

Changes in Consumer Knowledge, Behavior, and Confidence Since the 1996 PR/HACCP Final Rule

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1. Purpose

RTI conducted a multiyear evaluation of the 1996 *Pathogen Reduction: Hazard Analysis and Critical Control Point (PR/HACCP) Systems: Final Rule* for the U.S. Department of Agriculture, Food Safety and Inspection Service (USDA, FSIS). As part of this evaluation, RTI conducted a study to measure changes in consumer knowledge, safe food handling practices, and confidence in the safety of meat and poultry since the PR/HACCP farm-to-table initiatives were implemented. These initiatives include the PR/HACCP rule itself plus national consumer education campaigns, such as the Partnership for Food Safety Education's Fight Back® campaign and the FSIS' Food Thermometer Education Campaign; increased national, state, and local food safety efforts; promotion of farm-to-table strategies by trade associations, industry, and academia; and activities to strengthen education and training of food handlers. The public's knowledge of safe handling practices and their confidence in the safety of meat and poultry may have been influenced by these collective efforts.

2. Methodology

Z Analyzed existing survey and observation data

Sponsor	Study	Data Collection Approach	Year(s) of Data Collection
American Dietetic Association & ConAgra	Home Food Safety Refrigeration Survey	Internet survey	2001
Audits International	Home Food Safety Study	Observation	1997, 1999, 2000
CDC, FoodNet	Population Survey	Telephone survey	1996/1997, 1998/1999, 2000/2001
FDA & FSIS	Food Safety	Telephone	1993, 1998
FDA	Utah State University	Observation	1999
Penn State University	Food Safety Survey	Telephone survey	1998, 1999, 2001

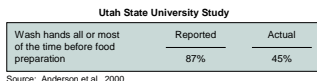
Z Conducted consumer focus groups

Focus Group	Population	Year
Food Safety Messages and Delivery	General population, parents of young children, young	2000
Listeriosis Food Safety Messages and Delivery	Pregnant women	2001
Thermometer Usage Messages and Delivery	Parents of young children	2002
Changes in Consumer Knowledge, Behavior, and Confidence	General population, parents of young children, young adults, and seniors	2002

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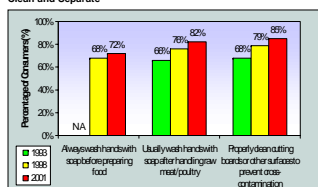
3. Findings: Reported vs. Actual Behavior

- Z In surveys and focus groups, consumers report that they are more knowledgeable about food safety and have improved certain safe handling practices (e.g., keeping hands and surfaces clean and taking steps to prevent cross-contamination)
- Z However, observation studies—Audits International and Utah State University—suggest that actual practices often differ from reported practices



4. Findings: Reported Safe Handling Practices

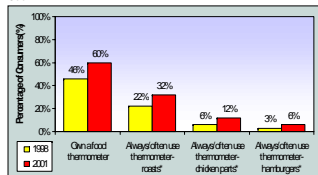
Clean and Separate



Source: FDA/FSIS Food Safety Survey.

- Z Many consumers report following the recommended practices for keeping hands and surfaces clean and preventing cross-contamination
- Z Consumers' reported use of these practices has increased since 1993
- Z Focus group findings suggest that in reality, consumers do not always follow these practices

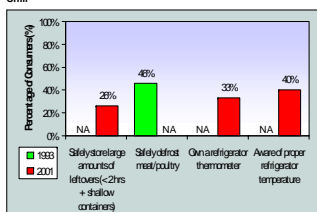
Cook



Source: FDA/FSIS Food Safety Survey. *Includes non-thermometer owners.

- Z Consumers' reported ownership and use of food thermometers has increased since 1998
- Z However, many consumers still do not use a food thermometer, especially for small cuts of meat/poultry
- Z Consumers report eating hamburgers more thoroughly cooked but do not use a food thermometer to check for a safe internal temperature
- Z Focus group findings suggest that many consumers are unaware of the health and food quality benefits of thermometer use; some overcook meats to ensure safety

Chill



Source: FDA/FSIS Food Safety Survey & ADA/ConAgra Home Refrigeration Survey.

