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David Brown
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A review of regional projects for control and elimination of PRRS virus

Bob Morrison

College of Veterinary Medicine, University of Minnesota

It may seem superfluous, but a critical first step in contemplating a regional PRRS program is to determine the goal. Four levels of intention are described by CDC (<http://www.cdc.gov/MMWR/preview/mmwrhtml/su48a7.htm>). Regional elimination will require confidence that all sites within the region are free of virus – can this be achieved in a voluntary program? If not, then to achieve success, one's goal must be regional control.

- Control: Reduction of disease incidence, prevalence, morbidity or mortality to a locally acceptable level as a result of deliberate efforts. Continued intervention measures are required to maintain the reduction.
- Elimination of infections: Reduction to zero incidence of infection caused by a specific agent in a defined geographical area as a result of deliberate efforts. Continued measures to prevent re-establishment of transmission are required. Eg: measles.
- Eradication: Permanent reduction to zero of the worldwide incidence of infection caused by a specific agent as a result of deliberate efforts. Intervention measures are no longer needed. Eg: smallpox.
- Extinction: The specific infectious agent no longer exists in nature or in the laboratory. Eg: none.

To achieve regional control or elimination of the virus, we need adequate knowledge, tools and diagnostics, cost effective elimination, and effective biosecurity methods to prevent new virus entries. We have all of that today.

The critical elements of the regional programs are that they are voluntary, producer-led, and conducted with limited resources. This has ramifications for how we enlist participation, how we sample within the region and within herds, and how we share data among producers. For example, the challenges due to the program being voluntary include:

- Ignorance on part of producers and vets about PRRS and the program.
- Some producers will choose not to participate – Encourage participating producers to approach and convince nonparticipants.
- Confidentiality – producer must give this up.

- Risk posed to other producers from non-participants – Incorporate risk based surveillance.

Locating farms is a never-ending challenge. Regional pig flow is complex and constantly changing. A PRRS program is a great “excuse” to create a database of locations.

Get exhibition folks on board right away. Exhibition pigs are usually purchased untested, and are often taken home and can be exposed to commercial pigs. Biosecurity awareness and training is essential. Several regions are developing and applying innovative programs to incent showing PRRS negative pigs.

Managing confidentiality can be tricky. The University of Minnesota requires a “consent form” for all participating producers that explains the objectives of the project, risks, who a producer can call with concerns and how to withdraw if one choose to longer participate. A better term for this agreement might be a “producer participation agreement”. In drafting an agreement, I suggest you be bold and broad with your description of risks such that you minimize risks that you or your institution might incur. Furthermore, a signed participation agreement should be in place before proceeding with any subsidized testing.

PRRS surveillance of sites - Targeted sampling can improve sensitivity & reduce cost. With limited resources & a voluntary program, we need risk-based sampling. We are used to doing this when sampling within herds when we sample sows that aborted or poor doing pigs. Randomized searches for a rare (i.e. low incidence / prevalence) event is a very ineffective way of finding PRRS. In the N212MN project, we have developed a risk score for every site including the following factors:

- history of infection
- PRRS status of known neighbors
- density in 1, 3, 5 mile radius and density of PRRS positive sites
- size of the site and type of production

The sampling strategy will involve using the risk based surveillance score to allocate resources from highest to

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lowest rank stratum until resources are used or a desired confidence achieved. Another sampling location for low density regions is at collection points.

The ideal region will have the following characteristics:

- Local leadership from producers and vets
- Motivated producers and vets
- Few pigs entering the region from PRRS + or unknown herds
- Natural borders or low density at perimeter
- Few exhibition pigs and/or willing to cooperate
- Higher is the density, tougher it becomes.

The strategy for PRRS CAP regional projects is that:

- Each project brings a unique learning opportunity to the overall effort.
- Each project leverages PRRS CAP funds.
- Each project is eligible for up to \$25,000 (plus indirect if required).

Existing projects are (funded in part by CAP II):

- N212 MN – Dr. Montse Torremorell
- W MI – Dr. Jim Kober
- W IL – Dr. Dyneah Classen
- Bethany, IL – Dr Noel Garbes

At the time of this writing, projects proposed to PRRS CAP include:

- Iowa – Dr Derald Holtcamp
- Pennsylvania – Dr Tom Parsons
- Nebraska – Dr Alan Sdodgras

Other existing projects include:

- Colorado – Dr John Waddell
- Western Canada (Saskatchewan & Manitoba) – Dr Leigh Rosengren
- Ontario (Niagara peninsula) – Dr Jane Carpenter

