

American Association of Extension Veterinarians

# 20<sup>th</sup> Annual Applied Animal and Public Health Research and Extension Symposium

3:00PM – 6:00PM (Central US Time) Sunday, October 13, 2024

Location: Hermitage A

Chair: Lew Strickland, Co-Chair: Tyler Jumper

## Agenda

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| <b>3:00-3:05 - Introduction</b>                                | <i>Intro to the AAEV Symposium</i><br>Carla Huston, AAEV Treasurer   |
| <b>3:05-3:20 – Presentation</b><br><b>3:20-3:25 – Q&amp;A</b>  | <i>Survey of veterinarians suggests knowledge gaps regarding animal disposal following pentobarbital euthanasia of animals</i><br>Mike Murphy, AVMA and Emily Cornwell, FDA                    |
| <b>3:25-3:40 – Presentation</b><br><b>3:40-3:45 – Q&amp;A</b>  | <i>Unmasking Johne's Disease: Illuminating Diagnostic Strategies and Trends for Small Ruminant Stakeholders</i><br>Craig McConnel, Washington State University                                 |
| <b>3:45-4:00 – Presentation</b><br><b>4:00-4:05 – Q&amp;A</b>  | <i>Addressing On-Farm Antimicrobial Drug Use Practices through A Community of Practice-Based Approach- A Case Study.</i><br>Rosie Busch, University of California-Davis                        |
| <b>4:05-4:20 – Presentation</b><br><b>4:20-4:25 – Q&amp;A</b>  | <i>Antimicrobial Stewardship Education for Companion Animal Practices in Iowa</i><br>Jenna Bjork, Iowa State University  |
| <b>4:25-4:40 – Presentation</b><br><b>4:40-4:45 – Q&amp;A</b>  | <i>Unveiling the Unseen: Unraveling the Factors Influencing a Veterinary Practitioner's Decision to Protect Themselves from Zoonotic Infections.</i><br>Nichelle Jasper, University of Georgia |
| <b>4:45-5:00 – Presentation</b><br><b>5:00-5:05 – Q&amp;A</b>  | <i>Biosecurity and preventing influenza transmission at agricultural fairs</i><br>Marie Culhane, University of Minnesota   |
| <b>5:05-5:20 – Presentation</b><br><b>5:20-5:25 – Q&amp;A</b>  | <i>Enteric Zoonoses Prevention Strategies guided by Trends in Animal Contact Behavior and Attitudes</i><br>Marisa Wong, CDC  |
| <b>5:25-5:40 – Presentation</b><br><b>5:40- 5:45 – Q&amp;A</b> | Andrea Beam USDA-NAHMS   |
| <b>5:45-6:00 – Presentation</b>                                | <i>Now on Video: Answers to Hard Questions about Foreign Animal Disease Response (pre-recorded)</i><br>Julie Smith, University of Vermont  |

Please look for the 21<sup>st</sup> Annual AAEV Symposium in October 2025 in Denver, CO.

## **Survey of veterinarians suggests knowledge gaps regarding animal disposal following pentobarbital euthanasia of animals**

W. Hess<sup>1</sup>, N. Kollias<sup>1</sup>, L. Pikel<sup>1</sup>, C. Johnson<sup>1</sup>, **E. Cornwell<sup>2</sup>**, G. Golab<sup>1</sup>, S. Bright-Ponte<sup>2</sup>, N. Bataller<sup>2</sup>, and **M. Murphy<sup>1</sup>**

<sup>1</sup>American Veterinary Medical Association, Schaumburg, Illinois

<sup>2</sup>U.S. Food and Drug Administration Center for Veterinary Medicine, Rockville, Maryland

Veterinarians, animal owners, and the animal food industry share responsibility to properly dispose of euthanized animals to prevent pentobarbital from entering the animal food supply. To better understand current veterinary practices regarding disposal of animals following pentobarbital euthanasia, the FDA Center for Veterinary Medicine (CVM) and the American Veterinary Medical Association (AVMA) conducted a survey of AVMA members on euthanasia and subsequent disposal practices to inform veterinary outreach efforts. This presentation focuses on results of the survey and outreach efforts.

