

CONSUMER FOOD HANDLING PRACTICES INDICATE NEED FOR FOOD SAFETY EDUCATION A SUMMARY OF RESEARCH

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Situation

Illness resulting from food borne disease has become one of the most widespread public health problems in the world today. An estimated 76 million people in the United States are sickened each year due to a food borne illness. Of those sickened, 325,000 are hospitalized and 5,000 people die. The estimated cost to society is \$5 billion annually. A large percentage of these illnesses result from improper food handling practices in the home. The importance of the home as a point of origin for foodborne illness has prompted studies to evaluate aspects of contamination and improper handling of food in the home.

Bacterial contamination in the home environment.

- The kitchen environment can be more heavily contaminated with fecal bacteria (those bacterial species associated with feces) than the bathroom, suggesting that the risk of spreading infection in the home may be highest in the kitchen-the area in the home where food is prepared.
- Microbiological surveys of domestic kitchens have found significant contamination from a variety of bacterial contaminants, including *E. coli*, *Campylobacter*, and *Salmonella*.
- Pathogenic organisms have been shown to be introduced in the home by people, food, water, pets and insects.
- The domestic kitchen is not used only for food preparation, but may serve as a laundry, a workroom, and a living area for family pets, and each of these functions can serve to introduce bacterial contamination into the kitchen environment.

Moreover, research focusing specifically on the kitchen environment has found:

- 67% of kitchen sponges may be contaminated with fecal bacteria
- Contaminated cloth towels serve to transfer bacteria to dishes during drying
- 82% of sink faucet handles are contaminated during food preparation
- Drain boards and sink drain areas frequently harbor harmful bacteria
- 60% of people do not wash the cutting board after cutting raw meat or poultry and before cutting fresh vegetables for salads
- 9% do not wash the work surface at all after cutting raw chicken

Consumer food handling practices.

Recent studies have shown that consumers often fail to store, handle and cook food safely. A survey of 1,000 U.S. households in September 1999 found gaps in consumer knowledge and practices related to food safety in the home. For example:

- Though 45% knew improper hand washing could result in food poisoning, 44% consistently forgot to wash their hands properly before preparing meals.
- While 78% recognized that a failure to wash cutting boards between handling raw meats and then cutting raw vegetables could result in food poisoning, 11% rinsed or wiped off cutting boards without using soap.
- Though 74% knew food poisoning could result from eating meats and chicken not cooked to proper temperatures, only 12% always used a meat thermometer to check doneness.

More recently, the food handling practices of 100 families in Logan, Utah were video taped, and the results showed the following errors in food handling behavior:

- Often no soap was used when hand-washing.
- The same towel was used to wipe up raw meat juice and to dry hands
- A salad was prepared without washing the lettuce first
- Meat loaf was prepared, but not cooked to the proper temperature
- The marinade tasted in which bacteria-ridden raw fish had soaked
- One mother handled raw chicken and then fixed her infant a bottle without washing her hands.
- Another mother merely rinsed her baby's juice bottle after it fell into raw eggs and then returned the bottle to the child; the bottle was not properly washed to guard against the *Salmonella* that can lurk in eggs.

The role of education. A survey of consumers indicated that 89% considered issues regarding food safety more important than issues regarding safe drinking water, crime prevention, health and nutrition, and the environment. Similarly, more consumers are concerned about bacterial contamination of food than pesticide residues; mercury, aluminum or lead contamination; or irradiated food. However, despite these concerns, recent surveys indicate that many consumers lack sufficient knowledge of appropriate food safety practices.

- 7% did not know about the need to cook food to a proper temperature
- 49% thought that cooked food should be cooled at room temperature before being placed in the refrigerator or freezer 40% did not know the proper temperature for a home refrigerator
- 20% did not know that raw meat could contaminate cooked foods or ready-to-eat foods like lettuce and cold cuts 14% did not understand the importance of hand washing in preventing foodborne illness

This lack of knowledge is likely to lead to inappropriate food handling behaviors. Generally, consumers' knowledge has been found to be inadequate to ensure that food preparation in the home minimizes the risk of foodborne illness.

Implications for WNEP These findings highlight the need for continued food safety education. Many consumers either fail to understand the need for careful food handling and preparation, or they fail to apply knowledge that they do have. Since improperly handled and prepared food can lead to food borne illness, continued training in this area is important for WNEP clients. And the fact that low-income clients may be more at risk for serious consequences of food borne illness underscores this need for education.

Overall, consumers appear to need repeated education to reinforce the five principals of safe food handling, storage and preparation:

- **Wash: wash hands and surfaces often**
- **Separate: prevent cross-contamination**
- **Cook: cook foods to proper temperatures**
- **Chill: refrigerate promptly**
- **Store: store food properly**