Authorized Personnel Course
Part 3

Transmissible Spongiform Encephalopathies (TSEs)
Fever Ticks
Foreign Animal Diseases (FADs)
Transmissible Spongiform Encephalopathies (TSEs)
Transmissible Spongiform Encephalopathies (TSEs)

- Bovine Spongiform Encephalopathy (BSE) – Cattle
- Scrapie – Sheep & Goats
- Chronic Wasting Disease (CWD) – Cervids
- Many more, fairly species specific
Clinical Definition

- **BSE**
  - neurological symptoms in adult cattle

- **Scrapie**
  - neurological symptoms in sheep/goats
  - chronic weight loss despite normal appetite

- **CWD**
  - neurological symptoms in deer, elk, others
  - emaciated animals
Bovine Spongiform Encephalopathy (BSE) in the USA

- Dec. 2003 – 1st case; 6-yr-old dairy cow; WA; imported from Canada in 2001
- Nov. 2004 – 2nd case; atypical; 12-yr-old beef cow; TX
- Feb. 2006 – 3rd case; atypical; 10-yr-old beef cow; AL
- April 2012 – 4th case; atypical; 10-yr-old dairy cow; CA
- July 2017 – 5th case; atypical; 11-yr-old beef cow; AL
- Aug. 2018 – 6th case; atypical; 6-yr-old beef cow; FL

“Atypical” = spontaneous form of disease
Importance of BSE

- Approximately 14% of U.S. beef production is exported
- Approximately 90% of the exports go to 4 countries (Japan, Korea, Mexico and Canada)
- U.S. beef exports dropped 80% in 2004
  - Estimated loss approximately $3 billion
- Effects on consumer confidence
- Ongoing surveillance in Texas slaughter plants
Scrapie Program in Texas

- Premise and animal identification
- Conduct genetic testing
- Testing of “suspects”
- Last detection in April 2016
  - Prior to that 2008
Chronic Wasting Disease (CWD)

Species Affected:
• White-tailed deer
• North American elk
• Mule deer
• Moose
• Sika deer
• Red deer
• Reindeer
• Hybrids of above species
Cervid Jurisdiction in Texas

• Indigenous species of cervids regulated by Texas Parks & Wildlife Department
  • White-tailed and mule deer

• Non-indigenous species regulated by TAHC
  • Elk, red deer, sika, axis

• CWD program in Texas is shared between both agencies
Chronic Wasting Disease (CWD)

• Disease Progression
  • July 2012 – Discovered in free-ranging mule deer in far West Texas
  • June 2015 – Captive white-tail deer herd Medina County, Texas
  • February 2016 – Free-ranging mule deer in Texas Panhandle
  • January 2017 - Free-ranging Texas white-tailed deer in Medina County
Chronic Wasting Disease (CWD)

- **Disease Progression**
  - May 2017 – Detected by antemortem testing in captive white-tailed deer herd
  - October 2017 – detected in elk located on high-fenced premises with common management as a property where white-tailed deer were previously confirmed to have CWD
  - December 2019 – detected in free-ranging white-tailed deer in Val Verde County, Texas
  - February 2020 – detected in captive white-tailed deer herd in Kimble County
TX CWD Check Stations/Zones
CWD Monitoring Program

- 190 cervid herds in TAHC program
  - Individual animal ID required
  - 100% mortality testing deer 12 months and older – after 5 years may allow interstate sales
  - Annual inventory and recordkeeping requirements

- 1100 herds in TPWD program
  - Only 20% mortality testing – can only sell within state
## Positive CWD TX Cases

*updated Sept 2020*

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CWD Sampling

• Obex portion of medulla oblongata
Chronic Wasting Disease (CWD)
Medial Retropharyngeal Lymph Nodes
TAHC Movement Requirements for CWD Susceptible Species

- Elk, red deer, sika, reindeer, moose
- 4 TAC 40.5 – outlines requirements
  - Individual animal ID
  - Mortality testing of animals 16 months and older
  - Annual inventory and recordkeeping requirements
  - Movement reporting requirements
Cattle Fever Tick Eradication Program
What is the Cattle Fever Tick?

- Rhipicephalus (Boophilus) microplus, and R. (B) annulatus, introduced by Spanish colonists
  - One-host tick
- Vectors for bovine babesiosis – "Cattle Fever"
Hosts Targeted by Fever Ticks

- Cattle are the most efficient host, but
  - horses
  - deer
  - exotics (e.g., Nilgai antelope) also sustain tick populations
Cattle Fever Tick Eradication Permanent Quarantine Area

- Del Rio to Brownsville
- Spans 8 counties
- Approx. 600 miles long
- 5 yards to 5 miles wide
Control Program - Quarantine Zone

• River, range inspection
• Livestock movement control
• Scratch, dip livestock
• Apprehend stray animals
• Systematic treatment of animals on infested premises
Control Program - Quarantine Zone
Control Program - Quarantine Zone
Foreign Animal Disease Response in Texas
Risks Unique to Texas Agriculture

- 20 land ports
- 9 seaports
- 4 international airports
- Top importer live animals - 1 million+ /year
- Texas borders 8 states
- 1,237-mile border with Mexico
Scenarios for Disease Introduction

