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

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MPH CANDIDATE, MAY 2015
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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 2nd, 2015-April 13th, 2015
  - Preceptor: Tarrie Crnic, DVM, MPH, Animal Health Planner

THE KANSAS DEPARTMENT OF AGRICULTURE

1320 Research Park Dr
Manhattan, KS 66502
(785) 564-6700

- 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)

FIELD OF EMERGENCY MANAGEMENT AND PUBLIC HEALTH

- 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)

REPORTABLE FOREIGN ANIMAL DISEASES (5)

Kansas Animal Health Reportable Diseases

The Kansas Department of Agriculture's Division of Animal Health mission is to ensure the public health, safety and welfare of Kansas' citizens through the prevention, control and eradication of infectious and contagious diseases and conditions affecting the health of livestock and domestic animals in Kansas. Below is list of animal diseases the Animal Health Commissioner has determined to be immediately reportable to Kansas Animal Health officials. *Other diseases the livestock commissioner determines to be immediately reportable due to an animal health emergency situation may be added at any time.*

Kansas Department of Agriculture

CERVID & CAMELID

- Foot and Mouth Disease
- Vesicular Stomatitis
- Tuberculosis (active and latent)
- Anthrax
- Brucellosis
- Rabies

CATTLE

- Foot and Mouth Disease
- Vesicular Stomatitis
- Tuberculosis (active and latent)
- Anthrax
- Brucellosis
- Rabies
- Rinderpest
- Bovine Leukosis
- Psoroptic Mange
- Scabies
- Johne's Disease
- Trichomoniasis

EQUINE

- Piroplasmosis
- Vesicular Stomatitis
- Equine Infectious Anemia
- Anthrax
- Brucellosis
- Rabies
- Equine herpesvirus myeloencephalopathy (EHM)

SHEEP & GOATS

- Foot and Mouth Disease
- Vesicular Stomatitis
- Scabies
- Anthrax
- Scrapie
- Psoroptic Mange
- Brucellosis
- Rabies

SWINE

- Foot and Mouth Disease
- Vesicular Stomatitis
- Classical Swine Fever/ Hog Cholera
- Anthrax
- Vesicular Exanthema
- Pseudorabies
- Brucellosis
- African Swine Fever
- Porcine Epidemic Diarrhea Virus (PEDv)

AVIAN

- Avian Influenza
- Fowl Typhoid
- Exotic Newcastle Disease
- Psittacosis
- Pullorum

ZOONOTIC (HUMANS)

- Influenza +
- Rabies *
- Tuberculosis * (active and latent)
- Botulism +
- Plague or Yersinia pestis +
- Q Fever (Coxiella burneti) +
- Anthrax *
- Ehrlichiosis +
- Brucellosis *
- Campylobacter Infections +
- Cryptosporidiosis +
- Giardiasis +
- Hantavirus Pulomary Syndrome +
- Leprosy or Hansen's disease +
- Listeriosis +
- Lyme disease +
- Rocky Mountain Spotted Fever +
- Salmonellosis, including typhoid fever +
- Any transmissible spongioform encephalopathy or other prion disease +
- E. coli 0157:H7 and other Shiga toxin-producing E. coli +

+ Disease must be reported to KDHE

* Disease must be reported to KDA and KDHE

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

KAERC

MISSION AND FRAMEWORK

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

SAMPLE POSITION DESCRIPTION

Position Description

Kansas
Department of Agriculture

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

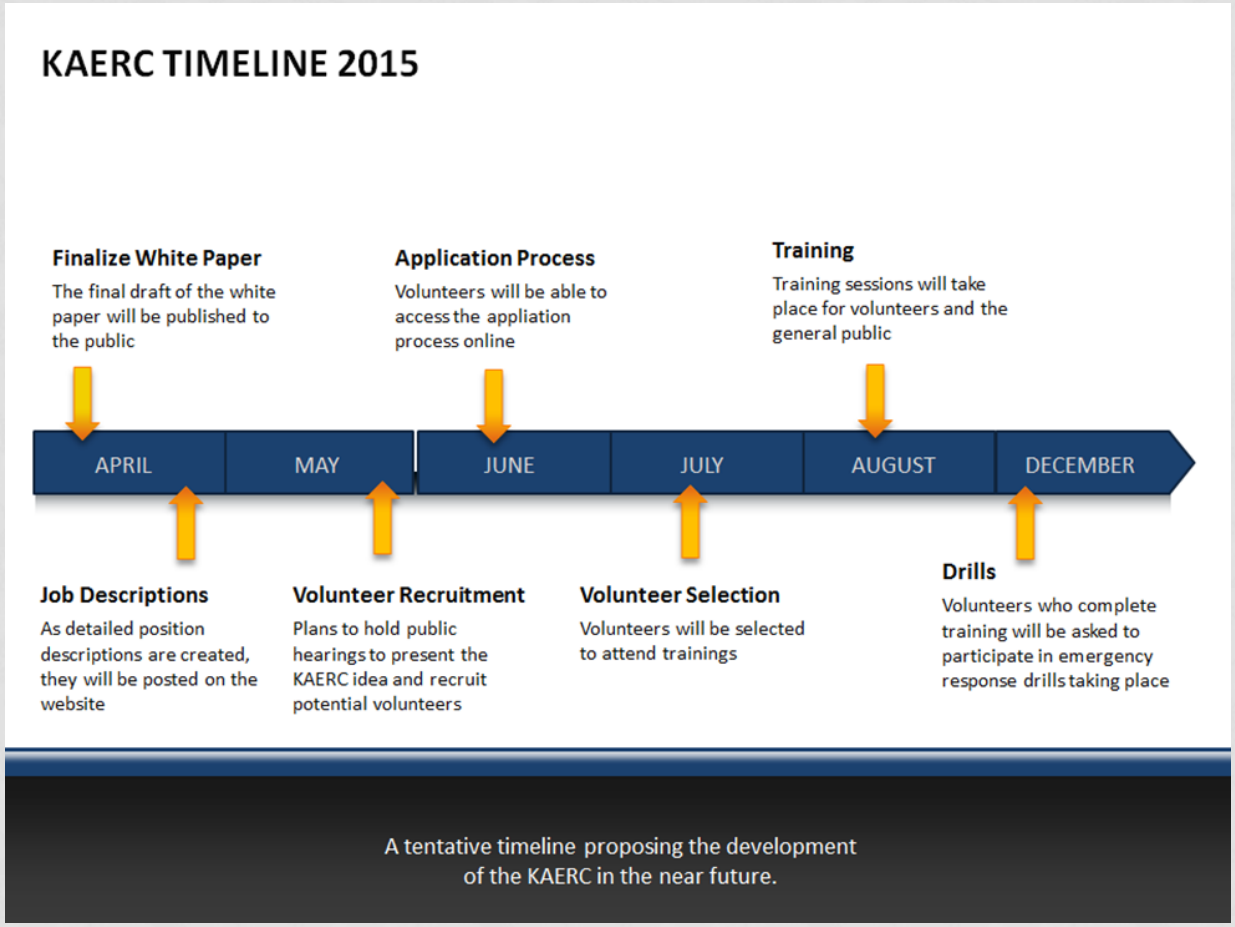
DEVELOPMENT OF WHITE PAPER

- 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



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

BIOSTATISTICS

- 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

ENVIRONMENTAL HEALTH SCIENCE

- 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

FOOD PROTECTION AND DEFENSE

- 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

PATHOGENIC MICROBIOLOGY/MECHANISMS

- 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

INTRODUCTION TO ONE HEALTH

- 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

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- My family
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QUESTIONS?

THANK YOU FOR YOUR ATTENTION!