Collaborative H5N1 Swine Industry Working Group Remains Vigilant

Response Preparation and Protection of the US Swine Herd Key Missions

The US swine industry has proactively united to combat the potential threat of H5N1 influenza, a highly pathogenic avian influenza (HPAI) that has impacted poultry flocks and dairy herds, humans, and a few pigs on an isolated Oregon hobby farm. Since March 2024, a dedicated working group, comprised of representatives from the American Association of Swine Veterinarians (AASV), National Pork Board (NPB), National Pork Producers Council (NPPC), and Swine Health Information Center (SHIC), has been working continuously. Their mission: to prevent and prepare for a potential H5N1 outbreak response in commercial US swine herds.

Collaboration: A Unified Front Against H5N1

The emergence of H5N1 in dairy cattle in March 2024 was an eye-opening occurrence, prompting the immediate formation of the swine industry working group. Dr. Heather Fowler, director of producer and public health, NPB, emphasizes the need for multi-species, interdisciplinary collaboration to adequately prepare for and respond to an H5N1 outbreak. Dr. Marisa Rotolo, director of swine health, NPB, echoes this, highlighting how the outbreak has prompted livestock commodity groups to strengthen relationships and share knowledge across the barnyard.

This unified approach ensures a more efficient and effective response. As Dr. Fowler states, "By collaborating we are not only sharing the load but also making sure the right people are involved in the conversation at the right time." This synergy leverages the unique strengths and expertise of each organization, ultimately benefiting producers and veterinarians. AASV, for instance, has leveraged its committees, comprised of global experts in influenza viruses, to review and provide feedback on the draft response plan, ensuring it is as realistic and useful as possible.

Single H5N1 Diagnosis in U.S. Backyard Pig

In October 2024, the US swine industry learned of the first detection of H5N1 influenza in a pig on a small backyard mixed-species farm in Oregon. NPPC and SHIC immediately shared this detection with pork industry stakeholders. SHIC prepared and deployed both a timely eblast and monthly newsletter article. While the detection on the Oregon farm was isolated and the crossover to swine limited, it reinforced efforts by SHIC, NPB, NPPC, and AASV to remain diligent in ongoing endeavors to monitor H5N1 spread and learn more about its risks to commercial swine.

“Ensuring timely and valuable communications across all stakeholder audiences is part of the SHIC mission to minimize the impact of emerging diseases,” said Dr. Megan Niederwerder, executive director of SHIC. “Confirmation of H5N1 in a backyard pig by USDA raised questions regarding this emerging threat and coordinating communications to inform veterinarians and producers was critical.”

Proactive Measures and Key Learnings

Stakeholders recognized the importance of being at the forefront of planning. Dr. Abbey Canon, director of public health and communications, AASV, notes that swine veterinarians and producers understood it's best to be at the table and be part of the planning process, a foresight commended by USDA and state animal health officials.

A critical realization for the working group has been the complex nature of an H5N1 response, extending beyond the swine industry itself. Dr. Anna Forseth, director of animal health, NPPC, points out that the process has been far more than just what is best for the swine industry alone, considering the zoonotic potential, susceptibility in other species, and the foreign animal disease classification for poultry.

Early on, SHIC started gathering broad input with industry partners from veterinarians, pork producers, and state/federal animal health officials on potential gaps in knowledge and research priorities for H5N1 in commercial swine operations. “We wanted to understand what research questions would generate the highest value data and information for US pork producers,” noted Dr. Niederwerder.

Organizational Contributions and Achievements

Each participating organization has played a vital role in the working group's efforts:

- **National Pork Board:** NPB has supported the development of an H5N1 response guide and facilitating regular calls across industry groups to ensure timely updates. They have created a dedicated H5N1 landing page on PorkCheckoff.org and disseminated existing resources like the Secure Pork Supply plan. Crucially, NPB has partnered with SHIC and the Foundation for Food & Agriculture Research (FFAR) to fund a significant research initiative focused on H5N1, aiming to fill critical knowledge gaps.
- **National Pork Producers Council:** NPPC took the lead in drafting the comprehensive guidance response plan, presenting it to USDA in January 2025. This plan underwent rigorous review and feedback from a wide array of stakeholders, including AASV's influenza committee and Board, NPB and NPPC Boards, and public health professionals, ensuring broad acceptance and practical applicability.
- **Swine Health Information Center:** SHIC has been at the forefront of timely information dissemination and research prioritization. Upon the first detection of H5N1 in a backyard pig in Oregon in October 2024, SHIC and co-sponsor AASV immediately alerted stakeholders and organized a webinar, "H5N1 Influenza Risk to US Swine," to provide the latest information and address concerns. SHIC also spearheaded the H5N1 Risk to Swine Research Program, a $4 million initiative in partnership with the Foundation for Food & Agriculture Research and the Pork Checkoff, to fund targeted research addressing crucial knowledge gaps. The overwhelming response to their Request for Proposals, with 51 submissions from 35 institutions across six countries, underscores the industry's commitment to

scientific understanding. SHIC has funded 10 projects from the submissions with work scheduled to begin in summer 2025.

- **American Association of Swine Veterinarians:** AASV's dedicated committees, comprised of leading experts, have provided invaluable scientific and practical input into the response plan. They advocate for continued participation in existing influenza A virus surveillance programs, emphasizing their role in early detection and rapid response to emerging threats. AASV also actively promotes preparedness programs like AgView® and the Secure Pork Supply Plan as well as co-sponsoring timely webinars on H5N1.

Lessons from Other Livestock Industries

The swine industry has closely observed the H5N1 responses in the poultry and dairy sectors, gleaning valuable lessons to inform its own strategy.

From the Poultry Industry

The poultry industry's experience with H5N1, where it is classified as a foreign animal disease, has provided key insights:

- **Significant Investment:** The substantial USDA investment ($1 billion) in the poultry response highlights the financial commitment required for combating widespread outbreaks, particularly concerning biosecurity, indemnity, and vaccine development.
- **Program Value:** The National Poultry Improvement Plan (NPIP) demonstrates the value of established programs in maintaining exports and controlling disease spread, offering a potential model for the swine industry's U. S. Swine Health Improvement Plan (U.S. SHIP).
- **Biosecurity and Indemnity:** The poultry experience has raised questions about the level of biosecurity that may be required for swine farms and how current industry programs could integrate with indemnity considerations.
- **Vaccine Discussions:** The ongoing discussions around vaccine development for poultry are closely monitored, as understanding an industry need, development timelines, and potential trade barriers will be crucial for any future swine vaccine strategy.

From the Dairy Industry

The dairy industry's H5N1 experience, where the virus is regulated differently, has offered unique lessons:

- **Movement Restrictions:** While not universal, the implementation of quarantines and movement restrictions for certain dairy cattle types has highlighted potential challenges for the swine industry, which relies heavily on interstate movements.

- **Patchwork State Requirements:** The emergence of varied state-specific import requirements in the dairy sector serves as a warning for the swine industry, emphasizing the need for coordinated, national guidelines.
- **Exhibition Sector Focus:** The dairy experience has underscored the vulnerability of the exhibition sector due to frequent commingling and human interaction, leading to a specific focus on this area within the swine guidance response plan.
- **Worker Safety and Surveillance:** The enhanced focus on worker safety and surveillance in dairy operations reinforces the importance of similar measures in swine production.
- **Pork Safety Studies:** The need for milk and beef safety studies in dairy suggests that similar pork safety studies will be crucial if H5N1 were to enter the swine herd.

Recommendations for Pork Producers and Veterinarians

The working group's efforts translate into actionable recommendations for pork producers and veterinary practitioners:

- **Stay Informed:** Dr. Marisa Rotolo strongly encourages producers and veterinarians to stay up to date with H5N1 developments.
- **Enhance Biosecurity:** This is paramount. Drs. Forseth and Rotolo shared recommendations include implementing practices aimed at preventing interaction between pigs and other species, paying particular attention to potential introduction pathways such as wild birds, contaminated feed or water, raw milk feeding, or shared labor/equipment with poultry or dairy facilities. Further biosecurity resources, including recommendations for show pig participants, are available at porkcheckoff.org.
- **Participate in Surveillance:** AASV recommends active participation in IAV surveillance programs to monitor virus evolution and epidemiology, enabling early detection and rapid response to emerging threats.
- **Engage in Preparedness Programs:** Producers are urged to sign up for AgView®, participate in the Secure Pork Supply Plan, and explore the Certified Swine Sample Collector Program. These initiatives provide crucial tools for disease preparedness and response.
- **Prioritize Worker Health:** Consistent recommendations include not coming to work when sick and getting annual influenza vaccinations, protecting both human and animal health.

