Assessment and Modification of the PADRAP as a Tool to Assess On-Farm Biosecurity Across Canada

Final Report
Reporting Period; April 15, 2010 to February 21, 2012
Ontario Swine Health Advisory Board

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Province/Area of Focus: National Focus
CSHB Pillar: Biosecurity and best Management Practices
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Executive Summary

This project was developed to assess and customize the Production Animal Disease Risk Assessment Program (PADRAP) biosecurity survey tool, administered by the American Association of Swine Veterinarians (AASV), to meet the needs of the Canadian swine herd. The PADRAP allows individual farms or systems to assess their current biosecurity practices and benchmark against production systems across North America. This project relates directly to the CSHB mandate to “provide leadership and coordination in support of the management of the health of the Canadian swine herd” under the Biosecurity and Best Management Practices pillar by providing a standardized, customized tool which can be used to assess and monitor on-farm biosecurity and risks with plans for on-going improvements.

Key tasks included in the scope of this project are:
1. Development of an interprovincial work group led by the Ontario Swine Health Advisory Board (OSHAB).
2. Investigation into data confidentiality and any potential trade barrier issues associated with use of the PADRAP.
3. Review of the PADRAP terminology, developing recommendations to modify the survey to account for regional production differences and develop a Canadian version of the survey for breeding herds including assessment of the questions to ensure the key position statements included in the Canadian National Biosecurity Standards are addressed.
4. Development of a biosecurity farm plan template based on the PADRAP survey results which will highlight key areas for improvement relating to the advancement of the National Biosecurity Standards.
5. Translation of the Canadian PADRAP and associated reports into French and inclusion on-line.
6. Assessment of the utility of the Canadian PADRAP tool on-farm.
7. Training to educate Canadian veterinarians on the new system.
8. Communication to producers and industry on the tool.

This project was developed with a proposed one year scope of work (April 2010 to April 2011) and a budget of $132,440.00, project delays have extended the project completion date to February 24, 2012 with no extension of the budget required. All tasks are now complete with the exception of the translation of the final report, pending approval from the CSHB and a final communication piece to be provided in both English and French. These tasks have been accounted for within the constraints of the budget. Legal review has been completed as outlined previously. The recommendations from this review were provided to the American Association of Swine Veterinarians (AASV) in the form of a letter requesting modifications to the confidentiality agreements associated with the PADRAP. This request was not agreed upon by the AASV due to concerns around liability from AASV’s perspective (see recommendations and letter submitted to AASV in Appendix 1).

A research agreement was developed with Iowa State University (ISU) and approved by the Canadian Swine Health Board (CSHB). An outline of the scope of work based on the recommendations of the workgroup was provided by ISU – this outline highlights the principle changes which have been made to the PADRAP reporting format and has been submitted with this report. The principle reporting differences in the new version are the addition of three summary pages at the beginning of the report that include a demographics page with the risk quadrant graph and principle risks highlighted, a national biosecurity standards report card page and a simulation page as illustrated in the attachment. These modifications were designed to improve ease of use and the interactivity of the tool.
This project also included review of the PADRAP survey by the interprovincial team with recommendations for modifications forwarded to Dr. Holtkamp and additional questions developed to satisfy aspects of the National Biosecurity Standards (NBS) that were not covered by the original PADRAP survey (see recommended modifications and additions in Appendix 2). The modified “Canadian” survey is posted on the PADRAP website for ease of access and has been included with this submission. An appendix to the PADRAP training manual has been developed to address the new features available in the Canadian version and is also available on the PADRAP site (this manual addition is included here in Appendix 6). However, the recommended changes to the “regular” PADRAP questions have not yet been reviewed and modified by the AASV PADRAP team – this review is scheduled for 2012. As well, PADRAP has implemented a new operational system (SQL server) which improves data export capabilities – this feature was not within the scope of this work, but will improve the usefulness of this tool, particularly for area analysis.

On-farm trials were conducted in Ontario, Quebec and Western Canada, led by the interprovincial lead from each area. A total of 21 on farm assessments were conducted with 7 done in each area (Ontario, Quebec and Western Canada). This review asked for comments from both the veterinarian who conducted the PARDAP survey and the producer and was very useful both to assess the usefulness of the modifications and to resolve any remaining technical issues associated with these changes. General consensus suggests that the changes made throughout the scope of this project improved the value of the tool and generated results that were easier to understand and utilize for the producers and veterinarians. Results are summarized below with full results from each region provided in Appendix 5.

1. Project Partners and Collaborators

In order to initiate the project, Ontario and interprovincial workgroups were established. The Ontario workgroup was composed of OSHAB members and was tasked to develop materials and guide the project. The OSHAB workgroup includes:

- Kevin Vilaca, DVM – project lead
- Doug MacDougald, DVM
- Martin Misener, DVM
- Brent Robinson, producer – Vista Villa Genetics
- Cheryl Lehmann, technical support – Southwest Ontario Veterinary Services
- Lori Moser – OSHAB
- Jane Carpenter, DVM – OSHAB
- Derald Holtkamp, DVM - Iowa State University, PADRAP Administrator, will act as the principle partner to develop the modifications to the PADRAP survey online.

Dr Kevin Vilaca has also been invited to act as a full member on the American Association of Swine Veterinarians (AASV) questionnaire review team.

Members of the interprovincial team have committed to review and assess materials developed and this team includes:

- Madonna Benjamin, DVM
  Principal Veterinarian, Veterinary Science Consulting Inc.
  Millarville, Alberta
- Egan Brockhoff, DVM
  Prairie Swine Health Services and University of Calgary,
  Faculty of Veterinary Medicine, Department of Production Animal Health
  Red Deer, Alberta
As well, OSHAB has provided information about the scope of work included in this project to Quebec and Alberta during the course of pre-arranged PADRAP training sessions in these provinces through Dr. Derald Holtkamp (Iowa State University, PADRAP administrator) and the interprovincial team members from the respective provinces.

2. Legal Review

Legal council regarding trade implications of utilizing the AASV PADRAP program has been sought. After consultation with Ontario Pork, the firm OSHAB selected for this review was:

Borden Ladner Gervais LLP
World Exchange Plaza
1100-100 Queen Street
Ottawa ON K1P 1J9

Jack Hughes, Gerry Stobo and Greg Tereposky composed the legal team providing advice. By way of background, Jack acted as principle contact for this review, Gerry is the former General Counsel to the Canadian International Trade Tribunal and was the lead counsel advising Ontario Pork and Greg is the head of the Regional International Trade Group of Borden Ladner Gervais and is currently representing the Government of Mexico in connection with the WTO Country of Origin Labeling (COOL) dispute.

Their assessment of the potential trade related issues concerning sanitary and phytosanitary (SPS) measures is summarized here and the complete review has been submitted as a supplementary document (Appendix 1). OSHAB followed the recommendations of Borden Ladner Gervais and sent a request to the AASV that the recommended addition to the confidentiality agreement be included as excerpted from the draft report:

Notwithstanding the foregoing, OPIC may wish to ask that Clause 2 of the PADRAP confidentiality agreement be revised to include the following language: “The PADRAP data will be used solely for the purpose of scientific and public policy research, and not for any administrative, proprietary, or law enforcement purposes nor for the purposes of introducing or maintaining any form of trade measures.” [emphasis added]

The letter submitted to the AASV has been included in Appendix 1. However, communications from Dr. Tom Burkgren, AASV President indicate the AASV is unwilling to make the requested modifications to the PADRAP confidentiality agreements. This decision was based on the concern that AASV might be incurring liability by implementing the wording changes requested. Dr. Burkgren indicated that AASV may be willing to negotiate to modify the wording and this result and recommendation has been forwarded to the CSHB.
3. PADRAP Terminology and Question Review

This project included review of the PADRAP survey by the interprovincial team with recommendations for modifications to PADRAP survey questions tabulated into one document (see Appendix 3) and forwarded to Dr. Holtkamp and additional questions developed to satisfy aspects of the National Biosecurity Standards (review and additional questions are outlined in Appendix 2). However, the changes to the “regular” PADRAP questions have not yet been reviewed and modified by the AASV PADRAP team – schedule for those changes is early 2012. As well, PADRAP has implemented a new operational system (SQL server) which improves data export capabilities – this feature was not within the scope of this work, but will improve the usefulness of this tool, particularly for area analysis.

4. Structural Modification and Additions to the Canadian PADRAP

Recommendations to modify the PADRAP report to improve user friendliness and include tools to increase interactivity were developed by the OSHAB workgroup and vetted with the interprovincial workgroup (see preliminary recommendations in Appendix 4 and final work plan in the attached ISU outline). These included development of a front summary page, a report card format for the National Biosecurity categories and a simulation tool which would allow veterinarians to highlight a few actions based on the results of the assessment and on their knowledge of the producer and production system and illustrate the impact of making modifications in those areas. Development of the NBS report card required categorizing of the PADRAP survey questions under the NBS categories and development of questions to satisfy any gaps identified. The outline of this work can be seen in Appendix 2.

5. Translation of the Canadian PADRAP and associated reports into French and inclusion online.

This task has been accomplished with assistance from Lilly Urizar, DVM, Centre de développement du porc du Québec Inc. (CDPQ) Complete functionality of French materials on the PADRAP site is expected by March 31, 2012.

6. Assessment of the utility of the Canadian PADRAP tool on-farm.

On-farm trials were conducted in Ontario, Quebec and Western Canada, coordinated by the interprovincial lead from each area. A total of 21 on farm assessments were conducted with 7 done in each area (Ontario, Quebec and Western Canada). Farms trialed represented a diverse representation of breeding herds with herd size ranging from 150 sows to over 3,000 sows and including farrow to wean to farrow to finish facilities. This review asked for comments from both the veterinarian who conducted the PARDAP survey and the producer and was instrumental to assess the usefulness of the modifications and to resolve any remaining technical issues associated with these changes. General consensus suggests that the changes made throughout the scope of this project improved the value of the tool and generated results that were easier to understand and utilize for the producers and veterinarians. The simulation tool was highlighted as an excellent addition. The national biosecurity report card was also identified as a valuable tool which was easy to interpret and highly relatable to the National Biosecurity training currently being delivered in the area assessed. The mapping tool showed merit, but there were some technical glitches during the assessment period that needed to be resolved and so could not be fully assessed. Most veterinarians indicated that this is a detailed tool that may not be appropriate for use with all producers, but that it does have value for clients who already have good biosecurity protocols, but want to review or improve, for genetics suppliers and multipliers and for producers involved in PRRS Area Regional Control and Elimination programs. Some veterinarians...
indicated that they will use this tool for all of their clients. Participants also identified that the questions included in the original survey require updating. Recommendations for further improvements included:

- Scoring calculation problems, some responses located at the wrong place, no scoring re NBS questions (this has been resolved).
- The tool should have a tab at the end to create a work plan, schedules or deadlines (like a calendar) for the things to improve in the site.
- Put “alerts” or “pop-ups” to major risks (to make it even more visual).
- In the simulation tool: demonstrate how the overall score changes with the new responses.
- Consideration of non-applicable answers in the overall score.
- Allow the input of GPS co-ordinates for improved mapping abilities.
- When printing documents, frequently the font is rather small and makes legibility difficult.
- Consider regular review/improvements.

Full results from each region are provided in Appendix 5.

7. **Training to educate Canadian veterinarians on the new system.**

The Go-To-Meeting program has been used extensively throughout the course of this project – to discuss progress and also to provide training to the interprovincial team leaders. This resulted in delivery of the project within budget constraints even with the significant time extension. The interprovincial leads have been trained in the use of the Canadian version of PADRAP and so may act as resources to assist veterinarians in their area. Dr. Holtkamp has offered to provide Go-To-Meeting training sessions as requested. An appendix for the PADRAP training manual has been developed to assist user understand and utilize the new features and can be seen in Appendix 6 of this report.

