

National PRRS Elimination Program Framework

Executive summary

The goal of this document is to develop a strategy for the elimination of the porcine reproductive and respiratory syndrome (PRRS) virus from the national swine herd. This initiative is undertaken by the American Association of Swine Veterinarians (AASV) PRRSV Task Force in conjunction with the National Pork Board. A working group of veterinarians from private practice, industry and academia with expertise in various aspects of disease control programs was appointed to draft this document.

The US Producers have expressed their clear strategic intent to have the impact of PRRSV reduced from the US swine herd to maintain the long term competitiveness of the swine industry. Therefore “The National PRRSV elimination framework” is conceived as a road map to assist swine producers, allied industry and regulators in the journey to control and eliminate PRRSV from the national swine herd.

Once a strategy is developed, technical and intellectual gaps can be identified and the development of tools to fill those gaps can be targeted. It is the objective of the working group to provide a strategic plan that could be implemented at such time as producers and veterinarians deem appropriate.

1. Background and assumptions

Porcine reproductive and respiratory syndrome virus (PRRSV) causes significant economic losses to the national and global swine industry. PRRSV causes reproductive losses, increased mortality, decreased daily gain and decreased feed efficiency. In the U.S alone, the productivity losses due to PRRS have been estimated at \$664 million dollars a year (Holtkamp et al., 2011). The PRRSV break incidence rate in breeding herds is estimated to range between 23 and 41% annually (Swine Health Monitoring Program, Dec 2015 report) representing a significant burden to producers. PRRSV is a RNA virus prone to mutations with significant genetic variability that results in limited cross-protection among strains, which makes PRRS control more difficult. The emergence of new strains is on-going and represents a significant threat to the national swine industry.

PRRSV is transmitted by multiple routes including direct animal contact and semen. Indirectly, PRRSV is transmitted through the air, in areas of high pig density, and with contaminated fomites such as transport and movement of materials by people.

Significant efforts have been directed at controlling, preventing and eliminating PRRSV infections. Fortunately much has been learned about managing and preventing PRRSV and there are tools available to control PRRSV at the herd level. Producers have invested millions of dollars in upgrading their biosecurity and management practices first at the herd level, and more recently with a focus to include geographical regions. However, even with such investments and efforts, the cost of PRRSV is high and at

risk of threatening businesses as has been the case with the recent emergence of highly pathogenic strains such as 1-8-4 or the 1-7-4 novel PRRSV strains.

In preparing this framework document, there are a series of assumptions made based on current knowledge of PRRS. This knowledge should evolve and be reflected in the decisions taken as progress is made on efforts to control PRRSV. The assumptions include the following: a) PRRSV causes significant losses to producers and producers have expressed a clear strategic intent to limit the impact of the disease, b) PRRSV is a significant welfare issue for the pigs that has a direct impact on the pig's susceptibility to other infections and antibiotic use, c) although much is known about PRRSV transmission there are still many unknowns in particular related to herd to herd transmission, d) commercially available vaccines can assist in management of the disease, but their role in a National elimination program is still unclear.

We acknowledge that any national elimination program must be producer-led and recognize the challenges associated with preventing viral re-introduction into negative herds. We also acknowledge that additional tools may be required before this plan can be implemented.

2. Justification

The cost of PRRS continues to be significant despite the many attempts to control and eliminate the virus at the herd, and more recently, at the regional level. Given the challenges, cost, and on-going emergence of novel strains of PRRSV that threaten the competitiveness and sustainability of the North American swine industry, there is recognition for a need to elaborate a plan, and infrastructure, to successfully eliminate PRRSV from the swine industry.

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Embarking on a National PRRSV elimination program is a complicated task, and requires many steps, some of which are still under development. Undertaking such a program also represents an opportunity to foster an industry that is more resilient and sustainable, capable of addressing the challenges of today, and the future, while meeting the food demands of an expanding population. PRRSV is recognized as the number one disease affecting the sustainability of U.S pork producers. The impact of PRRS is such that affected pigs are more prone to other diseases, production losses and welfare issues including increased antibiotic use.

