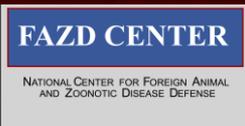


# Transportation as an Attack Vector: The Role of Education in Preventing the Spread of Catastrophic Diseases

Katherine Waters DVM, MPH, Dipl. ACVPM  
University of Minnesota

DHS Fifth Annual University Network Summit  
Catastrophes & Complex Systems  
TRANSPORTATION  
March 30, 2011

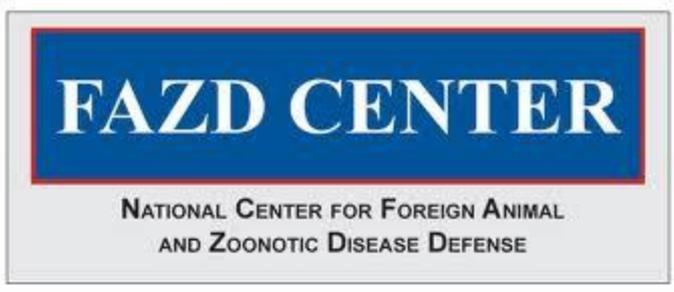


# Overview



- History
  - Collaborators
  - Pro Active Risk Assessments
- Risk Analysis
- Educational Materials

# BACK STORY



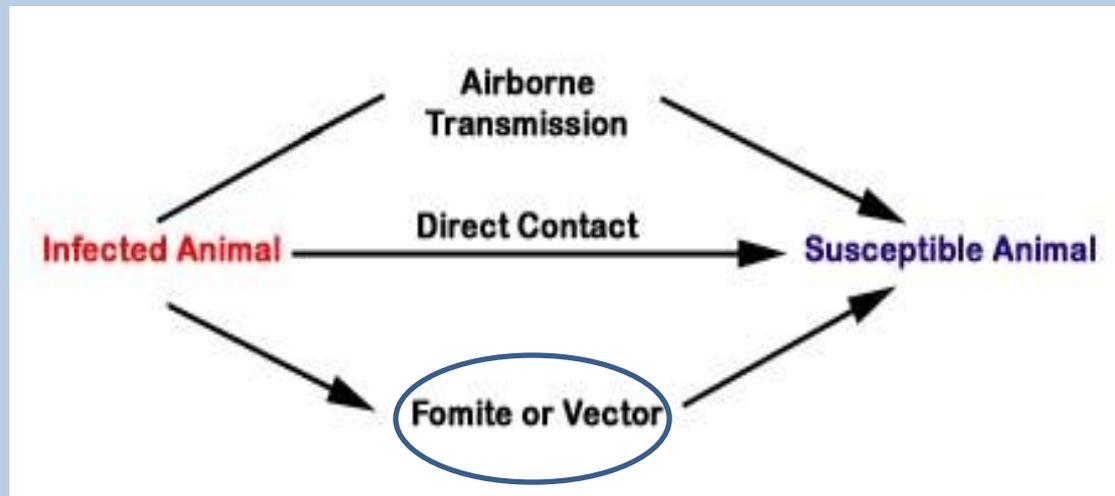
“The nicest thing about not planning is that failure comes as a complete surprise”



Sir John-Harvey Jones

# Transportation as an Attack Vector

An attack vector is a path by which a hacker gains access to a system to deliver a malicious outcome. Attack vectors exploit system vulnerabilities, transportation is a vulnerability.



