DEVELOPMENT OF A FOUNDATION FOR A KANSAS AGRICULTURAL EMERGENCY RESPONSE CORPS (KAERC)

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MPH CANDIDATE, MAY 2015
DEFENSE DATE: APRIL 28TH, 2015
OUTLINE

- Background
- The Kansas Department of Agriculture
- Field of Emergency Management and Public Health
- Food Supply and Economy
- Foreign Animal Disease and Zoonosis
- Current Kansas State Animal Response Team (KS SART)
- KAERC Mission and Framework
- Volunteer Management
- Roles and Responsibilities
- White Paper Development
- Future Scope and Timeline
- Application of Knowledge
- Overall Experience
BACKGROUND

- B.S. Animal Science with emphasis in Bioscience/Biotechnology, KSU May 2012
- Summer Residency in Public Health (SURPH), Summer 2011
- Biomedical Master’s Program, August 2012
- Master of Public Health candidate in Infectious Disease/Zoonoses, May 2015
- Field Experience completed with the Kansas Department of Agriculture, Division of Animal Health from March 2\textsuperscript{nd}, 2015-April 13\textsuperscript{th}, 2015
  - Preceptor: Tarrie Crnic, DVM, MPH, Animal Health Planner
The Kansas Department of Agriculture was the nation’s first state department of agriculture, founded 1872.

Division of Animal Health created in 1969 and is divided into disease control, animal facilities inspection and brands.

“One of the agency’s goals is to eradicate infectious and contagious livestock diseases throughout the state.” – KDA (3)
The KDA is dedicated to Emergency Management and prioritizes Food and Agriculture Security, Emergency Planning, Training and Exercise, Continuity of Operations Planning and the overall protection of the Kansas Food and Agriculture Critical Infrastructure (4).

Emergency Management is critical to Public Health as it protects the safety and well-being of animals, humans and the food supply.
FOOD SUPPLY AND ECONOMY

• 2001- Foot and Mouth Disease outbreak in the UK (1)
• Emergency response resulted in U.S. deployments to assist in alleviating the outbreak
• Negative public perception on disease, even if untrue, impacts food sales and trade
• Culling and disposal of uninfected animals cause detrimental impacts on the supply and demand
• Psychological impact on herd owners and general public leads to increased crisis
FOREIGN ANIMAL DISEASE AND ZOONOSIS

- Upwards of 80% all infectious diseases are zoonotic
- Foreign Animal Disease (FAD) is a huge threat to public health
- FAD’s are characterized by a high prevalence and rapid spread, a high death loss with a decrease in production and any disease that is vesicular or affects the central nervous system of the animal
- Loss of animals due to FAD results in the loss of years of selective breeding and genetics, livelihood, income and food supply
- Emergency protocols required to manage an outbreak at an appropriate level of biosecurity at the lowest possible level of jurisdiction (8)
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<thead>
<tr>
<th>CERVID &amp; CAMELID</th>
<th>CATTLE</th>
<th>EQUINE</th>
<th>SHEEP &amp; GOATS</th>
<th>SWINE</th>
<th>AVIAN</th>
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<td>Avian Influenza</td>
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<td>Equine Infectious Anemia</td>
<td>Equine Encephalomyelitis (EHM)</td>
<td>Equine Influenza</td>
<td>Fowl Typhoid</td>
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<td>Tuberculosis (active and latent)</td>
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<td>Anthrax</td>
<td>Anthrax</td>
<td>Classical Swine Fever</td>
<td>Exotic Newcastle Disease</td>
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<td>Anthrax</td>
<td>Brucellosis</td>
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<td>Hog Cholera</td>
<td>Prittacasol</td>
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<td>Rabies</td>
<td>Rinderpest</td>
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<td>Proctoic Mange</td>
<td>Anthrax</td>
<td>Pottoruvum</td>
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<td>Bovine Leukosia</td>
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<td>Johne’s Disease</td>
<td>Trichomoniasis</td>
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*Zoonotic (Humans)*
- Influenza
- Rabbit Fever
- Toxoplasmosis
- Actinobacillosis
- Rinderpest
- Blue Tongue Virus
- Trichomoniasis
- Campylobacteriosis
- Cryptosporidiosis
- Guineas
- Mastitis
- Pulmonary
- Leghorn or Frazier’s disease
- Lyme Disease
- Rocky Mountain Spotted Fever
- Salmonellosis, including typhoid fever
- Acanthamoeba
- Spondylopathy or other spine disease
- E. coli 0157:H7 and other
- Ulcer or ulcer-producing

KDA: (785) 564-6601 • KDHE hotline: (877) 427-7317
KDA Division of Animal Health • 1320 Research Park Drive, Manhattan, KS 66502 • (785) 564-6601 • agriculture.ks.gov/animalhealth
CURRENT KANSAS ANIMAL RESPONSE TEAM (KS SART)

- Non-profit, volunteer agency created in 2004 as an initiative of the Kansas Veterinary Medical Association (6)
- Focused on the evacuation of pets and companion animals
- Public outreach and training as well as pet preparedness protocols for the community
- 15 out of the 105 Kansas counties have an active response team, regional teams also developed
MISSION STATEMENT

“The KAERC aims to manage a wide-ranged and highly multi-disciplinary volunteer base in order to plan and respond to incidences of foreign animal disease in the state of Kansas.”

