Outreach and Extension

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Outreach and Extension Team

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Outreach
• A function common to all university campuses.
• Outreach programs focus on solving real-world problems through direct intervention and interaction with target populations.

Cooperative Extension Service
• Extension is a formalized educational system housed at all land-grant universities within the U.S.
• Designed to help people use research-based knowledge to improve their lives.
• Extension has an extensive local presence (County Extension Centers staffed by Extension Agents).
Goal of Outreach and Extension Activities

• **Translate and disseminate** knowledge about foodborne viruses.

• Four target audiences:
  o **Foodservice Operations** – Retail and foodservice industry
  o **Consumers** – general public and authors of consumer education materials
  o **Food Safety/Public Health Professionals** – Environmental health specialists, state epidemiologists, food safety educators, Extension agents, Registered Dietitians
  o **Commodity Industries** – Fresh produce and shellfish
5.1 – Educational intervention targeting the retail food sectors to prevent FBV contamination.
5.2 – Review consumer food safety materials so can be updated to reflect emerging information on FBV.
5.3 – Develop curriculum and materials to educate food safety/public health professionals.
5.4 – Extension and outreach efforts to fresh produce industry.
5.5 – Extension and outreach efforts to shellfish industries.
5.6 – Evaluate behavior change (foodservice intervention).
5.1: Two Foodservice Activities

1. Prevalence Study
   • Determine prevalence of HuNoV in commercial foodservice establishments in SC, NJ, and OH.
   • Because bathrooms possible source of FBV transmission between food workers and dining patrons, sample surfaces in shared public restrooms.

2. Education Intervention
   • Transfer of training is limitation of many programs.
   • Effective training centers on modifying individual as well as environmental/institutional factors.
1. Prevalence Study

- Data collection begins December 2012.
- Samples taken from one public men’s and one public women’s restroom.
  - **High-touch surfaces**
    - flush handle of the toilet,
    - underside of the toilet seat,
    - faucet of the handwashing sink, and
    - inner door of in each bathroom stall or bathroom door
  - **Low-touch surfaces**
<table>
<thead>
<tr>
<th>STATE</th>
<th>RESTAURANTS</th>
<th>PERCENT TOTAL SAMPLE</th>
<th>SAMPLE SIZE</th>
</tr>
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<tbody>
<tr>
<td>SC</td>
<td>7,565</td>
<td>16%</td>
<td>120</td>
</tr>
<tr>
<td>OH</td>
<td>21,306</td>
<td>46%</td>
<td>345</td>
</tr>
<tr>
<td>NJ</td>
<td>17,388</td>
<td>38%</td>
<td>285</td>
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2. Educational Intervention

- **Objective:**
  - Operators create customized prevention and control strategies to reduce risk for FBVs.

- **Problem-based learning approach**
  - Short lectures to describe best practices
  - Moderate discussion so participants identify barriers and challenges of implementing strategies—this precedes development of procedures.
  - Series of interactive hands-on activities that allow participants to create or adapt existing prevention/control strategies to their facility.
  - Allows for customization of prevention and control strategies to the actual working environment.
Define questions to be addressed in the review

- What behavioral or environmental interventions have been used to reduce or control NoV (or related disease) outbreak?
- What is known regarding food service workers’ knowledge/attitude/behavior regarding controlling or reducing NoV (or related disease) contamination?
- What are institutional or organizational factors that could support change? What are institutional or organizational factors that could be barriers to change?
• Generate list of key terms for search
  • Review seminal articles
  • Discuss with experts in the field
  • Review MeSH terms
• Databases reviewed:
  • PubMed, Web of Science, CINAHL, FS&T Abstracts
• Two reviewers independently rated articles (include/exclude)
• Current status
  • 146 articles have been reviewed
    • 38 retained for inclusion
  • 101 additional articles identified and currently under review
Intervention Delivery Strategy

• **Sample:**
  - Convenience sample ~90 restaurants (three states)
  - Power calculations for design need to be completed to finalize sample size.

• **Research Design:**
  - Randomized control trial
  - pretest, posttest, post follow-up—timing of follow-up evaluations under evaluation.
Develop a five-level evaluation plan to evaluate the effectiveness of problem-based learning intervention targeting foodservice workers.

1: **Reactions and Planned Action** — assess participant response to intervention; perceived value; difficulty of training.

2: **Learning** — measure individual knowledge, perceptions, and practices.

3: **Individual Behavior** — assess behaviors of individual workers.

4: **Environmental and Institutional Changes** — assess environmental and institutional factors that affect spread of HuNoV.

5: **Economics/Return on Investment** — determine costs and benefits associated with implementation of intervention.
5.2: Consumer

• **Aim:**
  o Determine state of knowledge about foodborne viruses using a web-based survey.