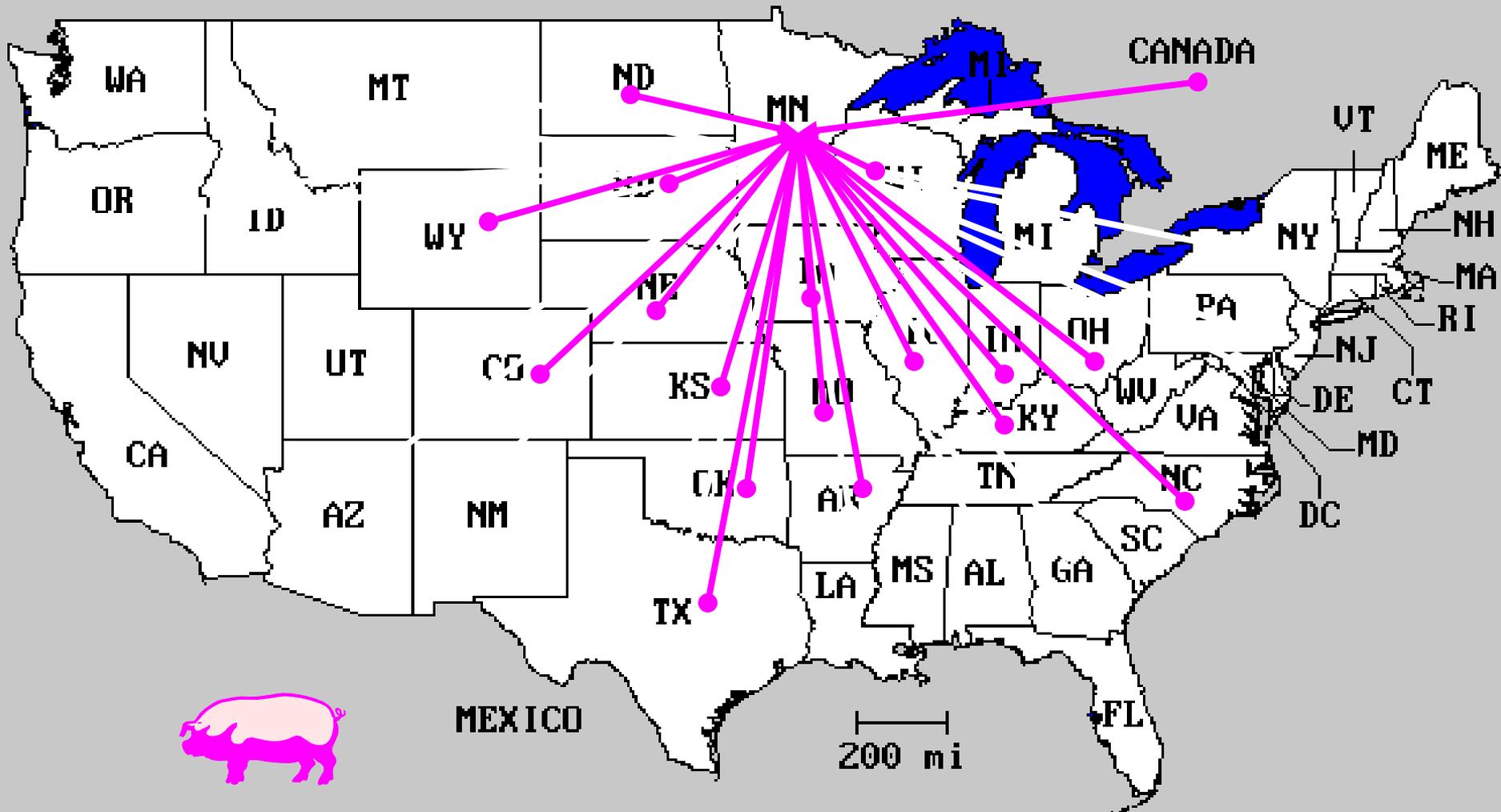


# FMD: 2001

**Lessons Learned: "How many animals move around the UK - how fast and how frequently."**

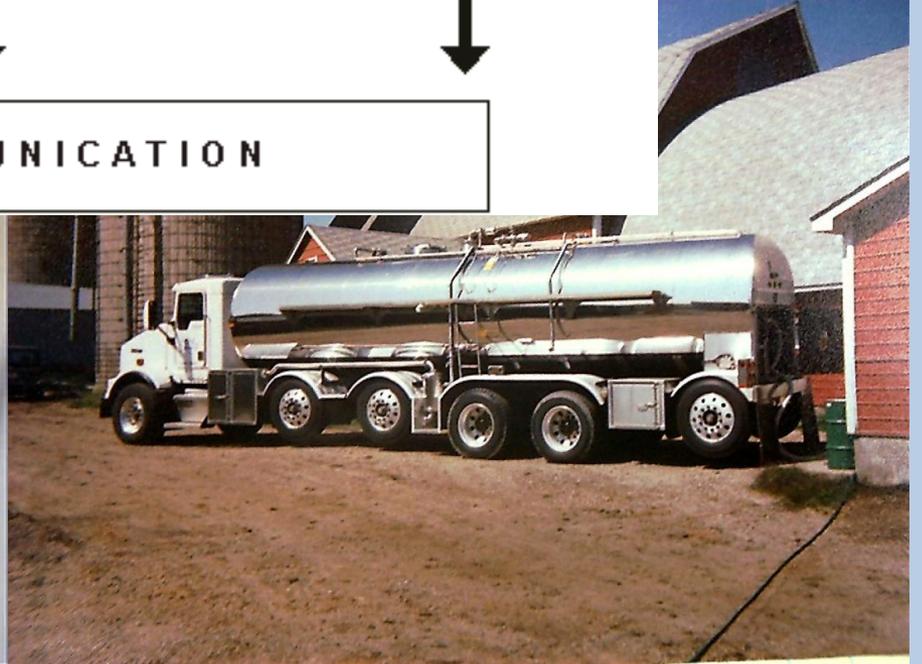


# 2005 Minnesota Live Animal Imports



# RISK ANALYSIS

- The evaluation of the likelihood of entry, establishment or spread of a pest or disease *and of the associated potential biological and economic consequences*



# ASSESSMENTS

## HPAI

- Liquid Pasteurized
- Liquid Non Pasteurized
- Shell
- Nest Run
- Hatching
- Day old chicks\*
- Shells and Inedible\*

## FMD

- Ready to eat pork products\*
- Milk\*

\* In process

The image shows the cover of a report. At the top left is the USDA logo. Below it, the text reads: 'United States Department of Agriculture', 'Animal and Plant Health Inspection Service', 'Veterinary Services', 'Centers for Epidemiology and Animal Health', and 'Center for Animal Disease Information and Analysis'. The address is '2150 Centre Avenue, Building B, Mail Stop 2W4, Fort Collins, CO 80526'. The title of the report is 'An Assessment of the Risk Associated with the Movement of Pasteurized Liquid Egg and Its Products Into, Within, and Outside of a Control Area during a Highly Pathogenic Avian Influenza