8. **Communication to producers and industry on the tool.**

Information has been provided to the industry through meetings such as CSHB Forums, OSHAB Big Bug Day and OPIC/OSHAB Annual General meetings. Regional leads have been trained on the use of this tool and producers from each area have been involved in the assessment process. This final report will be made available in both French and English and a summary article will be developed highlighting the key features of the tool – to be made available in both French and English.
## PADRAP Project Milestones Status

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<th>End Date</th>
<th>Deliverables</th>
<th>Status</th>
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<td>Milestone 1: Interim report 1 June 30, 2010</td>
<td>4/15/10</td>
<td>6/30/10</td>
<td>Development of an interprovincial work group with representation from Western Canada, Ontario and QC Assessment of current confidentiality procedures and documents, details on process for legal review.</td>
<td>Complete</td>
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<td>Milestone 2: Interim report 2 Sep 30, 2010</td>
<td>7/01/10</td>
<td>9/30/10</td>
<td>Final recommendations on any changes needed to confidentiality agreements. Recommendations on changes to the PADRAP survey re terminology, questions and reporting. Development of recommendations/options for the on-farm biosecurity plan template.</td>
<td>Complete</td>
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<td>Milestone 3: Interim report 3 Dec 30, 2010</td>
<td>10/01/10</td>
<td>12/30/10 Revised 11/30/11</td>
<td>Modifications to PADRAP implemented on line, tested by work group. Communicate to Ontario industry on the development of this program</td>
<td>Complete</td>
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<tr>
<td>Milestone 4: Final report April 30, 2011</td>
<td>1/01/11 Revised 02/21/12</td>
<td>4/30/11</td>
<td>Completion of the PADRAP training sessions. Reporting on the farm trials. Final version of the Canadian version of PADRAP on-line in English and French.</td>
<td>Complete, French materials currently under development.</td>
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PADRAP Budget Summary

This project has been delivered within the constraints of the budget. Some reallocation of budget categories was done to accommodate the extended timeline of the project. Lower than anticipated travel and facility costs offset the extra project management costs incurred.

A detailed expenses summary has been submitted with this report.
Appendix 1 – Legal Recommendations - Letter from Borden Ladner Gervais LLP and to AASV

September 21, 2010

Ms. Lori Moser
Managing Director
Ontario Pork Industry Council
P.O. Box 98
Stratford, Ontario
N5A 6S8

Dear Ms. Moser,

PADRAP Analysis
Our File: 340706/000001

We were asked to provide the Ontario Pork Industry Council ("OPIC") with an advisory opinion with respect to the potential impact of the Production Animal Disease Risk Assessment Program ("PADRAP") from a trade law perspective. Our preliminary views were contained in an opinion letter dated June 3, 2010. The purpose of this letter is to update our analysis based on subsequent developments.

As we noted in our original opinion, the PADRAP program is an initiative to help hog producers and veterinarians manage disease risk faced by the North American swine industry. It offers a set of risk assessment questionnaires, databases and reports for measuring and benchmarking disease risks. While the program can accommodate risk assessments for other swine diseases, its primary focus is PRRS.

PRRS is a pandemic disease which causes reproductive failure in breeding stock and respiratory tract illness in young pigs. Originally recognized in North America in the mid to late 1980s, PRRS has spread rapidly throughout the world causing significant economic hardship for pork producers. Some estimates suggest that the annual impact of PRRS in the United States alone is approximately $600 million.

The stated purpose of the PADRAP program is to help evaluate current biosecurity protocols, help develop new protocols and track the improvement of biosecurity over time in an effort to justify the expenditure of resources on measures to improve biosecurity. In addition, the data and reports generated by the program can form part of the due diligence process in commercial operations.

As OPIC considered the relative benefits and risks associated with the PADRAP program, one of the immediate concerns identified was whether information provided to PADRAP could be used to justify some form of trade measure which would have the
effect of restricting the exporting of Ontario hogs to the United States. For the reasons that follow, we believe that these concerns are not totally unfounded.

The type of trade measures at issue are commonly referred to as “sanitary and phytosanitary” measures (“SPS”), and include any measure applied by a government to protect animal life or health within the territory of the government arising from the entry, establishment or spread of diseases. International trade rules governing SPS measures require that the measures be based on an appropriate risk assessment.

In our opinion, the PADRAP data – and reports created from that data – could constitute the type of information that could, in certain circumstances, be used (in concert with other information) to justify an SPS measure which could be a barrier to trade. While this does not mean that the PADRAP data would necessarily be used for that purpose, it does mean that it is conceivable that it could be used for such a purpose.

The PADRAP confidentiality agreement which we reviewed includes language that should prevent researchers from disclosing the raw data collected to support an SPS measure. In particular, the agreement states that the data obtained cannot be used “for any administrative...or law enforcement purpose” In our view, this language would likely be broad enough to prevent the use of the raw data to justify an SPS measure.

Moreover, the PADRAP confidentiality agreement also contains provisions which expressly restrict the use of the data “solely for the research purposes described in the application.” As a result, unless the research purpose described in the relevant application is to establish or justify an SPS measure, the confidentiality agreement would appear to prevent the use of PADRAP data for such purposes.

Notwithstanding the foregoing, our initial recommendation was that OPIC ask that Clause 2 of the PADRAP confidentiality agreement be revised to include the following language: “The PADRAP data will be used solely for the purpose of scientific and public policy research, and not for any administrative, proprietary, or law enforcement purposes nor for the purposes of introducing or maintaining any form of trade measures.”

That said, however, we noted that even if this proposed revision was accepted, there would still be a gap in the coverage afforded by the confidentiality agreement. The PADRAP confidentiality agreement contemplated that the results of the research (as opposed to the raw data) could be made public. As a result, there is a risk that any such report could be used to justify the creation of maintenance of an SPS measure.

Consequently, even if the raw data were protected from disclosure, we could not dismiss the possibility that an SPS trade measure could be created or maintained as a direct result of the PADRAP program. Our opinion noted that there was nothing that could be done to totally eliminate this risk, as it arose from the public disclosure and dissemination of research analysis which is, to some extent, the very purpose for which the program exists.

We ultimately concluded that the degree of risk, and whether that risk outweighs the potential benefits, was something that OPIC would have to determine for itself. We could
only confirm that government officials and/or private sector competitors would likely examine all available evidence before seeking to impose a trade measure. In the case of hogs, we noted this could potentially include publicly available PADRAP reports.

That said, however, we also noted the mere fact that the PADRAP program could create publicly available information that could, in part, justify an SPS measure did not mean that the program would actually increase the risk of a trade measure. To the extent that the program could also identify potential solutions and reasonable benchmarks, we argued that the program might create the factual basis needed to avoid SPS measures.

Moreover, we explained that even if the confidentiality agreement were strengthened as we had proposed, or if OPIC declined to participate in the program altogether, there was no guarantee that those actions would, in and of themselves, prevent the imposition of SPS measures based on other types of information that are currently available in the public domain.

Since our original opinion letter, it is our understanding that OPIC has written to the American Association of Swine Veterinarians ("AASV") both advising them of our initial opinion and asking them to modify their confidentiality agreement. At the time of writing, it is not known whether the relevant officials with the AASV have responded or agreed to make the proposed changes.

Should you have any further questions, please do not hesitate to contact us at your convenience.

Yours very truly,

[Signature]

Ronald Loderer, Corvias LLP
Dear Dr. Burkgren,

As outlined by Derald Holtkamp, the Ontario Swine Health Advisory Board (OSHAB) is leading a project entitled “Assessment and modification of the PADRAP as a tool to assess on-farm biosecurity across Canada”, funded through the Canadian Swine Health Board. We have been working with Derald through the development and initial stages of this project and greatly appreciate the support he has provided.

One of our tasks in this project was to consider any trade issues that could potentially be associated with the storage and management of data relating to biosecurity practices and disease risks collected from Canadian farms but stored in the United States. To accomplish this task, we engaged legal council through Borden Ladner Gervais LLP – a legal firm from Ottawa, Ontario with significant experience in assessing and negotiating trade issues. They have assessed the confidentiality agreements in place for the PADRAP program and have drawn the following conclusions:

- the PADRAP program has legitimate and desirable goals
- the PADRAP data and reports created from that data could constitute the type of information that could, in certain circumstances, be used (in concert with other information) to justify a sanitary and phytosanitary (SPS) measure which could be a trade barrier
- to the extent that the program can identify potential solutions and reasonable benchmarks, the program could also be used to create the factual basis for a mutually acceptable solution that avoids SPS measures
- the PADRAP confidentiality agreement provided includes language that should prevent researchers from disclosing raw data collected to support an SPS measure
- the PADRAP confidentiality agreement also contains provisions which expressly restrict the use of the data “solely for the research purposes described in the application”
- the confidentiality agreement could be strengthened by the inclusion of a specific request that the data not be used for the purposes of introducing or maintaining any form of trade measures
- even if this revision is accepted, publication of data and results from research programs still creates some risk that the information generated could be used to justify an SPS measure and in fact, any information available in the public domain can create this risk, as such, the mere fact that the PADRAP program could create publically available information that could, in part, justify an SPS measure does not mean that the program will actually increase the risk of a trade measure.

Based on these conclusions, we would like to request that AASV include the following revision to clause 2 of the PADRAP confidentiality agreement:
“The PADRAP data will be used solely for the purpose of scientific and public policy research, and not for any administrative, proprietary, or law enforcement purposes nor for the purposes of introducing or maintaining any form of trade measures.”

We appreciate your consideration of this request and look forward to working with you and Dr. Holtkamp further on the development of this project.

Sincerely,

Lori Moser
OSHAB Managing Director
## Appendix 2 – Recommended PADRAP Survey Questions Modifications and Additions

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<th>NBS Category</th>
<th>Questions to be analyzed</th>
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<td>Direct Routes of Contamination</td>
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<tr>
<td>Domestic live pigs</td>
<td>External risks questions 1-17</td>
</tr>
<tr>
<td>Domestic semen and embryos</td>
<td>18-48</td>
</tr>
<tr>
<td>Foreign live pigs, semen or embryos</td>
<td>Add question under external risks/ semen category such as: Procedures are in place to meet legal requirements for importation of foreign live pigs, semen or embryos. a. No live pigs, semen or embryos and imported from a foreign country b. Yes proper procedures are in place and reviewed by a veterinarian c. No proper procedures are not in place d. Not applicable</td>
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| Indirect Routes of Contamination | |
| Incoming animal transport | Non-genetic - questions 61-68 Genetics - 69-77 |
| Outgoing animal transport | Market animals and culls – question 49-60 |
| Dead stock | 81-86 Could add CAZ and RAZ terminology |
| People and vehicles | 79, 80 (vehicles), 89-91 (entry), 92-93-97 (employee workload, training and documentation) 102 (access to site) |
| Meat Products (for human consumption) from foreign countries | Need to add a question – perhaps under employees and visitors such as: Procedures are in place to ensure no dry-cured or fresh (raw) meat products are allowed with the RAZ (or barn facilities) a. Yes b. No |
| Aerosols | 100, 101 (ventilation), - need to add air filtration questions |
| Pests, birds and insects – could add these questions from the long survey format Derald | 103 (insects) Add rodent and avian controls under biovector section |
| 52. Presence of birds inside buildings | |
| Often present in buildings | |
| Occasionally present inside buildings | |
| Barriers are sufficient to restrict entry of birds into buildings | |
| 53. Insecticides are used on the interior of buildings | |
| No | |
| Yes | |
| 54. Insect traps are used on the interior of buildings | |
| No | |
| Yes | |
| 55. Rodent baits are used on the interior of buildings | |
| No | |
| Yes | |
| 56. Rodent traps are used on the interior of buildings | No |
Yes

Domestic animals – again in the standards and actually, this might be a risk, I've seen pets carrying around dead baby pigs - question could be something like

Procedures are in place to keep non-pig domestic animals such as pets and other livestock out of the pig barn.
  a. yes
  b. no

Add domestic animals (pets) question under biovector section Domestic animals are not generally viewed as a major (or even minor) risk factor for PRRS virus (maybe they should be)

Wildlife – this is included in the standards, but we could also say it is covered under rodent control as I think that would be the most common “wildlife” to enter a barn. What do you think Derald?

