



FERN

Uniting Federal, State and Local Laboratories for Food Emergency Response

Food Emergency Response Network FERN

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Brief History of FERN

- Program developed in 2004 in response to Homeland Security Presidential Directives:
 - HSPD-7 Critical Infrastructure Identification - DHHS/USDA = food
 - HSPD-8 National Preparedness – Coordinated response to incidents
 - HSPD-9: Defense of United States Agriculture and Food
- Thus, FERN is jointly administered by USDA/Food Safety Inspection Service (FSIS) and HHS/Food and Drug Administration (FDA)

Mission of FERN

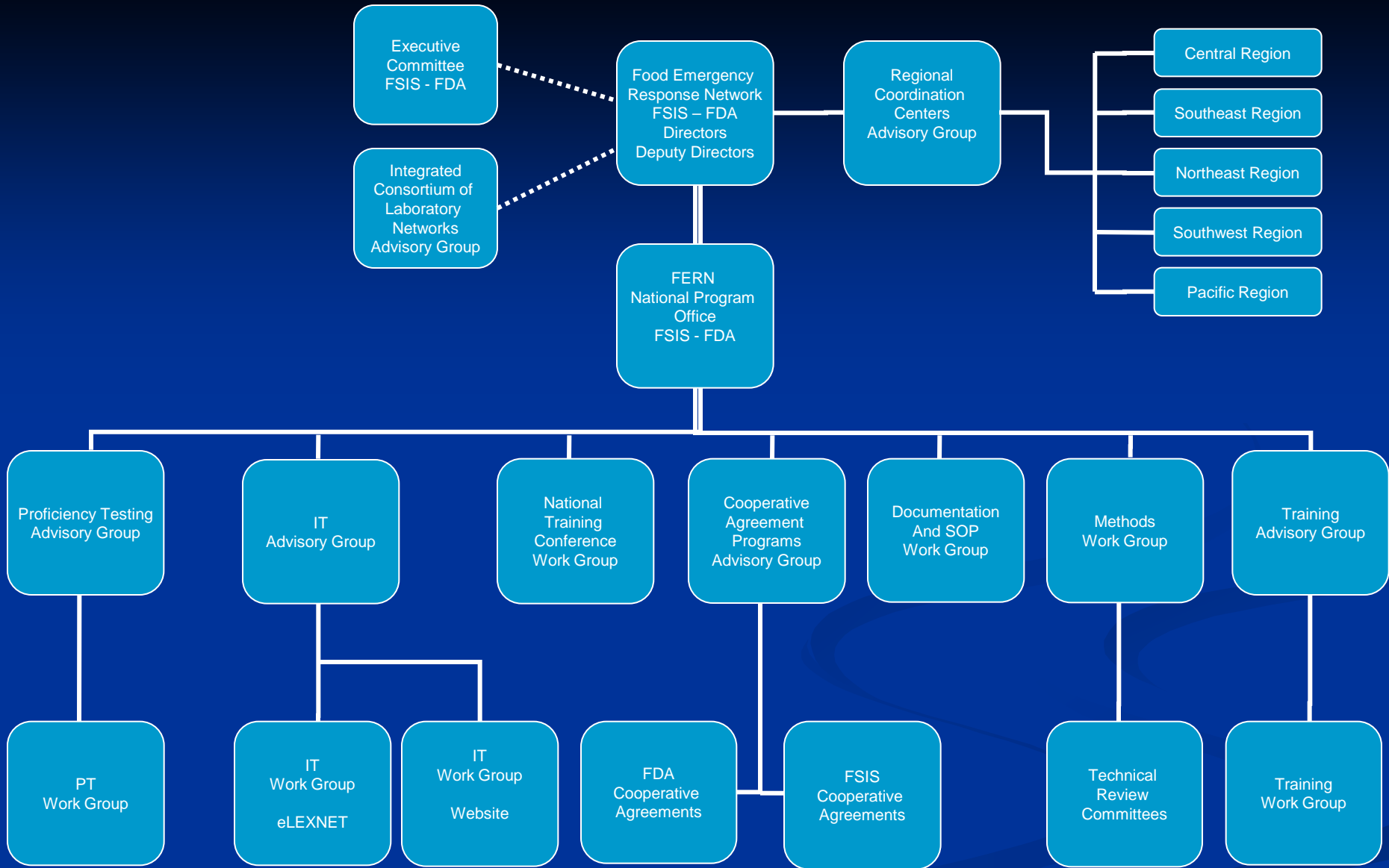
- Integrate the nation's multilevel food-testing laboratories to detect, identify, respond to and recover from a bioterrorism or public health emergency involving the food supply
 - **Response and recovery**
- FERN mission incorporates:
 - **Food Defense**
 - **Food Safety**
- Member of Integrated Consortium of Laboratory Networks - DHS

FERN Challenges

- Development of a coordinated program that is implemented by separate federal agencies (HHS/FDA and USDA/FSIS)
 - Unique budget and administrative structures
- Responsible for all foods in three disciplines
 - Biological, Chemical, Radiological
- Stakeholder states/laboratories show great diversity

FERN Organization

- Jointly managed by FDA & FSIS
 - National Program Offices
 - Rockville, MD & Athens, GA
 - 5 Regional Coordination Centers
 - Aligned with FDA Regions
 - Staffed by FDA and FSIS coordinators
- Implementation of Support Programs
 - Joint Advisory and Work groups
 - Stakeholder involvement



