This presentation is titled “Animal Disease Emergencies – Local Response Preparedness and Planning” and is designed for a General Public audience.

Note to presenter.... The following presentation provides an overview of animal disease emergency preparedness, response and recovery measures. Additional PowerPoints on specific components (e.g., state response plan, NIMS/ICS, specific disease information) are found with your resources and can be included into this presentation, depending on time allotted and interest of the audience. Please delete this slide prior to presentation!

Animal agriculture is an essential component of the U.S. and Iowa’s economy. The impact of an animal disease emergency or outbreak in livestock could be devastating. Response to such a situation will require interaction between local, state and often federal agencies and personnel. Preparedness efforts are essential for the prevention and control of such an event in Iowa and are necessary to protect animal health, our economy and even human health. During this presentation we will discuss the importance of agriculture to the U.S. and Iowa’s economy, what animal emergency diseases are, the impact they can have, the steps involved in detection and response, including the State and Federal agencies involved. Additionally, we will discuss the importance of preparing at the local level and how you can prepare.

Animal disease emergencies involve any number of disease pathogens that may affect large numbers of livestock, resulting in severe economic consequences, including high death rates, high levels of illness, and loss of production. The occurrence of any of these diseases may have trade implications, including embargos and import restrictions. Human health can also be impacted by animal health emergencies. Some of the diseases are zoonotic (spread from animals to humans) and the loss of animals and livelihood can have severe mental health impacts. Disease listed as important concerns or emergencies are often referred to as FADs (foreign animal diseases) or high consequence pathogens.

United States agriculture is very vulnerable to the intentional or accidental introduction of disease agents (foot-and-mouth disease or FMD), as well as emerging (Nipah virus in pigs and people) or re-emerging diseases (such as exotic Newcastle disease in poultry). Today we will talk more about those vulnerabilities and ways to minimize the United States’ risk of a devastating disease entering our country. Introduction of these disease agents can occur in any number of ways from natural spread, emergence of diseases to new areas, accidental introduction or even the intentional use of agents in a terrorist type attack. Natural introduction can occur sporadically in given (endemic) areas like anthrax in cattle in the Dakotas. Emerging diseases are those that are expanding in distribution or found in new locations (e.g., Nipah virus, Exotic Newcastle disease). The accidental introduction of disease pathogens may occur through the transport of animals, animal products.
or persons coming from countries where the disease occurs, via contaminated clothing, shoes or other objects. These are often referred to as foreign animal diseases, as their presence in the U.S. is limited or non-existent. Disease pathogens of livestock may also be introduced intentionally. Defined as agroterrorism, this involves the use of biological agents or their toxins to adversely impact the agriculture industry, the economy, or the consuming public. Regardless of how a disease pathogen may be introduced, the detection, response and control measures needed are essentially the same, but may vary in scale (local vs. state vs. national), depending on the disease in question.

There are several different lists of high consequence animal diseases but with overlap between them. Most of the listed disease agents have been successfully eradicated or controlled in the U.S. but still occur in other countries. While this is good for our livestock industry, it also means that the introduction of any of these agents, like the ones listed here, could have severe consequences since our animals have no natural immunity to the disease.

Next we will discuss the importance of agriculture to the nation and more specifically, Iowa.

When we look at the economics of livestock at the national level, we see it is of major value. From pigs and poultry to cattle and sheep, animal agriculture generates income for producers and the economy while supplying safe food to our tables. The economic importance and estimated numbers of livestock and poultry in our nation and Iowa are listed here. (2005 for U.S. and 2006 for Iowa). In 2006, Iowa led the nation in the production of pork, corn, soybeans and eggs and was second nationally in red meat production (6.5 billion pounds) and agricultural exports ($4.02 billion). Data from www.usda.gov/nass/pubs/stathigh/2005/lvstkindex.htm and www.agriculture.state.ia.us/quickFacts2.htm

Here in Iowa, agriculture and livestock are major components of our economy with 88,600 farms, supporting over 63,000 jobs in the state. In 2006, Iowa led the nation in the production of pork, corn, soybeans and eggs and was second nationally in red meat production (6.5 billion pounds) and agricultural exports ($4.02 billion). Total cash receipts for farm commodities in Iowa in 2006 were almost $15 billion dollars, third in the nation. [Source: State of Iowa, Department of Agriculture and Land Stewardship, Quick Facts about Iowa Agriculture, 2005 Livestock Summary. www.agriculture.state.ia.us/2006AgStats/06_76.pdf, www.agriculture.state.ia.us/quickFacts.htm and www.agriculture.state.ia.us/quickFacts2.htm. Accessed 01/02/08.]
Food Production Changes

