Swine Health Information Center 2026 Plan of Work

Improve Swine Health Information

1. **Veterinary diagnostic laboratory data collation for domestic disease monitoring.** A coordinated surveillance system across US pork production for endemic disease is valuable to the swine industry. The Swine Disease Reporting System (SDRS) takes advantage of the willingness of major veterinary diagnostic laboratories to share data through an infrastructure enabled by support from SHIC. Advisory members to SDRS provide feedback through periodic meetings regarding possible improvements or enhancements to the SDRS which would enable it to become more helpful, informative, timely and actionable. Expansion of reporting trends in pathogen or syndromic surveillance at VDLs will be explored. Epidemiological use of diagnostic data to further inform the pork industry of regional trends, future predictions, and emerging disease detection will be considered. Examples could include:
    a. Increasing bacterial disease monitoring through characterizing *Streptococcus suis* strain virulence, and/or identifying *Glaesserella parasuis* serotypes.
    b. Reporting the prevalence and trends of pathogens such as porcine astrovirus 4 and porcine sapovirus over time.
    c. Expanding the participating VDLs which contribute to confirmed disease diagnoses through histopathology and tissue evaluation by pathologists.
    d. Including Senecavirus A into the SDRS report to include regional detection and trends, expected prevalence, production phase and sample type.
    e. Explore the utilization of AI technology for monitoring data to identify signals for potential emerging issues.
    f. Explore the feasibility to incorporate heat mapping within states to better visualize disease distribution.
2. **Morrison Swine Health Monitoring Project voluntary reporting for domestic disease monitoring.** As a voluntary reporting system enabled through infrastructure support from SHIC, MSHMP provides a foundation for industry capacity to report system level disease, respond rapidly, support targeted disease elimination efforts, and maintain business continuity. The project will help to identify industry needs through participant input with a goal to make the data more actionable for enrolled participants and help in response to emerging health challenges. Utilization of MSHMP to track disease elimination status and progress, such as *Mycoplasma hyopneumoniae*, will be explored. Incorporating additional factors that influence disease prevalence will be evaluated to aid in mitigation strategies and inform farm risks. Mechanisms to automate or ease task of self-reporting will be investigated to enable consistency in reporting frequency rates across participants and reduce reporting burden. Additional analysis projects using MSHMP data will be pursued to enhance value to participants and encourage more producers to participate as voluntary reporting of data will translate to value across all producers. Examples could include modeling to characterize individual farm risks of infection during regional outbreaks and heat mapping to visualize areas of increased pathogen activity.
3. **Webinars to inform veterinarians and producers about emerging swine health issues.** Veterinarians are challenged to stay abreast of new technologies and emerging pathogens associated with disease. The goals of the webinar series are to 1) share experiences and management options to foster communication and inform discussion about emerging diseases and

2) keep pace with industry chatter about current health challenges. Webinars will be offered quarterly or as needed in response to emerging health topics.

4. **Maintaining up-to-date swine disease fact sheets.** The swine disease fact sheets are a commonly accessed information resource from the SHIC website. The content of each sheet, as well as the need for new sheets to be developed, will be monitored to ensure the latest information remains available. Fact sheets for revision in 2026 could include porcine sapelovirus, porcine kubovirus, orthoreovirus, porcine bocavirus and other pathogens as indicated.
5. **Ensure timely and valuable communications across stakeholder audiences.** Information sources may have disparate conclusions that require consolidation, validation and summarizing to help ensure producers are provided up-to-date and accurate information to make decisions. This analysis of information may require a panel of experts to help provide context to novel swine health technologies or advancements. Further, ensuring effective communication across different stakeholders, such as state and federal animal health officials and state pork producer associations, may require tailored messaging platforms or targeted relaying of information. Periodic assessment of information dissemination to stakeholders including preferred methods of delivery should be explored.

