United States Department of Agriculture



APHIS Swine Disease Surveillance, Monitoring, and Modeling

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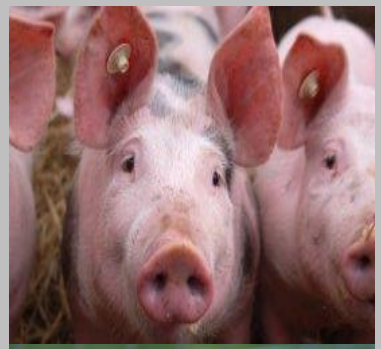
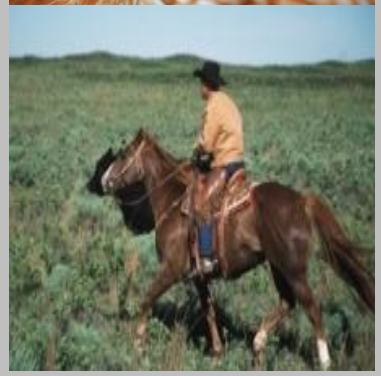
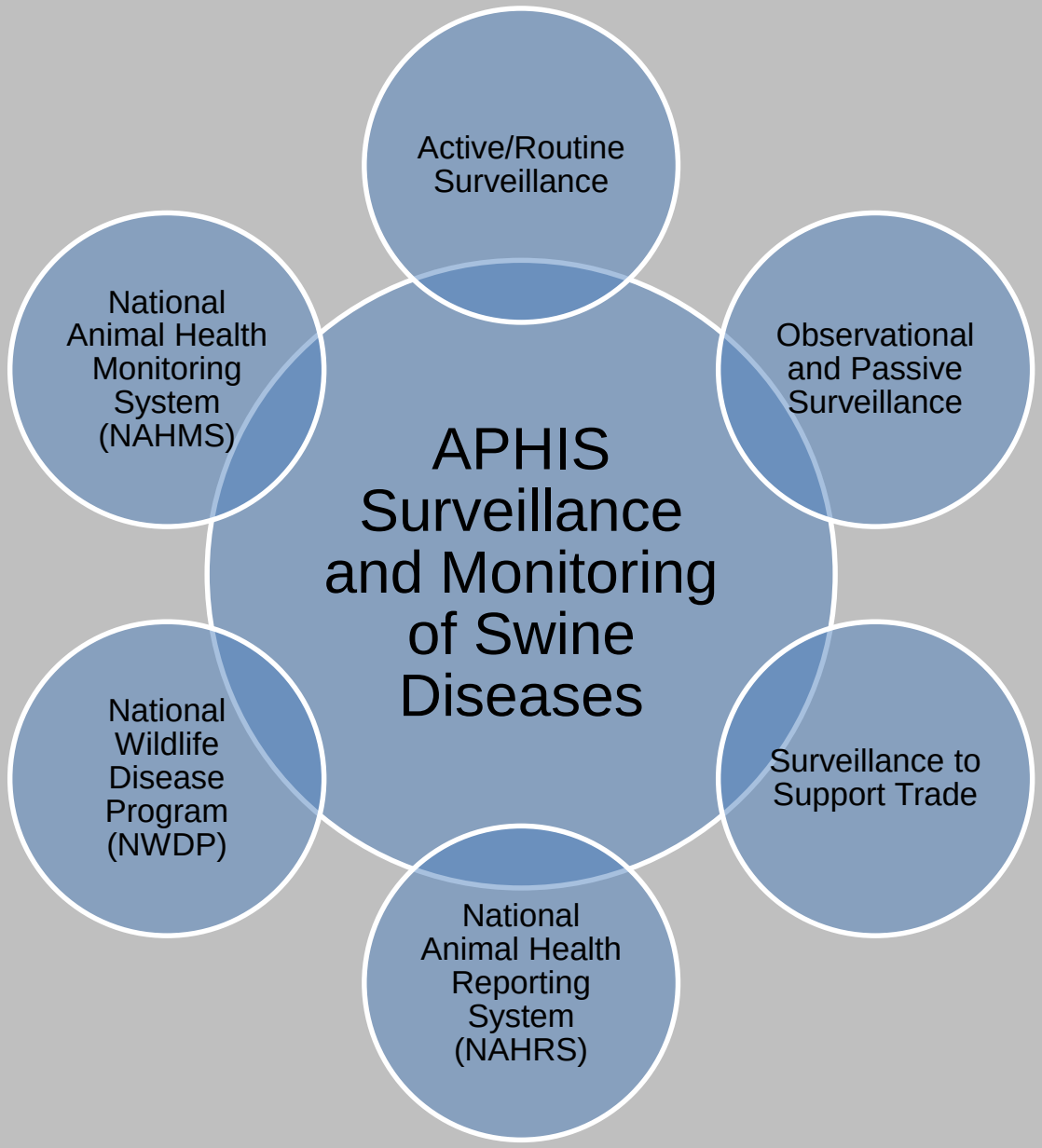
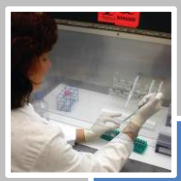





