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NAHLN Emergency Preparedness Update



AAVLD–Laboratory Emergency Management Committee

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November 12, 2010

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Presentation Overview



- Background
- 2010 Preparedness Activities
- 2011 Preparedness Activities

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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

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Founding Principles and Features of NAHLN

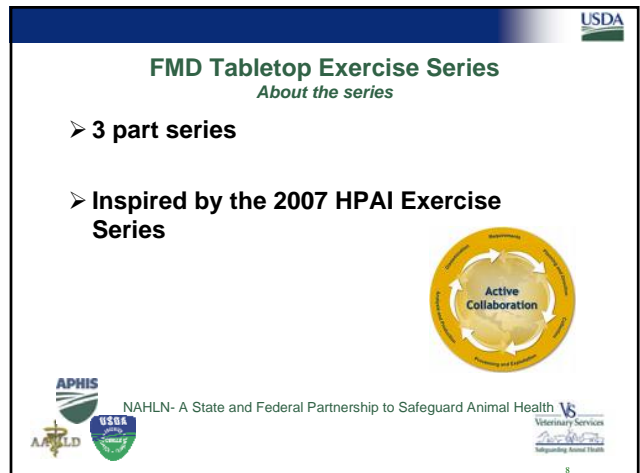
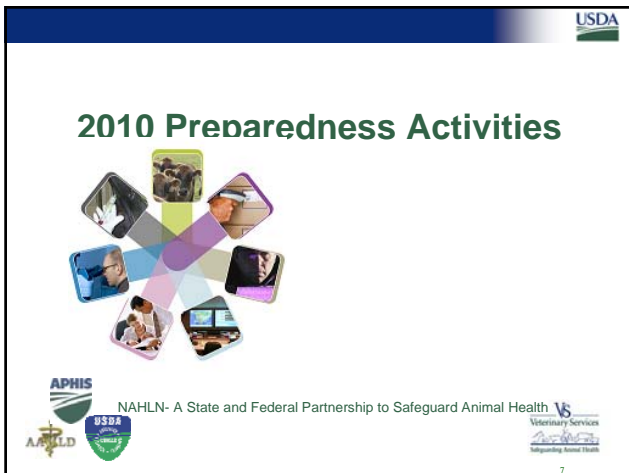
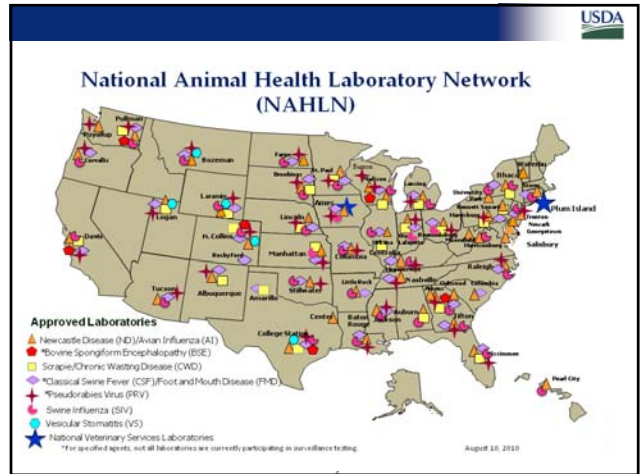
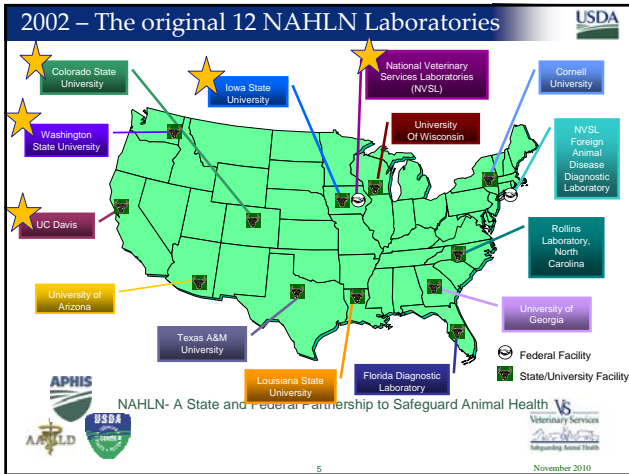
- Standardized, rapid diagnostic techniques
- Secure communications alert and reporting system
- Trained personnel, modern equipment
- Quality standards, proficiency testing
- Adequate facility biosafety/biosecurity levels
- Scenario testing
- Laboratory review and approval process


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FMD Tabletop Exercise Series


About the series

VS policy-level workshop

- Representatives from NCAHEM, NVSL FADDL and NAHLN, NAHPP, and NSU.
- Primary goal – identify and discuss the roles and responsibilities of decision-makers, and solutions to policy questions related to NAHLN laboratory response during an FMD outbreak.
- Result of discussions – applied and further examined in the subsequent components.



