

Building a Collaborative Approach to Zoonoses Education for Youth in Animal Agriculture

NAE4-HYDP RESEARCH, INNOVATION AND PROGRAM ROUNDTABLE
OCTOBER 20, 2020



Funding support from CDC/USDA/CSTE Project Development Grant: Influenza and Zoonoses Education among Youth in Agriculture

Session Overview

Setting the Stage – One Health Approach

- There is an ever-growing need for a One Health approach towards the prevention and control of zoonoses in people and animals.
- Zoonoses, such as variant swine influenza, avian influenza A viruses, and coronaviruses, comprise a large percentage of all newly identified and existing infectious diseases (www.who.int).

Variant Swine Influenza at 2017 County Fairs in Maryland

Building Collaborative Groups

- The World Health Organization argues that collaboration is key to understanding and managing public health risks at the human-animal-environment interface and improving local and global health security.
- Steps taken to collectively develop and implement long term strategies to prevent future variant influenza outbreaks in Maryland, approaches used, and resources developed to provide zoonoses education for 4-H/FFA youth in agriculture.

Targeted Zoonosis Education Program for Youth in Agriculture

- USDA / CDC / CSTE Support
- Healthy Animals | Healthy Youth

Benefits of the Collaborative Approach



Session Presenters

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Donielle Axline - 4-H Youth Development Principal Agent Assoc., Frederick County

April Barczewski - 4-H Youth Development Educator, Cecil County

Sheryl Bennett - 4-H Youth Development Educator , Howard County

Ashley Travis- 4-H Youth Development Educator, Washington County

Carrie Wivell - 4-H Program Coordinator, Maryland 4-H Center

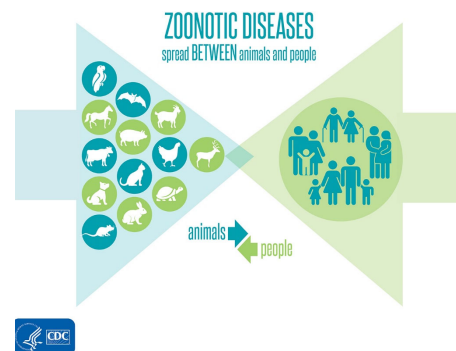


What is Zoonosis?

A zoonotic disease or zoonoses (plural) is an infectious disease that is transmitted species from animals to humans (or from humans to animals).

Some animals can carry harmful germs that can be shared with people and cause illness.

Zoonotic diseases are caused by harmful germs like viruses, bacteria, parasites, and fungi.



Zoonosis

- There are benefits associated with human-animal contact. It provides opportunities:
 - Production agriculture
 - Education
 - Companionship / Therapy
 - Recreation / Entertainment
- How We Get Into Trouble
 - Some producers, exhibitors, and members of the public are unaware that pathogens can be transmitted between animals and people
 - Not practicing personal protective behaviors
 - Not knowing or observing signs of sick animals



Why is this Important?

- Many people have an inadequate understanding of how zoonotic diseases are transmitted.
- Most people are unaware that apparently healthy animals can transmit pathogens.
- Event organizers should encourage those attending fairs or shows to practice personal protective behaviors such as appropriate handwashing and not eating in the barns.



Zoonotic Disease (H3N2) Outbreaks at Three Maryland County Fairs

- 2010-2015, approximately 100 human infectious disease outbreaks involving animals were reported nationally.
- Substantial medical, public health, legal, and economic effects.
- 2017 Swine Influenza H3N2 impacts Maryland County Fairs:
 - County Fair A - 1 fair visitor diagnosed with H3N2
 - County Fair B - 5 exhibitors with 7 clinical pigs and 15 children diagnosed with H3N2
 - County Fair C - 10 exhibitors with 17 clinical pigs, 2 pigs died (1 euthanized) and 24 children diagnosed with H3N2
 - County Fairs D & E – Swine shows cancelled.



Sources: MDA and MDH



H3N2 Outbreaks: Lessons Learned

- Communication is critical.
- Pre-event meetings are necessary.
- Shorten the duration animals are comingled and on the fairgrounds; be flexible to change the order of show at the event.
- Fairs should establish a veterinary relationship.
- Be aware of animal stock density; try to minimize stress.
- Keep animal barns as clean as possible; especially on public thoroughways.
- Post warning signage & establishing a traffic flow pattern for the public.
- Train fair officials on preventing virus transmission; provide PPE equipment to fairs.



Animal and Human Health: Realities

NOTE: Completely eliminating risks from animal contact is not possible.

- To deliver prevention messages to keep people and animals safe and healthy.
- Educate youth on the prevention and control of zoonotic diseases
 - Understand the risks of illness and injury from animals.
 - Provide strategies for preventing illness associated with animal contact.



