

# Policy in the Making: Establishing Public Policy for Complex Animal Diseases

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# Public Policy?





# The One Health Experience

#### Field Experience Site:

- One Health Coordination Center
  - USDA, APHIS, Veterinary Services
    - Surveillance, Preparedness, and Response Services unit
  - Riverdale, MD
- **▶ Field Experience Mentor:** 
  - Dr. Joseph Annelli, Director of the One Health Coordination Center
- Field Experience Project: Defining how policy is established for complex animal diseases





One Health (OH) – WHAT IS IT? WHAT DOES IT MEAN?

Between animal and human medicine there is no dividing line – nor should there be. The subject is different but the experience constitutes the basis of all medicine.

-- RUDOLF VIRSCHOW, GERMAN SCHOLAR (1800S)



# ONE HEALTH

Step 1: DECIDING WHEN TO ACT

# What becomes OH policy?

Is this a zoonotic/One Health Event?

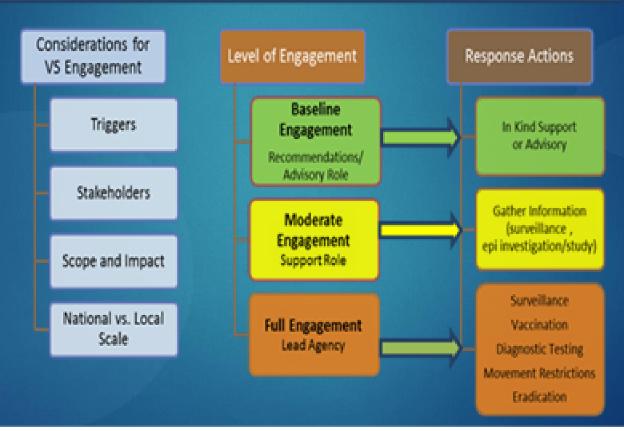


Figure 1: One Health engagement flowchart, created by APHIS, VS

	Full Engagement	Moderate Engagement	Baseline Engagement	No Involvement	
Species Involved	Cattle, sheep, swine, poultry	Horses, Farmed Cervids, Farmed aquaculture	Wild cervids, feral swine, wild fish, wild horses, domestic pets, zoo animals, insects	Animals not involved	
Animal Prevalence	Agent not thought to exist in susceptible population	Agent exist at low to moderate levels in population	Agent is endemic or highly prevalent in species	Agent is not found nor infectious in animal species	
Animal Transmissibility	Agent highly transmissible within and between species	Moderate transmissibility within species	Animal transmission unlikely, limited or uncertain	No known animal transmission	2015 Highly
Animal Consequences	High mortality/ morbidity in species of concern	Serious illness and moderate economic loss in species of concern	Little, unkown or uncertain illness in species of concern	Animal infection unlikely	Pathogenic Avian
Host Species	Primary host is "farm" species	Secondary host is farm species	Host range is unknown or uncertain OR VS-covered species are unlikely hosts	Exclusive human pathogen	Influenza
Zoonotic Transmissibility	Zoonotic transmission likely or common	Known zoonotic transmission of moderately transmissible agent	Zoonotic transmission unlikely, limited or uncertain	No known zoonotic transmission	H5N2 Outbreak
Human Consequences	Agent is potentially fatal to humans	Agent causes serious illness in humans	Human illness asymptomatic or mild	Human infection unlikely	OUDICAR
Stakeholder Interest/ Concern	High pressure, interest, request expectation	Moderate level of pressure, interest, request for engagement	Little pressure, interest, request for engagement	No pressure, interest, request for engagement	
Possible Actions	Surveillance Vaccination Diagnostic Testing Movement Restriction Eradication	Gather Information (surveillance, epi investigation/study) Support	In Kind Support or Advisory Subject Matter Expert	No Activities	

# Step 2:

"GETTING IN THE KNOW" -BACKGROUND RESEARCH

# Building the Epidemiologic Database...

- Time-consuming BUT important!
- MERS-CoV Story
- Current HPAI-H5N2Outbreak
- Stakeholder Announcements

#### WEEKLY SITUATION REPORT



Highly Pathogenic Avian Influenza

DATE TRANSMITTED: April 16, 2015 (data reported through 11:00 AM ET)

PREPARED BY: Veterinary Services HPAI Incident Coordination Group

CONTACT INFORMATION: Send questions or comments to VS.SPRS.Feedback@aphis.usda.gov.