- Number of farms decreasing
- Animal numbers rising on some farms
- Opportunities
  - Increasing intensity/specialization
  - Efficient food source: U.S. and world
- Challenges
  - Disease control and eradication
  - Devastating economic effects

Despite the large numbers of animals in Iowa, each year the Census of Agriculture reports fewer farms. The changes in animal production (e.g., higher densities) and species specialization has allowed livestock farmers to efficiently provide food for America and the world, but presents opportunities and challenges that were not a part of raising animals only a few decades ago. The introduction of a disease into a facility can spread rapidly based on the high concentration of animals. This highlights the need to prevent disease introduction to continue to ensure the animal’s well-being and a safe food source.

Impact of Animal Disease

- Animal Health
  - Death, illness
  - Loss of production
- Economics
  - Loss or disruption of trade
  - Loss of consumer confidence
  - Movement restrictions
- Human Health
  - Zoonoses
  - Mental health

The effect of an animal disease emergency can impact animal health, economics and possibly even human health. The impact could be felt, in the case of a foreign animal disease discovery, in as quickly as 24 hrs. Exportation of livestock could be halted. Allied and reliant industries, such as restaurants, grocery retailers, food processors and distributors, and transporters have direct and indirect ties to agriculture and would be impacted significantly. Costs would also be generated due to the needed measures for eradication and control of the disease (e.g., disease surveillance, diagnostic testing, tracing of exposed animals and their movement, implementing and maintaining quarantines, depopulation costs, indemnity paid to the farmer), … the list and impact could be extensive. Some losses due to a foreign animal disease may take years to fully realize.

Vulnerabilities

- High density husbandry
- Mixing at auction markets or transport by vehicles
  - Over 5 million cattle each year
- Poor traceability of animals
- No immunity to foreign animal diseases
- Centralized feed supply and distribution

What makes U.S. and Iowa agriculture vulnerable? Animals are raised in high concentrations (cattle feedlots, swine confinement units, poultry barns) which can lead to the rapid spread of a FAD. Animals are often transported great distances, sometimes over 1,000 miles, and mixed at auction markets. Auction markets allow for mixing of animals from around the state or neighboring states, presenting the opportunity for the exchange of infectious diseases such as FMD or hog cholera, and exposing others in a crowded setting. The U.S. is currently very inefficient in our ability to trace animal movement, making the tracking of disease outbreaks difficult. The USDA National Animal Identification System (NAIS) has progressed to get animal owners to register their location or premises. However, it is voluntary and the second step, animal identification, is not as advanced. Most severe, highly contagious diseases of livestock have been eradicated from the U.S, and vaccines are not used for these diseases, livestock have no immunity to FADs. Another concern is our centralized feed supply and distribution; feed can be an ideal vehicle in which to distribute an infectious disease agent throughout the country.

Vulnerabilities

- Diseases are widespread in other countries
- Expanded international trade and travel
- Border penetration: people, wild birds, mammals
- Inadequate on-farm biosecurity
- Inadequate foreign animal disease awareness

We are a global society and our international trade and travel has greatly expanded in the last quarter century. With the widespread distribution of infectious disease agents in other countries, we are very vulnerable to the accidental or intentional introduction of these pathogens. Our mobile society leaves our borders open for trade, making us vulnerable to agents or contaminated equipment being smuggled in if inspections are not thorough. Another concern is the lack of biosecurity for our animals and plants, which will be further discussed. Finally, there is also a great need to improve foreign animal disease (FAD) awareness and education among veterinarians and producers. We all must be able to recognize the signs and know how to report them in order to decrease our vulnerability to disease spread. Today’s presentation is designed to give you some of those tools.
Preventing and Responding to an Animal Disease Emergency

Prepare
- Identify, delineate and resources in community
- Local plan development
- Practice: Table top, functional exercises
- Animal ID and Premises ID

Prevent
- Resources and education
- Biosecurity

Respond
- Awareness and education
- Recovery
- Resources continuity

Recover
- Detection/diagnosis; surveillance
- Contain: Quarantine, isolation, stop movements; biosecurity
- Control: Depopulation and disposal, vaccination, cleaning and disinfection

ANY emergency or disaster, including animal disease emergencies, involve four phases of management – prepare, prevent, respond and recover. This training is designed to help us become aware of the different measures needed in each of these steps for animal disease emergencies. Listed are the various steps for each phase of an animal disease emergency. These are important for all members of the community to be aware of and implement. We will discuss each phase later in this presentation. This training will address preparing, preventing, responding and recovering from an animal disease emergency at the local level.