Procedures are in place to keep wildlife such as feral pigs and cloven hoofed animals like deer out of the pig barn.
  a. yes
  b. no

Add wildlife question under biovector question

Fomites

Feed and bedding
This standard states “Procedures are in place to limit the risk of contamination by pathogens through feed and bedding manufacture (on-farm or commercially), delivery and storage” so I think flow if feed trucks speaks to that, we could also add:

Feed supplies are purchase from a reliable source that has HACCP protocols.
  a. yes
  b. no
  c. internal source (or something like that)

Add 2 questions under the facilities category re water meets accepted guidelines for swine consumption (or perhaps the chlorination question from the long survey) and not from a surface water source

Water

Pharmaceuticals

18 and 19 (needle use)
Add question under entry of supplies re entry and storage of pharmaceuticals (or modify question 98 slightly to include)

Solid and liquid manure

87 and 88
Add question under manure section re household and barn waste management

Waste other than manure

Question could be
Storage and disposal of household and barn garbage is managed to prevent access by pests and predators
  a. yes
  b. no

On Farm Health Management

Health status, disease management and monitoring

Internal risks re PRRS status questions 7 to 17
Demographics re PRRS status questions 17 to 24

Swine immunization strategies

Internal risks questions 20 to 31

Overall NBS Compliance Score
**Additional questions for Canadian Survey**

25. Cleaning, washing, disinfecting and drying of facilities between batches
   a. Scraped only
   b. Scraped, washed and disinfected
   c. Scraped, washed, disinfected and dried
   d. Scraped, washed, disinfected and dried with a set downtime between fills

26. Procedures are in place to meet legal requirements for importation of foreign live pigs, semen or embryos.
   c. Yes, proper procedures are not in place
   b. Yes, proper procedures are in place and reviewed by a veterinarian
   a. No live pigs, semen or embryos and imported from a foreign country

27. Procedures are in place to verify that imported pigs, semen or embryos are free of endemic diseases (such as PRRS virus)
   a. No
   b. Yes
   d. Not Applicable (Select if pigs, semen and embryos are never imported)

28. Access ways (driveways) to the site are clearly defined (i.e. with gates or signs)
   a. No
   b. Yes

29. Entry of pork meat products by employees, visitors, service and delivery personnel
   a. No restrictions on entry of pork meat products
   b. Not allowed to enter uncooked fresh pork products, but can enter cooked fresh or processed pork
   c. Not allowed to enter uncooked or cooked fresh pork products, but can enter processed pork
   d. No pork meat products allowed

30. Presence of domestic animals (pets) inside buildings
   a. Often present inside buildings
   b. Occasionally present inside buildings
   c. Barriers are sufficient to restrict entry of pets into buildings

31. Facilities, fences and equipment are properly maintained to keep wildlife out
   a. No
   b. Yes

32. Chlorination of water
   a. Not done
   b. Done in response to problems only
   c. Done on a regular basis
   d. Done continuously
33. Water source  
   a. Surface water  
   b. Shallow well  
   c. Deep well  
   d. Rural/Municipal water  

34. Location of pick up site for waste (other than manure) disposed of off-site  
   (Change answers)  
   a. At this site inside of gates (within the controlled access zone or CAZ)  
   b. At this site, outside of the gates (outside of the CAZ)  
   c. At a dedicated off site location  
   d. Not applicable (select if waste is disposed of on-site.  

35. Frequency with which waste (other than manure) is picked up for off-site  
   a. Daily  
   b. Pickup every 2-6 days  
   c. Pickup every 7-13 days  
   d. Pickup every 14-20 days  
   e. Less frequently than every 20 days  
   f. Not applicable (select if waste is disposed of on-site and never stored prior to disposal)  

36. Type of storage for waste (other than manure) awaiting pickup or disposal  
   a. Open container  
   b. Covered container or shed  
   c. Covered container or shed with perimeter fence  
   d. Not applicable (select if waste is disposed of on-site and never stored prior to disposal)  

37. Management of trucks that pick up waste (other than manure) for off-site disposal  
   a. Truck managed by third party  
   b. Truck managed by production system  
   c. Not applicable (select if waste is disposed of on-site.  

38. Vaccines and pharmaceuticals are managed in accordance with CQA guidelines  
   a. No  
   b. Yes
Appendix 3 – PADRAP Survey Review

[Instructions: Air Spacing = Room]

Enter "N/A" if gilt isolation is not located at this site.

Gilt Development Questions
11. Number of Air Spaces for Gilt Development
   Enter "N/A" if gilt development is not located at this site.

12. Number of Animals in Gilt Development
   Enter "N/A" if gilt development is not located at this site.

Grow-Finish Questions
13. Number of Animals in Grow-Finish
   Enter "N/A" if grow-finish is not located at this site.

14. Number of Air Spaces for Grow-Finish
   Enter "N/A" if grow-finish is not located at this site.

Boar Stud Questions
15. Number of Air Spaces for Boar Stud
   Enter "N/A" if boar stud is not located at this site.

16. Number of Animals in Boar Stud
   Enter "N/A" if boar stud is not located at this site.

Demographic: PRRS Status & History -> PRRS Current Status
17. Current PRRS virus infection status:
    a. Positive
    b. Negative
    c. Naïve
    d. Unknown

[Note: PRRS Positive can mean currently infected or had an infection in the past and has been negative on at least 3 tests.
   PRRS Negative is for animals currently negative or never had PRRS in the past and has been tested at least 3 times.
   PRRS Naïve is for animals currently negative but have not had exposure to PRRS virus and have never been tested.
   PRRS Unknown is for animals currently negative but are not sure of their PRRS status due to exposure.
   Consider evolving PRRS status definitions to standardize terminology.]

Comment [Note]: Equs - Cattle are all here because there is no natural mixing. Must not question prior to entry. The width of these boxes is one of the biggest conversational issues. They are aligned and should be addressed in these questions.

Comment [Note]: Equs - Not all boxes are from the same season. A good question may be how many have sources? How many times per year does your barn report an event?
18. Current FRBS status 
   a. Not Applicable 
   b. Stable 
   c. Unstable 
   d. Unknown

19. Severity of most recent clinical FRBS episode 
   a. Not Applicable 
   b. Subclinical 
   c. Mild 
   d. Moderate 
   e. Severe 
   f. Unknown

Demographic -> FRBS Status & History -> FRBS History
20. FMDV infection status prior to most recent clinical FMD episode
   a. Not applicable
   b. Positive
   c. Negative
   d. Unknown

   FMDV infection status prior to most recent clinical FMD episode is determined by the risk and surveillance status of the farm and the risk of the disease to the surrounding area based on the FMDV risk as defined by FAO and OIE.

21. Stability status prior to most recent clinical FMD episode
   a. Not applicable
   b. Stable
   c. Unstable
   d. Unknown

   Stability status prior to most recent clinical FMD episode refers to the disease status of the farm in the previous 12 months and is determined by the risk and surveillance status of the farm.

22. Number of clinical FMD episodes between 3 and 5 years ago
   1) Disease in FMDV-positive farms
      a. Increase in FMDV infection
      b. Increase in FMDV prevalence
      c. Increase in FMDV incidence

   2) Disease in FMDV-negative farms
      a. Increase in FMDV infection
      b. Increase in FMDV prevalence
      c. Increase in FMDV incidence
23. Number of Clinical FMDV episodes within last 3 years

- A "clinical FMDV episode" is the breeding herd is
  defined by:

  1) Changes in one or more reproductive performance
  parameters related to a change in reproductive performance
  (e.g., miscarriages, stillbirths, abortions, or
  reduced litter size).
  - Change in calf relative to normal.
  - Change in繁殖 performance parameters.
  - Increase in rate of abortions, stillbirths, or
    reduced litter size.

24. Number of months since most recent clinical FMDV episode

  [Instructions: If the site has never had a clinical FMDV episode, enter "N/A"]
Internal Risks

Internal Risks -> Circulation Risks -> Herd and Site Characteristics -> Characteristics of the herd

1. Size of breeding herd (number of breeding age animals)
   [Instructions: Enter INVENTORIED breeding females]

   Is it the same question as #3 (demographics)? Can we remove one of them?

2. Parturition segregation
   a. All gilt farm
   b. Mixed parity
   c. All parity +1 farm

3. Average parity of the breeding herd
   [Instructions: Enter average of all INVENTORIED breeding females]

   Is it the same question as #4 (demographics)? Can we remove one of them or combine questions?

Internal Risks -> Circulation Risks -> Herd and Site Characteristics -> Characteristics of the site

5. Stages of production at site
   a. Farrow to feeder
   b. Farrow to wean

6. Gestation housing
   a. All pen gestation
   b. Combination pen and individually housed gestation during less than 3 weeks of each mating cycle
   c. Combination pen and individually housed gestation during more than two weeks of each mating cycle
   d. All individually housed gestation

Internal Risks -> Circulation Risks -> PRRSV Status -> Current and historical PRRSV status of the site

7. Current PRRSV status of animal population at this site
   a. Positive active, that is positive by ELISA and producing infected weaned pigs, not clinically stable
   b. Positive, stable that is positive by ELISA, but producing non-infected weaned pigs

   Add Positive, stable that is positive by ELISA but piglets become negative by 4 weeks post weaning due to depletion of maternal antibodies
   c. Negative but naive - herd still contains previously exposed animals
   d. Naive - entire herd never exposed to PRRSV

   Is it the same that of question #7 (demographics)? Can we remove one of them?

8. [Number of PRRS clinical breaks at this site in last 6 months (define clinical break as respiratory or reproductive disease based on some clinical signs - abortions, etc.)]
   [Instructions: Enter number of breaks]

9. Number of PRRS clinical breaks at this site during period between 6 months to 1 year ago
   [Instructions: Enter number of breaks]
10. Number of FMD clinical breaks at this site during period of 1 and 3 years ago
   [Instructions: Enter number of breaks]

11. Number of FMD clinical breaks at this site during period of 3 and 5 years ago
   [Instructions: Enter number of breaks]

12. Time since most recent FMDV clinical break in this population of animals
   a. Less than 3 months ago
   b. 3 - 12 months
   c. 12 to 24 months ago
   d. > 24 months
   e. Never
   These questions are almost the same as those about FERES episodes. Is there a difference between an episode and a break? Could we remove some of these questions if they’re duplicated?

