Swine Futures Project

A Cooperative Strategy for the 21st Century
SFP History

- Examine current VS swine-related services and resources
- Examine pork industry future trends
- Evaluate industry change implications for VS services over next decade
- Develop VS restructuring recommendations to begin meeting service objectives
Future Service Areas

- Foreign Animal Disease preparedness
  - Develop EAI detection and response capability
- Process certification
- Expanded surveillance portfolio
- Improve marketing of APHIS services
- Develop swine specialists
- Maintain eradication expertise
Collaborative Vision

- To protect and improve the health of the national swine herd
- Support production of a quality product
- Promote access to international markets
Emphasis Areas

- Quality assurance
- Surveillance
- Emerging animal issue detection / response
Pork Industry Environment - Transition

- 70% of producers left industry in 15 years
  - 1980 - 670,000 swine operations
  - 1995 - 208,000 swine operations

- 1998 - 139,000 swine operations
Pork Industry Changes

- Increased producer/client sophistication
- Reinventing government opportunities
- Increased farm to retail coordination
- Continuous product improvement demands
- Increased importance of world exports
U.S. Pork Trade (as a % of production)

NPPC Goals
SFP Oversight Committee

- Diverse industry representation, with production focus
  - Establish SFP goals and objectives
  - Review SFP action plans
  - Assess SFP Team progress
  - Serve as prototype Swine Health Council
SFP Oversight Committee

- Dr. Gregg Bevier. Pig Improvement Company
- Dr. Terry Coffey. Murphy Farms
- Mr. Robert Dircks. Dircks Farms
- Dr. Mark Engle. Audubon Manning Veterinary Clinic
- Mr. James Lewis. Prairie Lake Farms
- Dr. Bret Marsh. Indiana State Board of Animal Health
SFP Oversight Committee

- Dr. Robert Morrison. University of Minnesota
- Dr. Kevin Petersburg. USDA: APHIS: VS
- Dr. Michael Terrill. Clougherty Packing Co.
- Dr. William Van Alstine. Purdue University
- Dr. Teddi Wolfe. Roche Animal Nutrition and Health
- Dr. Paul Yeske. Swine Veterinary Center
Information Collection Tools

- Oversight Committee
- Interviews
- Focus groups
- Symposiums, conferences, meetings
- Producer / practitioner specialty committees
- Site visits
- Surveys (mail, website)
Information Sources

- **Advisory**
  - Swine Futures Project Oversight Committee (project oversight)

- **Industry**
  - MI Pork Producers Alliance (focus group)
  - NPPC Pork Academy (focus group)
  - NPPC Quality and Safety Summit (focus group)
  - AASP Food Safety Committee (focus group)
Information Sources

Industry continued…
- Trichinae Certification Steering Committee (discussion group)
- Acute PRRS Investigation Committee (evaluation group)
- Practitioner web survey
- Producer web survey
- U.S. Poultry and Egg Association (site visit)
Information Sources

- Allied Government
  - FAS (site visit)
  - ORACBA (site visit)
  - Centers for Disease Control (site visit)
  - State Veterinarians (mail survey, focus group)
  - AMS Meat Grading & Certification (discussion group)
  - FSIS Office of Field Operations (discussion group)
  - FSIS Training Center (site visit)
  - FSIS Pathology Laboratory (site visit)
Information Sources

- APHIS
  - APHIS Area Veterinarians In Charge (mail survey, focus group, interviews, site visits)
  - APHIS Regional Directors (interviews)
  - APHIS TST (site visit)
  - APHIS NCIE (site visit, interviews)
  - APHIS EP (site visit)
  - APHIS CEAH (discussion groups)
  - APHIS NAHP (site visit)
Information Sources

International
- Farm Assured British Pigs, UK (site visit)
- Danish Quality Assurance & *Salmonella* program, Denmark (site visit)
- IKB Quality Assurance, Netherlands (site visit)
- Canadian Pork Council (site visit)
- Canadian Food Inspection Agency (site visit)
Emphasis Areas

- Quality assurance
- Surveillance
- Emerging animal issue detection / response
Quality Assurance Services

- National Certification
- Auditing
- Export Certification
Quality Assurance (QA)

Reasons for Action

- HACCP implementation in plants
- Consumer quality and safety demands
- Export expectations - entry barriers
- Specialty markets developing
- “Industrialization” of pork industry
- “Business” versus “life-style” clientele

“Someone will provide the service...”