Producers and veterinarians have become significantly better at managing and preventing PRRS. There are tools (i.e vaccination, filtration, thermo-assisted drying and decontamination of vehicles) and practices (i.e improved transport biosecurity, herd closure) that have proven effective at reducing the

incidence and impact of PRRSV. There are many instances of successful elimination of PRRSV at the herd level and the procedures to control and eliminate PRRSV have become routine in many systems. However, there is recognition that a single solution is not available at the moment, and that there is a need to have a comprehensive plan functioning as a whole to effectively decrease the incidence of PRRSV. Because as an industry we do not fully understand the mechanisms facilitating transmission between herds, the dissemination of the virus in particular when new strains emerge, and what management practices predictably decrease viral shedding, there is a need to develop a comprehensive plan that considers the elimination of the virus from complete systems and regions.

The National PRRSV elimination plan is conceived as *“a voluntary producer-led, funded and managed plan. The plan is presented here as a stepwise, bottom up approach that includes risk-based stages that define the PRRSV status of a farm, an area, or a region, and focuses first on reducing the local spread of the virus, second on reducing spread between areas, and then focuses on regions that expand and coalesce into larger well-defined areas that progress towards elimination. The plan ensures the long term sustainability by first controlling/stabilizing herds, containing infections and protecting negative herds and regions. The plan requires trust, enhanced communication and uses surveillance, implementable information and proven methods in order to contain, control and eliminate the virus”*.

3. Plan requirements:

a) Surveillance

Surveillance is central to PRRSV control and elimination. The surveillance program is envisioned to provide information on detection of infection and disease status and to provide implementable information to assist in decision-making and communication.

The Swine Health Monitoring Program (SHMP) is suggested as the umbrella to measure progress towards PRRSV elimination by: a) assessing incidence, b) provide research-based recommendations, c) use and analysis of data for decision-making to ensure business continuity and, d) assist in communication. Such approach relies on: a) widespread use of SHMP by producers (i.e have as many herds enrolled as possible including herds in low density regions), b) use of premises identification numbers, c) having mechanisms to integrate data automatically (i.e AgConnect, Bioportal) from multiple sources (i.e., diagnostic laboratories, production systems, recording databases, States, etc), d) analytical capabilities that provide access to interpretation and, e) a structured reporting system.

Surveillance should include boar studs, breeding herds and growing commercial pig herds with capabilities to expand to include other sectors of pig production (i.e show pig production, 4-H, pure bred breeders, etc) and other sources of data in particular as the project progresses (i.e slaughter plant surveillance). A particular emphasis should be placed in the biosecurity and monitoring of boar studs, including smaller studs, given that infections could impact many breeding herds located in multiple regions at once. Monitoring of finishing sites should also be enhanced as growing pigs can serve as reservoirs of viruses and be a source of viruses for breeding herds and boar studs.

Ideally, the surveillance should be based on risk considering statistical probabilities. The surveillance system also needs to define reporting of PRRSV status and traceable events that are critical to PRRSV risk and business decision-making (movement, performance parameters, diagnostics, etc.). Effective surveillance relies on the use of premises IDs by the producers.

Specifically for surveillance, there will need to be agreement on which methods are recommended for site status determination (serology, PCR or both), what are the appropriate methods for sample collections (oral fluids, blood, semen, etc), frequency of sampling, statistical power and appropriate sample selection for maintenance of status in herds as the program advances. The testing requirements will need to be standardized. In addition, the concept of risk-based surveillance should be considered and developed to include high risk sites instead of testing all sites.

b) Animal movement

Animal movement is central to multi-site swine production due to pig volume and regularity of movements, and it is recognized as a major risk for disease introduction into regions. Animal movement is complex and there are connections with packer agreements, suppliers, feed-mills and others, where minor changes in pig flow, can result in significant cost differences. Ability to track animal movements is considered a critical requirement for the long term success of PRRSV control and other diseases. As part of tracking animal movements, specific focus should be made on addressing the confidentiality of movement data.