13. First complete depopulation completed at this site within last five years
   a. Became positive by ELISA or PCR in less than 6 months following repop
   b. Became positive by ELISA or PCR 1 to 2 years following repop
   c. Remained negative or naïve
   d. Not Applicable (Select if site has not been completely depopulated and repopulated in last 5 years)

14. Second complete depopulation completed at this site within last five years
   a. Became positive by ELISA or PCR in less than 6 months following repop
   b. Became positive by ELISA or PCR 1 to 2 years following repop
   c. Remained negative or naïve
   d. Not Applicable (Select if site has not been completely depopulated and repopulated twice in last 5 years)

15. Third complete depopulation completed at this site within last five years
   a. Became positive by ELISA or PCR in less than 6 months following repop
   b. Became positive by ELISA or PCR 1 to 2 years following repop
   c. Remained negative or naïve
   d. Not Applicable (Select if site has not been completely depopulated and repopulated three times in last 5 years)

16. Historical natural or controlled exposure of current animal population at this site to field strain of FMDV
   In Western Canada, many FMD-positive herds are vaccinated. Is this controlled exposure?
   a. No
   b. Yes

17. Current number of different FMDV field strains isolated at this site in the last 12 months where a different strain is defined as having >3% difference in ORF5 region
   a. Unknown, sequencing of isolates from this site has never been done
   b. Three or more different strains
   c. Two different strains
   d. One strain
   e. None (Farm is negative naïve)

*Internal Risks -> Circulation Risks -> Management -> Management practices*

18. Frequency with which needles are changed when used on breeding animals
a. Same needle used on an average of 16 or more animals
b. Same needle used on an average of 6 to 15 animals
c. Same needle used on an average of 3 to 5 animals
d. Separate needle for each individual animal
e. Use needle-less syringe

19. Frequency with which needles are changed when used on pigs
   a. Change needle only when bent or broken
   b. One needle per farrowing room
   c. One needle per farrowing crate (i.e., litter of pigs)
   d. Separate needle for each individual piglet
   e. Use needle-less syringe

Internal Risks -> Immune Management -> Managed Exposure -> Natural exposure by contact or feedback of breeding females and replacement animals

This section needs consideration for closed herds – considering a clear answer and making based on lower risk of closed herds

20. Breeding animal replacements are exposed to PRRSV infected live-breeding animals or pigs prior to entry
    a. Yes
    b. No

21. Breeding animal replacements are exposed to tissue or fecal material from PRRSV infected source via feedback prior to entry
    a. Yes
    b. No

22. Time (days) between last natural exposure of replacements to live animals or feedback and entry into breeding herd
    [Instructions: Enter days (Enter 0 if entered directly into herd)]
    Enter "NA" if replacements are not exposed to PRRSV positive live animals or feedback prior to entry into the breeding herd

23. Breeding animals are intentionally exposed at this site to PRRSV infected live pigs from grow-finish
    a. Yes
    b. No

24. Breeding animals are exposed at this site to PRRSV infected tissue or fecal material via feedback
    a. Yes
    b. No

Internal Risks -> Immune Management -> Managed Exposure -> Controlled exposure by blood or serum injection of breeding females and replacement animals

This section needs consideration for closed herds – considering a clear answer and making based on lower risk of closed herds

25. Replacements are exposed to serum from PRRSV infected pigs or cows via injection prior to entry
    a. Yes
    b. No

26. Time (days) between initial exposure to injected serum and entry of replacements into breeding herd
27. Time (days) between last exposure to infected serum and entry of replacements into breeding herd
[Instructions: Enter days (Enter 0 if entered directly into herd)]
Enter "N/A" if replacements are not exposed to PRRSV positive injected serum prior to entry into the breeding herd

28. Breeding animals are exposed at this site to serum from PRRSV infected pigs or swine via injection on a regular basis (e.g., every 3 or 4 months)
   a. Exposed on a group by group basis post-farrow or pre-breed
   b. Exposed on a group by group basis pre-farrow
   c. Exposed periodically on a whole herd basis less than 4 times per year
   d. Exposed periodically on a whole herd basis 4 or more times per year
   e. No

29. Breeding animals have been exposed at this site to serum from PRRSV infected pigs or swine via injection of the whole herd only during or immediately following a PRRS break
   a. Yes
   b. No

Internal Risks -> Immune Management -> Managed Exposure -> Modified live PRRSV vaccine use in the breeding herd

30. Commercial modified live PRRSV vaccine used on breeding females at this site
   a. Not used at this site
   b. Vaccinated on a group by group basis post-farrow or pre-breed
   c. Vaccinated on a group by group basis pre-farrow
   d. Vaccinated periodically on a whole herd basis less than 4 times per year
   e. Vaccinated periodically on a whole herd basis 4 or more times per year

Could they include the use of an autogenous vaccine?

31. Commercial modified live PRRSV vaccine used on boars at this site
   a. Not used at this site
   b. Vaccinated in stages (e.g., 20% per week for five weeks)
   c. Vaccinated on a periodic whole herd basis less than 4 times per year
   d. Vaccinated on a periodic whole herd basis 4 or more times per year
External Risks

How does the program score closed herds for the questions in this section?

1. Number of breeding herd sources from which replacements have been obtained in last two years
   [Instructions: Number of source sites (Enter 0 if herd is closed to outside introduction of females)]
   a. None or all purchased from other production systems/genetic suppliers
   b. None or all from other sites outside the pig flow but within the same production system, none from outside the production system
   c. Some or all from other sites within the same pig flow as this site (e.g., downstream nursery or grow/finish/development), none from outside the same pig flow
   d. Closed herd at this site (replacements are born at site, moved to another site and later returned as replacements)
   e. Closed site (replacements are born and raised at site and never moved from site)

2. PRRS virus status of breeding herd(s) from which replacements are sourced
   a. One or more sources positive for active that is positive by ELISA and producing PRRS infected weaned pigs
   b. One or more sources with unknown status, none positive active
   c. One or more sources positive stable – that is positive by ELISA but producing non-infected weaned pigs, none positive active or unknown status
   d. All site(s) currently negative
   e. All site(s) currently naive

Closed herd considerations

3. PRRS virus status, prior to isolation / acclimation or entry into breeding herd, of nurseries and finishers from which replacements are sourced
   a. One or more sources positive by ELISA or PCR
   b. One or more sources with unknown status, none positive
   c. All site(s) currently negative
   d. All site(s) currently naive

Closed herd considerations

4. PRRS virus status of breeding female replacements in isolation / acclimation
   a. Negative on entry but field virus positive from natural exposure at exit
   b. Field virus positive from natural exposure at entry
   c. Negative on entry & negative or naive at exit
   d. Not Applicable: Select if closed site (replacements are born and raised at site and never moved from site) or if not isolated or acclimated prior to entry

How is this weighted?

6. Response when group of replacement animals in isolation / acclimation becomes positive by PCR or ELISA to PRRS virus from natural field virus exposure
   a. Introduced into breeding herd on regular schedule
   b. Introduced into breeding herd after holding period of less than 30 days
   c. Introduced into breeding herd after holding period of 30 to 60 days
   d. Introduced into breeding herd after holding period of more than 60 days
   e. Replacements are marketed and not used for breeding purposes

Comment [Rev.1]: Epic - Consider putting house bar on the equation. There is an inference that this is given only.
f. Not Applicable (Select if closed site (replacements are born and raised at site and never moved from site) or if not isolated or acclimated prior to entry)

7. Isolation/acclimation period (days)
[Instructions: Days immediately prior to introduction into breeding herd. Enter 0 if entered directly into breeding herd.]

What is the requirement of distance to be considered as an isolation location? Could one separate isolation and acclimation since a lot of farms have an acclimation without an isolation period?

8. Replacement animal acclimation flow
   a. Continuous Flow
   b. All in / All out by room
   c. All in / All out by barn
   d. All in / All out by site
   e. Not Applicable (Select if closed site (replacements are born and raised at site and never moved from site) or if not isolated prior to entry)

9. Replacement animal isolation flow
   a. Continuous Flow
   b. All in / All out by room
   c. All in / All out by barn
   d. All in / All out by site
   e. Not Applicable (Select if closed site (replacements are born and raised at site and never moved from site) or if not isolated prior to entry)

10. Location of replacement animal acclimation housing relative to this site
    a. On-site in same air space as sow herd
    b. On-site in different air space as sow herd
    c. Off-site (different site from the sow herd)
    d. Not Applicable (Select if closed site (replacements are born and raised at site and never moved from site) or if not isolated prior to entry)

11. Location of replacement animal isolation housing relative to this site
    a. On-site in same air space as sow herd
    b. On-site in different air space as sow herd
    c. Off-site (different site from the sow herd)
    d. Not Applicable (Select if closed site (replacements are born and raised at site and never moved from site) or if not isolated prior to entry)

12. Timing of breeding animal replacement seroconversion to PRRS virus prior to entry into the breeding herd
    a. Seroconversion occurs as acclimation / isolation
    b. Seroconversion occurs early to late gestation (more than 60 days or 45 kg)
    c. Seroconversion occurs early finishing (50 to 100 lbs or 25 to 45 kg)
    d. Seroconversion occurs before 10 weeks of age (less than 50 lbs or 25 kg)
    e. Replacements are negative upon entry into the breeding herd

13. Serum testing of replacement animals for PRRS virus or antibodies by PCR or ELISA upon entry into acclimation / isolation site
    a. No routine testing done
    b. A sample subset of incoming animals are tested upon entry
    c. All incoming animals are bled and tested upon entry
    d. Not Applicable (Select if closed site (replacements are born and raised at site and never moved from site) or if not isolated or acclimated prior to entry)
14. Serum testing of replacement animals for PRRS virus or antibodies by PCR or ELISA upon entry (3% positive (are not isolated or acclimated prior to entry))
   a. No routine testing done
   b. A sample of incoming animals are tested prior to entry into breeding herd
   c. All incoming animals are tested and tested prior to entry into breeding herd
   d. Not Applicable (select if site is isolated and not moved from site)

15. Typical PRRSV status of breeding animal replacements upon entry into the breeding herd (% positive by ELISA)
   a. Not tested or unknown
   b. More than 20%
   c. 20% to 30%
   d. Less than 20%
   e. Negative (0%)

16. Frequency of replacement deliveries to this breeding herd (days between deliveries)
   [Instructions: Enter days between deliveries]
   Enter "N/A" if closed site (replacements are born and raised at site and never moved from site)

17. Number of upstream core farms replacement source sites (those that produce replacements for this site) that have completed any PRRS Risk Assessment
   a. None
   b. Some
   c. All
   d. Not Applicable (select if closed site (replacements are born and raised at site and never moved from site)
   or closed herd at this site (replacements are born at site, moved to another site and later returned as
   replacements)

I think that the score is also important and could be considered. How they do an assessment AND have they
obtained a high risk (for example; a score > 85 or a low risk (score< 25))

External Risks -> Pig Related -> Animal Components -> Entry of semen into the breeding herd

Need air filtration system for boars/studs

Procedures are in place to meet any legal requirements for importation of foreign live animals, semen or embryos
a. Yes
b. No

18. Source of AI semen
   a. Some or all sourced from other site(s) that are not part of same production system
   b. Some or all sourced from other site(s) that are part of same production system. Some sourced from other
   sites not part of same production system
   c. All semen collected from boars at this site
   d. Not Applicable (select if 100% natural insemination)

19. Number of sites from which semen is sourced in last two years
   [Instructions: Enter number of sites]
   Enter "N/A" if 100% natural insemination OR if all semen is collected from boars at this site

20. PRRS status of site(s) from which semen is sourced
a. One or more site(s) positive active - that is positive by ELISA and evidence of active shedding of virus
b. One or more site(s) of unknown status
c. One or more site(s) positive stable - that is positive by ELISA but no evidence of active shedding of virus
d. All site(s) currently negative
e. All site(s) currently naive
f. Not Applicable (Select if 100% natural immunization OR if all semen is collected from boars at this site)

21. Most recent FRSV clinical break at site(s) from which semen is sourced
   a. Unknown
   b. Less than 12 months
   c. 12-24 months
   d. More than 24 months
   e. Never
   f. Not Applicable (Select if 100% natural immunization OR if all semen is collected from boars at this site)

