Motivating Consumers to Adopt Safe Handling and Preparation Practices for Raw Poultry

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Background of Project

- USDA/NIFA AFRI – 5 years
- Goal - to reduce illnesses from Salmonella and Campylobacter by improving consumer storage, handling, and preparation of raw poultry and poultry products.
- Multiple consumer and laboratory studies to assess reported and actual practices and potential impacts ultimately leading to develop effective intervention tools.
Using Research Findings – Focus Groups

Consumers’ knowledge and use of recommendation to put raw poultry in disposable plastic bags (if available) to contain any leakage, which could cross-contaminate other foods during shopping

- Although many participants had heard of recommendation, participants’ actual adherence to recommendation was low.
- Most younger participants were not aware bags were available. Some said they would start using them if more prominently displayed.
- Younger participants agreed with one participant who suggested using signage so people would be more likely to notice and use bags.
Using Research Findings – Nationally Representative Web-based Survey

The last time you purchased raw poultry was it placed in a separate plastic bag before you put it in your cart or basket?

<table>
<thead>
<tr>
<th></th>
<th>Raw Poultry Whole &amp; Parts (n=1,504)</th>
<th>Raw Ground Poultry (n=408)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separate raw poultry from other food in shopping cart by placing in bag</td>
<td>60.4%</td>
<td>53.3%</td>
</tr>
<tr>
<td>Separate raw poultry from other food in shopping bags at checkout</td>
<td>70.3%</td>
<td>61.8%</td>
</tr>
</tbody>
</table>
Questions Raised
1. How do consumers handle raw poultry products in the grocery store?
2. Does posting a sign reminding consumers to bag their raw poultry products have any effect on their bags usage?
3. When does cross contamination occur in the grocery store?

Research Finding:
Some consumers (~40%) do not put poultry in a separate plastic bag in the meat section at the grocery store, which can lead to cross contamination.
Grocery Store Study #1

- 150 consumers were screened by researchers to determine if they would be purchasing poultry on their next shopping trip
- Researchers accompanied the shoppers
  - In the grocery store (how many used bag if available?)
  - Putting items away at home
Swabs were taken throughout the observation

1. Consumers hand when leaving poultry section
2. Outside of all poultry packages
3. One item that the poultry touched in the cart
4. One surface that the poultry touched at the consumers home
5. The inside of the grocery bag (if it was not thrown away)
Swabs were analyzed for the presence of raw poultry juice. The presence of meat juice was an indicator of possible cross contamination.

- Poultry juice found on all items touched if not bagged before putting in grocery cart
- No cross contamination occurred if poultry was bagged
Survival laboratory experiments

- Determine survival time for bacteria on surfaces and packages
  - Salmonella survives for up to 7 days on refrigerator surfaces and milk cartons when in poultry juice
  - Campylobacter dies within hours on same surfaces
  - Both survive for weeks in plastic grocery bags
Grocery Store Study #2

- 100 shoppers were observed by researchers purchasing raw poultry in 2 different grocery store locations in Middle Tennessee

- Researchers observed:
  - How shoppers handled raw poultry items in the meat and poultry section of the grocery store
  - Use of the plastic bags provided when handling raw poultry

- Consumers surveyed
  - Opinions of use of bags
Developing Educational Programming
Developing Educational Programming

• Conducted synthesis of results to identify risky practices most commonly exhibited by consumers
• Identified key messages to focus on in the interventions
• Target audiences for the interventions
  • Interactive web site for consumers
  • Educational modules for youth
  • Educational modules for Ag-Ed teachers
Youth lessons

- Developed six lessons
- Conducted workshops with ~190 youth at 4-H camps
  - Used pre-, post-test model
  - Positive impact on knowledge, perceptions, and intentions.
  - Revised lessons as recommended
- Reviewed by six university professors
- Final revision
Youth lessons now available

- [http://www.tnstate.edu/tsuaged/peepcurriculum.aspx](http://www.tnstate.edu/tsuaged/peepcurriculum.aspx)
  - full curriculum
  - six individual lessons
  - slides
  - videos
Grocery Store Safety

Lesson Overview
Time: 10-20 Minutes
Learning Objectives:
In this lesson, participants will:
- Identify poultry and egg safety practices shoppers can do while in the grocery store.
- At the market:
  - In the meat section.
- Remove any contaminated other food items in your cart.
- Adding them to your cart.
- Employee:
  - Es. This keeps juices from leaking onto the refrigerated or freezer at home.
  - Your shopping cart, with items, especially fresh produce, at least one hour.
  - Products) first and immediately after

Vocabulary
Sell-By Date: The date marked on a food item indicating the last day it should be sold in stores.
Expiration Date: The date marked on a food item indicating the date it expires or could spoil. Perishable foods should be consumed before or on this date for maximum freshness.

As consumers it is important to follow food safety procedures while shopping in order to prevent further contamination.
Next steps for youth curriculum

- Promotion to 4-H Program Leaders and Extension Agents
- Addition of higher level activities
- Promotion and distribution at FFA Convention
Partnership for Food Safety Education Collaboration

- A collaborative agreement was developed to design educational programming for Bac-Fighters, consumers, and grocers.
- Materials will target Millennials and Seniors.
- Team will develop Branding, brochures, signage, and educational materials for Bac-Fighters.
A nationwide survey of 208 millennial parents (50% female/male) examined 4 possible logos developed by professional graphics designers for use in educational materials.

Almost half chose the same logo.

That logo was examined by several hundred Fight Bac educators and tweaked to determine the final logo.
Assessment of Consumer Materials

- Conduct two focus groups with millennium parents to test and refine brochure
  - Two groups: (1) HS educated or less and (2) college-educated
  - Discussion topics
    - Initial reaction
    - Comprehension
    - Usefulness
    - Relevancy
    - Acceptability
    - Attractiveness
    - Persuasiveness
    - Behavior change
Assessment of Consumer Materials (II)

- Conduct evaluation to assess effect on behavior change
  - Experimental design with random assignment to treatment group (link to educational web site) or control group (receive recipes only)
  - Pre/post surveys with data collected via web-based survey (n = 300 per group)
  - Difference-in-difference models to assess change in outcomes of interest (adherence to recommended practices)
Assessment with Bac-Fighters

- Links to examples of the Educational Programming will be sent to Fight Bac Educators who currently are part of the Partnership for Food Safety Education.
- In addition to the links to programming, a link to a survey will be provided for the educators to provide feedback on a) the design, b) ease of use, and c) appropriateness for consumer education, d) intended use, e) expected ability to convey messages, etc.
- Design and message modifications can be made depending on the feedback from the Fight Bac educators.
Collaborators

- Kansas State University
  - Edgar Chambers IV
  - Delores Chambers
- Tennessee State University
  - Furchi Chen
  - John Ricketts
  - Agnes Kilonzo-Nthenge
  - Sam Nahashon
- RTI
  - Kathy Kosa
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Questions?