The survey was conducted over a three-week period in 2021 and consisted of an email sent to a stratified random sample of 16,830 AVMA member veterinarians. The sample was stratified by species to ensure adequate species coverage. 2,093 veterinary responses representing 6,617 species responses were received. Analyses reported today were performed based on whether respondents reported euthanizing only food-producing species or both food and nonfood-producing species, location of practice, time since veterinary school graduation, and other factors.

Veterinarians reported using pentobarbital for euthanasia of all species. Some veterinarians reported using or recommending rendering as a carcass disposal method following pentobarbital euthanasia. Rendering is not an appropriate disposal method after pentobarbital euthanasia because of the potential for adulteration of the animal food supply. More than half of veterinarians reported agreeing or strongly agreeing that they explain the method of euthanasia to their client (74%) and that they advise their clients on disposal based on the euthanasia technique selected (69%). Some veterinarians reported a lack of familiarity with local and state laws (18%) or with federal laws (22%) surrounding use of pentobarbital for euthanasia and carcass disposal. More than half (51%) of veterinarians reported that they never or sometimes discuss with clients that use of pentobarbital to euthanize animals raises a concern for rendering the carcass.

The survey results suggest that veterinarians may benefit from additional education, outreach, and resources regarding proper disposal of pentobarbital-euthanized animals to prevent adulteration of the animal food supply and to address environmental concerns. As a result, AVMA and FDA-CVM are working on multiple resources and educational opportunities for veterinarians.

## **Unmasking Johne's Disease: Illuminating Diagnostic Strategies and Trends for Small Ruminant Stakeholders**

**L Bermudez-Koch, M Holahan, C Burbick, LBA Williams, K Poonsuk, CS McConnel**

**College of Veterinary Medicine, Washington State University, Pullman WA 99164**

Johne's disease (*Mycobacterium avium* subspecies *paratuberculosis*; MAP) is an underdiagnosed but clinically important disease affecting domestic goat and sheep herds worldwide. Determining a diagnostic testing strategy has proved challenging for small ruminant producers and veterinarians due to infrequent/intermittent shedding, subtlety of clinical signs, and lack of producer awareness. To understand Johne's disease and diagnostic trends, Washington Animal Disease Diagnostic Laboratory (WADDL) small ruminant submissions from May 2015 to June 2024 were evaluated. Within this timeframe, 105,404 samples were submitted for Enzyme-Linked Immunosorbent Assay (ELISA), and 1,004 samples were submitted for fecal Polymerase Chain Reaction (PCR). Ten samples were submitted to outside laboratories either for Agar Gel Immunodiffusion (AGID) or MAP fecal culture. Analysis of ELISA test results revealed an apparent animal prevalence of 1.0% (966/95,136) within domestic goat submissions, and 3.2% (330/10,268) within domestic sheep submissions. Prevalence based on PCR results was 10.8% (99/916) within domestic goats and 2.3% (2/88) within domestic sheep. Between May of 2015 and June of 2024, WADDL sequentially utilized two commercial MAP ELISA tests: IDEXX, and VMRD. IDEXX was utilized from May 2015 - October of 2023, and VMRD from October of 2023 - present day. A Chi-Squared test revealed differences in apparent prevalence ( $p < 0.0001$ ) when comparing results from goat samples using either IDEXX (0.73%; 646/88,826) or VMRD ELISAs (5.1%; 320/6,310). Similar differences ( $p < 0.0001$ ) were found when comparing results from sheep samples using either IDEXX (2.4%; 224/9,154) or VMRD ELISAs (9.5%; 106/1,114). A subpopulation of goat samples ( $n=270$ ) of unknown MAP infection status tested with both IDEXX and VMRD ELISAs showed little agreement ( $\kappa = 0.15$ ) between the two tests. A prospective study on herds with a known MAP infection status is necessary to fully delineate test characteristics of commercial ELISAs within a field setting. Uncovering Johne's disease trends, prevalence, and test performance will provide valuable insights to more efficiently diagnose and manage Johne's disease in small ruminants.