APHIS?
Quality Assurance - Drivers

- Industry initiatives
  - 4 plants - requiring PQA Level III\textsuperscript{SM} in 1998
  - 5 plants - trichinae certification interest
  - 2 pork companies - production audit interest

- European competition

- Agricultural Marketing Service
Certification - Attributes

- National in scope
- HACCP-based
- Based on uniform standards
- Verification of adequate processes
- Predictable outcome
- Industry-wide expectations
- Third party verified
Certification - AVIC / RD Views

- Few service requests
- Nurtured and grown
- Early investment risk required
- Lack clear mandate
Certification - AVIC / RD Views

- FSIS partnering dilemma

- QA is preharvest… hands off!

- APHIS watches, while QA passes by

- APHIS should aggressively deliver QA
Certification - Producer / Practitioner Views

- Need - industry defined
- Objective - government defined
- Criteria - predominantly industry defined
- Structure - industry defined
- Participation - packer-driven
- Incentive - to remain competitive
12 Step Process - Program Development

- Defined structure to “filter” requests
  - Likelihood of success
  - Additional resources needed

- Mechanism for program development
  - Uniform evaluation of current status
  - Defined science / field data assessment
  - Uniform process for implementation
  - Prioritize development resources

- Builds industry commitment
12 Step Process - Program Development

- Assess program needs
- Assess knowledge base
- Assess market impact
- Assess industry motivation
- Assess research / technology needs
- Conduct pilot demonstration
- Review pilot / refine process
- Assess pilot acceptance
- Expand revised pilot to other locations
- Pilot results to develop national program standards
- Implement a national program
- Monitor, and modify program, as needed
National Certification Recommendation

- Finish implementing the national trichinae herd certification program
  - *The trichinae herd certification effort will serve as the pilot for subsequent national, on-farm, production process-oriented, certification programs.*
National Certification - Action Steps

- Commit to providing a PHFS service
- Provide AVIC a clear QA mandate
- Fill trichinae program leader position
- Develop CFR to support trichinae certification
- Develop FY2000 budget to certify herds supplying 5 plants
National Certification - Action Steps

- Establish USAHA / LCI trichinae committees
- Establish FSIS trichinae MOU
- Develop “Qualified” AV classification
- Develop trichinae program support materials
- Audit Staff provide Agency QA clearinghouse function
Quality Assurance Services

- National Certification
- Auditing
- Export Certification
Auditing - Attributes

- Two components: standardization / auditing
- Based on ISO-9000
- Buyer and supplier negotiate standards
- Supplier meets proscribed standards
- 3rd party verifies process compliance
- Process produces anticipated product
- Consistent reporting mechanisms
Auditing - Agency Applications

- Standardize / audit client systems

- Designing certification standards

- Auditing Agency internal systems
  - Surveillance systems
  - Emergency response mechanisms
Auditing Recommendation

- Develop and market the service of standardizing and auditing productions systems
Auditing - Action Steps

- Develop ISO / HACCP-based service
- Establish an APHIS Auditing Staff
- Conduct APHIS QA regional workshops
- Select / cultivate APHIS specialists
- Pilot auditing service in 4 Area Offices
- Separate standards / audit services
- Develop employee auditing expertise
Quality Assurance Services

- National Certification
- Auditing
- Export Certification
Export Certification

- Large demand, dynamic service
- Going well, could be enhanced...
  - Improve depth of service delivery
  - Increase technical knowledge
  - Provide auditing tools
  - Clarify standards - decrease variability
- On-farm audit skill set applicable
- Cost recovery… user fees readily accepted
Export Certification Recommendation

- Apply audit and certification practices, and other suggestions made to the SFPT, to enhance export certification service delivery
Export Certification - Action Steps

- Develop subject matter experts
- Develop personnel standardization / auditing skills
- Devote personnel to developing, marketing, and delivering service
- Improve liaison with non-traditional industries
DISCUSSION
Emphasis Areas

- Quality assurance
- Surveillance
- Emerging animal issue detection / response
Conduct surveillance for the prevention and control of diseases affecting the U.S. pork industry.
Definition of Surveillance

- An ongoing process of collection, analysis and interpretation of health related events occurring in a population; followed by timely dissemination of results to those involved in the planning, implementation, and/or evaluation of prevention and control measures.