22. Number of FRSV clinical breaks at site(s) from which semen is sourced in last 6 months
   [Instructions: Enter number of breaks, "N/A", or "Unknown"]

   Enter "N/A" if 100% natural immunization OR if all semen is collected from boars at this site

23. Number of FRSV clinical breaks at site(s) from which semen is sourced during period between 6 months to 1 year ago
   [Instructions: Enter number of breaks, "N/A", or "Unknown"]

   Enter "N/A" if 100% natural immunization OR if all semen is collected from boars at this site

24. Number of FRSV clinical breaks at site(s) from which semen is sourced during period between 1 and 3 years ago
   [Instructions: Enter number of breaks, "N/A", or "Unknown"]

   Enter "N/A" if 100% natural immunization OR if all semen is collected from boars at this site

25. Number of FRSV clinical breaks at site(s) from which semen is sourced during period between 3 and 5 years ago
   [Instructions: Enter number of breaks, "N/A", or "Unknown"]

   Enter "N/A" if 100% natural immunization OR if all semen is collected from boars at this site

26. Estimated number of different FRSV virus field strains present at site(s) from which semen is sourced - different strain is defined as having >3% difference in FRSV region
   [Instructions: Enter number of breaks, "N/A", or "Unknown"]

   Enter "N/A" if 100% natural immunization OR if all semen is collected from boars at this site

27. Historical status of animal populations at site(s) from which semen is sourced
   a. Exposed to both field strain of FRSV virus and modified live FRSV vaccine
   b. Unknown
c. Exposed to field strain of FRSV virus only, no known modified live vaccine exposure
d. Exposed to modified live vaccine only, no known field virus exposure
e. Exposed to neither field strain of FRSV virus or modified live vaccine
   f. Not Applicable (Select if 100% natural immunization OR if all semen is collected from boars at this site)

28. Number of complete depopulation projects completed in last 5 years at site(s) from which semen is sourced
   [Instructions: Enter number of projects, "N/A", or "Unknown"]

   Enter "N/A" if 100% natural immunization OR if all semen is collected from boars at this site
29. Number of complete depop-epop projects completed at site(s) from which semen is sourced in last 5 years that have subsequently had field strain of PRRS virus reintroduced
   [Instructions Enter number of projects; "NA" (if no pop-depop done), or "Unknown"]

   Enter "NA" if 100% natural insemination OR if all semen is collected from boars at this site

30. Frequency of semen PCR testing for PRRS virus
   a. No semen testing or unknown
   b. Approximately quarterly or less frequently
   c. Approximately monthly
   d. Approximately weekly
   e. Every collection tested
   f. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site)

   If the boar stud is doing PCR or serum (not semen) – does answering no semen testing result in a high risk assignment for questions 30 to 32?
   I think we should remove this question or give it a lower weighing when the site does serum testing.

31. Sampling method of semen PCR testing for PRRS virus
   a. Unknown
   b. Pooled sample tested
   c. Individual sample tested
   d. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR if semen PCR is not done)

32. Timing of semen use relative to acquisition of semen PCR test results
   a. Always used prior to obtaining PCR test results
   b. Biweekly used prior to obtaining PCR test results
   c. Never used prior to obtaining PCR test results
   d. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR if semen PCR is not done)

33. Serum testing of boars for antibodies to PRRSV by ELISA
   a. Never or unknown
   b. Approximately yearly or less frequently
   c. Approximately quarterly
   d. Approximately monthly
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site)

34. Frequency of serum PCR testing of boars for PRRSV virus
   a. No serum testing or unknown
   b. Approximately quarterly or less frequently
   c. Approximately monthly
   d. Approximately weekly
   e. Every collection tested
   f. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR if semen PCR testing is not done)

35. Sampling method of serum PCR testing of boars for PRRS virus
   a. Unknown
   b. Pooled sample tested
   c. Individual sample tested
   d. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR if semen PCR testing is not done)
36. Timing of semen use relative to acquisition of serum PCR test results
   a. Always used prior to obtaining PCR test results
   b. Sometimes used prior to obtaining PCR test results
   c. Never used prior to obtaining PCR test results
   d. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site
   OR if semen PCR testing is not done)

37. Proximity of site(s) from which semen is sourced to other swine farm sites within a one mile radius
   a. All site(s) from which semen is sourced have other swine farms located within a 1 mile (1.6 km) radius
e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site)

38. Number of other swine farms within one mile radius of site(s) from which semen is sourced
   [Instructions Enter number of other swine farm sites within 1 mile (1.6 km). "N/A", or "Unknown"
   Enter "N/A" if 100% natural insemination OR if all semen is collected from boars at this site)

39. PRRSV Status of other swine farm sites within one mile radius of site(s) from which semen is sourced
   a. All other swine farm sites within one mile (1.6 km) radius of site(s) from which semen is sourced are
      PRRSV positive or within last 5 years
   b. Unknown
c. One or more other swine farm sites within one mile (1.6 km) radius of site(s) from which semen is
      sourced are PRRSV positive currently or within last 5 years
d. None of the other swine farm sites within one mile (1.6 km) radius of site(s) from which semen is sourced
      are PRRSV positive currently or within last 5 years
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site
   OR no other swine farms within 1 mile radius)

40. Control of other swine farm sites within one mile radius of site(s) from which semen is sourced
   a. None of the other swine farm sites within one mile (1.6 km) radius of site(s) from which semen is sourced
      share common management with this site or site(s) from which semen is sourced
   b. Unknown
c. One or more other swine farm sites within one mile (1.6 km) radius of site(s) from which semen is
      sourced share common management with this site or site(s) from which semen is sourced
   d. All of the other swine farm sites within one mile (1.6 km) radius of site(s) from which semen is sourced
      share common management with this site or site(s) from which semen is sourced
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site
   OR no other swine farms within 1 mile radius)

41. Proximity of site(s) from which semen is sourced to other swine farms within a 1 to 3 mile radius
   a. All site(s) from which semen is sourced have other swine farms located within a 1 to 3 mile (1.6 to 4.8 km)
      radius
   b. Unknown
c. One or more, but not all site(s) from which semen is sourced have other swine farms located within a 1 to
      3 mile (1.6 to 4.8 km) radius
d. No site(s) from which semen is sourced have other swine farms located within a 1 to 3 mile (1.6 to 4.8 km)
      radius
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site)

42. Number of other swine farm sites within a 1 to 3 mile radius of site(s) from which semen is sourced
   [Instructions Enter number of other swine farm sites 1-3 miles (1.6 to 4.8 km). "N/A", or "Unknown"

43. PKRWV status of other swine farm sites within 1 to 3 mile radius of site(s) from which semen is sourced
   a. All other swine farm sites within 1 to 3 mile (1.6 to 4.8 km) radius of site(s) from which semen is sourced are PKRWV positive currently or within last 5 years
   b. Unknown
   c. One or more other swine farm sites within 1 to 3 mile (1.6 to 4.8 km) radius of site(s) from which semen is sourced are PKRWV positive currently or within last 5 years
   d. None of the other swine farm sites within 1 to 3 mile (1.6 to 4.8 km) radius of site(s) from which semen is sourced are PKRWV positive currently or within last 5 years
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR no other swine farms within 1 to 3 mile radius)

44. Control of other swine farm sites within a 1 to 3 mile radius of site(s) from which semen is sourced
   a. None of the other swine farm sites within 1 to 3 mile (1.6 to 4.8 km) radius of site(s) from which semen is sourced share common management with this site or site(s) from which semen is sourced
   b. Unknown
   c. One or more other swine farm sites within 1 to 3 mile (1.6 to 4.8 km) radius of site(s) from which semen is sourced share common management with this site or site(s) from which semen is sourced
   d. All of the other swine farm sites within 1 to 3 mile (1.6 to 4.8 km) radius of site(s) from which semen is sourced share common management with this site or site(s) from which semen is sourced
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR no other swine farms within 1 to 3 mile radius)

45. Proximity of site(s) from which semen is sourced to other swine farms within a 3 to 5 mile radius
   a. All site(s) from which semen is sourced have other swine farms located within a 3 to 5 mile (4.8 to 8.0 km) radius
   b. Unknown
   c. One or more, but not all site(s) from which semen is sourced have other swine farms located within a 3 to 5 mile (4.8 to 8.0 km) radius
   d. No site(s) from which semen is sourced have other swine farms located within a 3 to 5 mile (4.8 to 8.0 km) radius
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site)

46. Number of other swine farm sites within a 3 to 5 mile radius of site(s) from which semen is sourced
   (Instructions: Enter number of other swine farms within 3 to 5 mile (4.8 to 8.0 km) radius, “N/A”, or “Unknown”)

47. PKRWV status of other swine farm sites within 3 to 5 mile radius of site(s) from which semen is sourced
   a. All other swine farm sites within 3 to 5 mile (4.8 to 8.0 km) radius of site(s) from which semen is sourced are PKRWV positive currently or within last 5 years
   b. Unknown
   c. One or more other swine farm sites within 3 to 5 mile (4.8 to 8.0 km) radius of site(s) from which semen is sourced are PKRWV positive currently or within last 5 years
   d. None of the other swine farm sites within 3 to 5 mile (4.8 to 8.0 km) radius of site(s) from which semen is sourced are PKRWV positive currently or within last 5 years
   e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR no other swine farms within 3 to 5 mile radius)

48. Control of other swine farm sites within a 3 to 5 mile radius of site(s) from which semen is sourced
a. None of the other swine farm sites within 3 to 5 mile (4.8 to 8.0 km) radius of site(s) from which semen is sourced share common management with this site or site(s) from which semen is sourced
b. Unknown
c. One or more other swine farm sites within 3 to 5 mile (4.8 to 8.0 km) radius of site(s) from which semen is sourced share common management with this site or site(s) from which semen is sourced
d. All of the other swine farm sites within 3 to 5 mile (4.8 to 8.0 km) radius of site(s) from which semen is sourced share common management with this site or site(s) from which semen is sourced
e. Not Applicable (Select if 100% natural insemination OR if all semen is collected from boars at this site OR no other swine farms within 3 to 5 mile radius)

External Risks >> Non-pig Related >> Operations >> Transportation of live animals

For breeder-to-weaner and breeder-to-feeder sites, questions in this section
- Related to "transport of animals to market or collection points" should be answered for cull animals
- Related to "transport of animals to and from other sites within the production system" should be answered for weaner pigs and feeder pigs even if pigs are sold to another production system or delivered to members of a cooperative

For genetic sites, questions in this section
- Related to "transport of animals to market or collection points" should be answered for cull animals
- Related to "transport of non-genetic animals to and from other sites within the production system" should be answered for barrows and non-select gilts

49. Flow restrictions on vehicles used to transport animals to market or collection points
   a. No restriction, the same vehicle may haul PRRSV positive and negative or naïve animals
   b. The same vehicle can haul PRRSV positive and negative or naïve animals but a minimum downtime is required before visits to negative or naïve sites following last visit to positive site
   c. The same vehicle never hauls both PRRSV positive and negative or naïve animals
   d. Trucks are dedicated to this site and do not haul animals from other sites

50. Route restrictions on vehicles used to transport animals to market or collection points
   a. No special route selection practiced
   b. Transport routes are outlined proactively to avoid roads with swine and swine-related sites along the route

51. Transit restrictions on vehicles used to transport animals to market or collection points
   a. Transport vehicles are allowed to stop en route
   b. Transport vehicles are allowed to stop on route only at designated times and locations
   c. Transport vehicles are never allowed to stop on route
52. Use restrictions on vehicles used to transport animals to markets or collection points
   a. Vehicles used to transport animals to markets may transport genetic animals or non-genetic animals to other sites within the production system.
   b. Vehicles used to transport animals to markets are not used to transport genetic animals or non-genetic animals to other sites within the production system.