FERN Support Programs

- Training: state, local, federal, international – all three disciplines
- Proficiency testing: all three disciplines
- Method development and validation
 - 18 Micro, 29 chem, 3 rad methods developed/optimized

FERN Support Programs

- FERN Storeroom – reagents/supplies
 - Emergency response
- Cooperative Agreement Programs – funding
 - FSIS – 25 multi-discipline labs
 - FDA – 14 chemical, 15 microbiological, 5 radiological
- Electronic communications and collaboration:
 - Electronic Laboratory Exchange Network (eLEXNET)
 - FERNlab.org website
- Surveillance programs: i.e. major political events

FERN Support Programs – Proficiency Testing

- All three disciplines, some select agents
- Some PTs are jointly held with the CDC's LRN
- “Confidence Exercises” have been coordinated with ICLN

FERN Support Programs – Method Development and Validation

- Joint operation between FDA/FSIS/State Subject Matter Experts
 - Method Coordination Committee
 - Technical Review Committees
- All three disciplines -
 - Select agent methodologies
 - “New” agents/toxins/chemicals – melamine, PAHs
 - Triage protocol of unknown samples – “NY lemons”

FERN Support Programs – FERN Storeroom

- Used for critical reagents
 - Select agent supplies/reagents
 - PCR assay needs
 - Specialty items
 - Standards
 - Assignment needs
 - Emergency response – Deepwater Horizon, etc

FERN Support Programs – Cooperative Agreement Programs

- FDA cooperative agreement labs:
 - “Go-To labs” for initial emergency response
 - Equipped to match FDA Field labs
 - Trained on FERN and FDA methods
 - Participate in-
 - Method validation and development
 - Surveillance assignments
 - FDA assignments

FERN Support Programs – Electronic communications and collaboration:

- Electronic Laboratory Exchange Network (eLEXNET)
 - Secured site/firewalled
 - Controlled access by all stakeholders
 - Data storage
 - Methods Repository
 - Used for analytical results compiling/sharing

- FERNlab.org website
 - Maintains lab capability and capacity information
 - Labs can use to register for training and PTs
 - Communication tool for scheduled events
 - Used for meetings and webinars
 - FERN 'face' to public

FERN Support Programs - Surveillance Programs

- FERN labs participate in FDA surveillance programs –
 - Assessing and demonstrating the effectiveness and capabilities of FERN – select agent testing
 - Allows expansion of FDA surveillance programs
 - Large event pre-surveillance
 - Political conventions
 - 2012 Special Event Assignment
 - 120 Micro samples tested – Five analytes
 - 160 Chem samples tested – multiple analytes
 - Ad hoc assignments

Laboratory Makeup

- 170+ Laboratories representing 50 US States and Puerto Rico have satisfactorily completed FERN Laboratory Qualification Checklists
 - **Affiliations:**
 - 39 Federal (FDA, USDA/FSIS, USDA/AMS, CBP, DOD)
 - 113 State/University/District
 - 17 Local
 - **Disciplines:**
 - 133 Microbiological
 - 111 Chemistry
 - 36 Radiological

FERN Laboratory Response

Large-scale food events

- *E. coli* O157:H7 in spinach, 2006
- *Salmonella* in peppers, Summer 2008
- *Salmonella* in peanut butter, 2009
- Melamine Outbreak response activities.
 - 2007 and 2008-09
- Deepwater Horizon Oil Spill, 2010
- Japanese nuclear reactor event, 2011
- Arsenic Assignments, 2012
- No select agents/bioterrorism – a good thing

FERN Laboratory Response

Large-scale food events

- Deepwater Horizon Oil Spill, 2010
 - Restoration of Gulf seafood industry
 - Activation of FERN
 - Chem Cooperative agreement labs stood up to perform NOAA method
 - Chem SMEs utilized to develop and validate alternative, more rapid method for PAH detection
 - FERN labs analyzed nearly 250 seafood samples
 - FERN NPO worked closely with DFS to provide outreach and information to appropriate parties
 - FERN Storeroom stocked and supplied scarce standards require for analysis



FERN Interaction with other National Laboratory Networks

Integrated Consortium of Laboratory Networks ICLN

- Coordinated through the Department of Homeland Security
- Mission of the ICLN:
 - Improved coordination of laboratory response to incidents
 - Assess, fill gaps in coverage across multiple sample types, potential victim groups (human, animal, plant), all WMD, all response phases
 - Promote common standards of performance across all lab response assets to ensure data supporting homeland security decisions is best quality and defensible

ICLN Member Laboratory Networks

- Food Emergency Response Network
FERN
- National Animal Health Laboratory Network
NAHLN
- National Plant Diagnostic Network
NPDN
- Laboratory Response Network
LRN
- Environmental Response Laboratory Network
ERLN
- Vet-Laboratory Response Network*
Vet-LRN*



FERN BSL/SA Issues

- Method development/improvement – screening
 - Early work – interim methods
 - MCC has worked to upgrade
- Lab numbers/capacity
 - BSL 2+ vs. BSL 3
 - Limited numbers
 - Limited space
- Expenses
 - Set up and upkeep
 - Utilization and training

FERN Priorities

- Continued alignment of FERN activities with a risk based approach for food defense and food safety emergency response
- Continued support of FERN state and local laboratories comprising the Network



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For Further FERN Information

- <http://www.fernlab.org/>

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