



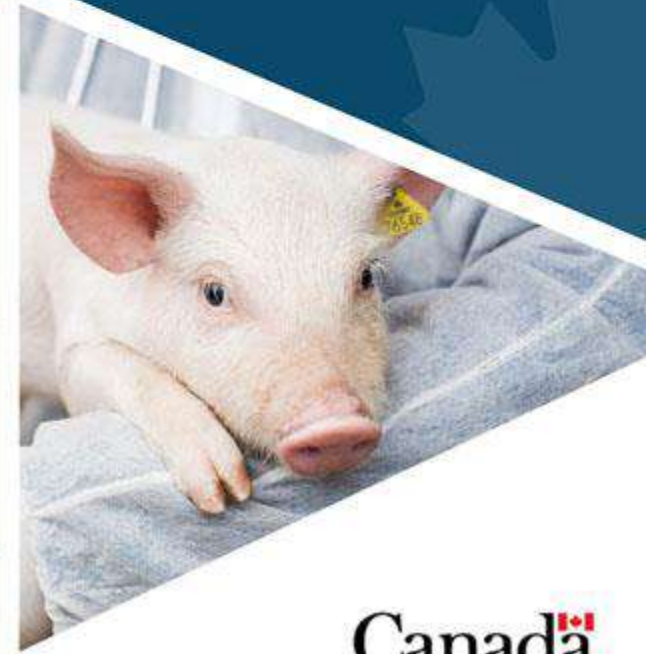
Canadian Food  
Inspection Agency

Agence canadienne  
d'inspection des aliments

# AFRICAN SWINE FEVER

## Overview of the CFIA's Disease Response

Presented by Sophie Benoit BSc



Canada 

A photograph of several piglets in a grassy field under a clear blue sky. The piglets are light-colored, possibly pink or white, and are looking towards the camera. The text "ASF Disease Response" is overlaid in the center of the image.

# ASF Disease Response

# The *Health of Animals Act and Regulations*

Under the *Health of Animals Act and Regulations* a CFIA inspector may:

- investigate the suspicion of animal disease;
- impose movement restrictions;
- order destruction;
- order disposal;
- pay compensation;
- order cleaning & disinfection.



# What Happens if ASF is Suspected?

CFIA will investigate all reported suspect cases and perform the following:

- field epidemiology investigation;
- establish biosecurity zones on site to prevent disease from leaving the premises → biocontainment;
- diagnostic sampling;
- apply movement restrictions.



# ASF Case Definitions

A **suspect case** is defined as follows:

1. A pig with clinical signs or pathologic lesions that are suggestive of African swine fever virus (ASFV) infection; **or**
2. A pig that is thought to have been exposed by direct or indirect contact to case of ASFV; **or**
3. A non-negative result obtained on a CFIA-approved screening test performed by an approved laboratory or by the National Centre for Foreign Animal Disease (NCFAD) for ASFV

**Non-negative = Result from a sample that cannot be officially reported as “negative” on an ASF diagnostic test conducted at a Network laboratory.**

