

Welcome to the SHIC Rapid Response to Emerging Disease Training program. This program is designed to help you learn how to conduct standardized epidemiological investigations in the event of a swine disease emergency. The training will be divided into four separate modules paired with recorded lectures. You are currently beginning Module 1.1, a program overview.

Thank you for participating in the Rapid Response Corp. Your input and participation in the program are valued.

Now let's get started on Module 1.1.

## RRC MEMBER TRAINING Overview

### Module 1.1

- Rapid Response Corp Program Overview

### Module 1.2

- Fundamental Concepts of Epidemiological Investigations

### Module 2.1

- Preparing for and Conducting an Investigation

### Module 2.2

- Post Investigation Phase and Summary Report



Each of the four modules are described in the lecture slide. Module 1.1, the module you are currently listening to, will provide you with an overview of the program structure, objectives, and relevance.

Module 1.2 will remind you of some fundamental concepts that you will need before conducting standardized epidemiological investigations. We will talk about carrying agents, risk events, and the series of failures required for pathogen entry into a herd.

The next two modules, 2.1 and 2.2, will give specific introductions to the forms and processes used to conduct epidemiological investigations. They will give you a step by step walk through investigation preparation, the investigation interview, and the investigation summary. These modules can also easily be revisited for review in the event of an actual investigation.

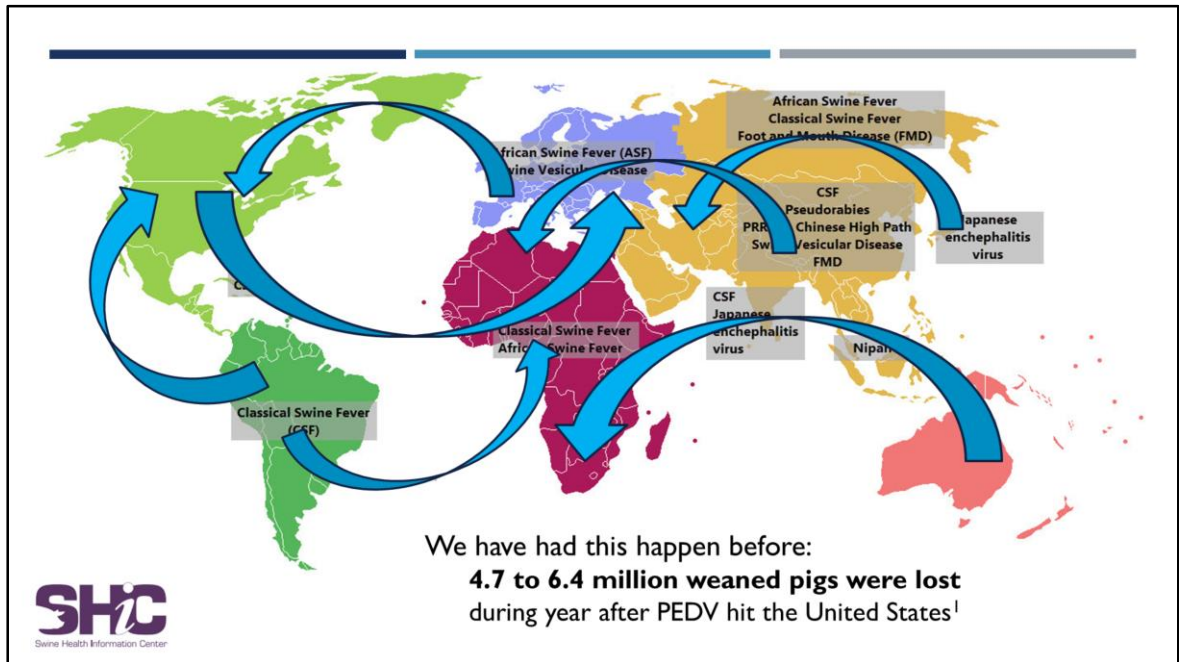
## MODULE 1.1

### Learning Objectives

- Rapid Response Corp members will:
  - Understand the relevance and importance of this program in a global context
  - Recognize key components of SHIC's Rapid Response to Emerging Diseases Program including
    - Objectives
    - Program Structure
    - Member Roles and Responsibilities



By the end of Module 1.1, Rapid Response Corp members will understand the relevance and importance of this program in a global context. They will also be able to recognize key components of SHIC's Rapid Response to Emerging Diseases Program, including the objectives of the program and the structure of the program. Furthermore, members will be able to explain their roles and responsibilities as investigators going through the investigation process.



