Report of the USAHA/AAVLD Committee on Food and Feed Safety
Chair: Patrick McDonough, NY
Vice Chair: Craig Shultz, PA

David Ailor, DC; Chris Ashworth, AR; James Averill, MI; Deanna Baldwin, MD; Adrienne Bautista, CA; Richard Benton, MS; Karyn Bischoff, NY; Richard Breitmeyer, CA; Deborah Brennan, MS; Dwight Bruno, NY; Beverly Byrum, OH; Jim Collins, GA; Wendy Cuevas-Espelid, GA; Glenda Davis, AZ; Ignacio dela Cruz, MP; Kathy Finnerty, MA; Mallory Gaines, DC; Tam Garland, TX; Robert Gerlach, AK; Chelsea Good, MO; Laura Goodman, NY; Jerry Heidel, OR; Douglas Hepper, CA; Joseph Hill, GA; Susanne Hinkley, NE; Christine Hoang, IL; Donald Hoenig, ME; Clyde Hoskins, SC; Danny Hughes, AR; John Huntley, WA; Doreene Hyatt, CO; Ellen Kasari, CO; Susan Keller, ND; Joe Kendall, AB; Hailu Kinde, CA; Jennifer Koeman, IA; T.R. Lansford, TX; Dale Lauer, MN; Elizabeth Lautner, IA; Arthur Layton, MT; Tsang Long Lin, IN; Laurent O'Gene Lollis, FL; Bret Marsh, IN; David Marshall, NC; Katherine McNamara, VT; David Meeker, VA; Shelley Mehlenbacher, VT; Brenda Morningstar-Shaw, IA; Nicole Neeser, MN; Gene Niles, CO; Sandra Norman, IN; Ogi Okwumabua, WI; Kenneth Olson, IL; Stephanie Ostrowski, AL; Lanny Pace, MS; Elizabeth Parker, TX; David Pyburn, IA; John Ragan, MD; Lisa Ramsey, VA; Renate Reimschuessel, MD; Grant Rezabek, OK; M. Gatz Riddell, Jr., AL; Joni Scheftel, MN; David Schmitt, IA; Kathryn Simmons, DC; Harry Snelson, NC; Stan Stromberg, OK; Larry Thompson, MO; Bob Tully, KS; Shauna Voss, MN; Liz Wagstrom, DC; Doug Waltman, GA; Robert Wills, MS; Nora Wineland, MO.

The Committee met on October 25th 2015 at the Rhode Island Convention Center in Providence, Rhode Island from 1:30 pm until 5:30 pm. There were 23 members and 24 guests present. Dr. McDonough welcomed the attendees and reviewed the purpose of the committee, i.e., "the purpose of the joint USAHA/AAVLD Committee on Food and Feed Safety is to provide a national forum to discuss current and emerging issues and information pertaining to all aspects of food and feed safety and related veterinary diagnostic testing of foods of animal origin. The Committee should recommend food and feed safety policies to protect animal and human health."

Salmonella in dogs and cats (symptomatic/asymptomatic prevalence) 2012-2014: A survey conducted by 11 Vet-LIRN laboratories
Dr. Renate Reimschuessel VMD, PhD, Director Vet-LIRN, DHHS/FDA/CVM/OFVM/CVM/OR

Some *Salmonella* outbreaks in humans have been linked to dog food according to the Centers for Disease Control and Prevention. The FDA wanted to determine the impact of *Salmonella* on pets and also the background prevalence in dogs and cats. They developed a case definition for clinically ill dogs and cats as an animal with diarrhea presented to their veterinarian by their owner. The FDA enlisted eleven Vet-LIRN laboratories to participate in a project to explore *Salmonella* in companion animals. First they harmonized a method for culturing *Salmonella* from companion animal feces. The study determined that the overall background prevalence for *Salmonella* was 2.5% for dogs (60 of 2422) and 0.6% for cats (3 of 542). Almost half of the *Salmonella* positive dogs were asymptomatic. The *Salmonella* serotypes found in cats were *S.* Javiana, *S.* I 4,5,12:i: -, and *S*. Infantis. While over 30 serotypes were found in dogs, the four most frequently isolated serotypes were *S*. Newport, *S*. Enteritidis, *S.* Javiana, and *S*. Infantis. When looking at the top seven *Salmonella* serotypes found in dogs (n= 2422 samples) versus humans (n = 49004 samples in 2012), they found similar serotypes, i.e., dogs (*S.* Newport, Enteritidis, Javiana, Infantis, Montevideo, Typhimurium, and Albany), and humans (*S.* Enteritidis, Typhimurium, Newport, Javiana, 1 4,5,12:1:-, Montevideo, and Infantis).