## **Addressing On-Farm Antimicrobial Drug Use Practices through A Community of Practice-Based Approach- A Case Study.**

R.C. Busch<sup>1</sup>, B.M. Karle<sup>2</sup>, C.L. Meehan<sup>1</sup>, M.H. Smith<sup>1</sup>

<sup>1</sup>UC Davis Veterinary Medicine Extension

<sup>2</sup>UC Cooperative Extension

Decision-making by farm employees is often influenced by previous experience, risk aversion, and costs, sometimes resulting in a disconnect between the expectations of a prescribing veterinarian and the actions of the end users. Innovative approaches that seek to understand and acknowledge individuals' values, social trust, and personal experience are needed to effectively empower decision makers on farm. Communities of practice (CoPs) are structured networks of peers and represent a model for professional development whereby groups of individuals work toward shared goals. Learning within CoPs occurs within the context of social relationships with other members of the CoP who have similar, if not identical, issues and concerns. The objective of our project was to implement a community of practice-based approach to serve as a transferable model to help influence farm employee decision-making behavior change towards judicious use of antimicrobials on participating farms. In Northern California, two CoPs were implemented on a 1,900-cow California dairy and one CoP on a commercial sheep outfit with 10,000 breeding ewes (the subject of this case study). Members of the project team served as facilitators for a series of six meetings with employees responsible for daily health and well-being of the animals. Each meeting focused on current challenges and successes and employees were encouraged to take the lead to guide the informal discussion and identify possible solutions. The CoP had 10 participants and reported increased confidence in their ability to share ideas and improved awareness of chronic conditions that do not respond to antimicrobial treatments. Challenges with biosecurity practices were addressed and a new method for identifying high risk ewes was implemented. In the short term, no changes in antimicrobial use were reported, but CoPs, especially when implemented as short, direct meetings may be an effective method to improve employee engagement on farms.

## **Antimicrobial Stewardship Education for Companion Animal Practices in Iowa**

J. Bjork<sup>1</sup>, A. Hennenfent<sup>2</sup>, and K. Rumsey<sup>3</sup>

<sup>1</sup>Iowa State University Center for Food Security and Public Health

<sup>2</sup>Iowa Department of Health and Human Services

<sup>3</sup>Iowa Department of Agriculture and Land Stewardship

Antimicrobial stewardship, as defined by the American Veterinary Medical Association, is “the actions veterinarians take individually and as a profession to preserve the effectiveness and availability of antimicrobial drugs through conscientious oversight and responsible medical decision making while safeguarding animal, public, and environmental health.” Responsible use of antimicrobials requires action by all sectors of health care and veterinary medicine, including companion animal practices. Various guidelines and resources are currently available but not readily accessible to veterinary personnel in a concise format. The goal of this project was to create an online resource to provide a “one-stop-shop” for small animal practices in Iowa. Through a collaborative partnership between the Center for Food Security and Public Health, Iowa Department of Health and Human Services, and Iowa Department of Agriculture and Land Stewardship, six project outcomes were delivered: 1) resource review, 2) Summit workshop, 3) webpage ([Antimicrobial Resistance](#)), 4) newsletter article, 5) educational materials, and 6) educational webinar. To fit the project’s timeframe and budget, three educational materials were developed:

- Instructional Guide for AMS Champions: a four-page pdf with customized graphics and conversational tone to invite veterinary personnel to develop an AMS Program
- AMS Program Template for Companion Animal Veterinary Practices: an 18-page Word document for AMS Champions to easily download and customize for their practice’s unique characteristics and needs, including linked resources, handouts, and worksheets
- AMS Program Slide Deck: a 20-slide PowerPoint presentation complete with graphics and speaker notes for AMS Champions to customize, if needed, to educate and motivate their coworkers to implement AMS Program activities

Over the course of 15 months, this project helped raise awareness of antimicrobial stewardship and fill a gap for veterinary personnel in Iowa and beyond. Overall, feedback has been positive on the developed educational resources. This project serves as an excellent example of collaboration across academic and government agencies.