# Suspect Investigation

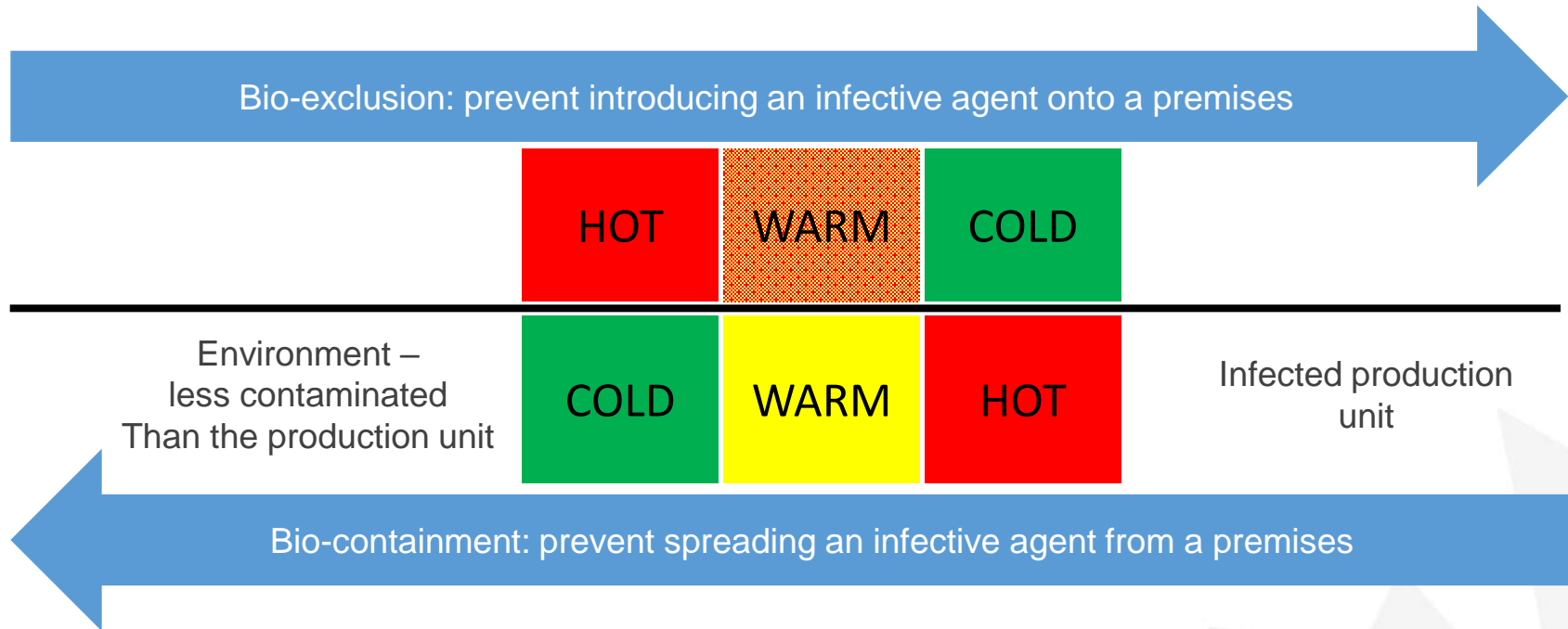
## Field Epidemiology Investigation



- Collection of information prior to the visit
  - Call to the animal/ premises owner +/- call to their veterinarian
- Collection of information during the on-site visit by completing the **Premises Investigation Questionnaire (PIQ)**. It captures details about the:
  - premises, owner, affected animals, herd of origin, biosecurity practices, potential risk factors for disease entry, employees etc.
  - Movements to and from the premises which can identify other premises that require investigation = **Epidemiologically linked / epi-linked premises**
- Personal information is protected under the provisions of the *Privacy Act*

