Rapid Response Team (RRT) Success Stories

Examples of Strengthening State Capacity for Integrated All-Hazards Prevention, Response and Recovery Efforts for Incidents Involving Food and Feed
FDA’s RRT Program

Why RRTs?
- White House & Congressional interest in improving response and food safety

Multi-year Cooperative Agreement Program
- Awards are up to $300,000/year (3 year awards)
- Oversight provided by FDA/ORA Office of Partnerships
- Cross-Center RRT Advisory Committee
- 18 RRTs (within 14 Districts) are currently funded
Indiana & Wisconsin are voluntary (non-funded) RRTs
RRT Program Rationale

• Develop and maintain multi-jurisdictional RRTs that operate under ICS/NIMS and Unified Command to support integrated all-hazards prevention, response and recovery efforts for food/feed. Unify and coordinate federal/state/local food/feed emergency response efforts, including:
  – Strengthening the link among epidemiology, lab and environmental health components.
  – Foodborne illness/outbreak investigations, removing tainted food from commerce, root cause investigations.
  – Supporting components: training, data sharing, data analysis and communications.

• Capture/develop and support adoption of best practices

• Ensure alignment with national priorities (FSMA, IFSS, PFP)
What are RRTs?

Feed Program
FDA District
Epidemiology
Food Program
Laboratory
RRT Program Outcomes

Strengthen Federal/State/Local Collaboration

- District & State Food Regulatory Program
- Across programs within the State
  - Lab/epi/regulatory
    - May or may not be multi-agency
  - Food & Feed Regulatory Programs
    - May or may not be multi-agency
  - Local Health Departments
    - Majority (~75%) of RRT States are decentralized

- Across national initiatives. Examples include:
  - CDC FoodCORE, COEs, NVEAIS
  - CIFOR

Did You Know

9 RRT grantees are in Public Health Agencies
9 RRT grantees are in Departments of Agriculture
RRT Program Outcomes

• Development of Rapid Response Capabilities
  – Multi-disciplinary, multi-jurisdictional communication and coordination
  – District/State response teams
  – ICS Implementation (Unified Command)
  – Capability Assessment Tool

• Improve Program Infrastructure
  – Alignment with the Manufactured Food Regulatory Program Standards
  – Sustainability of the RRT
RRT Investigations—By the Numbers 2015

- 340 incidents
  - 321 responses (94%)
  - 19 activations (6%)
- Human illness or outbreak linked (53%)
- Positive product investigation (20%)
- Recall investigation (20%)
RRT Response Activities

Frequency of Activities (% of Total Incidents)

- Tracebacks: n=180
- On Site Investigations: n=213
- Environmental Assessments: n=142
- Environmental Sampling: n=55
- Control Measures Implemented: n=160
- Consumer Advisory Issued: n=84
- Recall Audit Check: n=114
- After Action Report: n=54
• 180 tracebacks
  – 56% resulted in successful identification of the source
• Informational
  – 41% source identified
• Regulatory
  – 65% source identified
• 45 were both Informational & Regulatory
On-Site Investigations

- 213 on site investigations
  - 65% were joint investigations
  - 67% involved an environmental assessment
    - 106 (75%): contributing factors were identified
      - Ill employee with food contact
      - Improper cleaning/sanitizing of hands/or surfaces
      - Contaminated raw product during pre-harvest or processing
      - Cooling and hot-holding issues during preparation
  - 26% involved environmental sampling
RRT Success Stories
Through the Years

• 2012: *Salmonella* in Diamond Pet food (MI)
  – Resultant large scale recall
• 2013: Cyclospora in bagged salad mix and cilantro (IA & TX)
  – 2 separate, concurrent outbreaks
• 2014: *Listeria* in soft Mexican Cheeses (MD & VA)
• 2015: *Listeria* in caramel apples (MO, MN & CA)
• 2015: Ciguatera Fish Poisoning in Black Grouper and Barracuda (MD)
• 2016: *Listeria* in bean sprouts (VA)
“The RRTs vary from each other in accordance with differences in government structures, geographies, laws, resources, etc.”
State of Maryland Rapid Response Team

