Wild Birds and Feral Swine
The Wildlife Perspective regarding One Medicine

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USDA/APHIS - Wildlife Services
Relative risk EID from zoonotic pathogen from wildlife

Jones et al, Nature 21 Feb 2008
Number and Type of EID Events Per Decade

335 emerging infectious diseases since 1940
140 from wildlife
Complexity of Disease Investigation in Wildlife

Understanding, Predicting/Preventing, Epidemiology, and Management

Dein and Wright 2008
Complexity of Disease Investigation in Wildlife

- Estimating Disease in Wildlife Populations
  - Requires knowledge of:
    - Population Size
    - Number at risk
    - Number infected
    - What, when, and where
  - Rely on indirect measures
    - Use of sentinels
Complexity of Disease Investigation in Wildlife

- Diagnostic Tests
- Capturing Wildlife
Justification for Including Wildlife in One Medicine Approaches

- Reservoirs
- Budgetary Constraints
- Epidemiology
- Need for Science
- Statistically Valid Data
- Education
Avian Influenza Surveillance in Wild, Migratory Birds

Use Wild Birds as Sentinels for the Early Detection of HPAI
An Early Detection System for Asian H5N1 Highly Pathogenic Avian Influenza in Wild Migratory Birds
Sampling and Testing Approaches

Standardized Methodologies
Emphasize M/M Investigation
Targeted Surveillance of Competent Carriers
Common H5 and H7 Assays
Results

The Story Ends Here

No HPAI Detected In Wild, Migratory Birds
Known Feral Swine Diseases

- Pseudorabies
- Swine Brucellosis
- Classical Swine Fever
- African Swine Fever
- Bovine Tuberculosis
- Influenza???
- PRRS
- Anthrax
- Tularemia
- West Nile virus
- E. coli
- Salmonella
- Trichinosis
- Toxoplasmosis
- Ticks, Fleas, Lice
- Internal parasites
U.S. Counties in which Wildlife Services has conducted feral swine disease surveillance (2006-2009)
Necessary Program
Partnerships/Cooperation

- Federal Agencies
- State Wildlife Agencies
- State Agriculture Departments
- Domestic Swine Industry
  - Laboratories
  - Universities
- Wildlife/Animal Health Organizations
Can We Succeed at One Medicine?

- Recognize human-animal-environment linkages
- Devise adaptive, holistic approaches
- Increase investment in comprehensive surveillance and prevention efforts
- Collaborate – integrate
- Education and Awareness
Contact Information

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