# Suspect Investigation

## Biosecurity

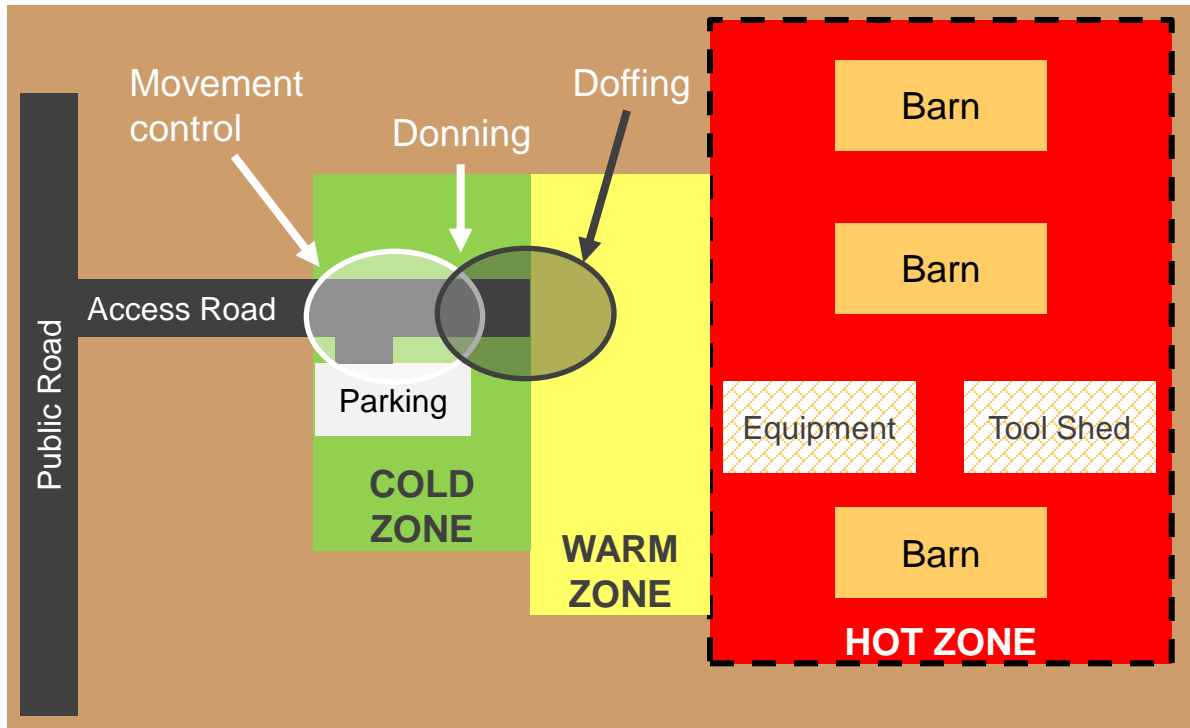


**Bio-exclusion** = ensuring no disease agents are brought into the property

**Bio-containment** = ensuring no disease agent leaves the property

**Bio-management** = preventing the spread of a disease agent within the property

# Suspect Investigation



**Containment Biosecurity:** procedures followed by CFIA staff for contagious foreign animal diseases like ASF.



# Risk Determination Process

Once the investigative team have collected the necessary information, they will perform a clinical exam of the herd and then make a risk determination of the likelihood of ASF being present.

- The epidemiological investigation of ASF requires the investigator to make a risk determination in regards to the likelihood of the ASF being present in the animals under investigation.
- The ASF risk determination is based upon three main criteria:
  - **Clinical presentation:** clinical signs or pathology consistent with ASF;
  - **Risk of ASF introduction and exposure to pigs:** likelihood of ASF being introduced into the premises and then exposed to the pigs; and,
  - **Biosecurity practices of the premises :** if the practices could allow for or were compromised allowing for potential introduction of ASFv.

# Risk Determination

A **low risk** determination means that ASF is not suspected but will still be ruled out.

- Samples will be collected and submitted as confirmatory negative submissions to the National Centre for Foreign Animal Disease and processed during normal business hours.

A **high risk** determination means there is a strong suspicion of the presence of ASF on the premises

- Samples are submitted to NCFAD as a high risk submission and processed immediately (including after-hours and on holidays).

A **negligible risk** determination means that there is no evidence or suspicion of ASF on the premises.

- No samples are collected.

# Suspect Investigation Sample Collection

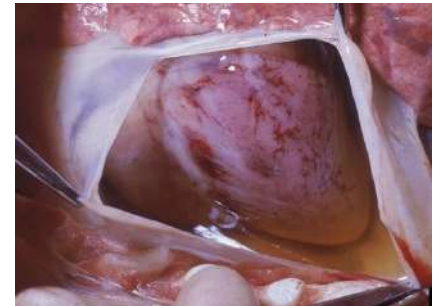
## Sample types:

- ✓ Blood samples (9 animals showing clinical signs – febrile or signs of hemorrhage)
  - EDTA whole blood and
  - Serum
- ✓ Tissues (up to 5 animals – choose mostly recently deceased)
  - Tonsil, spleen, lymph nodes, kidney, lung, liver, brain
  - Body fluids - Pericardial, peritoneal
  - Bone marrow – Best option for decomposed carcasses



