

Influenza and Zoonoses Education among Youth in Agriculture
Final Progress Report. Jurisdiction: Nebraska
Date: October 31, 2019

Summary of Achievements

No	Deliverable	Due Date	Current Status
1	Key Project stakeholders meet to discuss training content	Jan-19	Completed
2	Training content for delivery finalized, website created, and materials uploaded	Feb-19	Completed
3	Webinar with key 4-H animal health leadership hosted	Feb-19	Completed
4	Lessons and activities for widespread use by 4-H clubs, camps, and fairs printed and made available for use	Mar-19	Completed
5	Adoption of project promoted materials into existing school-based activities	Jul-19	In progress / with some completed
6	4-H Extension Specialists are encouraged and supported to hold community level “train-the-trainer” meetings related to implementation of zoonotic disease education programs	Jul-19	Completed
7	Recorded webinar is hosted for future use by activities leaders and volunteers	Jul-19	Completed
8	Project materials are printed and shared at UNL Extension career fairs	Jul-19	Completed
9	Project materials related to zoonotic disease risk messages are printed and delivered at high-risk events such as fairs and animal exhibitions	Jul-19	Completed
10	Two formal Meetings of NE One Health Team held	Jul-19	Completed
11	Conduct final evaluation, review results, prepare and submit project final report	Oct-19	Completed
12	Prepare policy paper on project for potential publication	Dec-19	Incomplete

1.0: The main project achievements for the period January to October 2019 are detailed below.

Deliverable 1: Key project stakeholders meet to discuss training content

STATUS: Completed

Achievements: The One Health Team and other stakeholders met on January 28, 2019 at the Nebraska State Office Building in Lincoln, Nebraska. Ten stakeholders were in attendance including all One Health Team members. The following were achieved:

- i. Project activities were discussed, responsibilities shared, and project activity leads were assigned. Training materials from inter-state partners were presented, materials were discussed, and the best-suited materials and activities for the Nebraska setting were selected including the materials to be printed and distributed at fairs. The team determined that the following content from interstate partners were appropriate for Nebraska: *Mucus Swap* and *Mutation Nation* for in-person training of 4-H members aged 7–12 years and 13–18 years, respectively; *Excellence in Exhibition: Preventing Disease in Animals and People* for online training (separate for kids aged 7–12 years and 13–18 years); *be a Zoonotic Disease Detective*; and *The Junior Disease Detective* for distribution at State and County agriculture fairs.
- ii. The project implementation plan was reviewed, and dates and locations for the implementation of activities were finalized including plans for the webinar and regional meetings.

Deliverable 2: Training content for delivery finalized, website created, and education materials uploaded on website.

STATUS: Completed

Achievements: Following the initial stakeholder meeting, the training materials for delivery were finalized, and webpages focused on zoonotic disease risk with emphasis on youth agriculture exhibitions were created and hosted on the University of Nebraska Medical Center (UNMC), College of Public Health website. The website for the project was launched on April 10, 2019 (see <https://www.unmc.edu/publichealth/via/>). As of October 31, 2019, there were 652 unique page views, with an average time on page of two minutes and twenty-six seconds. About 47.8% of the page views were on the education (24.3%) or the resources (16.8%) pages. Webpages were linked to appropriate CDC, NASPHV, and CSTE hosted content on youth in agriculture.

Deliverable 3: Webinar with key 4-H animal health leadership hosted

STATUS: Completed

Achievements: The webinar titled “CSTE/CDC Influenza and Zoonoses Education for Youths in Agriculture Program” was held through Zoom on March 21, 2019 at 10:00 a.m. Nineteen Extension Specialists, 4-H leaders, and members of the One Health Team attended the webinar. Given that substantial flooding and blizzards had recently affected multiple locations throughout the state and this impacted

Influenza and Zoonoses Education among Youth in Agriculture
Final Progress Report. Jurisdiction: Nebraska
Date: October 31, 2019

participation, this webinar was also recorded and the link was shared widely for persons unable to attend live. The webmaster at UNMC reports that we are unable to track the number of views for this recorded webinar.

Deliverable 4: Lessons and activities for widespread use by 4-H clubs, camps, and fairs printed and made available for use.