Tracking animal movement should start with commercial pigs and would eventually include show pigs, sow buying stations and other collection points. It is important to recognize constraints that dictate movements such as: packer contracts, feed mills, health status, costs, frequency of movement, size of the site, vehicle availability, grower contracts, unknown movement situations, ability to respond rapidly to status change, need for risk-based decisions, truck wash availability and distance, and that there will be situations that will offer limited flexibility for changes in movement protocols. Information on PRRSV status and considerations for regionalization of pig movement based on risk should be considered.

There is recognition that at some point in the program controlled movement will be required. This will be needed as the program progresses and when a vast majority of producers are in the program and as the need to maintain area status arises. There is also recognition that in a voluntary program “good neighbor practices” such as swapping growing sites, and avoiding high risk routes should be promoted at the local level.

Besides the impact of movement at introducing new diseases into a region, there is in general a poor understanding on the impact of animal movement on incidence and presentation of PRRSV breaks in particular in growing pigs. It is not clear when and how finishing pigs become infected with PRRSV and whether there is an association with timing of moving pigs in and out of the sites. This information is important to determine the impact and risk of the various types of movements (i.e slaughter, culls, weaning, etc) on PRRSV incidence and to trace-back the source of infection. In addition, information on

the other components of pig movement such as truck wash biosecurity needs to be considered. The overall goal is to understand the impact of pig movement to control PRRSV.

c) Herd and region classification

Herd classification based on PRRSV status is critical in order to define a risk-based PRRSV elimination plan. The AASV PRRSV herd classification (Holtkamp et al., 2011) offers a great foundation to classify herds based on PRRSV status and it is recommended that changes are made to include definitions in line with stages proposed in the plan (see description of stages later). Stage 2 classification that incorporates herd status based on vaccination, live virus inoculation or implementation of a PRRSV elimination plan should be considered as different activities in Stage 2 are considered.

It is recognized that all herds will have a PRRSV status that will be regularly updated based on diagnostic data, clinical information or other information provided by the production systems. How the information will be updated will need to be discussed and be considered as part of the infrastructure to support the overall initiative to support PRRSV elimination. The plan also recognizes that in-house diagnostics are becoming more prevalent and there will be the need to incorporate real time information from fragmented sources.

There will also be a need to define the PRRSV status of regions or states. Regional classification should reflect the PRRSV status of the herds with the lower PRRSV herd status in the region, and within a State there may be different regional statuses recognized.

d) Organization of producers

Producer leadership and engagement is central to this voluntary producer-led, funded and managed PRRSV elimination plan. Effective communication and a plan on which to base decisions are necessary for the success of the program.

It is proposed to work through state-level swine health committees. Established by state pork associations and involving all pertinent stakeholders, the creation of a State PRRSV Advisory Board as part of the state swine health committee or the state pork association is recommended. These committees would have local champions crucial to the local and regional success of the program and would play a central role in creating impetus for the program, increase and maintain participation, collate and disseminate data, set local/state policies and provide an on-going barometer for the roadmap of the local industry. These committees would inform the state veterinarians and seek their input for state-level decisions.

In addition, the reinstatement of a national swine health board, specifically a National PRRS Advisory Board, is recommended, and although it is recognized that this body would not have decision authority, it would serve as a sounding board to provide recommendations to producers and state and federal governments on an as needed basis. The main role of this board should be to provide national guidance and coordination in the program, help coordinate efforts among states and set minimum standards for

the program. This board would work in collaboration with the National Pork Board and the American Association of Swine Veterinarians to provide recommendations, evaluate road maps and establish the infrastructure for the long term success of the program.