**Confirmation testing is done at the National Centre for Foreign Animal Diseases (NCFAD), National Microbiology Laboratory, Winnipeg, MB.**

- ✓ NCFAD continues to evaluate different sample types suitable for testing in hopes of easing sample collection



# Suspect Investigation

## Movement Control

- Access to the premises – restricted
- One single entry point established
  - Gate officer
- Risk determination
  - Negligible Risk → no movement restrictions
  - Low Risk → quarantine of sampled animals and carcasses
  - High Risk →
    - Movement restrictions on animals / things - “Order to Quarantine Animals and/or Things”
    - Movement restrictions on the premises - “Declaration of an Infected Place”



# Presumptive Case Definition

A **presumptive** case is defined as follows:

- A suid showing clinical signs or pathologic lesions consistent with ASFV infection, **and**
  - i. that is epidemiologically linked to a confirmed ASF case, **or**
  - ii. a non-negative result on a CFIA-approved screening test performed by an approved laboratory or by the NCFAD for ASFV, in a sample collected from that suid.

**After confirmation of the index case of ASF in Canada**, a presumptive case may be additionally defined as follows:

- A non-negative result obtained on a CFIA-approved screening test performed by an approved laboratory or by the NCFAD for ASFV as part of surveillance activities, but not meeting the definition of an outbreak-confirmed case.

The CFIA may take control actions based on a presumptive diagnosis.

# Immediate Measures Taken while Waiting for ASF Confirmation (Presumptive Case)

- Further diagnostic sampling – if required
- Extended epidemiological investigation to determine potential source and spread of disease to:
  - Identify all epidemiologically linked premises & risk factors to determine incursion route
- Maintenance of on site movement restrictions and biosecurity zones
- Movement restrictions on all swine premises within a min 3 km radius may be applied
- A movement standstill could be initiated by industry and would be voluntary

# Confirmed Case (Index Case)

For the official confirmation of the **index case** (in either domestic/captive or wild/feral swine) of ASFV in Canada, a **confirmed case** is defined as:

1. A suid from which ASF virus has been isolated and identified by the NCFAD; **or**
2. Nucleic acid specific to ASFV has been confirmed and sequenced by the NCFAD in samples from a suid showing
  - i. clinical signs or pathological lesions consistent with ASFV, **or**
  - ii. an epidemiological link to a suspected or confirmed case of ASF, **or**
  - iii. a suspicion of previous exposure to ASFV; **or**
3. Antibodies specific to ASFV have been identified by the NCFAD in samples from a suid showing:
  - i. clinical signs or pathological lesions consistent with ASFV, **or**
  - ii. an epidemiological link to a suspected or confirmed case of ASF, **or**
  - iii. a suspicion of previous exposure to ASFV.

# What Happens if ASF is Confirmed?

**Disease Response Strategy:** **Eradication**

**Objective:** Return to Canada's ASF Disease Freedom Status in domestic swine and if possible in wild pigs.

For **WOAH** purposes eradication means “the elimination of a pathogenic agent from a country or zone “

# Emergency Management

CFIA will implement an incident management structure to respond to the outbreak:

- Establishment of a centralized location for managing the incident. This may occur at various levels
  - **ICP** - Incident Command Post
  - **AEOC/REOC** – Area/Regional Emergency Operations Center
  - **NEOC** – National Emergency Operations Centre
- Deployment of responders for: destruction, disposal, diagnostics, epidemiology, movement control, etc.
- Immediate engagement with stakeholders