So, how do we prepare for an animal disease emergency? Preparedness involves advance planning. This starts with identification of stakeholders and agencies involved or needed for a response. It is important to know members of your community and understand the roles and responsibilities they may have or may contribute to in the event of an emergency at the local, State and Federal level. Familiarity should be established before the disaster strikes. We will discuss the State and Federal agencies involved in preventing and responding to animal disease emergencies, and the plans and programs that are in place for such an event.

In the event of an animal disease emergency, the lead agency involved is the Iowa Department of Agriculture and Land Stewardship (IDALS). Directed by the State Veterinarian, Dr. David Schmitt, the agency is responsible for animal health and disease control issues as well as determining actions and the scope of the response, overseeing field operations, animal movement and tracking, and more. Working under the State Veterinarians are six District veterinarians. These individuals are all Foreign Animal Disease Diagnosticians, or FADDs. This means that they have been specially trained to conduct investigations and collect samples for situations involving high consequence diseases, or foreign animal diseases (FAD). In Iowa, 25-50 suspected FAD are investigated each year. The Center for Agriculture Security is also part of IDALS. The Center trains and coordinates the Iowa Veterinary Rapid Response Team (IVRRT). This cadre of over 330 veterinary and animal health professionals is trained and ready to respond to an animal disease emergency in their community, county or in the state. These individuals are activated and directed by the State Veterinarian and the Iowa Secretary of Agriculture to assist in surveillance, euthanasia, diagnostics, premise cleaning and disinfection operations. They can also assist counties with animal sheltering issues during other types of disasters.

The State Veterinarian, has the responsibility for animal health and control issues as well as animal movement and tracking. Under the authority of the Iowa Secretary of Agriculture and the Iowa Code, he also has the authority to quarantine or embargo animals or animal products that pose a disease risk.
This map shows the areas covered by the six District veterinarians for the state of Iowa. All of these veterinarians are FADDs. They run surveillance and prevention programs in the state for diseases such as brucellosis, tuberculosis, pseudorabies, and avian influenza. Several have dual roles as USDA Veterinary Medical Officers (VMOs).

A number of other State agencies may be involved in an animal disease emergency response and provide assistance and/or resources to IDALS, depending on the needs of the situation.

There is a State plan developed for the occurrence of an animal disease emergency. It describes the roles, responsibilities and actions needed for a variety of emergencies or disaster events. The Iowa Emergency Response Plan is part of the Iowa Comprehensive Plan, outlined in the Iowa Code, Section 605, Chapter 9 and Essential Support Function #11: The Agriculture and Natural Resources Plan, and Annex W: Infectious Animal Disease addresses the specifics for an animal disease emergency.

There are a number of federal agencies involved in the surveillance, detection and response of animal disease emergencies at the national level. The lead federal agency for safeguarding American livestock and poultry health and for responding to a disease emergency is the U.S. Department of Agriculture, Animal and Plant Health Inspection Service (USDA-APHIS). There are several divisions of the agency which handle various aspects of surveillance, detection, diagnostics and response. The Veterinary Services division (VS) works to prevent, control and/or eliminating animal diseases, and monitoring and promoting animal health and productivity. The Emergency Management and Diagnostics Division prepares and trains personnel for response to animal health emergencies and oversees the National Center for Animal Health Emergency Management and National Veterinary Diagnostic Laboratories. The National Animal Health Laboratory Network (NAHLN) is a nationwide strategy to enhance communication and collaboration between all organizations providing animal disease surveillance and testing services, including Federal, State and University veterinary diagnostic laboratories.
There are several USDA personnel based in Iowa and responsible for federal activities in the State. All are trained FADDs.

Just as the state has District Veterinarians, on the Federal side, there are 9 regionally located Veterinary Medical Officers, or VMOs. These veterinarians are all FADDs and work to implement and monitor federal animal health surveillance and control programs. Some of these individuals have dual duties as State district veterinarians as well.

