NDSU Extension and Partners Enhance North Dakota's Foreign Animal Disease Response Capacity

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When the Highly Pathogenic Avian Influenza (HPAI) outbreak occurred in 2022, many responders in North Dakota lacked knowledge and technical skills to respond to foreign animal diseases and the associated mass livestock mortalities. North Dakota State University Extension led the development of curriculum and training to enhance the abilities of local communities and the state of North Dakota to respond to foreign animal disease outbreaks and mortalities. Following training, 100% of participants had increased ability to respond, and 92% indicated that their community was better prepared for a foreign animal disease.

Summary

The 2022 HPAI outbreak impacted North Dakota. Many responders had no previous experience responding to a foreign animal disease, including 62% of NDSU Extension agents. Through a USDA Animal and Plant Health Inspection Service (APHIS) National Animal Disease Preparedness and Response Program grant, NDSU Extension trained 65 professionals on how to safely respond to an animal disease outbreak or mass livestock mortality. Participant evaluations revealed that 100% of respondents indicated that the training increased their confidence and improved their ability to respond to an animal disease or mass livestock mortality. Additionally, 93% reported that the training improved their ability to provide support to individuals in high-stress situations. Six-month follow-up evaluation data indicated that 92% of respondents (25) considered their community to be better prepared for and able to respond to an animal disease or mass livestock mortality. The training successfully built relationships between responders in the state; 48% reported collaborating with individuals they connected with at the training to better prepare their communities.

Introduction

The 2022 HPAI outbreak impacted North Dakota. Responders to the outbreak included the North Dakota Department of Agriculture, North Dakota Department of Environmental Quality, APHIS, NDSU Veterinary Diagnostic Laboratory (VDL), NDSU Extension, county emergency managers and veterinarians. Many responders were new employees and were not involved in response efforts during the 2015 HPAI outbreak, including 62% of NDSU Extension agents. The lack of experience and knowledge resulted in a significant amount of time and effort spent determining the appropriate agencies to contact, defining agency roles, developing educational resources and creating an awareness of biosecurity and procedures used in active cases. Additionally, limited attention was given to stress management, mental health and well-being for personnel involved in the response.

To address these gaps, NDSU Extension developed curriculum and training to increase the knowledge and technical skills of local responders in responding to a foreign animal disease and mass livestock mortalities. The objectives of this training were the following: 1) enhance the abilities of local communities and the state of North Dakota to respond to foreign animal disease outbreaks and mass livestock mortalities by developing resources and providing hands-on training related to biosecurity, depopulation, disposal and decontamination, 2) develop and deliver mental health, stress and conflict management training resources for responding personnel and 3) build relationships and enhance communication between individuals and agencies responding to foreign animal disease outbreaks and mass livestock mortalities.

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Procedures

NDSU Extension collaborated with the North Dakota Department of Agriculture, North Dakota Department of Environmental Quality, APHIS and the NDSU VDL to identify training topics and develop curriculum. Training topics included an overview of animal diseases; continuity of business planning; personal protective equipment and decontamination; incident command systems, local response roles and impact assessment; humane endings; carcass disposal site selection and methods; stress management and responding to stressed people; effective communication in high-stress situations; and response simulation exercises. The curriculum was developed over a five-month period and included nine presentations, two response simulations (HPAI and anthrax), 22 Extension publications (14 of which were translated to Spanish), 130 kits with personal protective equipment (PPE) and a resource hub.

The curriculum was previewed by 25 attendees during the North Dakota Veterinary Medical Association's Annual Winter Conference in January 2024. Eleven attendees responded to a survey, all agreeing that the training increased their confidence in responding to a foreign animal disease (FAD), while 91% indicated that the materials presented were appropriate for those responding to an animal disease outbreak at the local level. All topic areas were rated as either moderately useful or very useful. Suggested improvements to the curriculum were made over the next four months leading up to the first full training.

The one-and-a-half-day training events were held in person at the NDSU Carrington Research Extension Center in June and September 2024. The training format included lectures, group work, demonstrations and hands-on activities (Figure 1). Each participant received a kit that contained personal protective equipment (Figure 2). A tabletop exercise at the end of the training integrated all topics presented and provided time for groups to share experiences with response efforts.

Figure 1. Participants of the Emergency Response Preparedness for Foreign Animal Diseases and Mass Livestock Mortalities in North Dakota training viewed a nondisease mortality compost site. NDSU photo.

Figure 2. Emergency Response Preparedness for Foreign Animal Diseases and Mass Livestock Mortalities in North Dakota training participants practiced donning PPE during the hands-on portion of the training. NDSU photo.

Results and Discussion

In post-event evaluations of training participants, all respondents (57) indicated that the training increased their confidence and ability in responding to an animal disease or mass livestock mortality event. Additionally, 96% of respondents indicated they planned to make changes to be better prepared and better able to respond to animal diseases or mass livestock mortalities because of their participation in the training. Responses also indicated 93% improved their ability to provide support to individuals in high-stress situations.

Post-training evaluation respondent comments included the following:

- *"One of the best trainings I've ever attended. Please make sure new ANR [agriculture and natural resources] agents attend this in the future.*
- *"This was a great training and I appreciate all the work put into it! It was good to understand the chain of command and know that many other offices would be working with a producer in a situation involving a FAD."*
- *"I appreciated the number of different professions represented at this meeting and their unique perspectives for this type of emergency response."*
- *"It was a great learning experience. The information was very useful and will be put to use if an event occurs. We EMs [emergency managers] don't normally deal directly with the emotional responses, but we are resources for finding avenues for emotional support, which is great to know that there are people to reach out to in the animal industry. Overall, it was great to network with others, and I have more tools in the toolbox for when the situation occurs. GREAT JOB to everyone involved!!"*

Six-month follow-up evaluation data indicated that 92% of respondents (25) felt their community is better prepared for, and able to respond to, an animal disease or mass livestock mortality. Of these respondents, 60% took action to be more prepared for an animal disease or mass livestock mortality. Additionally, the training successfully built relationships between responders in the state, with 48% collaborating with individuals they connected with at the training to better prepare their communities to respond to an animal disease or mass livestock mortality. Since the training, 12% of participants have responded to an animal mortality, 100% of whom felt they were better equipped to respond due to the training.

As part of the six-month evaluation, respondents were asked if they had taken actions to prepare for an animal disease or mass livestock mortality. Comments included the following:

- *"Put together a list of resources, working on a response plan, informed stakeholders on the process and procedures involved."*
- *"Monitoring of animal diseases in state and working with local producers and Extension county agent."*
- *"I have been more diligent about collecting names of producers or contacts needed if any outbreak would occur."*

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