Outbreak'. The date is 'October 12, 2007' and it was 'Updated January 20, 2009'. A pink box contains the text: 'Collaboration between the Egg Sector Working Group, the University of Minnesota's Center for Animal Health and Food Safety, and USDA:APHIS-VS:CEAH.' At the bottom, there are logos for 'VS Safeguarding Animal Health', 'United Egg' (with a red and white striped background), and 'UNIVERSITY OF MINNESOTA CENTER FOR ANIMAL HEALTH AND FOOD SAFETY' (with a red and white striped background).

USDA

United States  
Department of  
Agriculture

Animal and  
Plant Health  
Inspection  
Service

Veterinary  
Services

Centers for Epidemiology  
and Animal Health

Center for Animal Disease  
Information and Analysis

2150 Centre Avenue  
Building B, Mail Stop 2W4  
Fort Collins, CO 80526

An Assessment of the Risk Associated with  
the Movement of Pasteurized Liquid Egg  
and Its Products Into, Within, and Outside of  
a Control Area during a Highly Pathogenic  
Avian Influenza Outbreak

October 12, 2007

Updated January 20, 2009

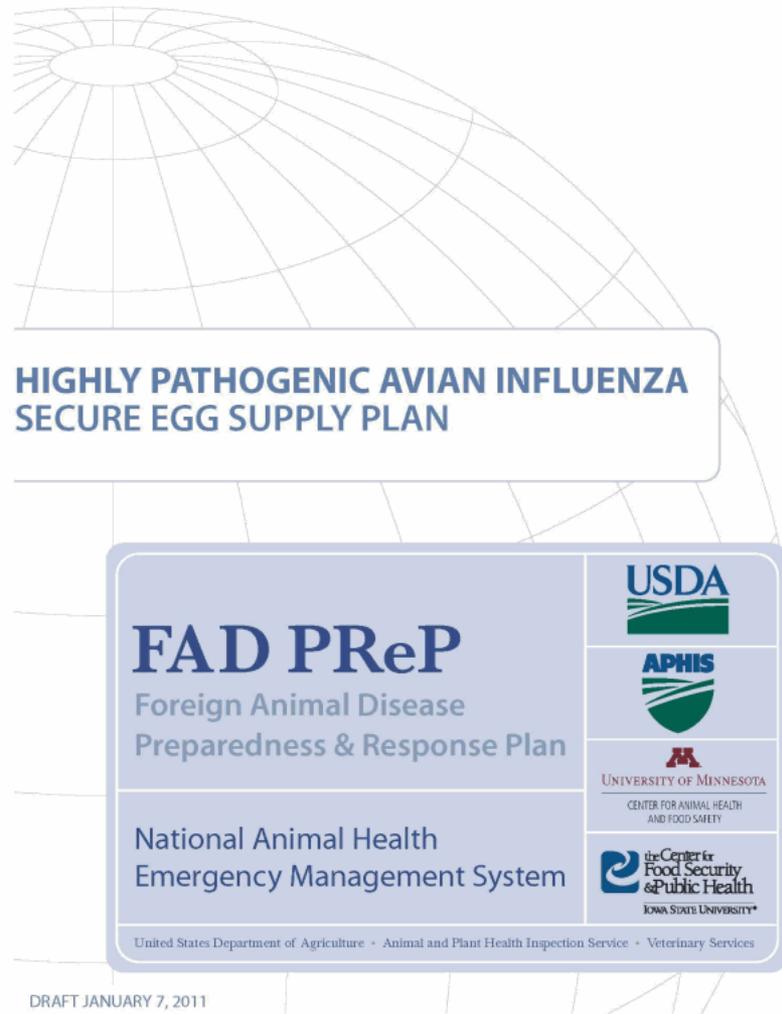
Collaboration between the Egg Sector Working Group,  
the University of Minnesota's Center for Animal Health  
and Food Safety, and USDA:APHIS-VS:CEAH.

