

NATIONAL PLANT DIAGNOSTIC NETWORK

FIVE-YEAR REVIEW

Report Of The Review Panel

SUMMARY OF RECOMMENDATIONS FROM THE REVIEW

June 12, 2007

Summary of Recommendations from the Review

(Note: The following section is meant to be a stand alone summary document to accompany the Executive Summary, compiling lists of recommendations from all sections)

A. DIAGNOSTICS

1. Action Items

- Develop a comprehensive accreditation and certification process for NPDN that identifies minimum standards for accreditation. The quality management system should meet NPPLAP accreditation criteria. It may be necessary to identify specific levels of accreditation in a quality assurance/quality management system. Identify how to obtain and distribute the resources necessary to attain and retain the levels of quality assurance required for accreditation.
- Establish data and practices for monitoring of laboratory workload against lab capacity, and develop a referral process for samples to effectively utilize the capacity of the Network in the event of a surge.
- Work with APHIS to establish a policy of rapid relay of confirmatory data and address issues of confidentiality of those data.

2. Specific Recommendations

- Plan effective linkages among the NPDN labs for enhanced surge capacity in a large disease outbreak or bioterror event. This must include an effective mechanism for referral of overload samples when a lab reaches capacity.
- Continue the close coordination with APHIS PPQ identification services to refine Standard Operating Procedures and to perfect Quality Assurance Systems.
- Increase coordination with laboratories run by state departments of agriculture.
- Better integrate the work of entomologists and weed biologists into the NPDN operation.
- Implement strategies for every laboratory to meet a high standard of chain-of-custody for samples and data, sufficient to support APHIS, state departments of agriculture, DHS, and law enforcement agencies for forensic investigations of intentional plant pest or pathogen introductions.
- Develop plans to work effectively among NPDN labs and with regional and state laboratories to prioritize diagnostic resources and specific disease assays. This should include state and APHIS CAPS surveys, as well as other monitoring and enforcement activities.
- Establish standard operating procedures that require documentation of sample test quality such as always documenting negative data and readings for positive and negative controls.
- Develop close communication and cooperation with NAHLN and with FERN via ICLN. Establish a committee to identify and prioritize diagnostic assays suitable for inclusion in the ICLN surge reagents program, and communicate surge capacity and deficiencies to the ICLN, and to identify sampling and sample handling issues for consideration by the ICLN Working group on environmental sampling and sampling method validation. The committee could also work in parallel to the ICLN efforts with reagent suppliers on methods, efficacy and supply availability in surge events.

3. Future Issues for Consideration

- In conjunction with APHIS, determine the feasibility of cooperating with the border countries of Canada and Mexico on methodology and data sharing of pests and pathogens of mutual concern.

B. EDUCATION and TRAINING

1. Action Items

- Incorporate first detector training into Certified Crop Adviser training workshops.

2. Specific Recommendations

- Expand first detector training to encompass Master Gardeners, CCAs, crop consultants, and other agribusiness professionals.
- Expand the current initiative on incident command system training to all regions
- Continue to develop, expand and refine online training tools.
- Establish Education & Training Committees in all regions.
- Better integrate training activities with extension, CCAs, other training (add modules) and continuing education programs.
- Develop and provide certifications and certification programs for various types of training.
- Strengthen links between diagnosticians and first detectors.

3. Future Issues for Consideration

- Consider providing a moderated online technical forum for conversation and information sharing, using open source forum software.
- Partner with law enforcement agencies and APHIS to develop deliberate pathogen outbreak scenario exercises to address the roles of regulatory agencies, state and local law enforcement agencies.

C. DATABASES/IT MANAGEMENT

1. Action Items

- Strong centralization of IT management is critical for the NPDN. The review team recommends that NPDN leadership designate a fulltime CIO with policy and oversight responsibilities for IT at the national and regional levels.
- The CIO should develop a national IT strategic plan detailing steps to achieve baseline IT capabilities and security at all network labs.
- The CIO should work with the Advisory Council and NPDN leadership to establish an information sharing policy, to include clear guidelines for data access by researchers and reporting of findings to end users.
- All persons with access to NPDN data must be trained in information security and the Privacy Act.

2. Specific Recommendations

- Use of a standardized national database should be implemented at the regional level. The accomplishments of regional levels should be acknowledged and valuable aspects of those

databases should be incorporated into the national database. This step is needed both for efficiency of workflow and overall database security. The PDIS database is the most fully integrated with the security measures and updates needed to maintain a national database. Local, state or regional lab management data systems should be required to meet a minimum set of criteria to ensure compatibility with PDIS and successfully interface with NPDN systems, including PIPE.

- Staffing needs of local labs must be analyzed. Funding support should be given for data entry personnel if needed to allow diagnosticians to focus on diagnostic work.
- A standard policy for entering negative data should be developed.
- Automation of data entry should be increased.
- Work with APHIS to clearly establish responsibilities for real time monitoring and evaluation of NAPIS data, and develop a plan for responding appropriately.

