
A Comprehensive Approach to Animal Disease

Ernest Hovingh DVM, PhD

Veterinary Extension, Field Investigation & Research

Penn State University

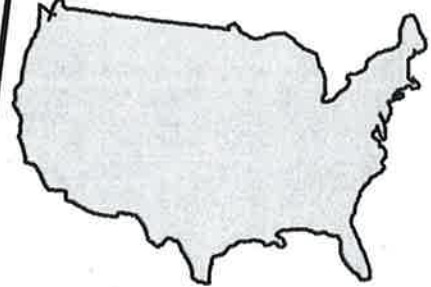
eph1@psu.edu



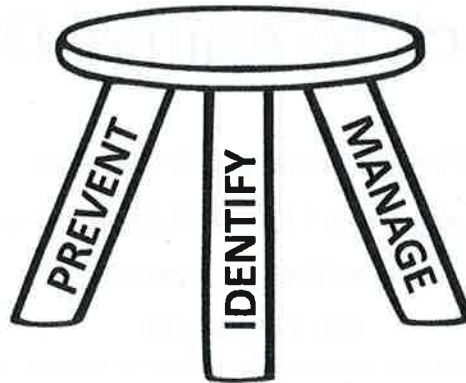
PennState Extension

Dealing with Animal Disease

- Fundamentally the same → farm, state, and national levels



Dealing with Animal Disease



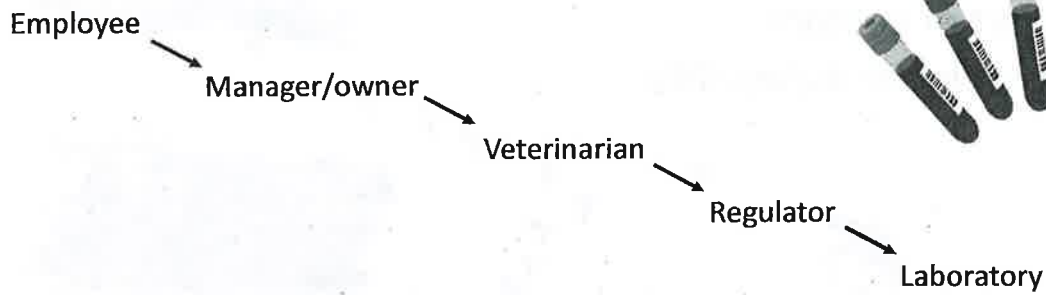
Disease Prevention

- Reduce the **risk** of disease-causing bacteria or virus entering the farm (or state, or country)



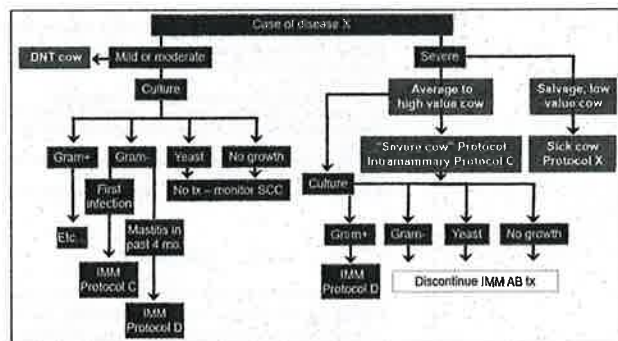
Disease Identification

- Have a system in place to **promptly** and **accurately** diagnose disease when it occurs



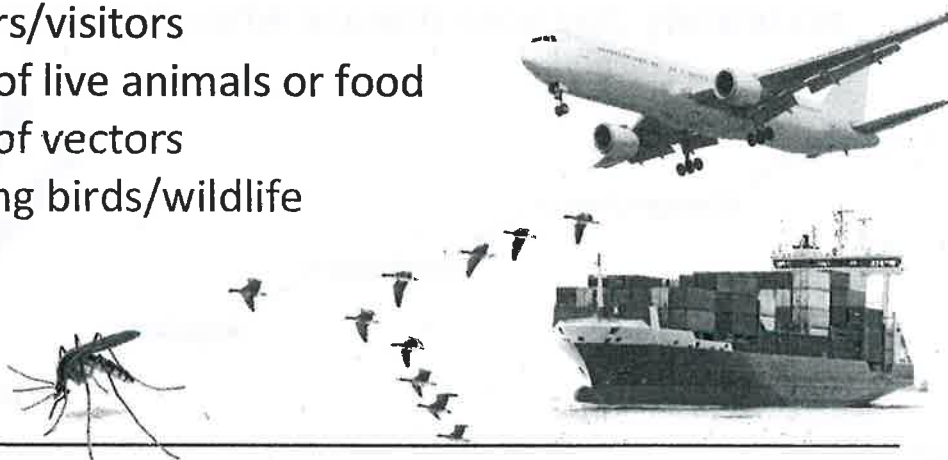
Disease Management

- Have a strategy in place to **promptly** and **effectively** manage a disease outbreak when it occurs