VS  
Safeguarding Animal Health

UNITED EGG

UNIVERSITY OF MINNESOTA  
CENTER FOR ANIMAL HEALTH  
AND FOOD SAFETY

# PLANNING MATERIALS



## HIGHLY PATHOGENIC AVIAN INFLUENZA SECURE EGG SUPPLY PLAN

**FAD PReP**  
Foreign Animal Disease  
Preparedness & Response Plan

National Animal Health  
Emergency Management System

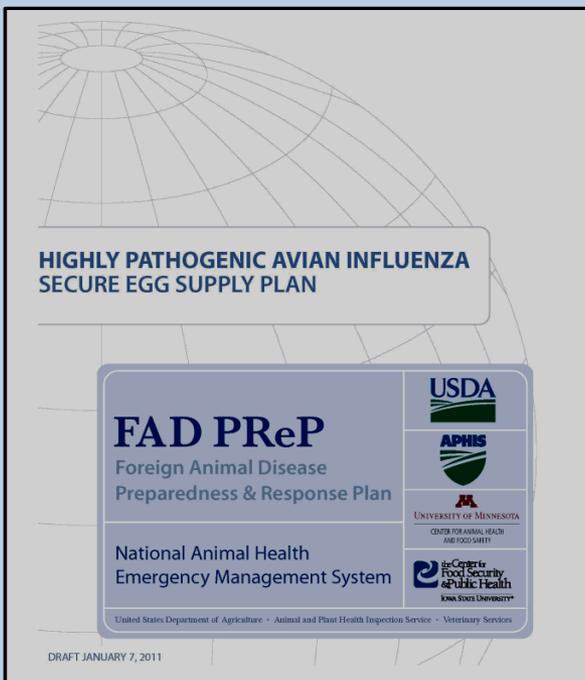


United States Department of Agriculture • Animal and Plant Health Inspection Service • Veterinary Services

DRAFT JANUARY 7, 2011

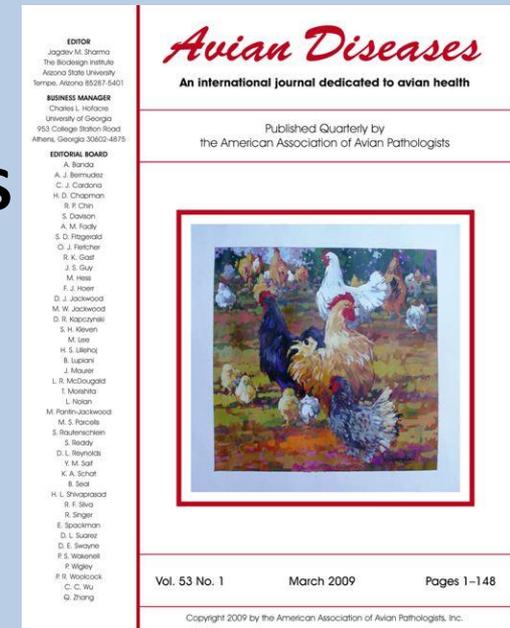
# COMMUNICATIONS

## PLANNING MATERIALS



<http://secureeggssupply.com/>

## PUBLICATIONS



AVIAN DISEASES 54:387-389, 2010

### Supporting Business Continuity During a Highly Pathogenic Avian Influenza Outbreak: A Collaboration of Industry, Academia, and Government