Active/Routine Surveillance
Observational and Passive Surveillance
Surveillance to Support Trade
National Animal Health Reporting System (NAHRS)
National Wildlife Disease Program (NWDP)
National Animal Health Monitoring System (NAHMS)
APHIS Surveillance and Monitoring of Swine Diseases

Information sources

Diseases of concern



Program/Surveillance Diseases

- Pseudorabies (PRV)
- Swine brucellosis (SB)
- Influenza A in Swine (IAV-S)
- Classical Swine Fever (CSF)
- Seneca Valley Virus
- *(Formerly)* Swine Enteric Coronavirus Diseases
  - Porcine Epidemic Diarrhea Virus (PEDV)
  - Porcine Deltacoronavirus (PDCoV)

High-profile Foreign Animal Diseases

- Food-and-Mouth Disease (FMD)
- African Swine Fever (ASF)
- Classical Swine Fever (CSF)

Other Reportable Diseases

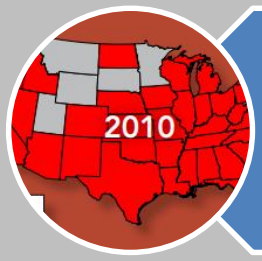
- Swine vesicular disease
- Vesicular stomatitis (VS)
- Rinderpest
- Nipah virus encephalitis
- Antrhax
- Echinococcosis/hydatidosis
- Rabies
- New World screwworm
- Old World screwworm
- Trichinellosis
- Japanese encephalitis
- Porcine Cysticercosis
- Transmissible gastroenteritis
- Porcine Respiratory and Reproductive Syndrome (PRRS)
- Tularemia
- Melioidosis

National Animal Health Reporting System (NAHRS)

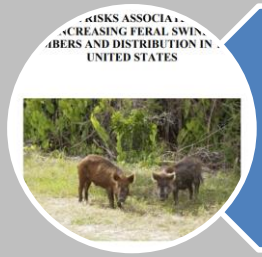
- Reporting system for reportable diseases for the World Organization for Animal Health (OIE) and National List of Reportable Animal Diseases (NLRAD)
- Confidential, monthly, State-based reporting for livestock, avian, lagomorph, and aquatic species diseases
- Helps to support national level animal health surveillance and trade, especially internationally

National Wildlife Disease Program (NWDP)