Monitor and Mitigate Risks to Swine Health

6. **Monitoring high-risk product importation and traveler entry at borders.** The risk of emerging or foreign animal disease introduction at the US border, including at seaports and airports, is due in part to importation of both legal and illegal products. High-risk traveler entry, such as those individuals who have recently visited ASFV or FMDV-positive countries or farms, pose a risk to the US industry. Identifying high risk imports through analysis and interaction of product data, such as country of origin, disease status of region, likelihood of pathogen contamination, product type (such as a swine feed ingredient), processing and packaging protocols, risk of pests (such as rodents and insects), transport route and timeline, and potential exposures enroute is needed. Frequency of secondary inspection and mitigation strategies for high-risk products from FAD-positive regions should be evaluated. Best practices for reporting metrics of product confiscation to stakeholders as a biosecurity alert should be investigated.
7. **Global disease monitoring to identify international swine disease risks.** The global disease monitoring reports rely on both official and unofficial verified sources of information to improve understanding of disease status in countries around the world. Continued efforts in validation and verification of reporting for inclusion to maintain timely and accurate reporting will be prioritized. Projects to enhance reporting will be considered, such as the incorporation of imported product entry activities, development of an international VDL network to provide standardized reporting from other countries, and AI tools for mining online data for signals of unusual syndromes in swine or specific disease indicators. Investigate how to overcome barriers to swine disease information in countries or regions where outbreaks are unreported or unreliable and data is scarce. Engage and foster relationships with international stakeholder groups to build and compile a global information network in high and low volume pork production countries around the world. Individuals with international disease experience will be asked for their input and analysis of unofficial disease reports from other countries, including swine veterinarians, technical service veterinarians, pork producers, veterinary diagnostic laboratorians, and genetics or pharmaceutical company representatives. Efforts to enhance actionable outcomes from reports will continue, including dashboard development and ‘lessons learned’ from global outbreaks.
8. **Foster information sharing with government and allied industry through international animal health organizations**. Understanding the origin and progression of emerging, re-emerging, and novel infectious diseases is critically important to preventing epidemic and pandemic outbreaks. The World Organization for Animal Health (WOAH) and Food and Agriculture Organization of the United Nations (FAO) facilitate international health information sharing through building and maintaining databases of diseases in member countries. Interacting

with these entities and other swine disease centered programs could provide lessons for the US pork industry about monitoring, analysis, preparedness, and response for emerging diseases.

9. **Packing plant biocontainment to reduce trailer contamination at unloading docks.** Pathogen transfer back to the farm from first points of concentration continues to challenge producer's opportunities for disease control. A collaborative approach to identify and validate best practices and novel innovations for enhanced biocontainment at packing plants will be pursued, including identifying cost-effective mitigations to reduce pathogen transfer at the interface between the harvest facility dock and transport vehicles. Understanding barriers to widespread adoption, including an economic analysis for implementation, is encouraged. Evaluating the translation of on-farm biosecurity principles to plant biocontainment and assessment of new or alternative mitigation strategies to reduce pathogen transfer should be considered.
10. **Packing plant tools for effective cleaning and disinfection of lairage.** Contamination of packing plant lairage from multiple sources presents a disease transmission risk to trailers, transport vehicles and personnel that return to farms and are in contact with live pigs. Should an emerging swine disease be detected in lairage at a packing plant, effective cleaning and disinfection tools are necessary to confirm pathogen elimination on site. A collaborative approach to identify and validate best practices for enhanced biosecurity focusing on reduction of disease risk at lairage will be pursued using endemic diseases as indicators of pathogen risk and control. Strategies to reduce pathogen contamination from incoming market pigs should be considered. Assessing the biological effectiveness of on-site sanitation measures, including duration of product efficacy, application rate and frequency, efficacy with high organic loads, and the impact on plant environmental systems should be considered.
11. **Cull sow and secondary market biosecurity and disease surveillance.** Monitoring pathogen surveillance and spread in the cull sow and secondary market swine populations presents an industry challenge for disease prevention and control. Assessing the relative contribution of cull markets for disease risk, identification of novel technologies for reducing risk, and the development of monitoring and surveillance strategies for rapid disease detection will be investigated. Best practices for detecting emerging pathogens, reducing the risk of disease transmission, and maintaining biosecurity through these channels will be investigated.

Responding to Emerging Diseases

12. **Emergency disease preparedness and response planning in coordination with state, federal and industry stakeholders.** Working in collaboration with the swine industry organizations as well as other stakeholder groups (US SHIP, NPB, NPPC, AASV, Meat Institute, USDA, CDC, FSIS, DHS) to collectively plan emergency response for emerging, foreign or transboundary swine disease incursion. Assist in filling research gaps and generating information necessary to prevent, prepare and respond to diseases which impact the US pork industry. Identify needs for protecting the US pork supply chain and US food security in emergencies due to swine or human disease, such as NWS or H5N1. Prioritize preparedness in responding to an emerging disease, including the allocation of resources, response times, and all events from the initial suspicion of farm infection to status confirmation. PEDV or PRRSV may be considered as proxies for FAD to assess resource needs and aid in further development of tools to reduce the time necessary for disease response. Through coordinating with the other pork industry organizations, SHIC will continue to participate, focusing on research and other activities to inform effective national prevention, response, and recovery programs to minimize impact on the US industry.
13. **Rapid deployment of research funds for a newly emerging disease.** There is no predicting when or where the next emerging disease will appear. SHIC needs to be prepared with funds in place that can be quickly mobilized to support filling the immediate research gaps following an outbreak. This research will provide producers and their veterinarians with critical information that they will need to effectively respond to the disease outbreak.