The USDA also manages the National Animal Identification System (NAIS), a voluntary national program created to identify and track the movement of livestock. This will aid in determining animals in contact with or commingled with diseased or exposed animals during an outbreak investigation. Although most animal industries use some type of identification system for animal identification, the current systems are not consistent from state-to-state. In the event of a disease outbreak, the process of tracing an animal’s movement using the current forms of identification can be a time consuming event, especially if the animal has moved across state lines. Additionally, the maintenance of this information improves the ability to notify states and producers in the event of an animal health emergency. Once the program is fully implemented, a goal of NAIS is to be able to traceback or traceforward exposed animals in 48 hours or less. The first component of the program is premises identification, followed by animal identification and lastly, reporting animal movement.

The Department of Homeland Security (DHS), through USDA-APHIS, has the difficult job of protecting our borders and keeping foreign animal and plant pests out of our country. Agriculture border controls were maintained by the USDA-APHIS-Plant Protection and Quarantine, prior to March 1, 2003, when responsibilities were transferred to the Department of Homeland Security (DHS), Customs and Border Protection (CBP). DHS CBP is responsible for monitoring 317 ports of entry into the US and are constantly on the lookout for imported animal and plant material. Under the CBP are the Customs Service, the Border Patrol, Immigration and Naturalization Service, and Agricultural Inspections; more than 40,000 employees working to safeguard our borders and ports. About 3,000 USDA-APHIS agriculture inspectors search baggage at airports and cargo at major ports of entry to ensure compliance with animal and plant import restrictions. In 2004, DHS CBP agriculture specialists inspected nearly 1 million conveyances; 83 million passengers/pedestrians and conducted nearly 3.6 million cargo inspections. An additional part of the CBP is the Beagle Brigade, a team of 141 detector dogs used to sniff out luggage, packages, mail and any other items brought in the U.S. Over 2 million interceptions of prohibited agricultural products made each year, detector dogs make 75,000 of them. This photo depicts a beagle sniffing baggage at an airport; the vest he is wearing says “Protecting American Agriculture”. (Photos by Danelle-Bickett Weddle, ISU)
Individuals and Households. Although not formally a part of emergency management operations, individuals and households play an important role in the overall emergency management strategy. Community members can contribute by reducing hazards in and around their homes (e.g., producers implementing biosecurity); prepare an emergency supply kit and household emergency plan (e.g., in the event of reduced access); monitor emergency communications carefully (e.g., for information on quarantine areas, or actions needed), volunteer with an established organization (e.g., help your community to prepare); enroll in emergency response training courses (e.g. get trained in NIMS and ICS).

(Source: http://www.fema.gov/pdf/emergency/nrf/nrf-core.pdf)
Prevent
Managing Disease Risk

Prevention includes measures that prevent the emergency from happening, reduce the chance of the emergency happening, or reduce the damage of unavoidable emergencies. Awareness and management of disease risk is an important component for Iowa livestock operations so that an animal disease emergency can be prevented. Whether it is part of everyday operations or in the event of an outbreak, awareness of common biosecurity, or biological risk management, protocols is essential to those interacting with animal facilities. Specific prevention steps exist for certain diseases, and control practices relate to how the disease is actually spread. Recommended prevention practices for the five routes of transmission will be further explained.

Disease Transmission

- Animals may not exhibit obvious clinical signs of disease
- Essential
  - Disease prevention
  - Awareness of how disease is transmitted
- Develop strategy to minimize disease risk for livestock operation

It is important to remember that disease transmission can occur without animals exhibiting obvious clinical signs of disease. That is why daily disease prevention and awareness of developing how diseases are transmitted are essential when a strategy to minimize the risk of disease for a facility or operation. (Photo source: DB Weddle, DVM, Iowa State University)

Routes of Transmission

- Spread of disease agents
  - Animal → animal
  - Animal → human "zoonotic"
- Different modes of transmission
  - Aerosol
  - Oral
  - Direct contact
  - Fomite
  - Vector-borne
  - Zoonotic

Disease agents can be spread from animal to animal, or animal to human (known as zoonotic disease), through five main routes – aerosol, direct contact, fomite, oral and vector borne. Zoonotic diseases involve the transmission of disease pathogens from animals to humans. The disease agents entry into a person goes through the same five routes of transmission as in animals – aerosol, oral, etc. It should be noted that many infectious agents can be transmitted by more than one route of infection. (Photo courtesy of DB Weddle, DVM, Iowa State University)