Identify damage and risk

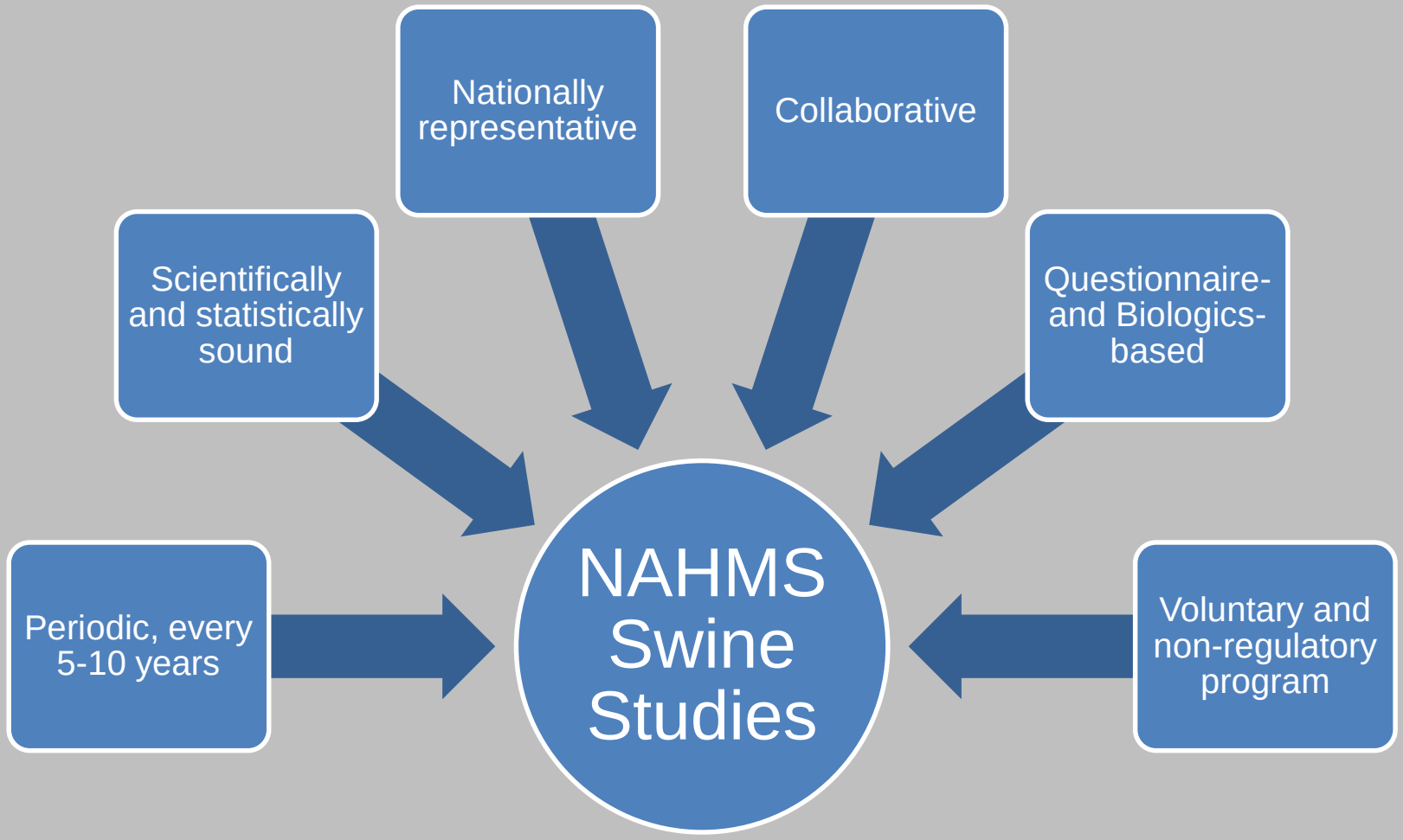


Track, monitor, and test

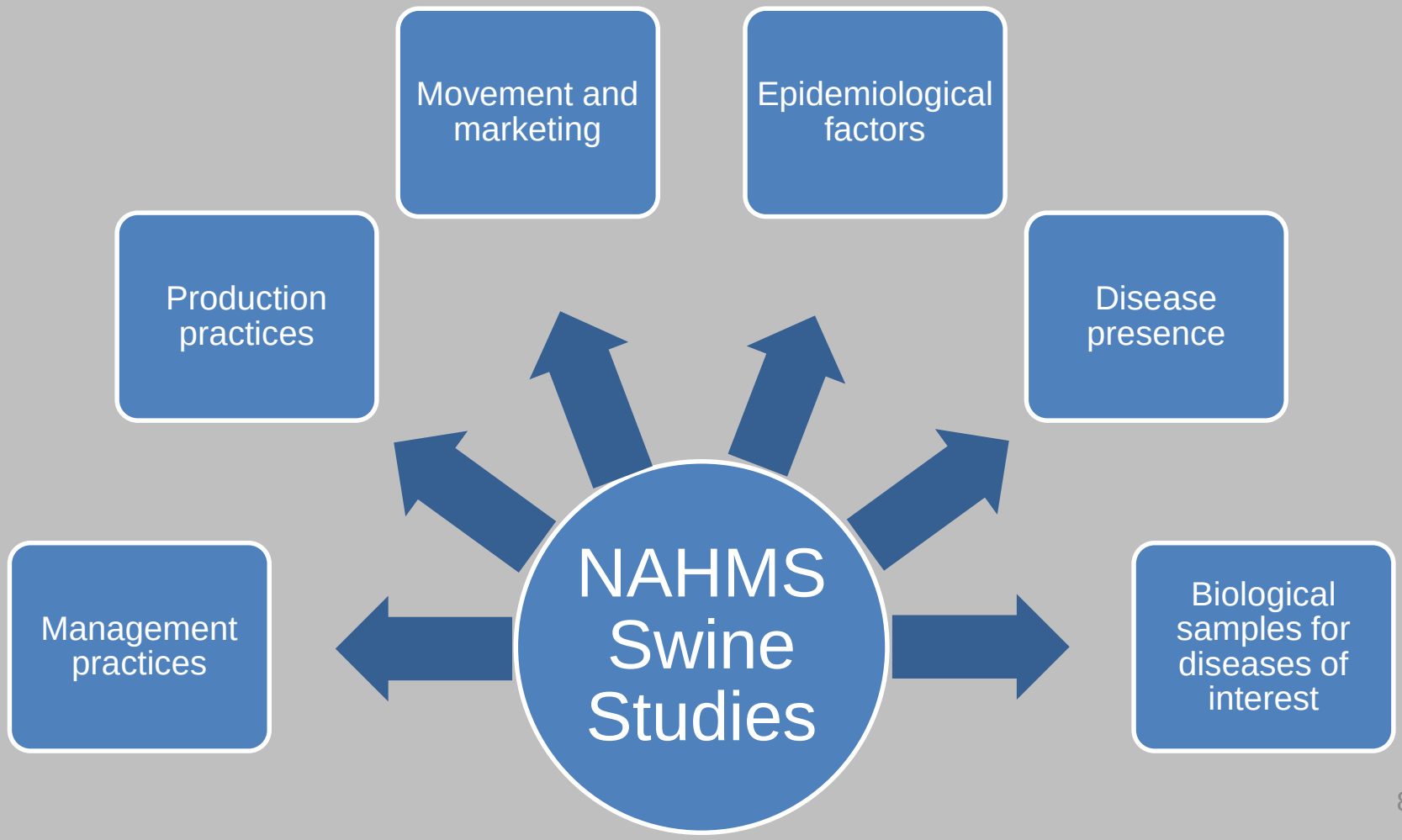


Educate on biosecurity and damage prevention

National Animal Health Monitoring System (NAHMS)



National Animal Health Monitoring System (NAHMS)



