



“Bring Home the Blue, Not the Flu!”

Train-the-Trainer for Iowa County Youth Coordinators

May 29, 2020

Contact: YouthInAg@iastate.edu

These courses were created by veterinarians at the [Center for Food Security and Public Health](#) at Iowa State University in collaboration with the Iowa Department of Public Health and with support from the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists. The content has been national peer reviewed by 4-H and many other organizations.

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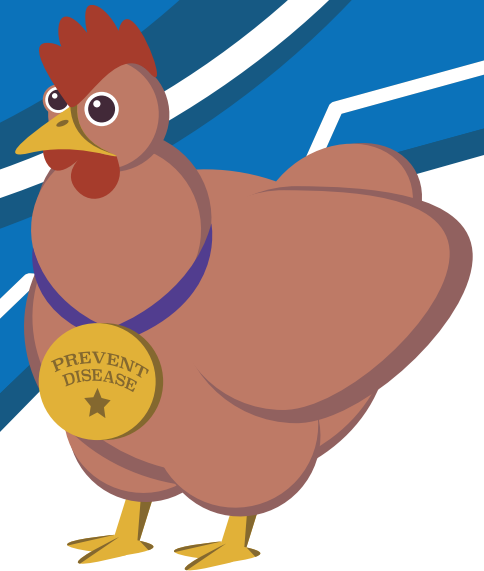
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BRING HOME THE BLUE, NOT THE FLU!



Learn about diseases shared between animals and people, disease risks and prevention, and career opportunities in One Health!

WHEN: _____

WHERE: _____

RSVP: _____

Learn what you can do to help protect yourself and your animals on the farm and at the fair through FUN, HANDS-ON ACTIVITIES!

These courses were created by veterinarians at the Center for Food Security and Public Health at Iowa State University in collaboration with the Iowa Department of Public Health and with support from the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists. The content has been national peer reviewed by 4-H and many other organizations.

For assistance organizing your own workshop, contact YouthInAg@iastate.edu

Visit: www.BlueNotFlu.org

Trainer's Guide

Integrating the “Bring Home the Blue, Not the Flu!” curriculum into the classroom or a workshop with hands-on activities.



Introduction

The online course, “Bring Home the Blue, Not the Flu,” has been created to educate youth on best practices related to biosecurity, animal health, and prevention of zoonotic diseases, so they can keep themselves and the animals they interact with safe and healthy. Two courses are available: the first created for middle-high school students (ages 13-18), and the second created for elementary students (ages 7-12). Whether on the farm, at a fair, or at home, the information presented within these courses—and the many supplemental resources we have developed to assist with implementation—can benefit youth with their current and future livestock projects, and contribute to their science and health education.

Ideas for Implementation

The “Bring Home the Blue, Not the Flu” course content and materials allow flexibility in instruction. The courses, found on our website, and associated hands-on activities, can be incorporated into online or in-person classroom instruction, used during 4-H or FFA club/chapter meetings or to prepare for contests, incorporated into youth projects in animal or human health, used in preparation for showing at animal exhibitions or fairs, used by parents for at-home learning, and more! Listed on the following pages are three different options to consider when planning educational events based on the course material.

When deciding which hands-on activities to implement, we recognize that you may at times need to work within limited resources. For your convenience, a [workshop materials list](#), and the amount of time needed, for each of the three activities is provided on the last page of this guide. Detailed hands-on activity guides and demonstration videos may be found on our website.

Using this guide as a template, select what works best for your needs and delete what doesn't apply. We hope you and the youth you interact with enjoy the course, and we welcome feedback. Please visit our website, www.BlueNotFlu.org, or contact us directly at YouthInAg@iastate.edu.

Planning

1. Download and print or ensure access to necessary resources
 - a. For trainers:
 - i. Resource guide
 - ii. Worksheet key(s) (one for each lesson covered)
 - iii. Hands-on activity instructor guides (one for each activity)
 - b. For each participant:
 - i. Pre- and post- course evaluation forms, if not using online course evaluations
 - ii. Learning Goals Worksheets or Learning Objectives Worksheets and additional Worksheets (time permitting) (one for each lesson covered)
 - iii. Hands-on activity participant guide (only available for Disease Transmission and Outbreak Investigation: Mucous Swap Activity)
 - iv. Additional Resources from website, as desired (optional)
2. Before participants arrive at the workshop, set up for hands-on activities. Specific instructions can be obtained by visiting the course website and viewing the applicable demo video or downloading the instructor guide for that activity.

Options for covering course material

Option 1

Use this option if students are able to complete independent learning ahead of a workshop (e.g., you are able to send participants a link to the course after registration for an event). In this option, you will spend your in-person time completing hands-on activities and facilitating discussion about the material during the activities. Suggested class/workshop time is 1 to 1.5 hours.

Approximately 1-2 weeks before the workshop, ask students to independently complete the online course appropriate for their age group. You may wish to have students print and hand in or download and email certificates of completion (integrated into the online course) to verify.

Option 2

Use this option if the workshop or class period can be held multiple times or expanded to a longer time (i.e., a half-day or more workshop). In this option, the hands-on activities can be integrated into the instruction using the online course or PowerPoint lessons (available under 'Supplemental Material') during the relevant lessons. Note that each lesson is 10-15 minutes (elementary course) or 20-30 minutes (middle-high school course).

Lessons are instructor-led using either the online course or PowerPoint presentations. The specific [daily agenda](#) will vary depending on time and resources available for the hands-on activities. The hands-on activities may be performed either before teaching the related lesson

as an introduction to the concept, or after the lesson to apply what was learned. See '[Lesson-Activity Correlation Guide](#)' below for more guidance.

Option 3

Use this option if you have the opportunity to hold a workshop or class with youth, but are unable to request that students complete the online course prior to attending, and do not have enough time to complete the online course or PowerPoint presentations during the workshop or class. Suggested class/workshop time is 1 to 1.5 hours. In this case, you can utilize the provided learning objective worksheets (available under 'Supplemental Material') to guide learning on certain course topics that correlate with the hands-on activities. See '[Lesson-Activity Correlation Guide](#)' below for more guidance.

General Agenda

[Add Workshop Title, Date, Time, Location, Instructors' Names, and Number of Participants to agenda]

1. Welcome- discuss session plan and overview with participants
2. Distribute pre-course evaluations, if not using online course, and allow participants time to complete. Collect evaluations.
3. Distribute relevant lesson worksheets before the workshop, for students to follow along with (time permitting)
4. (Optional) 'Pass the Pig' introductions (see Disease Transmission and Biosecurity Activity).
5. Cover course material according to most appropriate option (see previous) and perform hands-on activities.
 - Complete activities according to instruction in the demo video or instructor guide, and facilitate discussion throughout the activity (key topics/prompts are available in the instructor guide)
6. Summarize key concepts covered during workshop.
7. Distribute post-course evaluations, if not using online course, and allow students time to complete. Collect evaluations.

Lesson-Activity Correlation Guide

Note that activities will be best understood by participants if all preceding lessons have been completed (e.g., elementary school participants should complete lessons 1-4 before participating in the PPE activity). The below guidance is intended to assist with timing of interspersing activities throughout classroom learning or an extended workshop, during which material from the course itself, rather than just the activities on their own, will be incorporated.

- Elementary Course:
 - Lesson 4: PPE Activity
 - Lesson 5: Disease Transmission and Biosecurity Activity
 - Lesson 6: Disease Transmission and Outbreak Investigation: Mucous Swap Activity
- Middle-High School Course:
 - Lesson 2: Disease Transmission and Biosecurity Activity
 - Lesson 3: PPE Activity
 - Lesson 6: Disease Transmission and Outbreak Investigation: Mucous Swap Activity

Workshop Suggested Materials List and Estimated Time Needed*

Disease Transmission and Outbreak Investigation: Mucous Swap Activity

Setup: 15 minutes **Activity:** 20-30 minutes

Material	Quantity
Instructor Guide (incl. behavior cards)	1 per instructor (print 1 pg. behavior cards/15 participants)
Plastic Cups	1 per participant
Baking Soda†	1 teaspoon per 2 cups of water
Phenol Red with dropper†	~ 1 mL per 10 participants
Distilled Water	~ ½ cup per participant
Participant Guide	1 per participant
Gloves	1 pair per participant
Bubbles	1 bottle
Bubble blower	1 per workshop

†Alternatively, blue and yellow food coloring may be used for a simpler activity

Disease Transmission and Biosecurity Activity

Setup: 10 minutes **Activity:** 20-30 minutes

Material	Quantity
Glo Germ	1 container
Blacklight	1 large or 1 small per 15 participants
Stuffed Animal (pig, cow, etc.)	1 stuffed animal
Livestock Brush	1 brush
Popcorn	1 bag
Feed bags or buckets	2 bags or buckets

Personal Protective Equipment Activity

Setup: 5 minutes **Activity:** 10 minutes

Material	Quantity
Shaving Cream	1 can
Tyvek	1 per 15 participants
Boot Covers	1 per 15 participants
Gloves	1 pair per 15 participants
Mask	1 per 15 participants

*Setup may be completed prior to participants' arrival, and activity time includes time for discussion about concepts learned in the activity. Note that many of these materials can be substituted, and still allow an effective and engaging learning experience. Be creative! If you have questions or suggestions, contact us at YouthInAg@iastate.edu.



Project Background

Animal agriculture is an important part of our country's economy and culture. Youth agriculture programs are a key element in the future of animal husbandry and food production. Raising and showing livestock help youth develop responsibility, learn good sportsmanship, and gain confidence. Most Iowa youth interested in pursuing a career in agriculture are members of either 4-H or FFA. In Iowa, nearly 100,000 Iowa youth are involved with 4-H and more than 15,000 students participate in FFA.

While raising and showing animals have an overall positive impact on youth and the community, many zoonotic diseases can affect exhibitors and spectators, especially when people have close contact with animals. Several animal related disease outbreaks, such as variant influenza A virus of swine (H3N2v), or enteric disease outbreaks caused by pathogens such as *E. coli* and *Campylobacter*, have been associated with fairs within the past few years. In many instances, these events resulted in severe illness in youth. Younger children are at an increased risk for complications of zoonotic disease infections.

Youth livestock projects can also present disease transmission risks to animals due to the comingling of various animals and animal species from different locations. While most commercial farms implement biosecurity measures to reduce the risk of disease among animals, youth animal agriculture projects are generally reared on a smaller scale, involve closer contact with the animals, and have an increased opportunity for comingling of animals or sharing of equipment. Subsequently, many national and state agencies, organizations, and institutions have identified biosecurity for animal agriculture settings as a subject of high priority.

Understanding disease risks and preventive measures is critical to reduce the occurrence of zoonotic diseases among youth associated with animal agriculture. Awareness of these risks can help youth to understand the importance of disease prevention for themselves, their animals, and the public. Additionally, teachers, volunteer leaders, and parents should understand the same disease risks to further reinforce measures needed to prevent zoonotic disease transmission.

While programs addressing issues of food safety (e.g., Quality Assurance Programs) are currently available and often required for youth in agriculture, programs directly targeted at youth that address the link between biosecurity, animal health, and zoonotic disease risks are very limited.

To address this concerns, the Center for Food Security and Public Health at Iowa State University's College of Veterinary Medicine, in collaboration with the Iowa Department of Public Health and with support from the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists created two **free online courses to teach youth about zoonotic diseases, "Bring Home the Blue, Not the Flu: Preventing Disease in Animals and People"**.

These courses are meant to encourage showmanship and animal involvement while keeping both animals and humans safe and healthy. Two courses, one for elementary students (ages 7–12) and one for middle and high school students (ages 13–18), are each divided into six lessons. Students will learn about diseases, how diseases are spread, and how to prevent transmission between humans and animals in a fun and interactive way. Older learners will learn about specific zoonotic diseases, such as influenza, and complete case studies, and will also learn about career opportunities in One Health—the health of animals, people, and the environment.

Visit www.BlueNotFlu.org to access the courses, supplemental information such as learning objectives and worksheets, teacher materials including answer keys, hands-on activity guides, materials for hosting a workshop, and more! For questions, contact YouthInAg@iastate.edu.



Implementing “Bring Home the Blue, Not the Flu!” Into the Classroom— Curriculum Standards and Related Information

The following information pertains to the online courses “Bring Home the Blue, Not the Flu!” created by the Center for Food Security and Public Health at Iowa State University’s College of Veterinary Medicine, in collaboration with the Iowa Department of Public Health and with support from the Centers for Disease Control and Prevention (CDC) and the Council of State and Territorial Epidemiologists. Access to the courses and more information is available at www.BlueNotFlu.org.