Engaging producers from low density areas/states should also be made a priority. It is envisioned that a national program would first require progress in low pig dense areas. In such a case, partnership with the Association of Extension Veterinarians and other groups could be instrumental for purposes of coordination and reporting.

e) Risk analysis and risk management

A risk assessment tool capable of being implemented at the local level to deliver practical results is necessary. The risk assessment tool should be used to: a) decide where pigs move and how to identify how risky a herd or region is, b) identify factors that contribute to risk at the herd level (i.e why is one herd more risky than another?), c) define likelihood of a herd to remain negative, d) measure impact of single vs. serial PRRSV breaks, e) assess between herd risks, f) assist in decision making, g) understand the constraints and, h) how disease in low incidence areas impact disease in high incidence areas and vice versa.

Goals of risk management to:

- decide where pigs move and where and when controlled movements are appropriate
- Identify how risky is a herd or a region
- Guide investment, be a tool that provides return on investment to producers
- Identify risks that contribute to new virus introduction in a herd or a region
- Identify the risk that shipping infected pigs represent to other herds

There is recognition that existing risk assessment tools (i.e PADRAP, others) need further development and that a tool that incorporates dynamic risks based on PRRSV status of farms in a region and density of the region is preferred. The risk management tools need to go hand in-hand with regional and local risks and need to operate at the local level.

4. Stages

The National PRRSV Elimination Plan is envisioned with a bottom up approach with stages at the herd, regional or state level that account for risk of PRRSV infection and that allows the logical progression from infection/high risk to no infection/low risk scenarios by adopting a series of procedures directed to early detection, containment and mitigation of PRRSV infections.

The stage-based plan also envisions to set the steps necessary to initiate a plan in a region, to progress within a region, to have clean-up plans for all herds and surveillance systems in place, and recognizes that not all states/regions will reach the stages at the same time.

Appendix 1 describes in detail the stages and procedures recommended for the National PRRSV Elimination Plan. The stages are defined based on the following parameters:

- % of herds in a region that have been identified (herd identification rate)
- % of participating herds
- Prevalence by PRRSV category
- Incidence rate by breeding herd or grow-finish herd
- Role and responsibilities at the National and State level

The plan recognizes the need to define where disease is present or absent geographically in order to show national status and create momentum for progress in the plan. The plan also recognizes that the role and responsibilities at the national and state level will be different although activities will need to be done in conjunction and coordinated with State Health Officials. National level supervision will be important to provide national guidance and coordination in the program, help coordinate efforts among states and set minimum standards. State level supervision will be crucial to provide guidance and leadership at the regional and state level, and very importantly to help coordinate local and regional efforts and implement guidance established at the national level.

The plan recognizes the need to have a regulatory component at some point in the evolution of the program, but this component will be determined by progress of projects in the ground and local demands.

5. Feasibility

The framework recognizes that the feasibility and success of the program will depend on multiple factors. Such factors reside on the level of participation and commitment of the producers, the cost associated with the implementation of the program, the presence of program incentives to motivate producers to move forward and access to effective PRRSV management tools. The program also relies on the buy-in from industry stakeholders including producers and veterinarians. Veterinarians play a central role in the success of the program by contributing their technical expertise, knowledge, networking and close relationships with the producers. Packers and other industry allied stakeholders are also important to ensure the feasibility of the program.

A key component of the proposed program is that the framework recognizes that there are tools and processes to control and eliminate PRRSV that are proven to work. The framework also recognizes that the knowledge on PRRS control evolves, and that the program will need to be adapted as new information is generated. However, there are risk factors and threats that are not fully understood and it will be important to identify the hurdles that may de-rail the program.

Appendix 2 includes a summary of proposed main steps and milestones.

6. Gaps and needs

Gap analysis should be an on-going exercise and gaps and opportunities should be considered as the program progresses. The following have been identified as gaps and needs that need to be bridged in order to advance in the control of PRRSV. These are divided in infrastructure, technical, knowledge and logistics gaps:

Infrastructure:

- Premises identification (IDs).