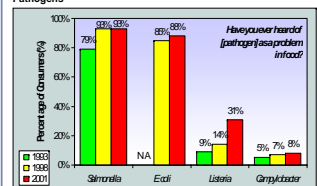
- Z Many consumers do not follow the recommended practices for keeping foods at proper temperatures. Less than half of consumers:
 - X Safely store large amounts of leftovers
 - X Safely defrost meat and poultry
 - X Own a refrigerator
- Z Focus group findings suggest that consumers are unaware of the "2-hour rule": refrigerate or freeze perishable foods and leftovers within 2 hours

Other

- Z Findings from the Penn State Food Safety Survey (1999) on consumer practices
 - X 45% do not follow the recommended rule "when in doubt throw it out"; instead they check appearance, smell, or taste
 - X 86% regularly check expiration dates
 - X 85% regularly check food packages for broken/damaged seals

5. Findings: Knowledge of Pathogens, High-Risk Foods, and High-Risk Populations

Pathogens



Source: FDA/FSIS Food Safety Survey.

- Z Consumer knowledge of pathogens has increased (FDA/FSIS Food Safety Survey, 1993, 1993, and 2001)
 - X Perception that microbes are a serious food safety problem has increased from 36% in 1993 to 53% in 2001
 - X Awareness of specific pathogens has increased since 1993
 - X Knowledge that cooking kills *Salmonella* has increased (from 39% in 1993 to 65% in 2001)

High-Risk Foods

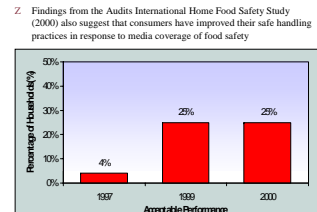
- Z Consumer perception of meat and poultry as high-risk foods for foodborne illness has increased (FDA/FSIS Food Safety Survey, 1993 and 1998)
 - X Perception of chicken as a high-risk food increased from 31% in 1993 to 45% in 1998
 - X Perception of meat as a high-risk food increased from 24% in 1993 to 40% in 1998

High-Risk Populations

- Z Focus group findings suggest that consumers have limited knowledge of high-risk populations for foodborne illness
 - X Correctly identify the elderly, young children, and people with compromised immune systems as being at high risk
 - X Unaware pregnant women are at high risk
 - X Despite this knowledge, do not perceive themselves at high risk (e.g., senior participants incorrectly believe that only those 80 years and older are at high risk)

6. Findings: Changes in Consumer Knowledge and Behavior

- Z In focus groups, participants report that compared to five years ago (since the PR/HACCP initiative) they are more cautious when handling and preparing meat and poultry
- Z Report making the following changes:
 - X Switch from wood to plastic cutting boards
 - X Defrost foods in refrigerator (instead of countertop)
 - X More conscientious about hand washing
 - X Overcook meat and poultry
 - X Use food thermometer
- Z Attribute increased knowledge and behavioral changes to media coverage of food safety
 - X Television news shows
 - X Local television news
 - X Cooking programs on television
- Z Food labels are also an important source of food safety information



Source: Audits International, 2000. Acceptable Performance = no critical violations and no more than four major violations

7. Findings: Changes in Consumer Confidence

- Z In focus groups, participants report that their confidence in the safety of meat and poultry has increased or remained about the same in the past five years (since the PR/HACCP initiative)
 - X Attribute their increased confidence to media coverage of food safety
- Z In focus groups, participants identify the government as being the responsibility for ensuring the safety of meat and poultry safe
 - X Think the government is doing an adequate job keeping meat and poultry safe
 - X Think the government has not improved its performance in the past five years
- Z Survey and focus group data suggest that consumers also accept responsibility for food safety
 - X 85% agree that "food safety is up to each of us as individuals" (Penn State Food Safety Survey, 1998)
 - X 92% make a great deal or some effort to choose safe foods and handle them safely (Penn State Food Safety Survey, 1998)

- Z In surveys and focus groups, consumers express confidence in their safe handling practices
 - X 93% report confidence in their ability to handle and prepare meat and poultry safely (CDC FoodNet Population Survey, 2000/2001)
- X However, in focus groups, participants reveal that they unknowingly follow some unsafe practices when cooking at home
- Z In surveys and focus groups, consumers express more concern about how meat and poultry are handled prior to purchase than about how they handle it at home
 - X Believe foodborne illness originates in food processing plants (43%) and in restaurants (20%), not their homes (15%) (FDA/FSIS Food Safety Survey, 2001)
 - X Concerns about antibiotic residues
 - X Concerns about food transportation

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