To get started, we need to ask ourselves the question: Why are we here? Why do we need a Rapid Response Corp to respond to emerging and transboundary diseases?

With the expansive reach of globalization, people, animals, and materials move easily across the world. **The United States** is vulnerable to the propagation of these pathogens with devastating economic consequences.

In 2013, we felt the effects of this phenomenon with PEDV, which cost us 4.7 to 6.4 million weaned pigs.

## NEW AND EMERGING DISEASES IN NORTH AMERICA

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cannot get it by eating properly handled and cooked pork or pork products.

Furthermore, the United States has also recently experienced the effects of significant emerging diseases. Influenza A (CLICK, CLICK) and the scare of Seneca Valley Virus have made it clear that North America is susceptible to the entry and spread of new and emerging diseases.

## TRANSBOUNDARY DISEASES

### History Repeats Itself

- It may happen again:
  - US Economic Research Service predicts a **\$1.56 billion – \$2.35 billion USD loss** to the swine industry in the first four quarters post-FMD outbreak<sup>2</sup>
- It has happened to other countries:
  - In 1997, a CSF outbreak in Europe resulted in the depopulation of more than 10 million pigs<sup>3</sup>
  - In 2001, an FMD outbreak in the United Kingdom resulted in an estimated 3.1 billion Euros cost to the swine industry (approximately **\$2.9 billion USD in 2001**)<sup>4</sup>



With these experiences under our belt, we have to prepare for it to happen again. In the 4 quarters after an Foot and Mouth Disease outbreak, there are \$1.56 to 2.35 billion dollar losses expected in the United States swine industry.

In Europe, Classical Swine Fever caused a depopulation of nearly 10 million pigs and FMD cost the United Kingdom almost 2.9 billion dollars.

The increased travel, communication, and interconnectedness between global swine industries reminds us that we need learn from the experiences of others and be prepared in the event of our own outbreak.

## LESSONS FROM RECENT EXPERIENCE WITH TRANSBOUNDARY AND EMERGING DISEASES

- Absence of a plan and program hampered industry efforts to effectively respond in a timely manner
- In addition to state and federal support, the industry needs a coordinated response to take action against an emerging swine disease



And so when PEDV hit in 2013, the absence of a concrete plan in the face of the outbreak hampered the industry's efforts to respond in a timely manner. The industry learned that it should count on its own resources to develop a coordinated response to take action in the case of an emerging swine disease.

## SWINE HEALTH INFORMATION CENTER

- Swine Health Information Center (SHIC) was created in response to the PED and PDCoV experience...
- Funded by the National Pork Board
- Mission: “to protect and enhance the health of the United States swine herd through coordinated global disease monitoring, targeted research investments that minimize the impact of future disease threats, and analysis of swine health data”



This is when the Swine Health Information Center (SHIC) was developed to “protect and enhance the health of the US swine heard through coordinated global disease monitoring, targeted research investments that minimize the impact of future disease threats, and analysis of swine health data.”



## SHIC FUNDS THE RAPID RESPONSE TO EMERGING DISEASE PROGRAM



And SHIC funded the Rapid Response to Emerging Disease Program in order to uphold its objective of protecting the health of the US swine industry.

## RAPID RESPONSE PROGRAM

### Objectives

- Objectives of the Rapid Response Program
  - Create a pool of swine veterinarians and epidemiologists who are formally trained and practiced to conduct epidemiological investigations using a standardized approach and methodology
  - Collect molecular and epidemiological information on emerging or transboundary disease cases of **known etiology**
  - Identify operational linkages, patterns of spread, and gaps in biosecurity of an emerging or transboundary disease of known etiology
  - Improve industry biosecurity of the overall industry and individual producers



This program was funded by SHIC to gather a pool of swine veterinarians and epidemiologists, you, who are formally trained and practiced to conduct epidemiological investigations using a standardized approach and methodology. The program will also collect molecular and epidemiological information on emerging or transboundary disease cases of known etiology. This means that you will not be responsible for collecting information that will determine the etiology of the case you are investigating. Upon arrival at the farm, you will know the identity of the pathogen with which you are dealing. Your job will be to identify risks, operational linkages (such as linkages to feed sources, boar studs, other swine farms, etc.) and gaps in biosecurity to assess the most likely route of introduction. Collectively, the information will be used to identify temporal and geographical patterns of spread, and potentially, the index case for a new emerging or transboundary disease in the US. In running this training program and conducting investigations, we seek to continuously improve the biosecurity of the overall industry and individual producers to reduce the spread of pathogens of interest for endemic, transboundary, and emerging diseases.