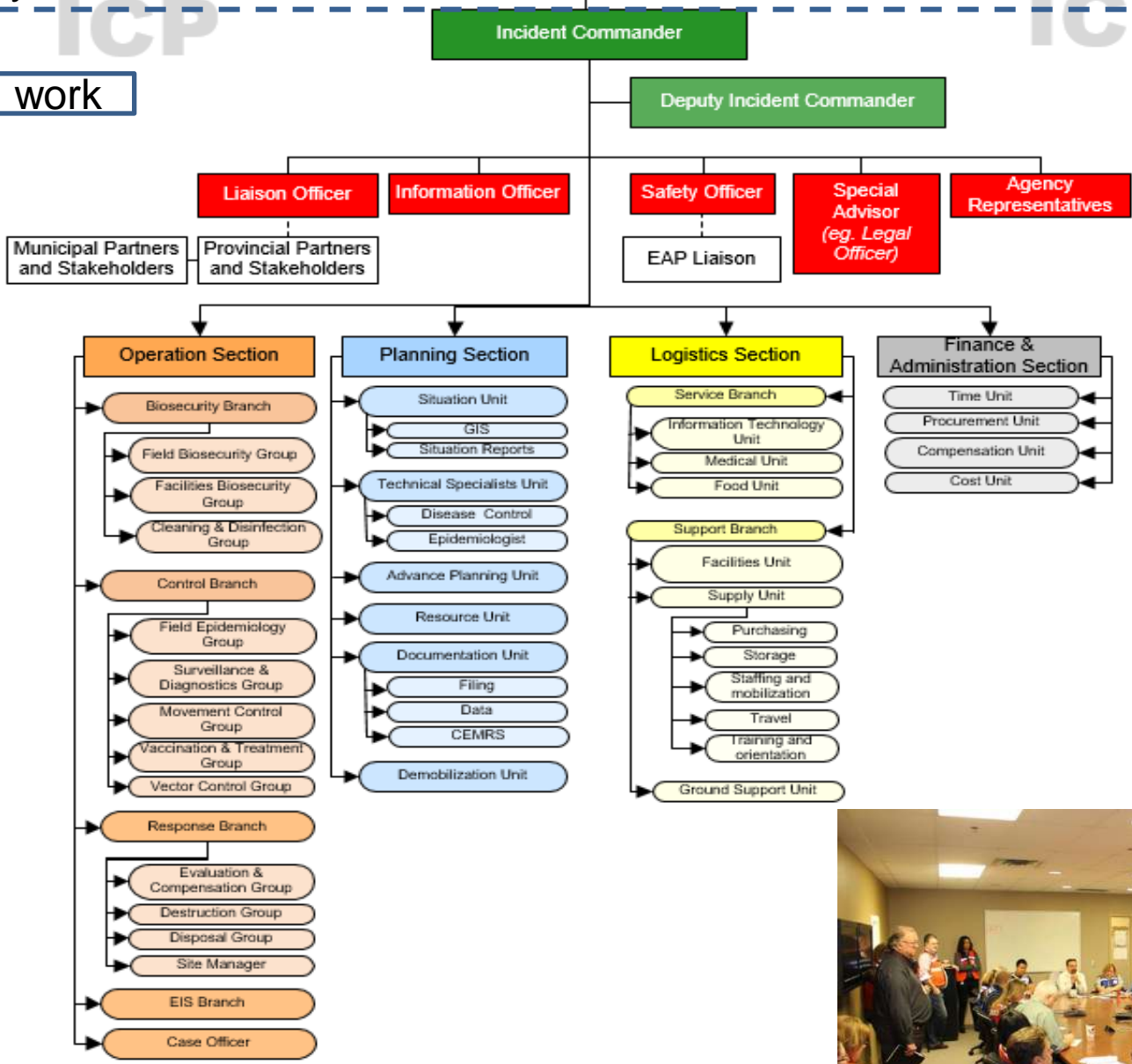
Policy

Assigned level of authority

ICP

ICP

Detailed work



# Messaging in an ASF Outbreak

All stakeholders have a role to play in conveying these messages within their communities before, during and after an ASF outbreak.

## Canadian pork IS safe to eat.

The ASF virus cannot be transmitted to humans.

**Eradication of the disease is a top priority for Canada.**

**Preventing the spread of ASF is everyone's responsibility.**

## ASF is a contagious disease affecting all PIGS

DO NOT feed food waste to pigs.

