

MODULE 2.1

PREPARING FOR AND CONDUCTING AN INVESTIGATION

RAPID RESPONSE CORP TRAINING

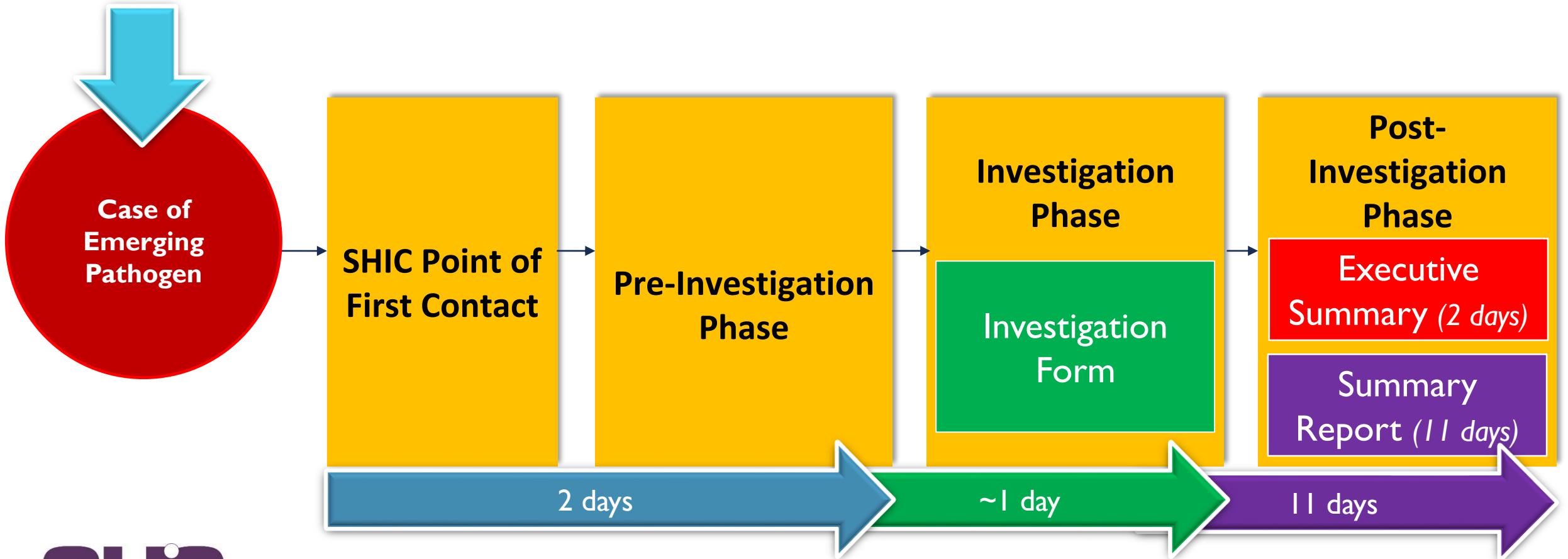
MODULE 2.1

Learning Objectives

- RRC Members will be able to:
 - Identify responsibilities involved with planning the investigation
 - Prepare for an epidemiological investigation with the help of the RRC Case Coordinator
 - Conduct a case investigation interview using the **Investigation Form**

INVESTIGATION PROCESS

Overview



OVERVIEW

Introduction To Forms

Investigation Form

2. DESCRIPTION OF CURRENT OUTBREAK

1. Date that clinical signs were initially observed: _____

2. Describe clinical presentation of infection:

3. Were the clinical signs observed in a specific barn, room or pen?
 Yes (describe location and pattern of spread below)
 No

4. Date of diagnostic confirmation of outbreak: _____

5. Date that pathogen was sequenced: _____

6. Name out outbreak sequence: _____

Table 1. Describe diagnostic results performed after the outbreak.

	Test 1	Test 2
Test Performed		
Date Submitted		
Type of animal(s) tested		

Executive Summary

1. INTRODUCTION

Investigation Period: Dates of investigation period used during investigation
Investigation Date: Date investigation was conducted
Investigation Facilitators:

- Name of veterinarian conducting investigation, Primary Investigator
- Name of other investigation facilitator(s), Title and/or role during investigation

Form Personnel:

- Name of herd veterinarian, Herd Veterinarian
- Name of farm manager, Farm Manager
- Name of other production system personnel, Title

2. CHARACTERISTICS OF THE PREMISES

Site Name: Name of Site
Production System: Name of Production System
Type of herd: Nucleus / Multiplier / Commercial
Stage of production: Breed-to-Wean / Wean-to-Finish / Nursery, etc.
Site Inventory: # of animals on site
Production system inventory: # of animals in production system
Parity Segregation (if applicable): mixed parity / all gilt // all parity +1

3. DESCRIPTION OF CURRENT OUTBREAK

Date of first clinical signs: Month, Day, Year
Location of first clinical signs in barn: Describe location of first clinical signs
Description of clinical signs: Describe clinical presentation, including patterns of spread, etc.
Date of diagnostic confirmation: Month, Day, Year
Diagnostic Lab: Name of Diagnostic Lab
Diagnostic tests performed: Describe test(s) performed, including number of animals, pooling, etc.

4. POSITIVE FARMS WITHIN A 3-MILE RADIUS AND/OR OPERATIONAL CONNECTION

Farm Name	Stage of Production	Number of Animals	Distance from farm (miles)	Operational Connection (shared risk event(s))

5. EVENTS RATED AS HIGH LIKELIHOOD OF BEING RESPONSIBLE FOR PRRSV INTRODUCTION

Summary Report

2. DESCRIPTION OF CURRENT OUTBREAK

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2. Describe clinical presentation of infection:

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Table 1. Describe diagnostic results performed after the outbreak.

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Date Submitted		
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OVERVIEW

Who is the RRC Case Coordinator?