Wide use of premises IDs is central to the program. The implementation and validation for movement of pigs, submission of diagnostic data, effective surveillance, disease trace-back and risk analysis require a standardized information tracking system. Therefore, the recommendation is that use of premise IDs should be mandatory.

- Integration and analysis of data
- Pig movement data tracking
- Identify independent body for point of information (National PRRSV Advisory Board)

Technical:

- DIVA vaccines
- Enhanced diagnostics
- Immune stimulants
- Genetic factors (host and viral)

Knowledge:

- Fully understand factors and mechanisms that contribute to between-herd transmission
- Farm practices that decrease shedding duration
- Risks that lead to long term duration within farms
- Effect of regional vaccination or vaccination of weaned pigs on PRRSV incidence
- Timing and frequency of when infection in growing pigs takes place and whether there is an association with movement events
- Identify risk of pig movement on PRRSV incidence. Are infections in growing pigs associated with pig movement at weaning, slaughter or others?
- How to contain PRRSV infections in grow-finishing sites?
- Investigation of new cases, when they occur and mechanisms responsible for new infections
- Implementation of effective risk-based surveillance
- Understand connections and risks between commercial production and peripheral pig production such as show pigs, purebred breeders, 4H, etc.

Logistics:

- Gathering, creation and dissemination of guiding documents (critical literature to guide program)
- Identify educational needs
- Incorporate show pigs/exhibition pigs
- Funding of the program
- Timing of a program

7. Research and educational needs

In order to advance in the efforts to control and eliminate PRRSV, there will be a need to have on-going educational efforts directed at updating producers and veterinarians of the current PRRSV status and on-going risks and procedures to manage the risks. Since we envision that on-going analysis of PRRSV information will be necessary, the dissemination of information and educational efforts should be on-going.

There needs to be the gathering or creation of documents (“guiding documents”) that will assist producers and veterinarians to guide their efforts at controlling and eradicating PRRSV. In addition, dissemination of information to producers and veterinarians should be central to the program.

There will also be a need for on-going research. There are questions that need to be addressed now, and questions that will come up as the program progresses. It will be important to support and expand the current infrastructure to support such research efforts. This infrastructure includes but is not limited to funds from the National Pork Board, Universities, private enterprises and federal sources such as NIFA USDA.

Research questions to answer in addition to the knowledge gaps identified in Section 6 of this document:

- Would vaccination at weaning help manage the risk of PRRSV infection via movement of pigs into a region? Modelling approach?
- PRRSV breaks in growing pigs, when do they happen? At placement? Slaughter truck associated? During growing period? Seasonal effect?
- Understand risk that show and feral pigs represent for PRRSV.
- How would a risk-based tool incorporate dynamic risks?

8. Limitations and caveats

- a) Throughout the program we recognize that there will be pressures of different sources such as economic, social and regulatory. At this point we strive to recognize the social and economic pressures to advance participation and that will consider the cost associated with the program. Regulatory and mandatory pressures may come as the program progresses significantly.
- b) PRRSV Vaccines – there is recognition that PRRSV vaccines aid in the management of PRRS disease. However, their role in PRRSV elimination programs is still uncertain. There is the desire

for PRRSV vaccines to have similar effectiveness as PRV vaccines, however given the genetic differences between both viruses, it seems unlikely that a vaccine that prevents against infection and shedding will be available for PRRSV. Existing vaccines should be considered as tools in the arsenal available to assist in the efforts, but the program should not rely on the availability of a PRV-like vaccine to get the program started. In addition, use of vaccination makes diagnostic interpretation more difficult since vaccinated animals cannot be differentiated from infected animals. There is also recognition that at some point in the program (during stages 4 and 5), use of vaccine should be prohibited.

