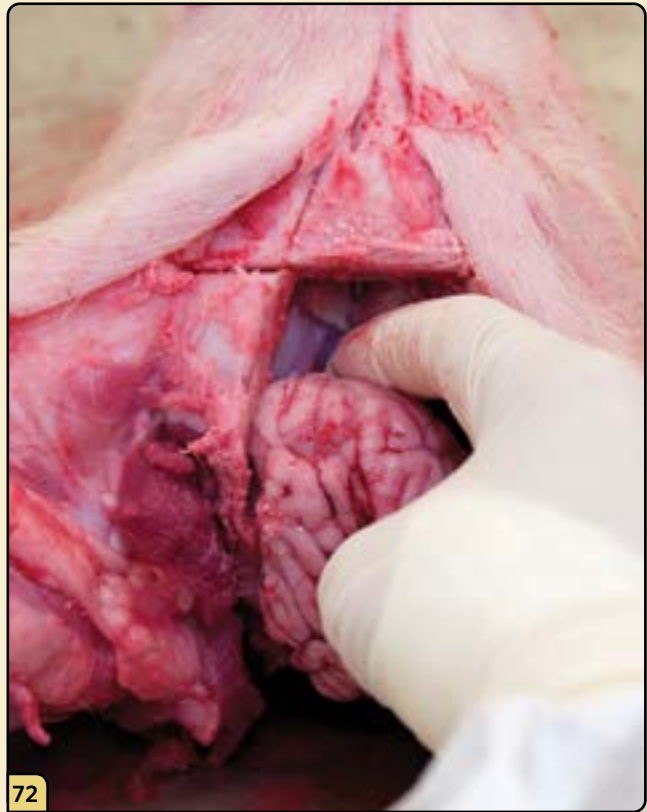
69

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.



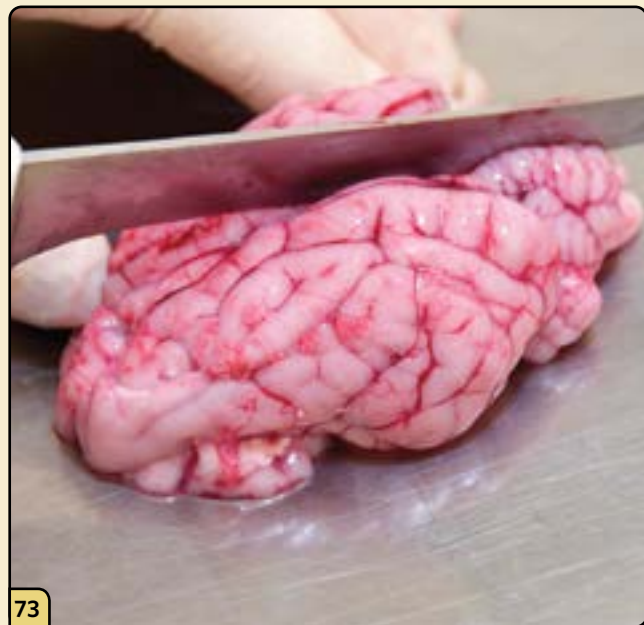
72

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



71

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



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



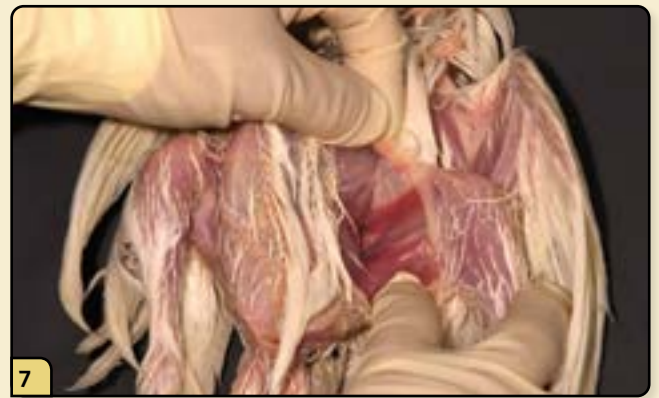
Perform an external examination of the chicken. Examine the infraorbital sinuses and nares, eyelids and conjunctiva, oral cavity, and vent.



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.



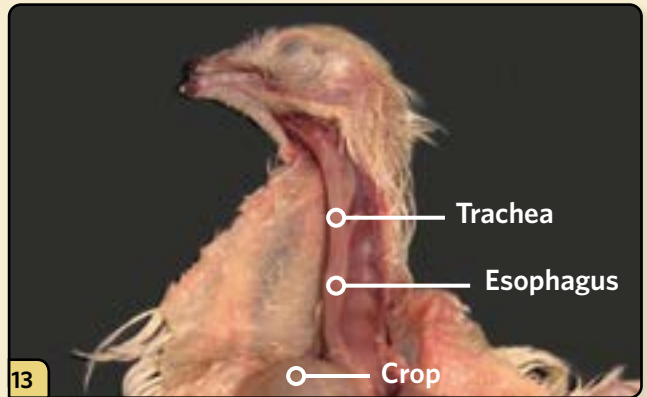
10 Peel the skin toward the entrance of the chest to expose the breast.



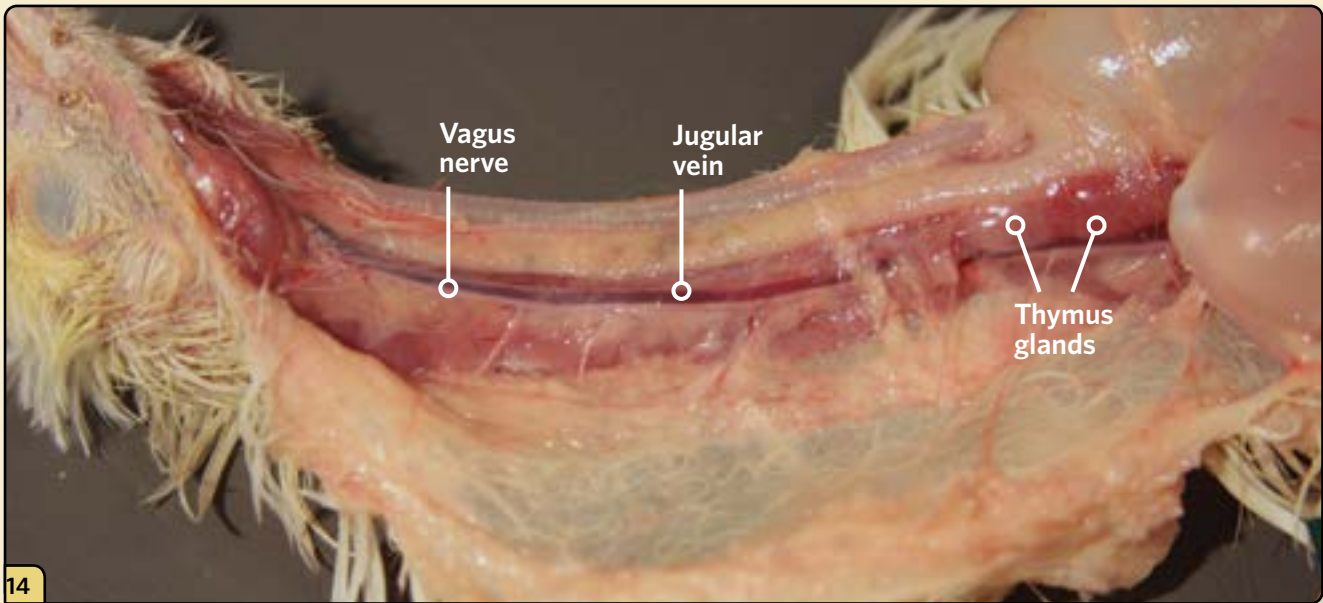
11 Separate the skin on the neck from the underlying neck tissues, alternating between the use of fingers and scissors.



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.



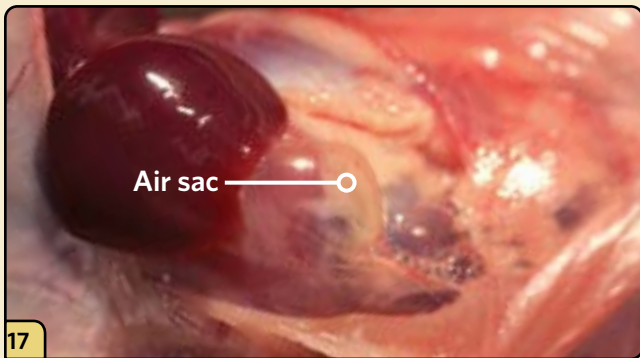
15

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.



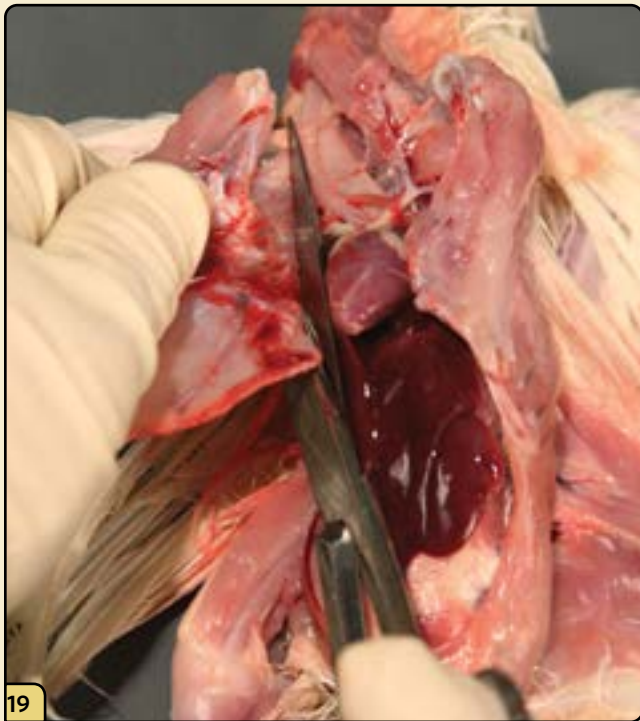
17

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.



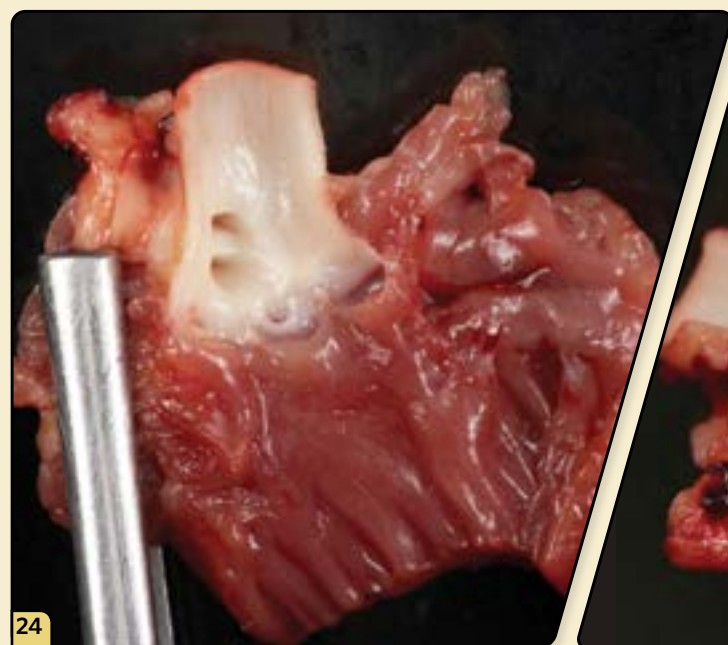
22

Remove the apex of the heart.



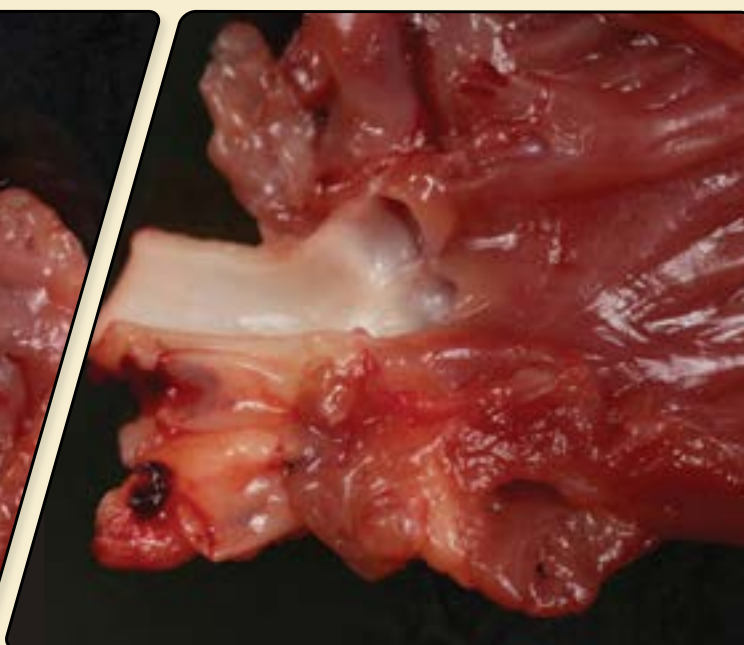
23

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



24

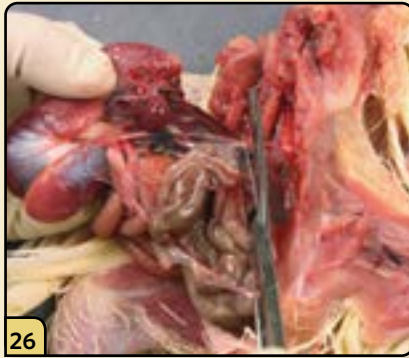
Examine the myocardial muscles, heart valves, and endocardium.





25

Sever the proventriculus from the esophagus.



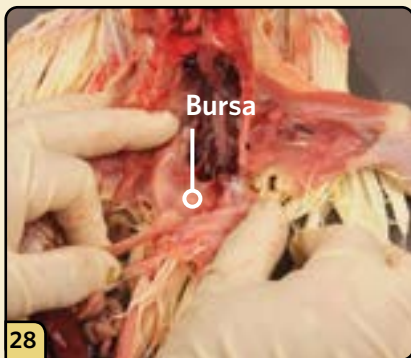
26

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

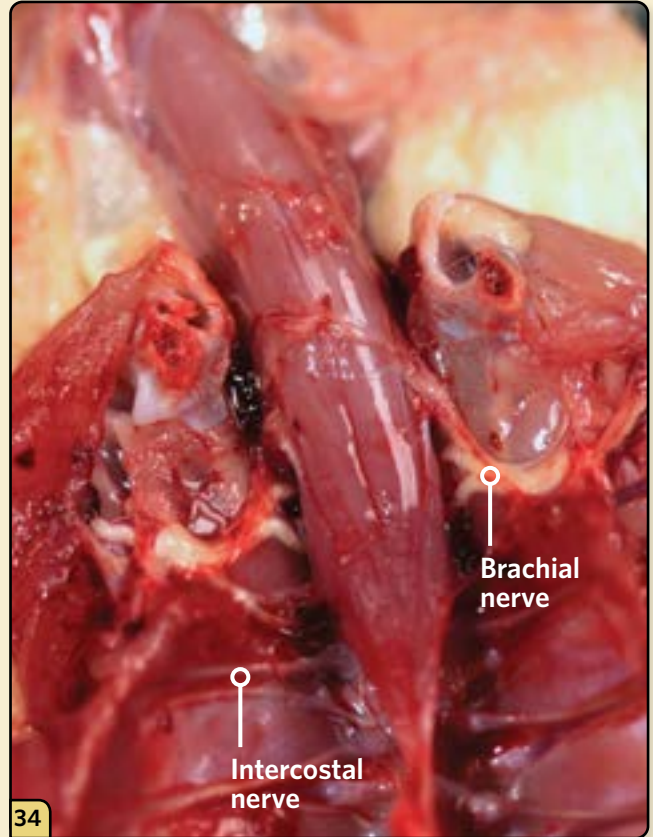
Sever the posterior end of the intestine from the cloaca. Set the GI tract aside for a more detailed examination after the remaining aseptic tissues have been processed.



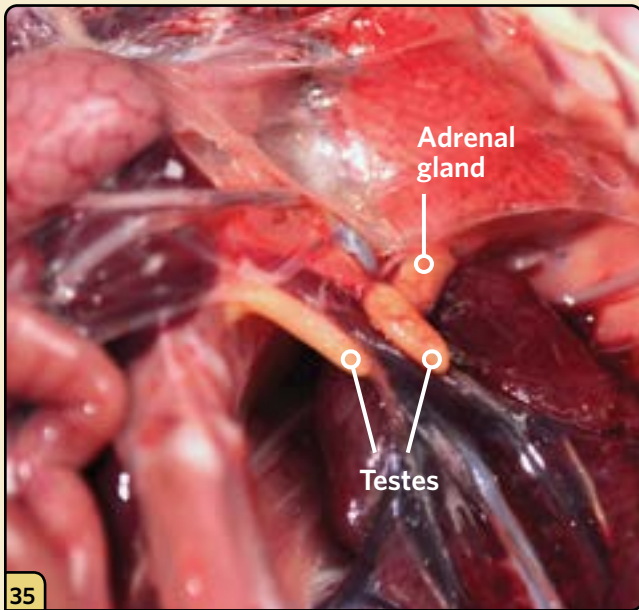
Use the edge of the scissors to bluntly dissect the lungs from the rib cage.



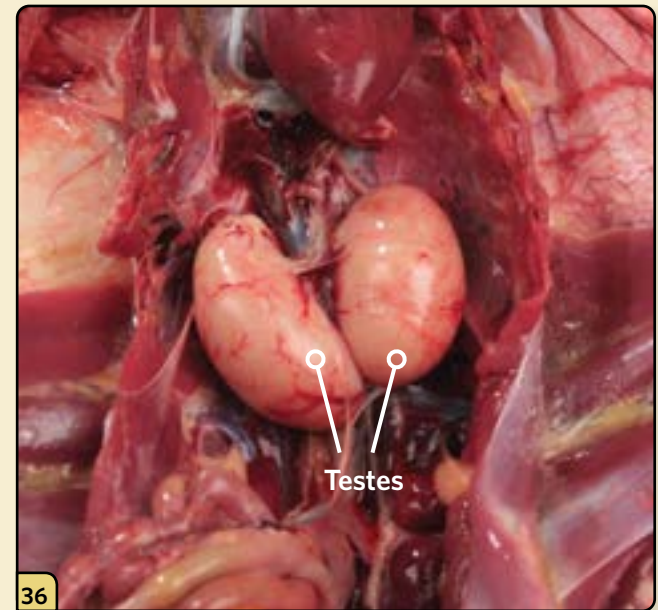
Visually inspect and palpate the lungs for lesions.