- Staff member, funded by SHIC, who is responsible for coordinating the efforts of RRC Investigators
- Responsible for pre-populating Investigation Form with weather data and maps
- Point person for questions you may have about case investigation

PRE-INVESTIGATION PHASE

Master Investigation Checklist

- You will be provided with a Master Investigation Checklist in your Resources
- Comprehensive list of steps per phase of the investigation process

RAPID RESPONSE TO EMERGING AND TRANSBOUNDARY SWINE DISEASES PROGRAM



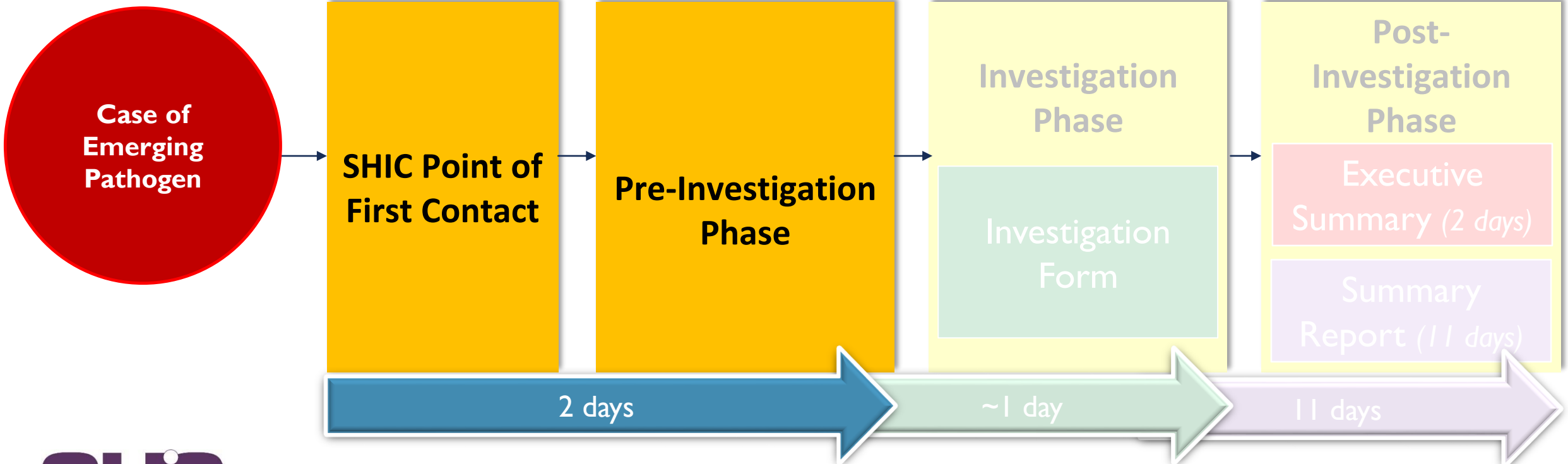
Master Investigation Checklist



- ◀ PRE-INVESTIGATION PHASE
 - Contacted by SHIC
 - Review Data Sharing Agreement
 - Arrange Investigation Meeting
 - Required attendees: farm manager and herd veterinarian
 - Communicate meeting plans to RRC coordinator
 - Book travel arrangements
 - Lodging
 - Transportation
 - Review Investigation Form
 - Print enough Investigation Forms for all participants
 - Review pathogen
- ▶ INVESTIGATION PHASE
- ▶ POST-INVESTIGATION PHASE

PRE-INVESTIGATION PHASE

Timeline



PRE-INVESTIGATION PHASE

Pre-Investigation Phase Checklist



PRE-INVESTIGATION PHASE

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PRE-INVESTIGATION PHASE

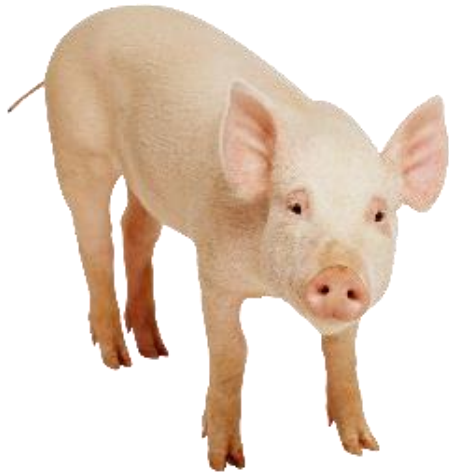
Receive Pre-Investigation Form

- Data Sharing and Permissions and Permissions Agreement includes questions regarding:
 - Personnel RRC Investigators can interview
 - Facilities RRC Investigators can visit
 - Facilities RRC Investigators can photograph
 - Diagnostic samples RRC Investigators can take
 - Other approvals, conditions, or restrictions

Facilities <i>(check if Rapid Response Investigators are permitted to visit, leave blank if not permitted or not applicable)</i>	Photos Permitted	Notes <i>(e.g. restrictions, conditions or other approvals required)</i>
<input type="checkbox"/> Farm where case occurred, entryway <input type="checkbox"/> Farm where case occurred, office <input type="checkbox"/> Farm where case occurred, barns	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Other farms, entryway <input type="checkbox"/> Other farms, office <input type="checkbox"/> Other farms, barns	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Producer, production system or veterinary offices	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Boar studs, office <input type="checkbox"/> Boar studs, lab <input type="checkbox"/> Boar studs, barns	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Gilt development, isolation or acclimation facilities	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Nursery or wean-to-finish facilities	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Truck washes	<input type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> Maintenance facilities	<input type="checkbox"/> Yes <input type="checkbox"/> No	

PRE-INVESTIGATION PHASE

Pre-Investigation Phase Checklist



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PRE-INVESTIGATION PHASE

Arrange Investigation Meeting

- RRC Investigation Team
 - **RRC TEAM LEADER**
 - RRC Team Members
 - Assistant Facilitator
 - USDA or State Animal Health Official
 - Academics

- Interviewees:
 - **HERD VETERINARIAN**
 - **FARM MANAGER**
 - Other interested parties associated with production system

PRE-INVESTIGATION PHASE

Value of Assistant Facilitator

- What can Assistant Facilitator do?
 - Helps prepare for investigation interview
 - Takes Investigation notes
 - Contributes to **Summary Report**
- Who is the Assistant Facilitator?
 - Person with knowledge of swine industry
 - Vet tech, lab assistant, other RRC member, etc.
 - **Assistant Facilitator paid for by RRC Member**



PRE-INVESTIGATION PHASE

Arrange Investigation Meeting

- Contact RRC coordinator with following information:
 - Date of meeting
 - Location of meeting
 - Known attendees
 - Role of attendees
- RRC Coordinator Contact Information
 - Email: rrc@iastate.edu

PRE-INVESTIGATION PHASE

Pre-Investigation Phase Checklist



PRE-INVESTIGATION PHASE

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PRE-INVESTIGATION PHASE

Book Transportation And Lodging

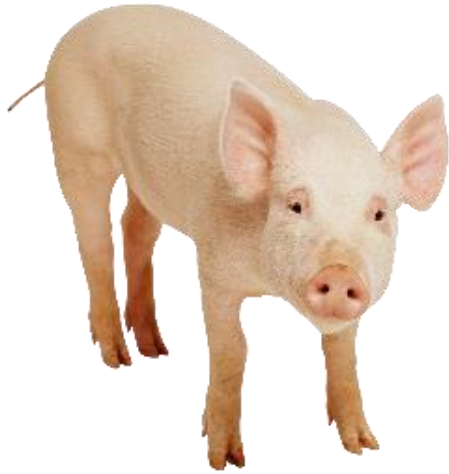
- Responsible for:
 - Coordinating transportation
 - By car
 - By airplane
 - Hotel arrangements