DO NOT throw pork products in the garbage unless they have been fully cooked.

DO clean all farm equipment, footwear and clothing PRIOR to visiting a farm.

DO NOT allow pork products to be brought onto your farm.

DO NOT allow farm access to wild pigs.

DO know where your feed and feed ingredients come from.

KNOW the signs of ASF.

REPORT any suspicious pig illnesses to your vet or the CFIA.

# Zoning. It is...

- a common disease response tool used in the management and eradication of ASF and other foreign animal diseases.
- a geographic area that is established to prevent the spread of disease from an infected area to areas free of the disease → movement control & biosecurity

The **primary goal of zoning** is to contain the disease to part (or parts) of Canada.

- ✓ Zoning has the **secondary benefit** of managing trade risk by defining disease-free areas of the country.

# Declaring the Primary Control Zone

- Zoning is implemented by the declaration of primary control zones (PCZ) under the authority of the Health of Animals Act. The PCZ is:
  - Critical to prevent disease spread
  - A tool that allows us to control movements on a larger scale
- A PCZ will be declared as soon as possible once an outbreak of ASF is confirmed
  - Declared by the Federal Minister of Agriculture → Delegation to CFIA president

# Overview of Response Activities

## On infected premises:

- Epidemiology ✓
- Planning of destruction and disposal plans ✓
- Depopulation of animals on positive premises ✓
- Disposal ✓
- Evaluation of the animals for compensation ✓
- Cleaning & Disinfection activities ✓
- +/- vacancy period, sentinels, restocking ✓

|   |                                  |
|---|----------------------------------|
| ✓ | Completed at presumptive stage   |
| ✓ | Completed after lab confirmation |

## Beyond the infected premises:

- Actions on epi-linked premises +/- monitored premises ✓
- Movement controls in order to avoid exposed/suspect animals, equipment, vehicles exiting the zones ✓
- Increased biosecurity in all swine premises ✓
- Outbreak surveillance ✓

# Outbreak Epidemiology

- Investigating, describing, documenting and communicating information about each infected premises.
  - Source of ASF introduced to the premises.
  - Extent of infection on the premises.
  - Potential spread from the premises.
- The identification of epidemiologically (epi –linked) premises
  - Tracing period = 30 days
- The prioritization of investigation of epi-linked premises
- The evaluation of risk and epidemiological analysis

# Outbreak Surveillance & Diagnostics

## Surveillance is done on:

- Suspect premises –
- All epidemiologically linked premises – those premises that have had contact with an IP
- Monitored premises -Pig premises within 10 km of any infected premises (inside the primary control zone)
- Premises reporting sick pigs
- Pre-movement testing
- Surveillance sampling

Surveillance DOES NOT always mean diagnostic sampling!

### Surveillance activities may include:

- clinical examinations
- report sick or dead animals
- monitoring mortality levels and other production parameters
- Blood collection
- Tissue sampling from dead pigs

## Laboratory Capacity

- Canadian Animal Health Surveillance Network (CAHSN) laboratories.
- National Centre for Foreign Animal Diseases

# Humane Depopulation Guidelines

- Depopulation is applied to:
  - ✓ All swine on an infected premises regardless of individual infection status
- The depopulation method used depends on:
  - ✓ Animal production type (isoweans vs. mature sows/boars), number of animals and environment/facilities
  - ✓ Provincial and international animal welfare requirements
  - ✓ Compliance with biocontainment measures
  - ✓ For reference there is the ASF depopulation catalogue of accepted methods
- CFIA's role is to approve, oversee, and verify that the depopulation plan is carried out accurately and successfully.

The owner or any person having care or control of an animal **may be ordered to dispose of it**, where the animal is, or is suspected of being, affected or contaminated by a disease.