Collaborative Groups

- **Maryland One Health: Healthy Animals | Healthy YOUth**
 - Maryland 4-H Healthy Animals | Healthy Youth Team
 - Nearly 100 trained Healthy Animals | Healthy Youth Facilitators across Maryland and West Virginia
 - Training to all 24 local health jurisdictions in Maryland
- **Maryland Animal Health Partners** (hosted by Maryland Department of Agriculture)
- **Maryland Association of Agricultural Fairs and Shows**
 - Annual Fall Convention
 - Annual Spring Meeting
 - 2020 Zoom Meeting Series
- **University of Maryland Extension 4-H**
 - 4-H Animal Science Program Committee
 - Annual 4-H Animal Science In-Service for Faculty/Staff
 - Annual 4-H Animal Science Updates for Volunteers



3-Minute Brainstorming and Sharing

The Maryland example included collaboration among the Maryland Department of Health (MDH), local health departments, Maryland Department of Agriculture (MDA), Univ. of Maryland Extension/4-H, West Virginia Extension/4-H, fair officials, and influenza experts at CDC.

QUESTION: Who are other potential partners in addressing this important issue within your state?

3:00

Time Remaining (minutes : seconds)



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2:30

Time Remaining (minutes : seconds)



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QUESTION: Who are other potential partners in addressing this important issue within your state?

1:30

Time Remaining (minutes : seconds)



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QUESTION: Who are other potential partners in addressing this important issue within your state?

0:30

Time Remaining (minutes : seconds)



3-Minute Brainstorming and Sharing

0:00

Time is up!



Influenza & Zoonoses Education among Youth in Agriculture

Multi-state program is a joint effort of federal government (CDC and USDA), the Council for State and Territorial Epidemiologists (CSTE) in partnership with state health departments, land-grant universities and Extension programs, and state departments of agriculture.

GOAL: Partnering to educate rural youth and to improve influenza education and communication efforts around youth in agriculture.



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Creation of Healthy Animals | Healthy YOUTH

A multi-faceted program developed by a two-state partnership to educate youth in agriculture about *influenza* and *zoonoses*.



Maryland and West Virginia Partners

- Maryland Department of Health
- University of Maryland Extension 4-H
- Maryland Department of Agriculture
- West Virginia University Extension Service



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Our Goals!



Collectively, collaboration members play an important role:

1. To educate youth about zoonotic infections.
2. To deliver prevention messages to keep people and animals safe and healthy.
3. Strengthen One Health networks among state human and animal health departments and agricultural communities.



Our Goals!



4. To identify opportunities to meet with youth about zoonotic infections and protective strategies.
 - a) Club meetings
 - b) Chapter meetings
 - c) Livestock field days
 - d) Fair orientation meetings
5. To teach by example.



Project Facets



Online Maryland and West Virginia AH&QA Program

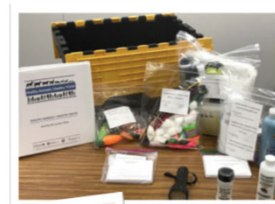
- Enhanced content about zoonotic disease basics, including disease transmission and prevention, strategies to help prevent the spread of disease and reduce its consequences (handwashing).
- Video additions to 1) inform importance and recommended procedure of handwashing and 2) inform importance and recommended procedure for conducting Exhibitor Self-Certification of Animal Health.



Project Facets



- Supplementary zoonotic disease lesson plans and other educational materials.
 - Zoonoses Activity Kits and Curriculum
 - 26 Activity Lesson Plans
 - 5 Facilitator Videos
- Signage to encourage zoonotic disease prevention at agricultural fairs.



Key Public Health Messages



Simple and easy to understand messaging:

Fair Signage and Social Media



- No food or drink in animal areas
- No strollers or toys in animal areas
- No kissing the animals
- Wash your hands



Source: MDH



Key Messages for Youth in Agriculture



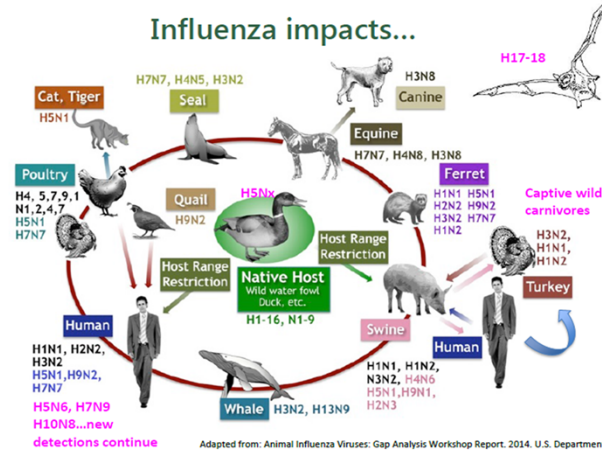
- **Understand the human – animal interface**
 - People who live or work with animals are at risk of infection with zoonotic diseases.
 - Zoonotic diseases can spread both directions: **Animals -> Humans** and **Humans -> Animals**.
 - Knowing which groups are at highest risk from contracting zoonotic diseases.
- **Maintain animal health: Care, monitoring, and treatment**
 - Knowing the most common zoonotic diseases.
 - Active Veterinary – Client – Patient Relationship (VCPR).
 - Daily animal checks – Signs of healthy / sick animals.
 - Animal Health Checks before loading.
- **Know how zoonotic diseases spread**
 - Direct Contact
 - Indirect Contact
 - Aerosol or Droplet
 - Ingestion
 - Vector Transmission
- **Recognize the importance of following recommended biosecurity protocols**
 - Handwashing is a critical step to preventing spread of disease.
 - Animal identification and record keeping is critical.