- c) Use of serum inoculation – similarly to vaccines, use of serum can aid in the management of PRRS. However, guidelines on serum use and at which point in the program it should be discontinued need to be developed.
- d) Recently there has been a report on pigs that are fully resistant to PRRSV infection. This report is very encouraging and welcomed by the industry. However the availability of PRRSV resistant pigs at the commercial level is predicted in the medium/long term period and there are still many uncertainties to know whether this is a commercially viable option to effectively eliminate the PRRS disease.
- e) Given that the program presented in this framework relies on in the voluntary participation of producers, participation rate and commitment of the participants is crucial to the program. Incentives for participating producers and incentives that ensure progress in the program will also need to be identified. Those incentives can be at the individual, local, regional/state or national level.
- f) There needs to be a better definition of which measures should be established to maintain breeding herds and boar studs PRRSV negative. The program recognizes that both actively infected boar studs and breeding herds play a significant role in the spread of PRRSV. Therefore strict guidelines on biosecurity and monitoring, and contingencies, should be priorities for these types of herds. In addition, the program also recognizes that any PRRSV elimination efforts should focus first in these types of herds.
- g) There needs to be reasonable timelines for reaching Stages in low density and high-pig dense states/areas – ideally needs to fit within 10 year national timeline.
- h) It is uncertain at this point how much funding is required to initiate and implement a national program to eliminate the PRRS virus. Since such a program represents a big undertaking, there will need to be new resources brought from different sources to ensure the viability of the program. The resources should include funds from both public and private institutions. In addition, funds will be necessary for capacity building in regards to data integration, data analysis and communication. Different organizations will need to be working together and it will be crucial to have a coordinated integration of the efforts by the different parties.
- i) It is unclear what unintended consequences may derive from this program. There may be an impact on short- term producer and packer profitability as we anticipate failures along the process. However, we anticipate that in the long run such a program will result in a more sustainable and resilient swine industry not only able to respond to PRRSV threats but also

threats posed by other existing and emerging diseases. A cost-benefit analysis is needed prior to initiating the program.

9. Cost benefit

A cost benefit analysis of the risk and benefits of the program should be made prior to embarking on such an undertaking. There has already been efforts at quantifying the impact of the disease (see Holtkamp et al., 2011), but there has not been a clear assessment on what it would take to conduct an elimination program and what benefits may derive from it. A recommendation is made to try to assess and quantify the cost: benefit ratio for a national PRRSV elimination program.

10. Communication and review of framework document

- AASV Board of Directors – October 2015: an update on framework process and progress was provided
- AASV Task Force – March 2016
- AASV Board of Directors – final document – March 21, 2016
- Pork Board – Swine Health Committee – April 2016
- Pork State Organizations
- NPPC
- USDA and State Animal Officials

Appendix 1.

Proposed program stages:

1. Stage I – Program initiation

- a) Establish State level producer led PRRS Advisory Board – Communicate with state pork producers associations to establish a state level PRRSV Advisory Board.
- b) Initiate producer/industry education program
- c) Promote voluntary support from industry for PRRS elimination
- d) State canvas of swine production sites (mapping) – separate breed-wean, wean-finish, nursery, finisher and farrow-finish production
- e) Identify % of participating herds and their status (if known)
- f) Enroll herds in program. Include both large and small herds as part of umbrella surveillance program (i.e SHMP).
- g) Initiate status testing program in state/counties to describe prevalence – goal: monitoring for the purpose of establishing baseline (identify status of existing herds) and measure prevalence
- h) Establish monitoring/surveillance program – find infected herds
- i) Identify high risk areas or infrastructure at the state level (know where slaughter plants are, truck washes, buying stations, live animal markets, etc)
- j) Identify/know % of pigs that come from out of state

1. Stage II – Completion of Stage I measures plus the following:

- a) On-going monitoring in place
- b) All herds to have a risk management plan in place (including biosecurity, etc) – goal is to prevent new infections
- c) All known infected breeding sites to have on site stabilization plans (Category I – IV) including biosecurity and risk-mitigation education
- d) Category I pigs originating intrastate or interstate consider that enhanced biocontainment procedures will need to be in place.
- e) Consider the desirability of movement controls into low prevalence regions/states
- f) Develop state level biosecurity and intervention plan(i.e include buying stations, slaughter plants, rendering plants, etc.