Most *Salmonella* isolates were pan-susceptible when antimicrobial susceptibility testing was performed.

Salmonella positive dogs were more likely to have eaten raw food or a probiotic than negative dogs, and very young dogs or very old (for breed) may be more at risk to become positive. When assessing temperature effects, they determined that during times of warmer temperatures (80F), there were a higher percentage of positive dogs.

Canine Urine Fanconi Panel Results in Association with Jerky Pet Treat Ingestion

Dr. Renate Reimschuessel, Director Vet-LIRN, DHHS/FDA/CVM/OFVM/CVM/OR

Since 2007, over 5,000 reports of pet illness associated with jerky treats. Clinical signs in dogs included vomiting, diarrhea, lethargy, decreased appetite, increased thirst and increased urination.

So what is Fanconi Syndrome (FS)? FS is a defect in a part of the proximal convoluted tubules of the kidneys. This defect is rare in dogs, i.e., it has a genetic component in Basenji's and in Labrador Retrievers. The patient often has a normal blood glucose but because of the kidney tubule defect, the dog will lose glucose in their urine or glucosuria. This is how veterinarians in practice usually diagnose Fanconi syndrome. The kidney tubule defect may also be acquired, i.e., common causes are exposure to ethylene glycol, grapes/raisins, Leptospira, drugs (Aminoglycosides-gentamicin, amikacin, expired tetracycline's, sulfonamides, polymyxins, chemo Rx-cisplatin, methotrexate, doxorubicin), and heavy metals (lead, mercury, copper, cadmium, and chromium).

In 2012, the Vet-LIRN began collaborating with owners and veterinarians across the country to collect diagnostic samples from dogs with a variety of illnesses (not just FS) following jerky pet treat (JPT) consumption. In other words, not just the 4-5% of dogs with reported FS. A variety of samples and tests were coordinated, e.g., serum chemistries, fecal cultures, urinalysis, urine Fanconi panel, Raman, Leptospira serology, DNA analysis. This list is not exhaustive, and they performed many other types of tests (EM, IHC, Heavy Metals, BGA, Alpha Amanitin) on the over 400 active cases that they currently investigate. The results of necropsy exam of 82 deaths reported to FDA indicate that 42 of these were not related to jerky consumption. Thirty three dogs died of renal problems, 2 of liver disease and 4 of gastrointestinal problems. They are having further diagnostics done on the renal cases to get a better idea about the nature of the kidney lesions and to better understand the etiologies that may be involved. In 2012, Vet-LIRN in collaboration with the University of Pennsylvania's PennGen Metabolic Genetics Laboratory, began testing a variety of dog breeds with various illness types using an established urine Fanconi panel. Their goal in using the PennGen panel is to better characterize the occurrence of FS associated with JPT exposure, determine the time course of recovery, and also potential predisposing factors to FS.

The Vet-LIRN tested seven times more dogs from breeds weighing less than 30 pounds based on reports FDA receives. Dogs form breeds weighing < 30 lbs. test positive at higher rates than dogs weighing more than 3 pounds for the first 3 Fanconi panel results. Of the 164 small dogs tested (75%) were positive first round (123) and almost that for the 77 dogs tested the second round (56 positive). Moreover the 1st Fanconi panel was performed on dogs with a variety of presenting clinical signs, not just those symptoms of Fanconi syndrome. Additionally, the 2nd and 3rd Round Fanconi panels were from dogs with a positive result on the previous Fanconi test. The Maltese, Poodle, and Dachshund test positive at ~86-89% approximately 2 months after the first positive Fanconi test and after the cessation of JPT consumption. This trend continued for ~4 months after the first Fanconi positive result. They determined that the number of dogs with glucosuria was much lower than the number of dogs testing Fanconi positive. This is because clinically, the glucosuria resolves and is no longer detectable, but the dogs continue testing positive with the Urine Fanconi panel.
In summary, small dogs (<30 lb.) are more frequently Fanconi positive. The four most commonly affected breeds are Maltese, Poodle, Dachshund, Shih Tzu, and Chihuahua. Maltese and Poodle test positive at 86-89% about 4 months after the first Fanconi positive result. Glucosuria disappears before Fanconi positive dogs become negative.

