

The National Animal Health Laboratory Network in the USA

9th OIE/WAVLD Seminar
Veterinary Laboratory Networks and Networking

Madrid, Spain
June 19, 2009

Barbara M. Martin, USDA, APHIS, VS, NVSL



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009



- History and Background
- Current Activities
- Surveillance Activities
- Future Activities



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

The National Animal Health Laboratory Network

- Formed in 2002
- Is a group of State funded veterinary diagnostic labs that deal with diseases of animals including endemic, exotic, zoonotic, and emerging diseases
- Is a **partnership** between:
 - USDA (APHIS and CSREES)
 - AAVLD
 - NAHLN Laboratories



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

The Purposes of NAHLN

- Early detection
(targeted surveillance based on population density & risk)
- Rapid response
(surge capacity to test outbreak samples)
- Appropriate recovery
(large numbers of samples tested to show freedom)



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Founding Principles and Features of NAHLN

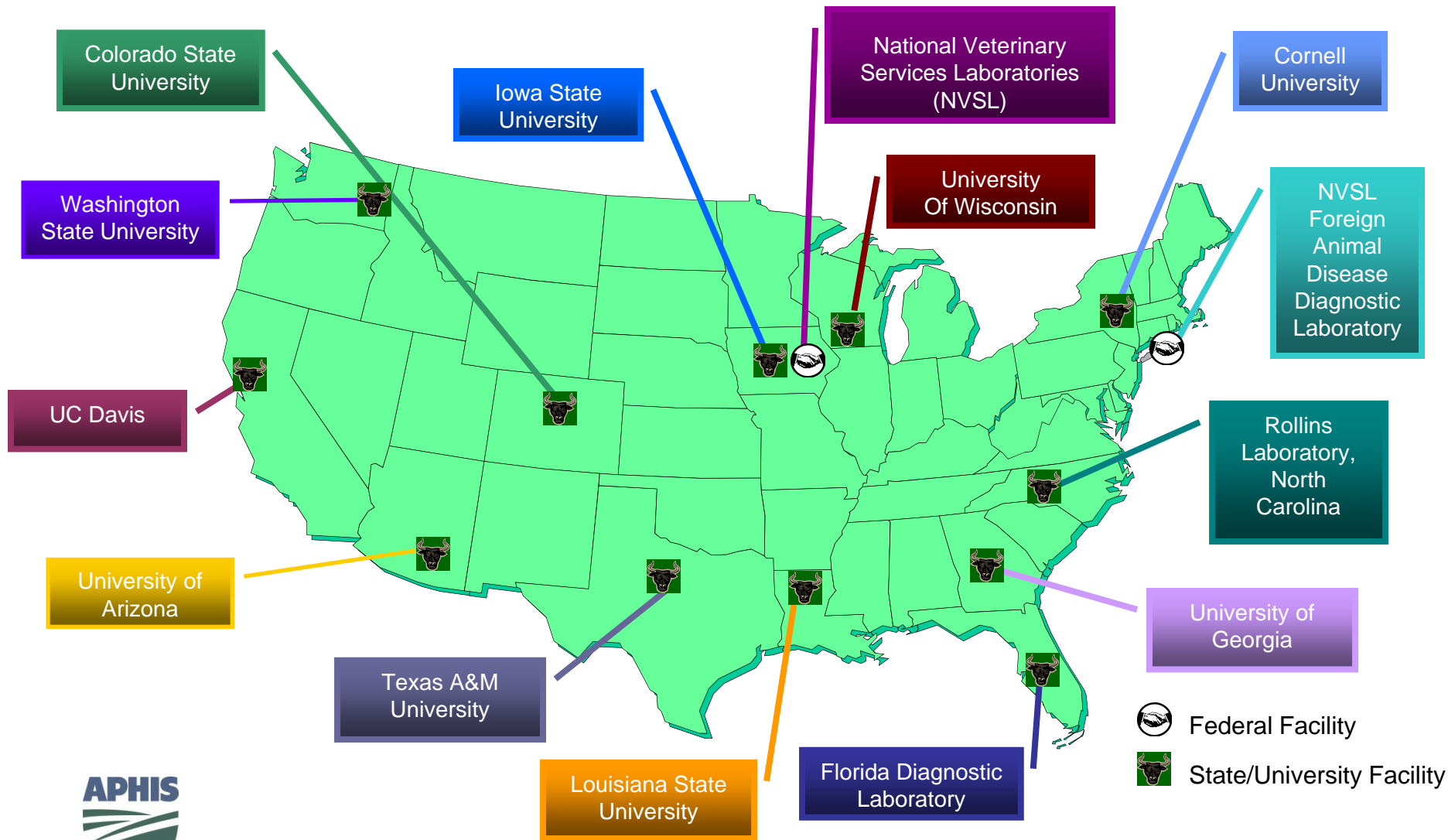
- Quality Management System
- Standardized, rapid diagnostic techniques
- Secure communication, alert, reporting system
- Trained personnel, modern equipment
- Quality standards, proficiency testing
- Adequate facility biosafety/biosecurity levels
- Scenario testing