Myriam Dufrier
Illustrator
07/2012

PRE-INVESTIGATION PHASE

Pre-Investigation Phase Checklist

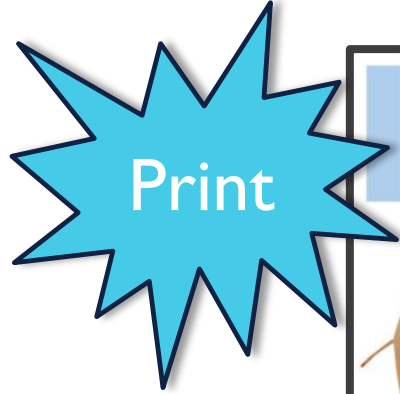


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PRE-INVESTIGATION PHASE

Review Investigation Form



PRRSV Outbreak Investigation Program
INVESTIGATION FORM & SUMMARY REPORT

INVESTIGATION PERIOD: [MM/DD/YY → MM/DD/YY]
SITE ADDRESS: [STREET ADDRESS] [CITY, STATE] [ZIP]



[Producer Name]

SITE NAME: [Enter Site Name]
PREMISES ID: [Enter Premise ID]
OUTBREAK INVESTIGATION DATE: mm/dd/yyyy
RRC INVESTIGATOR(S): [Enter Name of RRC Veterinarian(s) Conducting the Investigation]
HERD VETERINARIAN: [Enter Name of Herd Veterinarian]
FARM MANAGER: [Enter name of Farm Manager]

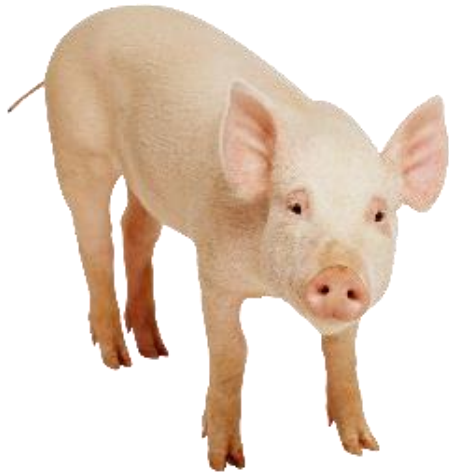
IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY
College of Veterinary Medicine
Dr. Derald Holtkamp
holtkamp@iastate.edu

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- Review **Investigation Form**
- Print enough copies for participants

PRE-INVESTIGATION PHASE

Pre-Investigation Phase Checklist



PRE-INVESTIGATION PHASE

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- Review pathogen

PRE-INVESTIGATION PHASE

Review Pathogen

- Review information about pathogen
 - Consider modes of transportation, other species infected, etc.
 - Consider case definition
 - Consider previous case studies and/or outbreaks in other countries



PRE-INVESTIGATION PHASE

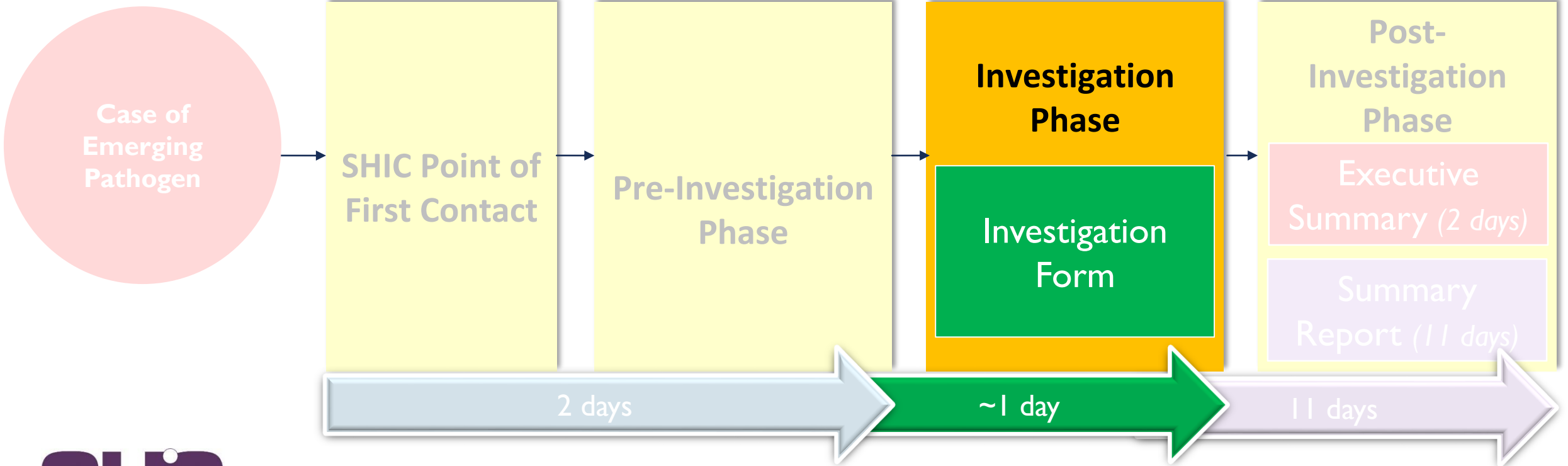
Pre-Investigation Phase Checklist



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INVESTIGATION PHASE Timeline



INVESTIGATION PHASE

Who Is Involved?



INVESTIGATION PHASE

Before You Begin...

- Clearly state the investigation is not to find blame
- Understand the producer and herd veterinarian are under stress and may feel vulnerable
- Let the veterinarian know that the report will be communicated to him/her first
 - Herd veterinarian can include edits in final report

INVESTIGATION FORM

Purpose Of Investigation Form

- Set of closed-ended questions that will provide a consistent set of information for the database
- Guides interview questions
- Serves as template for final **Summary Report**



INVESTIGATION FORM

Review Investigation Form

- **Investigation Form** contains a standardized set of questions surrounding risk events that occur on a swine farm
- Completed **Investigation Form** is due 5 days post-SHIC first contact (or 2 days post Investigation interview)
- Questions focus on **investigation period**



