



EXCITE

Extension Collaborative on
Immunization Teaching & Engagement

H5N1 Final Report

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Attribution

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Extension Collaboration on Immunization Teaching and Engagement (EXCITE) is a nationwide local response by U.S. Cooperative Extension made possible through an interagency agreement between United States Department of Agriculture – National Institute of Food and Agriculture (USDA-NIFA) and the Centers for Disease Control and Prevention (CDC) and a cooperative agreement with the Extension Foundation in partnership with the Extension Committee on Organization and Policy (ECOP) Health Program Action Team (PAT).

On behalf of the Cooperative Extension System, the Extension Foundation serves as Principal Investigator, provides grant administration, fiscal, operational, and technological services, system-wide communication, innovation processes, wrap-around services for projects, data collection and dashboards, and partnership development for the EXCITE Program.

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Introduction to EXCITE

The Extension Collaborative on Immunization Teaching & Engagement (EXCITE) was initiated to increase confidence in adult vaccines, especially in rural communities, and was made possible through an interagency agreement between the United States Department of Agriculture – National Institute of Food and Agriculture (USDA-NIFA), the Centers for Disease Control and Prevention (CDC), and a cooperative agreement with the Extension Foundation. EXCITE's goals are to increase vaccine confidence among rural populations and in areas with restricted access to medical services; increase connection and communication between priority populations and health care systems; increase the availability of vaccination clinics for priority populations; and help CDC, USDA-NIFA, the Cooperative Extension System, and health partners implement public health programs.

H5N1 National Project

In October 2024, the EXCITE H5N1 National Project was launched to increase knowledge about H5N1 among Extension agents, dairy farmers, and farm workers; strengthen biosecurity practices to help reduce the spread of H5N1; and increase confidence in flu vaccines among farmers. In collaboration with the National Center for Farmworker Health, funds supported an H5N1 specialist lead in joint efforts. To support a coordinated national response, a dedicated project team was formed to guide the development of clear, effective educational messages. Two dairy Extension specialists supported curriculum development, leading resource development, and professional training efforts. EXCITE collaborated with the CDC to increase awareness of the Avian Flu Survey among backyard and small-scale poultry operations.

The H5N1 project team developed practical, easy-to-use resources, including fact sheet booklets, banners, and handouts, which were translated into Spanish and shared nationwide through multiple channels, with an initial reach of over 7,000 dairy professionals and even more on the waiting list for resources currently in production. One specific collaboration with CDC resulted in a Personal Protective Equipment (PPE) pyramid to address PPE for specific tasks. This replaced the original proposal of full PPE for every task and made PPE use on farms more acceptable to farmers and dairy workers. While developing materials, project team members worked with the Washington State University Neuromarketing Lab to test and refine key messages for dairy producers and workers. Materials and presentations were developed that addressed workers' specific needs. Washington State University's Neurotesting lab conducted an on-site assessment with farm workers and producers in Colorado to further inform the development of appropriate messaging.

Outreach efforts included an inaugural national H5N1 update webinar, ongoing monthly H5N1 Spotlight sessions, and highlighting the H5N1 website. The monthly spotlight sessions highlight key experts (e.g., federal agencies, nationally recognized researchers, Extension specialists and practitioners, and state veterinarians). H5N1 Spotlights have reached over 684 individuals, who are often responsible for disseminating information broadly across their Extension networks. The following topics were addressed through monthly webinars.

- Importance of biosecurity to reduce risk and spread of H5N1
- On-farm recommendations (animals, employees, visitors)
- Recommended PPE for Extension professionals planning site visits and guidance for those planning and attending livestock exhibitions
- Secure milk supply plan overview
- Farm labor studies

- Effects of and on domestic animals and wildlife (e.g., migratory birds)
- Heat stress: Signs, symptoms, levels, treatment, and strategies to reduce and keep employees safe

The website has received over 3,579 unique viewers since its inception, and its content continues to be expanded to address the needs expressed by EXCITE H5N1 participants, such as backyard poultry and youth and livestock shows. While five land-grant institutions received funding to deliver education and outreach, an additional 43 non-funded institutions also participated, expanding the project's reach.

H5N1 Project Outputs

In addition to the five funded land-grant institutions, 43 non-funded institutions participated in the project. Funded institutions reported 217 activities, reaching 3,082 participants. Non-funded institutions (n = 11) reported 511 activities, reaching 4,258 participants. Since non-funded institutions were not required to report, it is believed that their activities and reach were far greater than those listed here.

Funded projects focused on enhancing awareness and preparedness for emerging zoonotic diseases, identifying on-farm routines and practices that may increase the risk of transmission, and strengthening the capacity of dairy producers and workers to implement effective biosecurity measures to prevent HPAI-H5N1 infection and spread. The target audience included Extension agents, dairy farm personnel and their families, and allied industry professionals serving those areas. The aim of these efforts was to encourage safer practices and improve rapid response capacity at the farm, which will help reduce the risk of disease transmission affecting both dairy production and human health.

The following approaches were used by funded projects.