Parallels and Differences in Disease Response

While H5N1 preparedness and response planning share similarities with efforts surrounding foreign animal diseases like African swine fever (ASF), foot-and-mouth disease (FMD), and classical swine fever (CSF), there are key distinctions.

Dr. Rotolo highlights that the ultimate response to H5N1 detection in any livestock species rests with federal and state partners. While H5N1 is a foreign animal disease for poultry and typically results in depopulation, the approach for dairy herds has differed, with no depopulation. This suggests that a similar approach might be taken for swine, unlike the typical eradication strategy for ASF, CSF, and FMD.

Dr. Forseth notes that common parallels include potential quarantine, movement restrictions, establishment of surveillance zones, surveillance for epi-linked premises, and potential trade implications. However, the emerging and somewhat unknown nature of the virus in swine underscores the importance of the working group's proactive planning to define the precise response.

The Enduring Commitment: Protecting People, Pigs, and the Planet

The sustained interest in the H5N1 swine working group, even after a year of continuous collaboration, is a testament to the shared passion and common goal of its members. Dr. Fowler said it's about, "Shared passion, shared goal, and good people." Dr. Rotolo adds that the inherent susceptibility of pigs to influenza A, combined with the ongoing transmission of novel strains, makes it as important as ever for the swine industry to remain vigilant and ready to adapt to changes in disease threats. The constant domestic and international threat of H5N1, particularly with wild birds as uncontrollable vectors, keeps the mission at the forefront.

The Influence of Zoonotic Potential

The zoonotic nature of H5N1 significantly influences the working group's goals and information sharing. It necessitates a comprehensive **One Health** approach, integrating animal health, human health, and environmental health. Dr. Fowler emphasizes the importance of protecting people, pigs, and the planet in the face of a zoonotic pathogen with multiple animal hosts. This aspect fosters crucial collaboration with partners in other species and industry groups, as well as with human health colleagues.

“The zoonotic component is very important. This virus is challenging because of its ability to change. A change may make it more difficult to control in animals or more of a threat to people. A large component of the response plan focused on worker safety and public health,” Dr. Forseth remarks.

The swine industry's long-standing, successful relationship with public health partners has been invaluable, ensuring that worker safety and public health are central to the response plan. AASV actively supports recommendations for people working with swine to take all available precautions, including vaccination, biosecurity, and personal protection, to prevent bidirectional influenza transmission.

“The swine industry is lucky to have a long, successful working relationship with our partners in public health, especially veterinary public health and zoonotic diseases,” Dr. Canon states. “Labor is a top issue in pork production, and we want to protect our people

and make sure they feel safe coming to work. Public health professionals were involved in drafting this response from the beginning, and animal and human health goals are aligned."

Looking Ahead: Continued Vigilance, Research, and Refinement

The working group remains committed to its mission. NPB will continue to engage in H5N1 learnings, particularly concerning research updates on the epidemiology of the virus, to better inform and prepare producers. NPPC plans to continue conversations with USDA and further refine the guidance response plan. AASV is focused on disseminating more details about the plan to swine veterinarians and producers, having already initiated these conversations at events like the World Pork Expo in June 2025.

SHIC will shepherd H5N1 research projects; 10 projects were selected for funding in 2025 with awards totaling $2.1 million. Projects were initiated in summer of 2025. "Awarded projects are addressing diverse H5N1 research questions, such as the clinical signs in pigs across different production phases, the potential for mammary transmission in sows, if endemic influenza provides cross-protective immunity, vaccine efficacy, diagnostic test sensitivity, and transmission risks through wildlife exposure," commented Dr. Niederwerder.

The overarching message for pork producers, veterinarians, and industry stakeholders is clear: the swine industry is proactively addressing the H5N1 threat. Efforts are underway to protect the US swine herd, ensuring the safety of workers, and safeguarding the industry's future. The working group welcomes feedback as it continues to work on behalf of the industry to protect people, pigs, and the planet.