NOTE TO PRESENTER: This would be the place to distribute the Transmission Routes Handout so participants can learn the definition of each of the routes of transmission. For brevity, here are quick explanations: aerosol – breathing in contaminated particles; direct contact – disease agent entering through blood, breeding, mucous membranes like eyes/gums/open wounds; fomite – contaminated inanimate object carries disease agents and enters animal directly or orally (example – needles, buckets, boots); oral – consumption of contaminated feed, water; vector-borne – insects acquire disease agent from one animal/human and spread to another animal/human

Preventing Entry

- Some animal viruses can be carried by fomites
  - Truck tires, wheel wells, undercarriage, footwear, clothing
- Walking/driving through animal areas
  - Pick up viruses/bacteria
- Deposit on the road, next farm
- Proper cleaning and disinfection is important

It is important to recognize that some animal pathogens may be carried on vehicles (truck tires, wheel wells, undercarriage) as well as footwear and clothing. These are all examples of fomites – contaminated inanimate objects that can carry disease from one place to another. Therefore walking or driving through animal areas can contaminate footwear or tires and spread the agent throughout the operation or to the next farm, if proper cleaning and disinfection steps are not taken. We will discuss specific prevention protocols you can put in place to minimize the risk of spreading disease.
If a major animal disease is reported in Iowa, movement restrictions could be put in place to minimize spread until more information is known. The State Veterinarian, under the authority of the Iowa Secretary of Agriculture, may implement embargos, voluntary hold orders, or quarantines, depending on the needed response. Animals or their products may not be allowed to go to market or for further processing. The only ones allowed on/off operations could be essential personnel or state authorities. Deliveries may be halted as well depending on the disease concern and how rapidly it can spread. People movement may also be limited initially until more is known about the disease and how it is spread.

The response needed for an animal disease emergency will be dependant on a number of factors. However, almost all disease outbreaks involving livestock or poultry will involve the State Veterinarian and usually the Federal Government (USDA-APHIS) to some extent. Those outbreaks that involve a foreign animal disease (one that is not found in the U.S.) will have international trade issues.

The level of response needed will vary on a number of factors, including the number of premises affected, the disease involved, the economic and public health consequences. A Single premises response consists of one location where the FADD is called out to investigate the clinical signs or cause of death in animals. Once a diagnosis of a foreign animal disease is received, the State Veterinarian will put a quarantine on that premises. If the history and clinical signs are cause for concern, the FADD can discuss their findings with the State Veterinarian first and the quarantine can actually be put in place prior to definitive diagnosis as a safety measure. A single premises FAD will most likely be handled by State. They will decide to treat the animals or depopulate (euthanize and dispose of carcasses) depending on the disease diagnosis. The Federal authorities will handle the issues related to international concerns as a result of the disease diagnosis (OIE communication, embargos from other countries).

Diseases are detected at the local level, either by the producer or the local veterinarian. In some cases, the diagnostic laboratory or slaughter facility may make initial detection. Veterinarians are required to report animal disease of high consequence (listed in the Iowa Code, USDA or OIE lists) to the State Veterinarian or Federal AVIC. Once detected, the incident is typically handled at the State/Federal level first working with the local level. State Veterinarian has authority for and directs all response and treatment actions (in partnership with their Federal counterpart-AVIC). Once the animals are euthanized and disposed of, then the site or sites must be cleaned and disinfected. Likewise, some compensation (indemnity) may be provided to the owners of the animals. The state or federal indemnity funds will need to be made available. During and after an animal disease emergency, businesses must attempt to continue function. Recovery takes time.
Upon suspecting a disease of high consequence, the local veterinarian is required to contact the State veterinarian or the Federal AVIC. At this point a FADD (foreign animal disease diagnostician) is sent out to investigate. A FADD, is a state or federal veterinarian who is specially trained to conduct investigations of high consequence animal diseases. Each year in the U.S. over 500 FADD investigations are conducted; most of which turn out to be negative for high consequence animal diseases. Here in Iowa, about 25-50 investigations are conducted each year. The FADD will investigate within 24 hours of the local veterinarians initial call. The FADD will assess the situation and examine the animal(s). Working in close collaboration with the State Veterinarian and the Federal AVIC, the FADD will obtain the appropriate samples and forward them to the appropriate National laboratory for testing. Depending on the level of suspicion of an FAD, the sample may be shipped overnight or hand carried to the laboratory. While the sample is being processed, the affected farm may be placed under a hold order to prevent the movement of animals off of or onto the premises. The level of response needed will vary on a number of factors. The disease suspected or confirmed, the number of animals or premises affected, the animal health and public health impact from the disease, the economic or trade implications of the disease. Actions taken will be made by the State Veterinarian (or in the case of a national emergency – in conjunction with the Federal AVIC). Some diseases may potentially bring a Presidential or a USDA declaration of emergency.