STATUS: Completed

Achievements: Existing online and print materials from interstate partners on zoonotic disease education targeting both age groups have been adapted. A website has been created and materials have been made available on the website. Four training workshops were held with 4-H leaders; presentations included information on how to access and make use of the materials on the website to organize club-based activities and how to conduct online training of 4-H members.

4-H youth participated in the in-person trainings organized by 4-H staff and leaders using project provided training materials: Nebraska State Fair Largest Classroom – 3 days in Grand Island – reaching 1,382, 674, and 827 youth (total: 2,883) with glow germ education and providing hand-out materials to promote educational materials on the YIA web page. State 4-H Dog Show in Lincoln to reach 75 youth competing with additional family members in attendance with glow germ education and promoting educational materials on the YIA web page.

A total of thirty-eight (38) 4-H youth participated in the in-person trainings organized by 4-H leaders using project provided training materials and completed the pre and post written evaluations. The number of youths completing evaluations was lower than expected. Nevertheless, pre- and post-training evaluation results show that the training was effective.

- Overall, 73.7% of youths that attended the YIA training expressed moderate or strong satisfaction with the course. No youth expressed dissatisfaction with the course.
- 65.8% of youth that attended YIA training said they learned new things that they can use at fairs or when dealing with animals.
- 71.1% of youth who attended YIA training strongly agreed or somewhat agreed that they plan to use information from course at fairs or when handling animals, while 5.3% do not plan to use the information
- About 55.0% of youth knew that children are at higher risk of developing illness from influenza before training compared to 68.42% after training. The McNemar's test shows that the pre-test and post-test proportions were significantly different, $p = 0.03$ (two sided).
- The number of youths who knew that zoonoses are diseases that are spread among animals and between animals and people, increased from 42.5% before the training to 71.1% after training, and the difference between the paired proportions was significant, $p = 0.00$ (2 sided).

Influenza and Zoonoses Education among Youth in Agriculture
Final Progress Report. Jurisdiction: Nebraska
Date: October 31, 2019

- The proportion of trainees that identified four ways of preventing the spread of influenza between humans and animals increased from 50.0% before training to 73.7% after the training, $p = 0.011$ (2 sided). After training almost three-quarters of the youths were able to recognize that: (i) Staying home and away from animals when you are sick; (ii) Washing hands with soap and water after working with animals; (iii) Not eating around animals; and (iv) Not walking in the house with boots used to work on the farm were ways to prevent the spread of influenza between humans and animals.
- These results suggest that the training might have contributed to a moderate improvement in knowledge on these questions. Nevertheless, the extent to which the moderate improvement in knowledge will be translated into behavior that will result in adoption of the required practices cannot be established. For example, there was no discernable change in reported frequency of handwashing before training and handwashing intentions post-training, based on a Wilcoxon signed rank test; $Z = -4.0$, $p = 0.75$.

In the next project cycle, we aim to examine evaluation processes to use methods to gain more feedback and to build upon project reach by increasing the number of 4-H staff, leaders and youths trained. We also plan to actively promote the utilization of educational resources, the online training course and evaluation on the project webpage.

Deliverable 5: Adoption of project promoted materials into existing school-based activities

STATUS: Complete

Achievements: Materials produced by our interstate partners were adapted. They were pre-tested at in-person 4-H training events that began in June. The educational program was conducted via several delivery modes that are utilized through 4-H. We also engaged with Ag Ed Teachers at the Annual Nebraska Ag Ed Symposium in Kearney at the Younes Conference Center on November 16, 2019. Members of the Nebraska YIA team were invited to offer a one-hour training session three times through the course of the day for interested Ag Ed teachers. This introductory training focused on introducing the project, providing background on zoonotic diseases, describing risks and stressing the importance of disease prevention activities, and discussed potential opportunities for Ag Ed Teachers to incorporate the various YIA training materials into their educational curriculums in their schools. We will explore ways that YIA activities can be incorporated into the annual week-long State FFA Conference held in Lincoln during April 2020. This conference will provide an opportunity to provide training directly to students regarding disease prevention and careers.