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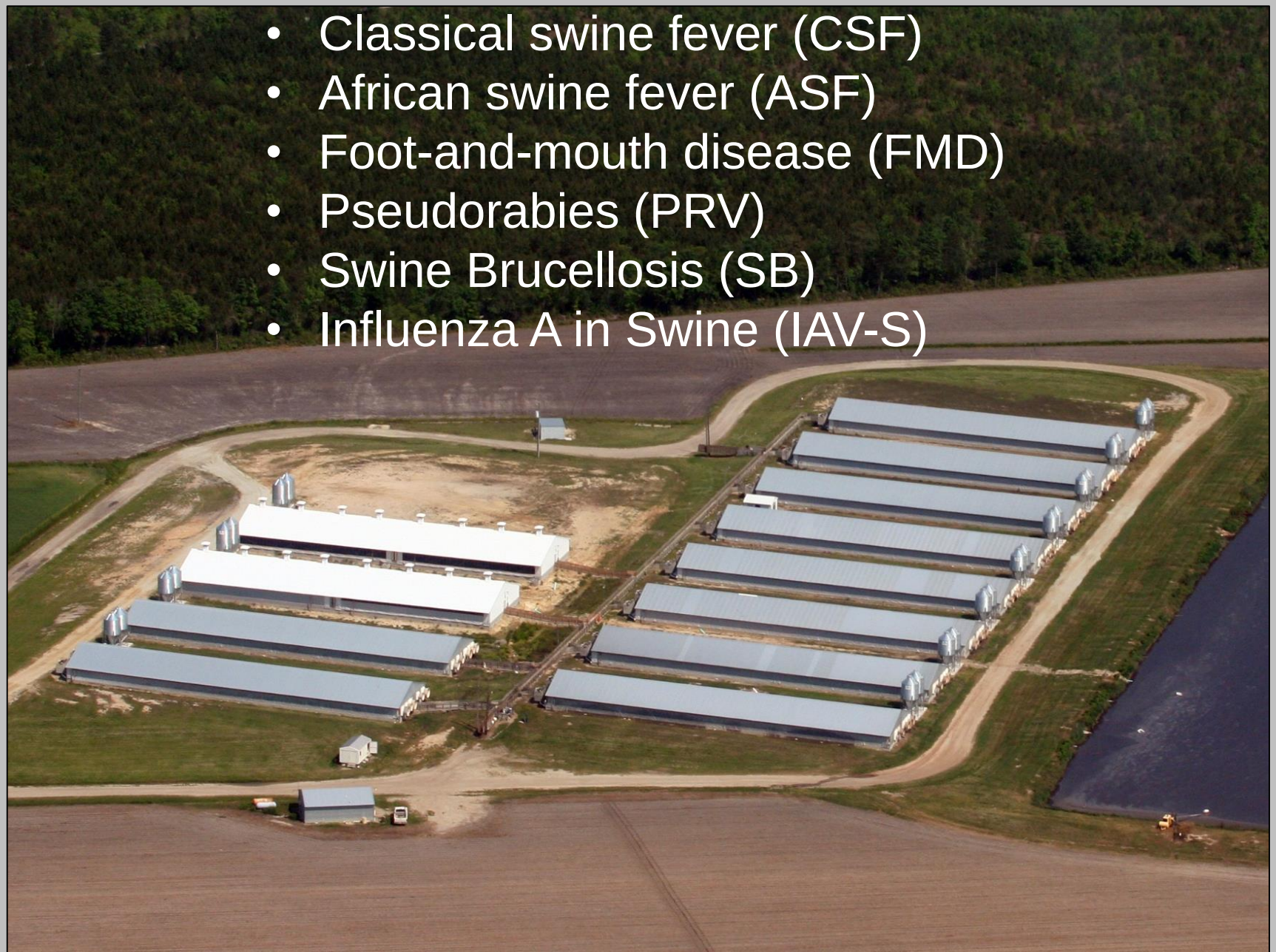