Content and recommendations to promote healthy behaviors provided in the courses are science- and evidence-based to reduce the risk of disease transmission among animals and people. All reviewing partners ensure content aligns with state and national guidelines and recommendations based on scientific research. Our reviewing partners include the following:

- Iowa Department of Public Health
- Iowa Department of Agriculture and Land Stewardship
- National Pork Board
- Iowa State University Extension and Outreach
- Iowa FFA
- Iowa 4-H*
- National 4-H*

*Courses have passed Iowa and National 4-H peer review

The courses are consistent with positive youth development principles and practices and learning methods (Appendix 1). Content within courses also align with the following standards:

- Iowa and National 4-H Program Priorities in healthy living and STEM
- Iowa Core and National Education Standards (Appendix 2)

Both courses are fully accessible for learners with disabilities.

Should you choose to incorporate the courses into your classroom or club, we have also developed additional material to aid in your instruction.

- Certificates of completion, provided at the end of each online lesson and at the end of each online course
- PowerPoint versions of the high school course, with comprehensive presenter notes, for an alternative method of presentation
- Learning Goals/Objectives to assist in formulation of test questions
- Keys to Learning Goals/Objectives and Worksheets (password-protected)
- Evaluations for courses and workshops (password-protected)

Courses are also responsive on tablets and mobile devices.



Appendix 1: Positive Youth Development Principles and Practices and Learning Methods

The “Excellence in Exhibition: Preventing Disease in Animals and People” online course teaches the following life skills:

- Health—Living
 - o Healthy lifestyle choices
 - o Disease prevention
 - o Personal safety
- Head—Thinking
 - o Critical thinking
 - o Problem Solving
- Head—Managing
 - o Planning/organizing
- Heart—Relating
 - o Communication

Youth must be **engaged in learning**. After completing the self-paced and self-guided interactive online course, they can apply what they have learned to their own animal projects at home and during exhibitions to build **a safe environment**. Youth also have an **opportunity for mastery** and may use elements of the course or supplemental material to teach other youth, leaders, or exhibition volunteers. Throughout the course, youth have the **opportunity to see themselves as an active participant in the future**, envisioning themselves doing the activities described with their own animal projects. They also have the **opportunity for self-determination**, and are encouraged to set goals for their animal projects as they learn best biosecurity practices.



Appendix 2: Education Standards

Iowa Core Alignment

The content of “Excellence in Exhibition: Preventing Disease in Animals and People” online course aligns with the following Iowa Core Standards:

- Health Literacy 21.9-12.HL.1
 - o Demonstrate functional health literacy skills to obtain, interpret, understand and use basic health concepts to enhance personal, family, and community health.
- Health Literacy 21.9-12.HL.2
 - o Synthesize interactive literacy and social skills to establish and monitor personal, family and community goals related to all aspects of health.
- Health Literacy 21.9-12.HL.3
 - o Apply critical literacy/thinking skills related to personal, family and community wellness.
- Health Literacy 21.0.12.HL.5
 - o Demonstrate behaviors that foster healthy, active lifestyles for individuals and the benefit of society.
- Engineering, Technology, and Applications of Science HS-ETS1-1
 - o Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
- Engineering, Technology, and Applications of Science HS-ETS1-3
 - o Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
- Engineering, Technology, and Applications of Science HS-ETS1-4
 - o Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

References

Iowa CORE. Health Literacy. Available at <https://iowacore.gov/iowa-core/subject/21st-century-skills/10/health-literacy>.

National Health Education Standards, 2nd Edition. Joint Committee on National Health Education Standards. 2007. Available at https://sparkpe.org/wp-content/uploads/NHES_CD.pdf.

Next Generation Science Standards. Available at <https://www.nextgenscience.org/topic-arrangement/hsengineering-design>.



National Education Standards

The content of “Excellence in Exhibition: Preventing Disease in Animals and People” online course aligns with the following National Education Standards:

- National Health Education Standards
 - o Standard 1: Students will comprehend concepts related to health promotion and disease prevention to enhance health.
 - o Standard 2: Students will analyze the influence of family, peers, culture, media, technology, and other factors on health behaviors.
 - o Standard 3: Students will demonstrate the ability to access valid information, products, and services to enhance health.
 - o Standard 4: Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.
 - o Standard 5: Students will demonstrate the ability to use decision-making skills to enhance health.
 - o Standard 6: Students will demonstrate the ability to use goal-setting skills to enhance health.
 - o Standard 7: Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.
 - o Standard 8: Students will demonstrate the ability to advocate for personal, family, and community health.
- Next Generation Science National Education Standards: Engineering, Technology, and Application of Science
 - o HS-ETS1-1: Analyze a major global challenge to specify qualitative and quantitative criteria and constraints for solutions that account for societal needs and wants.
 - o HS-ETS1-3: Evaluate a solution to a complex real-world problem based on prioritized criteria and trade-offs that account for a range of constraints, including cost, safety, reliability, and aesthetics, as well as possible social, cultural, and environmental impacts.
 - o HS-ETS1-4: Use a computer simulation to model the impact of proposed solutions to a complex real-world problem with numerous criteria and constraints on interactions within and between systems relevant to the problem.

References

National Health Education Standards, 2nd Edition. Joint Committee on National Health Education Standards. 2007. Available at https://sparkpe.org/wp-content/uploads/NHES_CD.pdf.

National Health Education Standards. Centers for Disease Control and Prevention. 2016. Available at <https://www.cdc.gov/healthyschools/sher/standards/index.htm>.

Next Generation Science Standards. Available at <https://www.nextgenscience.org/topic-arrangement/hsengineering-design>.



Resource Guide for **"Bring Home the Blue, Not the Flu!"** Course (Elementary School Students)

This guide applies to youth or adults using the online curriculum with a group or as self-guided learning. If desired, engaging, hands-on activities are available for use along with the online courses.

Lesson 1: All About Germs

- Tell me what a germ is.
- Tell me what germs can do.
- Tell me who can get sick from germs.
- Tell me what we call germs that are shared between animals and people.

Supplemental Resources:

- Lesson 1 Learning Goals Worksheet

Lesson 2: Signs of Sickness

- Tell me how a person or animal might act or feel when they are sick.
- Name who to tell if you find a sick animal.
- Tell me what you should do around a sick animal.

Supplemental Resources:

- Lesson 2 Learning Goals Worksheet

Lesson 3: How Germs are Spread

- Tell me 4 ways that germs can spread.
- Tell me ways to stop germs from spreading.

Supplemental Resources:

- Lesson 3 Learning Goals Worksheet

Lesson 4: Fight Germs

- Tell me one way to boost your health power to fight off germs.
- Show me how to wash your hands.

Supplemental Resources:

- Lesson 4 Learning Goals Worksheet
- Personal Protective Equipment activity
 - Activity Guide
 - Video tutorial: <https://www.youtube.com/watch?v=vZEH93L4ITY>

Lesson 5: Biosecurity: Keep Germs Out

- Tell me what “biosecurity” means.
- Tell me how germs can get onto farms or fairs.
- Tell me how you can W.A.C.K. away germs.
- Practice good biosecurity at your farm and at the fair.

Supplemental Resources:

- Lesson 5 Learning Goals Worksheet
- Disease Transmission and Biosecurity activity
 - Activity Guide
 - Video tutorial: <https://www.youtube.com/watch?v=dSN0We1PJt4>

Lesson 6: What Went Wrong at the Fair?

- Tell me how you and your animals can get germs.
- Tell me ways you and your animals can stay healthy at home and at the fair.
- Tell me some people that can help you and your animals stay healthy and stop germs.

Supplemental Resources:

- Lesson 6 Learning Goals Worksheet
- Disease Transmission and Outbreak Investigation: Mucous Swap activity
 - Activity instructor guide
 - Activity participant guide
 - Video tutorial: <https://www.youtube.com/watch?v=2mJcXDPD37k>

Other Supplemental Resources

- Course glossary
- Course stall sign
- Related resources

Keys for the learning objective worksheets can be found on the password-protected “Teacher Materials” page. Select this link on the webpage and complete the form to receive the password.

All supplemental resources can be found at <http://www.BlueNotFlu.org/>. Any questions or comments can be directed to YouthinAg@iastate.edu.

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 1: All About Germs Learning Goals

- 1. Tell me what a germ is.**
- 2. Tell me what germs can do.**
- 3. Tell me who gets sick from germs.**
- 4. Tell me what we call germs that are shared between animals and people.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 2: Signs of Sickness Learning Goals

- 1. Tell me how a person or animal might act or feel when they are sick.**
- 2. Name who to tell if you find a sick animal.**
- 3. Tell me what you should do around a sick animal.**

**Excellence in Exhibition:
Preventing Disease in Animals and People**

**Lesson 3: How Germs are Spread
Learning Goals**

- 1. Tell me 4 ways germs can spread.**
- 2. Tell me ways to stop germs from spreading.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 4: Fight Germs Learning Goals

- 1. Tell me one way to boost your health power to fight off germs.**
- 2. Show me how to wash your hands correctly.**

**Excellence in Exhibition:
Preventing Disease in Animals and People**

**Lesson 5: Biosecurity: Keep Germs Out
Learning Goals**

- 1. Tell me what “biosecurity” means.**
- 2. Tell me how germs can get onto farms or fairs.**
- 3. Tell me how you can W.A.C.K. away germs.**
- 4. Practice good biosecurity at your farm and at the fair.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 6: What Went Wrong at the Fair? Learning Goals

- 1. Tell me how you and your animals can get germs.**
- 2. Tell me ways you and your animals can stay healthy at home and at the fair.**
- 3. Tell me some people that can help you and your animals stay healthy and stop germs.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 1: All About Germs Learning Goals and Answers

1. Tell me what a germ is.

A germ is a tiny invader that gets into our bodies. Germs are so small that we can't see them. Different types of germs are bacteria, viruses, fungi, or parasites.

2. Tell me what germs can do.

Germs can make us sick. Germs can also spread to others and make them sick.

3. Tell me who gets sick from germs.

Everyone can get sick from germs—people and animals!

Germs can attack some people more easily than others and make them very sick.

- Children younger than 5 years old
- People who are already sick and are less able to fight off disease
- People older than 65 years old
- Pregnant women

4. Tell me what we call germs that are shared between animals and people.

Zoonoses.

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 2: Signs of Sickness Learning Goals and Answers

1. Tell me how a person or animal might act or feel when they are sick.

When people are sick, you might see signs like:

- Cough
- Fever
- Runny nose
- Headache
- Stomach ache

When animals are sick, you might see signs like:

- Cough
- Fever
- Runny nose
- Tired, not eating
- Red or runny eyes
- Skin sores
- Diarrhea

2. Name who to tell if you find a sick animal.

Tell your parents and veterinarian if you see a sick animal.

3. Tell me what you should do around a sick animal.

If you are around a sick animal, you should wash your hands after touching the animal, feeding or watering it, or cleaning its pen. You should also keep the sick animal away from healthy animals. You should change clothes and shoes before visiting other animals or going inside.

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 3: How Germs are Spread Learning Goals and Answers

1. Tell me 4 ways germs can spread.

Germs can spread:

- Touch
- Air
- Hand-to-mouth
- Bugs

2. Tell me ways to stop germs from spreading.

Prevent spreading germs by touch:

- Wash your hands after touching animals or pens
- Wear gloves when touching sick animals or their poop
- Wash boots and clothes often
- Use clean supplies, and don't share supplies
- Keep sick animals away from healthy animals

Prevent spreading germs by air:

- Provide fresh air to animals and people
- Stay away from animal barns if you are sick
- Stay away from sick animals or people

Prevent spreading germs by hand-to-mouth:

- Wash your hands:
 - After you touch animals
 - After cleaning pens
 - After using the bathroom
 - Before making food
 - Before eating
- Do not eat or drink around animals or in animal areas
- Only eat food that has been stored and cooked to the right temperature.

Prevent spreading germs by bugs:

- Use fly spray or medicine from your vet on your animals
- Wear long sleeves and use bug spray when outside
- Check for bugs on people and pets

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 4: Fight Germs Learning Goals and Answers

1. Tell me one way to boost your health power to fight off germs.

- Eat healthy
- Sleep well
- Get vaccines from your doctor
- Clean up after working with animals
- Wash your hands often

2. Show me how to wash your hands correctly.

- Wet hands
- Soap
- Wash for 20 seconds:
 - Front and back
 - Under your fingernails
 - Between your fingers
- Rinse
- Dry with clean towel or paper towel

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 5: Biosecurity: Keep Germs Out Learning Goals and Answers

1. Tell me what “biosecurity” means.

Biosecurity is a group of things we do to prevent germs from spreading. Two parts of biosecurity are:

- Stop diseases from coming into an area, and
- Stop diseases from getting out and spreading to other places.