Safe Food & Feed
Anywhere
Any Time

Maryland Department of Health and Mental Hygiene
Prevention and Health Promotion Administration
Updates/Highlights

- **2013-2014:** *Listeria monocytogenes* Associated with Hispanic Style Soft Cheese
- **August 2014:** *Salmonella Newport* Associated with produce from the DelMarVA Peninsula
- **August 2015:** MultiState Traceback Exercise
- **September 2015:** RRT Cooperative Agreement Renewed with Awarded Elective
- **September 2015:** Recall of Cheese Spreads due to *Listeria monocytogenes*
- **January 2016:** Campylobacter lari Cluster Investigation linked to Raw Oysters
Building Partnerships and Capacity
Safe Food & Feed Anywhere Any Time

Prevention and Health Promotion Administration
[4/18/2016]
Building Partnerships

- DelMarVA Taskforce
- MultiState Face to Face Meetings
  - April 2016 meeting held in Maryland and included regional partners and Federal Food Protection and Law Enforcement Agencies
Building Capacity

- **Increase Efficiency in Traceback Investigations**
  - Two ER220 Traceback Investigations Courses being held in Maryland in 2016

- **Continue Joint Training and Inspections with the District Office**
  - Recall Audit Check Training for State Staff
  - Joint Environmental Sampling Training

- **Continue Joint Training and Inspections with the Local Health Departments**
  - Joint Aseptic Sampling Exercise
Cooperative Agreement Elective Project
SMarRRT GIS Project

How we can use this:

- **Emergency situations**
  - Hurricane
  - Flooding
  - Storm surge
  - Chemical dispersion (air/water)
  - Radiological dispersion

- **Other Uses**
  - Traceback
  - Distribution hubs, tracking
  - Environmental sampling
  - Hot spot analysis
Geocoded Facility Information and Tidal Surge
List of Facilities Potentially at Risk

Winter Storm Jonas CFP Facilities at Risk 2-5ft Tidal Surge

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Preparing

- **Salmonella Newport Pattern 61**
  - On Farm Environmental Assessments
  - Increased Sampling

- **Upcoming National Special Security Events**
  - Pre-Event Surveillance
  - Sampling

- **Continue to Build Partnerships**
  - Regional RRTs
  - Food Safety Roundtable
VIRGINIA RAPID RESPONSE TEAM
Virginia RRT Communication

- The team decided to have a weekly conference call led by the RRT coordinator to discuss ongoing and emerging threats or issues to food and feed safety.
- All communications regardless of source are sent to the RRT coordinator.
- An initial email about the event is sent out to the RRT core group and their designated backups.
- Group members disseminate information within their respective agencies/divisions based on the details of each incident.
Post Response and Prevention (2015)

- A total of 25 recalls were reviewed by the VA RRT after receiving notification by other federal and/or state partners or other Rapid Response Teams and the VA RRT was used successfully 6 times to monitor recalls and provide recall audit check assignments to VDACS Food Safety Specialists.

- Involved with 9 active investigations regarding foodborne illness outbreaks or food unfit for human consumption and 1 investigation regarding contaminated pet treats.

- Received calls regarding 32 emergency response incidents and assigned/coordinated VDACS staff to 17 incidents involving food products.
Success Story: *Listeria monocytogenes* in Sprouts

- Numerous sprout varieties
  - Alfalfa, clover, sunflower, broccoli, mustard, radish, garlic, dill, pumpkin, mung, kidney, pinto, navy, soy beans and wheat berries (wheat grass).