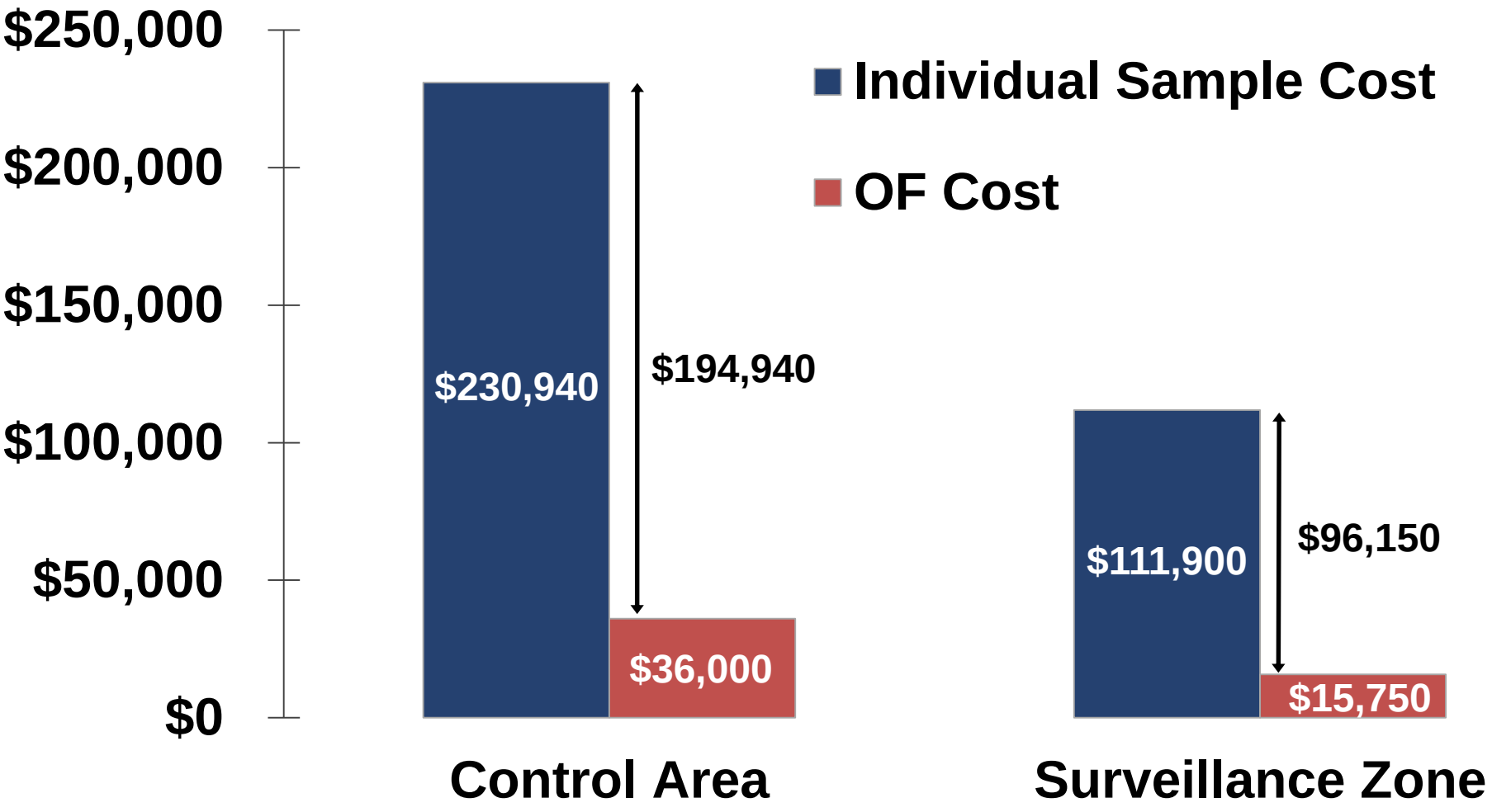
Swine Disease Surveillance