14. **Identification of early disease warning signals utilizing emerging technology.** Early warnings of an emerging disease provide the opportunity for timely diagnostic confirmation leading to more effective containment and recovery. Development and validation of real-time, labor-saving early disease warning technologies will be explored to improve sensitivity of detection and disease outbreak prediction capabilities. Investigate how existing and novel technologies, such as the use of AI or Bluetooth compatible systems, could be automated and developed for continuous output to reduce time to detection and improve alert accuracy. Exploration of novel technologies and best practices to assess in real-time individual or group health status at the pen, room, barn or system levels should be considered.
15. **New World Screwworm as an emerging disease risk for US swine.** New World Screwworm re-emerged in Mexico in November 2024 with continued northward expansion towards the US. A recent detection within 70 miles of the US border raises concerns regarding the potential impact this parasite could pose to US swine. Pork producers' knowledge of NWS is limited and the development of resources to aid in the prevention, detection and management of a potential NWS incursion in swine is warranted. Investigations to generate knowledge around NWS in swine could include a risk assessment for US commercial swine (considering housing, ventilation, temperature, management practices, wound care, and transport), on-farm risk factors for infestation, practices to mitigate flies on farm, impact of infestation in feral pigs, management of sites housing multiple at-risk species, and the assessment of therapeutic options for swine. The evaluation of parenteral and topical products should include determining appropriate withdrawal times to meet domestic and international requirements for pork safety.
16. **Mitigating risk of H5N1 IAV to commercial swine populations.** A single detection of H5N1 in backyard pigs on a multi-species operation in Oregon, along with the ongoing outbreak in dairy cattle, raises concerns regarding the potential risk of H5N1 incursion into commercial swine farms. Research funded in 2025 focused on clinical presentation, transmission, diagnostics, cross-protection, pre-existing immunity, vaccine development, mammary involvement, and biosecurity risks associated with wildlife. Additional gaps in knowledge have been identified to support response planning for H5N1 in swine, generate data on pork safety to support trade, and facilitate animal movements for business continuity in the case of an incursion. Evaluating existing surveillance for IAV to support early detection and validation of sample types such as oral fluids for H5N1 testing are warranted. Further investigation into risk factors for transmission including boar semen, aerosols, multispecies exposure to wildlife or waterfowl, and shared fomites from dairy and poultry operations (equipment, personnel, supplies, trucks, loadout and vaccine crews) can help inform prevention and mitigation strategies. Identifying best practices for animal caretakers to prevent zoonoses, including most effective PPE, and defining high and low risk movements of swine, such as all in/all out or market haul, is warranted. Evaluating the risk of transmission from manure management systems and handling should also be considered.
17. **Investigating production and swine health impacts of porcine sapovirus as an emerging pathogen.** Additional information is needed to fully characterize PSaV and its potential causative role in clinical disease, prevalence across US herds, and contribution to production losses. Targeted analyses of suckling and postweaning cases of enteric disease may be useful to enhance knowledge of this emerging virus. Defining the economic impact of infection through weaning weights as a measure of clinical impact is warranted. Further development of new diagnostic tools beyond PCR assays is needed to assess the potential for increased detection frequency in swine across the US industry and support vaccination strategies for disease mitigation.
18. **Porcine astrovirus 4 as an emerging disease threat to US swine.** Through routine diagnostic investigations, veterinary diagnostic laboratories have indicated a potential increase in PoAstV4 cases which are negative for IAV. Understanding the clinical relevance and contribution to respiratory disease, prevalence across US swine herds, production phase affected, epidemiology of disease transmission, and impact of co-infections would assist the US industry in further defining PoAstV4 as an emerging production disease. Pathogenicity of PoAstV4 associated with

swine disease should be further investigated, including potential co-factors and clinical impact on the industry. Correlating diagnosis with negative production impacts could help assess economic losses associated with PoAstV4 and help prioritize management actions.