4-H Afterschool and School Enrichment Efforts - Platte County - Over 200 youth attended an agriculture education and careers day with glow germ education and promoting educational materials on the YIA web page. Additional programming was held in the same format with locations in: Kearney and Franklin Counties – 87 youth, Antelope County – 210 youth, Phelps County - 126 youth, and in Hall County

Influenza and Zoonoses Education among Youth in Agriculture
Final Progress Report. Jurisdiction: Nebraska
Date: October 31, 2019

two days were held for programming that involved 125 youth each day for a total of 250 youth. Lancaster County – 37 youth - and 14 adults.

Duel Garden Counties – 16 youth – completed lessons on: Mutation Nation, Mucus Swab, Bio Security, Careers, and also lessons 1 & 2 from the older youth piece.

Deliverable 6: 4-H Extension Specialists are encouraged and supported to hold community level “train-the-trainer” meetings related to implementation of zoonotic disease education programs.

STATUS: Completed

Achievements: Training of trainers’ workshops were conducted; thirty-five 4-H leaders, Extension Educators and Specialists were trained at four regional meetings on the use of project materials. They were encouraged and supported to cascade training with 4-H leaders and community volunteers and to promote club-based exercises. Multiple copies of the training resources including training evaluation tools were made available to Extension Specialists after the trainings and the use of the project website to conduct training was also demonstrated. The post evaluation results show that the 4-H leaders reacted positively to the training.

- Overall, 96.7 % of the trainees were either highly satisfied (50.0%) or somewhat satisfied (46.7% with the training.
- About 96.5% of the 4-H leaders who attended the training (n=35) either strongly agree (58.6%) or somewhat agreed (37.9%) that the training met their needs.
- About 93.5% either strongly agreed (56.7%) or somewhat agreed (36.7%) that the instructors style of delivery was effective.
- 93.1% of the 4-H leaders trained strongly agreed (69.0%) or somewhat agreed (24.1%) that the course was relevant to what they might be expected to do at 4-H settings (Strongly agreed = 69%, Somewhat agreed = 24.1%).

When asked about their intention to use course materials to cascade training at 4-H event, 69.0% expressed strong intention to conduct training at 4-H settings. Nevertheless, only very few of the 4-H leaders who were trained actually conducted a training event with 4-H leaders.

Attended Extension Fall Conference and NCEA Professional Development Training during 4-H Section meeting (over 90 in attendance), and 4-H New Worker Training (over 43 in attendance) - promotional materials were provided and a description of programming were shared with the staff in attendance. New and current staff heard about examples where the educational program had been implemented and about the web page to gain more information.

Deliverable 7: Recorded webinar is hosted for future use by activities leaders and volunteers.

STATUS: Completed

Achievements: The webinar was hosted, recorded, and made available to all stakeholders. It can be accessed here: https://webmedia.unmc.edu/coph/meetings/via/zoom_0.mp4.

Deliverable 8: Project materials are printed and shared at UNL Extension career fairs and other opportunities.

STATUS: Completed

Achievements: Project materials were shared with staff who are conducting career education programs and also with youth attending agriculture education and careers day.

Platte County - Over 200 youth attended an agriculture education and careers day with glow germ education and promoting educational materials on the YIA web page.

Career education was included in the Animal Science programming as a breakout topic over the lunch period at Columbus, Minden, Neligh, Holdrege, and Grand Island. The Extension state wide team responsible for conducting youth Career Education met in Grand Island and one of our extension educators presented and promoted the project materials. There were 13 extension staff in attendance for that meeting. They received copies of the curriculum and also some promotional materials that had the YIA web page so that the career development focused staff could share the information with groups at educational programs.

Deliverable 9: Project materials related to zoonotic disease risk messages are printed and delivered at high-risk events such as fairs and animal exhibitions

STATUS: Completed

Achievements: Materials have been adapted, Extension Specialists trained, and website created. The materials have been provided with QR codes to facilitate mobile phone access.

Educational materials and promotional pieces were handed out to youth and families at state fair and also at animal exhibitions. The hand sanitizer and the ink pens were distributed which has the web page address so that participants can go and seek additional information following the event. Materials were also shared at the State 4-H Dog Show and three large agriculture education related events.

Deliverable 10: Two formal meetings of Nebraska One Health Team held.

STATUS: Complete

Achievements: The first meeting of the One Health Team was held in January 2019. Another meeting was held in July 2019.