Once an Infected Premise with a high consequence animal disease is identified, the area surrounding that farm will be quarantined (Infected zone ~ approximately 6.2 miles in diameter). Neighboring farms, Contiguous Premises, may also be quarantined as would any farms that had received animals from the IP or were sources of animals to the IP (until surveillance is conducted). For some severely contagious diseases, such as foot-and-mouth disease, movement of animals and possibly traffic will be stopped. This will involve the implementation of various road block and entry and exit points in the Infected Zone. Depending on the location and number of roadways feeding into the area, this may be a high resource (personnel) demanding function. (Graphic by Andrew Kingsbury, CFSPH, ISU)

Control of a diagnosed foreign animal disease on a livestock operation usually involves depopulation of all animals on the farm. However, this decision will be made by the State of Federal Veterinarian. There are many different humane ways to euthanize animals and the method is determined by the species. If animals are euthanized, then a disposal plan should be in place. (The photo shows carbon dioxide foam used to humanely euthanize poultry, they simply go to sleep without any struggle.) Burial on-site and composting are the current options in Iowa. Landfill of dead animals raises biosecurity concerns depending on the disease and where the quarantine zone is located. Open burning carcasses is not allowed in Iowa.

As previously discussed, response to an animal disease emergency will require coordination of various agencies and many personnel. The Incident Command System (ICS) is used to organize and control the response. Most emergency personnel and responders, are trained in this system.
There are various disease prevention and control methods that must be applied during and after an animal health event and those will be discussed next.

If a major animal disease is reported in Iowa, movement restrictions could be put in place to minimize spread until more information is known. Animals or their products may not be allowed to go to market or for further processing. People movement may also be limited initially until more is known about the disease and how it is spread. The only ones allowed on/off operations could be essential personnel or state authorities. Deliveries may be halted as well depending on the disease concern and how rapidly it can spread. Affected farms would be quarantined and the animals on those farms would not be allowed to move off the farm until a control measure is implemented.

Producers should implement and follow strict, complete biosecurity protocols as their best means of prevention. This should include steps such as restricting access to only personnel necessary for the function of the farm. All traffic (vehicle, people and animals) should be CLEAN, closely monitored and recorded in a log book. Animals should be closely and frequently monitored for signs of illness or unusual behavior. If identified, the herd veterinarian should be contacted immediately. Signs should be posted at the farm entrance restricting access, such as the one pictured here (graphic design by Clint May, CFSPH). Note to presenter: Do Not Enter Sign is available in your resources.

The final step in an animal disease emergency is recovery – what can be done to restore livestock production, continue with business, and ensure Iowa’s agriculture industry rebuilds.

It is important to remember that each incident will be LOCAL. Therefore local planning is needed to best prepare for an event. Although State and Federal agencies will respond, once the situation is controlled, the long term recovery process is locally based. Recovery involves restoring confidence that the situation is contained and the danger is over. A great deal of time, money, and effort is required to recover from an agricultural incident. Once the animals are disposed of, then the site(s) must be cleaned and disinfected. The process of disinfecting facilities and equipment is expensive. Following an animal disease emergency, Federal and State governments would work together on a possible compensation plan (indemnity) for producers for some or all of the loss of value of animals destroyed, dependent upon availability of State or Federal indemnity funds. Once the location has sit idle for a period of time to ensure the disease organisms are gone, the population can be
repopulated which can often take years to restore inventory of herds. Finally, business continuity is an important consideration in recovery efforts. It consists of keeping people safe and employed during a disaster and making plans to keep the business running during and after a disaster, which history tells us requires planning. More details related to business continuity are discussed next.