2. Tell me how germs can get onto farms or fairs.

Germs can enter a farm or fair through:

- Equipment and supplies like bedding or shavings
- Feed and water and their buckets
- People
- Vehicles and trailers
- Other animals
- Poop
- Rodents, birds, bugs, and other wild animals.

3. Tell me how you can W.A.C.K. away germs.

WATCH for sickness in your animals.

Stay **AWAY** from sick animals.

Be **CLEAN**!

KNOW about your animal’s health.

4. Practice good biosecurity at your farm and at the fair.

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 6: What Went Wrong at the Fair? Learning Goals and Answers

1. Tell me how you and your animals can get germs.

You can get germs through touch, air, hand-to-mouth, and bugs.

At the fair, Sarah, Pancake and the other kids and pigs that got sick got germs through touch: by sharing supplies, like water buckets, between animals, and sleeping in pens with their animals.

2. Tell me ways you and your animals can stay healthy at home and at the fair.

Protect people:

- Do not eat or drink in animal areas.
- Wash your hands.
- Do not sleep in animal areas.

Protect animals:

- Do not bring sick animals to the fair.
- Do not share supplies or tools with others.
- Watch your animals for signs of sickness.
- Tell a grownup if you think an animal might be sick.

3. Tell me some people that can help you and your animals stay healthy and stop germs.

- 4-H Leader
- Veterinarian
- Disease Detective
- Doctor
- Nurse
- Scientist

Resource Guide for “Bring Home the Blue Not the Flu!”

Course (Middle-High School Students)



This guide applies to youth or adults using the online curriculum with a group or as self-guided learning. If desired, engaging, hands-on activities are available for use along with the online courses.

Lesson 1: Introduction to Influenza, Zoonoses, and Disease Risks

- Define zoonoses.
- Describe the importance of influenza and other zoonoses.
- Recognize common zoonotic diseases that might affect people and animals at fairs or exhibitions.
- Identify risk factors for zoonotic disease infection.

Supplemental Resources:

- Comparison Chart Worksheet
- Lesson 1 Learning Objectives Worksheet
- Lesson 1 PowerPoint

Lesson 2: Zoonotic Disease Transmission

- Explain the five routes of disease transmission.
- Give an example of a zoonotic disease that can be transmitted by each route.
- Describe how influenza viruses are transmitted among animals and to humans.
- Explain ways to prevent each route of transmission.

Supplemental Resources:

- Transmission Routes Worksheet
- Lesson 2 Learning Objectives Worksheet
- Lesson 2 PowerPoint
- Disease Transmission and Biosecurity activity
 - Activity Guide
 - Video tutorial: <https://www.youtube.com/watch?v=dSN0We1PJt4>



Lesson 3: Zoonotic Disease Prevention and Biosecurity

- Define biosecurity.
- Explain the importance of biosecurity in zoonotic disease control.
- Review ways zoonotic diseases might be spread to you, your family, and your animals on the farm and at exhibitions.
- Describe measures to prevent zoonotic disease spread to you, your family, and your animals on farms and at exhibitions.

Supplemental Resources:

- Lesson 3 Learning Objectives Worksheet
- Lesson 3 PowerPoint
- Personal Protective Equipment (PPE) activity
 - Activity Guide
 - Video tutorial: <https://www.youtube.com/watch?v=vZEH93L4ITY>

Lesson 4: Highly Pathogenic Avian Influenza (HPAI) Outbreak

- Describe avian influenza and how it is transmitted among animals and between animals and people.
- Explain the impact that an HPAI outbreak has on animal agriculture.
- Identify potential public health impacts of a highly pathogenic avian influenza outbreak.
- Identify those persons most at risk for being infected with avian influenza A viruses and those with the highest risk of complications.
- Explain how and why animal exhibitions might be impacted by HPAI.

Supplemental Resources:

- Lesson 4 Learning Objectives worksheet
- Lesson 4 PowerPoint

Lesson 5: Influenza A Virus of Swine Origin (H3N2v) Outbreak

- Describe influenza A viruses of swine and how they can be transmitted among animals and to humans.
- Explain measures to protect swine from infection with influenza viruses.
- Identify the public health impacts of the H3N2v virus outbreak.



- Identify those persons most at risk for being infected with swine influenza A viruses and those with the highest risk of complications.
- Explain the measures humans can take to protect themselves from influenza A viruses of swine when on farms or attending animal exhibitions.

Supplemental Resources:

- Lesson 5 Learning Objectives worksheet
- Lesson 5 PowerPoint
- Disease Transmission and Outbreak Investigation: Mucous Swap activity
 - Activity Instructor Guide
 - Activity Participant Guide
 - Video Tutorial: <https://www.youtube.com/watch?v=2mJcXDPD37k>

Lesson 6: Public and Animal Health Agencies and Careers

- Identify agencies that promote animal and public health.
- Recognize careers that are available in animal and public health.
- Describe the education and responsibilities that different animal and public health jobs require.

Supplemental Resources:

- Lesson 6 Learning Objectives Worksheet
- Lesson 6 PowerPoint

Other Supplemental Resources

- Course glossary
- Course stall sign
- Related Resources

Keys for the learning objective worksheets can be found on the password-protected “Teacher Materials” page. Select this link on the webpage and complete the form to receive the password.

All supplemental resources can be found at <http://www.BlueNotFlu.org/>. Any questions or comments can be directed to YouthInAg@iastate.edu.

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 1: Introduction to Influenza, Zoonoses, and Disease Risks Learning Objectives

- 1. Define zoonoses.**
- 2. Describe the importance of influenza and other zoonoses.**
- 3. Recognize common zoonotic diseases that might affect people and animals at fairs or exhibitions.**
- 4. Identify risk factors for zoonotic disease infection.**

Excellence in Exhibition: Preventing Disease in Animals and People
Lesson 1: Introduction to Influenza, Zoonoses, and Disease Risks
Disease Comparison Chart Worksheet

	Cause	Species Affected	Clinical Signs in Animals	Clinical Signs in Humans
Avian Influenza				
Influenza A Virus of Swine Origin				
Q fever				
Salmonellosis				

<i>E. coli</i>					
Ringworm					
Contagious ecthyma (Orf)					
Cryptosporidiosis					
Campylobacteriosis					

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 2: Zoonotic Disease Transmission Learning Objectives

- 1. Explain the five routes of disease transmission.**
- 2. Give an example of a zoonotic disease that can be transmitted by each route.**
- 3. Describe how influenza viruses are transmitted among animals and to humans.**
- 4. Explain ways to prevent each route of transmission.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 2: Zoonotic Disease Transmission Routes of Transmission Worksheet

Match the route of transmission to ways it can be prevented. Only one letter may be used per blank, but letters may be used more than once.

Routes of Transmission:

- A. Direct Contact
- B. Aerosol/Droplet
- C. Indirect Contact
- D. Ingestion (Oral)
- E. Vectors

Ways to Prevent Disease Transmission:

- _____ 1. Use insect control products
- _____ 2. Isolate sick animals
- _____ 3. Provide fresh air to humans and animals
- _____ 4. Dispose of or wash boots and clothing after animal contact
- _____ 5. Wash your hands before preparing food
- _____ 6. Work with your veterinarian to check and treat your animals for parasites
- _____ 7. Wear gloves when working with sick animals
- _____ 8. Store food at the proper temperature
- _____ 9. Wear respiratory protection when working with animals
- _____ 10. Decrease humidity and odor build-up in barns
- _____ 11. Clean and disinfect any equipment used with sick animals
- _____ 12. Increase the distance between healthy and sick animals
- _____ 13. Wash your hands after cleaning pens or contact with manure
- _____ 14. Cook meat to the appropriate internal temperature
- _____ 15. Avoid sharing equipment, or clean and disinfect equipment when sharing is necessary

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 3: Zoonotic Disease Prevention and Biosecurity Learning Objectives

- 1. Define biosecurity.**
- 2. Explain the importance of biosecurity in zoonotic disease control.**
- 3. Review ways zoonotic diseases might be spread to you, your family, and your animals on the farm and at exhibitions.**
- 4. Describe measures to prevent zoonotic disease spread to you, your family, and your animals on farms and at exhibitions.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 4: Highly Pathogenic Avian Influenza (HPAI) Outbreak Learning Objectives

- 1. Describe avian influenza and how it is transmitted among animals and between animals and people.**
- 2. Explain the impact that an HPAI outbreak has on animal agriculture.**
- 3. Identify potential public health impacts of a highly pathogenic avian influenza outbreak.**
- 4. Identify those persons most at risk for being infected with avian influenza A viruses and those with the highest risk of complications.**
- 5. Explain how and why animal exhibitions might be impacted by HPAI.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 5: Influenza A Virus of Swine Origin (H3N2v) Outbreak Learning Objectives

- 1. Describe influenza A viruses of swine and how they can be transmitted among animals and to humans.**
- 2. Explain measures to protect swine from infection with influenza viruses.**
- 3. Identify the public health impacts of the H3N2v virus outbreak.**
- 4. Identify those persons most at risk for being infected with swine influenza A viruses and those with the highest risk of complications.**
- 5. Explain the measures humans can take to protect themselves from influenza A viruses of swine when on farms or attending animal exhibitions.**

Excellence in Exhibition: Preventing Disease in Animals and People

Lesson 6: Public and Animal Health Agencies and Careers Learning Objectives

- 1. Identify agencies that promote animal and public health.**
- 2. Recognize careers that are available in animal and public health.**
- 3. Describe the education and responsibilities that different animal and public health jobs require.**

Lesson 1: Introduction to Influenza, Zoonoses, and Disease Risks

Learning Objectives and Answers

1. Define zoonoses.

Zoonoses (also known as zoonotic diseases) are diseases of animals that can be spread to humans.

2. Describe the importance of influenza and other zoonoses.

Zoonoses are important for many reasons, including animal health, personal health, public health, and food safety. Animals with zoonotic diseases could have severe disease or could appear healthy on the outside but still have decreased weight gain, poor performance, or decreased production. Even if animals do not show signs of disease they can still spread the disease to humans. Some zoonoses are capable of causing widespread and severe disease in humans. In addition, some zoonoses are foodborne pathogens. Foodborne pathogens cause illness in many humans every year. Influenza is an important zoonotic disease because it can cause very severe disease in both humans and animals. It is also able to spread quickly through a population.

3. Recognize common zoonotic diseases that might affect people and animals at fairs or exhibitions.

Common zoonotic diseases that could affect people and animals at exhibitions include:

- Avian influenza
- Influenza A of swine
- Q fever
- Salmonellosis
- *E. coli*
- Ringworm or club lamb fungus
- Contagious ecthyma or orf
- Cryptosporidiosis
- Campylobacteriosis

4. Identify risk factors for zoonotic disease infection.

Persons at higher risk include:

- Children aged five years and younger
- Pregnant women

- People aged 65 years and older
- People who are in close contact with animals
- People with weakened immune systems

	Cause	Species Affected	Clinical Signs in Animals	Clinical Signs in Humans
Avian Influenza	Influenza A virus	Pet birds Poultry Mammals	Depression Ruffled feathers Lack of appetite Watery diarrhea Swollen combs and wattles Decreased egg production Paralysis Sudden Death	Swelling and reddening of the tissues around the eyes Fever Aches Cough Sore throat Runny nose Headache Tiredness
Influenza A Virus of Swine Origin	Influenza A virus	Turkeys Pigs Mink Ferrets	Fever Tiredness Lack of appetite Weight loss Coughing Sneezing Nasal discharge Labored breathing	Fever Aches Cough Sore throat Runny nose Headache Tiredness
Q fever	<i>Coxiella burnetii</i> bacteria	Sheep Cattle Goats	Abortion Infertility Small offspring Weak offspring	Fever Chills Night sweats Headache Weakness Chest pains Premature birth or miscarriage in pregnant women

Salmonellosis	<i>Salmonella</i> bacteria	Pigs Cattle Horses Poultry Reptiles	Often asymptomatic Diarrhea Stomach pain Fever Dehydration	Diarrhea Fever Cramping
<i>E. coli</i>	<i>Escherichia coli</i> bacteria	Cattle Sheep Pigs Dogs Poultry	Many do not become ill Diarrhea Edema disease in pigs	Stomach pain Cramping Watery or bloody diarrhea
Ringworm	Many species of fungi	Birds Dogs Cats Cattle Goats Horses Pigs Sheep	Hair loss Scaling Crusts Redness	Itchiness Inflammation Redness Scaling
Contagious ecthyma	Contagious ecthyma virus	Camels Alpacas Sheep Goats	Small raised bumps, sores, and blisters found on the lips, nose, ears, and eyelids	Single, small, firm, red to blue bump, sore, or blister that lasts for 3 to 6 weeks
Cryptosporidiosis	<i>Cryptosporidium parvum</i> parasite	All mammals More common in young animals	Diarrhea Poor appetite Weight loss	Watery diarrhea Stomach cramps Poor appetite