Deliverable 11: Final evaluation of the project conducted, data analyzed, and report prepared for publication.

STATUS: Partially

Achievements: The evaluation tools were developed, and the 4-H leaders, volunteers, and Extension Specialists were trained to help administer the tools. Leaders were supported to cascade training at 4-H settings. Pre-training and post-training evaluations were conducted, and the data were analyzed (see deliverables 4 & 5). The online training course was launched on the Iowa State website linked to the YIA webpage on the UNMC website. The online evaluation was also developed and hosted on the UNMC website. Very few project beneficiaries utilized the online training and evaluation tool, so our evaluation results did not include the online component.

We had hoped to have move complete data for our final evaluation to potentially incorporate into a publication. The final evaluation questionnaire was prepared, and the survey was launched. The responses are being collected but the completion rate is less than desirable as of the date of this report. The end line assessment was designed to solicit feedback from 4-H leaders on project relevance, intervention effectiveness and potential improvements. It was also intended to estimate the proportion of 4-H leaders, staff and volunteers that (i) are aware of the YIA project; (ii) received messages on zoonotic diseases at a project organized event; (iii) used the project webpage on UNMC website; (iv) used project materials to educate youth on zoonotic disease prevention; (v) attended the Nebraska State Fair or county fairs and reported receiving project-related messages; (vi) attended project organized event/training; and (vii) conducted training of 4-H youths using YIA materials. We are continuing efforts to bolster response rates but since the project period is over, we are forced to rely on passive data collection. If enough data are captured, we will use it to prepare a publication. If funding in the coming year for a dedicated Extension Specialist for this project is available, this person can invest time and energy to actively solicit evaluations and hopefully we can get better completion rates as we engage even more 4-H leaders and Ag Ed instructors.

2.0: Project collaborators: The Nebraska influenza education for youths in agriculture project is a collaborative effort involving the following Institutions and partners:

Nebraska Project One Health Team

Departments of Health & Human Services	Univ. of Nebraska-Lincoln Extension Services (4-H)
- Robin Williams, Influenza Coordinator - Dr. Bryan Buss, State Public Health Veterinarian - Dr. Tom Safraneck, State Epidemiologist	- Kathy Potthoff, Extension Educator - Rhonda Herrick, Extension Educator - Eric Stehlik, Extension Associate
UNMC-College of Public Health	Nebraska Department of Agriculture
- Dean Ali Khan - Dr. Catalina Munoz, Project Coordinator - Philip Amara, Assistant Project Coordinator - Atul Rayamajhi, Information Systems Director	- Dr. Bill Meier, Livestock Veterinary Epidemiologist - Dr. Roger Dudley, Deputy State Veterinarian
Supporting partners	
- USDA – APHIS - Nebraska Agricultural Education – FFA Will join partnership in future project periods (as funding allows)	



2.1: Roles of the project collaborators

- i. Nebraska Department of Health and Human Services (NDHHS): NDHHS provides content matter expertise and leadership on zoonotic diseases, public health, and epidemiology. NDHHS coordinates the project through Dr. Bryan F. Buss on behalf of Dr. Safraneck, State Epidemiologist. Dr Buss is the Nebraska State Public Health Veterinarian, Deputy State Epidemiologist, and a CDC Career Epidemiology Field Officer. Dr Buss leads the Nebraska One Health Team and coordinates all project activities in a collaborative relationship with the UNL Extension Program & UNMC COPH. Robin Williams, the influenza surveillance coordinator at NDHHS provides focused consultation to the project on issues surrounding H3N2v, Highly Pathogenic Avian Influenza (HPAI), and other novel influenza strains. She supports the revision of materials and training of 4-H leaders and is responsible for managing project finances, organizing webinars, and coordinating One Health Team meetings.
- ii. University of Nebraska-Lincoln Extension (UNL): UNL hosts the State 4-H Office that delivers Youth Development programs across all 93 Nebraska counties. Katherine L. Potthoff, serves as Youth Agriculture Organization Coordinator and Extension Educator at UNL with primary responsibility for 4-H Youth Development. Ms. Potthoff, is responsible for organizing in-person training events,

supervising the training of 4-H leaders (training of trainers), rolling-out of the project training of 4-H members in 4-H settings, and distribution of print messages at project-organized and other related events.