Vet-LIRN and CARB – National Action Plan for Combating Antibiotic Resistance
Dr. Renate Reimschuessel, Director Vet-LIRN, DHHS/FDA/CVM/OFVM/CVM/OR

The FDA Vet-LIRN is included as part of President Obama's plan to combat antibiotic resistance in the United States. The plan is called the National Action Plan for Combating Antibiotic Resistance or CARB. A number of goals have been described for CARB, and the Vet-LIRN is part of Goal 2 and 3:

- GOAL 1: Slow the Emergence of Resistant Bacteria and
  Prevent the Spread of Resistant Infections

- **GOAL 2: Strengthen National One-Health Surveillance Efforts to Combat Resistance.**
- **GOAL 3: Advance Development and Use of Rapid and Innovative Diagnostic Tests for Identification and Characterization of Resistant Bacteria**.
- GOAL 4: Accelerate Basic and Applied Research and Development for New Antibiotics, Other Therapeutics, and Vaccines.

For Goal 2- Strengthen National One-Health Surveillance Efforts to Combat Resistance -within one year: The USDA and FDA will assess current capacities and protocols within NAHLN and Vet-LIRN member laboratories and identify capacity development needs that would support nationwide antibiotic resistance surveillance for zoonotic pathogens and pathogens of importance to animal health. As part of this Goal, the American Association of Veterinary Laboratory Diagnosticians (AAVLD) – National Animal Health Laboratory Network (NAHLN) and the Vet-LIRN surveyed laboratories (27 of 37 Vet-LIRN laboratories completed the survey) and determined that 21 use Thermo-Fisher Sensititre system, 4 use bioMérieux Vitek, and 23 also use the Kirby-Bauer disk or broth methods.
By 2020, the significant outcomes are routine testing of zoonotic and animal pathogens for antibiotic susceptibility at ten to twenty NAHLN and Vet-LIRN member laboratories that are using standardized testing methods and data sharing practices.

For Goal 3- Advance Development and Use of Rapid and Innovative Diagnostic Tests for Identification and Characterization of Resistant Bacteria – by 2020, the expected significant outcomes for this goas are that the USDA and FDA will provide support for ten to twenty NAHLN and Vet-LIRN member laboratories for next-generation sequencing equipment and training on the use of whole-genome sequencing techniques and bioinformatics.

The FDA-Vet LIRN is waiting on funding to initiate these two goals as part of CARB.

Final Rule for Preventive Controls for Animal Food
Dr. Michael J. Murphy DVM JD PhD, Office of the Director, Center for Veterinary Medicine (HHS/FDA/CVM/OFVM/CVM/OCD)
http://www.fda.gov/animalveterinary/products/animalfoodfeeds/ucm347941.htm

The Food Safety Modernization Act (FSMA) created the regulatory framework that holds animal food manufacturers accountable for having a food safety plan, verifying it is working, and taking corrective action when it isn't. The actual title of the rule, slightly revised from the title in the proposed rule, is Current Good Manufacturing Practice, Hazard Analysis, and Risk-Based Preventive Controls for Food for Animals. The rule is found in Part 507 of the Code of Federal Regulations. The original proposal was published in the Federal Register on October 29, 2013. FDA received more than 2,400 comments on the proposal. As a result of these comments, the FDA made substantial changes and issued a supplemental proposal on September 29, 2014. The FDA received more than 140 comments on the supplemental proposal. The final rule, that went on display September 10 and was published in the Federal Register on September 17, 2015, is the result of careful consideration of all the comments received.