1. INTRODUCTION

2. DESCRIPTION OF CURRENT OUTBREAK

3. SITE SUMMARY

4. MAPS

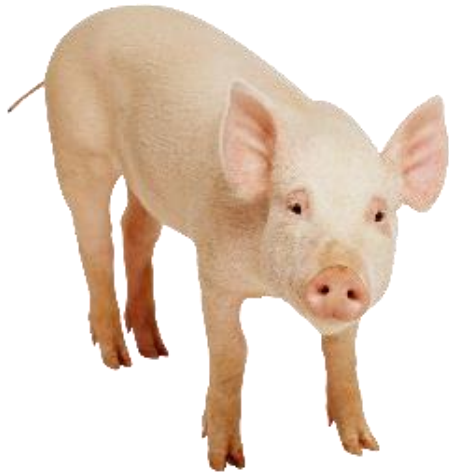
5. RISK EVENTS THAT OCCURRED DURING INVESTIGATION PERIOD

6. DETAILED WEATHER SUMMARY DURING INVESTIGATION PERIOD

7. OPERATIONAL CONNECTIONS

INVESTIGATION PHASE

Master Investigation Checklist



INVESTIGATION PHASE

- Fill in Section 1 (Introduction) and Section 2 (Description of Current Outbreak) of Investigation Form
- Fill in Section 3 (Site Summary)
 - Label Premises Map
 - Label 1-Mile Radius Map
 - Label 5-Mile Radius Map
- Fill in Section 4 (Risk Events that Occurred During the Investigation Period)
- Review Section 5 (Weather Summary) for relevant dates
- Fill in Section 6 (Operational Connections Summary Table) with information discovered during investigation
- Diagnostic Sampling

INVESTIGATION FORM

I. Introduction

- Basic information about investigated site

Type of Herd: (Nucleus/Multiplier/Commercial)	
Stages of Production: (farrow-to-wean, nursery, grower, etc.)	
Site Inventory:	
Production System Inventory:	
Parity Segregation:	
Average Parity:	

INVESTIGATION FORM

2. Description of Current Outbreak

- Allows for characterization of outbreak
- Includes
 - Description of clinical presentation of infection
 - Location of first clinical signs
 - Diagnostic testing information

2. DESCRIPTION OF CURRENT OUTBREAK

1. Date that clinical signs were initially observed: _____

2. Describe clinical presentation of infection:

3. Were the clinical signs observed?
 Yes (*describe location and pattern of*)
 No

4. Date of diagnostic confirmation of outbreak: _____

5. Date that pathogen was sequenced: _____

6. Name outbreak sequence: _____

Table 1. Describe diagnostic results performed after the outbreak.

	Test 1	Test 2
Test Performed		
Date Submitted		
Type of animal(s) tested		
Specimen(s) collected		
Number of samples		
Pooling (Y or N; if yes, #samples/pool)		
Result		
Diagnostic Lab		
Accession Number		

INVESTIGATION FORM

What is Investigation Period?

- **Investigation Period:** time period under focus during investigation (prior to first clinical signs)
- Determined by incubation period of pathogen and estimated time taken to detect clinical signs
- You will be provided with the dates of the investigation period during the Pre-Investigation Phase

INVESTIGATION PHASE

Master Investigation Checklist



INVESTIGATION PHASE

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INVESTIGATION FORM

3. Site Summary

- Site Summary section contains:
 - Characteristics of the Premises
 - Premises Map
 - Characteristics of Surrounding Area
 - 1-mile radius map
 - 5-mile radius map
 - Table: Farms within a 5-mile radius of investigated farm

A. CHARACTERISTICS OF THE PREMISES	
1. Does the owner of the pigs and barns work more than half-time on the premises?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. What is the business arrangement for this premises?	<input type="checkbox"/> Producer or production system owns pigs but farmed out <input type="checkbox"/> Producer or production system owns pigs and farmed out <input type="checkbox"/> Producer or production system owns pigs and farmed out
3. Are the buildings on the premises surrounded by a fence?	<input type="checkbox"/> Yes <input type="checkbox"/> No
4. Is there a closed gate at all entrances to the premises?	<input type="checkbox"/> No <input type="checkbox"/> Yes, closed and locked at all times <input type="checkbox"/> Yes, closed and locked only after hours <input type="checkbox"/> Yes, but never locked
5. Are there doors at all entrances to the barns?	<input type="checkbox"/> No <input type="checkbox"/> Yes, closed and locked at all times <input type="checkbox"/> Yes, closed and locked only after hours <input type="checkbox"/> Yes, but never locked

B. CHARACTERISTICS OF SURROUNDING AREA	
1. What is the topography of the surrounding area?	<input type="checkbox"/> Steep hills or mountains <input type="checkbox"/> Flat or gentle rolling hills
2. How far in yards in the nearest public road from the barns on the premises?	Name of road: _____ Distance from barns: _____ yards
3. Does the nearest public road carry the following swine related traffic, excluding traffic to and from this premises, more than 3 times per week?	a. Market pigs or culls to markets <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown b. Growing pigs to other swine premises <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown c. Vehicles traveling to or from a wash facility <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown d. Rendering trucks <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown e. Feed trucks <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
4. Distance (miles) to the nearest major public road with intensive swine transportation?	Name of road: _____ Distance from farm: _____ miles Direction from farm (North, South, etc.): _____
5. Does the nearest major public road with intensive swine transportation carry the following swine related traffic, excluding traffic to and from this premises, more than 3 times per week?	a. Market pigs or culls to markets <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown b. Growing pigs to other swine premises <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown c. Vehicles traveling to or from a wash facility <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown d. Rendering trucks <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown

INVESTIGATION FORM

3. Site Summary- Premises Map

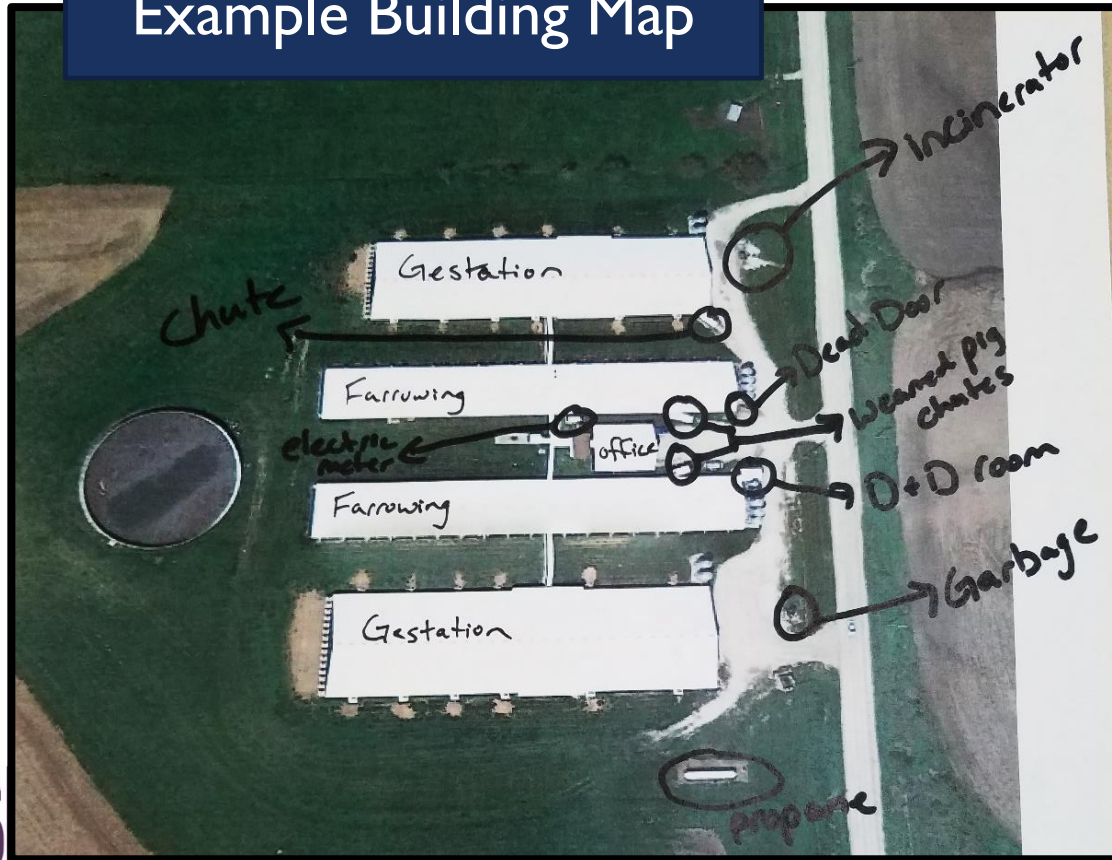
- Premises Map
- Label and discuss building layouts, entrances, and people/vehicle traffic
- Informs discussion and allows for clarity in Summary Report