A. Status of HPAI-Infected Commercial and Backyard Flocks Detections since the previous report are highlighted in gold.

States and Counties Currently Affected												
State/County	Backyard(BY)/ Species OR Commercial (C)/Species#	NVSL Confirmed Date (Type)	Infected Premises Quarantine Date	Control Area Est. Date	Depopulation Completed Date	Disposal Method/ Status & Date	C&D Date	Control Area Release Date	Final Release Date (Restocking Date)			
WI/Barron	C/Turkey/126,658	4/16/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Roseau	C/Turkey/26,904	4/16/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Otter Tail	C/Turkey/19,400	4/15/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Steams (6)	C/Turkey/52,831	4/15/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Kandiyohi (5)	C/Turkey/151,549	4/15/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
SD/Roberts	C/Turkey/86,590	4/15/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Meeker (3)	C/Turkey/19,600	4/14/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Kandiyohi (4)	C/Turkey/30,000	4/14/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Meeker (2)	C/Turkey/25,000	4/14/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Redwood	C/Turkey/84,772	4/14/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			
MN/Swift (2)	C/Turkey/145,854	4/14/15 H5N2	Pending	Pending	Pending	Pending	Pending	No	Pending			

Step 3:

ASSESSING AND COMMUNICATING RISK

## Risk Assessment Model

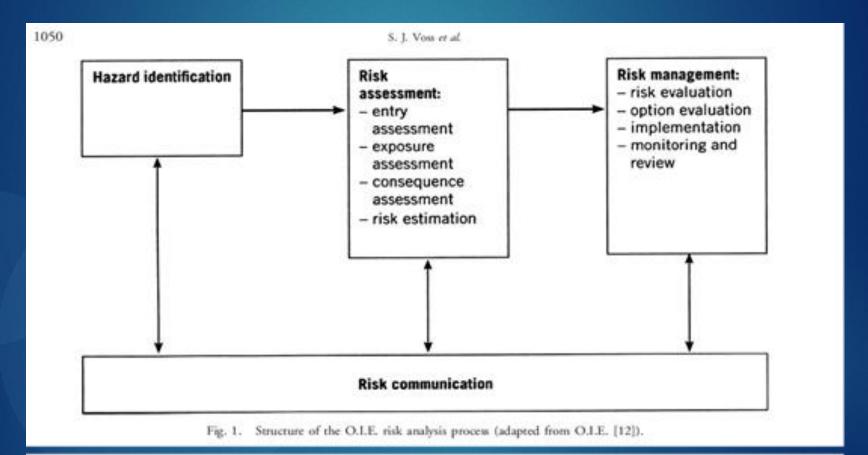
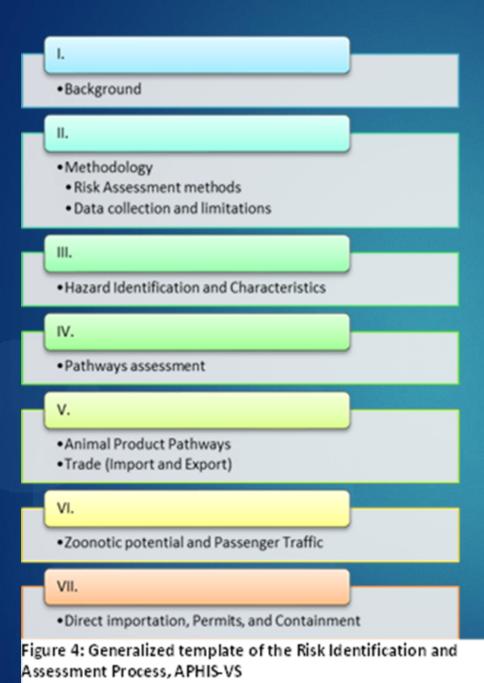