# Disposal

- Disposal of all destroyed animals and ASF contaminated things (i.e. manure)
- On-farm versus off-farm
- Options:
  - Burial
  - Landfill
  - Incineration
  - Rendering
  - Composting
- Biosecurity and Environmental issues

**CFIA's role is to approve, oversee, and verify that the disposal plan is carried out accurately and successfully.**



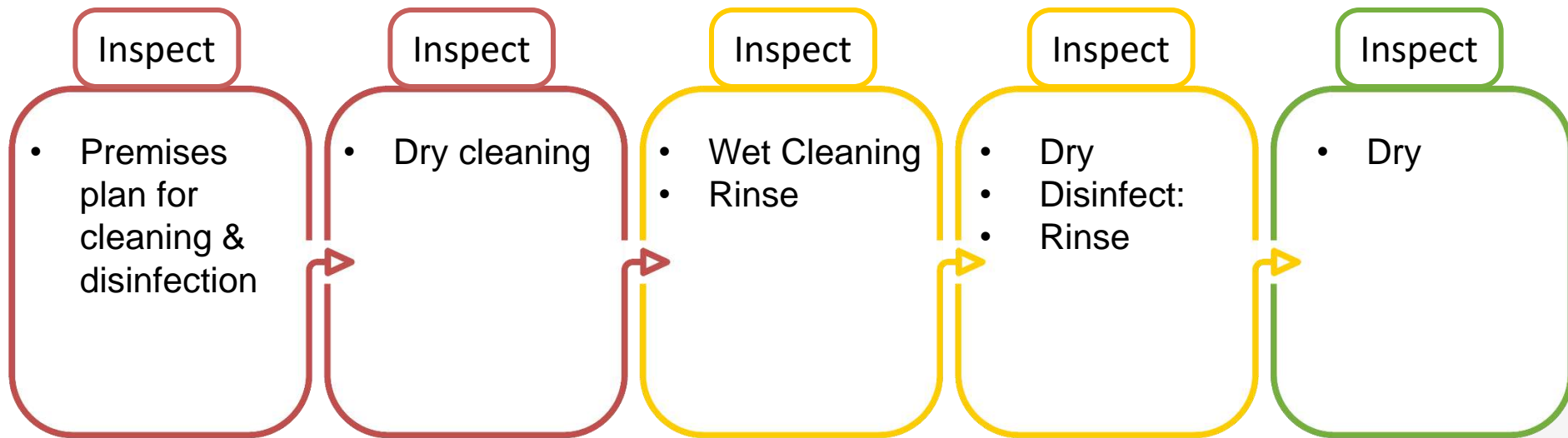
# Cleaning & Disinfection (C&D)

For every place or thing ordered to be cleaned and disinfected the:

- objective is to mitigate the risk of further spread of the infective agent.
- responsibility lies with the owner to complete this task.
- costs are borne by the owner.



# Steps Required for Cleaning & Disinfection



Once C&D on an individual is approved IP by the CFIA, recovery steps can begin.