- Surveillance is different from surveys and screening programs.
Characteristics of Effective Surveillance

- Coordinated
- Comprehensive
- Integrated
Objective A:

For VS to provide the infrastructure needed to implement a comprehensive plan for surveillance.
Coordinated Surveillance

Action steps for creating infrastructure

- Create a core surveillance staff
- National Swine Surveillance Coordinator (NSSC)
- National Swine Health Liaison (NSHL)
Coordinated Surveillance, cont.

Action steps for creating infrastructure

- Address veterinary diagnostic laboratory issues
  - Computerize results
  - Standardize diagnostics
  - Cooperation between labs

- Support national swine serum bank
Comprehensive Surveillance - Objectives

- Objective B: FAD
- Objective C: TRADE
- Objective D: DISEASE CONTROL
- Objective E: EAD
Objective D:
Expand and coordinate the use of surveillance to assess effectiveness of partnership efforts to control and prevent diseases affecting swine.

Objective E:
Employ broad-based coordinated surveillance to identify new and emerging diseases.
Objective B: For VS to expand and improve surveillance efforts to prevent intrusion of foreign animal diseases affecting the pork industry.

- Protect success of national eradication campaigns
- Manage risk in face of trade liberalization
- Growing divergence in herd health status
- High volume of personal travel, commerce, and animal movement
Comprehensive Surveillance

- Apply rigors of surveillance to improve current efforts to detect presence of a FAD on domestic soil.

- Design surveillance program to monitor disease status in trading partners and neighboring countries.

- Design surveillance program to monitor risks associated with introduction of FAD.
Comprehensive Surveillance

Objective C:
Facilitate access to foreign markets through surveillance of trade related diseases at the national, regional, and state level.

- Continue development of NAHRS to document national status of OIE List A and B diseases.
- Develop additional active surveillance programs to describe prevalence and patterns of trade related diseases.
- Lead and facilitate epidemiological research to define statistical approach needed for policy makers to assess evidence for absence of disease in a population.
Objective D:
Expand and coordinate the use of surveillance to assess effectiveness of partnership efforts to control and prevent diseases affecting swine.

- Conduct surveillance to assess progress in national eradication campaigns.
- Assess progress in education campaigns for control of selected diseases associated with swine.
- Assess progress in reduction of food-borne pathogens associated with swine.
Comprehensive Surveillance

Objective E:
Employ broad-based coordinated surveillance to identify new and emerging diseases.

- Deploy a portfolio of surveillance programs to describe trends in hazards, exposures, and health conditions associated with swine.

- Design and conduct surveillance to recognize emergence of new pathogens associated with swine.
Objective F:
For APHIS to form strategic links with users of surveillance information for control and prevention of disease affecting swine.

- Swine Health Council (SHC)
- Swine Health Advisory Committees (SHAC)
- NAHMS Swine 2000 index farms
Integrated Surveillance - Composition of SHC

- APHIS
- NPPC
- AASP
- FSIS
- ARS
- other government
- allied industry
- AAVLD

USDA
Integrated Surveillance - Function of SHC

- A forum for government and allied industry to jointly digest information on disease issues based primarily on objective surveillance data and needs assessment activities.

- Formulate long-term health strategies for addressing the top concerns.
Integrated Surveillance - Composition of SHAC

- VS swine specialist
- Practitioners
- Researchers
- Laboratory diagnosticians
- Extension
- Producers
Integrated Surveillance - Function of SHAC

- Formation of networks
  - Between government and allied industry
  - Within APHIS

- Coordinate surveillance and needs assessment activities

- Graduated response to EAD

- Collaboration among multiple disciplines and agencies
Integrated Surveillance

- NAHMS Swine 2000 index farms
  - A tool to conduct population-based surveillance
  - A basis for collaboration with researchers and government agencies
  - A backbone for responding to EAD with epidemiological information
  - An opportunity to obtain surveillance data for importing countries
  - Integrates surveillance activities at State and National levels
DISCUSSION
Emphasis Areas

- Quality assurance
- Surveillance
- Emerging animal issue detection / response
EAI Definition

“Any sudden, negative economic impact related to the appearance of a disease which could have a direct impact upon productivity, present a real or perceived risk to public health, or present a real or perceived risk to a foreign country which imports from the United States.”
Impact of EAI - Industry