- Provided training sessions and educational programming on H5N1 transmission and signs, personal protective equipment and biosecurity practices, worker protection strategies, vaccinations, and vaccine clinics to reduce and mitigate the impact of the H5N1 in cattle and farm personnel
- Held producer meetings and informational sessions at dairy shows, conferences, and county fairs for 4-H and FFA exhibitors
- Distributed PPE to foster awareness and preparedness
- Hosted focus groups to gain insights into practices and beliefs that may influence the risk of future zoonotic disease emergence
- Collaborated with local and state Human Health Services (HHS) to provide information on rural vaccination clinics and efforts in disease prevention and dairy producer education.
- Partnered with local Farm Bureaus and HHS on a vaccine clinic focused on middle and section managers and farm personnel.

At the conclusion of the project, each funded institution submitted a final programmatic report. Each principal investigator reported on their perceived successes and impediments, internal and external factors that affected implementation, key lessons learned, observed use of information by farmers, and the sustainability of education and outreach efforts.

Primary Successes

The H5N1 Project resulted in a range of meaningful successes across participating institutions, each contributing in unique ways to expanding education, outreach, and biosecurity preparedness. At the University of Idaho, the team strengthened its partnership with Dairy West and embedded H5N1 content into existing biosecurity and farm safety programs. Their efforts successfully reached dairy workers with both H5N1 information and immunization information, while also building a robust supply of educational materials, PPE, and handouts to sustain programming beyond the grant period. Their ability to adapt to an alternative educational format helped them better engage dairy producers and expanded the potential to use newly developed demonstrations in future 4-H programming.

Utah State University used the project to renew and deepen relationships with dairy producers, providing information that proved valuable to both producers and veterinarians. Their distribution of biosecurity signs was especially impactful, with many producers appreciating the practical tools and implementing them on their farms.

Texas A&M University reached dairy farm owners, workers, and industry professionals across three regions of Texas, sharing essential knowledge through Extension programs. They also produced three short educational videos focused on H5N1 and dairy farm biosecurity, which during the brief pilot collectively gained traction on YouTube (160 views), LinkedIn (860 impressions), and Facebook (890 views), reflecting growing engagement with the materials.

At the University of California, the project catalyzed coordinated outreach efforts and fostered relationships with public health agencies, county Human Health Services (HHS), and agricultural partners. Their accomplishments included conducting a statewide needs assessment, identifying impediments to vaccination efforts, and creating outreach materials, ranging from newsletter articles to youth-focused biosecurity fact sheets and video scripts. They also distributed materials at events, shared project findings in state and national forums, and gained hands-on experience by coordinating an on-farm vaccination clinic while integrating EXCITE messaging into broader dairy biosecurity efforts.

Michigan State University emphasized a One Health approach by connecting animal-level disease dynamics with worker exposure and public-health considerations. Their combination of training and focus groups yielded practical on-farm recommendations and deepened understanding of the PPE challenges workers face. By coupling real-time training with access to PPE supplies, they enhanced both preparedness and the likelihood of successful protective practices.

Primary Impediments

Across the participating institutions, several shared challenges emerged during the implementation of the H5N1 Project. At the University of Idaho, fluctuating funding created uncertainty, and the dairy industry's decision not to support an exclusive H5N1 program for owners and top managers required the team to revise its approach. Ultimately, this shift proved beneficial, as the program was reframed to effectively reach dairy workers and middle managers through a format that incorporated biosecurity, immunization education, and farm safety.

At Utah State University, early assumptions that the virus would pass without affecting milk production led producers to initially underestimate its impact. As the situation evolved, however, many producers increased their biosecurity measures, making the university's distribution of biosecurity signs particularly timely and well-received.

For Texas A&M University, the project's timing posed challenges. Because the outbreak was already declining when implementation began, audience interest and participation in H5N1-focused education were lower than anticipated.

The University of California faced a different set of hurdles tied to the sensitive nature of adult vaccination among dairy producers. Their needs assessment revealed several obstacles, including low attendance at vaccination clinics, persistent vaccine hesitancy in some communities, and reluctance among dairies to host on-farm clinics—even though many acknowledged the importance of protecting workers. Additionally, some producers did not view biosecurity as an effective mitigation strategy for HPAI, further complicating outreach efforts.

At Michigan State University, a short recruitment window limited the number of farms able to participate in training sessions and focus groups. Despite concerns that farm workers might view training time as unproductive or burdensome, the team was able to conduct meaningful on-farm engagement.

Internal and External Factors that Affected Project Implementation

Across participating institutions, a variety of internal and external factors shaped the implementation of the H5N1 project. At the University of Idaho, shifting funding availability created uncertainty and required the team to reframe their deliverables to keep the project moving forward. Utah State University faced similar financial obstacles, as a funding freeze prevented them from hosting an additional workshop that had already been planned, ultimately limiting the timing and scope of their outreach. At Texas A&M University, delays in receiving funding also slowed progress and affected the institution's ability to carry out project activities as intended.