## Abstract

### **Unveiling the Unseen: Unraveling the Factors Influencing a Veterinary Practitioner's Decision to Protect Themselves from Zoonotic Infections. A Qualitative Study.**

N. V. Jasper, B. A. Burgess

Department of Population Health, College of Veterinary Medicine, University of Georgia, Athens, GA

Although veterinary personnel frequently have close contact with animals of unknown health status, they tend not to take appropriate precautions to prevent zoonotic infections. In an effort to clarify this phenomenon, in 2021, we conducted a pilot study of three food animal veterinarians practicing in the Caribbean. This initial work highlighted that when making decisions relative to the use of personal protective equipment (PPE), veterinarians practice situational risk assessments that are influenced by their knowledge of common diseases in the region, the climate and/or environment, and the availability of PPE. Further, it became apparent that decisions tended to occur after the initial animal interaction, thereby reducing the effectiveness of PPE. Therefore, the objectives of this study were to 1) further explore field animal practitioners' perceptions about zoonotic disease exposure and their risk of infection and 2) identify factors influencing veterinarians' willingness to take appropriate precautions.

A mixed-method cross-sectional survey was administered to evaluate perceptions among currently practicing United States veterinarians who identified as equine and/or food animal field practitioners. The online survey (Survey Monkey®) of closed and open-ended questions asked participants about their demographics, perceptions of zoonotic risk and risk assessment, typical infection control practices, and barriers to taking precautions. Descriptive statistics were used to characterize the data collected. Thematic analysis of open-ended questions was conducted using NVivo® software.

We anticipate a consensus among participants on the importance of zoonotic disease exposure risk. However, we expect to uncover a range of responses to case scenarios, revealing the diversity in practitioners' perceived level of risk and infection control decision-making. In particular, we foresee a spectrum of opinions regarding the appropriate level of PPE required for field practice, underscoring the complexity of this issue.

The results of this study will demonstrate that while field practitioners have a general awareness of their exposure to zoonotic disease, the perceived risk level will not be consistent across practitioners. This suggests that without employing 'standard' infection control practices, individual perceptions may lead to varying levels of exposure and preventable zoonoses in practitioners.

## **Biosecurity and preventing influenza transmission at agricultural fairs**

A Schuff<sup>1</sup>, D DeWitte<sup>1</sup>, S Schieck-Boelke<sup>1</sup>, C Cardona<sup>2</sup>, and M Culhane<sup>2</sup>

University of Minnesota (UMN) College of Extension<sup>1</sup> and College of Veterinary Medicine<sup>2</sup>

Biosecurity principles include strategies that prevent contact directly and indirectly with other animal populations. Livestock and poultry fairs and exhibitions bring animals together from various sources which contradicts conventional biosecurity. Although fairs and exhibitions involve small numbers of animals relative to commercial production, outbreaks in exhibitors have far-reaching impacts. Before addressing how to limit H5 IAV transmission at agricultural fairs, we first visited Minnesota (MN) county fairs to determine the current knowledge and awareness levels of disease prevention and/or biosecurity. At each visit, we recorded: Where and how many biosecurity signs seen? Was biosecurity information in more than one language? How many handwashing stations seen? Is hand sanitizer available at the fair? Is there species-specific biosecurity educational information posted in the barn? Is there general biosecurity or personal hygiene educational information posted in the barn? Are there handwashing signs posted at food venues? Were there any biosecurity lapses? In August, 2024, 44 county fairs and the State Fair were held in MN, and MN Extension and VetMed personnel visited more than six by month's end. English was the only language used to convey biosecurity information. Signage was very often general and posted in inconspicuous places. Handwashing stations were plentiful outside the barns, with four as the average number of sighted. Only half of the fairs had hand sanitizer readily available, with few options for hand sanitation inside barns. Only poultry barns had species-specific signage consisting of handwritten DO NOT TOUCH signs placed on individual cages. The surveys support our belief that to prevent infection of new individuals and species as a result of fair exposure, basic knowledge needs to be shared in more than one language, in all barns both generally and specifically for each species. To this end, workshops are being designed that will improve essential knowledge and skills to foster a generation of well-informed individuals at exhibitions. When successful, fair boards will be better equipped to identify potential risks and implement effective solutions in event planning for the immediate and long-term future. This dual approach will foster a safer environment at events where people and animals intersect.

