



# Family and Consumer Sciences Extension

## *Reducing the Risk of Foodborne Illness 2006*

### Learning for Life

---

The University of Georgia Cooperative Extension

### ***The Problem***

- An estimated 76 million Americans become ill from foodborne illness each year, resulting in 325,000 hospitalizations and 5,000 deaths.<sup>1</sup> The Economic Research Service (ERS) estimates the cost of foodborne illness from five foodborne illnesses alone to be \$6.9 billion per year.<sup>2</sup>
- According to the USDA Economic Research Service, the estimated cost for a single case of salmonellosis is \$472, but this increases to \$9,284 for cases involving hospitalization. The economic burden to the U.S. for all foodborne salmonellosis is \$2.4 billion annually. The economic burden of acute listeriosis in the U.S. is estimated at \$2.3 billion.<sup>2</sup> ERS estimates that in 2005, the average case of *E. coli* O157:H7 cost \$477 without hospitalization and up to \$6.6 million if hospitalized with death resulting.<sup>3</sup>
- In the latest data available from the CDC, Georgia had the highest incidence of salmonellosis of all 10 sites monitored by CDC's Food Net system.<sup>4</sup>
- Infants, young children, the elderly and those with weakened immune systems are most at risk of serious complications. These may include kidney failure, seizures, strokes, heart complications and death.
- Food safety certification for foodservice workers is required by many employers and some health districts in Georgia. Employee turnover rates are very high so there is a continuing need for these programs.
- In an in-home study of consumer food handling practices, only 52% washed hands prior to food preparation, with less than 5% washing as recommended. Only 3% used a thermometer to determine doneness of a hamburger, with only 1% using it correctly. Chicken was undercooked 82% of the time, and other practices indicated a high rate of unsafe behaviors.<sup>5</sup>

### ***Research-based Solutions***

- Food handler training programs improve knowledge of the causes of foodborne illness and recommended safe food handling practices.
- By identifying and controlling critical steps in food preparation, a high percentage of foodborne illness can be prevented.

### ***Extension's Role***

- Provide consistent, accessible food safety and sanitation education for foodservice employees and both youth and adult consumers.
- Provide education in safe food handling and implementation of HACCP (Hazard Analysis Critical Control Point) systems for foodservice managers; offer *ServSafe*<sup>®</sup> certification.
- Provide training that fulfills state requirements for employee training in the school nutrition program, personal care homes, child care facilities and other institutional settings.

### ***Extension's Contribution to Solving the Problem***

- More than 17,200 educational contact hours in food handler education were provided to 3,309 foodservice personnel. This includes 681 foodservice managers who received the *ServSafe*<sup>®</sup> manager training and 402 foodservice workers who received the *ServSafe*<sup>®</sup> employee training.
- Nearly 7,800 educational contact hours of food safety education were provided to 2,883 consumers, families, and youth. Fifty-five percent (55%) of them were at risk or low-income Georgians.
- Nearly 320 educational contact hours in home food preservation were provided to 118 program participants.
- Media was a major strategy for food safety and preservation education: 5 exhibits reached over 17,700 individuals; 9 radio spots were broadcast to a listening audience of over 17,800 people; and 54 newspaper columns went to a circulation of over 0.9 million readers.

## ***Impact on Georgians***

- Of the foodservice employees who completed the *ServSafe*® food safety education program, 94% improved their knowledge in five food safety areas: recognizing hazardous food situations, receiving and storing food safely, preparing and serving food safely, preventing contamination and personal hygiene. After training, over 88% of the participants indicated they are more likely to thaw foods in the refrigerator, in cold running water, or in the microwave right before cooking; 98% are more likely to follow recommended hand washing procedures; 97% are more likely to sanitize their cutting board; and 88% are more likely to use a food thermometer to decide if meat, poultry, egg dishes or fish are done before serving. Additionally, the participants emphasized their preparedness to secure the safety of food. For instance, after a training, one participant said, “(I am planning to) pay more attention to holding times, temperatures of food, and the people around the kitchen – what they are doing with food handling.”
- More than 95% of the foodservice managers who completed the *ServSafe*® manager training planned to implement recommended food handling practices in their food establishments. For example, 91% of the participants said that they will monitor that their employees check and record food temperatures regularly in cold and frozen storage; 96% plan to train and monitor employees on cleaning and sanitizing equipment and dishware; and 96% will train and monitor employees to recognize food spoilage and unsafe foods. At the end of the training, participants emphasized their preparedness to apply gained knowledge to train others. For example, a manager said, “I will let everybody who is working in my restaurant know how important it is to wash hands and keep food at the right temperature and to keep food in the right place and check the refrigerator temperature all of the time.”
- Comparison of pre and post test evaluations indicated that participants in the general foodservice food safety training programs significantly improved their knowledge. Over 78% of the participants learned important food safety practices. For example, 95% of the participants planned to wash their hands with hot running water and soap for at least 20 seconds after handling raw meats, poultry, and fish; 88% planned to reheat leftovers to at least 165°F measured by a thermometer before serving them; and 100% of the participants will make a master cleaning plan and provide written directions for cleaning and sanitizing equipment and surfaces as a result of the training. Overall, 99% of the participants rated these programs as either helpful or very helpful.
- Of the participants of the *Cooking for Groups* food safety program in Bibb and Oconee counties, 97% said it was very helpful for them in learning about food safety practices. After the program, 94% of the participants said that they would refrigerate or freeze perishable foods, prepared foods, and leftovers within two hours of preparing or removing from cold storage when shopping; 91% will use a thermometer to check the internal temperature of hot and cold foods held on a serving line more than two hours; and 100% will choose or buy cold foods last at the store and bring a cooler if their destination is more than 30 minutes away.

## ***Economic Impact on Georgians***

- The total value of *ServSafe*® Manager Certification Training to food service establishments in Georgia was approximately \$17 million in 2006.

## ***Sources***

1. Mead, P.S., et al. (1999). Food-Related Illness and Death in the United States. *Emerging Infectious Diseases* 5(5):607-625.
2. ERS-USDA. 2004. Economics of Foodborne Disease. <http://www.ers.usda.gov/Briefing/FoodborneDisease/> Accessed 11/06.
3. ERS-USDA. 2006. Foodborne Illness Cost Calculator: STEC O157. [http://www.ers.usda.gov/data/foodborneillness/ecoli\\_Intro.asp](http://www.ers.usda.gov/data/foodborneillness/ecoli_Intro.asp). Accessed 11/06.
4. Centers for Disease Control and Prevention. 2005. Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food, 10 Sites, United States, 2004. *Morbidity and Mortality Weekly Report* 54(14):352-356.
5. Anderson, et.al. 2004. A camera’s view of consumer food handling behaviors. *J. Amer. Dietetic Assn.* 104(2):186-191.

## ***Contacts***

Dr. Elizabeth L. Andress, Professor and Extension Food Safety Specialist, eandress@uga.edu  
Dr. Judy Harrison, Professor and Extension Food Safety Specialist, judyh@uga.edu  
College of Family and Consumer Sciences (706) 542-3773, or your local Cooperative Extension Service office