- Primary focus will be the response to foreign animal disease, but the corps will be trained and available to respond to any public health emergency
- The vision is to formulate an all-encompassing team of passionate professionals with the purpose of planning and responding to agricultural emergencies in Kansas
THINGS TO CONSIDER

• When formulating an emergency response collaborative, there are several factors to consider (2):
  • What is our motive?
  • What experts can we utilize?
  • What resources do we need and in what quantity?
  • How should we conduct risk communication to the public?
  • How will our needs be funded?
  • How do we recruit and retain volunteers?
  • How do we educate the public?
  • What training do we need to provide to the community?
  • What legislature is enforced to regulate this response?
  • Is there a reliable command system?
OTHER STATE AND FEDERAL EMERGENCY RESPONSE TEAMS

• Part of my research included an investigation of other state and federal animal emergency response teams by contacting them with a questionnaire on general best practices and recommendations

• Purpose was to compile the responses to incorporate them into one especially tailored for the needs of the KAERC
INTERVIEW QUESTIONS

1. What is the major scope of your program and its best practices?
2. What kinds of events have you responded to and what was the outcome?
3. What kind of support do you receive from local, state or federal governments?
4. How do you fund for compensation and supplies?
5. Being a volunteer program, how do you recruit and retain volunteers?
6. What public education/outreach efforts do you participate in during times of non-crisis?
7. What kinds of roles are in place for individuals of your team?
8. Is there a written EOP of your preparedness plan (provide link if possible)?
9. Please describe any limitations to your program.
10. Are there any unique strengths to your program that you feel set you apart from other animal emergency response teams?
11. Are there any changes you would make or are looking to make to improve your initiative?
12. What is your relationship to a One Health collaborative?
13. Any recommendations you would give to someone developing a similar program?
PARTICIPATING AGENCIES

• Indiana State Board of Animal Health
• Louisiana State Animal Response Team
• National Animal Health Emergency Response Corps
• North Valley Animal Disaster Group
• State of Massachusetts Animal Response Team
• U.C. Davis Veterinary Emergency Response Team
• Yuba Sutter Domestic Animal Disaster Assistance
VOLUNTEER MANAGEMENT

• This corps will rely heavily on the involvement and skills of selected volunteers
• Volunteer recruiting and retention are common challenges in developing a volunteer program due to time constraints, training, and activity
• Many different jobs and skillsets required will allow for a wide-ranged volunteer base and for opportunities for cross-training
• KAERC will hold public hearings, offer training sessions, and attend community events to recruit volunteers
**ROLES AND RESPONSIBILITIES**

• “Most countries focus on what needs to be done, but not who needs to do it.” –NAHEMS (7)

• The large foundation of this project was to establish the various roles and responsibilities that would be utilized in an emergency response

• Position descriptions were created for the emergency response along with the various skill sets that would be utilized

• Many of these roles can be pulled from other emergency management resources both locally and statewide
JOB OVERVIEW

- Appraiser
- Clean-up/Disinfection
- Communications
- Community Liaison
- Data Entry/Record Management
- Disease Surveillance/Reporting
- Epidemiology
- Finance/Accounting
- IT
- Mapping (GIS)
- Physical Laborer
- Psychological/Behavioral Health Specialists
- Public Educator
- Resource Allocation
- Risk Analysis
- Scientists and Laboratory Technicians
- Traffic Control/Security
- Training Officer
- Transportation
- Volunteer Manager
- Warehouse Management
Position Description

Title: Volunteer Manager

Reports To: Resource Unit Leader

Summary of Position
This individual will be the most involved in managing of the volunteers for an emergency response. The Volunteer Coordinator is responsible for managing and overseeing all aspects of volunteer participation, including recruitment, just-in-time training, and deployment. They should have strong communication skills in conversing not only with the volunteer base, but also with the established Incident Management Team.

Duties and Responsibilities
- Maintain list of current active volunteers and make notifications as requested
- Work with Resource Unit Leader to assign tasks to available volunteer recruits
- Provide briefings on roles and responsibilities
- Provide situational updates to volunteers that are on “stand-by”
- Keep a detailed activity log
- Provide information to the Incident Public Information Officer

Qualifications
Must demonstrate strengths in communication and leadership and/or management. Must be well versed in volunteer management.