   Should we include other types of animals or just pigs? If the same truck transports cattle and pigs, should we consider it or just focus on PRRS and pigs?

53. Washing frequency of vehicles used to transport animals to market or collection points
   a. Never, rarely or unknown
   b. At least once per 20 loads
   c. At least once per 10 loads
   d. Between every load

54. Pre-rinse with water to flush away loose organic material prior to wash of vehicles used to transport animals to market or collection points
   a. Yes, recycled water used
   b. Unknown
   c. No, pre-rinse not done
   d. Yes, fresh water used

55. Disinfectant used on vehicles used to transport animals to market or collection points
   a. No disinfectant used or unknown
   b. Phenol-based compound (BioPhame, Environ, Tek-Trol, Laro, Lysol) or aldehydes (DC&S, Cider, Formaline) used
   c. Quaternary ammonium (Neocul, Gener, ZeoPham, Hi-Lethol, BioSty) used
   d. Hypochlorite (Chlorox, Hilton Zone, Chlorine-T) or peroxyxgen (Virkon) used
   e. Iodine (Wootworth, Permazin, Iole, Iodyn, Louis) or quaternary ammonium combinations (Synergize, Auspect) used

   We must add Canadian disinfectants.

56. Drying time following wash of vehicles used to transport animals to market or collection points
   a. No requirements
   b. Vehicles allowed to dry completely before next load
   c. Assisted drying technology is used to dry washed vehicles

57. Restrictions on movement of drivers of vehicles used to transport animals to market or collection points
   a. No restrictions
   b. Not allowed to enter buildings
   c. Not allowed to cross perimeter fence or some other defined limit
   d. Not allowed to leave cab of vehicle

Could insert CAE and RAZ terminology here

58. Cleaning of cab between sites for vehicles used to transport animals to market or collection points
   a. No requirements
   b. Swept but not washed between sites
   c. Washed between sites

I think washing the cab between sites is too difficult. Can we just place “Washed” once a day?
39. Disinfection of cab between sites for vehicles used to transport animals to market or collection points
   a. No disinfectant used or unknown
   b. Physical-based compound (BioShine, Environ, Tek-Trol, Larco, Lynol) or aldehydes (DDCAR, Cidex, Formakleen) used
   c. Quaternary ammonium (Rovac, Germix, Zeffen, Hi-Lethol, BioSentry) used
   d. Hypochlorite (Clorox, Haloxene, Chlorox-T), or peraceton (Viton), used
   e. Iodine (Wescodyne, Premise, Iofen, Jodyn, Loan), or quaternary ammonium combinations (Synergize, Aquacide) used

Canadian disinfectants should be added.

60. Boot and clothing restrictions between sites or on drivers of vehicles used to transport animals to market or collection points
   a. No requirements
   b. Required to change clothing but not boots between sites
   c. Required to change boots but not clothing between sites
   d. Required to change clothing and boots between sites

The transporters usually don’t have many pair of boots. Although, they can place a plastic bag over their boots or have one pair in the truck and another one for the outdoors. Could we “open” a little the response to while giving more options?

6. Vehicles used to transport non-genetic animals to and from other sites within the production system

   For breed-to-wean and breed-to-feeder sites, questions in this section
   - Related to “transport of animals to market or collection points” should be answered for cul animals
   - Related to “transport of animals to and from other sites within the production system” should be answered for wean pigs and feeder pigs even if pigs are sold to another production system or delivered to members of a cooperative

   For genetic sites, questions in this section
   - Related to “transport of animals to market or collection points” should be answered for cul animals
   - Related to “transport of non-genetic animals to and from other sites within the production system” should be answered for barrows and non-select gilts

   In Western Canada
   Managers sign off on trailer cleanliness on arrival at the farm site
   Or
   Wash audit of trailer presented to the manager prior to loading

61. Flow restrictions on vehicles used to transport non-genetic animals to and from other sites within the production system
   a. No restrictions; the same vehicle may haul FRSV positive and negative or naïve animals
b. The same vehicle can haul PRRSV positive and negative or naive animals but a minimum downtime is required before visits to negative or naive sites following last visit to positive site
c. The same vehicle never hauls both PRRSV positive and negative or naive animals
d. Trucks are dedicated to this site and do not haul animals from other sites

62. Route restrictions on vehicles used to transport non-genetic animals to and from other sites within the production system
   a. No special route selection practises
   b. Transport routes are outlined proactively to avoid roads with swine and swine-related sites along the route

63. Transit restrictions on vehicles used to transport non-genetic animals to and from other sites within the production system
   a. Transport vehicles are allowed to stop on route
   b. Transport vehicles are allowed to stop on route only at designated times and locations
   c. Transport vehicles are never allowed to stop on route

64. Use restrictions on vehicles used to transport non-genetic animals to and from other sites within the production system
   a. Vehicles used to transport non-genetic animals to and from other sites within the production system may transport genetic animals or animals to market or collection points
   b. Vehicles used to transport non-genetic animals to and from other sites within the production system are not used to transport genetic animals or animals to market or collection points

65. Washing frequency of vehicles used to transport non-genetic animals to and from other sites within the production system
   a. Never, rarely or unknown
   b. At least once per 20 loads
   c. At least once per 10 loads
   d. Between every load
   e. Not Applicable (Select if vehicle used to transport animals is dedicated to this site)

66. Pre-cinse with water to flush away loose organic material prior to wash of vehicles used to transport non-genetic animals to and from other sites within the production system
   a. Yes, recycled water used
   b. Unknown
   c. No,Rectangle not done
   d. Yes, fresh water used
   e. Not Applicable (Select if vehicle used to transport animals is dedicated to this site)

67. Disinfectant used on vehicles used to transport non-genetic animals to and from other sites within the production system
   a. No disinfectant used or unknown
   b. Phenol-based compound (BioThane, Environ, Tek-Trol, Laro, Lysol) or aldehydes (DCB, Cioxe, Formaldehyde) used
   c. Quaternary ammonium (Covac, Germcar, Zaprin, Hi-Lethol, BioSantry) used
   d. Hypochlorite (Clorox, Halalox, Chloramine-T) or peracetic acid (Virkon) used
   e. Iodine (Iodosa, Premine, Ifoye, Iodyn, Lome), or quaternary ammonium combinations (Synergies, Asepto) used
   f. Not Applicable (Select if vehicle used to transport animals is dedicated to this site)

68. Drying time following wash of vehicles used to transport non-genetic animals to and from other sites within the production system
   a. No requirements
   b. Vehicles allowed to dry completely before next load
C. Vehicles used to transport genetic animals

For breed-to-wean and breed-to-feeder sites, questions in this section
- Related to "transport of animals to market or collection points" should be answered for all animals
- Related to "transport of animals to... from other sites within the production system" should be answered for breed-to-wean pigs and feeder pigs. If pigs are sold to another production system or delivered to members of a cooperative, questions in this section should be answered for barrows and non-select gilts.

69. Flow restrictions on vehicles used to transport genetic animals
   a. No restrictions; the same vehicle may haul PRRSV positive and negative or naïve animals.
   b. The same vehicle cannot haul PRRSV positive and negative or naïve animals but a minimum downtime is required before visits to negative or naïve sites following last visit to positive site.
   c. The same vehicle never hauls both PRRSV positive and negative or naïve animals.
   d. Truck(s) are dedicated to this site and do not haul animals from other sites.

70. Route restrictions on vehicles used to transport genetic animals
   a. No special route selection practice.
   b. Transport routes are outlined proactively to avoid roads with swine and swine-related sites along the route.

71. Transit restrictions on vehicles used to transport genetic animals
   a. Transport vehicles are allowed to stop on route.
   b. Transport vehicles are allowed to stop at designated times and locations.
   c. Transport vehicles are never allowed to stop on route.

72. Use restrictions on vehicles used to transport genetic animals
   a. Vehicles used to transport genetic animals to and from other sites within the production system may transport non-genetic animals or animals to market or collection points.
   b. Vehicles used to transport genetic animals to and from other sites within the production system are not used to transport non-genetic animals or animals to market or collection points.

73. Washing frequency of vehicles used to transport genetic animals
   a. Never, rarely or unknown.
   b. At least once per 20 loads.
   c. At least once per 10 loads.
   d. Between every load.
   e. Not Applicable (select if vehicle used to transport animals is dedicated to this site).

74. Precise with water to flush away loose organic material prior to wash of vehicles used to transport genetic animals.
PADRAP
Production Animal Disease Risk Assessment Program

a. Yes, recycled water used
b. Unknown
c. No, none not done
d. Yes, fresh water used
e. Not Applicable (Select if vehicle used to transport animals is dedicated to this site)

75. Disinfectant use on vehicles used to transport genetic animals
   a. No disinfectant used or unknown
   b. Phenol-based compound (BioPhane, Environ, Tek-Trol, Laro, Lysol) or aldehydes (DDM, Cidea, Formalin) used
   c. Quaternary ammonium (Biscoral, Germir, Zephyr, H-Bisolv, BioEzyme) used
   d. Hypochlorite (Chlorax, Halacon, Chloraxine-T) or peracetic (Vitusan) used
   e. Iodine (Iodex, Premura, Iofex, Isofyn, Loan), or quaternary ammonium combinations (Synergize, A格力) used
   f. Not Applicable (Select if vehicle used to transport animals is dedicated to this site)

76. Drying time following wash of vehicles used to transport genetic animals
   a. No requirement
   b. Vehicles allowed to dry completely before next load
   c. Assisted drying technology is used to dry washed vehicles
   d. Not Applicable (Select if vehicle used to transport animals is dedicated to this site)

77. Type of feed out area
   a. Feed out area attached to buildings, no restrictions on truck driver access
   b. Feed out area attached to buildings, physical barriers restrict truck driver access to “dirty” areas
   (terminology could include access to dirty (out of RAZ) or clean area (within RAZ)
   c. Unattached animal transfer station located away from the same building

External risks -> Non-pig related -> Operations -> Transportation of feed
78. Flow of feed trucks
   a. No restrictions, the same truck may deliver feed to RAZV positive and negative or naive sites
   b. The same truck can deliver feed to RAZV positive and negative or naive sites but a minimum downtime
      is required before delivery to negative or naive sites following last delivery to positive site
   c. The same truck never delivers feed to RAZV positive and negative or naive sites or truck is dedicated to
      this site

External risks -> Non-pig related -> Operations -> Employee and service vehicles
79. Flow of service vehicles
   a. No restrictions, the same service vehicle may visit RAZV positive and negative or naive sites
   b. The same service vehicle can visit RAZV positive and negative or naive sites but a minimum downtime
      is required before visits to negative or naive sites following last visit to positive site
   c. The same service vehicle never visits RAZV positive and negative or naive sites

80. Flow of on-site employee vehicles
   a. No restrictions
   b. Allowed to visit other pig farm sites but must be washed and dried before return to this farm site
   c. Allowed to visit other pig farm sites but must be washed and dried before return to this farm site
   d. Allowed to visit other pig farm sites but must be washed, dried and disinfected before return to this farm site
   e. Not allowed to visit other pig farm sites

We should ask if the restriction is in the CAZ or RAZ.

Log book considerations?
External Risks - Non-pig Related - Operations - Disposal of dead animals
81. Dead animals disposed of on-site (e.g. burned, composted or incinerated)
   a. No
   b. Yes

82. Dead animals moved using equipment dedicated to this site to an off-site location for pickup
   a. No
   b. Yes
   c. Not Applicable (Select if dead animals are disposed of on-site)

We could add a response for: “Dead animals moved outside of the CAZ”.