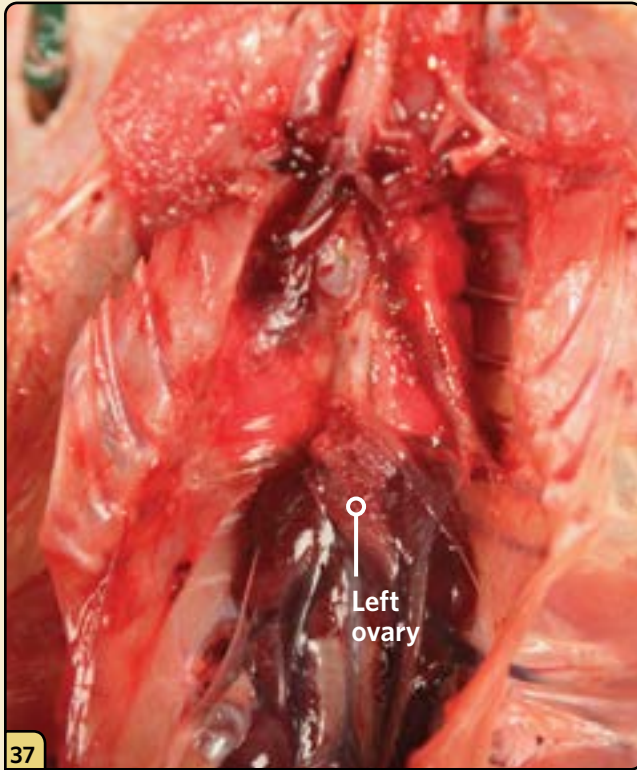
At the thoracic inlet, examine the brachial and intercostal nerves.



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.

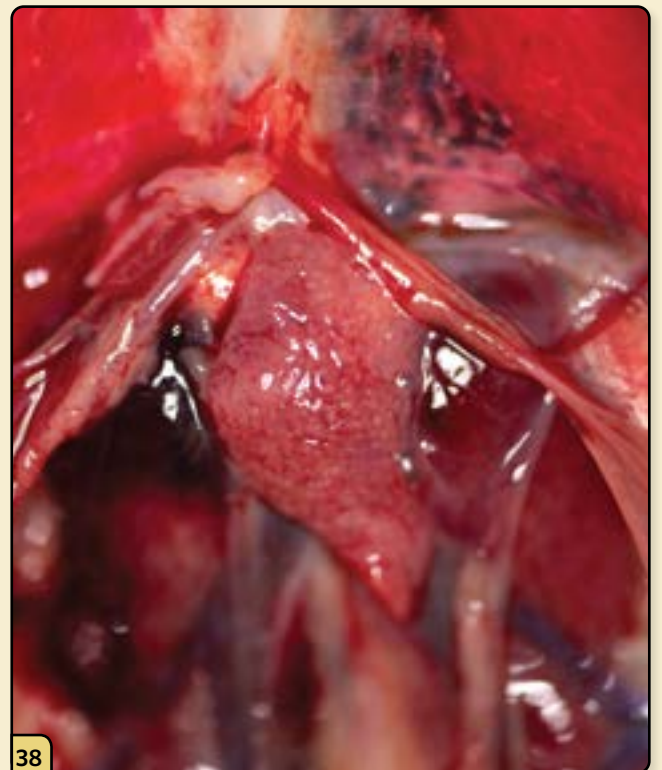


The testes depicted here are from a sexually mature male.



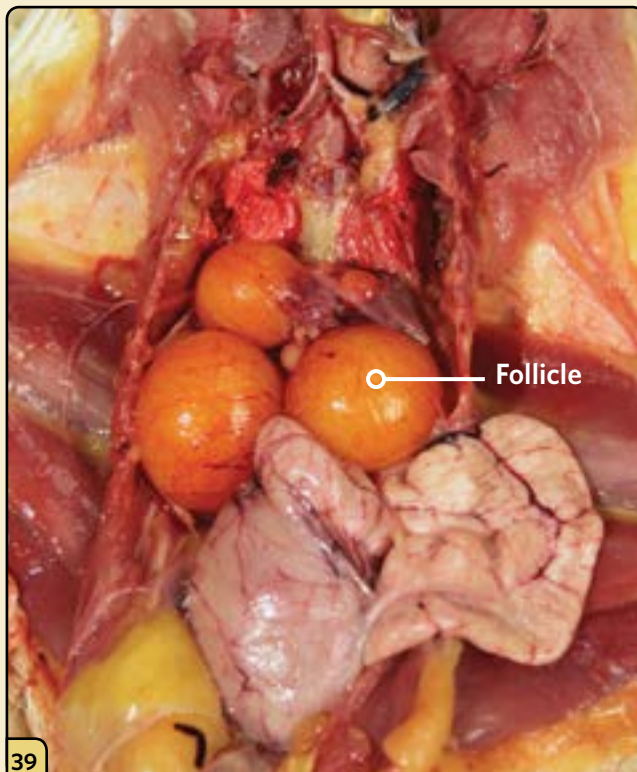
37

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



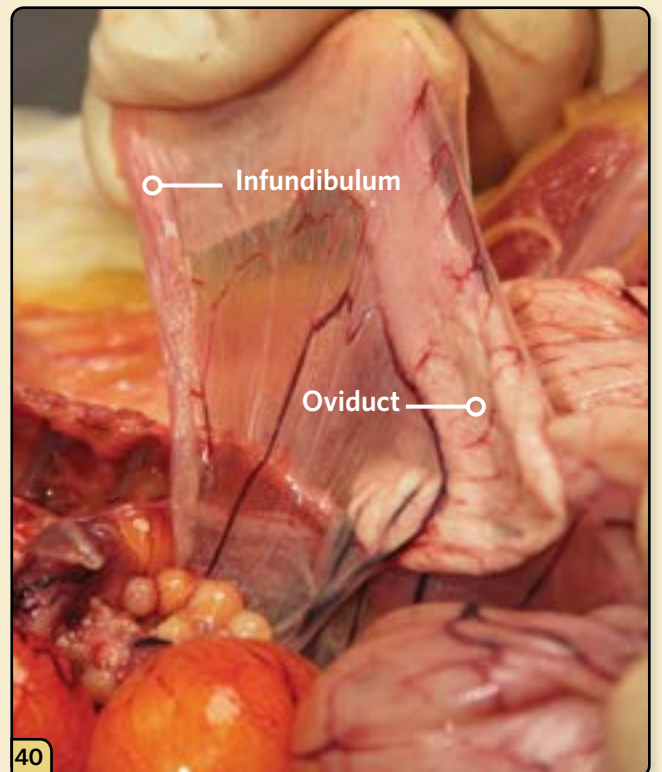
38

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



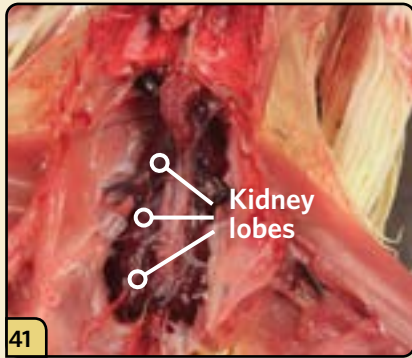
39

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



40

Examine the infundibulum and serosal surface of the oviduct.



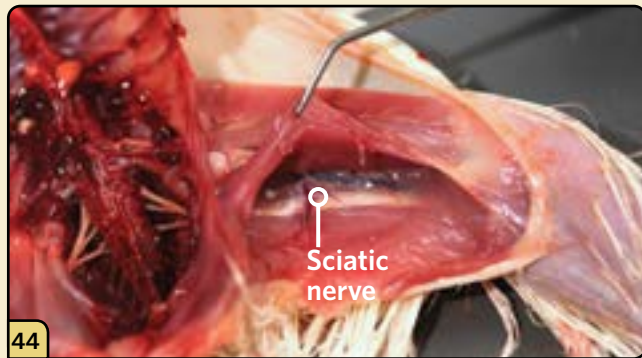
41 Examine the 3 lobes of the bilateral kidneys. They are located within the ventral recesses of the synsacrum (vertebrae) and contact the lungs cranially.



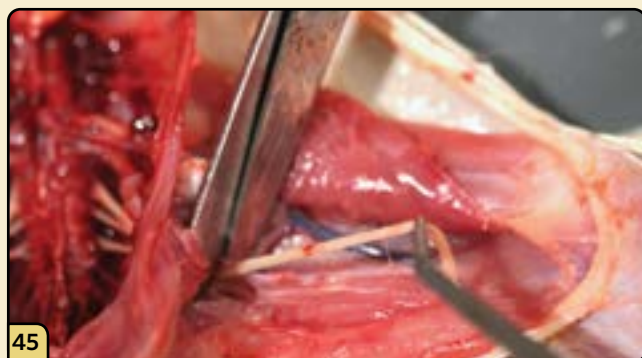
42 Use your fingers to gently dissect and remove the renal tissue to expose the sacral plexus for examination.



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.



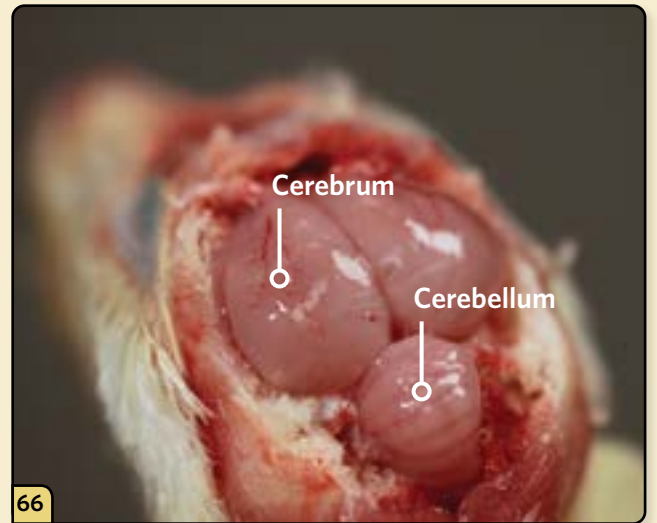
64

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.



69

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



70

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
Diagnostic Services Section (DSS) Head Office	(631) 323-3197

AFTER HOURS AND WEEKENDS

Diagnostic Services Section (DSS) Head work cell phone	(631) 488-7245
Acting Diagnostic Services Section (DSS) Section Head work cell phone	(631) 375-5314
Courier	(631) 566-0073

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

National Centers for Animal Health Dispatch	(515) 337-7266
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NVSL AMES CONTACT INFORMATION**DURING BUSINESS HOURS** (MONDAY-FRIDAY, 8:00 AM-4:30 PM CENTRAL)

NVSL Director	(515) 337-7601
Diagnostic Virology	(515) 337-7551
Diagnostic Bacteriology & Pathology	(515) 337-7526
Diagnostic Bioanalytical & Reagent	(515) 337-7563

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

National Centers for Animal Health Dispatch	(515) 337-7266
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NPIC AND DISTRICT OFFICES CONTACT INFORMATION**DURING BUSINESS HOURS** (MONDAY-FRIDAY, 8:00 AM-4:30 PM EASTERN)

NPIC Director	(240) 252-8074
NPIC Veterinary Medical Officer	(919) 637-4409
NPIC Veterinary Medical Officer	(970) 294-2879

AFTER HOURS AND WEEKENDS

NPIC/NVS 24-7 Emergency Answering Service	(800) 940-6524
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APHIS VS DISTRICT OFFICES

District One	(919) 855-7700
District Two	(517) 337-4700
District Three	(916) 854-3950
District Four	(512) 516-5778
Cattle Fever Tick Eradication Program	(956) 726-2228

2 ROUTING OF DIAGNOSTIC SAMPLE SUBMISSIONS

DIAGNOSTIC SPECIMEN TYPE	NVSL AMES	NVSL FADDL
Avian		
All	✓ Diagnostic Virology Lab	
Entomologic		
All	✓ Diagnostic Bacteriology & Pathology	
Equine		
African horse sickness (AHS)	✓ Diagnostic Virology Lab	
Contagious equine metritis (CEM)	✓ Diagnostic Bioanalytical & Reagent	
Dourine & Glanders	✓ Diagnostic Bioanalytical & Reagent	
Equine piroplasmiasis	✓ Diagnostic Bioanalytical & Reagent	
Venezuelan equine encephalitis	✓ Diagnostic Virology Lab	
Vesicular stomatitis	✓ Diagnostic Virology Lab	
Ruminants		
Bovine babesiosis	✓ Diagnostic Bioanalytical & Reagent	
Bovine spongiform encephalopathy (BSE)	✓ Diagnostic Bacteriology & Pathology	
Heartwater	✓ Diagnostic Virology Lab	
Other		✓
Swine		
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 Bioanalytical & Reagent], Diagnostic Virology Lab [DVL], or Diagnostic Bacteriology & Pathology).

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.

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.

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 Area Veterinarian in Charge (AVIC), Case Coordinator, or a 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 AVIC 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 the NAHLN Laboratory Director.

4. Make recommendations regarding intrastate quarantine or hold order.

Contact the SAHO, AVIC, 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.
 - Perform an EMRS2GO sync to receive the investigative assignment or create a new Contact Report directly in EMRS2GO, complete all required and necessary 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 Contact Report to EMRS2 within 8 hrs of completing the examination, and no later than the day samples are shipped to the laboratory.

Note: The FADD may refer to the EMRS2Go Mobile Application 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 EMRS2 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 EMRS2, then the following steps will be required.

Create and complete the following EMRS2 forms in a timely manner, preferably prior to samples arriving at the laboratory:

- Investigation Form (email or transmit to AVIC and SAHO utilizing the “Email a Link” hot button from the Investigation record),
- Examination Form (create and complete form),
- Lab Submission Form (create and complete to the “submitted” status),
- Create and complete premises statuses as appropriate (quarantine, etc)

NOTIFICATIONS DURING AN FAD/EDI INVESTIGATION**1. Immediately contact NPIC and the 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 AVIC, 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 AVIC, 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.

AVIC/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 the 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 EMRS2 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.

Enter information into EMRS2 no later than 8 hours after completion of the field examination and no later than the day specimens are shipped.

5. Assign classification of investigation and diagnostic sample priorities.

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 history is prepared and transmitted.

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

- The date and time of initial report,
- Contact information for the 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 might be involved or engaged in interstate or international commerce.

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. Logistics Center 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

Ensure all electronic EMRS2 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,
- Closed Quarantine status (if applicable), and
- Completed Investigation Form, including premises diagnostic status.

AVIC SPECIFIC TASKS**1. Transmit FAD Referral Control Number.**

Transmit the FAD Referral Control Number to the FADD and the SAHO.

2. Immediately contact NPIC and the 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 EMRS2.

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

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 EMRS2.**
 - The FAD/EDI Case Coordinator will ensure the FADD has received a Referral Control Number for the investigation.
 - Within 12 hours of the FADD completing the initial field investigation, the FAD/EDI Case Coordinator or designee will log in to EMRS2 and verify that the Initial Contact Report was successfully uploaded and that all documents are in order (*if 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 EMRS2 are created and properly completed, to include the Premises, 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 EMRS2.**
 - Ensure all electronic EMRS2 documentation and data entry is complete to include, but not limited to, movement records, written or verbal quarantines, test results, etc.
 - Complete and 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 AVIC and District Director.

2. **Assist FADD, AVIC, and SAHO.**
Consult with the FADD, AVIC, SAHOs, District Director or designee, NVSL Director, and NAHLN Laboratory Director when questions, concerns, or disagreements arise regarding the classification of an 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 AVIC, 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, the VS ADAs, Legislative and Public Affairs, and the 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 AVIC 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.

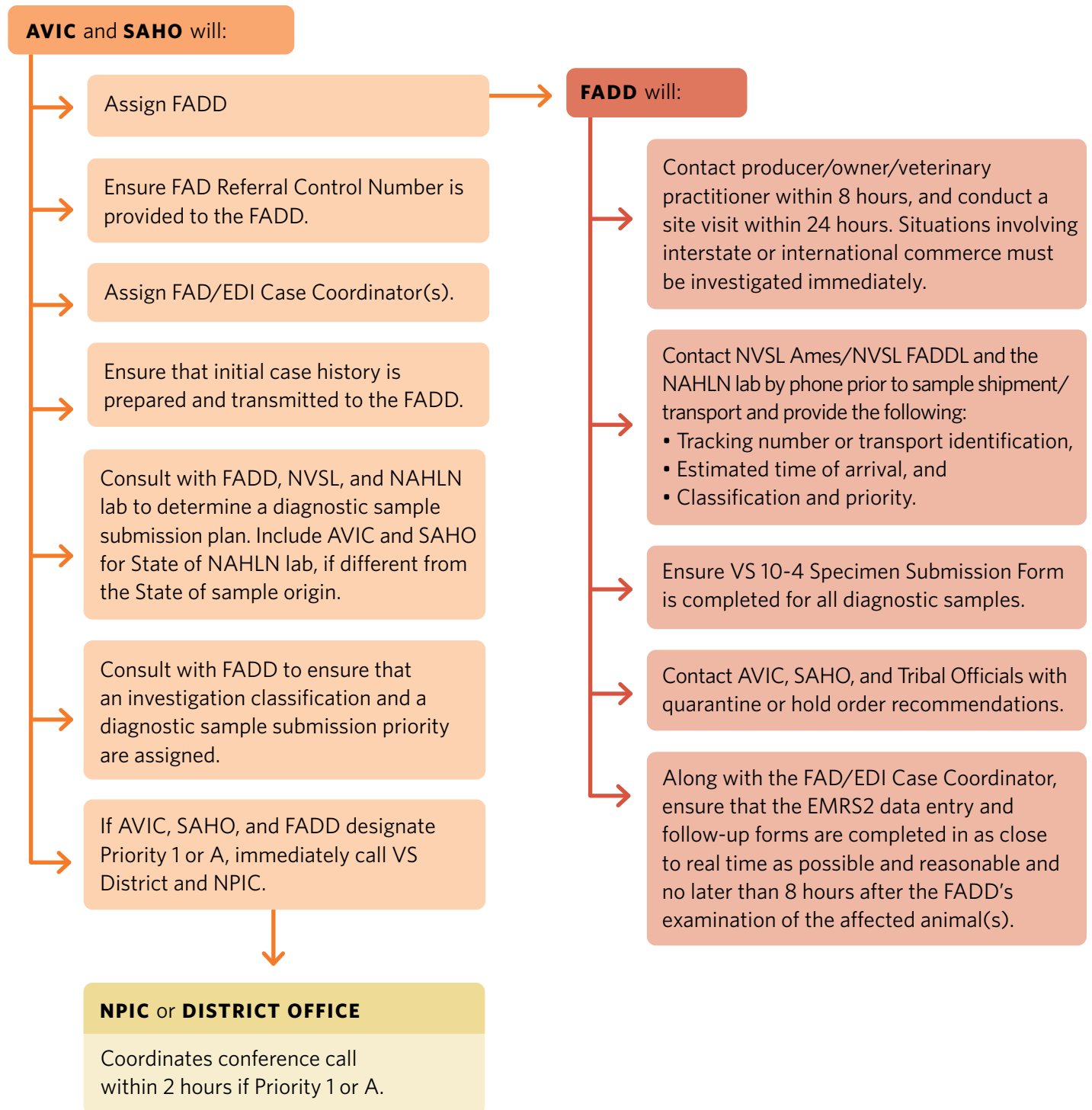
In addition to using EMRS2, provide written and verbal situation reports, operational updates, and diagnostic updates at intervals requested by the District Director, the VS ADAs, and the VS DA.