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

2002 - NAHLN Original Laboratories



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Current Activities



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

NAHLN Quality Policy

- All NAHLN laboratories must be fully accredited
 - AAVLD Essential Requirements
 - OIE or ISO 17025 Standard
- If not accredited
 - Quality System consistent with AAVLD/OIE/ISO 17025 standards
 - Participate in regular site visits
 - Special approval by USDA/APHIS, VS
- Must agree to NAHLN compliance audits and/or site visits upon request.



NAHLN- A State and Federal Partnership to Safeguard Animal Health

NAHLN Information Technology System

- Established a system with data and messaging standards to ensure accurate and consistent diagnostic information is quickly and securely transmitted.
- Increased emphasis on electronic results messaging
 - CSF and AI messaging in process



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Train the Trainer

- 2009
 - Formalize processes
 - ICLN training working group
- 2008
 - High Throughput System Training
- 2007
 - Increase personnel trained and PT'd to \approx 200
- 2006
 - Cross training for PCR accepted across diseases
 - Interlaboratory Training
- 2005
 - Increased the number of trained labs from 12 to 28 and personnel from 24 to \approx 100



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

NAHLN Methods Technical Working Group

- **Purpose - to provide input on various aspects of methods validation and approval including:**
 - Review of available methods and associated gaps
 - Identification of potential new technologies
 - Validation criteria, dossier review and assay approval process
 - Equivalency of modified methods or for adaptation to new platforms
 - Continual performance assessment of assays
 - Development of performance characteristic summary documents for NAHLN assays
- **Quarterly meetings and / or conference calls**



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

HPAI Tabletop Exercises

- 38 Regional presentations
- Participants
 - NAHLN laboratory personnel
 - State Animal Health Officials
 - VS Field Staff and AVICS
 - Industry
 - Public Health
 - Other interested groups
- Individual after action reports
- Meta analysis
 - Finalized report
 - Prioritized actions to address gaps
 - Working groups



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

AI

ND

BSE

VSV

Surveillance Activities

SIV

CWD

Scrapie

CSF



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Classical Swine Fever

- Plan developed by National Surveillance Unit with stakeholder input
 - Target clinical signs, feral swine, slaughter condemned
 - All high risk states involved
- Implemented – January 2006
 - >27,000 samples tested
 - 36 laboratories participating
- Data submission
 - Web based and electronic messaging
- Improved ability to respond to an adverse animal health event



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Swine Influenza Virus

-Surveillance Goals

- Determine if Novel H1N1 exists in commercial swine
- Timely detection of new influenza virus strains
- If present, determine virus distribution
- Determine genetic characteristics for vaccine and diagnostic development