## PROCESS OVERVIEW



In the event of an outbreak, here is a brief overview of the process that you will go through.

Step one and two (CLICK, CLICK) have already taken place: you have been recruited and you have signed an MOU with SHIC.

Step three (CLICK, CLICK) is taking place at the moment: you are being trained to conduct standardized epidemiological investigations. When a case of known etiology arises, you will be contacted through SHIC and asked to conduct a case investigation in your region. Module 2.1 and 2.2 will give you a walk through of that process. You will conduct the case investigation, write the summary report and send to the RRC coordinator. As you know, you will be compensated for your time and travel.

## RESPONSE PROGRAM STRUCTURE



The structure of the Rapid Response Corp can be divided into four main groups of people. First, the Investigators, yourselves . Second, the Advisory Board , which provides input and expertise on the program and the training. Third, SHIC , which funds the project and provides program input. Finally, the RRC coordinators , which will help coordinate investigations in the event of a transboundary or emerging disease cases.

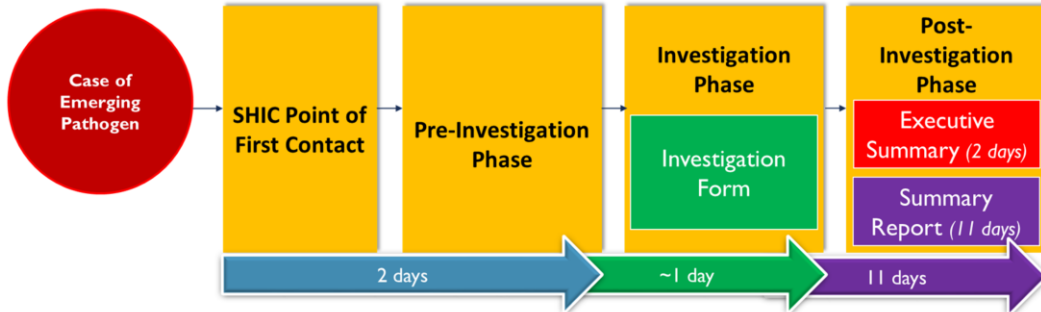
## ROLES AND RESPONSIBILITIES RRC Investigators

- Learn how to conduct standardized epidemiological investigations
- Prepare for case investigation
- Conduct case investigation
- Turn in Investigation Form, Executive Summary, and Summary Report



As an RRC Investigator, you will be responsible for going through all 4 modules to learn how to conduct standardized epidemiological investigations. In the event of deployment, you will be required to prepare for a case investigation, to conduct a case investigation and turn in the Investigation Form. Finally, with the information gained from the investigation you will complete an Executive Summary and Summary Report that will be critical to understanding of the outbreak investigation as a whole.

## TIMELINE



Throughout these training modules you will become familiar with this flow chart. This flowchart details the timeline and forms associated with each phase of a case investigation. In the case of an emerging pathogen, SHIC will contact a chosen Rapid Response Corp member to conduct the investigation. That member will then become the RRC Investigator. As soon as the RRC Investigator has been contacted, he or she will enter the Pre-Investigation Phase, in which that person will prepare for an investigation. Two days post-SHIC contact, the Investigator should be on the farm, conducting the interview. The Investigation Phase should take about a day. As stated in the previous slide, within two days of the investigation, or 5 days post-SHIC contact, the investigator should turn in the Investigation Form and Executive Summary. The Investigator will have 14 days post-SHIC contact to produce a Summary Report. You will work through each phase as you go through the modules.

## RESOURCE PACKAGE

- CONTAINS:
  - Investigation Form/Summary Report
  - Master Case Investigation Checklist
  - Training Modules and Scripts
  - Swine Disease Matrix
  - Executive Summary Template
  - Contact Information
  - Example Investigation Form/Summary Report
  - Example Executive Summary



{RE RECORD}

Finally, you should find a resource package online. This package will contain the essentials for conducting an investigation, such as the Investigation Form/Summary Report template and Executive Summary template. Furthermore, there will be a step by step checklist that you can use when going through the investigation process. All the training modules and scripts will also be included, as well as contact information and SHIC's swine disease matrix.

## THE END

- Continue on to Module 1.2 for review of fundamental concepts associated with epidemiological investigations



Congratulations on finishing the first module. Now you can move on to Module 1.2 to review the concepts associated with epidemiological investigations.