- iii. Nebraska Department of Agriculture (NDA): One of the primary responsibilities of NDA is the protection of animal health including the regulation of animal exhibitions at State Fair and other large exhibition events, and livestock disease monitoring and emergency response preparedness to help protect the livestock of Nebraska. Thus, the Nebraska Department of Agriculture, Bureau of Animal Industry is a key member of the NE One Health Team. Dr. Bill Meier the State Animal Epidemiologist represents NDA on the NE One Health team. Dr. Meier provides subject matter expertise on the revision and adaptation of project training content related to key animal health topics such as biosecurity practices, disease diagnosis, and prevention strategies.
- iv. University of Nebraska Medical Center, College of Public Health (UNMC/COPH): UNMC/COPH promotes optimal health and well-being through robust education, research, and service in collaboration with communities and other partners in Nebraska. Dr. Ali Khan, the Dean of the College of Public Health works closely with NDA, NDHHS and UNL to operationalize project activities. Dr. Khan provides subject matter expertise for public health-healthcare linkages to the project and is responsible for content adaptation using materials derived from inter-state partners, project website development and hosting including updating content, monitoring and evaluation and publication. He is supported by Dr. Catalina Munoz (content adaptation and reporting), Mr. Philip Amara (evaluation and reporting) and Dr. Atul Rayamajhi (UNMC website development, hosting, and content updating).

3.0: Challenges

Flooding caused major state infrastructure damage and corresponding response activities in Nebraska were competing priorities for 4-H Extension Educators and volunteers in their communities. These challenges substantially cut their attendance at trainings and subsequent participation with project activities, but many attendees of the four kick-off trainings had agreed to share resources and in-turn train their colleagues who were unable to attend. Given the current lack of evaluation data, we are unable to establish if these well-intentioned partners made good on their promises.

The time delay in receiving a contract from CSTE delayed NDHHS from moving forward with subawards with partners (UNMC COPH and UNL Extension).

Influenza and Zoonoses Education among Youth in Agriculture
Final Progress Report. Jurisdiction: Nebraska
Date: October 31, 2019

4.0: Project Timeline

Figure: Time of Activities*																	
No	Activity	Responsible person	End Date	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	
1	Set dates and locations; determine materials that need printing or editing.	Grant team	Dec-18														
2	Host meeting of key stakeholders to discuss content.	NE DHHS PHV	Jan-19														
3	Finalize content material for delivery including adapting existing materials. Create webpages focused on zoonotic disease risk with emphasis on youth agriculture exhibitions. Link content to CDC and NAPHV hosted content.	UNL 4-H EE	Feb-19														
4	Host webinar or in-person meeting with key 4-H animal health leadership.	NE DHHS PHV	Feb-19														
5	Ship lessons and activities for widespread use by 4-H clubs, camps, fair, and activities.	UNL 4-H EE	Mar-19														
6	Encourage adoption of materials into existing school-based activities (e.g. school enrichment and FFA).	NE -DHHS	Ongoing														
7	Encourage and provide support for 4-H Extension Specialists to hold community level “train-the-trainer” meetings related to implementation of zoonotic disease education programs.	4-H EE	Jul-19														
8	Host recorded webinar on NE DHHS webpage for future use by activities leaders and volunteers.	NE DHHS PHV	Ongoing														
9	Share materials at UNL Extension career fairs.	4-H EEC	Ongoing														
10	Ship and post materials at county fairs (later NE State Fair).	UNL 4-H EE/NDA Epi	Jun-19														
11	Formal Meeting of NE One Health Team.	NE DHHS PHV	Jan/Jul-2019														
12	Conduct final evaluation, review results, prepare and submit project final report.	UNMC/COPH	Nov-19														
13	Prepare policy paper on project and prepare for potential publication.	UNMC/COPH	Dec-19														

5.0: Materials uploaded to basecamp

Evaluation tools

- Summary of evaluation tools
- Training activity sign-in for unique ID
- [YIA post-online training evaluation questionnaire](#)
- [YIA post-training evaluation in-person activities](#)
- [YIA pre-training evaluation in-person activities](#)
- [YIA training instructions and form in-person activities](#)