Campylobacteriosis	<i>Campylobacter jejuni</i> bacteria	Cats Cattle Dogs Pigs Poultry Sheep	Diarrhea Decreased appetite Vomiting Fever	Diarrhea Fever Vomiting Stomach pain Headache Muscle pains
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Lesson 2: Zoonotic Disease Transmission

Learning Objectives and Answers

1. Explain the five routes of disease transmission.

Direct Contact: Spread of pathogens through contact with an infected animal, its tissues, or its fluids by way of open wounds, mucous membranes (such as the lining of the digestive, respiratory, or urinary tracts), or scraped skin

Aerosol: Droplets containing pathogens travel through the air and are inhaled by another animal or human

Fomites: Spread of pathogens through contact with objects or surfaces contaminated by an infected animal

Ingestion: Ingestion of disease-causing agents from contaminated food or water or by licking or chewing contaminated objects in the environment

Vectors: Transfer of a pathogen from an infected animal to another animal or human by an insect

2. Give an example of a zoonotic disease that can be transmitted by each route.

Direct Contact: Avian influenza, influenza A of swine, Q fever, salmonellosis, *E. coli*, contagious ecthyma, campylobacteriosis, cryptosporidiosis, ringworm

Aerosol: Avian influenza, influenza A of swine, Q fever

Fomites: Avian influenza, influenza A of swine, contagious ecthyma, ringworm

Ingestion: Q fever, salmonellosis, *E. coli*, contagious ecthyma, campylobacteriosis, cryptosporidiosis

Vectors: Q fever, West Nile virus

3. Describe how influenza is transmitted among animals and to humans.

Influenza can be spread among animals by direct contact, aerosol, fomites, and ingestion. Influenza is most often spread to humans when they are in close contact with sick animals.

4. Explain ways to prevent each route of transmission.

Direct Contact

- Isolate sick animals

- Wear gloves when working with sick animals
- Wash your hands after having contact with animals

Aerosol

- Increase distance between sick animals and healthy animals and humans
- Wear respiratory protection when working with sick animals
- Provide fresh air to animals and humans
- Decrease humidity and odor build up in barns

Fomites

- Avoid sharing equipment or clean and disinfect when sharing is necessary
- Clean and disinfect any equipment used with sick animals or animals with skin lesions
- Dispose of or wash boots and clothing after animal contact

Ingestion

- Wash your hands
 - After contact with animals
 - After cleaning pens or contact with manure
 - Before preparing food
- Cook meat to an appropriate temperature
- Store food at proper temperature

Vectors

- Use insect control products
- Work with your veterinarian to check and treat your animals for parasites

Lesson 2: Zoonotic Disease Transmission

Routes of Transmission Worksheet KEY

Match the route of transmission to ways it can be prevented. Answers may be used more than once.

Routes of Transmission:

- A. Direct Contact
- B. Aerosol
- C. Fomites
- D. Ingestion (Oral)
- E. Vectors

Ways to Prevent Disease Transmission:

- E 1. Use insect control products
- A 2. Isolate sick animals
- B 3. Provide fresh air to humans and animals
- C 4. Dispose of or wash boots and clothing after animal contact
- D 5. Wash your hands before preparing food
- E 6. Work with your veterinarian to check and treat your animals for parasites
- A 7. Wear gloves when working with sick animals
- D 8. Store food at the proper temperature
- B 9. Wear respiratory protection when working with animals
- B 10. Decrease humidity and odor build-up in barns
- C 11. Clean and disinfect any equipment used with sick animals
- B 12. Increase the distance between healthy and sick animals
- D 13. Wash your hands after cleaning pens or contact with manure
- D 14. Cook meat to the appropriate internal temperature

Lesson 3: Zoonotic Disease Prevention and Biosecurity

Learning Objectives and Answers

1. Define biosecurity.

Biosecurity is a series of practices designed to prevent the introduction and spread of pathogens. Biosecurity has two components. The first component is keeping disease from entering an area. The second component is preventing disease from spreading to other locations.

2. Explain the importance of biosecurity in zoonotic disease control.

People who live or work with animals are at risk of infection with zoonotic diseases. Good biosecurity practices can help keep both animals and humans healthy.

3. Review ways zoonotic diseases might be spread to you and your animals on the farm and at exhibitions.

Diseases can be spread by five different routes. The routes of transmission are direct contact, aerosol, fomites, ingestion, and vectors. Pathogens can get onto a farm or an exhibition in many different ways. Some of the ways pathogens can enter are:

- Animals
- People
- Feed and water
- Equipment and bedding
- Rodents, birds, and insects
- Vehicles and trailers

4. Describe measures to prevent zoonotic disease spread to you and your animals on farms and at exhibitions.

On Farms

- Limit access to the farm
- Maintain fences to keep your animals in and others out
- Limit contact between your animals and outside animals
- Post signs at the farm entrance to inform visitors of procedures to follow
- Keep a record of visitors who enter and leave
- Require that all people wash hands before and after animal contact

- Require that employees who have contact with outside livestock use the same biosecurity measures as visitors
- Be able to recognize and report diseases
- Avoid sharing equipment or vehicles between farms
- Prevent off-farm vehicles from driving where animals travel
- Make sure visitors avoid livestock areas and do not contact animals
- Wear gloves when working with animals
- Wear clean boots or disposable boot covers in animal areas
- Wear clean protective outer clothing when working with animals
- ID animals individually
- Maintain health records and records of animal movement
- Inspect animals for signs of illness at least daily
- Review vaccination and treatment protocols with your veterinarian yearly
- Use separate facilities and equipment to handle isolated animals
- Visit sick animals last when working with groups of animals
- Clean equipment and boots and change clothing between groups of different health statuses
- Quarantine all new or reintroduced animals to prevent exposing your herd to different pathogens
- Isolate sick animals immediately to minimize disease exposure of others in the herd
- Remove dead animals quickly and dispose of carcasses in a safe manner that prevents wildlife and rodent attraction
- Prevent contact with free roaming animals
- Control wildlife access to the farm
- Minimize bird contact and nesting on your farm
- Have a rodent control program
- Secure all feed storage areas and clean up spilled feed to minimize access by pests

At Exhibitions

- Do not bring sick animals to exhibitions
- Remove animals that become sick at exhibitions from areas of human contact
- Make sure all animals brought to an exhibition are up-to-date on vaccinations and parasite control
- Wash your hands before and after contact with animals

- Remove manure and soiled bedding from areas where humans have contact with animals
- Cover feed and store it in sealed containers
- Avoid bringing strollers, toys, etc. into animal areas
- Avoid eating, drinking, and sleeping in animal areas
- Clean and disinfect facilities after the animals leave
- Avoid mixing of animals from different farms
- Do not share equipment with other exhibitors
- Clean and disinfect any equipment, clothing, shoes, and vehicles that were at the exhibition

Lesson 4: Highly Pathogenic Avian Influenza (HPAI) Outbreak

Learning Objectives and Answers

1. Describe avian influenza and how it is transmitted among animals and to humans.

Avian influenza is caused by an influenza A virus. It can infect wild birds, pet birds, poultry, and mammals. Avian influenza viruses are classified as highly pathogenic avian influenza (HPAI) or low pathogenic avian influenza (LPAI). Classification is based on severity of disease in poultry and genetic characteristics of the virus. HPAI viruses cause more severe disease in poultry than LPAI viruses. Most wild birds do not show symptoms when infected with avian influenza. Spread of avian influenza among wild bird populations is largely through ingestion. Birds will eat the feces of infected birds that contains the virus and then become infected themselves. This can also occur in domestic poultry. Due to the closeness of birds in commercial poultry facilities, aerosol is another common route of spread. Fomites can spread avian influenza as well. Zoonotic avian influenza is usually transmitted to people when they are in close contact with infected birds or tissues. Poultry that have avian influenza will not enter the food supply. People cannot get avian influenza from eating cooked poultry or poultry products.

2. Explain the impact that an HPAI outbreak has on animal agriculture.

An HPAI outbreak can have a huge impact on animal agriculture. It can cause a decrease in the number of poultry due to death or depopulation of infected birds. The loss of poultry will lead to a decrease in the number of poultry products available. Workers in the poultry industry can be laid off because of the stop of production for depopulation, cleaning, and disinfection of facilities. Other businesses associated with the poultry industry, such as processing plants, feed mills, trucking companies, food production companies, and retail stores, will also be affected. The HPAI outbreak may cause other countries to limit the importation of U.S. poultry and poultry products as well.

3. Identify the potential public health impacts of a highly pathogenic avian influenza outbreak.

Some avian influenza viruses have zoonotic potential. The two most common zoonotic avian influenza viruses are the Asian H5N1 HPAI virus and the H7N9 LPAI virus that has caused disease in China. People are usually infected with avian influenza when they come in close contact with infected birds or their tissues. Clinical signs of avian influenza in humans include flu-like symptoms, swelling and reddening of the tissues around the eyes, fever, and aches. Avian influenza viruses are able to cause severe disease as well.

4. Identify those persons most at risk for avian influenza.

People at a high risk of getting avian influenza are:

- People in close contact with birds
- Children aged 5 years and younger
- Pregnant women
- People aged 65 years and older
- People with weakened immune systems

5. Explain how and why animal exhibitions might be impacted by HPAI.

An HPAI outbreak could lead to poultry being banned from exhibitions. During the 2015 HPAI outbreak, states banned all live birds, waterfowl, out-of-state waterfowl, or out-of-state birds. The bans are put in place to reduce the spread of HPAI through poultry populations.

Lesson 5: Influenza A Virus of Swine Origin (H3N2v) Outbreak

Learning Objectives and Answers

1. Describe influenza A viruses of swine and how they can be transmitted among animals and to humans.

Influenza A viruses of swine origin can infect pigs, turkeys, ferrets, mink, and humans. Influenza viruses normally found in pigs are called “variant” viruses when they are found in people. One example of a variant virus is the H3N2v influenza virus that was first detected in humans in 2012. Clinical signs in pigs include fever, tiredness, lack of appetite, weight loss, coughing, sneezing, nasal discharge, and difficulty breathing. Humans with IAV-S will have flu-like symptoms such as fever, cough, sore throat, runny nose, muscle aches, headache, and tiredness. The influenza virus is transmitted between pigs by aerosol and contact with nasal discharge, either directly or on fomites. The virus is thought to be spread to humans when an infected pig coughs or sneezes and the droplets with influenza virus spread through the air. If the droplets land on a person’s nose or mouth, or are inhaled, the person can become infected. It is also possible that a person can get the virus from touching an object with the virus on it and then touching their nose or mouth. Influenza can be spread from humans to pigs as well.

2. Explain measures to protect swine from influenza.

- Do not bring sick animals to an exhibition
- Avoid taking swine to multiple exhibitions
- Avoid mixing of animals from different farms
- Limit the amount of time your animals spend at an exhibition
- Avoid sharing equipment with other exhibitors
- Observe swine regularly for signs of illness
- Contact your veterinarian if your pig becomes sick
- Quarantine animals for at least 7 days before allowing contact with other animals after a show
- Clean and disinfect equipment, clothing, shoes, and vehicles that were at the exhibition before using them on your farm

3. Identify the public health impacts of the H3N2v virus outbreak.

Most human infections with H3N2v have been mild and similar to seasonal flu infections. As with the seasonal flu, serious illness is

possible, especially in people with a high risk of flu-related complications. The H3N2v virus contains a gene from the 2009 H1N1 pandemic virus. This gene may allow the virus to infect humans more easily than swine influenza viruses typically can. The people most likely to be infected with IAV-S are those who are in close contact with swine. Person-to-person transmission of IAV-S is limited. However, it is possible that the virus could change to allow for more efficient person-to-person transmission.

4. Identify those persons most at risk for swine influenza.

People at a high risk of getting influenza A of swine are:

- People in close contact with pigs
- Children aged 5 years and younger
- Pregnant women
- People aged 65 years and older
- People with weakened immune systems

5. Explain the measures humans can take to protect themselves from influenza A viruses of swine when on farms or attending animal exhibitions.

- Avoid eating and drinking in animal areas
- Wash your hands often, especially before and after pig exposure
- Avoid sleeping in animal areas
- Avoid putting anything in your mouth while in swine barns
- Leave toys, pacifiers, cups, strollers, etc. outside of animal areas
- Avoid pigs and swine areas if you are at a high risk of flu complications
- Avoid contact with pigs if you have flu-like symptoms to prevent spreading illness to pigs
- Avoid contact with pigs that look or act sick
- Take protective measures, such as wearing PPE, if you must come in contact with pigs that are known or suspected to be sick

Lesson 6: Public and Animal Health Agencies and Careers

Learning Objectives and Answers

1. Identify agencies that promote animal and public health.

There are many different agencies that work to promote animal and public health. These agencies can operate at the local, state, or national level. Some of the more common agencies are listed here.