5. Utilize Logistics Center services.

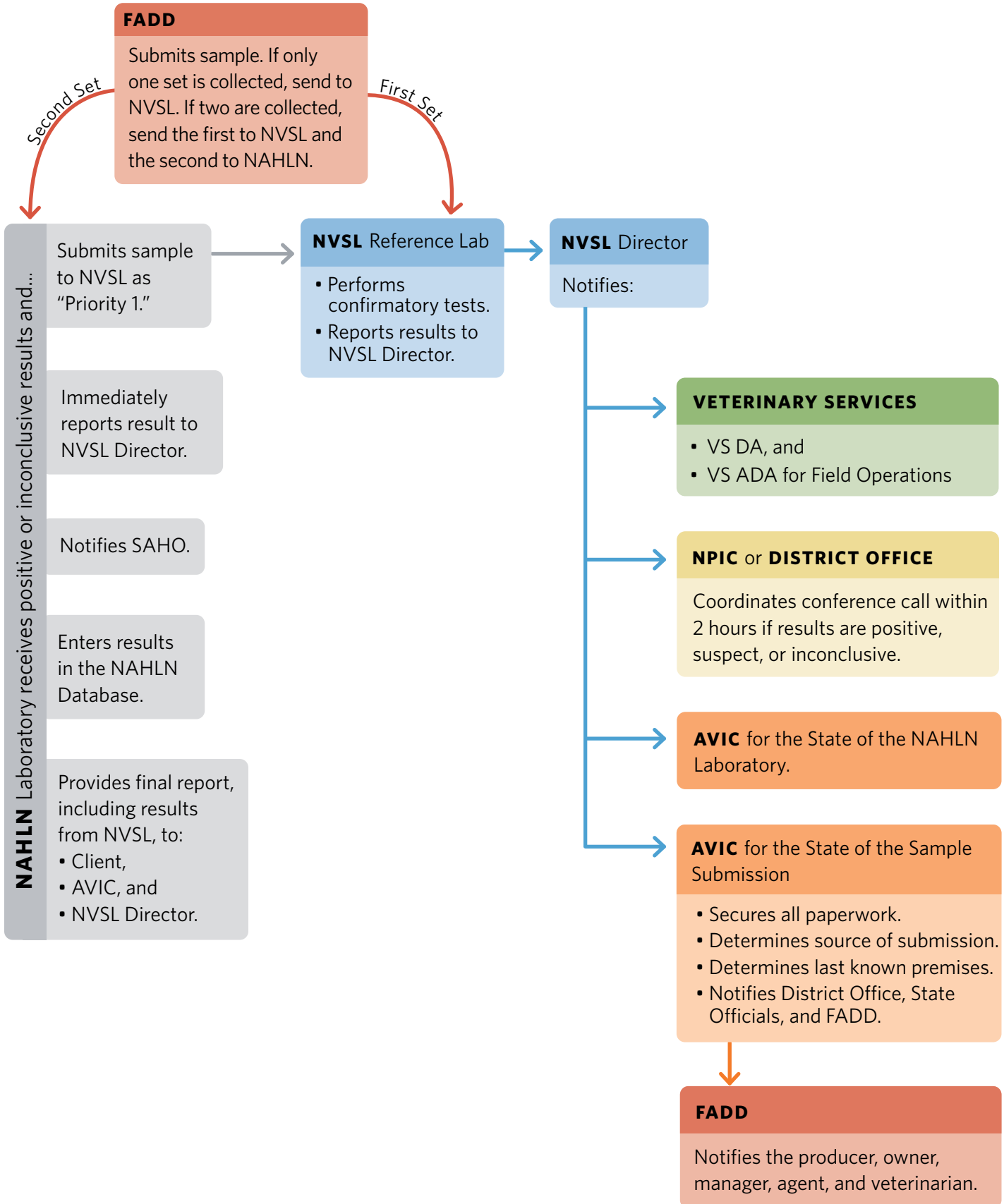
When requested by the District Director or designee, VS ADAs, or the VS DA, use Logistics Center services for the extraordinary methods of transporting diagnostic samples. This activation is conducted in close cooperation and communication with the AVIC, SAHOs, and Tribal Officials.

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 the following day
 - Saturday/Sunday—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 contracted commercial services

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

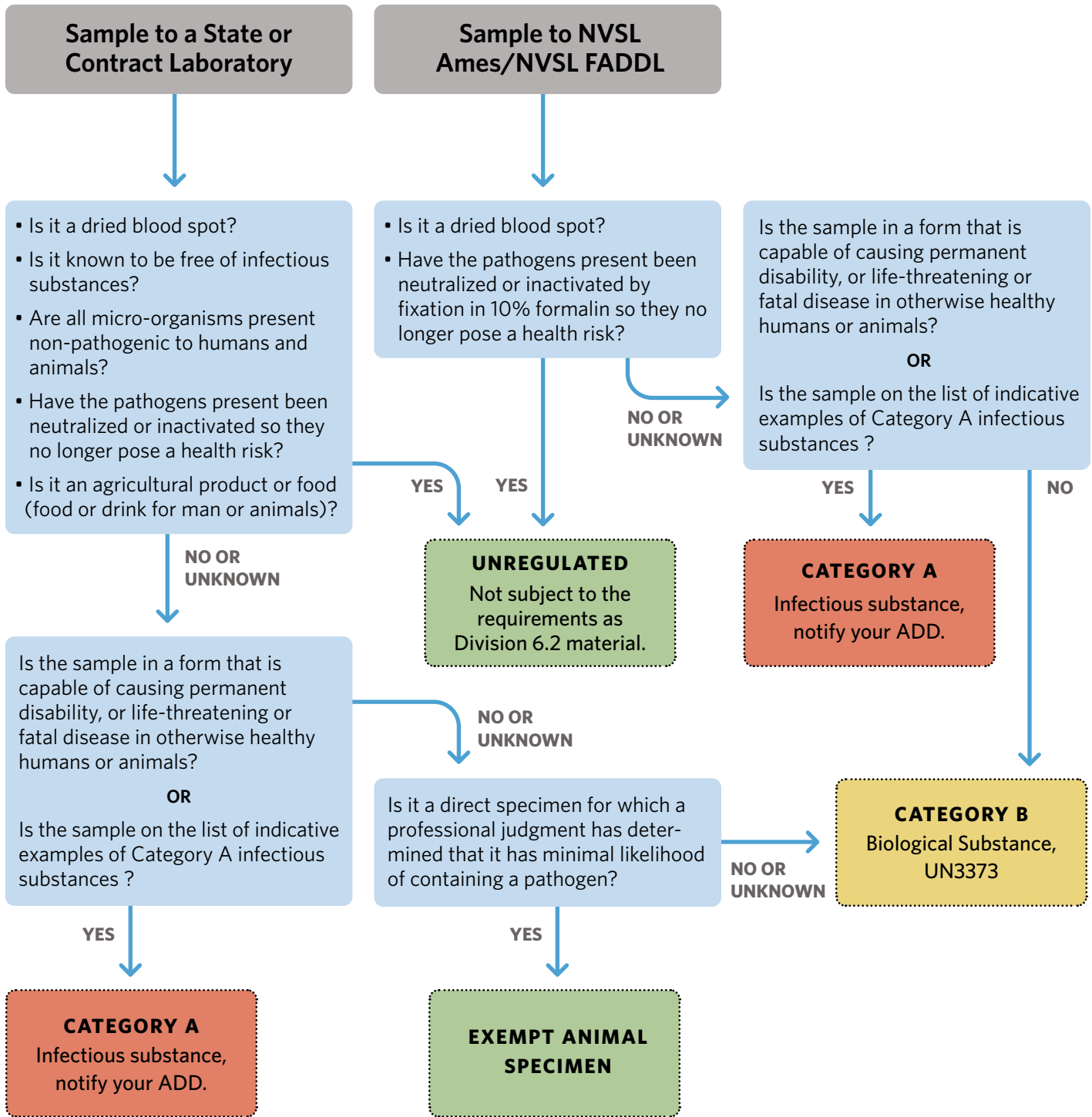
A Category B substance is an infectious substance that does not meet the criteria for inclusion in Category A. A category B infectious substance is not in a form generally capable of causing permanent disability, or life-threatening or fatal disease in otherwise healthy humans or animals.

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 *

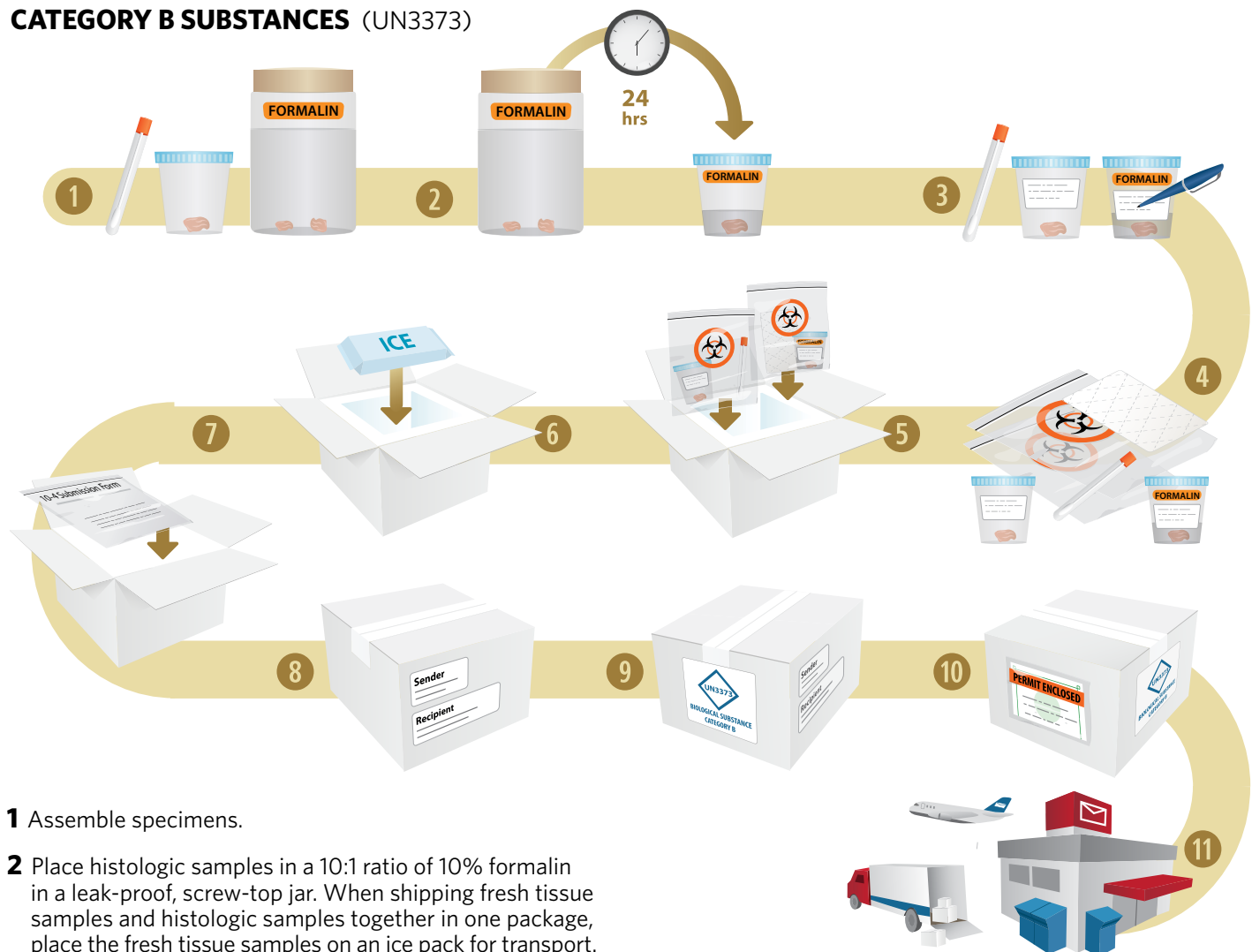
Swine vesicular disease virus *

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.

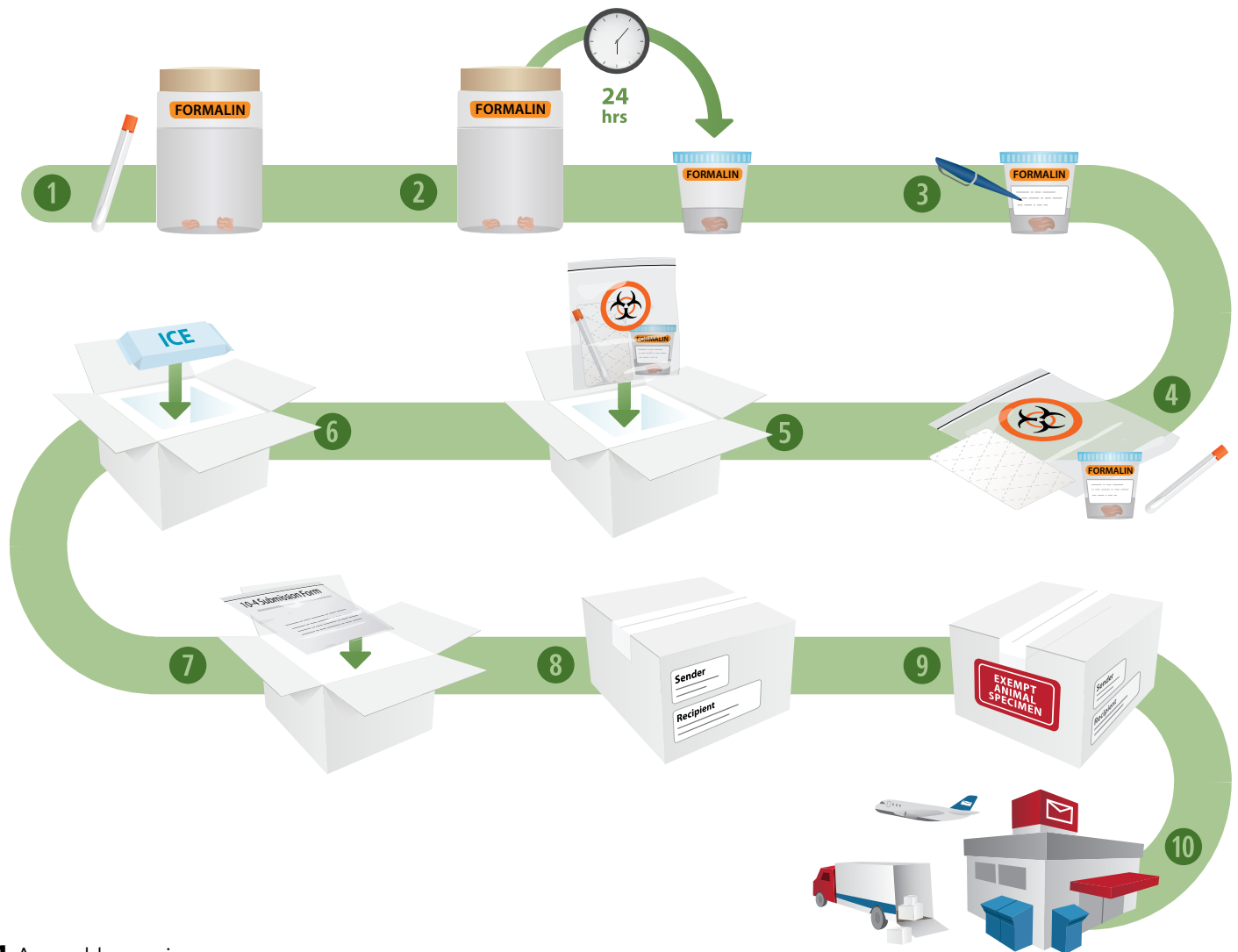
10 For international shipments (i.e., those arriving from outside the U.S.) contact the laboratory for a copy of an import permit and instructions for proper packaging to clear customs. Arrange all international shipments in advance with the receiving laboratory.

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, A, or 3 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.

FADDL Email: fad.submissions@usda.gov

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
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AFTER HOURS AND WEEKENDS

Diagnostic Services Section Head	(631) 488-7245
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Acting Diagnostic Services Section Head	(631) 375-5314
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Courier	(631) 566-0073
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AFTER HOURS AND WEEKENDS 24/7 (IF UNABLE TO REACH SOMEONE LISTED ABOVE)

National Centers for Animal Health Dispatch	(515) 337-7200
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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, A, or 3 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) 337-7601
Diagnostic Virology	(515) 337-7551
Diagnostic Bacteriology and Pathology	(515) 337-7526
Diagnostic Bioanalytical and Reagent	(515) 337-7563

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

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

PRIOR TO SHIPPING

NPIC must be contacted by phone prior to shipment or transport of diagnostic samples for a Priority 1, 2, A, or 3 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
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VS APHIS DISTRICT OFFICES

District One	(919) 855-7700
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District Two	(517) 337-4700
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District Three	(916) 854-3950
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District Four	(512) 516-5778
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Cattle Fever Tick Eradication Program	(956) 826-2228
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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

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	<h2 style="margin: 0;">SPECIMEN SUBMISSION</h2>	PAGE 1 OF 1
---	---	-----------------------

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

5. PAYMENT METHOD

<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 200	9. EXAMINATIONS REQUESTED FAD Rule Outs (list suspects - for example: FMD - PCR, VS - PCR, Elisa) Priority #	10. COLLECTED BY Jack Sparrow
7. NO. IN HERD/FLOCK AFFECTED 100		11. DATE COLLECTED mm/dd/yy
8. NO. IN HERD/FLOCK DEAD 0		12. AUTHORIZED BY ADD
13. PURPOSE OF SUBMISSION (See instructions for definitions)		14. COUNTRY OF ORIGIN/DESTINATION USA
<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 1234567

16. PRESERVATION
 None Ice Pack Dry Ice Formalin Borax Alcohol Other (Specify)

17. SPECIMENS SUBMITTED ("X" applicable item(s))	18. TOTAL NUMBER OF SPECIMENS SUBMITTED
<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 oral swab & tissue, foot tissue, & fixed <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	10

19. SPECIES OR SOURCE ("X" ONLY one)	20. NUMBER OF ANIMALS SAMPLED
<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	2

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				NVSL USE ONLY	
X					
NVSL USE ONLY					
CONDITION	PRIORITY	DISTRIBUTION	RECEIVED BY		

6 SHIPPING TO NVSL FADDL



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, or 3**
 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 OPTIONAL
 First 24 characters will appear on invoice.