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FMD Tabletop Exercise Series


About the series

Kansas State tabletop exercise

- Hosted by National Agriculture Biosecurity Center at Kansas State University
- Objectives-- to examine:
 - ❖ early, mid, and late-response activities regarding the decision-making process for NAHLN activation and de-activation,
 - ❖ testing capacity for the Kansas and Iowa NAHLN labs,
 - ❖ surveillance sample collection protocols and testing algorithms during different phases of the outbreak,
 - ❖ communication and coordination processes.



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FMD Tabletop Exercise Series


About the series

15 separate follow-up exercises

- Single or multiple states across country
- Focused on actions, decisions and communication by:
 - ❖ NAHLN laboratories,
 - ❖ SAHOs,
 - ❖ VS Area officials and field staff,
 - ❖ Additional units within VS--NCAHEM, VS regions and NSU, wildlife officials, and industry.



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FMD Tabletop Exercise Series

Preliminary Findings

5 General Areas of Preliminary Findings

- NAHLN Laboratory Preparedness
- Communication
- Capacity
- Diagnostic Development/ Validation
- Decision-Making





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FMD Tabletop Exercise Series

Preliminary Findings

Laboratory Preparedness

- Increased understanding of function and benefits of NAHLN
- Need NAHLN Disease Outbreak guidelines that provide more information and decision points on:
 - ❖ Use of BSL 2 vs. BSL 3 space
 - ❖ Compliance with select agent rule
 - ❖ Use of proficiency tested personnel
 - ❖ Timelines for reagents and support by other labs
 - ❖ Process for financial reimbursement
- Need NAHLN Laboratory and State Emergency Notification Plans


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FMD Tabletop Exercise Series

Preliminary Findings

Communication

- Generally, great communication among labs, State and AVIC offices.
- Early and frequent coordinated communication of outbreak events throughout network is vital.
- NAHLN labs, State and APHIS field officials need more education/information from VS on:
 - ❖ VS Memo 580.4
 - ❖ National Veterinary Stockpile support
 - ❖ Indemnity decision-making
 - ❖ Surveillance and movement testing guidelines
 - ❖ Wildlife testing




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FMD Tabletop Exercise Series

Preliminary Findings

Capacity

- NAHLN labs well prepared for early outbreak testing capacity.
- Sustainability during outbreak recovery will be a challenge.
 - ❖ Need information on long term supply of probe, primer and laboratory supplies.
 - ❖ Need information on testing algorithm when vaccination is used and during recovery.
- Need a real-time estimate of network capacity.


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Preliminary Findings

Diagnostic Development/Validation

- Several NAHLN labs interested in assisting with efforts.
- Multiple needs identified for assays deployable to NAHLN labs including:
 - ❖ Validated test for FMD in milk
 - ❖ Antibody ELISA
 - ❖ Validation of pooled sample techniques
 - ❖ DIVA antibody test capability
 - ❖ Validation of tests in wildlife




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FMD Tabletop Exercise Series


Preliminary Findings

Decision-Making

- VS Memo 580.4 used as guidance.
- Variety of decisions made by SAHOs and AVICs:
 - ❖ strategy on splitting samples and outbreak surveillance greatly effects NAHLN lab testing volume and surge needs,
 - ❖ decision on when NAHLN lab becomes involved/notified effects lead time for lab to prepare for onset of outbreak.
- Need more information on VS decision-making processes.