Figure 3: OIE risk analysis process (taken from Voss, 2012)



# Determining Risk for an Emerging Infectious Disease

Step 4: POLICY DEVELOPMENT

# What is the goal?

- Prevention and Control
  - ▶ PEDv
  - ► MERS-CoV
- Eradication
  - Pseudorabies
  - ► HPAI



# When Bills Become Laws, Laws Become Acts...



Figure 6: Diagrammatic Representation of Federal Policy Development

# Implementation and Education...

- Memorandums of Understanding (MOUs)
  - ► APHIS and FSIS
- Standard Operating Procedures (SOPs)
  - MERS-CoV
- Technical Fact Sheets

#### APHIS

#### Veterinary Services

#### Foot-and-Mouth Disease

Foot-and-mouth-decisie (FMCI) is a seriese, highly orthogous start desires. The FMD into causes litered in creat, orgs, share, godes, deer, and other aremals with divided house. It does not affect horses, dogs, or calls. FMD is not a public health or lood safety threat. It is also not related to hand, twit and mouth decisies, as common distillated literes caused by a different strux.

PAID is a worthwide concern, as it can spread quintly and cause significant concernit cleases. With many countries across the globe are dealing with PAID in their heating populations, the United States enablished the dealers on 1959. In camping out our safeguarding mission, the U.S. Department of Agriculturit's AUSDA, Armail and Plant Health inspection Seniors (APHS) works to ensure the continued health of our Nation's levelator. These efforts include preventing PAID from resertaining the country.

#### What is FMD?

Animals with FMC typically have a fewor and bittlers or the innegate and lips. In and assured the mouth, or the manninery glands, and around the hoover. These blades, called excision, pop and turn into red areas called excisions. Pain and discontant from the visicios and prodons lead to other gyingtons such as depression, anomics, excessive abhasitor, laminers and escussion to move or stand. Most affected animals will not die from FMC, but the disease leaves them wealered and unable to produce meat and milk the way they did better.

PMO causes production losses and harbidge for farmers and suches. If also has serious impacts on healtoot had—a single delection of PMO will flasly stop international hade completely for a period of time. Since the disease can operat widely and registly and has grain economic consequences. PMO is one of the artified diseases therbook centers draid frost.

#### What Causes FMD?

PMD is caused by a virus. After an animal is infected with the virus, the first signs of lifees usually appear within 2 to 14 days.

The virus survives in living tissue and in the breath, salve, urine, and other exceptions of inflicted snimes. It can also survive in contaminated materials and

#### **Factsheet**

#### July 201

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the environment for several months under the right conditions. Time, extreme temperatures, and pin changes will mactivate (i.e., kills the virus.

There are 7 known types and more than 60 subtypes of the PMD virus. Immunity to one type does not protect an animal against other types or subtypes.

#### How Does FMD Spread?

FMD can apresed when infected animals bring the your into physical contact with suppoptible animals (i.e., divided hard animals). An outbreak can also occur when suppoptible animals:

- Are held in contaminated Sociéties.
- · Are moved in confurninated whiches
- Are fed rise or improperly cooked garbage containing infected meat or animal products;
- Hiere contact with people wearing contaminated clothes or shoes or using contaminated equipment.
- Are exposed to contaminated materials such as hay fired, hides, or biologic products;
- Drink contaminated water, or
- Are insentrated by semen from an infected animal.