3 To

Recipient's Name **FAD Priority 1,2,A or 3** 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**

E HOLD Weekday
FedEx location address REQUIRED NOT available for FedEx First Overnight.

F HOLD Saturday
FedEx location address REQUIRED Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

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?
One box must be checked.

No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice UN 1845 _____ 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	Total Weight	Total Declared Value ¹
1	10 lbs.	\$ _____ .00

¹Your 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.

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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 ExpressSM Shipping Document		3 WEIGHT LTR <input type="checkbox"/> PAK <input type="checkbox"/> WEIGHT _____ DIMENSIONAL WEIGHT If Applicable _____ LARGE PACKAGE <input type="checkbox"/>		4 SHIPPER RELEASE <input type="checkbox"/>	
See instructions on back. Visit UPS.com ® or call 1-800-PICK-UPS® (800-742-5877) for additional information and Tariff/Terms and Conditions.		5 TYPE OF SERVICE <input checked="" type="checkbox"/> NEXT DAY AIR <input type="checkbox"/> EXPRESS (INTL) FOR INTERNATIONAL SHIPMENTS <input type="checkbox"/> DOCUMENTS ONLY \$ _____ CUSTOMS VALUE		CHARGES \$ _____	
TRACKING NUMBER _____		6 OPTIONAL SERVICES <input type="checkbox"/> SATURDAY PICKUP See instructions. \$ _____ <input type="checkbox"/> SATURDAY DELIVERY See instructions. \$ _____ <input type="checkbox"/> DECLARED VALUE FOR CARRIAGE For declared value over \$100, see instructions. \$ _____ AMOUNT \$ _____ <input type="checkbox"/> C.O.D. If C.O.D., enter amount to be collected and attach completed UPS C.O.D. tag to package. \$ _____ AMOUNT \$ _____		7 ADDITIONAL HANDLING CHARGE <input type="checkbox"/> An Additional Handling Charge applies for certain items. See instructions. \$ _____	
A 1 SHIPMENT FROM SHIPPER'S UPS ACCOUNT NO. _____ REFERENCE NUMBER _____ NAME _____ TELEPHONE (____) _____ COMPANY _____ STREET ADDRESS _____ CITY AND STATE _____ ZIP CODE _____		8 METHOD OF PAYMENT <input checked="" type="checkbox"/> BILL SHIPPER'S ACCOUNT NUMBER (In Section 1) <input type="checkbox"/> BILL RECEIVER DOMESTIC ONLY <input type="checkbox"/> BILL THIRD PARTY <input type="checkbox"/> CREDIT CARD American Express, Diner's Club, MasterCard, Visa <input type="checkbox"/> CHECK		9 RECEIVER'S/THIRD PARTY'S UPS ACCT. NO. OR MAJOR CREDIT CARD NO. _____ EXPIRATION DATE _____ THIRD PARTY'S COMPANY NAME _____ STREET ADDRESS _____ CITY AND STATE _____ ZIP CODE _____	
B 2 EXTREMELY URGENT DELIVERY TO NAME Sample Processing TELEPHONE (515) 337-7212 COMPANY USDA/NVSL/LRU STREET ADDRESS 1920 Dayton Ave. DEPT./FLR. _____ Residential Delivery <input type="checkbox"/> CITY AND STATE (INCLUDE COUNTRY IF INTERNATIONAL) Ames, IA ZIP CODE 50010		10 SHIPPER'S SIGNATURE X		DATE OF SHIPMENT _____ / _____ / _____	
SAMPLE		<small>Shipper authorizes UPS to act as forwarding agent for export control and customs purposes. Shipper certifies that these commodities, technology or software, if exported from the United States, were exported in accordance with the Export Administration Regulations. Deviation contrary to law is prohibited.</small>			

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**

Form ID No. **0200**

Sender's Copy

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 **OPTIONAL**
 First 24 characters will appear on invoice.

3 To

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

A Company **USDA/NVSL/LRU**

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

Address _____ **HOLD Saturday**
 Use this line for the HOLD location address or for continuation of your shipping address. Dept./Floor/Suite/Room _____
FedEx location address REQUIRED Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

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

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 3, UN 1845 _____ 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:

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

FedEx Acct. No. _____ Exp. Date _____
 Credit Card No. _____

Total Packages **1** Total Weight **10** lbs. Total Declared Value! \$ _____ .00

fedex.com 1.800.GoFedEx 1.800.463.3339

RETAIN THIS COPY FOR YOUR RECORDS.

SAMPLE

612

*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: **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 Name _____ Phone (____) _____

Company _____

Address _____ Dept./Floor/Suite/Room _____

City _____ State _____ ZIP _____

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

Company **USDA/NVSL/LRU**

Address **1920 Dayton Ave.** Dept./Floor/Suite/Room _____

Address _____

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

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

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

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

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, 9, UN 1845 _____ 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. _____ Exp. Date _____
Credit Card No. _____

Total Packages **1** Total Weight **10** lbs. Total Declared Value* \$ _____ .00

*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.

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. MARKING, LABELING, DOCUMENTATION		
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
C. AIR WAYBILL		
Nature and quantity of goods box must show:	UN 3373 Biological substance, Category B Number of packages	N/A

1 GETTING STARTED

The Emergency Management Response System 2.0 (EMRS2) is a web-based application used for the reporting of routine investigations of foreign animal diseases (FADs), surveillance and control programs, state-specific disease outbreaks, and national animal health emergency responses (all-hazards). Primary users of EMRS2 are Federal, State, and Tribal Veterinary Medical Officers, Animal Health Officials, Animal Health Technicians, Animal Disease Specialists, and Epidemiologists.

A field application has been developed, EMRS2Go, allowing field users of EMRS to quickly and efficiently capture information associated with a foreign animal disease investigation. Foreign Animal Disease Diagnosticians will find that using EMRS2Go is an easy and efficient way to report the findings associated with a FAD investigation using a laptop or tablet directly from the field. If the user has a portable Bluetooth printer, they can even print a completed VS Form 10-4!



Access to EMRS is primarily for State and Federal animal health personnel. In order to gain access, all users must have 1) received eAuthentication Level 2 credentials, 2) completed the current fiscal year information security awareness training, and 3) submitted an APHIS 513 form requesting access to EMRS. Please contact your local EMRS Network Associate to assist you in completing these steps. Refer to the following website for additional information about EMRS2, for additional information on gaining EMRS2 Access, and for a listing and contact information for the EMRS Network Associates:

https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/emergency-management/sa_emrs/ct_emrs

Once an FADD has completed the steps required above and has been granted access to EMRS, they may download the EMRS2Go application to their laptop or tablet.

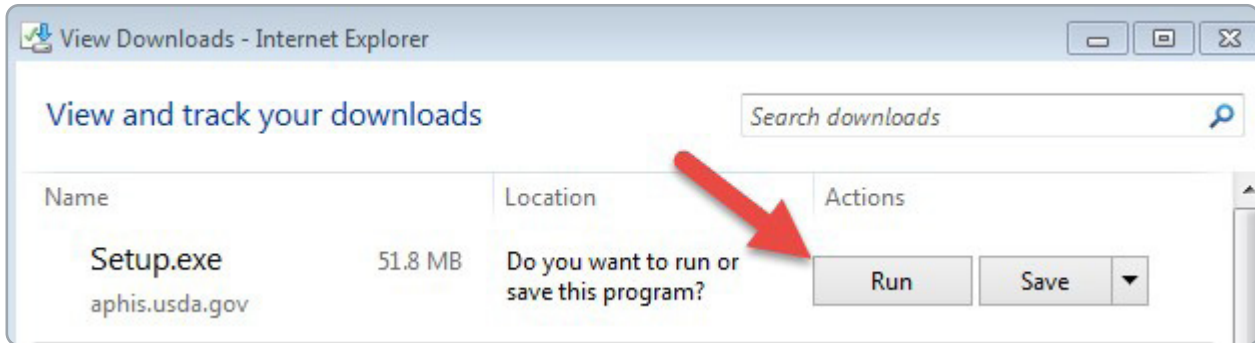
Note

To download the EMRS2Go application you **MUST** have a system-compatible encryption software feature installed on the laptop or tablet. As of the printing of this document, there is one encryption feature approved, Bitlocker. Additional encryption options are planned to be included in the future.

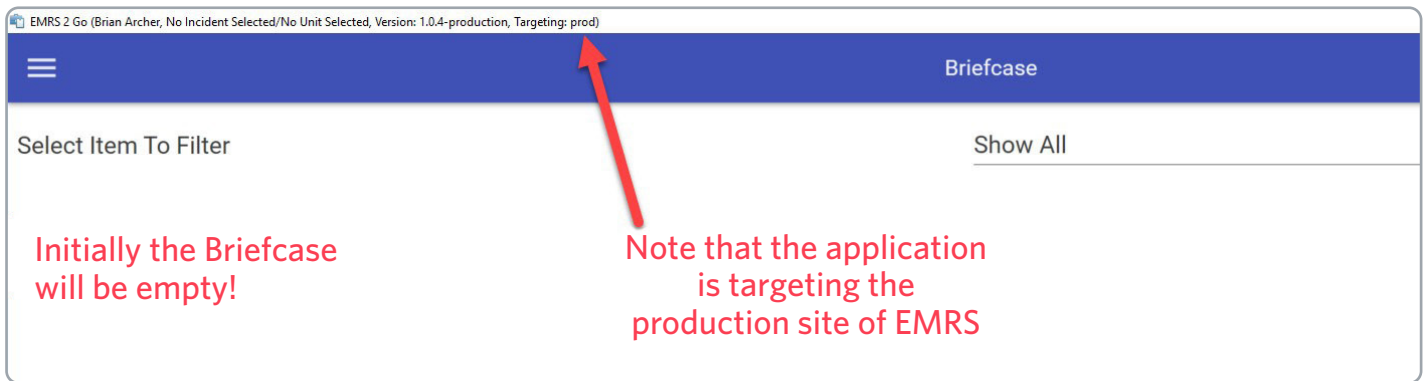
To download EMRS2Go, ensure that your computer/laptop/tablet is connected to the internet, then enter the following link into your web browser:

https://www.aphis.usda.gov/animal_health/software/emrs2go/Setup.exe

You will then be asked to Run or Save the download; click **Run**.



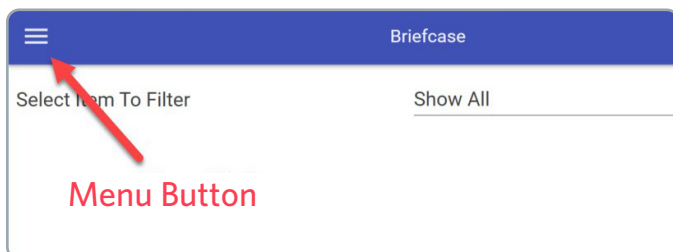
The application will download and open on the user's desktop. Note that the application is targeting Production (prod). This is the live site of EMRS where real information is entered.



Quick Tip
 You can easily change the target environment from Production to Training if you want to practice with the EMRS2Go app! Contact an EMRS Network Associate for instructions.

In order to use EMRS2Go, the user must first populate the lookup reference data in the application. To populate the reference fields, click on the **Menu button** (internet connection required).

Select **Receive**.



Select the option for **Full Synchronization**, then select the **Download button**. You will be prompted to enter your eAuthentication credentials. Follow the instructions to sync the lookups from EMRS with the application.

The screenshot shows a web interface titled "Receive from EMRS". At the top, there is a menu icon and the title. Below the title is a section for "Synchronization Mode" with two radio button options: "New and Updated Records Only" and "Full Synchronization". The "Full Synchronization" option is selected. Below this are several rows, each representing a different entity type with a cloud icon and a "Download" button. The entity types are: Metadata, Account, Business Unit, Contact, Animal Business, and LU Incident Related LU. A red arrow points to the "Full Synchronization" radio button, and another red arrow points to the "Download" button for "LU Incident Related LU".

Congratulations! You have successfully downloaded the EMRS2Go application, and have performed a sync to populate the lookups within the application. You may now return to the main page (Briefcase) by clicking the **Menu button** and selecting **Briefcase**. You may disconnect from the internet and use the application offline and in the field to capture information associated with a FAD investigation or incident-related surveillance activities.



Note

It is a good idea to perform the download synchronization process relatively frequently to ensure that the lookups within the application are current. If you have not performed a synchronization within the last 30 days, the application will prompt you to perform the sync.

It is important to realize that managers may assign work to field personnel directly in EMRS that will populate in the assigned personnel's EMRS2Go briefcase upon synchronization. In order for an assigned exam or task to appear in the briefcase, the due or scheduled start date must be within 10 days of the current day; therefore it is recommended that field personnel routinely perform a synchronization.

Reference materials for EMRS2Go FADI data entry have been developed and are available for your use. In addition, a training video that will take the user step by step through the process of how to use/enter information into EMRS2Go for a routine FAD Investigation has also been created. To obtain these resources, contact an EMRS Network Associate. (A list of associates has been provided via a link previously in this document).

Summary instructions on using the EMRS2Go application are provided on the following pages.

2 USING THE EMRS2GO APPLICATION

You will now find the EMRS2Go icon on your desktop. To open the application, double left click on the icon.

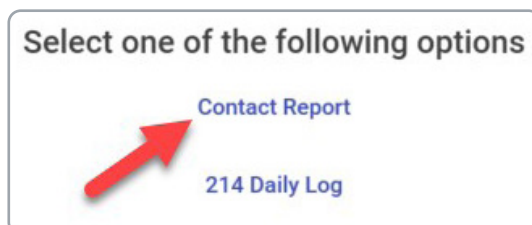


The application will open to the user's Briefcase. Note the various sections of the Briefcase shown below. Initially the Briefcase will likely be empty. If an exam or a task has been assigned to you, it will appear as shown below. To complete an existing assigned exam or task, click the **Edit button** associated with the exam or task. To enter information for a new FAD investigation (not already assigned), click the **+ button** in the bottom right-hand corner of the screen.

 A screenshot of the EMRS 2 Go application window. The window title is "EMRS 2 Go (Version 1.0.20-test, Targeting emrs100)". The main area is titled "Briefcase" and contains a list of items. Annotations with red arrows point to various elements:

- A "Menu Button" (hamburger icon) in the top left corner.
- A text box stating: "The app can be 'pointed' to the EMRS Training site or to the live production site. Consult an EMRS Network Associate on how to change the 'target' location for training versus actual investigation activities." with arrows pointing to the top navigation bar.
- A "Drop down to filter by forms available in EMRS2Go" in the top right corner.
- A list of items:
 - "DAILY 214 LOG FOR 01/24/2018" with subtext "Includes updates to tally sheet: Yes", "Tally sheet updated: No", "Test 2Go upload". Below it are buttons for "EDIT", "FORMS", and "ATTACHMENTS".
 - "E&D ED:1006:18 STATUS: ASSIGNED" with subtext "Incident: HPAI 2016", "Incident Site: Kansas". Below it are buttons for "EDIT", "FORMS", and "ATTACHMENTS".
 - "E&D ED:1007:18 STATUS: ASSIGNED" with subtext "Incident: HPAI 2016", "Incident Site: Kansas". Below it are buttons for "EDIT", "FORMS", and "ATTACHMENTS".
- A text box stating: "Forms created in EMRS2Go or downloaded from EMRS for field activities" with arrows pointing to the "FORMS" buttons of the two E&D items.
- A "Button to add a new form to the briefcase" (a blue circle with a white plus sign) in the bottom right corner.

After clicking the **+ button**, a window will appear. To create a new record associated with a FAD investigation, select **Contact Report**.



The Contact Report opens. The majority of the form is completed using drop-down arrows and selecting from pre-populated lookups, thereby allowing for quick and efficient data entry. Note, however, that there are select fields allowing for the entry of text. Entry in text fields should be succinct (less than 150 characters). Once the information is captured, click the **arrow button** in the bottom right-hand corner to advance to the next page of the record.

The screenshot shows the 'Contact Report' form with the following fields and annotations:

- Visit Information** (Section Header)
- Incident (Required)**: FAD (Annotation: Use drop down arrows to select options for ease of data entry)
- Investigation Reason (Required)**: Complaint (Annotation: Use drop down arrows to select options for ease of data entry)
- Investigation Type (Required)**: Vesicular- Skin of the muzzle & Feet (Annotation: Use drop down arrows to select options for ease of data entry)
- FAD Referral Control Number (Required)**: 19KS0011 (Annotation: Text Field)
- Exam Reason (Required)**: Sick Call (Annotation: Use scroll bar to access entire page)
- Investigation Source (Required)**: Practitioner (Annotation: Use scroll bar to access entire page)
- Investigator (Required)**: BRIAN ARCHER (ROUTINE ASSIGNMENTS - KANSAS) (Annotation: Use scroll bar to access entire page)
- Date Visited (Required)**: 5/21/2019 (Annotation: Use Calendar Icon to select date)
- Which type of Visit? (Required)**: Initial (Annotation: Use scroll bar to access entire page)
- Quarantine Date**: 5/21/2019 (Annotation: Use scroll bar to access entire page)
- Overall Comments, Notes and Additional Information (multiple lines allowed)**: Dr. Reel Lee Sharp, DVM, reported vesicles in the mouths of 3 cows identified while performing exam for health certificate (Annotation: Use scroll bar to access entire page)

At the bottom right, there is a blue circular button with a white right-pointing arrow, annotated with 'Use scroll bar to access entire page'.

Continue to utilize the drop-down fields and text fields to complete the record. Continue to use the **arrow button** to navigate to the next screen until all required information is entered. Upon reaching the last page of the contact report, be sure to save the report by clicking the **Save button** in the lower right-hand corner of the screen, which will return the user to the Briefcase.

Once the form has been saved, it will appear in the user's Briefcase. FADDs may now create a VS 10-4 Form utilizing the information already entered into the contact report by selecting the **Forms button**. A window will open; select **VS 10-4 Specimen Submission Form**.

The screenshot shows the 'Briefcase' screen with the following elements:

- Select Item To Filter** (Text)
- Show All** (Text)
- CONTACT REPORT FOR FAD AT ARCHER FARMS IN MCPHERSON** (Section Header)
- Investigator: BRIAN ARCHER (ROUTINE ASSIGNMENTS - KANSAS); Contact Date: 08/12/2020**
- 1769 Quivira Rd, McPherson, KS 67460**
- 3 Susceptible Animals; 8 Samples Taken**
- EDIT FORMS ATTACHMENTS** (Buttons)
- Forms Selection Dialog**: Select one of the following options
 - VS 10-4 Specimen Submission Form
 - Avian Influenza Specimen Submission Form

Annotations:

- Red arrow 1 points to the **FORMS** button: **To create a VS 10-4 Form, click the Forms Button**
- Red arrow 2 points to the **VS 10-4 Specimen Submission Form** option in the dialog.

The VS 10-4 Form opens. Note that the majority of the form has been auto-completed. Update or complete the necessary fields (identified in gold below). Once the updates have been made, select the **Export PDF** button in the upper left-hand corner of the screen.