The University of California faced a different set of challenges, largely shaped by local attitudes and outreach logistics. Externally, limited trust in vaccines and hesitancy around biosecurity practices among dairy producers and workers reduced participation in clinics, even when off-site options were available. Internally, video scripts and presentation materials were completed, but the videos were still under production and were not used for educational delivery. Meanwhile, Michigan State University navigated constraints stemming from delayed implementation funding and a fixed grant timeline, both of which limited its ability to recruit additional farms for training sessions.

Key Lessons Learned

Despite the challenges, each institution learned important lessons that can inform future efforts in animal and human health.

The University of Idaho reinforced its commitment to and partnership with Idaho's dairy industry—particularly Dairy West—responding to industry and producer feedback by adapting program deliverables to new programming that was well received. Dairy workers and middle managers received the deliverables positively and appreciated Extension's up-to-date information, and in some localities, positioned difficult topics like H5N1 and immunization education within broader frameworks such as dairy biosecurity and farm safety. Positioning this education within the broader context yielded better reception than addressing them as stand-alone subjects.

The Utah State University team noted they would have built better relationships with Dairy West and the state Farm Bureau to increase workshop attendance, and that they would have found or written more fact sheets to support producers. They plan to continue using H5N1 and EXCITE information and to build relationships with Utah dairy producers even after the grant ends.

Texas A&M University reported that, because the H5N1 outbreak was already declining when the project began, audience interest and participation were lower than anticipated, prompting incorporation of other high-interest emerging topics such as New World screwworm; incorporating H5N1 presentations into field days and workshops alongside other activities increased participation to over 120 participants across dairy farmers, farm personnel, and allied industry professionals, and they highlighted the long-term impact and reach of three short educational videos on pasteurization and H5N1 inactivation, the Secure Milk Supply program, and best biosecurity practices in dairy farms.

The University of California emphasized that messaging must be practical, trusted, and delivered through channels workers already use, calling for increased social-media presence to reach dairy workers directly. They observed that positive case examples of trusted farmers promoting vaccines and biosecurity practices are powerful tools, that sustained stakeholder engagement is required for success, and that producer support for worker health does not automatically translate into a willingness to host clinics.

At Michigan State University, the team reported that baseline knowledge varied widely among producers and farm workers, underscoring the need to be ready to adjust or expand materials. Combining training with dialogue through focus groups strengthens relevance and buy-in. Moreover, resource limitations strongly influence PPE use, underscoring the need to couple training with access to appropriate supplies. Interdisciplinary partnerships across animal health, public health, Extension, and industry partners are essential for effective implementation amid evolving risks and changing guidance.

How Farmers/Farmworkers Are Using H5N1 Information Provided

The participating institutions reported a variety of ways farmers and farm workers are using the H5N1 information provided through the project. At the University of Idaho, staff continue to rely on resources developed through this and other grants and have created biosecurity and farm safety demonstration kits—such as portable boot-washing stations, farm signs, and PPE kits—which are actively used to educate Extension personnel, producers, allied industry partners, and 4-H groups. At Utah State University, producers shared photo confirmation showing that they have installed the distributed biosecurity signs and implemented the recommended practices, and the CEO of the Utah Farm Bureau, who also operates a dairy, confirmed increased biosecurity measures on farms. Texas A&M University reported that dairy farms are increasing the adoption of biosecurity practices to prevent H5N1 and other zoonotic diseases from affecting cattle and farm personnel. The University of California noted that farmers and agricultural partners are incorporating biosecurity messaging into their operations, particularly in areas where HPAI preparedness is a priority. At Michigan State University, farmers and farm workers indicated that they plan to use at least some of the PPE provided and demonstrated a strengthened understanding of the importance of milk pasteurization as a risk-reduction measure.

H5N1 Prevention Education that Will Continue After Funding Ends

The participating institutions identified several activities they intend to continue beyond the funding period. The institutions' efforts center on the continued dissemination of biosecurity information and educational materials, including signs, PPE kits, and both worker- and producer-facing resources, such as bilingual materials. Their work also emphasizes ongoing outreach and engagement with producers and dairy farms through workshops, focus groups, and direct outreach. A consistent priority is the incorporation or continuation of H5N1-related or general biosecurity education delivered through classes, training, or One Health messaging. Additionally, they are refining and expanding educational products and strategies by conducting survey analyses, developing video scripts, and creating scalable materials. These activities are supported by sustained partnerships with public health agencies, such as state and county health departments.

Conclusion

The H5N1 project strengthened national Extension capacity by expanding biosecurity education, deepening partnerships, and delivering practical, producer-focused resources across a wide variety of dairy communities. Funded and non-funded institutions alike contributed to a coordinated response through training, outreach, material development, and on-farm engagement, collectively reaching thousands of producers, workers, and industry partners across the country. Their efforts increased awareness of H5N1, improved adoption of biosecurity practices, and enhanced connections between Extension, public health agencies, and agricultural partners. While institutions faced challenges related to funding, timing, hesitancy in specific communities, and logistical constraints, each one adapted its approach to meet local needs and strengthen long-term capacity for disease preparedness. Together, these accomplishments demonstrate the value of collaborative Extension efforts and provide a strong foundation for continued work in dairy health, safety, and HPAI preparedness beyond the project period.

To explore the full H5N1 complement of resources, visit <https://h5n1.extension.org/>