The Preventive Controls for Animal Food rule applies to facilities that manufacture, process, pack, or hold animal food for consumption in the U.S. These are facilities that are required to register with FDA under section 415 of the Federal Food, Drug, and Cosmetic Act. Facilities that are not required to register, such as farms, are not subject to the requirements of this rule. The rule does apply to both domestic and imported food. The final rule does provide some exemptions and modified requirements for certain facilities. Most of the exemptions were directed by FSMA itself.

The final rule is a very complex rule and Dr. Murphy provided highlights of the Rule. He addressed two key areas: the first key area relates to establishing Current Good Manufacturing Practice requirements for animal food. The second of these is the FSMA-mandated requirement that facilities conduct a hazard

analysis and implement risk-based preventive controls for hazards requiring preventive controls. Each facility would be required to implement a written food safety plan that focuses on preventing hazards in animal foods.

The first key area that Dr. Murphy covered related to establishing Current Good Manufacturing Practice (or CGMP) requirements for animal food. The original proposed CGMPs did not go over very well. We needed to take a step back in the supplemental to add flexibility because this rule has to cover a wide array of facilities (from small feed mills to large pet food facilities) that make food for many animal species. From the original proposal to the supplemental proposal, the original CGMP's were greatly modified. The FDA received a number of comments that supported the revised CGMPs that were proposed in the supplemental notice, but additional modifications were also requested. The FDA has revised the CGMPs based on comments and existing industry standards. The modifications were added to provide clarity and to provide additional flexibility and decreased prescriptiveness while still maintaining a baseline to protect against animal food contamination that would be harmful to public health. When we consider public health, this rule had to address both the health of animals who may eat the food and that of humans who may eat the edible animal products (such as meat, milk, and eggs) or handle food (such as pet food in the home). The added flexibility modifications were through use of language such as "when necessary" or "as necessary" or "adequately." The CGMP's address the following areas:

- Personnel
- Plant and grounds
- Sanitation
- Water supply and plumbing
- Equipment and utensils
- Plant operations
- Holding and distribution
- Holding and distribution of human food by-products for use as animal food

The first provision in Subpart C on hazard analysis and risk-based preventive controls is the requirement for a written food safety plan. There are several components to a food safety plan:

- Hazard analysis
- Preventive controls
- Supply-chain program
- Recall plan
- Procedures for monitoring
- Corrective action procedures
- Verification procedures

Although the rule becomes effective 60 days after publication, compliance dates are staggered by business size. Because the animal food industry will be implementing both CGMPs and preventive controls for the first time, the FDA has also decided to stagger the implementation of the CGMP requirements and the PC requirements by business size. For CGMPs, Very small businesses,, have 3 years to comply; Small businesses, which are those with fewer than 500 FTEs, must comply in 2 years, all other businesses, have one year to comply. The compliance date for the preventive controls requirements will follow the CGMPs by one year. For preventive controls, Very small businesses, which are subject to modified requirements, have 4 years to comply; Small businesses, which are those with fewer than 500 FTEs, must comply in 3 years, all other businesses, have two years to comply. Separate compliance dates have been established for the supply-chain program provisions to accommodate compliance dates for suppliers of different sizes subject to different rules (e.g., Produce Safety Standards, Foreign Supplier Verification Program). Information on other dates can be found in Table 33 of the preamble to the final rule.

FDA is planning guidance documents to help industry comply with the requirements of the rule. The first guidance will be for implementation of the Current Good Manufacturing Practices provisions, closely followed by a guidance document on the use of human food by-products as animal food. Another

guidance will address the hazards associated with different foods and how to apply preventive controls for hazards. And as with all rules, there will be a Small Entity Compliance Guide that explains the actions a small or very small business must take to comply with the rule. The FDA will consider additional future guidance, such as commodity-specific guidance.

FDA also recognizes that there will need to be industry and regulator training and there are likely to be many questions. They are collaborating with the Food Safety Preventive Controls Alliance to establish training and technical assistance programs. They are establishing a Food Safety Technical Assistance Network within FDA where industry can ask questions by submitting a form online and get answers from Subject Matter Experts within the agency.