#### Signs of Illness

The best known signs of the disease include vesicles, which are similar to bilisters, that quickly pop and cause ecosions in the mouth or on the feet, resulting in excessive salvation or lameness. Because they pop quickly. These bilisters are not always assay to see.

These signs may appear in affected arrinals during an FMD outbreak.

- Great increase in body temperature for 2 to 5 days.
- Vesces that righter and decharge clear or cloudy fluid, leaving raw, enoded areas summarided by regged fragments of loose tissue
- Stoky foarry stringy salive
- Eating less because of puriful tongue and mouth trislams
- Lameness with reluctance to move
- Aportions
- Low milk production in dairy cown.
- Head decase and death, especially in newborn arrimate

## Is it effective?

- Regulation analysis
  - Administrative review internal
    - Annual
  - Program review
    - Annual or as needed
      - States previously identified with issues
      - States that have not been reviewed for several years



## Social Media and Policy...





#### FoodKeeper





The FoodKeeper can help you use foor intended as useful guidelines and are in while others may last longer than the till conditions, harvesting techniques, man nature of the food, and storage temperal products in your pantry, refrigerator, an

Every year, billions of pounds of good f quality or safety. By reducing food wast cooking what is needed and compostin to landfills.

Data is available for download (X

Regulation of Select Agents

#### Office of Public Health Preparedness and Response

CDC > Office of Public Health Preparedness and Response > Are We Prepared? > Zombie Preparedness Office of Public Health Preparedness and Response Zombie Novella Overview Recommend Tweet Share Are We Prepared? Preparedness 101: Prep Check! Zombie Preparedness Zombie Novella Blog: Public Health Matters **Emergency Operations** Funding, Guidance, and CDC has a fun way of teaching about emergency preparedness. Our graphic novel, "Preparedness 101: Zombie Pandemic" demonstrates the importance Technical Assistance to States, Localities, and of being prepared in an entertaining way that people of all ages will enjoy. Readers follow Todd, Julie, and their dog Max as a strange new disease begins Territories spreading, turning ordinary people into zombies. Stick around to the end for a surprising twist that will drive home the importance of being prepared for Healthcare Preparedness any emergency. Included in the novel is a Preparedness Checklist so that readers can get their family, workplace, or school ready before disaster strikes. Click on the image below to view the novella. A transcript can be found by clicking on the "accessible text" PDF. You can also download the novella on Partnerships Google books here & or download a printable pdf versions here

Accessible text version 7

Step 5: REGULATORY AFFAIRS

# To Report or Not to Report...

- OIE World Animal Health Organization
  - OIE-listed diseases
  - Maintaining a national disease status
- State reporting
  - Nebraska and Cattle Trichomoniasis

### Figure 9: 2014 OIE-listed multiple species diseases, infections, and infestations

Anthrax

Bluetongue

Brucellosis (B. abortus, melitensis, and suis)

Crimean Congo hemorrhagic fever

Epizootic hemorrhagic disease

Equine encephalitis, specifically Eastern

Foot and mouth disease

Heartwater

Infection with Aujeszky's disease virus

Echinococcus granulosus, multilocularis

Rabies

Rinderpest

Trichinella spp.

Japanese encephalitis

Cochliomyia hominivorax (New world screwworm)

Chrysomya bezziana (Old world screwworm)

**Paratuberculosis** 

Coxiella burnetti

Rift valley fever

Trypanosoma evansi

Tularemia

Vesicular Stomatitis\*To be removed starting Jan 1,

2015

West Nile Virus

## Who are the Stakeholders?

- State and Local Level:
  - Local industry groups
  - Producers
  - Local and state veterinarians
  - Public Health Veterinarians
  - State Animal Health Officers

- National Level:
  - Federal agencies
  - Public organizations



# Take Home Message

- NO one size fits all approach to policy
- Clear cut definitions do not exist
- Money is often a driving factor
- One Health is a team effort
- Policy making is dynamic

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    - Dr. Mike Cates
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