Morgan Hennessey,<sup>A</sup> Brendan Lee, Timothy Goldsmith, Dave Halvorson, William Hueston, Kristina McElroy, and Katherine Waters

University of Minnesota Center for Animal Health and Food Safety, 1354 Eckles Avenue, 136 ABL, St. Paul, MN 55108

Received 18 March 2009; Accepted and published ahead of print 10 June 2009

**SUMMARY.** Since 2006, a collaborative group of egg industry, state, federal, and academia representatives have worked to enhance preparedness in highly pathogenic avian influenza (HPAI) planning. The collaborative group has created a draft egg product movement protocol, which calls for realistic, science-based contingency plans, biosecurity assessments, commodity risk assessments, and real-time reverse transcriptase-PCR testing to support the continuity of egg operations while also preventing and eradicating an HPAI outbreak. The work done by this group serves as an example of how industry, government, and academia can work together to achieve better preparedness in the event of an animal health emergency. In addition, in the event of an HPAI outbreak in domestic poultry, U.S. consumers will be assured that their egg products come from healthy chickens.

# EDUCATIONAL MATERIALS: Students, Veterinarians, Industry, Public Health

Emerging and Exotic Diseases of Animals & Initial Accreditation Training

Course Home    Accred. Lessons    EEDA Lessons    Dz. Incursions    Scenarios

Home ▶ demo.Jan2011 ▶ Resources ▶ Risk Communication

- Contemporary Risk Comm.
- Audience
- Ongoing Process
- Stakeholder Mistakes

## Principles of Risk Communication

Introduction

<https://eeda.sws.iastate.edu/>

# http://www.fazdrisk101.com

The screenshot shows a Mozilla Firefox browser window with the address bar containing [http://www.fazdrisk101.com/documents/Module\\_1/](http://www.fazdrisk101.com/documents/Module_1/). The browser tabs include 'University of Minnesota Mai...', 'University of Minnesota', 'People Search : University of Minnesota', 'Course: Learn (Mostly) ...', 'University of Minnesota...', and 'University of Minnesota...'. The main content area displays a presentation slide with the following text:

## Risk Communicator Training

*For Foreign Animal & Zoonotic Disease Defense*

Module 1

### An Introduction to Risk Communication

FAZD CENTER  
"Where People and Animals Meet to Safely Share the World"

Slide 1 / 18 | Stopped 00:06 / 00:56

Module 1: An Introduction to Risk Communication

Outline	Thumb	Notes	Search
Slide Title			Duration
▶ Introduction			00:56
Developed By			00:15
Instructions			01:10
Learning Objectives			00:24
You cannot NOT com...			00:32
Different Skill Sets			00:31
Reflection			00:17
Risk Communication ...			01:06
Animal/Public Health ...			00:33
Information Sources			00:15
Risk Communication ...			00:31
Risk Communication ...			00:24
We Are All Risk Com...			00:43
Food System Risk Co...			00:19
Food System Risk Co...			00:08
Infernal Channels			00:05

9 Minutes 33 Seconds Remaining

[http://www.umn.edu/lookup?SET\\_INSTITUTION=UMNTC&CN=kennedy&f-ps-submit1=Search&type=name&campus=a&role=any](http://www.umn.edu/lookup?SET_INSTITUTION=UMNTC&CN=kennedy&f-ps-submit1=Search&type=name&campus=a&role=any)

5:59 PM 3/29/2011



## Introduction to the Principles of Risk Assessment for Highly Contagious Animal Disease Plan

National Center for Foreign and Zoonotic Disease Defense



## Introduction to the Principles of Risk Management for Highly Contagious Animal Disease Planning



## Introduction to the Principles of Risk Communications for Highly Contagious Animal Disease Planning

National Center for Foreign Animal and Zoonotic Disease Defense (FAZD Center)

Center for Foreign Animal Disease Defense (FAZD Center)

# SUMMARY

- EMERGENCY PLANNING CONSIDERATIONS
- IMPORTANCE OF COLLABORATION
- CONSEQUENCES OF FAD: health, economic, public
- COMMUNICATION
- EDUCATION

## **Funding**

Dept. Homeland Security  
Foreign Animal and Zoonotic Disease Center  
Center for Animal Health and Food Safety  
USDA APHIS

## **Collaborators**

Egg Industry  
Iowa State University

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