Oral Fluids Testing

- Biosecure
- Aggregate
- Cost-effective

Potential cost savings using OF samples instead of individual animal samples in an outbreak setting



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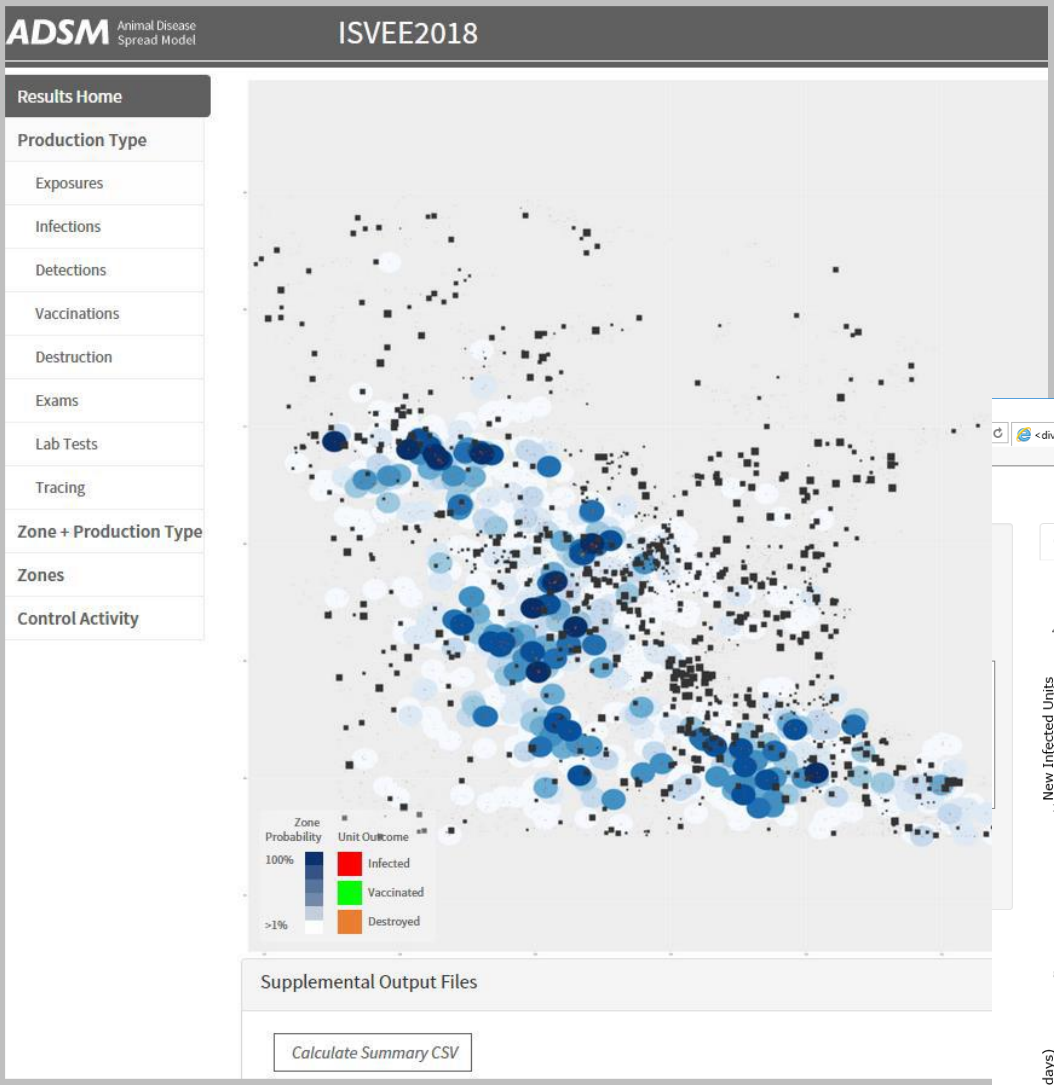
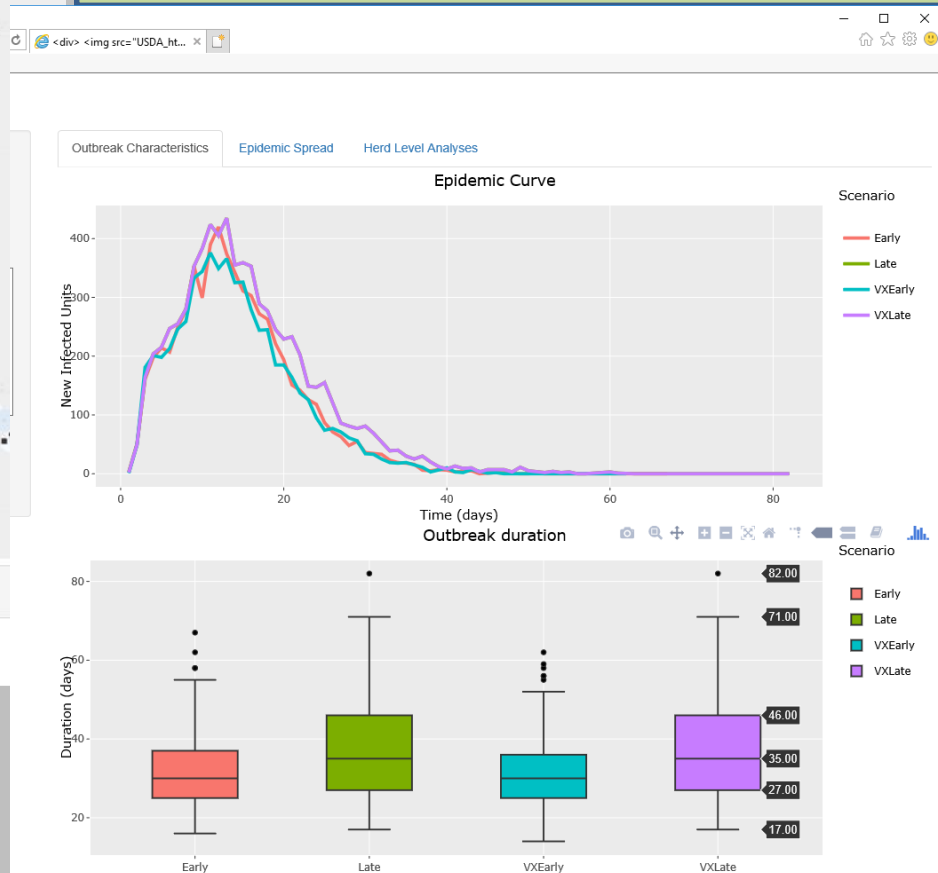
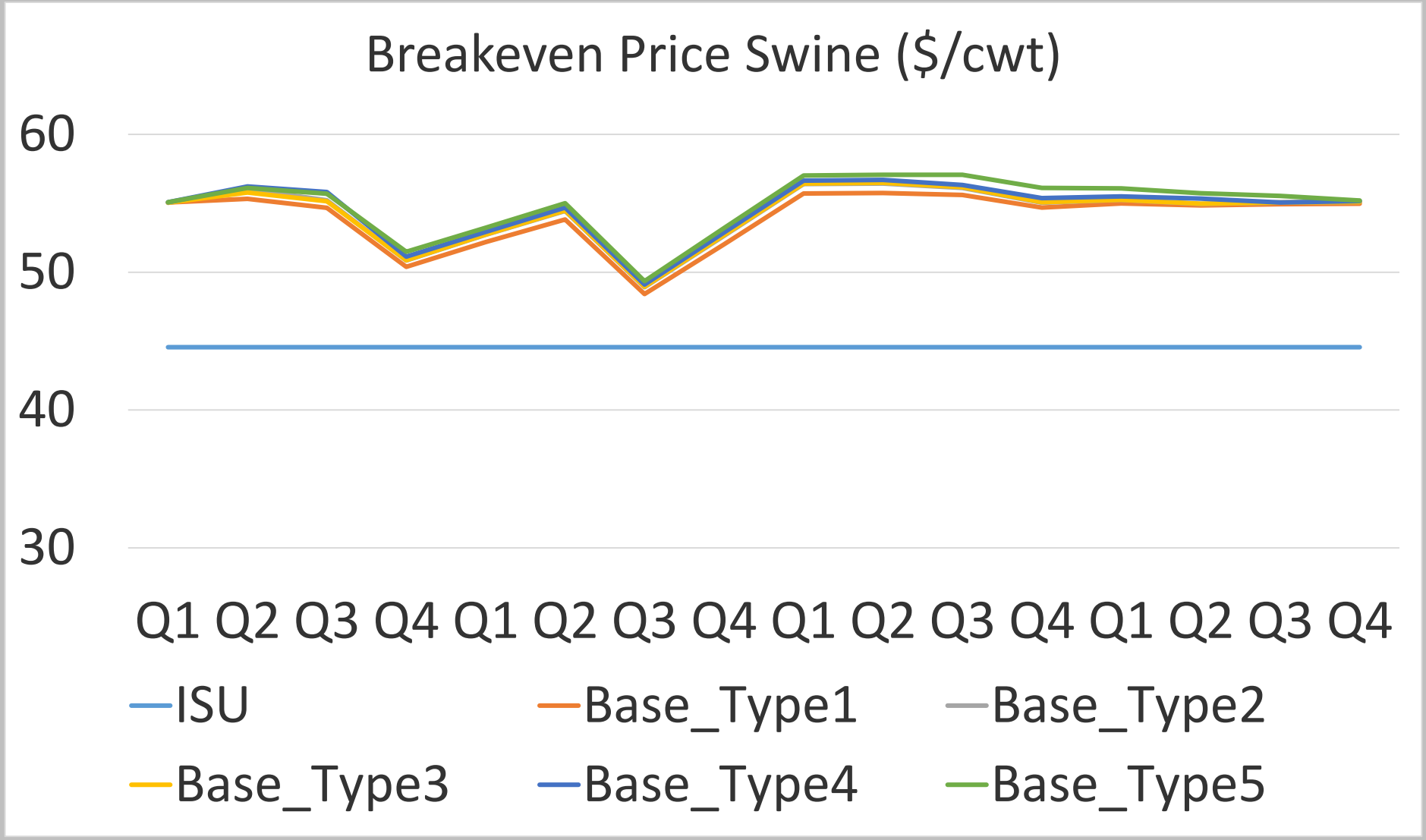
Swine Disease Epidemiologic Modeling





Economic Impact Modeling



Swine Dysentery

- NAHMS Swine 1995, 2000, 2006, 2012 Studies
  - Prevalence reduction to 4.3%
  - Morbidity rate 5.5%
  - Mortality rate 1.8%
- Literature search
  - Morbidity = 9 days extra on feed
  - Treatment costs $0.81 to $5.05
- Small market impacts in economic model
- Budget cost savings $7.80 per hog, higher returns of 10.6%

Questions?