3. Future Issues for Consideration

- Develop guidelines and protocols to enable segregation of diagnostic data for non-regulated pathogens (e.g. use American Phytopathology Society “Widely Prevalent Pathogens Lists”) from data addressing high priority regulated pathogens, so that diagnostic clinics can share routine pest and pathogen data across the network.
- Establish a task force, involving representatives from all involved agencies and NPDN members, to strategize the development of data transportability between the NPDN national database (PDIS), and the APHIS Cooperative Agricultural Pest Surveys database (NAPIS).
- Establish a task force, involving representatives from commercial companies, NPDN, and APHIS, to develop strategies for incorporation of plant disease data originating from industry into NPDN databases.
- Link databases and data to existing tools, professional societies (such as the American Phytopathological Society) and LGUs (e.g. Texas A&M University’s Tomato Diagnostic Guide; Penn State University’s *Fusarium* and *Phytophthora* databases).

D. GOVERNANCE and FUNDING

1. Action Items

- The Review Team strongly recommends the establishment of a broad based NPDN Advisory Council at both the national and regional level, to include representatives from the private sector, state/county extension, experiment station/research faculty, certified crop consultants (CCAs), state/federal regulatory agencies and National Plant Board affiliates. (Note the NPDN Review Team composition as a guideline). It is especially important to include "Industry" and NAHLN representation on the Advisory Board for exchange of ideas on business practices and governance strategies.
- The NPDN Executive Committee should be charged to develop a Strategic Plan for the next five years of the NPDN, to develop and identify milestones for all aspects of the network currently covered by NPDN subcommittees.
- Develop a framework and process for annual self-evaluation that will help to focus strengthening activities. Include common reporting topics and formats, and develop metrics for recording and reporting performance.

2. Recommendations

- Improve coordination/communication for recognizing labs with surge capacity for identification of specific pathogens. Consider charging the Advisory Council to develop a strategic plan for surge capacity, emphasizing resources and infrastructure needed to reach specific target goals.
- The Advisory Council should oversee and periodically revisit the current expansion in mission and scope to include diagnostics of insect pests, and interaction/ partnering with regional IPM Centers. While this expansion and partnering has had beneficial effects, including expansion of the customer base and leveraging of valuable diagnostic and extension resources at LGU's, the funding levels may not continue to increase in future years to support future expansion efforts. The Council should plan to advise NPDN Executive Committee on new initiatives and scope as the Network expands.
- Evaluate the basis for formulas and practice transparency in annual funding from national to regional to state labs/clinics. Improve accounting and timeliness in annual funding from each of these units.
- The Advisory Council, NPDN Executive Committee and CSREES National Program Staff should be charged with consideration of and the development of a five-year transition to a competitive funding model.

3. Future Issues for Consideration

- Consider adding a new committee to address "Surveillance" issues, including interaction of NPDN labs in partnerships with PIPE components and with USDA APHIS CAPS programs.
- Consider developing a strategic marketing plan that would incorporate the recommendations from the PR/Outreach Review and focus on prioritizing resources and infrastructure needed to support diagnostics and other reference materials. Build a transition plan to efficiently transfer leadership responsibilities at the regional and national level.

E. PARTNERSHIPS

1. Action Items

- The review committee feels strongly that NPDN leadership and individual diagnostic laboratories should seek partnerships with national and state NGOs such as the Farm Bureau, commodity groups and processors, CCAs and agricultural product producers and suppliers.
- NPDN laboratories should seek to establish and/or strengthen the partnerships with SPROs, SPHDs and natural resource agencies.

2. Specific Recommendations

- NPDN leadership should seek partnerships with those federal agencies whose missions involve land or resource management or plant pest regulations.
- NPDN leadership should seek to establish a communication link with the NAHLN, and individual state diagnostic labs should establish a similar link with state animal health diagnostic labs. A NAHLN representative should be provided a seat on the Advisory Board for NPDN and vice versa for exchange of ideas or business practices.

- As available, individual state diagnostic networks should establish partnerships with non-traditional cooperators such as Historically Black Colleges and Universities Land Grant Universities, Tribal Nations, and private land managers.
- NPDN laboratories should identify roles and responsibilities with partners and establish a mechanism to mutually share data, and investigational and analytical information. This can be facilitated by developing and implementing MOUs with key partners.
- NPDN laboratories should develop and implement additional ICS preparedness scenarios in cooperation with key partners to improve communication, enhance readiness and engage mutually available diagnostics. Varying the size of scenarios in regional, state, and local locations and cropping systems will challenge different resources and personnel.
- NPDN should establish closer partnerships with industry and professional associations such as the American Nursery and Landscape Association, the Professional Landcare Network, the California Association of Pest Control Advisors, and the American Farm Bureau. Representatives of these organizations should be considered for membership in the NPDN Advisory Board.