☰

Export PDF

Previous Page
Page 1 of 1

Next Page

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

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	SPECIMEN SUBMISSION	PAGE 1 OF 1
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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) BRIAN ARCHER	2. NVSL SUBMITTER ID 	3. NAME OF OWNER <input type="checkbox"/> Check if wildlife (no owner) Kristi Archer Archer Farms
EMAIL ADDRESS brian.c.archer@aphis.usda.gov	OWNER CITY McPherson	STATE/COUNTRY Kansas
PHONE NO. 620-755-1724 FAX NO.	4. LOCATION OF ANIMALS	
MAILING ADDRESS (Street, City, State, ZIP Code) 1234 Anywhere Road McPherson, NE United States		PREMISES ID
		COUNTY STATE/COUNTRY Kansas

5. PAYMENT METHOD

USER FEE ACCOUNT NO.	CHECK/MONEY ORDER (Enclosed, payable to USDA in US dollars)	Number: CREDIT CARD Exp. Date:
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6. HERD/FLOCK SIZE 30	9. EXAMINATIONS REQUESTED Foot & Mouth Disease, Vesicular Stomatitis 2 out of 28 head affected. Neighboring pasture has horses under quarantine for VSV	10. COLLECTED BY ARCHER, BRIAN
7. NO. IN HERD/FLOCK AFFECTED 2		11. DATE COLLECTED 08/12/2020
8. NO. IN HERD/FLOCK DEAD 0		12. AUTHORIZED BY
13. PURPOSE OF SUBMISSION (See instructions for definitions)		14. COUNTRY OF ORIGIN/DESTINATION USA
<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 20KS6001
16. PRESERVATION <input type="checkbox"/> None <input type="checkbox"/> Ice Pack <input type="checkbox"/> Dry Ice <input type="checkbox"/> Formalin <input type="checkbox"/> Borax <input type="checkbox"/> Alcohol <input checked="" type="checkbox"/> Other (Specify) Select Preservation		
17. SPECIMENS SUBMITTED ("X" applicable item(s))		18. TOTAL NUMBER OF SPECIMENS SUBMITTED 8
<input checked="" type="checkbox"/> Blood <input type="checkbox"/> Feeces <input type="checkbox"/> Parasite <input type="checkbox"/> Serum <input type="checkbox"/> Tissue (specify) <input type="checkbox"/> Whole Animal <input checked="" type="checkbox"/> Other (specify) Scabs, swab <input type="checkbox"/> Culture <input type="checkbox"/> Feed <input type="checkbox"/> Plant <input type="checkbox"/> Soil <input type="checkbox"/> Urine <input type="checkbox"/> Fetus <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 2
<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		

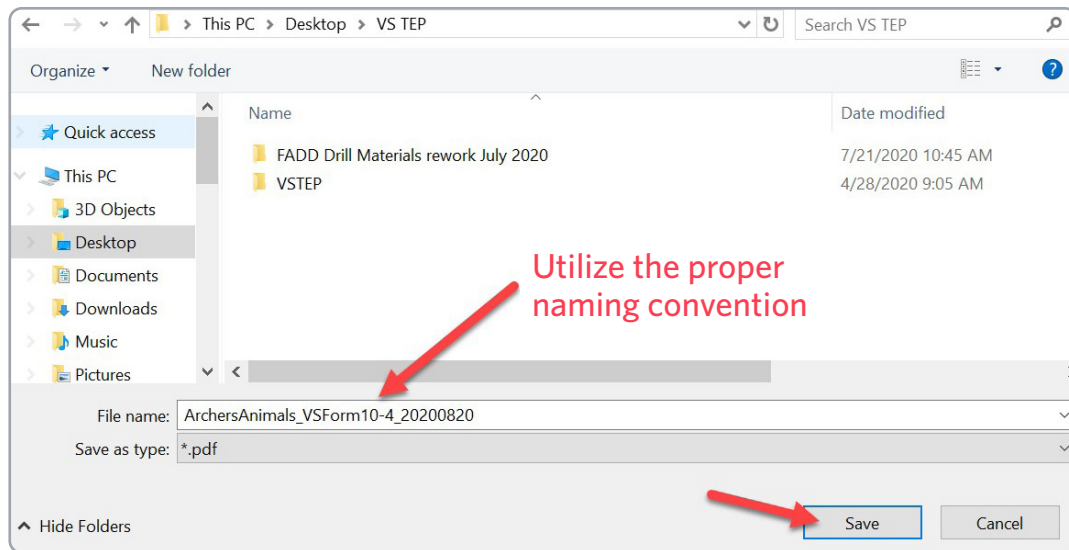
21. IDENTIFICATION (See instructions <250 samples per form)					IDENTIFICATION				
Sample ID	Animal ID	Breed	Age	Sex	Sample ID	Animal ID	Breed	Age	Sex
A01234	48VAW0001	Angus	ADULT	F	B01235	48WAV0069	Angus		F
A01235	48VAW0001	Angus	ADULT	F	B01236	48WAV0069	Angus		F
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A01237	48VAW0001	Angus	ADULT	F					
B01234	48WAV0069	Angus		F					

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

23. SIGNATURE OF SUBMITTER AND DATE X	NVSL USE ONLY								
<table style="width: 100%; border-collapse: collapse; font-size: x-small;"> <tr> <th colspan="4" style="text-align: center;">NVSL USE ONLY</th> </tr> <tr> <td style="width: 25%;">CONDITION</td> <td style="width: 25%;">PRIORITY</td> <td style="width: 25%;">DISTRIBUTION</td> <td style="width: 25%;">RECEIVED BY</td> </tr> </table>	NVSL USE ONLY				CONDITION	PRIORITY	DISTRIBUTION	RECEIVED BY	
NVSL USE ONLY									
CONDITION	PRIORITY	DISTRIBUTION	RECEIVED BY						

VS FORM 10-4
AUG 2009

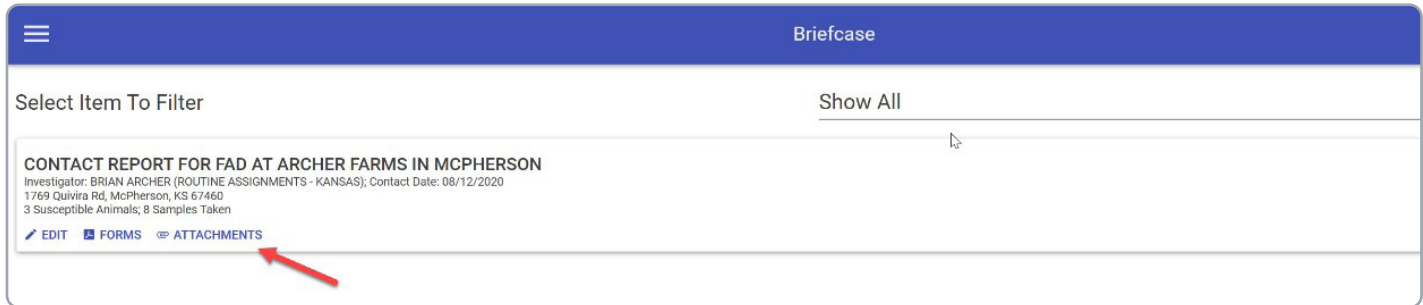
A window opens allowing you to save the VS 10-4 as a pdf document. **Name** the document with the following naming convention: AnimalBusinessName_FormName_Date(YYYYMMDD). (For example: ArchersAnimals_VSForm10-4_20200820). **Save** the document to the location of your choosing on your laptop/tablet.



A pdf document suitable for printing will open. **Print** the document, **sign**, and **place** in the specimen box being shipped to the laboratory per shipping protocols.

<small>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.</small>				<small>OMB Approved 0579-0090, 0579-0101, and 0579-0212</small>																																																					
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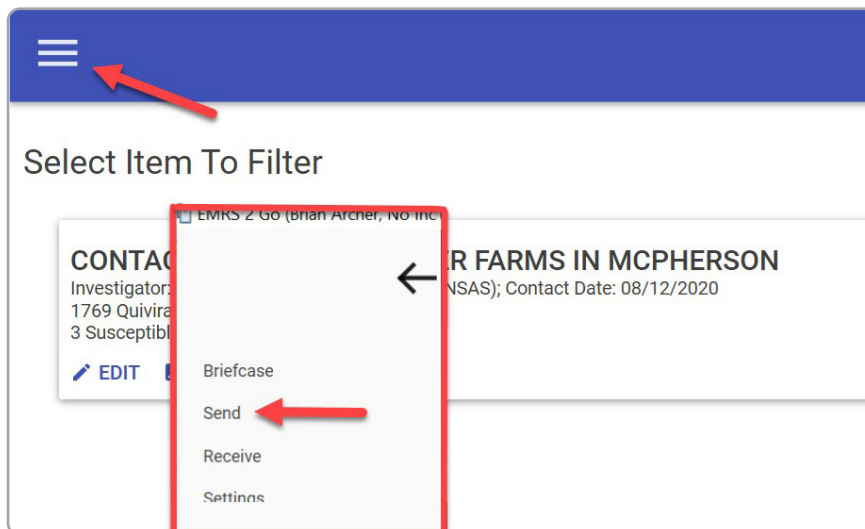
Close the pdf document on your laptop/tablet. Return to the Briefcase in EMRS2Go by selecting the **Menu button**. FADDs may also attach additional supporting documentation (FAD Investigative worksheets, notes captured on Word documents, digital pictures, etc.) to the Contact Report by clicking on the **Attachments button**.



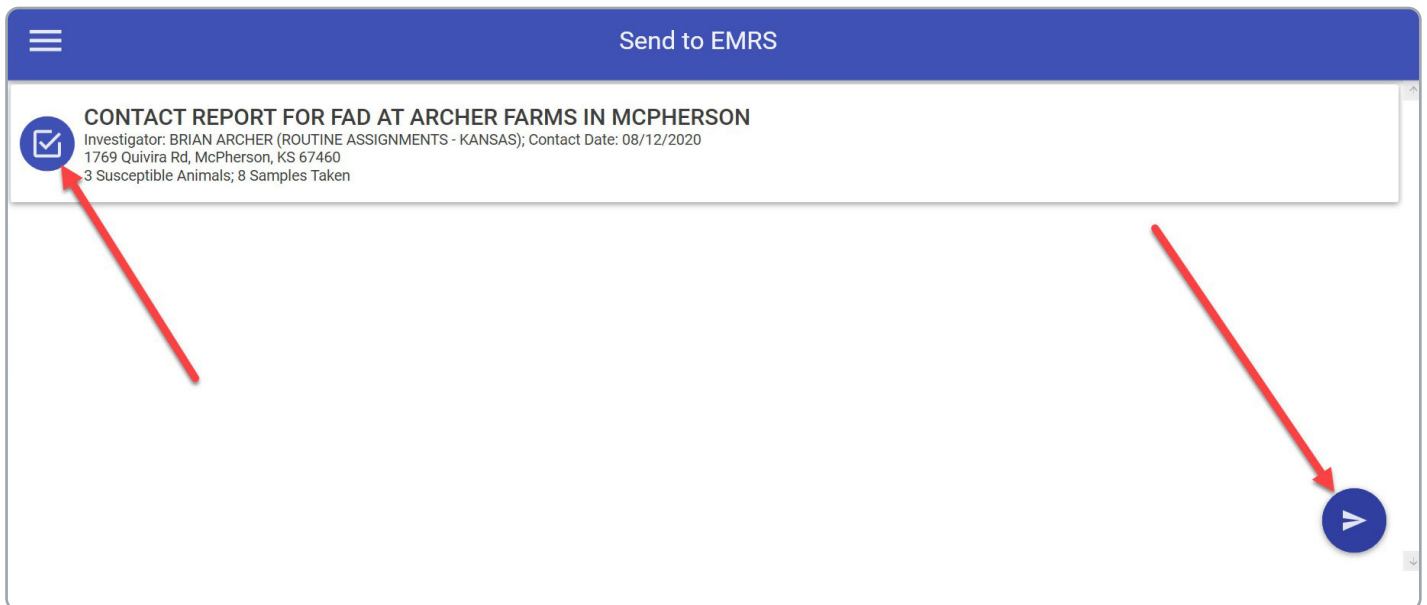
A window opens. Note that the VS Form 10-4 has automatically been attached to the Contact Report. To add additional documents, simply select the **+ button**, navigate to the file you wish to attach, and double left click the **file name** to attach it. Repeat for any additional documents/files you wish to attach to this contact report.



Return to the Briefcase. Once the Contact Report is complete and all desired documents have been attached, you are ready to send the Contact Report to EMRS. Acquire an internet connection, open EMRS2Go, click on the **Menu button**, and select **Send**.



Select the **Contact Report** for upload to EMRS, and click the **paper airplane icon** in the lower right hand corner of the screen.



You will be prompted to enter your eAuthentication credentials. After entering your credentials, the ICR will upload and be removed from your Briefcase. Congratulations! You have uploaded the ICR to EMRS. The FAD Coordinator may immediately review the information in EMRS and discuss with you the next appropriate action.

1 THE NAHLN

The NAHLN is a nationally coordinated network and partnership of Federal, State, and university-associated animal health laboratories. The network supports U.S. animal agriculture by developing and increasing the capabilities and capacities of a national veterinary diagnostic laboratory network to support early detection, rapid response, and appropriate recovery from high-consequence animal diseases.

Foreign Animal Disease Investigations (FADI) may only be initiated by an AVIC, SAHO, or designated officials from their offices. Field FAD Diagnosticians are required to send samples to NVSL Ames or NVSL's Foreign Animal Disease Diagnostic Laboratory (FADDL) reference laboratories for all FAD investigations. It is the decision of the AVIC and SAHO to submit duplicate FAD Investigation samples to a NAHLN laboratory for testing. Submitting duplicate samples to a local NAHLN laboratory approved for the specific FAD tests associated with the case FAD differentials is encouraged. Should the amount of sample material collected be insufficient for testing in both the NAHLN laboratory and the NVSL reference laboratory, the entire sample should be sent to the reference laboratory for testing.

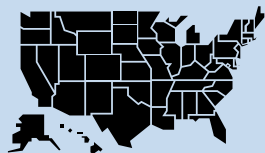
FADI samples received by the NAHLN laboratory without an FAD Investigation Number cannot be tested.

2 LAB LOCATIONS AND APPROVED DISEASES AND SAMPLE TYPES

It is important for the FAD Diagnostician to contact the NAHLN laboratory and verify they are approved to test for the suspected FAD and to confirm the samples approved for testing. The NAHLN laboratory should be contacted prior to sample submission to inform them of the incoming submission and verify this information.

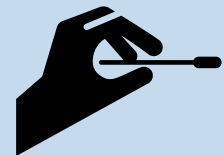
NAHLN LABORATORIES LISTED BY STATE AND DISEASE APPROVAL

https://go.usdatraining.com/NAHLN_labs



NAHLN APPROVED DISEASE-SPECIFIC SAMPLE TYPES

https://go.usdatraining.com/NAHLN_samples



IMPORTANT

It is important to understand that the NVSL reference laboratory can utilize a greater variety of sample types than the NAHLN laboratories. Submitting unapproved sample types for NAHLN FAD testing is not necessary, however, they may have value as a “backup” should there be an issue with the reference laboratory submission. In addition these samples could potentially be used by the NAHLN laboratory for domestic disease testing at animal owner expense.

3 NAHLN TESTING SCHEDULE BASED ON PRIORITY

1

PRIORITY 1

- High Suspicion
- NAHLN testing conducted immediately upon arrival

2

PRIORITY 2

- Intermediate Suspicion and commerce is not adversely affected
- NAHLN testing conducted as necessary
 - If sample arrives:
 - Before close of business — test immediately
 - After close of business — test the following morning
 - Saturday — test on weekends only with prior notification and approval

3

PRIORITY 3

- Low Suspicion and commerce is not adversely affected
- NAHLN testing conducted in routine accession order

A

PRIORITY A

- Intermediate or Low Suspicion but commerce is adversely affected so rapid results are required
- NAHLN testing conducted immediately upon arrival

Note

- Know what NAHLN laboratories are available in the area you cover.
- Know what disease tests are approved for the NAHLN laboratories in your area.
- Know what your local SAHO and AVIC policy is regarding use of NAHLN laboratories.
- Know how to contact an appropriate NAHLN laboratory in the event of an FADI.
- Know your NAHLN laboratory's policies for sample submission.