More information can be found on FDA's FSMA webpage http://www.fda.gov/fsma , which has a subscription feature to receive updates. FDA has established a FSMA Technical Assistance Network that is utilizing a web-form for people to submit questions and get responses. The web form can be accessed through the main FSMA page or through the long URL (http://www.fda.gov/Food/GuidanceRegulation/FSMA/ucm459719.htm).

Veterinary Feed Directive Update
Dr. Michael J. Murphy DVM JD PhD, Office of the Director, Center for Veterinary Medicine (HHS/FDA/CVM/OFVM/CVM/OCD)
http://www.fda.gov/AnimalVeterinary/NewsEvents/CVMUpdates/ucm448620.htm

The U.S. Food and Drug Administration announced today the **Veterinary Feed Directive (VFD)** final rule, an important piece of the agency's overall strategy to promote the judicious use of antimicrobials in food-producing animals. This strategy will bring the use of these drugs under veterinary supervision so that they are used only when necessary for assuring animal health. The VFD final rule outlines the process for authorizing use of VFD drugs (animal drugs intended for use in or on animal feed that require the supervision of a licensed veterinarian) and provides veterinarians in all states with a framework for authorizing the use of medically important antimicrobials in feed when needed for specific animal health purposes.

The VFD final rule continues to require veterinarians to issue all VFDs within the context of a veterinarian-client-patient relationship (VCPR) and specifies the key elements that define a VCPR. These key elements include that the veterinarian engage the client (i.e., animal producer or caretaker) to assume responsibility for making clinical judgments about patient (i.e., animal) health, have sufficient knowledge of the animal by conducting examinations and/or visits to the facility where the animal is managed, and provide for any necessary follow-up evaluation or care. The final rule will require veterinarians to follow state-defined VCPR requirements; in states where the FDA determines that no applicable or appropriate state VCPR requirements exist, veterinarians will need to issue VFDs in compliance with federally defined VCPR requirements. All veterinarians will need to adhere to a VCPR that includes the key elements in the final rule.

"The actions the FDA has taken to date represent important steps toward a fundamental change in how antimicrobials can be legally used in food-producing animals," said Michael R. Taylor, FDA deputy commissioner for foods. "The VFD final rule takes another important step by facilitating veterinary oversight in a way that allows for the flexibility needed to accommodate the diversity of circumstances that veterinarians encounter, while ensuring such oversight is conducted in accordance with nationally consistent principles."

In December 2013, the agency published a guidance document, which calls on animal drug manufacturers of approved medically important antimicrobials that are put into water or feed of food-producing animals to voluntarily stop labeling them as drugs that can be used to promote animal growth and change the labeling of their products for the remaining uses to require veterinary oversight of these

drugs when they are used for therapeutic purposes. All of the affected makers of these drugs have committed in writing to participate in the strategy.

Additional Information

- Final Rule: Veterinary Feed Directive
- Notice of Availability of Draft Revised Guidance for Industry: Veterinary Feed Directive Regulation Questions and Answers
- FACT SHEET: Veterinary Feed Directive Final Rule and Next Steps
- Placing Animal Drugs under Veterinarian Oversight: Questions and Answers with Michael Taylor and William Flynn
- Draft Guidance for Industry #120 Veterinary Feed Directive Regulation Questions and Answers (PDF - 133KB)
- Veterinary Feed Directive (VFD)
- FDA Voice: Veterinary Feed Directive Will Protect Both People and Animals

Dr. Murphy addressed a number of topics in his presentation on the FDA's Veterinary Feed Directive (VFD):

- What changes are being made and why?
- What drugs are affected, which ones are not?
- What is a veterinary feed directive?
- What are key elements of VFD regulation?
- When will this go into effect?