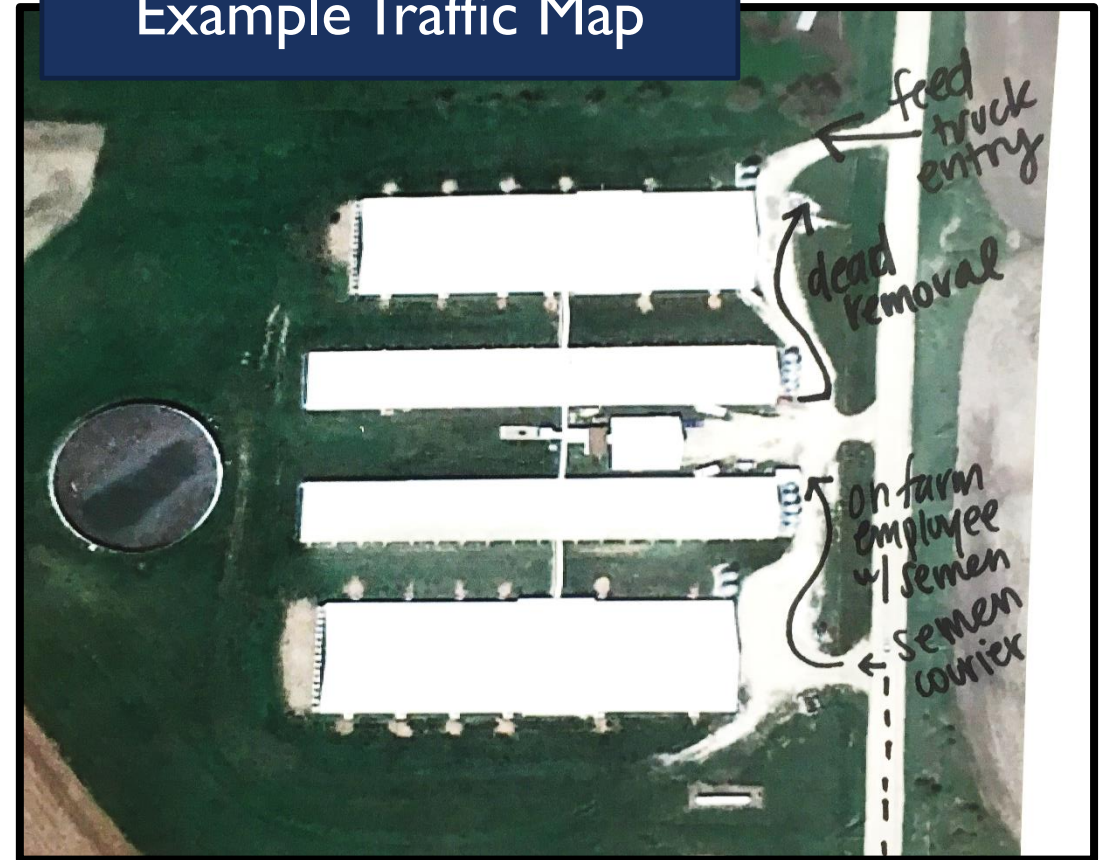
INVESTIGATION PHASE

3. Site Summary- Premises Map

Example Building Map



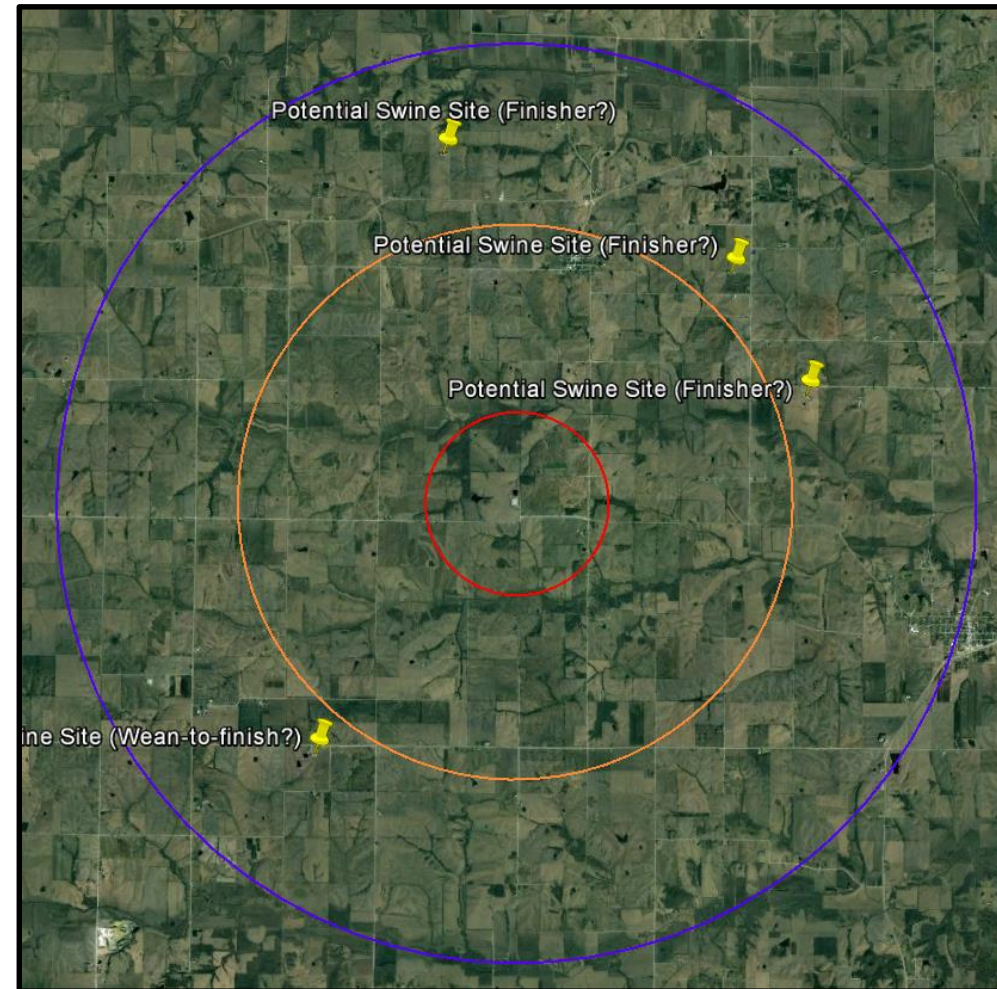
Example Traffic Map



INVESTIGATION FORM

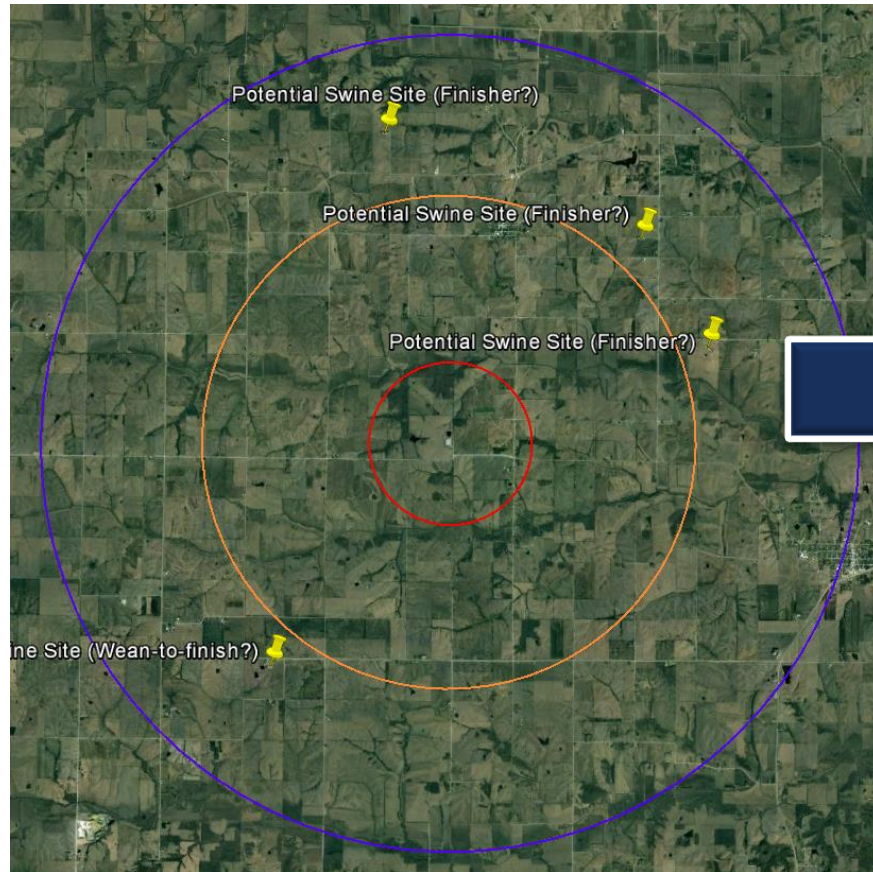
3. Site Summary- 1, 3, and 5-Mile Radius Map

- Map indicating 1, 3, and 5 mile radii
- Confirm identities and locations of swine sites on map at beginning of investigation interview



INVESTIGATION FORM

3. Site Summary- 1, 3, and 5-Mile Radius Map



INVESTIGATION FORM

3. Site Summary- Questions

A. CHARACTERISTICS OF THE PREMISES

1. Does the owner of the pigs and barns work more than half-time on the premises?

- Yes
 No

2. What is the business arrangement for this premises?

- Producer or production system owns pigs but facilities are contracted
 Producer or production system owns pigs and production system are contracted
 Producer or production system owns pigs and facilities

B. CHARACTERISTICS OF SURROUNDING AREA

1. What is the topography of the surrounding area?

- Steep hills or mountains
 Flat or gentle rolling hills

2. How far in yards in the nearest public road from the barns on the premises?

Name of road: _____
Distance from barns: _____ yards

3. Does the nearest public road carry the following swine related traffic, excluding traffic to and from this premises, more than 3 times per week?

- a. Market pigs or culls to markets Yes No Unknown
b. Growing pigs to other swine premises Yes No Unknown
c. Vehicles traveling to or from a wash facility Yes No Unknown
d. Rendering trucks Yes No Unknown
e. Feed trucks Yes No Unknown

INVESTIGATION FORM

3. Site Summary- Observations

13. Is the premises located in a forested area (>50% of the area within a 3 mile radius is trees)?

Yes

No

14. Are other livestock present on site?

Yes (*explain in observations*)

No

OBSERVATIONS ON CHARACTERISTICS OF PREMISES:

EXAMPLE: A feed mill that supplies feed for all of the Bear Grove production system is present on site

INVESTIGATION FORM

3. Site Summary- Table 2

Table 2. Farms within a 5-mile radius of this farm.