Local Agencies

- Local Health Department

State Agencies and Personnel

- State Health Department
- State Veterinarian
- State Public Health Veterinarian

National Agencies

- Centers for Disease Control and Prevention
- Food and Drug Administration
- United States Department of Agriculture

2. Recognize careers that are available in animal and public health.

Many different careers are available in animal and public health. Some of the more common careers are epidemiologist, public health laboratory scientist, nurse, physician, veterinarian, and public health veterinarian.

3. Describe the education and responsibilities that different animal and public health jobs require.

Epidemiologist: Epidemiologists investigate disease outbreaks and are called “disease detectives.” They work to identify people with the illness, determine the cause, and develop a plan to prevent future outbreaks. Depending on where they work, epidemiologists might need to obtain a master’s degree, usually a Master of Public Health.

Public Health Laboratory Scientist: Scientists who work in public health laboratories perform screening tests, diagnostic tests, and surveillance tests. They can research infectious diseases and aid in investigating disease outbreaks. Laboratory scientists usually have a bachelor’s degree in a science-related field and sometimes a master’s degree in public health.

Nurse: Nurses work with other healthcare providers to monitor health conditions, administer medicine, and provide care for patients. One specialty type of nurse is a public health nurse. Public health nurses work to improve the health of the community. They help to identify health issues within a community and create intervention strategies. Depending on where they work, public health nurses may need either an associate's degree or bachelor's degree in nursing.

Physician: Physicians are responsible for the health of humans. Some of their duties include diagnosing illness, prescribing medications, and developing treatment plans. Some specialized physicians will also perform surgery. Physicians need to have a Doctor of Medicine or a Doctor of Osteopathic Medicine degree. Most physicians also have bachelor's degrees.

Veterinarian: Veterinarians are responsible for the health of animals. They perform many duties including giving vaccinations, diagnosing and treating illnesses and injuries, and doing surgery. Veterinarians can also conduct research or work in food safety. Veterinarians need a Doctor of Veterinary Medicine degree (DVM or VMD). Most veterinarians also have a bachelor's degree.

Public Health Veterinarian: Public health veterinarians focus on the interaction between animal and human health. They can work in many different fields, including food safety, disaster preparedness efforts, zoonoses prevention, epidemiology, drug and vaccine safety, and occupational health. Public health veterinarians need a Doctor of Veterinary Medicine degree and a Master of Public Health degree.

Excellence in Exhibition: Preventing Disease in Animals and People



Disease Transmission and Outbreak Investigation Activity

Mucous Swap – Instructor Guide

LEARNING OBJECTIVES

- Explain who is at highest risk for becoming ill from a disease.
- Explain ways zoonotic diseases might be spread to you or your animals on the farm and at exhibitions.
- Describe measures to prevent zoonotic disease spread to you and your animals on the farm and at exhibitions.
- Practice basic epidemiologic methods to solve the outbreak.

PREPARATION TIME: 15 minutes

ACTIVITY TIME: 20–30 minutes

MATERIALS

- Clear plastic cups – one per participant
- Nitrile gloves
- Distilled water
- Distilled water with baking soda
- Phenol red
- Dropper
- Permanent marker
- Large address labels or sticky name tags
- Large pad of paper or white board and markers
- Handouts and worksheets
- Bubble blower and bubbles

PREPARATION

- Print enough copies of worksheets and instructions to give one set to each participant
- Number cups
- Number enough nametags to have one per participant and place with corresponding cup.
- Half fill up to 10% of cups with baking soda water. (E.g., if there are 10 participants, fill one cup with baking soda water; if there are 20 participants, fill two cups with baking soda water.)

- Make note of which cups contain baking soda water.
- Set a behavior card under each cup in the set with the numbered nametags. Ensure the baking soda cup(s) is paired with a “Participates in multiple open, county, and state shows” card.
- Half fill the remaining cups with distilled water.

EXPLANATION OF ACTIVITY

Some people are carriers of disease. Initially, these carriers may appear healthy or show only mild signs of disease. At some point they may eventually get sick, but they may not be recognized as having the disease until they’ve exposed and infected others. This is one reason why some pathogens can spread so quickly.

This activity is designed to simulate the uncontrolled spread of a disease through a population. Cups have been half-filled with water, except for one or two which contain baking soda water. The one or two people with the baking soda cups will be the original carriers of the “disease,” but they will carry this disease in a cup rather than in their body—and appear healthy on the outside. The original carrier(s) will make contact with other participants who will then make contact with others. At the end of the activity, everyone will be tested to see who has become infected, and we’ll discuss how to trace the infection back to its source.

NOTE: We will be wearing nitrile gloves for this activity, but you still need to be careful with your cup and solution as we work through this portion of the activity. If you spill any on yourself, immediately go to a bathroom to wash it off. It may stain clothing.

INSTRUCTIONS

- 1) Have participants pick up gloves, one cup, associated behavior card, and corresponding numbered sticker.
- 2) Instruct participants to put on their numbered sticker and review their behavior card. Tell them that each fluid swap should occur with someone they haven’t swapped with previously.
- 3) Ask participants to move about the room, during which time they should exchange fluids according to the instructions on their behavior card.
 - a. To exchange fluids, one person will dump all of the contents of their cup into the other person’s cup.
 - b. Return half of the solution back to the empty cup. (Demonstrate with two water cups.)
 - c. Record the number of the person exchanged with.
- 4) Participants should repeat step 3 as many times as specified on their behavior card.
 - a. Remind participants that each swap should be with someone they haven’t already swapped with, and that they should only swap as many times as their behavior card indicates.

- 5) When the swapping has finished, instruct participants to return to their desks with their cups.
- 6) Have a group leader go around to all participants and add 2–3 drops of phenol red to each cup.
 - a. A pink color change (bright or faint) indicates a positive result—this person is now considered “infected.” No color changes is “uninfected.”
 - b. Discuss mild–severe infection and those at increased risk of severe complications (pregnant, very young or old, immunocompromised).
- 7) After all testing is complete, participants should record their results and return their cups for disposal.

OUTBREAK INVESTIGATION & ADDITIONAL DISCUSSION

Work with the group to fill out the table and discuss any apparent risk factors.

Ask all with one exposure to raise their hands or stand—mark in total column.

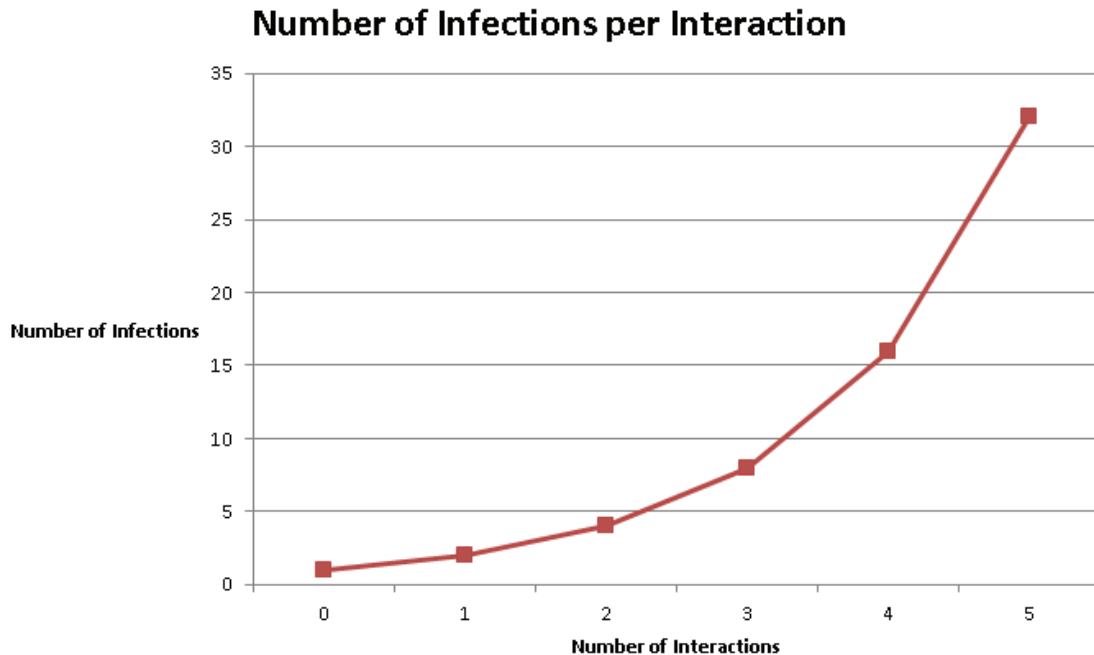
	Infected Yes	Infected No	Total
Exposure <i>Participated in county fair only</i>			
Exposure <i>Participated in county and state fair only</i>			
Exposure <i>Participated in multiple open shows, county fair, and state fair</i>			
Total			

- Did any of the exposures lead to greater risk of becoming infected?
- How does this translate to the increased risk of infection for you and your animals based upon the shows you attend and number of animals commingled in real life?

How did the number of people infected increase with each round of interactions?

- This can be thought about in multiple ways...instruct participants to fill out the table and graph provided.

Number of interactions	Previously Infected	Newly Infected	Total # of Infections
0	Student #1	N/A	1
1	Student #1	Student #2	2
2	Student #1 Student #2	Student #3 Student #4	4
3	Student #1 Student #2 Student #3 Student #4	Student #5 Student #6 Student #7 Student #8	8
4	...		16
5	...	...	32

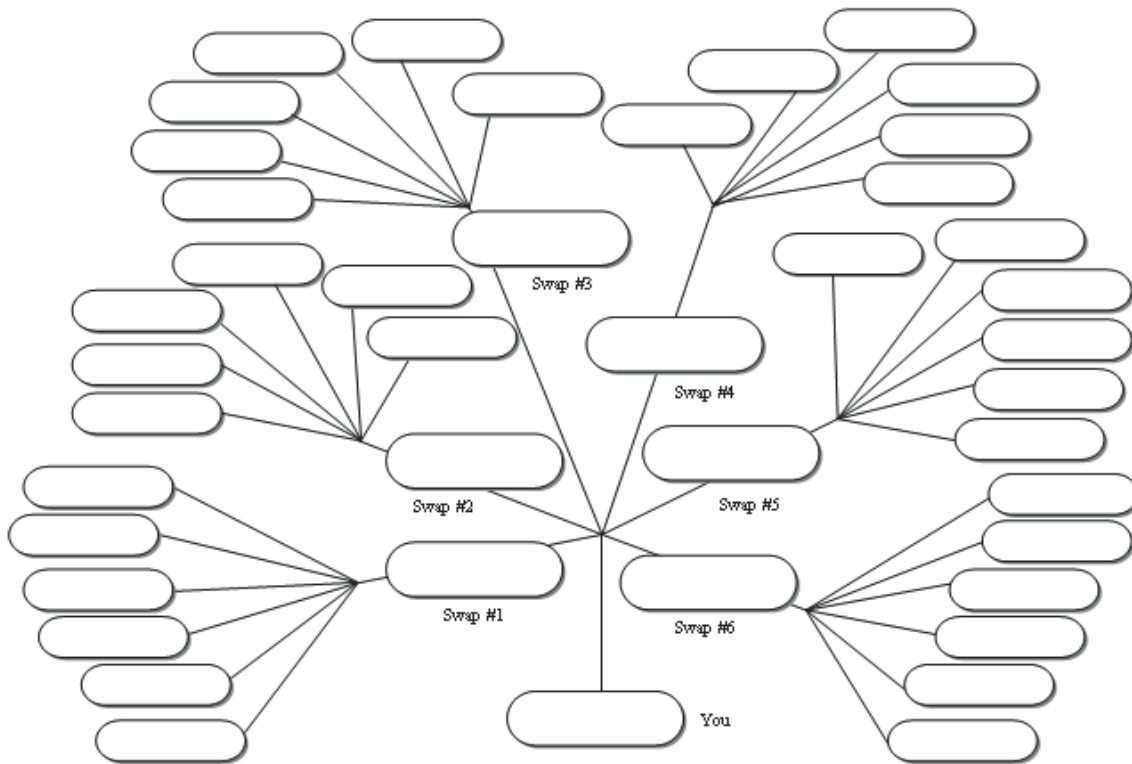


- Discuss doubling of number of infections in each round
 - Graph shows exponential, not linear growth
- If we did this activity long enough, would everyone become infected?
 - Yes, but the doubling of infection we see in each generation does not continue indefinitely. In the beginning the curve increases exponentially, but then levels out – this pattern is known as a logistic growth curve (S-curve). As the number of infected participants increases, it becomes increasingly more likely that an infected participant interacts with another participant that has already been infected. As a result, the number of new infections slows down.
 - This type of growth also assumes that no one has any protection from the infection (such as vaccination).