Antimicrobial use is a driver of resistance

- All uses (human, animal, horticultural, other) are part of the picture
- Despite complexities and uncertainties steps can be identified to mitigate risk
- Intent is to implement measures that address public health concern while assuring animal health needs are met

Guidance #209 outlines the antimicrobial resistance policy. FDA's Judicious Use Strategy: Two key principles are outlined in Guidance #209:

1. Limit medically important antimicrobial drugs to therapeutic purposes (i.e., those uses considered necessary for ensuring animal health)
2. Require veterinary oversight or consultation for such therapeutic uses in food-producing animals

Guidance #213/Implementation- was finalized December 2013 and provides a more detailed guidance on implementing key principles in Guidance #209; it presents a timeline for implementation and defines drugs that are medically important. December 2016 is the target for drug sponsors to implement changes to use conditions of medically important antibiotics in food and water to withdraw approved production uses (such as "increased rate of weight gain" or "improved feed efficiency") because such production uses will no longer be legal. However, therapeutic uses are to be retained such as for treatment, control, and prevention indications, and these require veterinary oversight.

Guidance #213/Veterinary Oversight: the Key principle is to include veterinarian in decision-making process but it

- ☐ Does not require direct veterinarian involvement in drug administration
- ☐ Does require use be authorized by licensed veterinarian
- ☐ This means changing marketing status from OTC to Rx or VFD
- ☐ Water soluble products to Rx – "medicated water"
- ☐ Products used in or on feed to VFD – "medicated feed"

Guidance #213: Scope/ what drugs are affected and which ones are not?

Only affects antibiotics that are:

- ☐ "Medically important"

- Administered in feed or drinking water; other dosage forms (e.g., injectable, bolus) not affected
- Includes antimicrobial drugs that are considered important for therapeutic use in humans
  - Guidance #213 defines "medically important" to include all antimicrobial drugs/drug classes that are listed in Appendix A of FDA's Guidance #152

Dr. Murphy gave examples of **affected feed-use and water-use** antibiotics.

Drugs **not affected** by Guidance #213 are antibiotics that are already VFD – avilamycin, florfenicol, tilmicosin; or Rx – Tylosin, and that are not medically important, for example:

- Ionophores (monensin, lasalocid, etc.)
- Bacitracin (BMD, bacitracin zinc)
- Bambermycins
- Carbadox

Other drugs (that are not antibiotics), including:

- Anthelmentics: Coumaphos, Fenbendazole, Ivermectin
- Beta agonists: Ractopamine, Zilpaterol
- Coccidiostats: Clopidol, Decoquinate, Diclazuril

What is a veterinary feed directive?
VFD drug – A ''veterinary feed directive (VFD) drug'' is a drug intended for use in or on animal feed which is limited by a [CVM] approved application to use under the professional supervision of a licensed veterinarian. Use of animal feed bearing or containing a VFD drug must be authorized by a lawful veterinary feed directive.
Veterinary Feed Directive (VFD): a ''veterinary feed directive'' is a written (nonverbal) statement issued by a licensed veterinarian in the course of the veterinarian's professional practice that orders the use of a VFD drug or combination VFD drug in or on an animal feed. This written statement authorizes the client (the owner of the animal or animals or other caretaker) to obtain and use animal feed bearing or containing a VFD drug or combination VFD drug to treat the client's animals only in accordance with the conditions for use approved … by the Food and Drug Administration.
Existing framework for veterinary oversight of feed use drugs is the veterinary feed directive (VFD)
In 1996 Congress passed Federal Law stating that medicated feeds which require veterinary oversight are VFDs. In 2000 FDA finalized regulations for authorization, distribution and use of VFDs. Although a similar concept, (… by or on the order of a licensed veterinarian) VFDs are not Rx.

Changes made were intended to make the process more efficient while continuing to provide public health protections:
VFD Final Rule
June 3, 2015 – VFD final rule published
October 1, 2015 – VFD final rule became effective
The implementation timeline summary:

- **October 1, 2015** – VFD Final Rule went into effect
  - Applies to current VFD drugs
- **January 1, 2017** – Target for all medically important antimicrobials for use in or on feed to require a VFD
  - December 2016 – Target for drug sponsors to implement changes to use conditions of products affected by GFI #213

Supply Chain Contamination Event Case Study: 2014 Incident Management Response (Case Study- Michigan feed contamination/adulteration with lasalocid)

Dr. James Averill - Animal Industry Division, Michigan Department of Agriculture and Rural Development

2014 MDARD Lasalocid Investigation Summary

MDARD investigation is the most complex animal feed investigation in recent memory