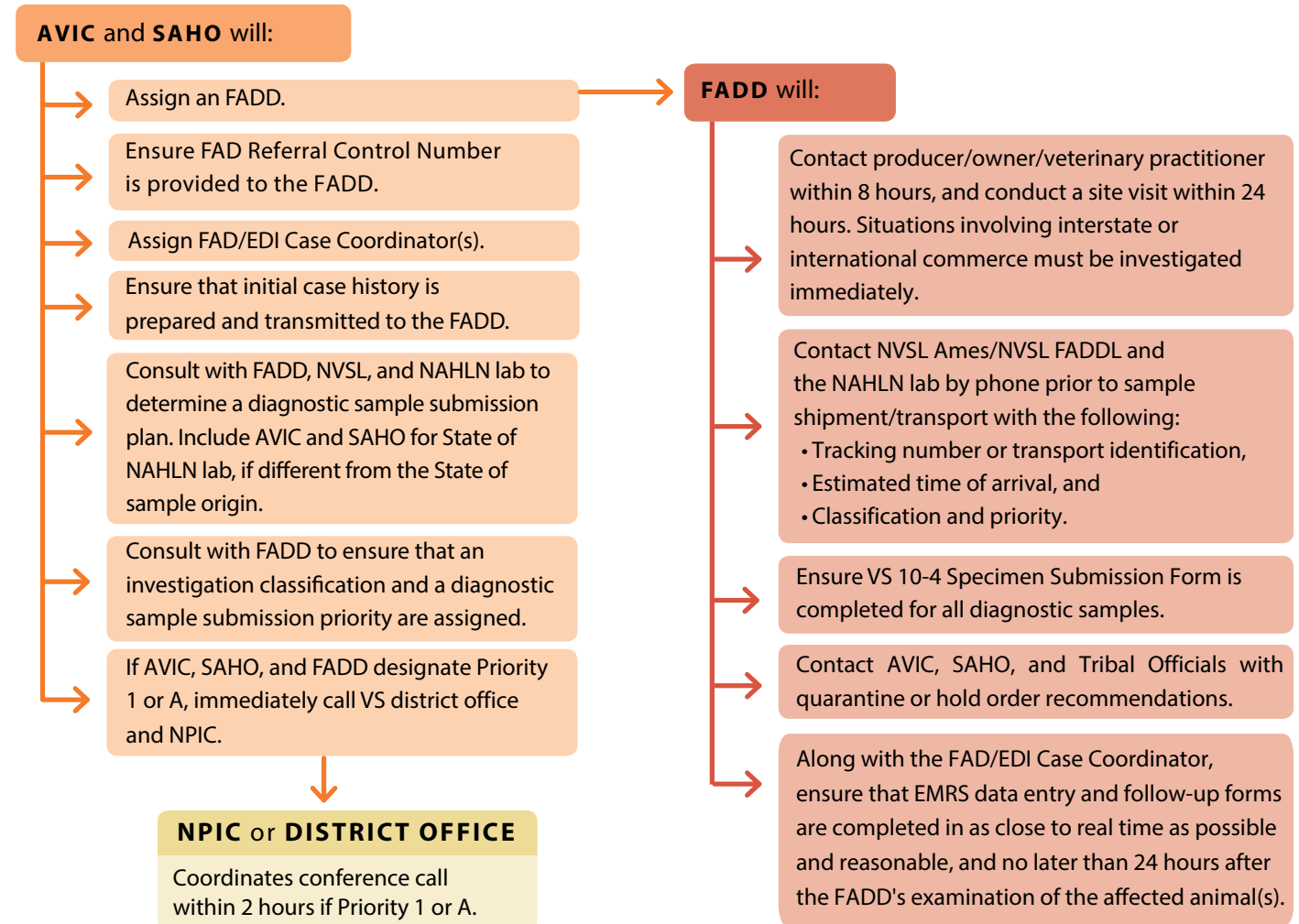
1 COMMON ACRONYMS

ADA (VS)	Associate Deputy Administrator	IATA	International Air Transportation Association
AHPA	Animal Health Protection Act	LN	lymph node
AI	Avian Influenza	LPA	Legislative and Public Affairs
APHIS	Animal and Plant Health Inspection Service	NAHLN	National Animal Health Laboratory Network
APR	air purifying respirator	vND	Virulent Newcastle Disease
ASF	African swine fever	NPIC	National Preparedness and Incident Coordination
AVIC	Area Veterinarian in Charge	NVS	National Veterinary Stockpile
BHI	brain heart infusion	NVSL	National Veterinary Services Laboratories - Foreign Animal Disease Diagnostic Laboratory
BSE	Bovine spongiform encephalopathy	FADDL	
CFR	Code of Federal Regulations	PAPR	power air purifying respirator
CNS	central nervous system	PPE	personal protective equipment
CSF	Classical swine fever	RCN	Reference Control Number
CVO	Chief Veterinary Officer	SAHO	State Animal Health Official (or Designee)
DA (VS)	Deputy Administrator	SPRS	Surveillance, Preparedness, and Response Services
EDI	emerging disease incident	SVD	swine vesicular disease
EMRS2	Emergency Management Response System	TBTB	Tris-Buffered Tryptose Broth
FAD	Foreign Animal Disease	USC	United States Code
FADD	Foreign Animal Disease Diagnostician	USDA	United States Department of Agriculture
FiOps	Field Operations	VS	Veterinary Services
FMD	Foot and mouth disease		
FMDV	Foot and Mouth Disease Virus		
GI	gastrointestinal		

2 VS GUIDANCE 12001.4 READY REFERENCE GUIDE

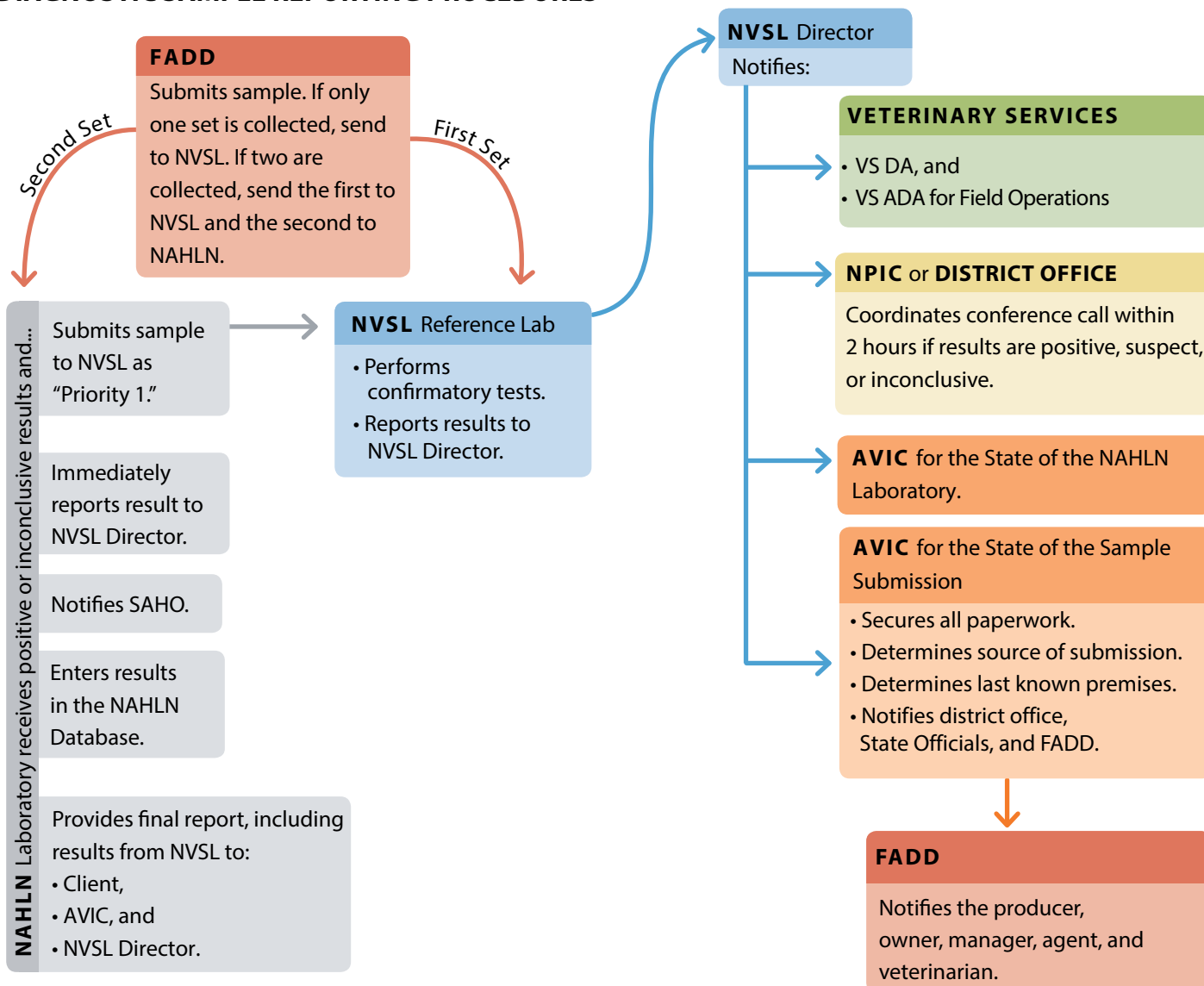
PROCEDURES AND POLICY FOR THE INVESTIGATION OF POTENTIAL FOREIGN ANIMAL DISEASE (FAD)/ EMERGING DISEASE INCIDENTS (EDI)

FAD INVESTIGATION IS INITIATED



PRIORITY 1	PRIORITY 2	PRIORITY 3	PRIORITY A
<ul style="list-style-type: none"> • 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) 	<ul style="list-style-type: none"> • 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 the following day; Saturday test on weekends only with prior notification and approval 	<ul style="list-style-type: none"> • Low Suspicion • Routine methods for sample collection and transport • Testing conducted in accession order (no overtime services) 	<ul style="list-style-type: none"> • 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)

DIAGNOSTIC SAMPLE REPORTING PROCEDURES



NVSL FADDL		NVSL AMES	
Main Office	(631) 323-3256	NVSL Director	(515) 337-7601
AFTER HOURS AND WEEKENDS		Diagnostic Virology	(515) 337-7551
Diagnostic Services Section Head	(631) 488-7245	Diagnostic Bacteriology & Pathology	(515) 337-7526
Acting Diagnostic Services Section Head	(631) 375-5314	Diagnostic Bioanalytical & Reagent	(515) 337-7563
Courier	(631) 566-0073	AFTER HOURS AND WEEKENDS	
		Nat'l Centers for Animal Health Dispatch	(515) 337-7266

NPIC (M-F, 8:00 AM – 4:30 PM ET)		APHIS VS DISTRICT OFFICES	
Jon Zack	(240) 252-8074	District One	(919) 855-7700
Barbara Porter-Spalding	(919) 637-4409	District Two	(517) 337-4700
Lindsey Holmstrom	(970) 294-2879	District Three	(916) 854-3950
AFTER HOURS AND WEEKENDS		District Four	(512) 516-5778
NPIC/NVS 24/7 Emergency Answering Service	(800) 940-6524	Cattle Fever Tick Eradication Program	(956) 726-2228

3 SELECTED TERRESTRIAL FAD THREATS TO THE UNITED STATES AND ITS TERRITORIES

FAD	DISEASE AGENT	PRIMARY TYPES	HIGHLY CONTAGIOUS	VECTOR-BORNE DISEASE	ZOONOTIC 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
Virulent Newcastle Disease (vND)	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

4 SELECTED FOREIGN PEST THREATS TO THE UNITED STATES AND ITS TERRITORIES

FOREIGN PEST COMMON NAME	FOREIGN PEST SCIENTIFIC NAME	PRIMARY TYPE OF ANIMAL(S) AFFECTED	DISEASE TRANSMITTED-CONDITION CAUSED IN ANIMALS	ZOONOTIC DISEASE POTENTIAL
Bont tick	<i>Amblyomma hebraeum</i>	Bovine, reptiles, avine, other species	Heartwater	Rickettsial diseases
Tropical bont tick	<i>Amblyomma variegatum</i>	Bovine, reptiles, avine, other species	Heartwater, Nairobi sheep disease, bovine dermatophilosis	Rickettsial diseases, 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, canine, other species	Babesiosis, Louping ill, Lyme disease	CCHF, Lyme disease, Babesiosis, Tick borne encephalitis
Licking fly	<i>Musca vitripennis</i>	Bovine	Bovine filariasis	No
Psoroptic mange (Sheep scab, sheep mange)	<i>Psoroptes ovis</i> , <i>Psoroptes equi</i> , <i>Psoroptes cuniculi</i>	Ovine, bovine, equine, caprine, other species	Mange	No
Cattle fever tick (established; TX)	<i>Rhipicephalus (Boophilus) annulatus</i>	Bovine, ovine, caprine, cervine, other species	Bovine babesiosis	No
Brown ear tick	<i>Rhipicephalus appendiculatus</i>	Bovine, ovine, caprine, other species	East Coast fever, Nairobi sheep disease, tick toxicosis	Rickettsial diseases
Southern cattle fever tick (established TX, PR, USVI)	<i>Rhipicephalus (Boophilus) microplus</i>	Bovine, cervine, ovine, caprine, other species	Bovine babesiosis, anaplasmosis	No

5 NAHLN SAMPLE CHART FOR REGULATORY SUBMITTERS

NAHLN laboratories are not all approved to perform each available test. It is important that the submitter verify the NAHLN laboratory is approved to test for the suspected foreign or regulatory disease and what samples are approved for testing. The NAHLN laboratory should always be contacted prior to sample submission to inform them of the incoming submission and verify this information.

DISEASE	SPECIES	NAHLN APPROVED SAMPLE TYPE
Foot and Mouth Disease (FMD)	Cattle, Sheep, Goats, Pigs, Camelids, Cervids (Including cloven-hoofed zoo animals and wildlife)	Vesicular tissue or swabs in TBTB media (oral or lesion)
African Swine Fever (ASF)	Pigs	Live sick animal: whole blood Dead animal: tonsil; spleen, lymph node (gastrohepatic and renal)
Classical Swine Fever (CSF)	Pigs	Live sick animal: whole blood, tonsil scraping in TBTB media Dead animal: tonsil; spleen; lymph node (mesenteric, submandibular, retropharyngeal)
Pseudorabies (PRV)	Pigs	Serum
Swine Influenza Virus (IAV-S)	Pigs	Nasal swabs, nasal wipes Lung tissue (<i>Environmental samples are not an acceptable sample</i>)
Vesicular Stomatitis Virus (VSV)	Horses	Serum Vesicular fluid, epithelial flap, swab in TBTB media of lesion (<i>Samples from horses may be tested in the NAHLN lab once the lab is activated based on a sample from that state being confirmed positive at NVSL. Only clinical horses in the same state as the activated NAHLN lab may be tested at that lab.</i>)
Infectious Salmon Anemia (ISA)	Salmonid	Surveillance/movement: heart, kidney, and gill preserved in RNA later™ Diagnosis: blood, kidney, heart, liver, spleen, and gill fresh tissue and/or tissue preserved in RNA later™ (random selection, slow swimmers, moribund avoid postmortem samples)
Spring Viremia of Carp (SVC)	Cyprinid	Whole fish, viscera, tissue samples, ovarian fluids (random selection, slow swimmers, moribund avoid postmortem samples)
Viral Hemorrhagic Septicemia (VHS)	Fin fishes	Whole fish, viscera, tissue samples, ovarian fluids (random selection, slow swimmers, moribund avoid postmortem samples)
Avian Influenza (IAV-A) or Newcastle disease	General Collection Guidance	Contact DVL-AV if questions: NVSL.DVL.AVIAN@APHIS.USDA.GOV Refer to WI-AV-0020 for sample collection: https://www.aphis.usda.gov/animal_health/lab_info_services/downloads/WIAV0020.pdf

Avian Influenza (IAV-A) or Newcastle disease	Gallinaceous Poultry (e.g. chickens, turkeys, pheasant, quail)	Oropharyngeal (OP) swabs preferred Tracheal (TR) swab acceptable on mortality Cloacal (CL) swabs may be useful; e.g. detection of swine lineage viruses in turkeys OP or TR swab pooling: up to 5 swabs in 3 ml, or up to 11 swabs in 5.5 ml CL or OP swab pooling: up to 5 CL swabs in 3 or 5.5 ml
Avian Influenza (IAV-A) or Newcastle disease	Domestic Waterfowl	Primarily CL swabs Oropharyngeal swabs may be useful/needed CL or OP swab pooling: up to 5 CL swabs in 3 or 5.5 ml
Avian Influenza (IAV-A) or Newcastle disease	Wild Waterfowl (can be used for free-roaming backyard waterfowl)	1 CL and 1 OP swab pooled together from one bird Pool 1 OP and 1 CL from the same bird in 3 ml VTM. Do not pool swabs from more than one bird.
Avian Influenza (IAV-A) or Newcastle disease	Other wild or captive pet bird species	Primarily CL swabs 1 CL and 1 OP swab may be pooled together from one bird; fresh fecal samples may be used under specific circumstances. For sampling captive flocks in closed, common housing: pool up to 5 swabs in 3 or 5.5 ml VTM by species group (e.g. passerines)
Avian Influenza (IAV-A) or Newcastle disease	Any avian species	Tissue samples Pool tissues from the same bird by system in 3 or 5.5ml VTM (e.g. respiratory, enteric, reproductive, brain if neurologic); do not pool tissues from different birds. <i>EXCEPTION: for import testing of closed-colony, passerine-type pet birds, lung/spleen sections from up to 5 birds may be pooled together for virus isolation (not for PCR).</i>
Avian Influenza (IAV-A) or Newcastle disease	Environmental Samples	BHI with antibiotics used for Post C&D testing Refer to Post C&D Sample Collection: https://www.aphis.usda.gov/animal_health/emergency_management/downloads/hpai/env_sampling_proced.pdf
Bovine spongiform encephalopathy(BSE)	Bovine	Fresh brainstem, including obex
Scrapie	Sheep, Goats	Formalin-fixed and fresh obex, retropharyngeal lymph node and tonsil
CWD	Captive Cervids (deer, elk)	Formalin-fixed and fresh obex and retropharyngeal lymph nodes (ELISA requires fresh tissue)
CWD	Wild Cervid (deer, elk)	Wild cervids are under state jurisdiction; state will provide diagnostic sampling guidelines for ELISA/IHC testing. Prepare test samples as directed by state diagnostic guidelines.

Please always contact the lab prior to submitting samples.

WI-NAHLN-0038.05

6 COLLECTING BLOOD FOR BLOOD SPOT CARDS TO BE USED FOR NUCLEIC ACID EXTRACTION FOR AFRICAN SWINE FEVER (OPTIONAL SAMPLE)

SUPPLIES

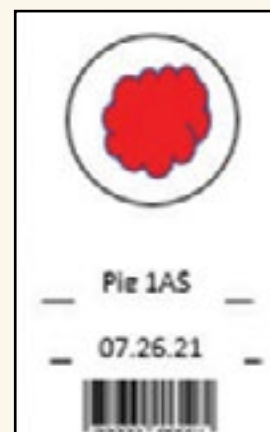
- | | | |
|---|---|--|
| <input type="checkbox"/> Disposable PPE | <input type="checkbox"/> Capillary or blood tube | <input type="checkbox"/> Appropriate laboratory submission form(s) |
| <input type="checkbox"/> Garbage bag | <input type="checkbox"/> Blood spot card
(Preferred card is the Copan NUCLEIC-CARD™) | <input type="checkbox"/> Pre-frozen gel ice packs |
| <input type="checkbox"/> Portable tote | | <input type="checkbox"/> Shipping label |
| <input type="checkbox"/> Sharps container | <input type="checkbox"/> Black writing marker or pen | <input type="checkbox"/> Packing tape |
| <input type="checkbox"/> Scalpel or knife | <input type="checkbox"/> Styrofoam cooler | |

BLOOD COLLECTION AND STORAGE PROCEDURE

1. Collect blood from the animal following the swine collection techniques outlined in Chapter 4 of the *FAD Investigation Manual (FAD PReP Manual 4-0)*. Alternatively, if collecting from an ear or other location with veins that may be too small or narrow to allow for sufficient blood flow using a syringe and needle, a tourniquet may be placed proximal to the vein to be collected. A small scalpel blade may be used to prick the vein to allow for blood to be collected via capillary tube; the tube should be filled as completely as possible.
2. Add up to 100 µL of blood to interior of the circle on the card (see Figure 1) by expelling from the syringe or tapping the capillary tube on the card. Allow blood to dry. **NOTE: The card must be allowed to dry completely before storage, shipment, or nucleic acid extraction.**
3. Appropriately label the card with the date, animal identification, and barcode or number that corresponds to the number listed for the sample on the laboratory submission form.
4. Close the card to protect sample and store in an individual labeled bag at room temperature if shipping immediately; store in a refrigerator if shipping will be delayed. Ship according to the guidelines outlined in Chapter 7 of the *FAD Investigation Manual (FAD PReP Manual 4-0)*.

Figure 1.