- Affect producer livelihood and competitiveness

- Rapid movement through industry
  - Movement during production stages
  - Genetic sourcing

- Access to export markets
Impact of EAI - APHIS

- Past/Current Activities
  - Emerging Issues Working Group
  - Emerging Animal Health Issues Exchange
  - Center for Emerging Issues Reports
  - Early Response Team – Acute PRRS

- Needed Activities
  - Define division roles / responsibilities.
  - Coordinate information collection.
  - Develop response capabilities.
Key EAI Questions

- What are the sources for intelligence information on emerging diseases?
- How is intelligence information collected from these sources?
- Who collects this intelligence information?
- How is a decision made that the intelligence information is signaling an emerging disease?
Key EAI Questions, cont.

- What are the choices for a response?
- Who determines what the response should be?
- How is the response evaluated?
EAI Detection - Sources of Information

International

- IS
  - 28 countries

- FAS
  - >100 countries

- Military
EAI Detection - Sources of Information

Domestic

- VS and State Field Force
- State Swine Health Advisory Committees
- Extension Service
- Food Safety and Inspection Service
- Internet
- Practitioners
- Diagnostic Laboratories/Researchers
Public Health

- Centers for Disease Control and Prevention
  - VS staff
  - Programs to detect emerging diseases in humans
EAI Detection - Challenges

- Case Definition
- Reporting Patterns
- Responsibility for Coordinating
- Proprietary Concerns
- Diagnostic Laboratory Issues
EAI Detection - Challenges

- Confidentiality/Government Involvement
- Legal Authority
- Budget
- State Government Participation
- International Markets
EAI Detection - Summary

- A comprehensive surveillance system is needed.

- Most sources of information already exist but need to be networked.

- A central process for gathering, reviewing, and evaluating EAI information is needed.
Response Options - EAI in the U.S.

- No response
- Educational programs
- Basic and applied research
- Field investigative studies (state, regional, national)
Response Options - EAI in the U.S., cont.

- Certification programs for preventive practices and/or health status

- Interim control measures for affected animals/herds
Response Options - EAI *outside* U.S.

- Monitor situation in affected country through available information
- Send technical team to affected country to review and develop expertise
- Surveillance in U.S.
Response Options - EAI outside U.S., cont.

- Import policy revisions for animals and products
  - Require to be identified and monitor after arrival
  - Refuse importation from affected country
  - Require testing of animals and/or herd before importation
  - Apply pre-embarkation quarantine control measure

- Other work groups review
Swine Health Steering Committee - Charge

1. Review collected information.

2. Determine when response is needed.

3. Develop structure of response.
Swine Health Steering Committee - Composition

- Subset of Swine Health Council
- NPPC
- AASP
- AAVLD
- NSSC, NSHL
- OSS, CEAH, NVSL, VSMT
- VS Field Personnel
- USAHA
- ARS, CSREES, FSIS
EAI Response - Challenges

- Case Definition
- Structure of Response
- Selection of Appropriate Response
- Authority/Indemnity
- Budget
- Reporting Patterns
- Media/Communications
EAI Response - Decision Tree Questions

- Is this a new agent or disease?
- Does it affect public health?
- Is it transmitted in meat products?
- Does it affect swine health?
- Is this a primary pathogen?
EAI Response - Decision Tree Questions, cont.

- What is the scope of the problem? Does it occur in the U.S.? If so, what is its geographic distribution?

- How is it being diagnosed?

- Do we know how to control it at the farm?

- How long has it been here?
Summary - EAI Response

- A collaborative multi-disciplinary team of industry and government professionals is needed to evaluate incoming EAI intelligence information and select an appropriate, measured response.
- The response mechanism must be flexible to allow change as more information becomes available.
- The response may be at a local, state, or national level.
EAI Detection and Response Recommendations

- Establish a system for the rapid detection of EAI.

- Develop a collaborative process to appropriately respond to EAI.
EAI Detection and Response - Action Steps

1. Establish the infrastructure necessary for VS to address EAI.
   - Assign a task force to establish a VS framework for detection and response activities for EAI.
     - Responsibility for EAI detection
     - Responsibility for EAI response
     - Roles of other APHIS and Federal agencies
     - Staff resources/position descriptions
     - Budget needs
EAI Detection and Response - Action Steps, cont.