Disease Prevention – Risk Reduction

- How could the pathogen get to the farm/state/country?
 - Travelers/visitors
 - Import of live animals or food
 - Import of vectors
 - Migrating birds/wildlife



Why not 100% adoption?



J. Dairy Sci. 100:3329–3347
<https://doi.org/10.3168/jds.2016-11977>
 © American Dairy Science Association®, 2017.

Invited review: Determinants of farmers' adoption of management-based strategies for infectious disease prevention and control

Caroline Rittler,^{*1} Jolanda Jansen,[†] Steven Roche,[‡] David F. Kelton,[‡] Cindy L. Adams,[§] Karin Orsel,^{*}

Ron J. Erskine,[#] Geert Benedictus,^{||} Theo J. G. M. Lam,[¶] and Herman W. Barkema^{*}

^{*}Department of Production Animal Health, Faculty of Veterinary Medicine, University of Calgary, 2500 University Dr., Calgary, AB, T2N 1N4, Canada

[†]St. Anna Advies, 6525 ZM Nijmegen, the Netherlands

[‡]Department of Population Medicine, University of Guelph, 50 Stone Rd., Guelph, ON, N1G 2W1, Canada

[§]Department of Veterinary Clinical and Diagnostic Sciences, Faculty of Veterinary Medicine, University of Calgary, 2500 University Dr., Calgary, AB, T2N 1N4, Canada

[#]Department of Large Animal Clinical Sciences, Michigan State University, East Lansing 48824

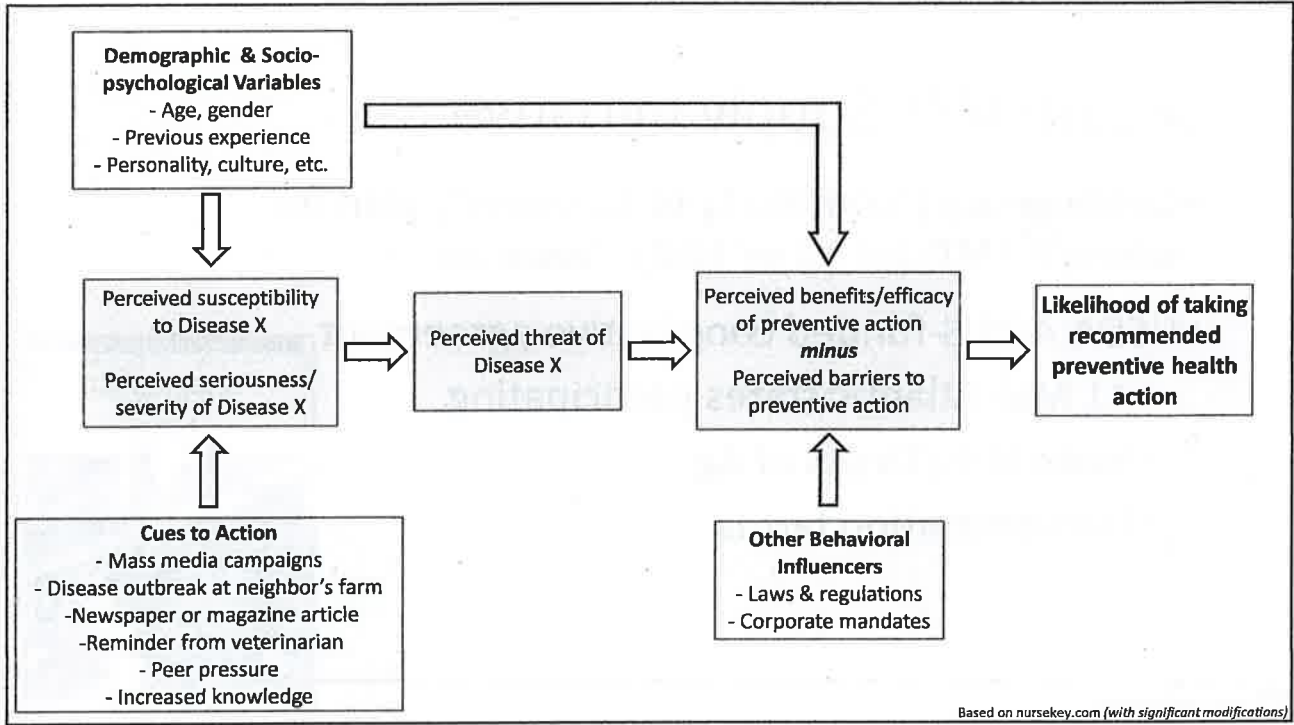
^{||}Benedictus Advies, 8501 NC Joure, the Netherlands