A cooperative effort by Michigan Department of Agriculture and Rural Development (MDARD) staff from the Pesticide and Plant Pest Management (PPPMD), Laboratory and Animal Industry (AID) Divisions and MDARD's Rapid Response Team (RRT) resulted in the largest investigation that affected livestock and Michigan's feed industry in recent memory. The investigation findings impacted numerous feed manufacturers and producers in this state and were linked to approximately 55,000 turkey deaths, disposal of 500 tons of feed and limited the movement of over 35,000 swine to market. The case turned into a nationwide investigation and traceback of a feed product involving the United States Food and Drug Administration (FDA), United States Department of Agriculture and many other state feed and animal health programs.

On August 11, 2014, MDARD was notified by the index farm's veterinarian that the farm had experienced significant mortalities. Tissue samples as well as feed samples were sent to Michigan State University Diagnostic Center for Population and Animal Health (MSU-DCPAH), which identified lasalocid to be the cause of death in the turkeys and feed samples also tested positive for lasalocid. Lasalocid is an ionophore drug that is approved for use in poultry and other species of livestock at approved levels. However, at higher levels, it can become toxic. Lasalocid is not approved for use in swine and has been shown to be fatal to horses or dogs if ingested.

MDARD and FDA contacted the index farm to assist in determining the cause of the toxicity due to lasalocid. Lasalocid levels from feed samples taken on the farm were found at 4-6 times the feeding rate for turkeys. MDARD worked in cooperation with MSU, DCPAH to analyze samples of dozens of feed ingredients used on the farm to determine the source. The team discovered that lasalocid was present in the grease the farm uses in both its turkey and swine feed formulations. Grease is typically added to feed as a flavoring and to increase fat content.

MDARD and FDA investigated the sources of the adulterated grease and determined that a restaurant recycling firm in Michigan received an out of state industrial processing waste oil product called "Lascadoil" that was brokered as soyoil. Lascadoil was intended for non-food or bio-fuel uses, but crossed over to the feed ingredient stream. Feed manufacturers and farms in Michigan and several other states were directly impacted by this diversion. A nationwide recall of the adulterated grease was issued on October 23, 2014.

MDARD investigated and sampled at farms and feed manufacturers that may have received the adulterated grease to ensure the recall was effective. Due to the impact and scale of this event, MDARD utilized the Incident Command System (ICS) and set up a multi divisional Incident Management Team (IMT). With numerous divisions involved, management of such a large scale investigation was greatly needed and successful. The use of ICS allowed for transparent flow of communications and coordination of field and laboratory activities which involved many agencies, institutions and organizations that were impacted by this event.

In June 2015, MDARD, FDA Center for Veterinary Medicine and the FDA District Offices involved received a "Group Recognition Award" at the 55th Annual FDA Honor Awards Ceremony for their work on

the response. This award recognizes superior achievement of the Agency's mission through teamwork, partnership, shared responsibility, or fostering collaboration and coalition to achieve FDA goals.

Contact: Tim Lyons, Feed Safety Specialist
LyonsT1@michigan.gov;
www.michigan.gov/mda-feed

Review of Multistate Foodborne Outbreaks—United States, 2015
Megin Nichols, DVM, MPH, DACVPM (DHHS/CDC/OID/NCEZID/DFWED/ORPB)

Dr. Megin Nichols presented a review of selected multistate foodborne disease outbreaks during 2015 in the United States.
First she presented information on Listeria outbreaks:
(From: http://www.cdc.gov/listeria/outbreaks/index.html)

- Multistate Outbreak of Listeriosis Linked to Soft Cheeses Distributed by Karoun Dairies, Inc. http://www.cdc.gov/listeria/outbreaks/soft-cheeses-09-15/index.html
- Outbreak of Listeriosis Linked to Blue Bell Creameries Ice Cream Products http://www.cdc.gov/listeria/outbreaks/ice-cream-03-15/index.html

She also presented information on a new CDC web site on food safety and raw milk: http://www.cdc.gov/foodsafety/rawmilk/raw-milk-index.html
"Back to nature" – that's what many Americans are trying to do with the foods that we buy and eat. We are shopping at farmer's markets, purchasing organic food, participating in food cooperatives (or co-ops), and even growing our own food. In addition, many people are eating food with minimal processing. However, raw milk and products made from it (including soft cheese, ice cream, and yogurt) can pose severe health risks, including death. That's because raw milk has not undergone a process called pasteurization that kills disease-causing germs, such as Campylobacter, E. coli, and Salmonella.