Filled and Labeled Blood Spot Card



7 COLLECTING BLOOD OR SPLEEN SWABS FOR DIAGNOSTIC TESTING FOR AFRICAN SWINE FEVER (OPTIONAL SAMPLE)



SUPPLIES

- | | | |
|---|---|--|
| <input type="checkbox"/> Disposable PPE | <input type="checkbox"/> Polyester swabs | <input type="checkbox"/> Appropriate laboratory submission form(s) |
| <input type="checkbox"/> Garbage bag | <input type="checkbox"/> Pre-labeled 3 ml collection tubes containing appropriate 1 ml transport media (Phosphate Buffered Saline [PBS] or Tris Buffered Tryptose Broth [TBTB]) | <input type="checkbox"/> Styrofoam cooler |
| <input type="checkbox"/> Portable tote | | <input type="checkbox"/> Pre-frozen gel ice packs |
| <input type="checkbox"/> Sharps container | | <input type="checkbox"/> Shipping label |
| <input type="checkbox"/> Scalpel or knife | <input type="checkbox"/> Black writing marker | <input type="checkbox"/> Packing tape |



PROTOCOL

Spleen Swab Collection

1. If collecting a spleen swab, at necropsy, identify the spleen, which can be found under the stomach with the animal in dorsal recumbency as described in Chapter 5 of the *FAD Investigation Manual (FAD PReP Manual 4-0)*, being careful to avoid compromising either the target tissue or the integrity of the field.
2. Using a clean scalpel or knife, make an approximately 1 cm stab into the spleen without running through the entire tissue specimen.
3. To collect the sample; insert the polyester swab into the incision with the intention of saturating the fibers of the swab (~approximately 5 seconds).
4. Remove the swab without compromising the sample.

Blood Swab Collection

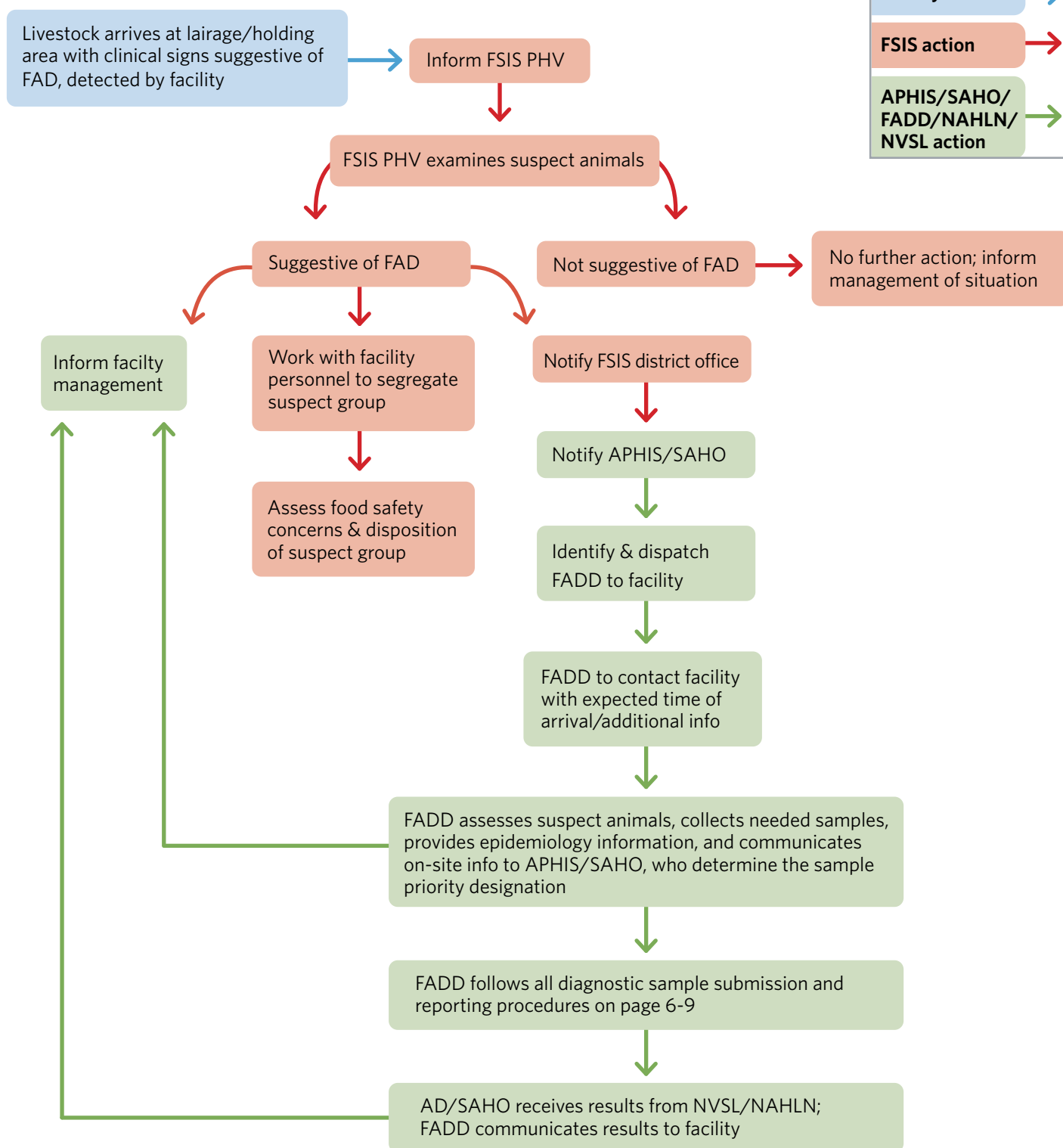
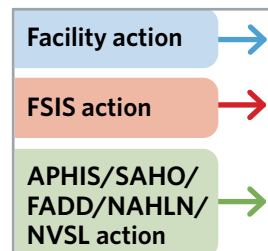
1. Antemortem: With the vessels of the ear or other appendage from which blood will be drawn occluded using a tourniquet, prick the vessel with a scalpel and depress the swab into the fresh blood until its fibers are saturated (~5 seconds).
2. Postmortem: Identify areas where blood may have pooled in recently dead animals, which could include heart chambers or the abdomen. Depress the swab into the pooled blood until its fibers are saturated.

Swab Handling

1. Place the swab into a labeled tube containing 1 ml of either PBS or TBTB.
2. Saturate swab fibers with media.
3. Depress fibers of the swab on the interior walls of the collection tube so the sampled blood collects in the bottom of the tube.
4. Leaving the swab in the collection tube; break the stick portion of the swab in a way that allows the cap to be properly reapplied to prevent leakage of the medium during transport.
5. Be sure that all specimens are labeled with the sample number tissue source, date, and animal identification.
6. Verify that the specimens are correctly recorded on the lab submission sheet.
7. Ship according to the guidelines outlined for fresh tissues in Chapter 7 of the *FAD Investigation Manual (FAD PReP Manual 4-0)*.

8 SLAUGHTER ESTABLISHMENT FAD INVESTIGATION PROCESS

KEY



EPIDEMIOLOGY QUICK GUIDE

BASIC EPIDEMIOLOGY PRINCIPLES FOR FIELD INVESTIGATORS

Basic Concepts/Definitions

Prevalence—measures the proportion of individuals in a defined population that have a disease of interest at a specified point in time (point prevalence) or during a specified period of time (period prevalence).

Incidence—measures the number of new cases of a disease of interest developing in a population at risk during a specified time period

Direct transmission: immediate transfer of an infectious agent from an infected animal to a susceptible animal or species without an intermediary step.

Indirect Transmission: When an agent moves between animals (or species) other than by direct contact, through one of the following means:

Airborne: Transmission by microbial aerosols that tend to stay suspended for long periods rather than settle quickly, e.g., droplets or dust.

Fomite: Transmission of an agent by a contaminated inanimate object or vehicle such as water, food, biological products (e.g., vaccines) instruments (e.g., balling guns, floats, speculums, stomach tubes, drenching guns), boots, clothes or water buckets.

Vector: Transmission of an infectious agent by an animal, usually an insect, in one of the following fashions:

-**Mechanical:** Vector transports the infectious agent on its mouthparts or feet.

- **Biological:** Multiplication or other development of the agent in the vector is required for it to be transmitted. Can't occur until after an incubation period happens.

Vertical: Infection that is transmitted from a parent to its offspring via infected semen or ovum, through the placenta, in the birth canal, via milk or due to direct contact, such as with contaminated teat skin.

Materials to assemble before conducting an investigation

- Basic stationary and pencils/pens
- Hand-held calculator
- A camera and/or cell phone
- Sampling kit (FAD Kit)
- Reference books on communicable diseases or toxic substances
- Computer with basic statistical or spreadsheet package
- Sample questionnaires from previous outbreaks
- List of contact names, phone numbers, addresses
- Personal identifier - ID

Contacts

NVSL

Diagnostic Virology (515) 337-7551

Diagnostic Pathobiology (515) 337-7521

Diagnostic Bacteriology (515) 337-7526

NVSL FADDL Contact Information

Main Office (631)323 3256

Diagnostic Section Head (631) 375-5314

VS.FiOps.FEIS@usda.gov

Important things to consider and data to collect during an investigation

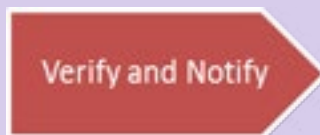
- Describe the population at risk
- Don't focus solely at animal level
- How are the animals grouped
 - Herds, stables, farms, etc.,
- Think about common exposures and pathways
- Identifying information
 - Name, address, contact info,
 - premise location, environmental conditions

- Demographic information
 - Age, sex, breed,
- Clinical information
- Morbidity/mortality
- Risk factor information
- Tailored to specific diseases
- Information source — validity
- Origin or report – lab, practitioner etc.,

Steps in an Epidemiological Investigation

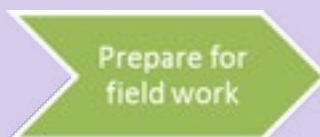


Step 1



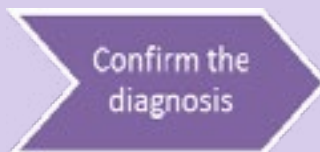
Verify the report of cases is accurate. Notify state/federal animal health directors. Is the number of cases actually increasing or is the increase an artifact? Is the clinical picture consistent with the laboratory findings?

Step 2



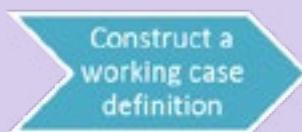
Preparations fall into two broad categories: (a) scientific and investigative and (b) management. For (a), Do you have access to the appropriate scientific knowledge or subject matter experts? Feel free to call S&P or FEIS at this point. For (b), do you have the right supplies and equipment? Do you need a travel authorization?

Step 3



Most important step to avoid confusion, ensure control measures are appropriate (many are disease-specific) and to rule out laboratory error or a false positive report.

Step 4




Check with CEAH for current case definitions. If you must build one, establish standard criteria for determining whether the animals have the health condition or are exhibiting clinical signs consistent with the condition of interest. Will include clinical criteria, symptoms, and restrictions by time, place, and person. Since diagnoses may be uncertain, consider different categories such as confirmed, probable, or suspect to provide flexibility.


Step 5




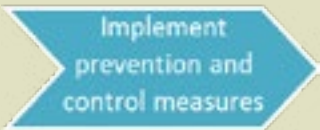
Systemically search for cases to accurately characterize and define the scope and severity of the outbreak. At this stage, consider rapidly developing and administering a simple questionnaire to elicit information and to identify possible hypothesis. Explore details of exposure.




Step 6  Characterize the outbreak by time, place and species and number of animals affected. If zoonotic, indicate impact to public health. Provides trends over time, geographic distribu-

Step 7  A conceptual understanding of the outbreak and its cause. Addresses the source of the agent, mode (vehicle or vector) of transmission and the risk for exposure. How was the disease introduced? What contributed to spread? Provides trends over time, geographic distribution, and the population affected by the disease.

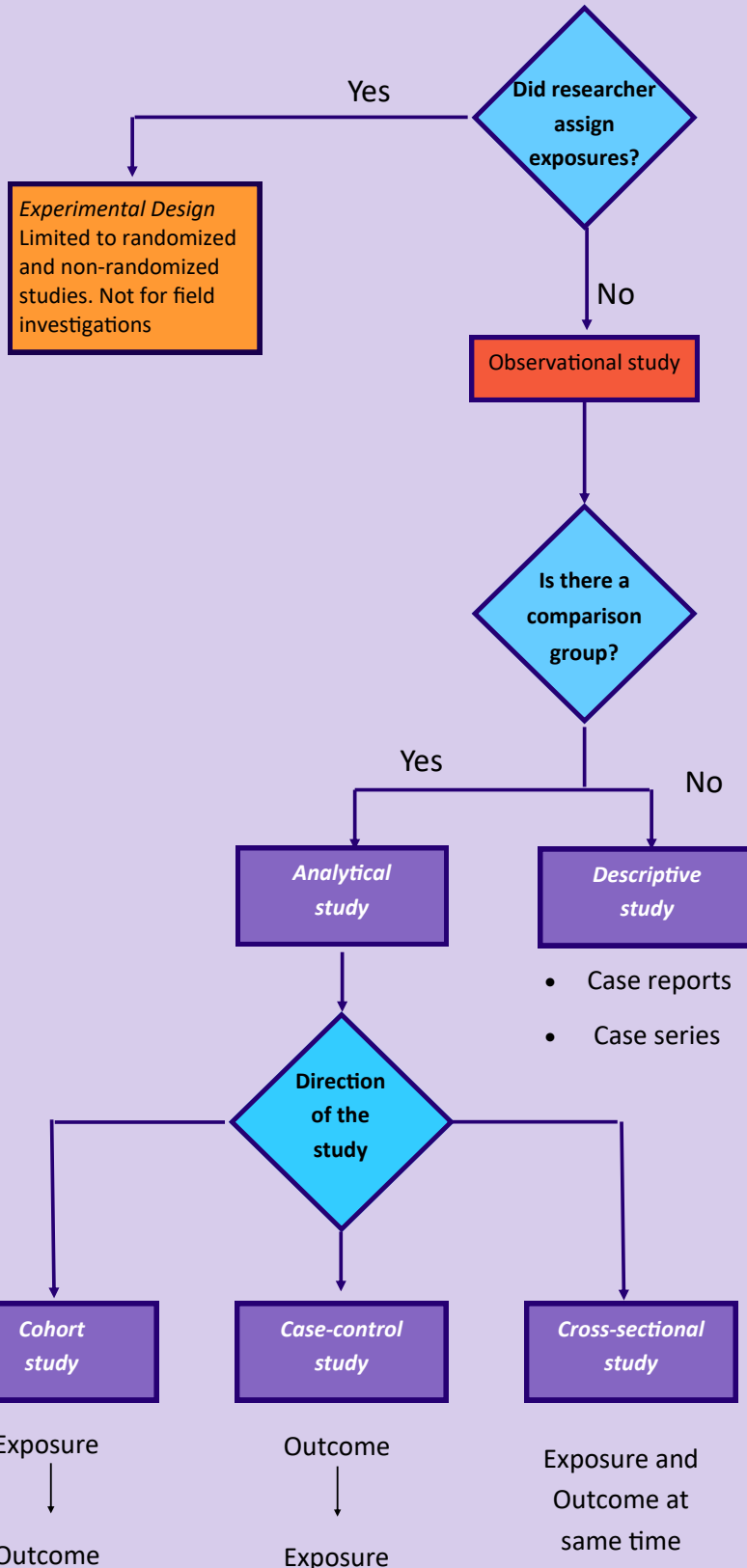
Step 8  Ask more questions and review the data as necessary to re-evaluate hypotheses

Step 9  Take action to prevent further disease spread. Apply movement control, vaccines, therapeutic agents, biosecurity measures, cleaning & disinfectant.

Step 10  Document the event. If you don't write it down, then it didn't happen, and no one can learn from all the work you did!

In reality, many of the steps of an investigation are done simultaneously and not as independent steps. Likewise, epidemiologists are often working together across program units and agencies on different aspects of the investigation.

Study Designs for Epidemiology Investigations



Measures of Association

Case Control Study

Disease

	Yes	No
Test Results +	A	B
Test Results -	C	D

Odds Ratio

$$\frac{AD}{BC}$$

Cohort Study

	Yes	No
Test Results +	A	B
Test Results -	C	D

Relative Risk

$$\frac{A/(A+B)}{C/(C+D)}$$

Epi Investigation

VS Veterinary Medical Officers and Epidemiologists provide technical support to requesting organizations for epidemiologic field investigations. It is best if the investigation is conducted in concert with state animal health officials. FEIS is available to consult and provide assistance, as are S&P epis

Questionnaire Design

The active outbreak investigation is the systematic process of collecting and analyzing data in order to identify and eliminate exposure. The process is best approached as a series of steps that can be tailored to specific situations and conditions relative to a particular agent and environmental setting. An integral part of the investigation is the development and use of a customized questionnaire to capture relevant epidemiological information with respect to time, place and person (animal). Check the Epi in Action Sharepoint or with FEIS to see if a standardized questionnaire exists.

The questionnaire organizes and standardizes data collection. In general, it captures demographic data on animals, owners, medical/clinical history, husbandry and travel history. Categories of information for an epidemiologic questionnaire will include:

- Animal demographic, including species, number, sex and age.
- Farm location
- Clinical information
- Exposure or risk factors
- Source of information (contact info and role of person)

Questionnaire—Example of basic format

Owner Information

Record Number: _____ Date: _____

Owner: _____ Address: _____

Contact Number: _____ City: _____

E-mail: _____ County: _____

GPS coordinates (decimal degrees) _____

Premises identification number: _____

Referring veterinarian (name/contact info): _____

Number & types of species on premises: _____

Species
Numbers

Identifying information includes the respondent's name or other identifier and contact information. It identifies the subject and is used to link to other records (e.g., laboratory results or other questionnaires) and prevents duplication of records.

Animal Information

Name (ID) : _____ Age: _____ Sex: _____ Breed _____

Current Location: _____ Primary Use: _____

Location of animal when clinical signs first observed: _____

Demographic information includes items like age, sex, and location. Characterizes population at risk and captures possible confounders (factors that distort the exposure-disease relationship).

Clinical/Laboratory Information

Signalment: _____ Fever (Circle): Yes No

Onset date: _____ Laboratory ID: _____

Samples collected: _____ Date collected: _____

Test requested: _____ Test results: _____

Clinical information includes signs and symptoms of the disease, date of onset of illness, and results of laboratory testing. This information allows you to characterize the illness, decide which animals have the outcome of interest, and chart the time course of the problem.

Exposures

Feed source: _____ Types of feed: _____

Recent travel history: _____

Water Source: _____

Comingled with other animals (Circle): Yes No

If Yes., describe _____

Immunization history: _____

Presence of waterfowl on premises (Circle): Yes No

Exposure or risk factor information is used to test the hypotheses under investigation. It will likely be the major focus of your questionnaire. It should be specific to the problem under investigation and reflect your hypotheses about the source of the problem. Exposure or risk factor information often includes:

- what exposures occurred to the factor of interest?
- By what route?
- In what amount?
- When did exposure occur? Was it one time or ongoing?
- Other details of exposure (e.g., Name/brand vaccines, production records).

Basic Epi Report Format

Describing the outbreak and reporting the results from an investigation into a professional, understandable and usable document is the final step. Below is a standard outline that can be used to write an outbreak report. This format logically describes the events that occur during an investigation.