2. Stage III – all sow herds on risk management and stabilization plans with real-time surveillance on swine sites including grow-finish;

- a) Mandatory participation for PRRSV control/elimination
- b) May have split state status (Stage II/III) depending upon area site prevalence and state PRRS Advisory Board considerations
- c) Interstate pig movement restrictions of only negative status pigs (Category II-b or higher) into Stage III areas
- d) Intrastate movement may be Category II or higher per state PRRS Advisory Board decision.

- e) Category I pigs originating intrastate or intra-region will be quarantined and enhanced biocontainment procedures will need to be in place.
 - f) Restricted movement placements per state PRRS Advisory Board decision
 - g) Shorten time horizons for completion of site plans (reach Category IV in breeding) as prevalence is reduced – consider regional timing of site completion to increase effectiveness under state PRRS Advisory Board guidance
 - h) Utilize market and cull swine surveillance to monitor herd/area/state progress for elimination/control movements of infected herds/sites
3. Stage IV - Surveillance
- a) Serological negative with market testing of pigs and all breeding sites or proven negative through regular testing program (Qualified negative PRRS site) required for category IV
4. Stage V – free - eligible after 12 months in Stage IV

Appendix 2.**Summary of proposed main steps/milestones:**

1. Ensure widespread and consistent use of Premises IDs.
2. Formation of State PRRS Advisory Board to set state policies and to report progress annually to appropriate State leadership and to National PRRS Advisory Board.
3. Pork producers and industry actively involved in funding sources and program development efforts at State and National levels.
4. Formation of a National PRRS Advisory Board to set policy and administration for national effort. Responsible for annual reports on program progress and resource needs. Responsible for review of state progress reports and activities and determination of state Stage status.
5. Actively seek and develop infrastructure to conduct diagnostics, eradication, surveillance and investigations– consider obtaining legal authority as program advances (to be developed by producers-industry) for national consistency in development of state “road maps”.
6. Educational program and materials are developed with functional delivery system.
7. Provide to applicable State Advisory Boards results from surveillance efforts including national prevalence data traced to production site for each state/county for market swine initially.
8. Creation of program definitions to enable national, regional and state conformity. Infected herd/site/animal - how to determine (use and revise AASV herd PRRS status guidelines)
 - a. Breeding herd site – at weaning
 - i. Category I = sows infected – control, +/- MLV usage; pigs= unknown status
 - ii. Category II = control (herd closure) initiated but no sentinels (category IIa) or with sentinel pigs (category IIb); pigs = low-risk status
 - iii. Category III = control (herd closure) and sentinels remain negative for extended period; pigs = negative status
 - iv. Category IV = all exposed animals removed; pigs = negative status
 - v. Serology of limited value until Category IV for breeding herd and offspring
 - b. Wean-finish (includes nursery, growing and finishing pigs)
 - i. Unknown status – (Category I or II-IV from low-prevalence areas)
 - ii. Low-risk status –Category II-b herds??
 - iii. Negative status – require testing or from Stage IV state
 - iv. Infected
9. “Negative” pigs – PCR or serum-negative within 30 days for individuals or other selection criteria (ie. from qualified negative herds or designated “PRRS-free” states, Category III or higher breeding herds)
 - a. Provisional negative site – required testing frequency (monthly/quarterly/semi-annual) for movement of “negative” pigs or to designate site as PRRS-negative
 - b. PRRS-free states – Stage IV or higher
 - c. Restricted movement – pigs quarantined until moved to harvest

d. Herd closure – needs definition and characteristics

10. Others:

- i. Getting producer groups approval, selling program,
- ii. Outline program framework
- iii. Develop structure to oversee program by producers (led national/state producer level)
- iv. Presentation at the USAHA to obtain buy in – interest by producers to move forward.