She also presented information on a new publication on increased outbreaks due to unpasteurized raw milk consumption from 2007 to 2012 in the United States: http://wwwnc.cdc.gov/eid/article/21/1/14-0447_article The number of outbreaks in the United States caused by nonpasteurized (raw) milk increased from 30 in 2007-2009 to 51 in 2010-2012. Most (77%) outbreaks were caused by *Campylobacter* and most (81%) occurred from consumption of nonpasteurized milk purchased from states where the sale of nonpasteurized milk was legal.

Dr. Nichols then presented overviews of select Salmonella foodborne outbreaks
(From: http://www.cdc.gov/salmonella/):

- Multistate Outbreak of *Salmonella* Paratyphi B variant L(+) tartrate(+) and *Salmonella* Weltevreden Infections Linked to Frozen Raw Tuna
- Outbreak of *Salmonella* Enteritidis Infections Linked to Raw, Frozen, Stuffed Chicken Entrees Produced by Aspen Foods
- Multistate Outbreak of Drug-Resistant *Salmonella* Enteritidis Infections Linked to Raw, Frozen, Stuffed Chicken Entrees Produced by Barber Foods
- Multistate Outbreak of *Salmonella* Poona Infections Linked to Imported Cucumbers
- Outbreak of Multidrug-Resistant *Salmonella* I 4,[5],12:i:- Infections Linked to Pork

Food Safety Research in the USDA Agricultural Research Service
Eileen Thacker, National Program Leader, Food Safety and Animal Health, USDA-ARS. Presented by Dr. Robin Anderson, Research Microbiologist, ARS

Dr. Eileen Thacker, Co-Leader for USDA/ARS National Programs 108 (Food safety, animal and plant products) and 103, Animal Health was unavoidably unable to attend this meeting and has asked Robin Anderson, Research Microbiologist at the USDA/ARS, Food and Feed Safety Research Unit located at

the Southern Plains Agricultural Research Center in College Station, Texas to present a short summary of the research focus of the Food Safety National Program. Administratively, based on 2013 data, a total of 64 appropriated research units located throughout the United States conducted research focused on understanding and modeling how foodborne pathogens and antimicrobial resistant bacteria colonize and persist in their production environments and on learning how to develop strategies to prevent and eliminate their propagation and dissemination so as to reduce the risk of foodborne contamination. Project scientists are active participants to the President's Combating Antimicrobial Resistant Bacteria (CARB) research initiative, performing research on microbial ecology and alternatives to antibiotics and contributing significantly to the development of the USDA Antimicrobial Resistant Action Plan. The Project participates as a member of Transatlantic Task Force on Antibiotic Resistance. Examples of just a small amount of the research conducted by project scientists include microbial ecology and National Antimicrobial Resistance Monitoring System research on *Salmonella, E. coli, Campylobacter* and more recently, select virulent *Enterococcus* species, conducted by scientists at the Bacterial Epidemiology and Antimicrobial Research Unit in Athens, Georgia, the Environmental, Microbial and Food Safety Research Unit at Beltsville, Maryland and the Food and Feed Safety Research Unit in College Station, Texas. Interested parties are encouraged to visit the USDA/ARS website to review research objectives and recent accomplishments of all project Units and to feel comfortable in contacting participating scientists to obtain additional information on subjects of particular interest.

Committee Business:

Dr.McDonough conducted the Committee business meeting and since there were no Resolutions, he asked those present to consider the following items and to respond to the group via email:

- creation of "subcommittees" to work on any action items that are identified
- begin a quarterly conference call to keep the committee engaged throughout the year
- there is a new AAVLD requirement: demonstrate the committee alignment with the AAVLD mission, vision and goals by generating/submitting some basic strategies and actions for the committee itself