19. **Utilizing standardized outbreak investigations to identify high risk events for pathogen entry.** Biosecurity hazards identified through standardized outbreak investigations help farms mitigate risk for introduction of emerging diseases. The web-based entry of outbreak investigation data provides the opportunity for standardized data capture online and enables utilization of data for machine learning and shared conclusions. Analysis of the generated and historical data from outbreak investigations will be pursued to provide aggregated data from outbreaks over time and identify the frequency of biosecurity hazards across the US industry. Routine automated output sharing with the broader industry will be explored for 'lessons learned.' Reporting should include epidemiologic data to inform stakeholders and enable application across the industry. Incentives, barriers and adaptation of the standardized outbreak investigation process will be explored to enhance adoption and ease of use by veterinarians and producers. Further utility of outbreak investigation data will be considered, such as methods to capture information from the Word-based form, use for new or novel disease outbreaks, database integration with programs such as AgView to combine outbreak data with traceability, and leveraging biosecurity hazard data with laboratory diagnostic and production data.

Surveillance and Discovery of Emerging Diseases

20. **Diagnostic fee support to assist in early detection of emerging diseases.** There continues to be incidents of increased morbidity/mortality where 1) an etiology is not identified, and the presumed etiology is negative on routine testing or 2) there is a strong supposition that the identified pathogen is not the primary causative agent of the outbreak. In these cases, it is beneficial to pursue a definitive diagnosis and support further diagnostic testing. Support for these follow-up diagnostic cases is offered after producers have funded the initial diagnostic testing. Diagnostic fee support helps to ensure that an emerging disease is identified quickly and accurately for rapid response and protection of the industry. Enhancing utility and overcoming barriers to broader use of this support program will be explored, such as expanding submissions to veterinarians and diagnosticians, increasing ease of submission requests, or incentivizing participation for adoption of compatible cases.
21. **Increasing utility of VDL submissions as an effective surveillance stream for detection of emerging diseases.** Submissions to VDLs can be effective surveillance streams for detection of foreign or emerging diseases. Improvements in VDL submissions could assist in the coordination of a national swine health surveillance system to prepare, detect, and rapidly respond to emerging diseases. Working in cooperation with the pork industry organizations and VDLs, barriers will be investigated for submitting routine and necropsy sample types that may be case-compatible with foreign animal diseases or that could help identify domestic, endemic diseases that may emerge. Further understanding of potential incentives for VDL submissions to include accurate detailed information to accompany samples, such as clinical signs and premise identification numbers, would also provide value. This would facilitate a quick and effective US response.
22. **Investigate the clinical relevance and epidemiology of newly identified agents in VDL submissions associated with swine disease.** VDLs may periodically find novel bacteria and viruses that are associated with clinical signs of disease in swine. Having support available to increase understanding of the novel agent's epidemiology and pathogenicity is important to further clarify their role in clinical disease. Further, analysis of the potential production and economic impact to US pork producers will help prioritize actions and resources.
23. **Genome-based diagnostic technologies for emerging disease detection and forensic analysis.** Rapid and accurate diagnosis of emerging swine pathogens is critical for response and effective mitigation strategies. Investigation of known and novel genome-based technologies (multi-plex PCRs, NGS, pan-diagnostic assays, RNA scope, TELSVirus) for emerging disease detection,

lesion identification, co-infection diagnoses, and cost-effective utilization for broad-based disease surveillance should be explored. Investigation could include using NGS for identifying known versus unknown agents through targeted pathogen primer inclusion. Streamlining bioinformatic analysis for interpretation and application of results should be included. Diagnostic methodology to assess test availability, accuracy of detection, and application to multiple sample types.

24. **Population and environmental surveillance technologies to facilitate rapid detection of emerging diseases.** Labor to perform sample collection for routine disease surveillance on individual pigs remains a consistent challenge across all phases of production. Sample types that provide opportunities for broad population-based surveillance using easy-to-collect methods are beneficial for the swine industry. Investigation into the expanded utility of currently collected sample types (oral fluids, processing fluids) as well as the investigation of novel sample types will be explored for emerging disease detection. Novel methods and sample types, including automation and environmental samples, that reduce the labor necessary to conduct sampling should be investigated. Investigation into the use of alternative sample types, development of surveillance strategies to maximize disease detection, and reduced labor input requirements should be considered. Cost-effective models for environmental sampling, such as spatially balanced surveillance, will be explored for potential use.

Swine Disease Matrix

25. **Using the bacterial and viral swine disease matrices as guidelines for research to enhance swine disease diagnostic capabilities.** As new information on emerging bacterial or viral pathogens is discovered through SHIC's surveillance or other routes, there may be needs to support improved diagnostic capabilities. Needs for diagnostic sensitivity and specificity validation for prioritized viruses or bacteria in the swine disease matrices using clinical samples and tissues will be considered.