How can we determine who was the original source of infection?

- Discuss ideas – it's important for participants to realize that if they are infected, but can identify people they swapped with that AREN'T infected, then they could not have been the original source. Working through this should lead back to the people that were originally infected and those they infected after the first swap
- After discussion, have all “infected” participants stand up and “non-infected” participants remain seated.
 - “Infected” participants should look around at “non-infected” participants – if anyone they exchanged fluids with is sitting, they should sit down as well.
 - Continue this until there are 7–10 participants still standing.
 - Direct the remaining participants to bring their list of people they swapped with to the front of the room and complete an “infection tree” similar to the one shown below.

- Participants have a full sized worksheet that they can work on as the group discusses.
- Completing the tree will require input from participants that remain seated.



- Once the tree is complete, shade in all bubbles representing people that were “infected” at the end of the activity. Use this diagram to discuss and identify the probable initial source of the infection.
 - Important to note that you will only be able to narrow it down to twice as many “suspects” as there were initial infected cups (e.g., starting with two cups means you’ll be left with four suspects).
 - You may need to use your knowledge of which cups were actually infected to help guide this portion of the conversation to ensure the two cups that were the original source of “infection” are included in the list of suspects.
 - In a real investigation, how could we distinguish between who was the original source and who they infected? Why can’t we do that here?
 - In this activity, the potential first exposure to disease for everyone was the same – when you were randomly handed a cup that either had water or a baking soda solution. You can’t use earlier exposure or timeline to further narrow down who was originally infected and spread the “disease” to rest of group.

How would this investigation be different if you hadn't kept notes about whom you swapped fluids with and in what order?

- Do you think you would have remembered clearly after the activity was over? How well do you think you'd remember tomorrow or in a week from now?
 - Discuss how that's one of the difficulties of a true outbreak investigation. It typically takes time for a disease to appear after initial exposure, and takes more time for an epidemiological investigation. People's memories aren't that great!

What preventative measures could have been taken to avoid exposure to the disease?

- Lots of possible answers, including vaccination, attending fewer shows, etc.

How would an airborne disease spread differently? Why?

- In this activity, disease spread was dependent on a very direct, one-on-one interaction (more similar to the spread of an STD than an airborne disease like influenza). Airborne diseases are able to spread more easily and indirectly from person to person (or animal to animal, or animal to person) and it often isn't as clear when you've been exposed to someone with the disease. In this activity it was very clear whom you swapped liquids with. It's much more difficult to track who you simply walked by, were in the barn with at the same time, etc.
- Use a bubble blower and see who gets hit with a bubble. Airborne disease spread requires less movement; some diseases can be transmitted in the air for long distances.

ADAPTING THIS ACTIVITY FOR SHORTER DURATION

- Rather than using the "infection tree" to identify the initial source of infection, simply use the "stand up/sit down" method
 - Have everyone stand up that is infected at the end of the activity
 - If anyone standing up swapped fluids with anyone that is still sitting (uninfected), they should sit down.
 - Continue this until you're left with twice the number of people standing as you had initially infected cups
 - One infected cup would result in two people left standing at the end. In this activity, there is no way to determine which person was the original source of infection, but you can share that information with the group).

ALTERNATIVE MATERIALS

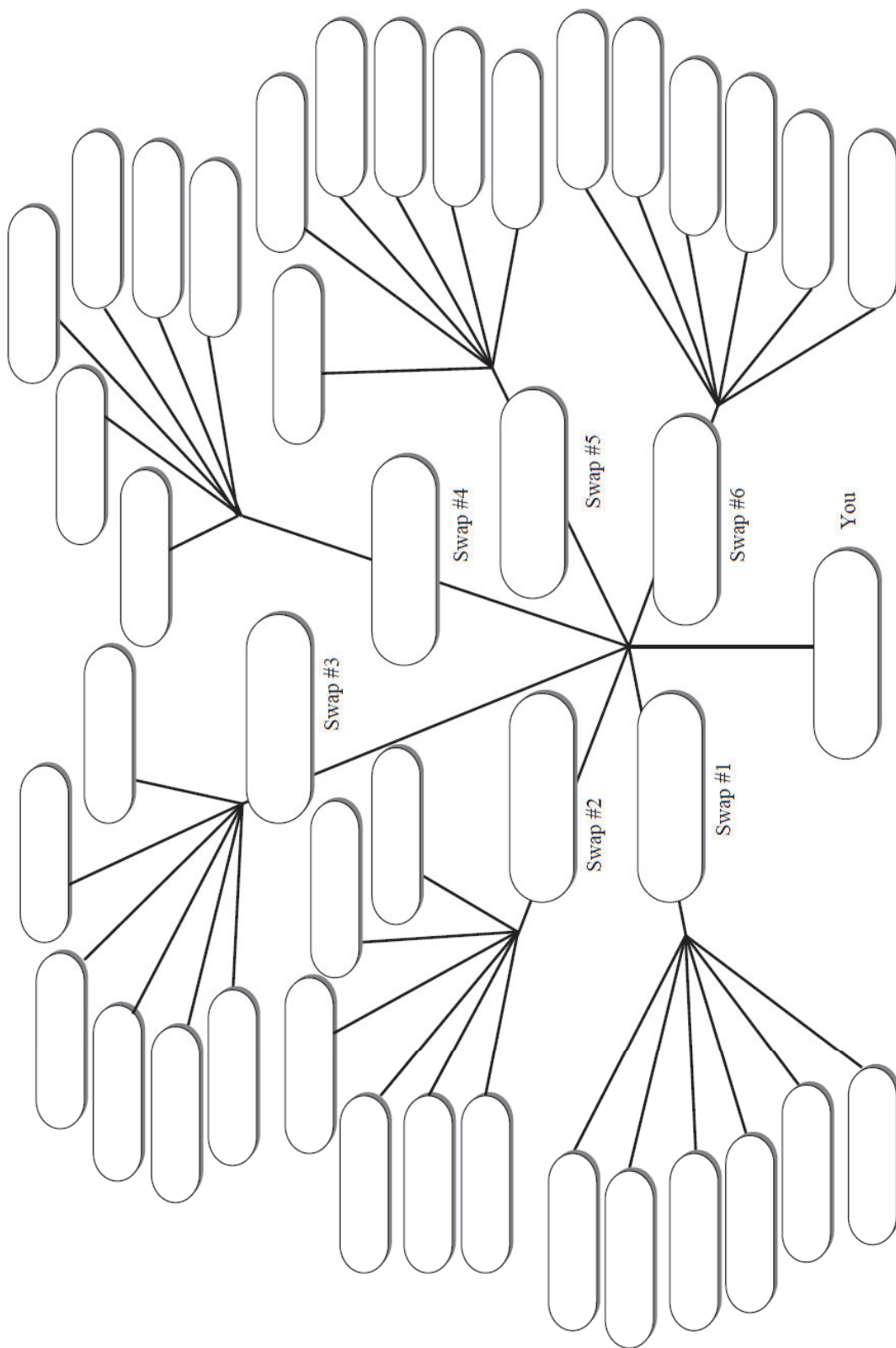
Yellow food coloring (uninfected) and blue food coloring (infected) may be used instead of baking soda and phenol red. Any shade of green will represent infection at the end of the swapping activity, and may better demonstrate varying severity of illness. These materials may be easier to obtain.

ACKNOWLEDGMENTS

These instructions were adapted from an activity developed by the Indiana State Department of Health and from the following resources:

- <http://seplessons.ucsf.edu/node/226>
- <http://www.cpet.ufl.edu/wp-content/uploads/2013/03/Epidemic-lab-with-bodily-fluid-cups.pdf>
- <http://lpsl.coe.uga.edu/mile3/resa/gpsinaction/lessonplans/Virus.pdf>
- http://www.accessexcellence.org/AE/AEC/AEF/1996/good_virus.php<http://www.plymouth.edu/eportfolio/view/artefact.php?artefact=86147&view=19172>

Instructions: Complete this “tree” to trace back the path of transmission of the disease. Write your cup number and the cup numbers of the people that you exchanged fluids with. Depending on your behavior card, you may have swapped with less than six people. Find out which of your partners had a positive test (were infected). Highlight their cup numbers. Talk to each of the people you swapped with and find out if they had interactions with infected people before they interacted with you. Circle the cup number of the partner that infected you. Draw a box around the cup numbers of the people that you infected (directly or indirectly).



Participated in County Fair Only Swap Once	Participated in County and State Fair Swap Twice	Participated in Multiple Open, County, and State Shows Swap Three Times
Participated in County Fair Only Swap Once	Participated in County and State Fair Swap Twice	Participated in Multiple Open, County, and State Shows Swap Three Times
Participated in County Fair Only Swap Once	Participated in County and State Fair Swap Twice	Participated in Multiple Open, County, and State Shows Swap Three Times
Participated in County Fair Only Swap Once	Participated in County and State Fair Swap Twice	Participated in Multiple Open, County, and State Shows Swap Three Times
Participated in County Fair Only Swap Once	Participated in County and State Fair Swap Twice	Participated in Multiple Open, County, and State Shows Swap Three Times

Excellence in Exhibition: Preventing Disease in Animals and People



Disease Transmission and Outbreak Investigation Activity

Mucous Swap – Participant Guide

LEARNING OBJECTIVES

- Explain who is at highest risk for becoming ill from a disease.
- Explain ways zoonotic diseases might be spread to you or your animals on the farm and at exhibitions.
- Describe measures to prevent zoonotic disease spread to you and your animals on the farm and at exhibitions.
- Practice basic epidemiologic methods to solve the outbreak.

EXPLANATION OF ACTIVITY

Some people are carriers of disease. Initially, these carriers may appear healthy or show only mild signs of disease. At some point they may eventually get sick, but they may not be recognized as having the disease until they've exposed and infected others. This is one reason why some pathogens can spread so quickly.

This activity is designed to simulate the uncontrolled spread of a disease through a population. Cups have been half-filled with water, except for one or two which contain baking soda water. The one or two people with the baking soda cups will be the original carriers of the “disease,” but they will carry this disease in a cup rather than in their body—and appear healthy on the outside. The original carrier(s) will make contact with other participants who will then make contact with others. At the end of the activity, everyone will be tested to see who has become infected, and we'll discuss how to trace the infection back to its source.

NOTE: We will be wearing nitrile gloves for this activity, but you still need to be careful with your cup and solution as we work through this portion of the activity. If you spill any on yourself, immediately go to a bathroom to wash it off. It may stain clothing.

INSTRUCTIONS

- 1) Pick up and put on a pair of gloves.
- 2) Pick up a cup containing a clear liquid, a behavior card, and a number sticker. The cup represents your (or your animal's) body and the liquid your bodily fluids. One or two of you has a cup that has been "infected" with an infectious disease.
- 3) Put on your numbered sticker and review your behavior card.
- 4) The instructor will announce when to start the activity. You will swap fluids as outlined on your behavior card.
 - a. To exchange fluids, one person will dump all of the contents of their cup into the other person's cup.
 - b. Return half of the solution back to the empty cup.
 - c. Record the number of the person you exchanged with on the table on the next page of this packet.
- 5) Repeat step 3 as many times as specified on your behavior card. Each swap should be with someone you haven't already swapped with. You should only swap as many times as your behavior card indicates.
- 6) When you have finished swapping, return to your seat with your cup. Remember to be careful and not spill any liquid.
- 7) The instructor will come around and add "testing" drops to your cup.
 - a. A color change to pink (either bright or faint) indicates a positive result – you are considered "infected." No color change is "uninfected."
- 8) **Record your results:** _____
- 9) Return your cup to the instructor to be disposed of.

FLUID SWAP RECORD

Record the participants' names/numbers you exchanged fluids with.

Exchange #	Partner's Name/Number
1	
2	
3	

OUTBREAK INVESTIGATION & ADDITIONAL DISCUSSION

Work with the group to fill out following table and discuss any apparent risk factors.