I. Summary /abstract

The summary/abstract should consist of a paragraph or two that provides an overview of the investigation (i.e., the WHO, WHAT, WHERE and WHEN of the outbreak). It should describe what caused the outbreak or the causal hypothesis based on the evidence.

II. Introduction/background

This section identifies the type of premises involved in the outbreak (e.g., feedlot, breeding operation, stable, etc.) with respect to size, management, or location. In this section, discuss the factors about the owner/operator that may affect possible spread (i.e., livestock dealer, multinational corporation).

Include the specific events that led to the investigation.

- A. how the outbreak was first reported,
- B. steps undertaken to confirm its existence, and
- C. all who assisted in the investigation.

III. Methods

A. Epidemiologic

Describe data collection techniques including how cases were defined and the time-frame which encompasses the investigation.

B. Environmental

Describe the environment where the animals are located (i.e., on-pasture, confinement housing, stockyard), paying particular attention to factors that may be relevant to disease exposure/spread —standing water for insect vectors, feeding of silage.

C. Laboratory and Clinical

Discuss any analyses performed. Note where the specimens were sent, what kinds of analyses were performed and who completed the testing.

IV. Results

These results can be presented in tables, graphic figures and/or text and is used to inform the reader about what you discovered.

V. Discussion

This section is where all aspects of the investigation are brought together and a conclusion is drawn.

VI. Recommendations

This is the opportunity to educate both the producer and the readership of the report. Be detailed about recommendations. Hopefully, the herd/flock owner will benefit from the information and use the recommendations to prevent the other occurrences.

VII. Acknowledgments

In the spirit of cooperation, it is proper to thank those who assisted in the investigation. This might include state animal health authorities, local veterinary practitioners, laboratory support, or other state/federal personnel.

VIII. Supporting Documentation

Copies of relevant items should be attached to the report and include the following:

- A. inspection reports
- B. surveys or questionnaires
- C. test results

When compiling material, be aware of confidentiality issues. Information that can identify individuals or premises should not be included in the outbreak report directly but referenced by another designation (i.e., premises A).

Distributing the Report

Copies of the report should be made available to all parties involved in the investigation. This would include, but not be limited to, the owner and/or managers of the premises and any other local or state agencies affected by or involved in the outbreak or the investigation.



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VS Guidance 12000.3

Foreign Animal Disease Diagnostician Certification Requirements**1. Purpose and Background**

This document clarifies the requirements for Foreign Animal Disease Diagnosticians (FADDs).

An FADD is a veterinarian employed by State or Federal animal health officials who has successfully completed specialized FADD training at the National Veterinary Services Laboratories (NVSL), as well as any other specialized training and continuing education Veterinary Services (VS) requires. VS may accept training at another equivalent facility in lieu of the Foreign Animal Disease Diagnostic Laboratory (FADDL) course on a case-by-case basis. FADD certification requires the approval of the VS Area Veterinarian in Charge (AVIC) for the State in which the FADD is employed.

Military veterinarians and others who have completed the FADD training at FADDL, but were not employed as a State or Federal animal health official at the time of the training, may be certified as FADDs if they are subsequently employed by VS or a State animal health agency within three (3) years of successfully completing FADD training. They will be subject to FADD continuing education requirements from the time they are hired. VS may assign tasks to military veterinarians who have completed FADD training in certain emergency situations.

This guidance document represents the Agency's position on this topic and is intended solely as guidance. It does not have the force and effect of law, 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. Language suggesting that this guidance is mandatory (e.g., "shall," "must," "required", or "requirement") should not be construed as binding unless the terms quote from a statutory or regulatory requirement. The information this document 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: 01/15/2024.
- B. This document replaces Veterinary Services Guidance 12000.2.

3. Reason for Reissuance

VS is reissuing this guidance to reflect changes in procedure and structure.

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VS Guidance 12000.3**4. Authority and References****A. Authorities** (*Code of Federal Regulations (CFR)*):

- [7 CFR 371.4](#)

5. Audience

VS employees, other affected Federal and State agencies, and affected members of the public.

6. Guidance**A. Duties**

VS AVICs are responsible for investigating reports of animal death, illness, or conditions suspicious for foreign animal diseases or emerging disease incidents (FAD/EDI) of interest to VS. AVICs may share this responsibility with State animal health officials through mutually agreeable arrangements, but AVICs are ultimately responsible for conducting successful investigations within their Districts.

Veterinarians, producers, and others (e.g., animal owners or workers in a position to observe the animals) report suspected cases of FAD/EDI to State and Federal animal health officials. AVICs and State animal health officials initiate FAD/EDI investigations, assign FADDs to carry out the investigations, and ensure investigation information is entered into the Emergency Management Response System (EMRS).

Investigations by FADDs may involve some or all of the following:

- 1) Site visits.
- 2) Sample collection and shipment to laboratories.
- 3) Providing biosecurity information to animal owners.
- 4) Communication with State and Federal animal health officials.
- 5) Issuing quarantine or hold orders.
- 6) Conveying test results to animal owners.
- 7) Data entry.

While VS expects that an FADD will be available for most situations, nothing in this document prevents an AVIC from using another competent individual to investigate a report of possible FAD/EDI in a timely manner if an FADD is unavailable.



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B. Initial Training

- 1) The FADD training course is typically a two (2) week classroom and laboratory course at the NVSL-FADDL with instructor-led lectures, facilitated discussions, clinical rounds, necropsies, and a simulated FAD investigation. Depending on available VS resources, this course may be modified; any FADD training course offered by USDA Animal and Plant Health Inspection Service (APHIS) is acceptable as initial training to become an FADD.
- 2) VS may accept equivalent training in lieu of the FADD training course on a case-by-case basis. The VS Field Operations (FiOps) Associate Deputy Administrator (ADA) or his or her designee may decide what substituted training is acceptable for an FADD. In some situations, the FiOps ADA may require additional initial training to become an FADD.

C. Continuing Education

- 1) VS Professional People Training (PPT) prepares a list of available training opportunities for FADD continuing education and posts it to the [PPT web site](#). This list contains courses and training opportunities in a variety of formats including offsite and onsite courses, VS Training and Exercise Program (TEP) events, AgLearn courses, courses available on CD or in paper format, and opportunities to assist in presenting courses such as the FADD course.
- 2) FADDs are encouraged to share information about useful courses by providing course descriptions to VS PDS.
- 3) AVICs ensure that their employees follow appropriate health and safety procedures in their daily work. FAD/EDI investigations may involve additional procedures; training in these procedures is appropriate for continuing education.
- 4) FADDs should complete a minimum of one (1) course, training opportunity, or a VS TEP event each fiscal year to retain FADD certification. Emergency management staff may, on occasion, mandate completion of specific courses. Each AVIC maintains a log of training accomplished by Federal FADDs in his or her area.

D. Certification

State and Federal veterinarians are certified as FADDs on completing initial FADD training and getting the AVIC's approval. VS removes an FADD from the certified list if he or she leaves Federal or State animal health agency employment.



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E. Recordkeeping

VS PDS maintains a current national roster of available and equipped State and Federal FADDs. VS District Directors, or their designees, also maintain a list currently certified FADDs in their Districts. VS updates the rosters annually.

7. Inquiries

Contact your local [APHIS-VS District Office](#) for more information.



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VS Guidance 12001.4

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 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 and is intended solely as guidance. It does not have the force and effect of law, 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. Language suggesting that this guidance is mandatory (e.g., "shall," "must," "required", or "requirement") should not be construed as binding unless the terms quote from a statutory or regulatory requirement. The information this document 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: 01/15/2024.
- B. This document replaces Veterinary Services Guidance 12001.3.

3. Reason for Reissuance

VS is reissuing this guidance to reflect changes in procedure and structure.

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](#)



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- [9 CFR part 121](#)
- [9 CFR part 122](#)
- [9 CFR part 161](#)
- [49 CFR part 173](#)

B. References:

- VSG 12000.3, “Foreign Animal Disease Diagnostician Certification Requirements”
- [Foreign Animal Disease Investigation Manual](#)
- [Introduction to the FAD Preparedness and Response Plan](#)

C. Definitions:

- 1) FAD: A terrestrial animal disease or pest, or an aquatic animal disease or pest, not known to exist in the United States or its territories. A FAD may be a World Organisation for Animal Health (OIE) listed terrestrial or aquatic animal disease (www.oie.int); additionally, at any time, the Secretary of Agriculture, or his or her designee, may designate a disease or pest as a FAD. Occasionally, “FAD” may be used interchangeably with Transboundary Animal Disease (TAD). An emerging disease is defined the [VS Emerging Animal Disease Preparedness and Response Plans](#). An EDI is any incident involving an emerging disease that requires field investigation. A FAD/EDI may involve livestock, poultry, other animals, or wildlife.

In the event of a FAD/EDI investigation involving wildlife, VS will work in close collaboration, communication, and coordination with State, Tribal, and Federal wildlife agencies with primary jurisdiction and subject matter expertise for wildlife.

- 2) Foreign Animal Disease Diagnostician (FADD): 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 specified in VS Guidance Document 12000.3.

VS Professional People Training (PPT) maintains a national roster of currently available or active FADDs. VS District Directors or designees maintain District rosters of currently available and equipped FADDs. Area Veterinarians in Charge (AVIC) 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.



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6. Guidance

The FAD/EDI investigation period is defined as the time from when the AVIC or his or her designee, and the State animal health official (SAHO) or his or her designee, initiate a field investigation until the time a FAD/EDI is ruled out or confirmed by a FADD field investigation, official NVSL laboratory diagnostic testing or study results, or by official VS case definitions.

A. Objectives

- 1) Provide a veterinary 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 a FAD, in relation to the magnitude of suspicion for an endemic disease or condition.
 - 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, AVIC, and SAHO must concur on the designation of diagnostic sample priority. The Diagnostic Services Section head at NVSL's Foreign Animal Disease Diagnostic Laboratory (FADDL) may also be consulted for input on priority levels.
- 2) Provide presumptive and confirmatory diagnostic testing results as rapidly as required by the designation of diagnostic sample priority to rule out or confirm a suspected FAD/EDI agent.

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 AVIC and SAHO retain the right to request diagnostic sample collection during a FAD/EDI investigation. The AVIC and SAHO, along with the FADD, NVSL, and laboratory director of the State National Animal Health Laboratory Network (NAHLN) laboratory, 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 a 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



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international import-export-facilities. The appropriate veterinary medical countermeasures, regulatory actions, and communications will depend on factors such as:

- 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; physically examining 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 (under the SAHO's authority); and recommending and establishing interstate quarantines during the investigation period as necessary (under the Secretary of Agriculture's authority).

Critical data and information collected during an investigation includes but is not limited to: The 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 a FAD/EDI in relation to the degree of suspicion for an endemic disease or condition. Table 1 presents the three options for classifying FAD/EDI investigations and their definitions.



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Table 1: Classification of FAD/EDI Investigations and Definitions

Classification of Investigations	Definition
High Suspicion	The veterinary medical and regulatory assessments conducted are consistent with a FAD/EDI and are generally inconsistent with an endemic disease/condition
Intermediate Suspicion	The veterinary medical and regulatory assessments conducted are consistent with a FAD/EDI but are also consistent with an endemic disease/condition
Low Suspicion	The veterinary medical and regulatory assessments conducted are generally inconsistent with a FAD/EDI and are consistent with an endemic disease/condition

2) Diagnostic sample priority designations

There are four diagnostic sample designations used during a 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 are completed.

- a. Samples designated as Priority 1 are only used for investigations where there is a High Suspicion of a FAD/EDI. Complete sample collection, transportation, and diagnostic testing using rapid to extraordinarily rapid methods. NVSL and NAHLN personnel perform diagnostic testing and studies as rapidly as possible when samples arrive at the laboratory, including nights, weekends, and holidays. NVSL uses overtime as necessary to begin and complete diagnostic testing and studies.

NAHLN laboratories perform testing as requested. Payment of overtime to NAHLN laboratory personnel varies by State. Extraordinary collection and transportation methods are 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



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markets, exhibitions or shows, and interstate or international import-export facilities. The National Preparedness and Incident Coordination (NPIC) Center must be notified by telephone of High Suspicion classifications. NVSL must be notified as well by telephone of a Priority 1 submission.

- b. Priority 2 sample designations are used for investigations where there is an Intermediate Suspicion of a FAD/EDI. Use rapid methods to collect, transport, and study diagnostic samples. NVSL and NAHLN personnel perform diagnostic testing and studies immediately if the samples arrive at the laboratory before the close of the workday. NVSL uses overtime to complete testing and studies. NAHLN laboratories perform testing as necessary. Payment of overtime to NAHLN laboratory personnel varies by State. Diagnostic samples arriving after the close of the workday 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. NPIC does not require telephone notification of Intermediate Suspicion classifications.
- c. The Priority 3 designation is only used for investigations where there is a Low Suspicion of a FAD/EDI. Investigations with this designation use routine methods of collection, transport, and diagnostic study. NVSL and NAHLN personnel 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. NPIC does not require telephone notification of Low Suspicion classifications.

The Priority A designation is only used for Intermediate Suspicion of a FAD/EDI classification or Low Suspicion of a 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 a 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. NPIC requires telephone notification of Priority A designations. Use rapid to extraordinary methods to collect, transport, and study diagnostic samples. NVSL and NAHLN personnel perform diagnostic testing and studies as rapidly as possible upon sample arrival at the laboratory, including nights, weekends, and holidays. NVSL uses overtime as necessary to begin and complete diagnostic testing and studies. NAHLN laboratories perform testing as necessary. Payment of overtime to NAHLN laboratory personnel varies by State. NVSL must be notified as well by telephone of a Priority A submission.



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- d. Extraordinary transportation methods include using 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).

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

Priority	Investigation Classification	Speed of Sample Collection, Transportation, and Diagnostic Study	Speed and Type of Contact Needed
Priority 1	High Suspicion	Rapid to extraordinary methods	Immediate notification of NPIC and NVSL by phone
Priority A	Intermediate or Low Suspicion	Rapid to extraordinary methods	
Priority 2	Intermediate Suspicion	Rapid methods	Timely notification of NVSL by phone or email
Priority 3	Low Suspicion	Routine methods	

The FADD, AVIC, and SAHO must concur on the classification of the investigation; 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 the FADD, AVIC, or SAHO have questions, concerns, or disagreements regarding the investigation classification or the designation of diagnostic sample priority, the FADD, AVIC, and SAHOs must immediately hold a conference call with the District Office, NVSL Director, and NPIC staff to resolve the issue. The NPIC staff and the District Office will host and coordinate conference calls. FADDL may also be consulted.

D. Diagnostic Case Definitions

For more information on diagnostics, please see the [Foreign Animal Disease Investigation Manual](#).

The VS Deputy Administrator classifies and designates FAD/EDI diagnostic case definitions. 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.



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E. National Veterinary Services Laboratories (NVSL)

NVSL safeguards U.S. animal health and contributes to public health by ensuring its nationwide animal health diagnostic system provides timely and accurate laboratory support.

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 (2) 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 addresses emergency biological and chemical threats to animal agriculture and the security of the food supply. The NAHLN enhances early detection of FAD agents and newly emerging diseases and improves response to animal health emergencies (including bioterrorist events) that threaten the nation's food supply and public health.

VS trains, proficiency tests, and approves NAHLN laboratory personnel to test for multiple high-consequence FADs. With the approval of the SAHO and AVIC, FADDs can collect FAD samples 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.

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 U.S. Chief Veterinary Officer (CVO) (in other words, the VS Deputy Administrator).

- 1) At the discretion of the FADD, AVIC, and SAHO in collaboration with NVSL and NAHLN laboratory directors, two sets of diagnostic samples may be obtained.



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- a. Always send the first set of diagnostic samples to the NVSL laboratory (NVSL Ames or NVSL FADDL) determined in the diagnostic sample submission plan.
 - b. Send the second set of diagnostic samples 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, send the samples that can be collected to the appropriate NVSL laboratory, not the NAHLN laboratory.
- 2) If an emergency situation occurs and the appropriate NVSL laboratory cannot perform FAD/EDI diagnostic testing, you may send one set of diagnostic samples to the other NVSL laboratory, and obtain a second set of samples for testing at a NAHLN Laboratory; or send the samples to another international reference laboratory as determined in the diagnostic sample submission plan. International sample shipments will require additional coordination and permitting.
 - 3) If AVIC and/or SAHO decide to submit a second set of diagnostic samples to the NAHLN laboratory, they must instruct the FADD to follow the procedures for submitting a second set of diagnostic samples to the NAHLN laboratory. The AVIC, SAHO, and/or FADD notify the NAHLN Laboratory Director if there is a change in the NAHLN laboratory submission plan after the FADD performs the investigation.

If a FAD/EDI outbreak occurs, VS provides 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 AVIC and the SAHO (or designee) must closely communicate and cooperate on all aspects of a FAD/EDI investigation from initiation to completion.

All FAD/EDI investigations must be initiated by the AVIC and/or the SAHO. All FAD/EDI investigations must be assigned by the AVIC and/or the SAHO to a FADD. The AVIC



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and/or the SAHO must timely initiate the investigation of all credible reported or suspected FADs/EDIs, including assigning a FADD to complete a site visit or field investigation as a required part of the investigation.

The AVIC and/or SAHO assigns a FAD/EDI Case Coordinator 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 automatically sends email notices 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 in real time.

The AVIC, or his or her designee, ensures 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 AVIC and the SAHO.

K. Requirements

Produce situation reports, spot reports, diagnostic updates, and regulatory assessments as required by the urgency or complexity of the investigation, or at intervals requested by the Field Office, the VS Associate Deputy Administrator for Strategy and Policy (the VS unit to which NPIC belongs), and the VS Deputy Administrator.

Because of the rapid exchange of information required during FAD/EDI investigations, use communications such as phone calls, conference calls, email, and fax when required, in addition to the official EMRS database to record information.

7. Inquiries

Please direct any questions regarding these procedures or instructions to the NPIC staff.

Main Office: NPIC, One Health Coordination Center, FiOps Logistics Center.
Please refer to the FAD Investigation Manual for contact numbers.

Normal Business Hours: Monday – Friday 8 a.m. to 4:30 p.m. Eastern Time,



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NPIC/National Veterinary Stockpile (NVS) 24/7 Emergency Answering Service.

Foreign Animal Disease Investigations or Emerging Disease Incidents NVS Activation:

1-800-940-6524.



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Acronyms

ADA	Associate Deputy Administrator
APHIS	Animal and Plant Health Inspection Service
AVIC	Area Veterinarian in Charge
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
FiOps	Field Operations
NAHLN	National Animal Health Laboratory Network
NPIC	National Preparedness and Incident Coordination
NVS	National Veterinary Stockpile
NVSL	National Veterinary Services Laboratories
OIE	World Organisation for Animal Health
SAHO	State Animal Health Official
USDA	United States Department of Agriculture
VS	Veterinary Services