- Accidental - through normal visitor activities and trade
- Intentional - result of a bio-crime or bioterrorist attack
- Response same for both scenarios (except for crime scene activities)
Foot-and-Mouth Disease (FMD) U.S. 1929
Foot-and-Mouth Disease (FMD)
United Kingdom FMD Outbreak 2001

• Failure to stop movement for three weeks allowed the disease to become widespread
• 6 million animals depopulated
• $6 billion+ (US) direct cost
• Estimated 60 suicides associated
Foot-and-Mouth Disease (FMD)

- Quarantines
- Roads closed, movement restrictions
- Inspection and disinfection at checkpoints
- Continuous improvement in traceability (animal ID)
Foot-and-Mouth Disease (FMD)

- Consumer fear
- Meat producers, processors, distributors, and retailers out of work
Most Important Foreign Animal Disease Threats to Texas

- Foot-and-Mouth Disease
- Classical Swine Fever (Hog Cholera)
- Heartwater Disease
- Screwworms
- Avian Influenza
- Fever Ticks
- Exotic Newcastle Disease
Conditions That Should Tip Off a Veterinarian of a Possible FAD:

• Central nervous system signs
• Presence of unusual ticks/maggots
• Vesicles/Blisters
• Sudden illness
• Sudden death
Foreign & Emerging Animal Disease (FEAD) Investigation and Response

Owner calls private veterinarian

Veterinarian investigates and calls TAHC

24 hours a day, 7 days a week
Call 1-800-550-8242
TAHC Vets Do FAD Investigations

• On call 24/7
• Will respond as needed
Report All Suspicious Animals

USDA-APHIS-VS
Austin
1-512-383-2400

Texas Animal Health Commission
1-800-550-8242
Foreign & Emerging Animal Disease (FEAD) Investigation and Response

• FAD Diagnostician (FADD) Assigned to the premises
  • Conducts investigation
  • Collects samples

• TAHC & USDA personnel respond & implement biosecurity protocols as appropriate
Diagnostic Infrastructure

- USDA/Plum Island, NY (FADDL)
- USDA National Veterinary Services Lab (NVSL) Ames, IA
- Texas A&M Veterinary Medical Diagnostic Lab (TVMDL)
Diagnostic Infrastructure

• Lab choice dependent on status of U.S.
• 1st case goes to Plum Island Lab
• Must have virus isolation to confirm
• Follow up samples may go to TVMDL
• National Animal Health Laboratory Network (NAHLN) in place
U.S./Texas Response Plan for an FAD/FMD

• Texas Office of Homeland Security & Division of Emergency Management
• Texas’ Foreign & Emerging Animal Disease (FEAD) Plan – Annex O
  • Uses state emergency management system
  • Outlines agencies’ responsibilities and tasks
  • TAHC/USDA/DPS are lead agencies
U.S. Highly Contagious Disease Response Plan Components

- Federal quarantine on interstate commerce
- Federal Emergency Declarations
- Industry input into policy development
- Incident Command System (ICS)
- State/Local Response structure intrastate

Concept of Operation
TAHC/USDA Area Command
Incident Command Post California END 2003
All emergencies & natural disasters are “local” problems FIRST!
County Animal Issue Committees

Local shelters, city, county, etc.
Animal Issue Committees – examine local vulnerabilities and prepare for those first!
Why is Animal Planning Needed?

• Animal issues are people issues
• Tex. Gov’t. Code §418.043 (11)
• State law, TDEM & TAHC help local jurisdictions plan for animal issues
• PETS Act
• Federal law amending FEMA Stafford act and requiring locals to plan for household pets
State Animal Response Plan Partners

- TX Division of Emergency Management
- Texas A&M AgriLife Extension
- TAMU CVM VET team
- Industry – TSCRA, ICA, TCFA, TxFB
- USDA VS, NRCS, AC
- Texas Veterinary Medical Association (TVMA)
- Texas Department of Agriculture
Hurricane Pre-Impact:

- Evacuation
- Shelter
- Interstate entry waivers
- Activation of Animal Response Operations Coordination Center (AROCC)
Hurricane – Post-Impact

- Re-entry
- Damage assessments
- Veterinary clinics
- Livestock facilities
- Displaced livestock
Hurricane – Post Impact

- Carcass disposal
- Animal health issues
- Dehydration, salt toxicity
- Displaced livestock ---- capture, shelter, owner ID
- Donations management
Veterinary Response Resources

- Texas A&M University College of Veterinary Medicine Veterinary Emergency Team (VET)
- United States Department of Agriculture Veterinary Services (USDA-VS)
- Emergency Management Assistance Compact (EMAC) or other mutual aid agreements; other states’ response teams (U of FL, OK State)
Role of Local Veterinarian

Community Planning:

• Participate in local emergency management activities:
  • Animal issues planning
    • Be engaged in local animal issues committee
      • Know the local Emergency Management Coordinator (EMC)
      • Shelter planning advisement
      • Be written into animal plans as a resource!
      • Understand EM system and where to go for help (ICS training)
      • Encourage client preparedness
  • Animal issues exercises
Role of Local Veterinarian

Community Response activities:
• Triage injured animals
• Treat animals, euthanasia decisions
• Support animal sheltering issues
• Reimbursed?
  • If you are identified as a county resource and involved in your area animal issues committee, you are more likely to be reimbursed.
Questions?