- Appoint a task force consisting of State and Federal government representatives, laboratory diagnosticians, practitioners, and producers to address the challenges associated with EAI detection and response.
  - Acute PRRS evaluation
  - Legal authority, confidentiality needs, State government participation, industry participation, criteria for implementation of import restriction options, criteria for movement controls, and procedures for handling trade concerns.
  - Develop criteria to determine the presence of an EAI and selection of an appropriate response. Organize in a decision tree structure.
Develop a budget category with discretionary spending capabilities to support EAI activities based on VS task force recommendations.

- Include laboratory services, resources for epidemiological studies or control measures, targeted surveillance, and technical teams.
2. Develop components of an EAI detection system.

- Conduct active laboratory-based surveillance for detection of emerging infections of swine.
  - Utilize the veterinary diagnostic laboratories (VDL) task force findings – Action Step 4 in Surveillance Services.
  - Determine roles and responsibilities of Federal research and diagnostic laboratories in identifying new pathogens and conducting EAI research.
Conduct active practitioner-based surveillance for detection of emerging infections of swine.

- Pilot test the use of general indicators of diagnostic challenges and severe disease in a practitioner surveillance system.
- Conduct surveys to assess the reporting patterns of producers, practitioners, and laboratory diagnosticians for the general indicators.
- Pilot test the feasibility of a diagnostic laboratory form checkbox to note a potential EAI by the practitioners at time of sample submission.
3. Develop system to collect information from a variety of sources.

- Pilot test a website for practitioners to report EAI suspect information, and promote website existence to veterinary audiences to test its feasibility.

- Develop in six states (IA, IL, IN, MN, NC, WI), procedures for State and Federal VMO’s to systematically poll practitioners on suspect EAI events.
Pilot test an EAI reporting mechanism in the six Swine Health Advisory Committees as in Action Step #20, Surveillance Services.

Evaluate the usefulness of scanning list-servers and meeting proceedings for intelligence information on EAI.

Continue evaluation of the Pathfinder system for detection of EAI in international literature.
EAI Detection and Response - Action Steps, cont.

- Pilot an EAI reporting system with USDA representatives located in three different countries or regions.
- Explore networking with the Extension Service to develop EAI reporting.
- Explore networking with the military sources on intelligence information on EAI.
4. Develop a Swine Health Steering Committee (SHSC) from the membership of the Swine Health Council.

Conduct a “test exercise” at the first meeting of the SHSC to evaluate the effectiveness of the operational plan for the Committee.
5. Develop a plan for dissemination of educational information on EAI with National Pork Producers Council and American Association of Swine Practitioners.

6. Develop EAI research strategy with Agricultural Research Service and Cooperative State Research, Education, and Extension Service and develop an EAI reporting mechanism for the research community.
DISCUSSION
Future Program Attributes - Government Perspective

- Collaborative and partnership-oriented
- Customer service driven
- Innovative and flexible
- Entrepreneurial
- Specialized
- Committed to education
Future Program Attributes - Industry Perspective

- Partnership oriented
- Cooperation within industry
- Receptive to government involvement
- Market-driven/science-based
- Information sharing/access for collective industry good
Acknowledgements

Organizational Acknowledgements

- National Pork Producers Council
- Iowa State University
- APHIS: VS: Center for Animal Health Monitoring
- APHIS: VS: Center for Emerging Issues
- APHIS: VS: National Animal Health Programs
- APHIS: Program Planning and Development
Acknowledgements

Individual Acknowledgements

- Heather Cooney (APHIS: LPA)
- Mary Ann Hines (APHIS: LPA)
- Tom Cramer (APHIS: VS)
- Julie Marquis (APHIS: PPD)
- Dawn Ragione (APHIS: PPD)
- Dawn Schu (APHIS: LPA)
- Kevin Walker (IICA)
- Steve Weber (APHIS: VS)
- Janet Wintermute (APHIS: LPA)
Acknowledgements

Special Acknowledgements
- Maria Calain (APHIS: OPD)
- Brenda Paul (National Pork Producers Council)
- Dale Rendahl (APHIS: PPD)
- Lynn Thomas (APHIS: VS)
- Kenneth Waters (APHIS: PPD)
- Robert Werge (APHIS: PPD)
THAT’S ALL, FOLKS