CANADA TAD FAD INVESTIGATION

MULTIPLE EROSIONS, ULCERS ON THE NOSE PAD
CANADA: CALF: HISTORY

- 2 WEEK OLD
- 2 CALVES OUT OF 40 AFFECTED
- ONLY ORAL LESIONS
- NORMAL TEMPERATURES
- EATING NORMALLY
- DRINKING NORMALLY
- Not lame: no hoof lesions
CANADA: CALF SPECIMENS COLLECTED

- Scrapings from oral lesions: submitted in Vesicular Transport Media
- Clotted Blood: Serum Red Top tube
- Blood-Unclotted: Purple Top (EDTA)
CANADA TAD  FAD INVESTIGATION

DIAGNOSIS

- CHEMICAL
- TRAUMA
- DERMATITIS
- FARM HAD A ROBOTIC FEEDER AND USED PHOSPHORIC ACID TO CLEAN LINES. A VALVE HAD STUCK OPEN AND PHOSPHORIC ACID WAS IN THE FEEDER NIPPLE
PEN SIDE TESTING with appropriate back up laboratory testing maybe useful
UK 2001 FIELD SURVEILLANCE
NEED A BETTER METHOD

THE FIRST THING I LOOKED FOR WAS A DOG TO RUN THE SHEEP

ON CLEAR DAYS USE A DRONE?
Techniques for Investigating Outbreaks of Livestock Disease

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Veterinarians in private or public practice are frequently asked to investigate outbreaks of livestock disease that appear unusual or that cannot be diagnosed readily. Frequently such investigations are requested after standard diagnostic or therapeutic procedures have failed to provide a satisfactory solution to the problem. Consequently, investigators may be required to reconstruct events after opportunities for necropsy, serologic tests, or agent identification have passed, and conclusions may be based on circumstantial evidence collected retrospectively.

In spite of these drawbacks, careful systematic investigation frequently provides information on which control measures can be instituted.

Objectives of Outbreak Investigations

The objectives of an investigation must be considered prior to its initiation. The objectives are to determine the cause(s), the sources (how the animals were exposed), and the extent of the problem and then to take immediate corrective actions and make recommendations to prevent recurrences.

These objectives are best achieved by systematically delineating the characteristics of affected and unaffected animals within the farm, recording, and analyzing the distribution of the disease with respect to time, place, and a variety of exposure factors and environmental influences. This analysis must be correlated with thorough physical examinations and necropsy findings from representative patients.

Procedures for Outbreak Investigations

The steps in an investigation are described herein. It begins with an interview with the owner or manager and the veterinarian. This is followed by an examination of the premises, examination of affected animals, then examination and necropsy of affected animals. The investigation is completed when data are assembled and conclusions and recommendations are presented.

Interview and Questionnaire—The interview identifies the ownership and location of the farm, clarifies the principal complaint, and evaluates the impact of the disease. Relatively early, the investigator must determine the attributes to be tabulated. These attributes are factors attributable to disease, i.e., disease-dependent variables. Attributes may be clinical signs, lesions, positive test results, events (such as abortion or death), or carefully defined syndromes. The attributes selected must be easily identified because the tabulations require that each animal on the premises be distinguishable as possessing or lacking each attribute. When the size or inaccessibility of the study population prohibits direct observation and complete tabulation of the attributes of each animal, a more accessible (but indirect) indicator of disease may be used. Thus, the impact and distribution of disease in large populations can sometimes be estimated from records of body weight gain, milk production, reproductive performance, drug and biologic use, hospital admissions, or "scratches" at race tracks.

The interview is best conducted with partially pre-coded questionnaires designed for the species involved. A single form is not ideal for all situations, but there are basic questions that must be asked, and blank space can accommodate other questions.

During the interview, the episode is oriented in time and space by establishing the location and identification of the first case (index case), the day when it was first recognized, the location, and the time and place of subsequent onsets. The source of replacement stock, vaccination programs, feeding programs, methods of crop or pasture fertilization, irrigation, insecticide applications, any changes in employees, and other possible exposure factors and their temporal relationship to the occurrence of disease must be recorded. The interviewer should inquire about illness among employees or their families and about similar diseases reported in the area.

The interview may last several hours. When possible, it yields a list of all animals on the farm. This process is sometimes called a line listing, and ideally it should include age, sex, breed, use, origin, location, feeding, and breeding status of each animal.

Examination of Premises—After the interview, the premises should be examined carefully. This should be done before the final diagnosis is determined, to prevent biasing the searching for factors substantiating the diagnosis. Examination of the premises involves examination of water supplies, pastures, and storage treatment of equipment, lubricants, chemicals, and fertilizers. It should include an evaluation of local geography, flow direction of streams, and location of well and location of adjacent properties. Information about adjacent properties should be obtained.