Rebranded activities

- [What is a pathogen?](#)
- [Basics of biosecurity](#)
- [Bridging human and animal health](#)
- [Building on biosecurity: Reducing the risk](#)
- [Diseases that animals and humans share: The words you need to know](#)
- [Disease transmission and biosecurity activity](#)
- [Health for one, one health for all](#)
- [Mucus swap - instructor guide](#)
- [Mucus swap - participant guide](#)
- [Mutation nation](#)
- [Personal protective equipment \(PPE\) activity](#)
- [Vocabulary cards](#)

6.0: Suggestions for CSTE/CDC

Continue to facilitate sharing of educational materials and resources that we leveraged from other sites. Not having to develop curriculum really helped us make better progress right from the start. Initiate the next rounds of grants or continuation funding early so more time is available for planning and to consolidate our current gains and build on them to create a well-known ancillary program in support of 4-H. This would also allow expansion to FFA in our state. Do your very best to get a timely contract out to us ASAP. We have

internal challenges that further delay our ability to finalize contracts, much of this is out of the control of the NDHHS project team leads. So the sooner we can get the CSTE agreement in place, the sooner we can initiate our internal processes.

7.0: Story/anecdote

During the training of Extension Specialists, Dr. Buss made a presentation on “Animals in Public Settings: What are the Risks for Human Health?” drawing from materials from the NASPHV *Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, 2013*. The presentation focused on benefits and risks associated with animal contact, transmission pathways for zoonotic diseases, past outbreaks, and prevention. This was followed by a facility design exercise in which participants broke into small groups to sketch out existing facility designs for their fairgrounds taking into consideration signage, trash receptacle locations, flow of visitors, manure handling, location of handwashing facilities, nearest food consumption or preparation, and other relevant topics. In the end, participants discussed ways they could implement some of the recommendations from the Compendium for improvement. This activity could have greater impact if it involves Fair Board members and Managers. Accordingly, a number of participants indicated they would discuss the Compendium and its recommendations with these officials. Copies of the Compendium were shared and distributed, and attendees were also directed to the Compendium “tool-kit” hosted on the NASPHV website. If funded in the coming year, we will consider proposing to further promote this activity with Nebraska Fair Managers both by webinar in 2020 and during their annual meetings in January or February 2021.

Influenza and Zoonoses Education among Youth in Agriculture
Final Progress Report. Jurisdiction: Nebraska
Date: October 31, 2019

Impact Chart							Evaluation	
Intervention Activity	Baseline #prior to 2018-2019 grant period	How did you measure the baseline? Did you include direct participants, families, etc?	2018-19 Audience (youth, community leaders, etc?)	# of attendees/participants	# of materials distributed	Did you collaborate with another state? If so, which one(s)?	Pre-test administered? (How many? To whom?)	Post-test administered? (How many? To whom?)
<i>Adapting and rebranding existing material and creation of website.</i>	NA	NA	Youths aged 7 to 18 yrs	Ongoing	2 online courses 2 printable magazines 10 activity materials	Yes, we collaborated with Georgia, Iowa and Michigan	No	No
<i>Webinar with key 4-H animal health leadership</i>	NA	NA	Extension Educators and 4-H Leaders	Nineteen attendees on the day of the webinar, but recording is available to the public on the website	One: recorded Webinar	Yes, Iowa and South Dakota provided slides for Dr. Buss	No	No
<i>Community level "train-the-trainer" meetings</i>	NA	NA	Extension Educators and 4-H Leaders	Four meetings with an attendance of thirty-five participants: Lincoln - 10 Grand Island - 9 Scottsbluff - 7 Columbus - 9	All evaluation materials (see 5.0 above) Print out of in-person activities (Mucus Swap and Mutation Nation)	Yes, Michigan and Iowa	No	Yes – 30 completed responses
<i>Community level training of youth at 4-H settings</i>	NA	NA	4-H youth	Three meetings with an attendance of 40 Johnson = 14 Pawnee = 8 Sheridan = 18	All training materials (see 5.0 above) Print out of in-person activities (Mucus Swap and Mutation Nation)	Yes, Michigan and Iowa	Yes N = 40	Yes N=38