Desired Skills
- Strong leadership ability
- Organizational skills
- Communication and public speaking
- Ability to multi-task and problem solve
- Software: Microsoft Word, Excel, and Outlook
DEVELOPMENT OF WHITE PAPER

• Final goal was to put this framework into writing in the form of a white paper
• White paper was written in a way to inform and recruit readers to volunteer
• The paper will propose the need for - and public health significance of - a large-scale volunteer emergency response corps and how it will apply to human emergency preparedness and response practices to animal health and zoonotic disease emergencies
FUTURE SCOPE OF THE KAERC

• Applying this response to drills and trainings in the near future
• Presenting the opportunity to the public through public hearings and outreach
• Networking with other state and federal agencies
• Unlike any other animal emergency volunteer program currently formulated, be an example for other states
• Strong community involvement
KAERC PROJECTED TIMELINE

KAERC TIMELINE 2015

- **Finalize White Paper**: The final draft of the white paper will be published to the public.
- **Application Process**: Volunteers will be able to access the application process online.
- **Training**: Training sessions will take place for volunteers and the general public.
- **April**
  - **Job Descriptions**: As detailed position descriptions are created, they will be posted on the website.
- **May**
  - **Volunteer Recruitment**: Plans to hold public hearings to present the KAERC idea and recruit potential volunteers.
- **June**
  - **Volunteer Selection**: Volunteers will be selected to attend trainings.
- **July**
- **August**
- **December**
  - **Drills**: Volunteers who complete training will be asked to participate in emergency response drills taking place.

A tentative timeline proposing the development of the KAERC in the near future.
APPLICATION OF KNOWLEDGE AND OVERALL EXPERIENCE

INTEGRATION OF CORE AND EMPHASIS AREA COMPETENCIES
# MPH Curriculum

## Core Courses
- Biostatistics
- Epidemiology
- Environmental Health Science
- Human Health Services Administration
- Social and Behavioral Sciences

## Required/Elective Emphasis Area Courses
- Emerging Diseases
- Food Protection and Defense
- Risk Communication
- Pathogenic Mechanisms/Microbiology
- Introduction to One Health
In an emergency situation, biostatistics is critical to obtain statistical data of the crisis by calculating the loss and damage done to aid in epidemiology and surveillance of infectious disease.

Can apply biostatistical methods and hypothesis testing to exercises and drills to determine best practices for an emergency response.
EPIDEMIOLOGY

• Epidemiologists assess the adverse effects of disasters and help predict possible risk and consequences should another disaster occur.

• Conduct surveillance on affected populations and careful tracking of reportable diseases.
The use of toxicology aids in determining various effects on the environment and enforces proper disinfection and disposal.

The primary function is to determine the environmental health risk in an emergency situation.
HEALTH SERVICES ADMINISTRATION

• Human health services are used in collaboration with animal response, specifically in the event of a zoonotic disease
• This could also include providing psychological and behavioral health for those suffering loss of companion animals or livestock
SOCIAL AND BEHAVIORAL SCIENCE

• By understanding the behavior of people, even how they react in crisis, we can determine ways to positively alter that behavior to decrease public outrage and build strong social constructs and communities, which in turn substantially strengthen an emergency response
EMERGING DISEASES

- Learning the science of emerging disease in the event of a natural disaster, an accidental or intentional release, wildlife foreign disease or zoonoses and their impact on human, animal and environmental health is necessary in responding to a foreign animal disease emergency.
• Discussing concepts in protecting the food supply by preventing disease in livestock populations and agro-terrorism can help to not only prevent a public health emergency, but also provide expertise in how to respond should it occur
RISK COMMUNICATION

• Methods of analyzing and communicating risk to the public are ways to decrease outrage during crisis and increase positive behaviors
• This incorporates the use of Emergency Support Functions, Incident Command Systems, the National Incident Management System and the National Response Framework
• Studies of the microbiology of pathogenic agents, how they function and how they cause disease in animals as well as humans are essential skills during a foreign animal disease emergency response
The One Health concept forms the foundation of the interconnected relationship between animal, human and environmental health, which is directly incorporated into KAERC.
CULMINATING EXPERIENCE

• I have a true passion and devotion for this field, animal health, infectious disease and overall public health
• I genuinely loved what I did through this project, with the opportunity to create something that will have a significant impact on the future of animal and public health
CAREER GOALS

- I plan to stay actively involved with KAERC
- Ultimately, my goal would be to hold a position in the Centers for Disease Control and Prevention
- Currently pursuing opportunities as a public health specialist for the city, an epidemiologist or a vaccine researcher
ACKNOWLEDGEMENTS

• My family
• Dr. Kimathi Choma
• My graduate committee
• The MPH program staff
• The KDA
REFERENCES


QUESTIONS?

THANK YOU FOR YOUR ATTENTION!