During examination of premises, subtle questioning should reveal what type of managerial practices are conducted and what changes, if any, have been instituted.

Examination of Healthy Animals—The examination of healthy animals should precede examination of sick animals, to avoid risk of spread of infection and to help avoid any that may develop after the investigator decides on a clinical diagnosis. Frequently the "healthy" animals are also sick, but if they are not, it should be...
Center for Food Security and Public Health-
Foot and Mouth Disease Information

- FMD Response
  - Phases & Types of an FMD Outbreak
  - FMD Vaccine Surge Capacity for Emergency Use in the US
  - The FMD Red Book
  - NAHEMS Guidelines on Continuity of Business
  - Appendix A – Vaccination for FMD
  - Inactivation of FMD Virus in Milk Products
  - FMD in Pigs- Progression of Lesions
Emerging and Exotic Diseases of Animals

- Web based course used at all US colleges of veterinary medicine
- Part of the USDA Initial Accreditation Program for veterinarians
- Each student receives a copy of a textbook of the same name
- Course and Textbook are available in Spanish and being used in Central America
- Future goal: Obtain funding to develop an OIE Day 1 Competencies web based course
The newest Edition has been updated and expanded. Includes information on disease response and disease management for both the U.S. and Canada. Chapter 1 takes a global approach to the veterinarian’s role in disease management. The 75 animal disease fact sheets have been updated. The book contains 260 annotated images for 59 diseases.
REFERENCES


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LESSONS LEARNED

- An experienced, trained, well equipped FAD / Emergency program staff at the Federal, State and local levels is critical to containing, controlling, eradicating an FAD.

- The support of private practitioners and US Military veterinarians is critical to this response.
LESSONS LEARNED

- Determining with any confidence the transboundary movement of an animal or zoonotic disease is very difficult.
- OIE is critical to worldwide animal disease surveillance and does an outstanding job.
- The means of introduction of many TAD animal diseases is undetermined.

Human vesicular stomatitis lesions
LESSONS LEARNED

- Several of these diseases are significant zoonotic diseases.
  - HPAI (H5N1), West Nile Virus, Screwworms, and Monkey Pox (END mild conjunctivitis)

- These diseases will require an enhanced “One Medicine” approach; with sharing of medical surveillance information as well as outbreak characteristics.

Screw worm larvae

Human

Screw worm infection
LESSONS LEARNED

- In cattle presenting with a vesicular disease there are several important differential diagnoses.

- They are all clinically similar

- Require rapid FAD investigation and lab confirmation
1987-2007: Approximately 10 major FAD /EID entered the USA - 32 individual disease FAD events. Few have been traced to origin.
LESSONS LEARNED

The historical partnership:

- USDA
- US Military
- other US Government Agencies
- State Animal Health Officials
- Universities
- Private veterinarians / Industry
- “One Medicine” approach: ESSENTIAL!
WITH FMD EXPECT *****
THE UNEXPECTED.
YOU DO NOT NEED A SLEDGE HAMMER TO DRIVE A TACK
use appropriate measures to complete the task at hand

GLOBAL FMD CONTROL
Simultaneous Event??

Foot and Mouth Disease

Vesicular Stomatitis Virus

Bluetongue
A VACCINE IS JUST ONE TOOL IN A TOOL BOX
■ Vaccine: availability, amount, price.
■ Assets: vaccination crews
■ Record keeping
■ I am still looking for the 1995/1996 VSV USDA vaccination records.
Vaccination program requirements

- Need a well serviced animal health program
- Will require assets- bodies
- Training
- Vaccination protocol
- You may need a more organized VS in a vaccination program than in a cull program.
MARKETING OF NATIONAL VETERINARY MEDICINE
CONTACT INFORMATION

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Credits

- Tim Allen, Timothy: BS, MLS: USDA
- Amass, Sandra: DSVM, PhD: Purdue University
- Apicelli, Katherine: USDA/ DHS
- Ashford, David: DVM, PhD: USDA
- Brown, Corrie: DVM, PhD, University of Georgia
- Dussault, Clement: DVM- USDA
- Paula Cowen, USDA, APHIS, VS
- Lea Master, Bradley DVM, PhD: USDA
- Teachman, Mark: DVM, USDA
- Thurmond, Mark: DVM, PhD- UC Davis
- White, William: DVM, MPH: USDA
- Joseph Annelli, USDA, APHIS, VS
- Jon Zack, USDA, APHIS, VS
My sincere apologizes if I have overlooked anyone in the Credits
THE END: ANY QUESTIONS