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Next Steps

- NVSL tabletop exercises to increase preparedness emphasizing:
 - ❖ decision making
 - ❖ primary and support role activities
 - ❖ interaction with and support of NAHLN laboratories
 - ❖ collaboration and communication
- Follow-up VS policy exercise
- After action reports for individual exercises and overall series



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Diagnostic Development

Ongoing work in collaboration with FADDL

- Enhancements to high-throughput diagnostics for FADs
 - ❖ Focus on FMD and CSF with AI compatibility
- Enhancements to high-throughput serology for FADs
 - ❖ Focus on FMD, but compatible with CSF
- Validation of real time PCRs for FMD, ASF and Rinderpest
 - ❖ Negative Cohort studies in NAHLN labs

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Diagnostic Development


Ongoing work in collaboration with FADDL

- Chemistry evaluation of rT-PCR
- Pilot of CSF ELISA in 1 NAHLN lab
- Methods comparison of CSF PIADC assay on SmartCycler
- Validation of CSF ELISA for meat juice samples



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NAHLN IT System

- Additional laboratories messaging into NAHLN IT system in 2010
 - ❖ 7 additional laboratories messaging (3 CSF and 4 AI)
 - ❖ Agreements with 12 Member Labs
 - Funding provided to develop ability to send and receive messages
- Expanding message capability
 - ❖ SIV message
 - ❖ CSF ELISA message



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ICLN Participation

- Continued Participation in Integrated Consortium of Laboratory Networks
 - ❖ Multiple interagency preparedness exercises
 - ❖ Focus on communication, information sharing protocols
 - ❖ Cross-network methods repository and laboratory logistics preparedness recommendations



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2011 Preparedness Activities







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Laboratory Capacity Estimation Program

- Collaboration between NAHLN/FAZD/AAVLD
- Software tool for evaluating/monitoring NAHLN capacity
 - ❖ Daily testing and surge
- Project Objectives:
 - ❖ Improve knowledge in individual and overall NAHLN diagnostic testing
 - ❖ Prioritization of resources
 - ❖ Serve as critical tool for managing a large number of diagnostic tests simultaneously



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VS Memo 580.4 Training

- Work with VS NCAHEM and PDS to improve understanding, use and implementation of VS Memo 580.4
 - ❖ APHIS and State field personnel
 - ❖ Lab personnel



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Diagnostic Development

Planned projects in collaboration with FADDL

- Deployment of FMD Serology to NAHLN labs
- Optimization of RNA extraction for early detection of FMD virus in milk from experimentally infected cows
- Enhancements to Molecular Diagnostics for FMD and CSF
- Validation of real time PCRs for Bovine Contagious Pleuropneumonia and Lumpy Skin Disease
 - ❖ Continuation of Negative Cohort studies in NAHLN labs



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NAHLN Portal

- Development in cooperation with KSU and UMN
- 5 modules
 - ❖ Secure mechanism to electronically comment on and release SOPs.
 - ❖ Laboratory directory including information on physical space, personnel and equipment.
 - ❖ Mechanism to monitor assay performance and report proficiency test results.
 - ❖ Mechanism to train others in the validation process.
 - ❖ Work Group space to post documents and schedule meetings and calls.
- User acceptance testing invitations
 - ❖ Goal to complete in 2011



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NAHLN Program Support for Laboratories

- Finalize NAHLN operational plan
- Disease outbreak guidelines
 - ❖ Use of BSL 2 vs. BSL 3 space
 - ❖ Compliance with select agent rule
 - ❖ Use of proficiency tested personnel
 - ❖ Timelines for reagents and support by other labs
 - ❖ Process for financial reimbursement
- NAHLN laboratory triage template
- NAHLN laboratory annex to State Outbreak SOPs



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NAHLN Policy and Procedures

- Begin codification process for NAHLN
- Continue to develop SOPs for NAHLN program operation procedures



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2011 NAHLN IT Priority Activities

- Address changes required by Certification and Accreditation (C&A) Review
- Training for Member labs to begin messaging
- Development of order messaging
- Messaging for and/or integration of existing databases:
 - ❖ SIV
 - ❖ Scrapie/CWD
 - ❖ PRV
 - ❖ FMD
- Messaging for additional diagnostic assays technologies
 - ❖ ELISA
 - ❖ IHC
 - ❖ VI and sequencing



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Conclusions

Continued advancements in NAHLN's preparedness through:

- Scenario testing
- Expanding partnerships
- Technology and diagnostic developments
- Taking action on feedback and lessons learned



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Questions?










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