- Raw and lightly cooked sprouts associated with numerous (>30) foodborne outbreaks:
  - *Salmonella*, *E. coli O157*, *L. monocytogenes*
  - Contaminated seeds sprouted under warm and humid conditions
  - Poor sanitation and unhygienic practices at the sprouting facility

- 1999 FDA public advisory:
  - “Consumers Advised of Risks Associated with Raw Sprouts”

- FDA Guidance Documents to Industry:
  - “Guidance for Industry: Reducing Microbial Food Safety Hazards for Sprouted Seeds”
  - “Guidance for Industry: Sampling and Microbial Testing of Spent Irrigation Water During Sprout Production”
Success Story: 
*Listeria monocytogenes* in Sprouts

- VA firm manufacturing and wholesaling soybean and mung bean sprouts in 1 lb., 2 lb. and 10 lb. bags
  - Up to 70,000 lbs. sprouts weekly
  - Distributed VA, MD and NJ
  - Firm under VDACS inspection since 2008
- March 19, 2015: Soybean and mung bean sprouts submitted to DCLS as a MFRPS surveillance sample
Success Story: 
Listeria monocytogenes in Sprouts

- 5/19/15 Soybean sprouts positive for L. monocytogenes
- Food isolates tested by PFGE and WGS by DCLS
- VA Rapid Response Team coordinated further sampling, testing, regulatory action:
  - >200 sprout samples collected from manufacturer and retail locations for DCLS testing from March - November
  - 50 environmental swabs collected
  - Three times firm closed for remediation prior to reinstating production
  - 3 successive recall notices
  - Permanent firm closure November 2015
Testing and Regulatory Response Timeline

- Mar 19: Soybean Sprouts L. mono +
- Apr 1: Environmental swab Composite L. mono +
- May 19: Soybean Sprouts L. mono +
- June 9: Soybean, Mung Bean Sprouts L. mono +
- July 27: Soybean, Mung Bean Sprouts L. mono +
- Aug 4: Seeds seized from Processor
- Aug 21: Seeds released to Processor
- Sept 21: Notice of firm Closure
- Oct 3: Sprouts tested - L. mono negative
Linking Clinical Cases of Listeriosis

PFGE AccI-pattern

PFGE Apal-pattern

Soybean isolate
Env swab
Clinical isolate

Sprouts tested-
L. mono negative

Listeriosis case
grouped by PFGE
WGS Links Additional Clinical Cases

SNP tree courtesy of FDA CFSAN
PFGE Cluster Definition: ≥ 2 cases with the same pattern-type within 120 days

Sprouts tested - *L. mono* negative

Listeriosis case grouped by PFGE/WGS

Isolates from 2 patients highly genetically related by WGS from ~1 year prior
WGS Suggests Persistent Single Strain Contamination at Point of Manufacture

0-4 alleles different among the 4,804 genetic loci compared across the food, environmental and human *Listeria monocytogenes* isolates
Benefit of WGS to Sprout Response

- Added confidence to the associations implied by PFGE
- Demonstrated persistence of the same strain at the point of manufacture, excluding the possibility of pass through contamination
- Identified of two additional clinical cases with suspected link to contaminated product
- Prolonged environmental contamination can be determined by WGS with the detection of historical, highly genetically related isolates from patients
- WGS can provide evidence of associations, but epidemiologic concordance remains the gold standard
WGS Goal: Illness Prevention Through Timely Detection

FDA, CDC, FSIS and states use WGS in real-time and in parallel on clinical, food and environmental samples.

Sources of contamination identified early through WGS combined database queries.

Contaminated food enters commerce.

Averted Illnesses

*Some illness onset dates have been estimated from other reported information.

Good Seed sprouts

- VA RRT response to *Listeria monocytogenes* in soy bean sprouts and mung bean sprouts
- Three (3) cases were reported in Virginia and all three were infected with the outbreak strain recovered in finished product samples collected by VDACS. Product was distributed by the firm into VA, MD, PA, NJ, NC and SC.
- After action report for this investigation was finalized and submitted on 1/23/16
- Please log in to FoodShield if you wish to review this AAR
Animal Feed program