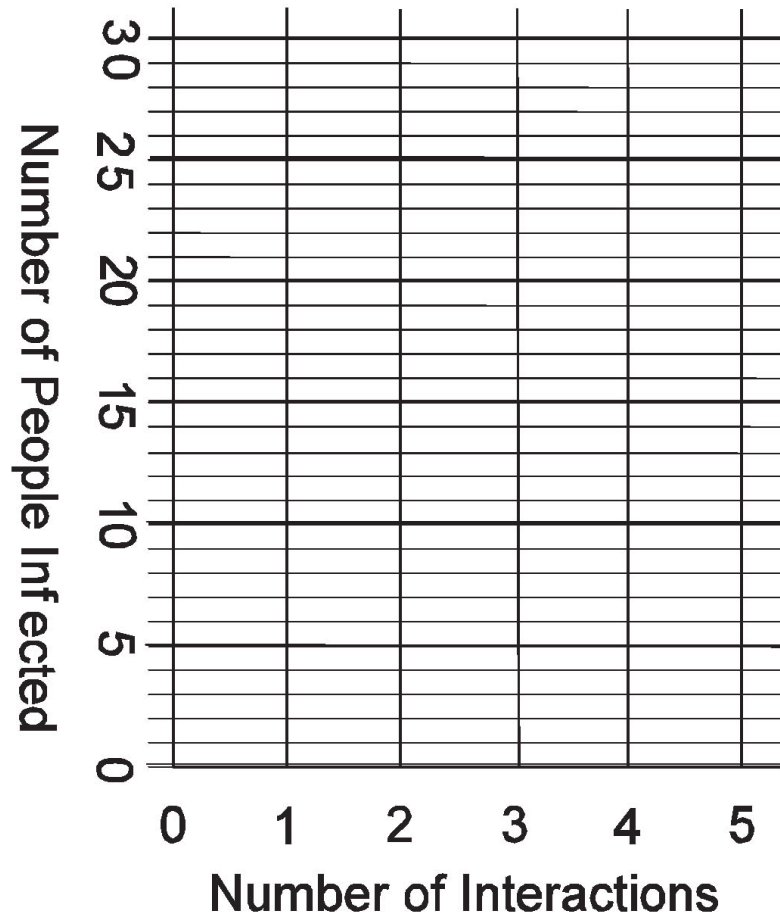
	Infected Yes	Infected No	Total
Exposure <i>Participated in county fair only</i>			
Exposure <i>Participated in county and state fair only</i>			
Exposure <i>Participated in multiple open shows, county fair, and state fair</i>			
Total			

- Did any of the exposures lead to greater risk of becoming infected?
- How does this translate to the increased risk of infection for you and your animals based upon the shows you attend and number of animals commingled in real life?

How did the number of people infected increase with each round of interactions?

- Assuming one person was initially infected, fill out the following table and graph

Number of interactions	Previously Infected	Newly Infected	Total # of Infections
0	Student #1	0	1
1	Student #1	Student #2	2
2			
3			
4			
5			



- What do you notice about the rate of increase in the number of infections? Does the graph show linear or exponential growth?
- If we did this activity long enough, would everyone become infected? Why or why not?

How can we determine who was the original source of infection?

How would this investigation be different if you hadn't kept notes about whom you swapped fluids with and in what order?

- Do you think you would have remembered clearly after the activity was over? How well do you think you'd remember tomorrow or in a week from now? A month?

What preventative measures could have been taken to avoid exposure to the disease?

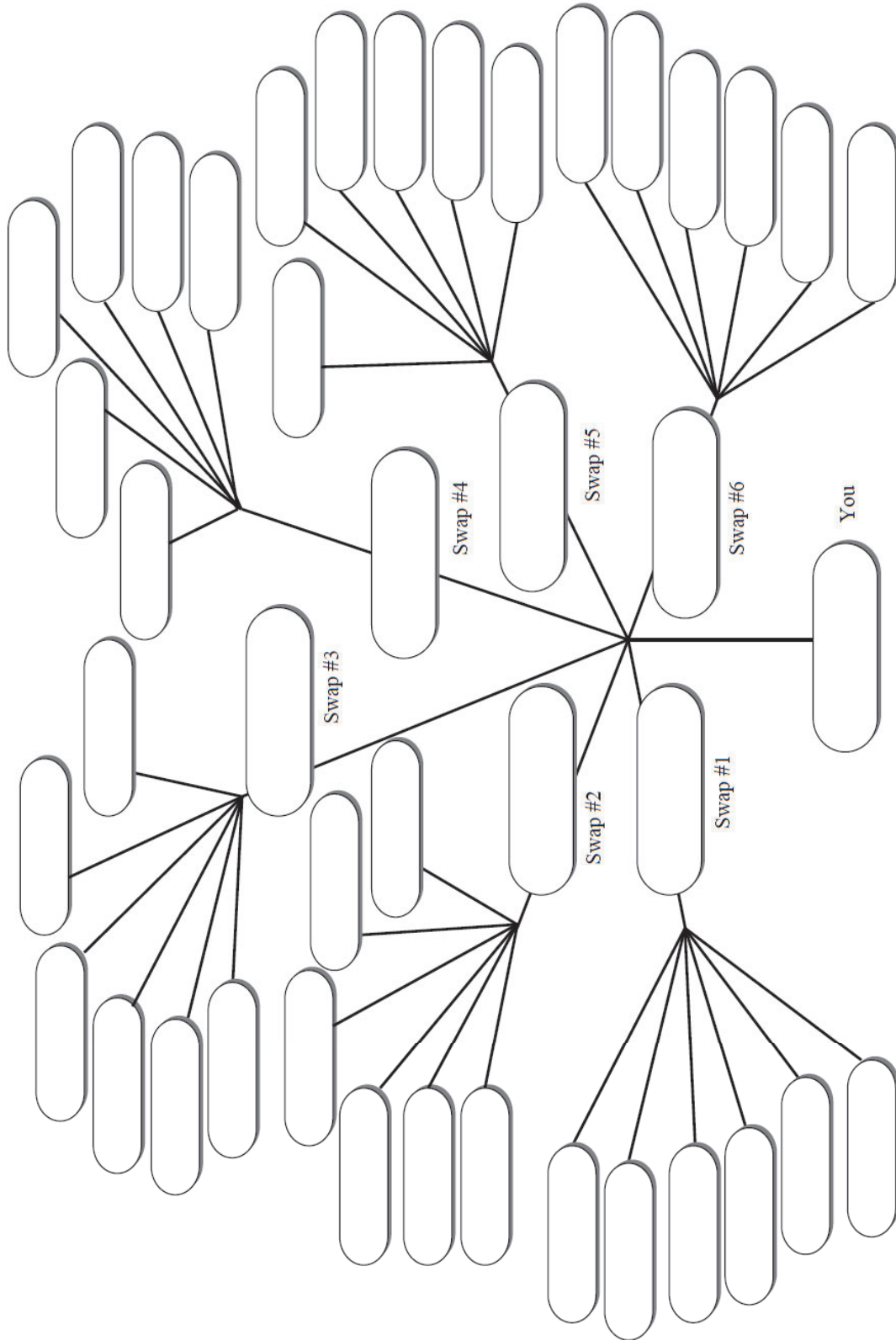
How would an airborne disease spread differently? Why?

ACKNOWLEDGMENTS

These instructions were adapted from an activity developed by the Indiana State Department of Health and from the following resources:

- <http://seplessons.ucsf.edu/node/226>
- <http://www.cpet.ufl.edu/wp-content/uploads/2013/03/Epidemic-lab-with-bodily-fluid-cups.pdf>
- <http://lpsl.coe.uga.edu/mile3/resa/gpsinaction/lessonplans/Virus.pdf>
- http://www.accessexcellence.org/AE/AEC/AEF/1996/good_virus.phphttp://www.plymouth.edu/eportfolio/view/artefact.php?artefact=86147&view=19172

Instructions: Complete this "tree" to trace back the path of transmission of the disease. Write your cup number and the cup numbers of the people that you exchanged fluids with. Depending on your behavior card, you may have swapped with less than six people. Find out which of your partners had a positive test (were infected). Highlight their cup numbers. Talk to each of the people you swapped with and find out if they had interactions with infected people before they interacted with you. Circle the cup number of the partner that infected you. Draw a box around the cup numbers of the people that you infected (directly or indirectly).



Excellence in Exhibition: Preventing Disease in Animals and People



Disease Transmission and Biosecurity Activity

Instructor Guide

LEARNING OBJECTIVES

- Explain ways zoonotic diseases might be spread to you or your animals on the farm and at exhibitions.
- Describe measures to prevent zoonotic disease spread to you and your animals on the farm and at exhibitions.

PREPARATION TIME: 10 minutes

ACTIVITY TIME: 20–30 minutes

MATERIALS

- Glo Germ
- Black light
- Stuffed animal covered with Glo Germ
- Feed samples in bags or buckets mixed with Glo Germ
- Bucket
- Popped popcorn mixed with Glo Germ
- Objects that could serve as fomites (brushes, halters, etc.) covered with Glo Germ
- Personal protective equipment (PPE), such as gloves, shoe covers, coveralls, face mask, etc.

PREPARATION

- Sprinkle Glo Germ in doorway.
- Sprinkle Glo Germ powder on example fomites, animals, and feed.

EXPLANATION OF ACTIVITY

Diseases can be spread by direct contact, indirect contact, aerosols or droplets, ingestion or oral, or vectors. Indirect contact transmission is the spread of pathogens through coming into contact with areas where animals live and roam, or objects or surfaces contaminated by an infected animal. Objects or surfaces that may become contaminated with pathogens are called fomites. Some examples of fomites are boots, cages, needles, bedding, clothing, vehicles, and restraint

devices. Ingestion, or oral, transmission occurs when disease-causing agents are ingested from contaminated food or water or by licking or chewing contaminated objects in the environment.



INSTRUCTIONS

1. Divide the students into groups and tell them that they need to get their animal ready for a show. Give them the following tasks:
 - a. Have the students 'inspect' the stuffed animal to make sure it is ready for the show.
 - b. Have the students mix different feed samples in the bucket.
 - c. Have the students collect the equipment to bring to a show.
2. Use a black light to demonstrate how diseases can be spread by direct contact and on clothing, feed, buckets, equipment, fair food (popcorn), etc.
 - a. Demonstrate how pathogens can be spread by shoes by showing the black light throughout the room where students walked.
3. Have the students wash their hands and then use the black light again. Discuss the importance of handwashing and how and when you should wash your hands to prevent the spread of disease.
4. Have the students put on PPE and repeat the activity. Discuss how wearing proper PPE helps to prevent disease transmission. Discuss other biosecurity practices you could take that would also prevent the spread of disease.

DISCUSSION

- Discuss ways to prevent direct contact transmission:
 - Isolate sick animals
 - Wear gloves when working with sick animals
 - Wash your hands after having contact with animals or being in animal areas even if you did not touch the animals
- Discuss ways to prevent indirect contact transmission:
 - Avoid sharing equipment, or clean and disinfect equipment when sharing is necessary
 - Clean and disinfect any equipment used with sick animals or animals with skin lesions
 - Dispose of or wash boots and clothing after animal contact
 - Wash your hands after having contact with animals or being in animal areas even if you did not touch the animals
- Discuss ways to prevent aerosol transmission:
 - Increase distance between sick animals and healthy animals and people
 - Wear respiratory protection when working with sick animals
 - Provide fresh air to animals and people
 - Decrease humidity and odor build up in barns
 - Stay away from animal barns if you are sick



- Discuss ways to prevent oral transmission:
 - Wash your hands
 - After contact with animals or being in animal areas even if you did not touch the animals
 - After cleaning pens or contact with manure
 - Before preparing or handling food
 - After going to the bathroom
 - Cook meat to the appropriate temperature
 - Store food at the appropriate temperature
- Discuss ways to prevent vectorborne transmission:
 - Use insect control products
 - Work with your veterinarian to check and treat your animals for parasites
 - Prevent standing water
 - Check for ticks on people and pets

Excellence in Exhibition: Preventing Disease in Animals and People



Personal Protective Equipment (PPE) Activity

Instructor Guide

LEARNING OBJECTIVES

- Explain the importance of PPE.
- Explain the importance of handwashing.

PREPARATION TIME: 5 minutes

ACTIVITY TIME: 10 minutes

MATERIALS

- Shaving cream
- Personal protective equipment (PPE), such as gloves, shoe covers, coveralls, face mask, etc.

EXPLANATION OF ACTIVITY

Germ can be present even when things (clothing, gloves, shoes, equipment, etc.) appear clean or when animals appear healthy.

INSTRUCTIONS

1. Ask at least one volunteer to dress in PPE.
2. Once dressed in PPE, fill the volunteer's hands with shaving cream.
3. Ask the volunteer to remove PPE.
4. Lead a group discussion about how clean the volunteer is able to keep his/her clothing, skin, etc.
5. Discuss the importance of handwashing even when wearing gloves and other PPE. Even when hands were visibly contaminated, it was hard to stay clean.