-36 Laboratories

-Testing Algorithm

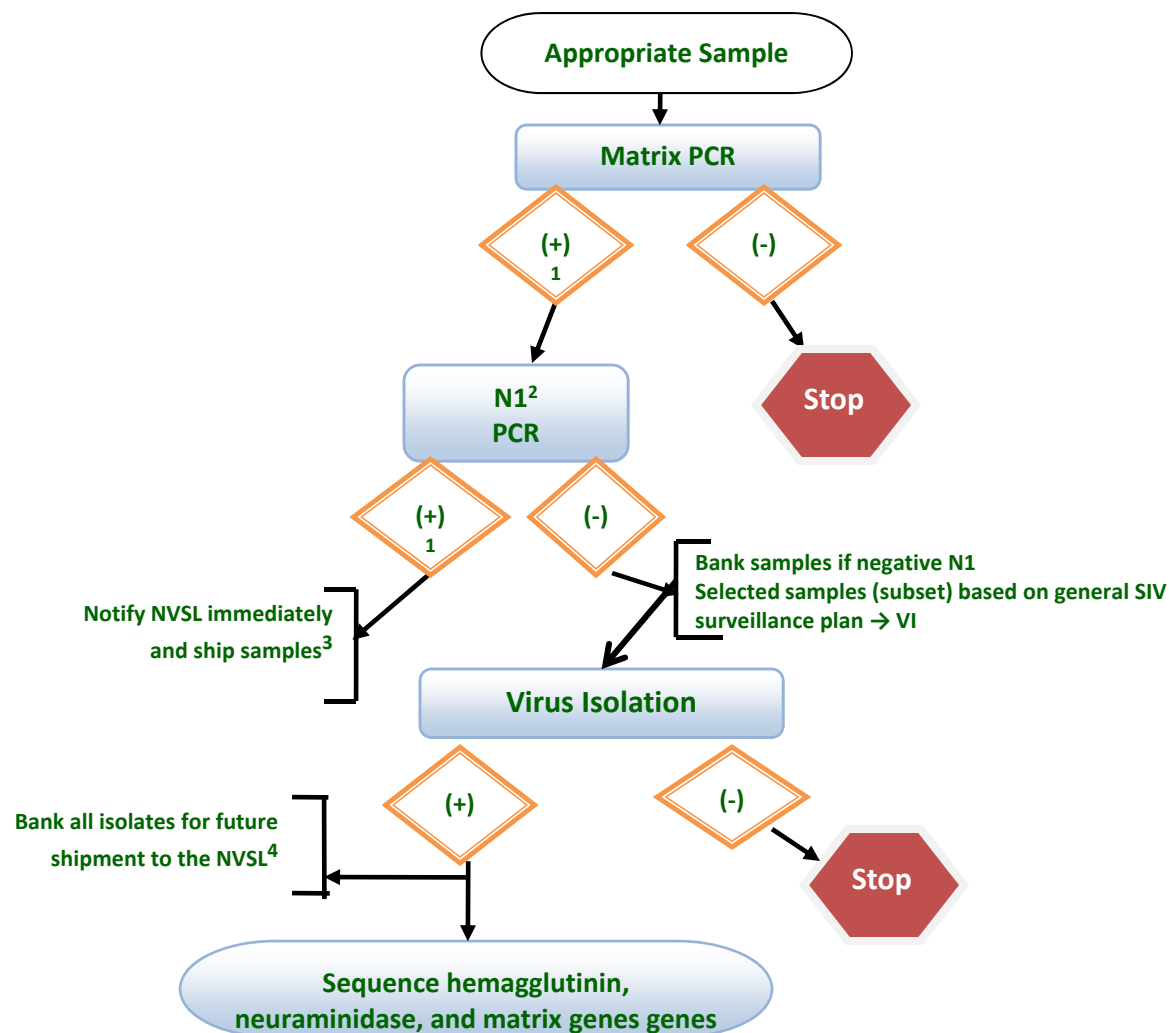
- Matrix and N1 PCR
- VI
- Sequencing



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

National Animal Health Laboratory Network (NAHLN) Swine Influenza Virus Surveillance Testing Algorithm



NAHLN- A State and Federal Partnership to Safeguard Animal Health

Upcoming Activities



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Upcoming Efforts

- FMD Negative Cohort
 - Laboratory based submissions
 - Real-time PCR
- Pseudorabies Surveillance
 - Laboratory based submissions
 - Serology
- FMD Tabletop Exercise
 - Planning meeting to determine objectives
 - Establishing timelines and delivery dates



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Successes of the NAHLN

- Strategically combines the infrastructure and expertise in the state veterinary diagnostic laboratories and the National Veterinary Services Laboratories.
- Established the animal health laboratory backbone of the United States emergency response and recovery program.
- Implemented national, standardized surveillance for high priority diseases.



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

Conclusions

- Increased levels of coordination and collaboration
- Tremendous progress in the ability to respond
- Much remains to be accomplished
 - Use data generated to prioritize actions
- Partnerships are key to the success of NAHLN!



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009

NAHLN Information

- Website:

http://www.aphis.usda.gov/animal_health/nahln

- Brochure and information cards
- NAHLN Quarterly Newsletter

- Contact information:

E-mail nahln@aphis.usda.gov or phone 515-663-7731



NAHLN- A State and Federal Partnership to Safeguard Animal Health

June 2009



NAHLN- A State and Federal Partnership to Safeguard Animal Health