## Enteric Zoonoses Prevention Strategies guided by Trends in Animal Contact Behavior and Attitudes

M. Wong<sup>1,2</sup>, G. Vahey<sup>1</sup>, G. S. Stapleton<sup>1</sup>, K. Werner<sup>1,2</sup>, M. Ablan<sup>1</sup>, K. Benedict<sup>1</sup>

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**Background:** Animal contact-associated enteric diseases cause about 450,000 illnesses and 5,000 hospitalizations in the United States annually. Outbreaks linked to animal contact disproportionately affect young children, representing a population at increased risk for severe illness. Some racial and ethnic groups are over-represented in outbreaks linked to specific animals. This presentation describes trends in animal contact behaviors and attitudes guided by results of quantitative data collection and identifies prevention strategies for those disproportionately affected by enteric zoonoses.

**Methods:** We used weighted, nationally representative data from Porter Novelli surveys of different U.S. populations to describe attitudes and behaviors towards animal contact. In 2021, U.S. Hispanic adults were asked about turtle ownership. In 2023, U.S. adults were asked about turtle ownership and settings of backyard poultry contact; additionally, parents with children under 18 were asked about their attitudes towards their children interacting with animals and their preferred information sources about child safety around animals. We tabulated data across variables to identify animal contact trends among populations of interest.

**Results:** Twenty percent (201/1,000) of Hispanic adults reported currently or previously owning a small turtle, compared with 13% (720/5,455) of U.S. adults. Hispanic adults reported using television news (59%; 592/1,000) and posts on Facebook and X (Twitter) (40%; 404/1,000) as preferred daily news sources. Of 2,178 U.S. adults who reported contact with poultry in the last year, 793 (36%) made contact at their residence. Sixty-five percent of parents reported involving their children in feeding and watering pets, and 45% preferred receiving information about child safety around animals from veterinarians.

**Conclusions:** Hispanic people are exposed to *Salmonella* through small turtle ownership at a higher proportion than other populations, many adults have contact with poultry at home, and parents seek child safety information from veterinarians. As trusted sources of information, extension veterinarians can leverage CDC resources to raise awareness among Hispanic people about the risks of small turtle ownership and disseminate messaging for backyard poultry owners, especially for households including young children. Further disseminating CDC resources through locally relevant platforms could improve communication for populations at highest risk of enteric zoonoses.



## **Now on Video: Answers to Hard Questions about Foreign Animal Disease Response**

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In the event of an incursion of a high-consequence pest or disease of food animals, those with affected animal species will be seeking answers to many questions, including the response strategies that are being used. Currently, there are limited materials about animal disease response strategies such as movement control, depopulation, and enhanced biosecurity that are easily accessible to those raising agricultural animals or to their advisors. This project, funded by the National Animal Disease Preparedness and Response Program, will develop 11 animated informational videos addressing these and related topics as short YouTube videos. The project team developed the scripts and incorporated revisions suggested by subject matter experts from across the United States. A digital media agency was contracted to create the videos, which will be accessible through the Healthy Farms Healthy Agriculture website (<https://healthyagriculture.org>) and YouTube channel. We expect Extension personnel, academic instructors, private veterinary practitioners, and government veterinarians to find these materials helpful for understanding and communicating about challenging topics associated with preparedness for foreign and emerging animal diseases. We intend for the videos to be useful across multiple livestock species including cattle, small ruminants, pigs, and poultry and to help foster collaboration between affected sectors and responders.