• **Survey Constructs:**
  o Beliefs/perceptions about foodborne illness
  o Knowledge of causes of foodborne illness
  o Knowledge of viral foodborne disease

• **Sample:**
  o Administer survey to KnowledgePanel®, a probability sample that will allow us to generalize results to the U.S. population.
Consumer Education Materials

- **Rationale**
  - Improve existing materials rather than produce new materials.
- **Expert panel:**
  - Identify expert panel members
  - Review consumer survey results.
  - Identify key education messages to prevent and control FBV.
- **Library of materials**
  - Print-based or video?
  - Select subset to review
  - Prepare coding sheet
  - Conduct content analysis
- **Author Feedback**
  - written assessment
  - updated information on FBV
  - suggestions for revision, including opportunity to consult with extension experts at collaborating institutions.
5-3: Food Safety Professionals

- **Aim:**
  - Determine state of knowledge about foodborne viruses using a web-based survey.

- **Survey Constructs:**
  - Knowledge of causes of foodborne illness
  - Knowledge of viral foodborne disease
Professional Organizations

- Academy of Nutrition and Dietetics (formerly ADA)
- American Frozen Foods Institute (AFFI)
- American Association of Long Term Care Nurses
- Association for Healthcare Foodservice (AHF)
- Association for Professionals in Infection Control and Epidemiology (APIC)
- Association of Food & Drug Officials (AFDO)
- Conference for Food Protection (CFP)
- Council of State and Territorial Epidemiologists (CSTE)
- Food Marketing Institute (FMI)
- National Association of County and City Health Officials (NACCHO)
- National Association of Extension Family and Consumer Sciences (NAEFCS)
- National Environmental Health Association (NEHA)
- National Institute of Food and Agriculture (NIFA)
- National Restaurant Association (NRA)
- School Nutrition Association (SNA)
- United Fresh Produce Association (UFPA)

**Red:** Indicates that the organization has announced the survey to their members by newsletter, email, and/or website (as of 11/5/12).
## Characteristics of Professional Survey Respondents (n=261)

<table>
<thead>
<tr>
<th>Role</th>
<th>% of Completed Surveys*</th>
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<tbody>
<tr>
<td>Provide training/education on food safety, hygiene, &amp; sanitation</td>
<td>85%</td>
</tr>
<tr>
<td>Provide training/education on infectious disease control</td>
<td>22%</td>
</tr>
<tr>
<td>Develop, implement, or oversee training/education on food safety, hygiene, &amp; sanitation</td>
<td>69%</td>
</tr>
<tr>
<td>Develop, implement, or oversee training/education on infectious disease control</td>
<td>19%</td>
</tr>
<tr>
<td>Regulate/inspect retail or institutional establishments</td>
<td>51%</td>
</tr>
<tr>
<td>Develop, implement, or oversee policies/procedures to control/prevent infectious disease</td>
<td>29%</td>
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*Multiple responses allowed
• Develop four modules—molecular biology, detection, epidemiology and risk, and control/prevention strategies.
• Curriculum framework based on Revised Bloom’s Taxonomy (RBT) to maximize alignment of the curriculum.
• Content reviewed by executive team and other experts.
• Knowledge Assessment
  • 25-item test (multiple choice) after completion of each module
  • 75% is pass score
Collaborations:

- NC Fresh Produce Safety Task Force
- Farmers, industry, and state and federal government
- Produce Safety Alliance (PSA) to develop unified GAPs

Workshops

- Good Agricultural Practices (GAPs) training for NC farmers and County Extension agents

Educational Materials

- Catalogued and reviewed GAP training materials from major programs across US to identify gaps in extension training related to viruses
- Designed module to include in PSA efforts to unify GAPs to relay information about viruses in fresh produce to producers
Planned Work

- Pilot training module for viruses in fresh produce
- Have revised extension module included in Produce Safety Alliance (PSA) unified national GAP training curriculum
- Cross-link NoroCORE website with other online resources
- Develop a series of fact sheets to relay information about viruses in fresh produce at the farm level
  - Focus: pre- and post-harvest water quality and worker hygiene (hand-washing)
• **Collaborations**
  • Extension personnel in NC (NCSU – CMAST), industry personnel and state and federal regulatory personnel to have a better understanding of how virus-related training materials can be integrated into existing programs

• **Educational Materials**
  • Reviewed Seafood HACCP Alliance Training Manual, 5th Edition to determine the extent of training related to viruses in seafood

• **Presentations**
  • Gulf and South Atlantic States Shellfish Conference
    • deliver information about viruses to shellfishermen and regulatory personnel
    • Update attendees on NoroCORE activities and future goals related to molluscan shellfish
Planned Work

- Update training materials related to viruses in molluscan shellfish
  - target boaters to address unauthorized discharges from vessels
  - target commercial shellfishermen to convey the importance of viral contamination in work areas
    - address working while ill
    - diarrhea or vomiting in work areas
- Develop educational materials for regulators related to utility of indicator organisms and direct detection of viruses in marine waters as correlate to water quality and public health risks in shellfish growing areas.
Questions?