Local resources will be needed at all levels of response. Depending on the severity or scale of the incident, State and Federal resources will be available. As the severity and scale escalates, these resources will be strained and a greater demand for local resources will occur. This is often referred to as the YOYO (Your On Your Own) philosophy. The list on the right indicates local resources that may be requested throughout a response to an animal health emergency.

In order to get through the YOYO phase, planning is imperative. Planning is a way to protect your family and/or employees, your pets and/or livestock, your property/business, and allow critical community resources to more readily help those who have special needs or are most severely impacted. This allows you to be part of the solution rather than part of the problem.

To demonstrate the impact an animal disease can have, and highlight the need for a prompt response to control the spread, we will discuss Foot and Mouth Disease and its implications should it be accidentally or intentionally introduced into the U.S.

Foot and mouth disease is a highly contagious viral disease that affects cloven-hoofed (two-toed) animals. [This includes cattle, pigs, sheep, goats, deer but NOT horses]. Foot and mouth disease is considered one of the most important livestock disease in the world. The world today. It is highly contagious, causing fever and blister formation in the mouth, on the tongue or muzzle, the feet or teats of affected animals. These result in great production losses, as animals have excessive salivation, difficulty walking and eating; death may occur in young animals. Sheep and goats that have the virus often have very mild signs of disease and cases may be missed if not examined closely. The FMD virus is found in the saliva and lesions of affected animals. It is spread rapidly between animals by contact, respiratory aerosol, or by objects (feed, coveralls, shoes, instruments, etc) contaminated with saliva or lesion fluids. Any case of FMD discovered in the U.S. (or in any country) must be reported to the World Organization for Animal Health (formerly the Office
Foot and Mouth Disease (FMD) once occurred in the U.S., but was eradicated in 1929. No new cases have occurred since that time. However, the disease does still occur in other areas of the world, including parts of Asia, Africa and South America. With the ease of world trade in animals and animal products, the threat of the introduction of FMD into the U.S. is a real one. Photo: The map show outbreaks of FMD worldwide from January-March 2008. Map from the World Organization for Animal Health (called the OIE- Office of International Epizootics), accessed 27 March 2008.

FMD is an economical devastating disease, as seen by the effects during and following an FMD outbreak in the U.K. in 2001. Estimates put overall economic losses over £10 billion due to the total economic strain placed on the agriculture and food industry (£3.1 billion), compensation to farmers (£1.1 billion), tourism (£4.5 to £5.3 billion by 2005) and sports (£750 million). While it is known that 6 million animals were slaughtered in the U.K. to control this disease, resulting in them reaching FMD free status in less than one year, the true costs will likely never be known. The public witnessed something few had ever seen. Mass slaughter was called into question, as were animal welfare and animal rights. Pollution from pyres of burning carcasses was intense in some areas and also impacted public health.

Throughout this presentation, we hope you have learned that threats to agriculture and livestock need to be taken very seriously. A local plan needs to be established for proper response and coordination in large events. Adequate resources and expertise will be needed to determine the extent of the attack, prevent disease spread and the losses that accompany it, prevent any public health implications.
In the event of an animal disease emergency, it is important for producers and the community to understand what steps government agencies will take to respond to or resolve the situation. It is equally as important for government agencies and local response groups to understand what industry resources are available to assist in the response and recovery process and how to work together to ensure consumer confidence in our food product and food safety systems. Today’s presentation emphasized the importance of early detection and response, which is critical to limiting the overall impact of the emergency. Veterinarians, and producers should know what signs to look for and who to call for assistance.

Hopefully this presentation has increased your awareness of the State and Federal agencies involved in an animal disease emergency response, as well as the necessary steps that must be taken to control an outbreak. Get involved and encourage other members of your community to be involved with local response plan development. Work with State officials to improve your communities level of preparedness. If you think you can assist in some manner, get trained in NIMS and ICS (free online web courses). Encourage members of your community to maintain vigilance and prevention practices for animal diseases.

A handout with the phone numbers of the State Veterinarian for Iowa, State Public Health Veterinarian, APHIS Area-Veterinarian-in-Charge and County Emergency Managers is provided. When presenting this to colleagues in your area, you may want to look up and include the specific name and phone number on this slide for reference for the county emergency manager, sheriff’s office, mayor and the county board of health supervisor or other medical professionals in your area. It is important to keep these numbers handy because in the event of an emergency, these officials will be kept informed of any movement restrictions, road closures, and if the animal disease poses a public health risk.