Farm Name	Stage of Production (<i>breeding herd, nursery, etc.</i>)	Number of Animals	Distance from farm (<i>miles</i>)	Direction from farm (<i>N, S, E, W, NE, SE, NW, SW</i>)	Pathogen Positive? (<i>Yes/No</i>)

INVESTIGATION PHASE

Master Investigation Checklist



INVESTIGATION PHASE

- Fill in Section 1 (Introduction) and Section 2 (Description of Current Outbreak) of Investigation Form
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INVESTIGATION FORM

4. Risk Events that Occurred During the Investigation Period

A. SEMEN DELIVERED TO FARM

Consider the following carrying agents:

- Semen
- Semen packaging and container(s)
- Semen delivery vehicle
- Semen delivery driver

FREQUENCY	
How many times during the investigation period was semen delivered to the farm?	
Dates of delivery (if possible):	

OPERATIONAL CONNECTIONS		
Farm Name	Stages of Production	Number of Deliveries

CHARACTERISTICS OF BOAR STUD AND SOURCE	
1. What is the name(s) of the semen source(s) during the investigation period (note health status of sources, if known)?	
2. Did the semen source change in the 3 months prior to the outbreak?	<input type="checkbox"/> Yes (explain) <input type="checkbox"/> No
3. Are all of the boar stud from which semen is delivered naïve to the pathogen?	<input type="checkbox"/> Yes <input type="checkbox"/> No (explain)

SEMEN DELIVERY PRACTICES OBSERVATIONS:

-
-
-

Likelihood that semen was responsible pathogen introduction (circle one):

LOW **MEDIUM** **HIGH**

Brief justification for risk assessment:

Follow-up and/or biosecurity recommendations:

- Organized by risk event
- Each risk event covers the following information:
 - Frequency
 - Operational Connections
 - Investigation Questions
 - Observations
 - Likelihood that risk event was responsible for pathogen introduction
 - Follow-up and/or biosecurity recommendations

INVESTIGATION FORM

4. Risk Events- Consider the Following Carrying Agents

- Each risk event includes a list of carrying agents to consider when going through the investigation
- Not exclusive list

A. SEMEN DELIVERED TO FARM

Consider the following carrying agents:

- Semen
- Semen packaging and container(s)
- Semen delivery vehicle
- Semen delivery driver

INVESTIGATION FORM

4. Risk Events- Frequency of Risk Event

FREQUENCY	
How many times during the investigation period was semen delivered to the farm?	
Dates of delivery (if possible):	

FREQUENCY OF RISK EVENT

- Number of times that a risk event occurred on the farm during the investigation period

INVESTIGATION FORM

4. Risk Events- Operational Connections

OPERATIONAL CONNECTIONS				
Farm Name	Stages of Production	Number of Animals	Distance from Farm (miles)	Describe Operational Connection

Example: A positive farm uses the same semen courier as the investigated farm

OPERATIONAL CONNECTIONS

- Any direct or indirect relationship with another swine site
- Summarize operational connections with known positive farms

INVESTIGATION FORM

4. Risk Events- Questions

CHARACTERISTICS OF BOAR STUD AND SURROUNDING AREA

1. What is the name(s) of the semen source(s) used during the investigation period *(note health status of sources, if possible)?*

2. Did

Yes

No

3. Are

Yes

No

BOAR STUD SAMPLING PROCEDURES

7. Which samples from boars are tested for pathogen by PCR?

a. Semen Yes No Unknown

b. Serum Yes No Unknown

8. Are samples from boars tested for pathogen by PCR at every collection of semen?

SEMEN DELIVERY PRACTICES

10. Approximately how many other swine premises is semen delivered to by the same driver and vehicle *(note names of premises, if possible)?*

_____ number of premises

11. What procedures are in place to prevent pathogen from a contaminated semen delivery vehicle or driver from being transmitted to herd?

a. All semen is delivered by on-farm employees Yes No Unknown

b. Driver not allowed past a clearly defined clean/dirty line. Yes No Unknown

c. Driver wears disposable boots when exiting the vehicle or changes boots between premises Yes No Unknown

QUESTIONS

- Grouped according to subject
- Each subject has a section for observations
- **All** answers required in order to receive compensation

INVESTIGATION PHASE

4. Risk Events- How To Ask Questions

- Ask open-ended questions during the investigation
- Closed-ended questions embedded in the form will capture a consistent set of information for the database

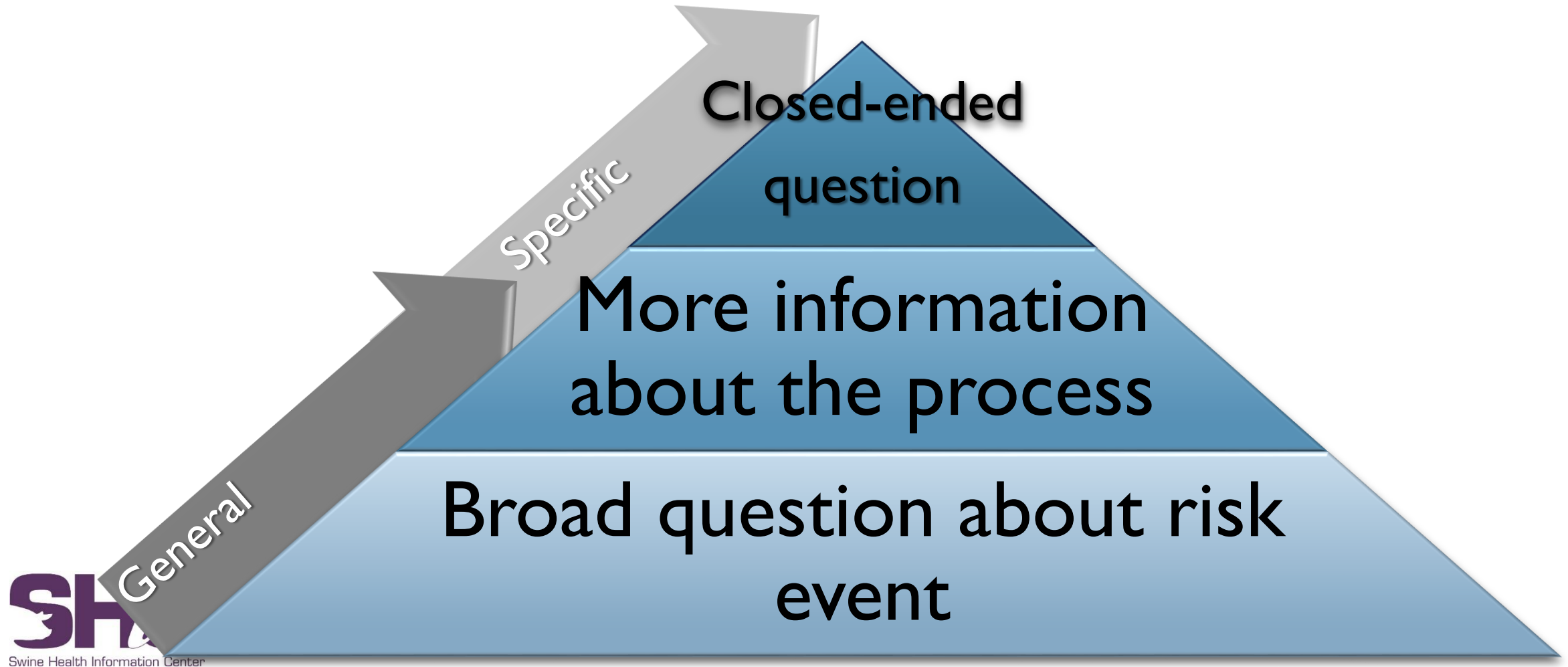
INVESTIGATION PHASE

4. Risk Events- Why Ask Open Ended Questions?

- Key pieces of information come from letting herd veterinarian and farm manager talk openly
- Closed-ended questions are limiting, but they supply investigators with a standard set of information that will be collected in a database
 - Complete all closed-ended questions in order to receive compensation