Educate about the Human - Animal Interface



Influenza impacts...



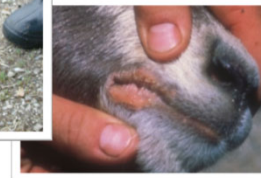
2015 LBM-WG

Adapted from: Animal Influenza Viruses: Gap Analysis Workshop Report. 2014. U.S. Department of Agriculture, Agricultural Research Service, Washington, DC. <http://go.usa.gov/KpGP>

Educate about Common Zoonotic Diseases



- Club Lamb Fungus
- E Coli
- Influenza
- Lyme Disease
- Rabies
- Ringworm
- Salmonella
- Sore mouth
- West Nile Virus



Educate about the Transmission of Zoonotic Diseases



How do zoonotic diseases spread?

- **Direct Contact:** This occurs when a healthy animal or person comes in direct contact with an infected animal or person. Then the pathogen from the infected animal or person is directly transferred to the healthy animal or person (nose-to-nose contact, mouth-to-mouth contact, contact during breeding)
- **Indirect Contact:** This is the spread of pathogens through contact with areas where animals live and roam, or with objects or surfaces contaminated by an infected animal.
- **Aerosol or Droplet:** A common example of disease transmission by aerosol or droplets is sneezing. Pathogens can also be carried on dust particles in the air.
- **Ingestion (Oral) transmission:** Ingestion occurs when pathogens are ingested from contaminated food or water or by licking or chewing contaminated objects in the environment.
- **Vector Transmission:** Pathogens can be carried by insects and pests from an infected animal to one that is healthy. The vector itself does not become ill, but it is a way pathogens are moved from one location to another (mosquitoes, ticks, rodents, birds, barn cats and farm dogs, and more).



Educate about the Important Role of Biosecurity



Biosecurity is a combination of management practices designed to prevent the introduction and transmission of diseases and disease-causing agents into a herd.

The Goal of biosecurity is to prevent, minimize, or control cross-contamination of body fluids (feces, urine, saliva, etc.) between animals, between animals to feed and between animals to equipment that may directly or indirectly contact animals.

Following recommended biosecurity protocols is important

- Maintaining a biosecurity program is the most effective means to control disease.
- Maintaining a biosecurity program is the least costly means to control disease.
- Biosecurity can be either external or internal.
 - External biosecurity is keeping diseases out of a herd, whereas
 - Internal biosecurity is keeping diseases already in one more segments of the herd from spreading to other segments.
- All biosecurity measures should be focused on the prevention of the entry of unwanted diseases!



Source: University of Idaho, 2016

Next Steps: Healthy Animals | Healthy Youth



- Video Development
- Additional Lesson Development
- Training Additional Healthy Animals | Healthy Youth Facilitators
- Continued Partnership Development



CONCLUSION: Benefits of a Collaborative Approach to Zoonoses Education for Youth in Animal Agriculture

- Enhanced communication
- Established relationships with key partners
- Coordinated education efforts
- Advanced planning
 - Preventative measures taken
 - Organized, effective response to crisis



For More Information

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Join Us for Live Discussion/Q&A!

Q: What are you doing in your local or state program related to this topic? Why do you feel this is an important topic?

Q: What do you see are the potential benefits for youth exhibitors who engage in this issue?

Q: What are the potential implications zoonotic disease outbreaks can have on 4-H animal programs? Youth engaged in animal agriculture?

Q: What have you seen in the media related to zoonotic diseases and how did you or others perceive it?

Q: How do we best respond to negative press or social media?

Q: What strategies might be taken to address zoonoses in your programs?

Q: How can we (Extension and 4-H across the US) collaborate together on this topic?



Thank you!

Thank you for being here!



Discussion Questions

There is an ever-growing need for a One Health approach towards the prevention and control of zoonoses in people and animals.

Q: What is your familiarity or experiences with zoonotic diseases in the context of your educator role or youth program?

Q: What are you doing in your local or state program related to this topic? Why do you feel this is an important topic?



Discussion Questions

Youth exhibiting livestock are themselves at risk for developing variant influenza or other zoonotic diseases, and also have the potential to play an important role in preventing the spread of these diseases.

Q: What do you see are the potential benefits for youth exhibitors who engage in this issue?



Discussion Questions

The Maryland example shows how zoonoses related occurrences at agriculture fairs and shows could impact public awareness, and maybe concern about diseases that can be transmitted between animals and people.

Q: What are the potential implications zoonotic disease outbreaks can have on 4-H animal programs? Youth engaged in animal agriculture?

Q: What have you seen in the media related to zoonotic diseases and how did you or others perceive it?

Q: How do we best respond to negative press or social media?



Discussion Questions

The Maryland example shared zoonoses education approaches and resources created and implemented in its state.

Q: What strategies might be taken to address zoonoses in your programs?



Discussion Questions

Q: How can you incorporate the information shared during this roundtable session into your current program?

Q: How can we (Extension and 4-H across the US) collaborate together on this topic?