83. Dead animals are stored in enclosed box awaiting pickup or disposal
   a. No
   b. Yes
   c. Not Applicable (Select if dead animals are disposed of on-site and never stored prior to disposal)

84. Dead animals are stored in refrigerated box awaiting pickup or disposal
   a. No
   b. Yes
   c. Not Applicable (Select if dead animals are disposed of on-site and never stored prior to disposal)

85. Management of trucks that pick up dead animals for off-site disposal
   a. Trucks managed by third party
   b. Trucks managed by production system
   c. Not Applicable (Select if dead animals are disposed of on-site)

86. Location of pickup site for dead animals disposed of off-site
   a. At this site
   b. At a dedicated site more than a half mile (0.8 km) from this site
   c. Not Applicable (Select if dead animals are disposed of on-site)

We could add a response for: “Dead animals moved outside of the CAZ”.

Suggestion: Separate the manure disposal into a new category (the actual category is: Operations/dead animals)

87. Management of manure disposal
   a. Outsourced to third party that provides service non-exclusively to production system
   b. Outsourced to third party that provides service exclusively to production system
   c. Managed by production system

88. Washing of manure removal equipment
   a. No requirements
   b. Washed and flushed between sites
   c. Manure removal equipment is dedicated to this site

External Risks - Non-pig Related - Operations - Employees and visitors
89. Sanitation procedure for employees and visitors entering site
   a. Unrestricted entry
   b. Boot wash / disinfection prior to entry
   c. Covered and boot change, hands are washed prior to entry
   d. Shower in and clothes changed prior to entry

Log book considerations? CAZ and RAZ questions?
Create a new question considering separate visits.

90. Design of entry to site
   a. Direct access, no defined “dirty” and “clean” areas
   b. Physical barriers separate the outside (“Dirty”) and internal (“Clean”) areas

91. Employee restrictions on visits to other swine production facilities
   a. No restrictions
   b. Visits to other swine farms are restricted
   c. Not Applicable (Select if a single owner-operator that has no employees)

92. Procedures are in place to ensure no fresh foreign or domestic meat products for human consumption are allowed on the premises.
   a. Yes
   b. No

92. Average annual employee turnover
   [Instructions: Enter percentage as a decimal value. For example, 49% would be entered as 0.49]

93. Written biosecurity protocols
   a. Written protocols and communications to on-site employees are never provided in all language(s) spoken as first language by employees
   b. Written protocols and communications to on-site employees are sometimes provided in all language(s) spoken as first language by employees
   c. Written protocols and communications to on-site employees are always provided in all language(s) spoken as first language by employees
   d. Not Applicable (Select if a single owner-operator that has no employees)

Separate the facts of having written protocols and foreign employers.

94. Breeding females per on-site employee
   [Instructions: Enter number of INVENTORIZED breeding females, count only full-time equivalents that work in the breeding herd (i.e. exclude ourselves and farmers if at same site)]

95. New employees receive formal training on biosecurity procedures
   a. No
   b. Yes

96. All employees periodically receive formal retraining on biosecurity procedures
   a. No
   b. Yes

97. Employee compliance with biosecurity procedures is periodically audited
   a. No
   b. Yes

A question about records should be added: It could be the logbook for visitors.

External Rinks for Non-pig Related => Operations => Entry of supplies
98. Procedures for introducing birds and supplies
   a. Direct introduction into the farm (no disinfection, no quarantine)
   b. Disinfection prior to introduction into the farm, but no quarantine
   c. Quarantine for 24 hours or more, but no disinfection
99. Procedures are in place to ensure vaccines and pharmaceuticals are selected, used and stored appropriately.
   a. Yes
   b. No

External Risks -> Non-pig Related -> Operations -> Facilities

99. Facility type
   a. Outdoor production
   b. Hoop structures
   c. Partial confinement
   d. Total confinement

It's almost the same question that of #2 (demographics). Can we remove one of them?

100. Ventilation in breeding/gestation
   a. Natural ventilation
   b. Combination mechanical & natural
   c. Mechanical ventilation - conventional fans & inlets
   d. Mechanical ventilation - tunnel

101. Ventilation in farrowing
   a. Natural ventilation
   b. Combination mechanical & natural
   c. Mechanical ventilation - conventional fans & inlets
   d. Mechanical ventilation - tunnel

102. Restrictions on employee access to site
   a. Not restricted
   b. Access to site (by key, combination or pass code) is restricted after-hours only
   c. Access to site (by key, combination or pass code) is restricted at all times

103. Procedures are in place to prevent contamination of water and that drinking water meets accepted guidelines for
     some consumption.
     a. Yes
     b. No

Procedures are in place to minimize contamination of pigs from water sources from surface water
   a. Yes
   b. No
   c. No (well water source)

External Risks -> Non-pig Related -> Operations -> Bioreactors

104. Insect proof are used to restrict entry of insects into buildings
     a. No
     b. Yes

105. Procedures are in place to keep pig herds segregated from any domestic animals including wild species.
     a. Yes
     b. No

106. Procedures are in place to effectively prevent contact with wildlife.
     a. Yes
     b. No
External Risk => Non-pig Related => Location / Proximity => Density of pig farms in the area

104. Pig density (swine sites) within 1 mile radius of this site
   [Instructions: Enter number of sites within 1 mile (1.6 km) radius]

105. Pig density (swine sites) in a 1 to 3 mile radius of this site
   [Instructions: Enter number of sites in a 1 to 3 mile (1.6 to 4.8 km) radius]

106. Pig density (swine sites) in a 3 to 5 mile radius of this site
   [Instructions: Enter number of sites in a 3 to 5 mile (4.8 to 8.0 km) radius]

External Risk => Non-pig Related => Location / Proximity => Neighboring pig farms

107. Distance (miles) to nearest swine farm
   [Instructions: Enter miles (0 km = 0.6 miles) or Unknown]

108. Finishing pigs housed at nearest swine farm
   a. Yes
   b. No

109. Nursery pigs housed at nearest swine farm
   a. Yes
   b. No

110. Breeding females and suckling piglets housed at nearest swine farm
    a. Yes
    b. No

111. Replacement breeding animals housed at nearest swine farm
    a. Yes
    b. No

112. Boar stud housed at nearest swine farm
    a. Yes
    b. No

113. Distance (miles) to nearest PRRSV positive swine farm
    [Instructions: Enter miles (0 km = 0.6 miles) or “Unknown”]

114. Status of nearest neighboring PRRSV positive pig farm
    a. Unknown
    b. PRRSV positive, acute-active clinical break within last 3 months
    c. PRRSV positive, post-acute active (clinical break more than 3 months but less than 6 months ago)
    d. PRRSV positive but currently stable (no evidence of virus circulation)

115. Finishing pigs housed at nearest PRRSV positive swine farm
    a. Yes
    b. Unknown
    c. No

116. Nursery pigs housed at nearest PRRSV positive swine farm
117. Breeding females and suckling piglets housed at nearest PRRSV positive swine farm
   a. Yes
   b. Unknown
   c. No

118. Replacement breeding animals housed at nearest PRRSV positive swine farm
   a. Yes
   b. Unknown
   c. No

119. Boar stud housed at nearest PRRSV positive swine farm
   a. Yes
   b. Unknown
   c. No

*External Risks -> Non-swine Related -> Location / Proximity -> Distance to pork industry infrastructure*

120. Distance (miles) to a major public road with intensive animal transportation
   [Instructions: Enter miles (1 km = 0.6 miles) or "Unknown"]

121. Nearest public road carries significant traffic related to nearest vehicle wash
   a. Yes
   b. No

122. Distance (miles) to nearest swine market, slaughter plant or collection point
   [Instructions: Enter miles (1 km = 0.6 miles)]

123. Nearest public road carries significant traffic related to nearest market, slaughter plant or collection point
   a. Yes
   b. No

*External Risks -> Non-swine Related -> Location / Proximity -> Topography and forestation of surrounding area*

124. Topography at the site
   a. Flat
   b. Gentle rolling hills
   c. Steep hills
   d. Mountains
   e. Murrays and rolling hills (AB geography)
Appendix 4 - Reporting Modification Recommendations

The workgroup considered options that they believe will improve the usability of the PADRAP report on farm to create a valuable and interactive tool. Report recommendations include:

- **Page 1**
  - farm information
  - Premise ID number (in Ontario)
  - GPS picture of the farm site with an ability to click and magnify to allow demarcation of zones such as CAZ and RAZ, areas for improvement etc
  - PADRAP score
  - Risk quadrant graph

- **Page 2**
  - User report card
  - Top areas for improvement ordered by priority (or highest impact) and categorized by National Biosecurity Standards categories with an ability for the veterinarian to select a top 3 to 5 topics for further investigation and recommended changes
  - This will require engagement and participation from the veterinarian to customize the recommendations to suite the priorities and resources of that particular farm

- **Page 3**
  - Simulation page – if these selected changes were made – recalculated score
  - See concept below

- **Appendix 1**
  - Full PADRAP report graphs and tables
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Score Before</th>
<th>Score After</th>
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# Appendix 5 : RESULTS OF THE CANADIAN PADRAP REVIEW

## VETERINARIANS QUESTIONS

<table>
<thead>
<tr>
<th>QC responses</th>
<th>Have you used the PADRAP survey before</th>
<th>Did you find the new reporting style easier to understand</th>
<th>What section(s) of the report gave the most value to you</th>
<th>What section(s) give the most value to producers</th>
<th>Did you think the new format supports the NBS training program</th>
<th>Was it a useful tool to identify areas for improvement</th>
<th>Will you offer this tool to producers you service</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Producer</td>
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<tr>
<td>Demographic information</td>
<td>Yes, in some farms in 2008 and 2009</td>
<td>Yes, tabs facilitate the comprehension of results. We can consult the final score of the section or in details if we want to go further in the analysis of results.</td>
<td>Because the two sites were closed herds and in-herd replacement sites, and disposal of dead animals is done on-site, the most useful section in the survey is &quot;External risks, and live animals movement and transport&quot;.</td>
<td>In the farms that I evaluated, the sections which gave the most value to producers were: Risk profile summary; Individual risk factors; Risk Pareto chart. The benchmark section with all sites in American data base isn't too</td>
<td>Yes, very much. PADRAP gives a report which provides a lot of quantitative information related to external and internal biosecurity risks</td>
<td>Fore sure. In fact, I think it's the biggest strength of the tool: identify the biosecurity lacks in a production system or site. Based on the results, we can easily identify the points to correct or improve. Excellent tool, to convince the manager or</td>
<td>I will probably offer this tool to my clients who already have a good biosecurity protocol, but want to review or improve it. Very good tool for multipliers and pure bred breeding. Those who doesn't have a good biosecurity protocol have gotten things</td>
<td>Yes, I notice that in some sections the responses are incorrectly managed by the program - the response isn't placed correctly in the right place: Size of breeding herd, Number of breaks, Number of PRRS strains, PRRS vaccine, Number of animal replacement sources, PRSS status, Number of breaks in semen source, No filtration question for AIC, site density, and manure equipment. This problem on the scoring has to be corrected fast because it causes a bad impact for producers when they analyze the reports. - The tool should create a working plan for the farm at</td>
</tr>
<tr>
<td>3 and 4 (MSH)</td>
<td>Farrow-weaner; 450 and 1100 sows; independent producers</td>
<td>Yes, once</td>
<td>Yes, really easier and very useful. NBS card adds value because you can make changes (simulation) and see the impact.</td>
<td>Pareto chart and NBS report.</td>
<td>Pareto chart and NBS report</td>
<td>Yes</td>
<td>Yes, really useful</td>
<td>Yes, a part of them: ARC&amp;E and genetics</td>
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<tr>
<td>5 and 6 (DT)</td>
<td>Farrow-Finisher and farrow-weaner; 300 and 500 sows; independent producers</td>
<td>No</td>
<td>Didn't see the old one</td>
<td>Pareto chart; Risk profile summary and NBS report card</td>
<td>Simulation tool; Risk profile summary and NBS report card.</td>
<td>Yes because ti gives a weighting on factors, but it's too much detailed</td>
<td>Yes, because it is visual and it identifies priorities and weak points. The length and the fact that it's too much detailed is a disadvantage.</td>
<td>To my ARC&amp;E clients and the ones with a high sanitary status with a good biosecurity level</td>
</tr>
<tr>
<td>7 (MB)</td>
<td>Farrowing; 1400 sows; semen collected from boars at</td>
<td>Yes</td>
<td>Yes</td>
<td>Pareto chart, simulation tool</td>
<td>Pareto chart and simulation + risk quadrant</td>
<td>Yes</td>
<td>Yes</td>
<td>Specific clients, clients involved in specific</td>
</tr>
<tr>
<td>8 (LU)</td>
<td>Sow sites; 150-1400 sows; independent producers</td>
<td>Yes</td>
<td>Yes, easier to use, to export to pdf or Excel, and more user friendly.</td>
<td>Pareto chart and simulation tool</td>
<td>Risk quadrant, google map image, Pareto chart, Simulation tool</td>
<td>Even though it's longer to complete, it totally complements NBS training program.</td>
<td>Yes</td>
<td>Yes, the ones interested in improving their biosecurity, but mostly the ones interested in reducing PRRS risk in their sites</td>
</tr>
</tbody>
</table>
## Western Canada Responses