DISCUSSION

- Discuss the importance of handwashing in disease prevention.
- Discuss ways to prevent direct contact transmission:
 - Isolate sick animals
 - Wear gloves when working with sick animals
 - Wash your hands after having contact with animals or being in animal areas even if you did not touch the animals
- Discuss ways to prevent indirect contact transmission:
 - Avoid sharing equipment, or clean and disinfect equipment when sharing is necessary
 - Clean and disinfect any equipment used with sick animals or animals with skin lesions
 - Dispose of or wash boots and clothing after animal contact
 - Wash your hands after having contact with animals or being in animal areas even if you did not touch the animals
- Discuss ways to prevent aerosol transmission:
 - Increase distance between sick animals and healthy animals and people
 - Wear respiratory protection when working with sick animals
 - Provide fresh air to animals and people
 - Decrease humidity and odor build up in barns
 - Stay away from animal barns if you are sick
- Discuss ways to prevent oral transmission:
 - Wash your hands
 - After contact with animals or being in animal areas even if you did not touch the animals
 - After cleaning pens or contact with manure
 - Before preparing or handling food
 - After going to the bathroom
 - Cook meat to the appropriate temperature
 - Store food at the appropriate temperature
- Discuss ways to prevent vectorborne transmission:
 - Use insect control products
 - Work with your veterinarian to check and treat your animals for parasites
 - Prevent standing water
 - Check for ticks on people and pets

Bring Home the Blue, Not the Flu: Preventing Disease in Animals and People



Workshop Evaluation

PRETEST

ID _____

1. Which of the following best describes you?

Elementary School Student

Middle School Student

Parent

Leader, Advisor, or Teacher

Other: _____

2. What is your gender?

Female

Male

Prefer not to say

Other: _____

3. At the current time, do you want to work in animal health, human health, public health, or farming when you grow up?

Yes

No

Don't Know

4. Have you ever taken care of farm animals?

YES

NO

5. Have you ever done a project with animals?

YES

NO

6. Have you ever taken your animals to a show or a fair?

YES

NO

Current Habits						
Directions: Select ONE answer per line by marking ☒						
Before today: How often do you....	Never	Rarely	Sometimes	Usually	Always	NA
7. Wash your hands right after working around animals.						
8. Wash your hands after touching animals at fairs or petting zoos.						
9. Wash your hands right before eating or preparing food.						
10. Wash your hands after touching poop or dirty bedding.						
11. Wear special clothing, such as clean rubber boots and coveralls, when you work with animals that might be sick.						
Before today: How often do you.....	Never	Rarely	Sometimes	Usually	Always	NA
12. Clean and disinfect the equipment you use at a show.						
13. Stop people from touching your animals.						
14. Keep your show animals away from your other animals after returning home from a show.						
15. Talk to your veterinarian if your animal becomes sick.						
16. Talk to your veterinarian about how to keep your animal(s) healthy before going to a show.						

Current Habits						
Directions: Select ONE answer per line by marking ☐						
How often do you.....	Never	Rarely	Sometimes	Usually	Always	NA
17. Eat or drink around animals or in animal areas.						
18. Share supplies with other people and animals.						

19. What are some reasons that you sometimes do not wash your hands after visiting with animals?
(Circle all that apply)

- a) Sometimes it feels like a waste of time when I have other things going on.
- b) Sometimes my hands don't seem to be dirty so they don't need to be washed.
- c) Sometimes I don't think it does much good – my hands are only going to get dirty again.
- d) Sometimes I use hand sanitizer instead.
- e) Sometimes I cannot figure out the handwashing station.
- f) Sometimes I can't get to the handwashing station (too far away, lines too long, couldn't find them)
- g) Sometimes I think the handwashing stations are too dirty.
- h) Sometimes I can't find any soap, running water, or paper towels at the handwashing station.

20. Before taking this course, did you know that ANIMALS could make YOU sick?

YES

NO

21. Before taking this course, did you know that YOU could make ANIMALS sick?

YES

NO

Bring Home the Blue, Not the Flu: Preventing Disease in Animals and People



Workshop Evaluation

POSTTEST

ID _____

Future Habits						
Directions: Select ONE answer per line by marking ☐						
After today: How often will you....	Never	Rarely	Sometimes	Usually	Always	NA
1. Wash your hands right after working around animals.						
2. Wash your hands after touching animals at fairs or petting zoos.						
3. Wash your hands right before eating or preparing food.						
4. Wash your hands after contact with manure or dirty bedding.						
5. Wear gloves before touching poop and dirty bedding.						
6. Wear special clothing, such as clean rubber boots and coveralls, when you work animals that might be sick.						

After today: How often will you.....	Never	Rarely	Sometimes	Usually	Always	NA
7. Stop people from touching your animals.						
8. Clean and disinfect the equipment you use at a show.						
9. Keep your show animals away from your other animals after returning home from a show.						
10. Talk to your veterinarian if your animal becomes sick.						
11. Talk to your veterinarian about how to keep your animals healthy before going to a show.						
Future Habits						
After today: How often will you.....	Never	Rarely	Sometimes	Usually	Always	NA
12. Eat or drink around animals or in animal areas.						
13. Share supplies with other people and animals.						

14. In what area do you think you could most improve (select ONE answer)?

- a) Washing my hands
- b) Wearing protective clothing
- c) Cleaning my equipment
- d) Stopping visitors from touching my animals
- e) Keeping my show animals away from my other animals after returning from a show
- f) Working with my veterinarian to keep my animals healthy

15. What would make you change what you do?

	Most likely to make me change	Somewhat likely to make me change	Least likely to make me change
Knowing it will keep my animal healthy.			
Knowing it will keep me healthy.			
Knowing it will keep other people healthy.			

16. After taking this course, did you know that ANIMALS could make YOU sick?

YES

NO

17. After taking this course, did you know that YOU could make ANIMALS sick?

YES

NO

18. I thought this course was (Circle the correct number):

Boring	1	2	3	4	5	Fun
Too Easy	1	2	3	4	5	Too Hard
Useless	1	2	3	4	5	Useful

19. What was your favorite part about the course?

20. What didn't you like about the course?

Bring Home the Blue, Not the Flu: Preventing Disease in Animals and People



Workshop Evaluation

PRETEST

ID _____

1. Which of the following best describes you?

Elementary School Student

Middle School Student

Parent

Leader, Advisor, or Teacher

Other: _____

2. What is your gender?

Female

Male

Prefer not to say

Other: _____

3. At the current time, do you want to work in animal health, human health, public health, or farming when you grow up?

Yes

No

Don't Know

4. Have you ever taken care of farm animals?

YES

NO

5. Have you ever done a project with animals?

YES

NO

6. Have you ever taken your animals to an exhibition or a show?

YES

NO

Current Habits						
Directions: Select ONE answer per line by marking ☒						
How often do you....	Never	Rarely	Sometimes	Usually	Always	NA
7. Wash your hands right after working around animals.						
8. Wash your hands after touching animals at fairs or petting zoos.						
9. Wash your hands right before eating or preparing food.						
10. Wash your hands after contact with manure or dirty bedding.						
11. Wear gloves before contact with manure and dirty bedding.						
12. Wear Personal Protective Equipment (PPE), such as clean rubber boots and coveralls, when you work with animals that might be sick.						
How often do you.....	Never	Rarely	Sometimes	Usually	Always	NA
13. Clean and disinfect the equipment you use at an exhibition.						
14. Prohibit visitors from touching your animals.						
15. Quarantine your animals after returning home from an exhibition.						
16. Contact your veterinarian if your animal becomes sick.						
17. Talk to your veterinarian about how to keep your animal(s) healthy before going to an exhibition.						

Current Habits						
Directions: Select ONE answer per line by marking ☒						
How often do you.....	Never	Rarely	Sometimes	Usually	Always	NA
18. Eat or drink around animals or in animal areas.						
19. Share equipment with other exhibitors.						

20. What are some reasons that you sometimes do not wash your hands after visiting with animals?
(Circle all that apply)

- a) Sometimes it feels like a waste of time when I have other things going on.
- b) Sometimes my hands don't seem to be dirty so they don't need to be washed.
- c) Sometimes I don't think it does much good – my hands are only going to get dirty again.
- d) Sometimes I use hand sanitizer instead.
- e) Sometimes I cannot figure out the handwashing station.
- f) Sometimes I can't get to the handwashing station (too far away, lines too long, couldn't find them)
- g) Sometimes I think the handwashing stations are too dirty.
- h) Sometimes I can't find any soap, running water, or paper towels at the handwashing station.

21. Before taking this course, did you know that ANIMALS could make YOU sick?

YES

NO

22. Before taking this course, did you know that YOU could make ANIMALS sick?

YES

NO

Bring Home the Blue, Not the Flu: Preventing Disease in Animals and People



Workshop Evaluation

POSTTEST

ID _____

Future Habits						
Directions: Select ONE answer per line by marking ☒						
How often will you....	Never	Rarely	Sometimes	Usually	Always	NA
1. Wash your hands right after working around animals.						
2. Wash your hands after touching animals at fairs or petting zoos.						
3. Wash your hands right before eating or preparing food.						
4. Wash your hands after contact with manure or dirty bedding.						
5. Wear gloves before Contact with manure and dirty bedding.						
6. Wear Personal Protective Equipment, such as clean rubber boots and coveralls, when you work animals that might be sick.						

How often will you.....	Never	Rarely	Sometimes	Usually	Always	NA
7. Clean and disinfect the equipment you use at an exhibition.						
8. Prohibit visitors from touching your animals.						
9. Quarantine your animals after returning home from an exhibition.						
10. Contact your veterinarian if your animal becomes sick.						
11. Talk to your veterinarian about how to keep your animal(s) healthy before going to an exhibition.						
Future Habits						
How often will you.....	Never	Rarely	Sometimes	Usually	Always	NA
12. Eat or drink around animals or in animal areas.						
13. Share supplies with other people and animals.						

14. In what area do you think you could most improve?

- a) Washing my hands
- b) Wearing protective clothing
- c) Cleaning my equipment
- d) Stopping visitors from touching my animals
- e) Keeping my show animals away from my other animals after returning from a show
- f) Working with my veterinarian to keep my animals healthy

15. What would make you change what you do?

	Most likely to make me change	Somewhat likely to make me change	Least likely to make me change
Knowing it will keep my animal healthy.			
Knowing it will keep me healthy.			
Knowing it will keep other people healthy.			

16. After taking this course, did you know that ANIMALS could make YOU sick?

YES

NO

17. After taking this course, did you know that YOU could make ANIMALS sick?

YES

NO

18. I thought this course was (Circle the correct number):

Boring	1	2	3	4	5	Fun
Too Easy	1	2	3	4	5	Too Hard
Useless	1	2	3	4	5	Useful

19. What was your favorite part about the course?

20. What didn't you like about the course?

"4-H at Home" by Iowa State Extension

Glowing Germs-- On the Go Lesson

Available at: <https://store.extension.iastate.edu/product/15872>



Glowing Germs -- On the Go Lesson

Center for Food Security and Public Health

The health of your animals is very important. Whether on the farm or at a show, you should be mindful of diseases that could make your animal very sick. But what about the diseases that can make your animal sick and can also make you sick? In this activity, you will see how easily germs can spread between you and your animal.

These On the Go Lessons can be used to create a "grab and go" style activity with supplies included. Add your local contact information, print, and cut each sheet in half. The left side can be used on the outside of the paper bag or box to identify the activity, and the right side can be placed in the package as an instruction sheet.

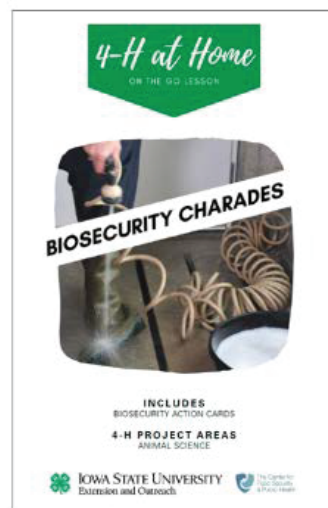
Pages / Length: 2

Publication Date: 06/2020

Format	Price	
PDF	\$0.00	Download

Biosecurity Charades-- On the Go Lesson

Available at: <https://store.extension.iastate.edu/product/15873>



Biosecurity Charades -- On the Go Lesson

Center for Food Security and Public Health

The health of your animals is very important. Whether on the farm or at a show, you should be mindful of the actions you take to keep your animal healthy. This charades activity is a great way for you to model the steps you should be taking when you are around your animals!

These On the Go Lessons can be used to create a "grab and go" style activity with supplies included. Add your local contact information, print, and cut each sheet in half. The left side can be used on the outside of the paper bag or box to identify the activity, and the right side can be placed in the package as an instruction sheet.

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