F. PUBLIC RELATIONS/OUTREACH

1. Action Items

- Develop a formal public relations strategy, with strategic goals at the national, regional and state levels. Identify target audiences for the strategy and for distribution, and prioritize audiences such as Land Grant University administrators, and State Plant Health Directors.
- Develop a schedule for open houses and visits by stakeholders to diagnostic clinics on a rotating annual basis, so that resources can be conserved or pooled to focus on state and regional issues.
- Improve access, search ability and content on the website(s), targeting publicly accessible information for local producers and crop advisors. Ensure that links work.

2. Specific Recommendations

- Expand professional “reach” by providing outreach (booths, displays, information) at new venues such as the National Plant Board, National Association of state Departments of Agriculture, National Association of State Foresters and North American Plant Protection Organization annual meetings.
- Identify key agricultural appropriators in each state and develop plans to educate them via the NPDN partners in that state on state, regional and national accomplishments and needs. Consider inviting state and Congressional staff on “fact-finding” field trips to diagnostic labs and disease impact sites.
- Adopt a formal, structured annual reporting system for NPDN labs at the local/state and national levels. Ideally, they should include short statements of accomplishment that can be disseminated to various audiences. Develop “Points of Progress” for communication at the state and regional levels for Experiment Station Directors, SPROs, and USDA agencies.
- Publish more of the diagnostic labs’ output in scientific journals. Consider publishing pathogen diagnostic standard operating procedures in easily accessible journals such as those in the Plant Health Management Network.

3. Future Issues for Consideration

- Consider further developing and utilizing the NPDN first detector registry as an outreach mailing list.
- Develop cost estimates and consider allocating resources to distribute information on NPDN activities and impact in commercial farm press publications and agricultural information broadcast networks (radio, television, internet-based). If not already accomplished, consider ‘branding’ NPDN logos for recognition on all educational and promotional materials, advertisements, etc.

G. INTEGRATION WITH RESEARCH

1. Recommendation

- Establish technical committees at the state and regional levels and charge them to identify new technologies from the research community and scientific literature, and to share technologies and technical protocols across state and regional labs.

2. Future Issue for Consideration

- The NPDN leadership should consider formalizing a mechanism for collecting feedback from stakeholders and from participating university or government laboratories to submit for consideration in research prioritization by relevant organizations. Two particular entities that would benefit from formal feedback would be USDA (ARS conducts intramural research that would benefit NPDN, and CSREES manages the extramural research portfolio and annually examines research needs and priorities) and ESCOP (the Agricultural Experiment Station directors annually prioritize research opportunities and regularly update their Science Roadmap to articulate agricultural research directions). Through these mechanisms, NPDN can ensure that fundamental and translational research takes place in support of the diagnostic mission of the organization.

H. RECOMMENDATIONS FOR ALL REGIONS

(Note: This list was compiled from recommendations common to all regions.)

1. Action Items

- Develop a framework and process for annual self-evaluation that will help to focus strengthening activities. Include common reporting topics and formats, and develop metrics for recording and reporting performance.
- Continually evaluate internal and external training opportunities through the use of survey instruments and benchmarking between NPDN Regions.

2. Specific Recommendations

- Expand the partnership with EDEN through training and educational information.
- Continue to communicate regularly via NPDN listserv, website and other appropriate electronic networks. Develop a schedule for open houses and visits by stakeholders to diagnostic clinics on a rotating annual basis, so that resources can be conserved or pooled to focus on state and regional issues.
- Share or benchmark effective state detector training methodologies
- Strive to measure potential economic/environmental impacts for increased state/federal leveraging. Metrics on numbers of samples processed vs. actual diagnosed diseases could be communicated in periodic reports.
- NPDN and CSREES staff should continue to annually visit a new host lab and invite respective state specialists, county educators and regulatory officials to discuss “hot” contemporary issues respective to their state.
- Develop medium- and long-term strategies for training within the region, and support the plan with resource allocation.
- Develop strategies for achieving higher visibility for regional and state labs within their institutions.
- Ensure continued periodic planned and transparent review of participating labs even after labs have passed the accreditation process.
- Implement proficiency testing of SOPs by the diagnosticians or participants in the network.
- Continue to expand first detector training in every region.
- Coordinate with other regions on first detector training for pests, pathogens and invasive species spread across multiple regions.

3. Future Issues for Consideration

- Enhance first detector training by providing bilingual (English and Spanish) versions of modules.
- Strive to develop effective relationships with respective state departments of agriculture and other state/federal agencies. Invite agency representatives to diagnostic in-services and include on appropriate state specific listservs and commodity specific newsletters.
- Identify key interactions with SPROs and develop a strategy for implementation in each state. Implement a schedule of regular meetings to ensure that new personnel are made aware of issues important to both entities.

Continue to advocate for higher-level positions for diagnosticians to reduce personnel turnover. Reinforce the importance of the positions to university administrators.