- New RRT Animal Feed Specialist: Caroline Wilkinson
- Compliance case ongoing with FDA/CVM concerning out-of-state repeat violator of medicated feeds (since 9/14). VDACS continues to work with manufacturer; slow improvement.
- Illegal manufacture and distribution into VA of animal remedy by out-of-state firm. Product placed under seizure late summer 2015. Currently working with CVM to advise firm of disposition of product. Another product, same illegal drug, found at same dealer early 2016. VDACS placed new product under stop sale, both products released for return to out-of-state manufacturer only (return shipment 1/27/16).
- Completed directed sampling of feeds for mycotoxins to identify contamination baseline in VA. Sampling conducted from 9/15 – 12/15. Number crunching in process!
- Deb Hargrave participating on the national AFRPS Review working group, serving on committee to review standards #2 (Training), #5 (Feed Related Illness or Death and Emergency Response) and #7 (Outreach Activities).
Sampling Initiative

- Sampling has played a major role in post response and prevention during the previous funding cycles.
- For the current budget period, $26,000 in funding has been allocated to cover costs associated with sampling of high risk foods and foods associated with foodborne illness complaints.
- VA RRT worked with DCLS to access the Electronic Laboratory Exchange Network (eLEXNET) and develop a directed sampling plan for the spring/summer of 2016.
- Products targeted include: smoked fish, white and black pepper, fresh culinary herbs, soft cheese, milk chocolate.
- eLEXNET is an integrated, secure network that allows multiple government agencies engaged in food safety activities to compare, communicate, and coordinate findings of laboratory analyses.
- eLEXNET enables health officials to assess risks, analyze trends and provides the necessary infrastructure for an early-warning system that identifies potentially hazardous foods.
- eLEXNET serves as a central repository for the sharing of food testing data among various government agencies in a timely manner.
On January 23, 2016, VA RRT staffed the ESF11 command station at the VEOC.

For this event, ESF11 was part of the Operations Section under VDEM’s ICS structure and sitreps were sent to the Operations Section Chief every 30 minutes.

The winter storm produced significant amounts of snowfall across the Commonwealth, with snowfall totals exceeding 16-34 inches in many locations throughout northern and northwestern Virginia.

The system also resulted in major coastal flood levels along the Eastern Shore and minor to moderate levels in other locations.

FEMA Region III conducted periodic conference calls and the following states issued Emergency Declarations: Maryland, North Carolina, Kentucky, Tennessee, Virginia, West Virginia, and Washington D.C.
Conclusions

- RRTs are beneficial for incidents that exceed or expect to exceed the resources of the agency that has the authority to respond.
- Developing and emerging food supply system requires new ways to deal with challenges with different sets of expertise and bringing together all needed authorities in ways that haven’t been done before.
- RRT structure normalizes process that exists with current relationships for state and federal agencies.
- RRT can improve timeliness and effectiveness of responses.
- An effective RRT should be integrated into the state and federal infrastructure.
- Team approach can bring consistency to process.
BLT-DO ERC

Focal Point for communicating/sharing information with the states:

- Status of firm inspection
- Distribution lists of recall products
- Coordination of state access to FoodSHIELD and analytical worksheets
- CORE requests for information: sample analyses/inspectional
- Press releases
- Recall audit checks
Rapid Response Team Strengths

- Information is shared equally between all partners
- Common and understood flow of communications simplifies response process
- Team members are familiar with other agency’s roles and responsibilities before an event
- Proper channels for information flow are understood or easily determined
- After action reporting is simplified and all inclusive
Conclusions

• RRTs are extremely active and involved in many initiatives
  – Responding to incidents, Task Forces, MFRPS
  – National initiatives
    • MFRPA, CIFOR, PFP/IFSS, FSMA, Mentorship, RRT WGs
• We should focus on making our endeavors as impactful as possible
  – More success stories – prevention, rapid timeframes
    • Tie activities to public health outcomes
  – Support individual District/State goals
    • Practical examples of mutual reliance in action
  – Think Regionally: Inter-RRT
  – Support national goals
• This will help make the case for sustainability
There are 5 RRT states within CASA, the most of any AFDO affiliate: VA, MD, WV, PA, NY
Questions?