<table>
<thead>
<tr>
<th>ID</th>
<th>Producer</th>
<th>Site</th>
<th>Have you used Padrap before</th>
<th>Did you find the new reporting style easier to understand</th>
<th>What sections of the report gave the most value to vets</th>
<th>Sections of the new reporting format give the most value to producers</th>
<th>Did you think the new format supports NBS training</th>
<th>Was it useful to ID areas of improvement</th>
<th>Will you offer this tool to producers you service</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLF</td>
<td>1200 Sow, Farrow to 22 kg</td>
<td>Yes. On sow farm and all down flow sites.</td>
<td>Yes, much more simple to review reports. Map isn’t correct. Report card is very good.</td>
<td>Report card</td>
<td>Simulations are very interesting.</td>
<td>Yes</td>
<td>Yes. Very useful.</td>
<td>Will use new version on down flow sites.</td>
<td>Tool is still very long but new reports interesting. Still some confusing questions on trucking and airspace.</td>
<td></td>
</tr>
<tr>
<td>RBF</td>
<td>1350 Sow, Farrow to 22 kg</td>
<td>Yes. All sites in flow.</td>
<td>Reporting style was easier to understand and very useful. Worry that if I answer some questions wrong it messes up my report. Some questions confusing.</td>
<td>Report card is very cool. Simulation was interesting. Risk quadrant always interesting. Farm Details Map not correct.</td>
<td>Simulations were very interesting. Like to use the means to compare sites I fill.</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes. All sites in flow.</td>
<td>Takes a long time. Some questions in original unclear.</td>
<td></td>
</tr>
<tr>
<td>PTR</td>
<td>1800 Sow, Farrow to Wean</td>
<td>Yes. All sites.</td>
<td>Very useful. Great improvement.</td>
<td>NBS Report card excellent.</td>
<td>Staff enjoyed the simulation</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes. All sites.</td>
<td>Map is wrong. Staff like the visuals when reports are returned to them</td>
<td></td>
</tr>
<tr>
<td>Location</td>
<td>Comments</td>
<td>NBS Report Card</td>
<td>NBS</td>
<td>Reports were easier to understand</td>
<td>NBS Report card was good to look at</td>
<td>Opportunity for improvement with each survey</td>
<td>Implementation of recommendations</td>
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<tr>
<td>ALX</td>
<td>Tabs very useful. Map is wrong though.</td>
<td>N/A</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>N/A</td>
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<tr>
<td>300 Sow F to F Colony</td>
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<td>Yes</td>
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<td>NBS Report card was good to look at</td>
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<td>Yes</td>
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<td>Yes</td>
<td>N/A</td>
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<tr>
<td>AB121 DP1-S AB123 PS1-S AB123 PS2-S</td>
<td>Farrow to Wean, independent farms, part of one management system</td>
<td>Yes</td>
<td>Yes, easy to use</td>
<td>external and internal risk quadrant</td>
<td>NBS Report card.</td>
<td>Yes</td>
<td>Yes, all sites every 2 years</td>
<td>Will implement recommendations.</td>
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<td>Yes</td>
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<td>Yes</td>
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</tbody>
</table>

Because we use boars it is not always clear how to enter them. Gilts enter breeding herd directly with no quarantine; Not sure how this fits into questions. Very long.
<table>
<thead>
<tr>
<th>Ontario Responses</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>ID</strong></td>
<td><strong>Producer</strong></td>
<td><strong>Site</strong></td>
<td><strong>Have you used Padrap before</strong></td>
<td><strong>Did you find the new reporting style easier to understand</strong></td>
<td><strong>What sections of the report gave the most value to vets</strong></td>
<td><strong>Sections of the new reporting format give the most value to producers</strong></td>
<td><strong>Did you think the new format supports NBS training</strong></td>
</tr>
<tr>
<td>1 to 7</td>
<td>under 200 sows to over 3000 sows, farrow to feeder and farrow to wean</td>
<td>yes</td>
<td>Easier to understand, easier to present to clients</td>
<td>simulation (allowed assessment of &quot;what if&quot; scenarios and enabled vets to show producers the impact of changes) and Risk Pareto charts</td>
<td>Simulation and Risk Pareto charts</td>
<td>yes, but too detailed for some producers</td>
<td>Yes, a number of the producers indicated that they identified areas to improve and they intend to implement improvements</td>
</tr>
</tbody>
</table>
PADRAP Training Manual – Appendix A

Canadian National Biosecurity Standards (NBS)

Canadian NBS accessibility

- **“Primary VeterinarianCA”** = AASV Veterinarians that have completed the training AND have a Canadian address OR have been assigned by PADRAP Administrators as a Canadian user
  - Access to PADRAP online and Canadian additions via username and password
  - May set up Canadian and non-Canadian production systems, sites, surveys and users
  - May take surveys and view benchmarking and NBS reports
  - Ability to create Canadian and non-Canadian users

- Who can complete Canadian surveys and who has access to the NBS reporting capabilities?
  - A veterinarian assigned the role of Primary VeterinarianCA by administrators when he/she is registered in PADRAP (any veterinarian with a Canada address will be designated as Primary VeterinarianCA by PADRAP administrators)
  - OR
  - If the veterinarian is assigned as a Primary VeterinarianCA for at least one Canadian production system (this could be a veterinarian with a non-Canadian address that is manually assigned a Primary VeterinarianCA role by PADRAP administrators or another person that is a Primary VeterinarianCA for a production system in Canada)

- Where are the additional NBS questions located in the PADRAP survey?
  - The first 24 questions in the Demographics section of the Breeding Herd survey are the original questions present for all PADRAP users. When a Canadian survey is created, questions 25 through 36 will appear in the Demographics section under an NBS sub-section. These are the additional questions pertaining to the NBS categories.
**When will the additional NBS questions be visible?**

- In a survey created for a site that belongs to a production system with a Canadian address.
- Conversely, if a survey has been created for a site that belongs to a production system outside Canada, the additional NBS questions will not be visible (even if the user has the role of Primary VeterinarianCA).
- If the production system/site is in Canada but you do NOT want the additional NBS questions to appear in the survey and do NOT want to run NBS reports, please call/email PADRAP administrators so the settings can be adjusted.

**When will the NBS Report Card for a site be available?**

- When a survey is 100% complete for a site that belongs to a production system with a Canadian address.
- On the contrary, even if the user has been designated as a Primary VeterinarianCA when he/she registered or for another production system, and the NBS Report Card link is visible on the left menu, if a survey was completed for a site with an address outside Canada it will not show up in the drop down list used to run NBS reports.

<table>
<thead>
<tr>
<th>Canadian Production system</th>
<th>Non-Canadian Production system</th>
</tr>
</thead>
<tbody>
<tr>
<td>• NBS questions show up</td>
<td>• NBS questions do not show up</td>
</tr>
<tr>
<td>• User sees NBS Report Card link in left menu</td>
<td>• User sees NBS Report Card link in left menu</td>
</tr>
<tr>
<td>• Surveys 100% complete are visible for NBS Report Card reports</td>
<td>• Completed surveys are not visible for NBS Report Card reports</td>
</tr>
</tbody>
</table>

For Primary VeterinarianCA, if the survey is completed for a site with a Canadian address:

- NBS questions show up
- User sees NBS Report Card link in left menu
- Surveys 100% complete are visible for NBS Report Card reports

For Primary VeterinarianCA, if the survey is completed for a site with an address outside Canada:

- No access to NBS questions and reports
- User may see NBS Report Card link in left menu if he/she is a Primary VeterinarianCA for a different production system with a Canadian address

Revised 12/12/2011
Completing surveys with NBS questions for Canadian sites

- Production Systems, Sites, and Surveys should be set up following the steps in the PADRAP Training Manual
- Questions 25 through 36 in the Demographics section are specific to Canada and will appear for any survey for a site in Canada

Accessing The NBS Report Card

1. Click on “NBS Report Card” on the left menu
2. From the drop down menus, select the Production System, Site, and Survey to analyze

Revised 12/12/2011
3. There are 3 tabs – Farm Details, User NBS Report Card, and Simulation, Results, Recommendations
   a. Farm Details – shows general information for the site such as address and GPS coordinates, site location on Google maps, a Risk Quadrant report and Risk Profile summary.

Revised 12/12/2011
b. **User NBS Report Card** – an overview of the site’s scores for each of the NBS categories and ranks each as either “ACCEPTABLE” or “OPPORTUNITY TO IMPROVE”

i. categories and subcategories can be expanded and collapsed by clicking on the + or – respectively
c. Simulation, Results, Recommendations tab – gives veterinarian the chance to show client what would happen by improving score(s) in a category or categories and has a place for notes and recommendations

i. The NBS categories and subcategories are shown and can be expanded/collapsed by clicking +/-

ii. After expanding all the way down to a question, that question can be selected by clicking in the box, or an entire category and it’s questions can be selected by clicking the category box

iii. Scroll to the bottom of the page and click “Proceed”
iv. Next the selected question(s) will appear with the response(s) that was(were) given as well as the other possible responses. Click circle(s) below “Select new response” then click “Update” in lower left corner. You do not have to select a new response and can just skip over ones you don’t want to change.

---

<table>
<thead>
<tr>
<th>Time Details</th>
<th>User NPI Report Code</th>
<th>Source, Results, Documentation</th>
</tr>
</thead>
</table>

Click in circle to select new answer(s)

---

Click “Update” after done selecting new answers

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Revised 12/12/2011
v. Now you can see the question, old response, new response, old score, median, new score, old NBS category it fell in, new NBS category it falls in

vi. Veterinarian can type in comments or recommendations in the box

vii. These reports are NOT currently auto-saved by PADRAP (like the regular PADRAP reports) but the NBS Reports can be exported to both Excel and to .pdf then printed and/or saved.

viii. Click “New Report” to run reports for another site, “Edit this Report” to go back to the beginning of the Simulation, Results, Recommendations tab or “Logout” if your work is complete

Revised 12/12/2011