INVESTIGATION PHASE

4. Risk Events- How To Ask Questions



INVESTIGATION PHASE

4. Risk Events- How To Ask Questions

Closed-ended
question

More information
about the process

Broad question about risk
event



INVESTIGATION PHASE

4. Risk Events- Notes

- Justification for risk assessment will be supplied by context of these notes
- Be as specific as possible by including identifiers:
 - Farm names
 - People names
 - Company names
- Identify possible areas of Follow-Up and Recommendations during the investigation



INVESTIGATION FORM

4. Risk Events- Observations

SEMEN DELIVERY PRACTICES OBSERVATIONS:

- Semen is delivered by semen courier who drives up to Bear Grove mailbox
 - On-farm employee meets semen courier by mailbox with a Bear Grove semen cooler and retrieves semen from courier's cooler
 - Courier's cooler has about 3 other semen packages inside it
 - On-farm employee removes outer packaging of semen in shop area
 - Semen is not disinfected
- Semen courier occasionally changes and did during the investigation period

INVESTIGATION FORM

4. Risk Events- Risk Assessments

Likelihood that semen was responsible pathogen introduction *(circle one)*:

LOW

MEDIUM

HIGH

Brief justification for risk assessment:

Considerations when assessing risk for semen entry:

- *Is there opportunity for the carrying agent to be contaminated or infected with an infectious pathogen?*
 - *Health status of swine sites to which carrying agent was exposed*
 - *Regional swine density*
- *Is the contamination or infection mitigated prior to entering the farm?*
 - *Entry of carrying agent delayed until test results received*
 - *Semen entry biosecurity procedures effective and complied with*
- *How frequently does risk event occur?*

RISK ASSESSMENT

- Chance to assess risk while observations are fresh in mind
- Utilized Considerations section found below Risk Assessment box
- Covered extensively in Module 2.2

INVESTIGATION FORM

4. Risk Events- Follow-Up and/or Biosecurity Recommendations

FOLLOW-UP and BIOSECURITY RECOMMENDATIONS

- Follow up: the next steps a producer/investigator should take to clarify route of pathogen entry
- Biosecurity Recommendations: Realistic and implementable biosecurity improvements that may prevent future pathogen entry

Follow-up and/or biosecurity recommendations:

- Determine location and health status of sites courier delivered to before Bear Grove
- Determine whether semen packaging is disinfected before entering the facilities

INVESTIGATION PHASE

Master Investigation Checklist



INVESTIGATION PHASE

- Fill in Section 1 (Introduction) and Section 2 (Description of Current Outbreak) of Investigation Form
- Fill in Section 3 (Site Summary)
 - Label Premises Map
 - Label 1-Mile Radius Map
 - Label 5-Mile Radius Map
- Fill in Section 4 (Risk Events that Occurred During the Investigation Period)
- Review Section 5 (Weather Summary) for relevant dates
- Fill in Section 6 (Operational Connections Summary Table) with information discovered during investigation
- Diagnostic Sampling

INVESTIGATION FORM

5. Detailed Weather Summary

WEATHER

- Pre-Populated by RRC Case Coordinator
- Review prior to investigation interview
- Importance dependent upon pathogen

- Weather during the investigation period had the following general characteristics:
 - **Daily Temperatures**
 - Maximum: 52.7 F
 - Average: 44 F
 - Minimum: 35 F
 - **Daily Wind Speed**
 - Maximum: 25.2 mph
 - Average: 11 mph
 - Minimum: 3.1 mph
 - **Daily Cloud Cover**
 - Maximum: 60.7%
 - Average: 36%
 - Minimum: 0%
 - **Daily Relative Humidity**
 - Maximum: 91.7%
 - Average: 73.5%

Hourly weather averages for the 42 days preceding first clinical signs, obtained from the Municipal Airport (11.8 miles from Bear Grove). Dates labeled with a red TRUE cell indicate appropriate conditions for PRRSV spread via aerosol.

Date	Time	Cloud cover	Temperature	Wind direction	Wind speed	Humidity
11/6/2016	12 AM	NA	48.2 F	South	9.21	81
11/13/2016	12 AM	NA	35.6 F	SSW	10.36	80
11/16/2016	12 AM	NA	42.8 F	North	4.6	81

INVESTIGATION PHASE

Master Investigation Checklist



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INVESTIGATION FORM

6. Summary of Operational Connections

OPERATIONAL CONNECTIONS

- Summary of connections found earlier in the report
- Organized per risk event

Risk Event	Farm Name(s)	Observations:
Semen Delivered to Farm	Hoth Sow	
Gilts Entered into Herd		
Cull Sows Hauled from Farm		

Example observation: Semen courier delivers to both Hoth Sow and investigation farm. Hoth Sow is pathogen positive.

INVESTIGATION PHASE

Master Investigation Checklist



INVESTIGATION PHASE

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- ✘ Fill in Section 4 (Risk Events that Occurred During the Investigation Period)
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- ✘ Fill in Section 6 (Operational Connections Summary Table) with information discovered during investigation
- Diagnostic Sampling

INVESTIGATION PHASE

Diagnostic Sampling

- In the event that diagnostic samples are necessary:
 - Remember the pathogen is of known etiology
 - Diagnostic tools will be present at the time of the investigation
 - The farm will have a prior positive test for the pathogen in question

INVESTIGATION PHASE

Diagnostic Sampling



- SHIC will provide \$500 budget for diagnostic sampling
- The most informative samples will be from carrying agents that you expect to be negative, including:
 - Gilts and boars
 - Transport, stored feed samples, and vaccines

INVESTIGATION PHASE

Master Investigation Checklist



INVESTIGATION PHASE

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- ✘ Diagnostic Sampling

MOVE ON TO POST-INVESTIGATION PHASE

Go To Module 2.2