# The Basics of Evaluation & Compensation

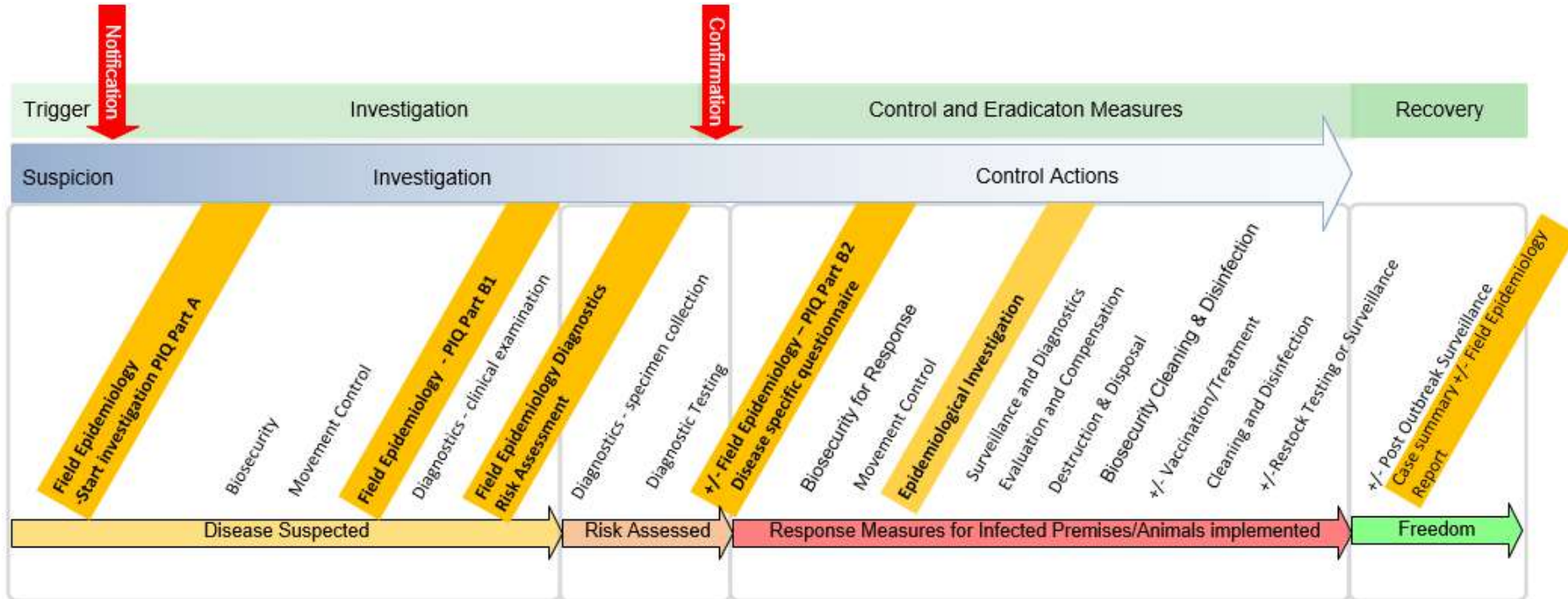
- Compensation is paid for:
  - animals and things ordered destroyed
    - animals are evaluated at a fair market price
    - costs associated with disposal of 'animals'
- Compensation is not paid for:
  - animals that have died prior to the initial CFIA investigation
  - lost production or costs associated with cleaning and disinfection.

# Recovery

- Recovery on individual IP's:
  - Vacancy period
  - +/- sentinel pigs
  - Restocking
  - Lifting of individual premises movement restrictions
- Recovery for the Canadian swine industry:
  - Revoking PCZ's as IP's eliminate ASF virus
  - Post outbreak surveillance
  - Country freedom can be re-established after a minimum of 90 days after the last IP has undergone the required components of C&D

C & D is linked to the process of declaring "*country freedom*".

# Overview of ASF outbreak in domestic pigs



# ASF Response in Wild Pigs

- ASF detection in any pig in Canada = immediate border closure
  - Movements of pigs and pork products would cease initially
  - Stoppages would continue until the CFIA could demonstrate that ASF was contained to a specific zone(s) within the country or had been eradicated
  - A PCZ will be declared
  - Movement controls, increased biosecurity and surveillance activities for domestic pigs will be required.
- An introduction of ASF into the wild pig population would make eradication difficult
- In order to satisfy international obligations, a comprehensive ASF response involving both wild and domestic populations must be in place.

# ASF Response in Wild Pigs

- Collaborative effort between:
  - CFIA
  - Canadian Wildlife Health Co-operative
  - Other federal departments, provincial and territorial governments
  - National and provincial industry organizations
  - Wildlife biologist, academia experts, etc.
- CFIA will lead ASF policy development, international issues management, and communication coordination.



A group of white piglets in a pen. The piglets are white with pink ears and snouts. They are standing on a ground covered with dirt and some green grass. The background is slightly blurred, showing more piglets and a chain-link fence.

# QUESTIONS

Directed to Dr. Amy Snow, the national manager for ASF programs at [amy.snow@inspection.gc.ca](mailto:amy.snow@inspection.gc.ca)