[¶]Department of Farm Animal Health, Faculty of Veterinary Medicine, Utrecht University, Yalelaan 7, 3584 CL Utrecht, the Netherlands

ABSTRACT

The prevention and control of endemic pathogens within and between farms often depends on the adoption of best management practices. However, farmers

with perceived standards. Extension tools and farmers' social referents (e.g., veterinarians, peers) not only provide technical information but also influence these standards. Whereas mass media have the potential to deliver information to a broad audience, more personal



www.cfsph.iastate.edu/Secure-Food-Supply/index.php

CFSPH Main Menu

- Products
- Animal Disease Information
- Zoonotic Diseases
- Infection Control
- Emergency Response
- Secure Food Supply
- Education and Training
- Vaccines
- Video Library
- Affiliated Websites
- About the CFSPH
- Contact Us

INSTITUTE FOR INTERNATIONAL COOPERATION IN ANIMAL BIOLOGICS
visit the website ▶

VETERINARY BIOLOGICS TRAINING PROGRAM
more info ▶

SECURE FOOD SUPPLY PLANS
Collaboration Between Industry, State Governments, Academia, USDA-APHIS

The Secure Food Supply Plans for poultry, milk, pork and beef were developed to aid producers, transporters and food processors in the event of a foreign animal disease outbreak. These response plans are designed to avoid interruptions in animal/animal product movement from operations with no evidence of infection and maintain business continuity. Click on the icons to learn more about each plan.

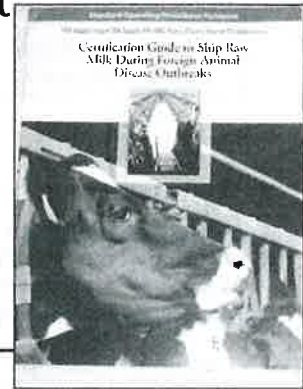
- SBS SECURE BEEF SUPPLY**
www.securebeef.org
- SPS SECURE PORK SUPPLY**
www.securepork.org
- SMS SECURE MILK SUPPLY**
www.securemilksupply.org
- SPS SECURE POULTRY SUPPLY**

Disease Resources

- Foot and Mouth Disease
- Classical Swine Fever
- African Swine Fever
- High Pathogenic Avian Influenza

Secure Milk Supply Initiative

- Contingency (“continuity of business”) plan for when/if FMD (or other FAD) shows up
- USDA:APHIS-funded cooperative agreement
 - 11 Mid-Atlantic states participating
 - State Vets/Depts of Ag
 - Demonstration farms



Secure Milk Supply Initiative

- Pre-event (pre-FAD) biosecurity audit/evaluation
- Document:
 - Controlled access, with access for milk truck
 - Truck wash/disinfection, equipment/supplies
 - Milk pickup area/sampling/loading
 - Record-keeping
 - Standard Operating Procedures (SOPs)
 - Training

Secure Milk Supply Initiative

- Pre-permit biosecurity audit/evaluation
 - Occurs when FAD present in region/country
 - For non-infected premises only
 - Demonstrate that measures have been implemented
 - Receive permission to ship milk from farm & across state lines (if applicable)

Perceived benefits/efficacy
of preventive action
minus
Perceived barriers to
preventive action

Summary

- Use a comprehensive Prevent-Identify-Manage approach to animal diseases
- Consider how to motivate voluntary adoption of preventive practices for individual farmers and industries
- If possible, use a carrot, rather than a stick

