# Food Handling and Consumption – Population Estimates from the 1988-2006 FDA/FSIS Food Safety Survey and 2006 Demographic Analysis Amy Lando, MPP



## Introduction

- The Food Safety Survey (FSS) is a random digit-dial telephone survey of a nationally representative sample of American consumers conducted by the Food and Drug Administration. Data were collected in 1988, 1993, 1998, 2001, and 2006 with sample sizes ranging from 1620 to 4539.
- The FSS obtains information that FDA and FSIS uses for risk assessments, regulatory and policy matters, and consumer education purposes.
- The FSS is used to assess food safety goals for Healthy People 2010.
- Information is collected each year on the following topics:
  - Food handling behaviors
  - Potentially risky food consumption
  - Food safety knowledge
  - Risk perceptions of getting a foodborne illness
  - Experience with foodborne illness and allergies
  - Demographic variables

# **Survey Participation**

- U.S. adults (Age 18 and up).
- Questionnaire in English (1988, 1993, 1998) and English and Spanish (2001, 2006).
- Data are weighted to the Census population to allow for national estimates.

# 2006 Demographic Analysis

### Table 1.

### Logistic Regression Models of the Relative Likelihood of NOT Washing Hands or Cutting Boards.

		Washing hands				Washing cutting boards	
Independent Variables	Definition	Before Meal Prep	After touch raw meat	After touch raw fish	After crack eggs	After cut raw meat	After cut raw fish
Immuno	1, if respondent is immunocompromised	1.03	1.08	0.91	0.91	1.39*	1.05*
Kidsless5	1, if respondent has kids less than 5	0.78*	0.95	0.49*	1.03	0.74	0.58
Age	Reference category: Age 18-29						
Age 30-39		0.78	0.94	1.2	0.94	1.27	0.52*
Age 40-59		0.78	0.9	1.29	1.07	1	0.67
Age 60 plus		0.9	1.39*	1.46	1.13	1.08	0.67
Race	Reference category: White						
Other race	Asian, Mixed race, Native American, Hawaiin, Pacific Islander	0.74*	0.81	1.51*	0.76	0.91	0.56
Black		0.35*	1.39*	1.2	0.97	1.13	1.24
Hispanic		0.9*	1.07*	1.06*	0.96*	1.08*	1.13*
Gender	Reference category: Female						
Male		1.8*	2.62*	2.13*	1.13*	2.13*	2.15*
Education	Reference category: Less than high school						
High school grad		1.39*	1.24	1.48*	1.3*	1.38	1.08
Some college		1.27	1.09	1.46*	1.43*	1.47*	1.59
College or higher		1.43*	1.19	1.95*	1.51*	1.51*	2.16*

\* = P<0.05

Odds ratios are reported

- Males and those with higher levels of education are more likely to have unsafe hand and cutting board washing practices.
- Immunocompromised respondents are more likely to have unsafe cutting board practices but are the same with respect to hand washing.
- Households with children less than 5 years old are less likely to have unsafe hand washing practices but are the same with respect to washing cutting boards.

# **Results Presented**

- U.S. Population Estimates
- CLEAN Trends in Hand Washing
- SEPARATE Trends in Cutting Board Washing
- COOK Trends in Food Thermometer Usage
- Trends in Potentially Risky Food Consumption

### 2006 Demographic Analysis

- Washing Hands and Cutting Boards
- Potentially Risky Food Consumption

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COOL - 2006 Refrigerator Thermometer Use



### **U.S. Population Estimates**



**1988 – 1993**: No improvement on washing cutting board after cutting raw meat. More respondents report NOT washing hands after touching raw meat.

**1993 – 1998**: Significant improvement on all of the measures of cross contamination.

**1998 – 2001**: Most of the measures of cross contamination show additional but small improvement.

**2001 – 2006**: Small improvements on washing hands before cooking and washing cutting board after cutting raw meat. No changes in other behaviors.

### Table 2.

### Logistic Regression Models of the Relative Likelihood of Eating the Fo

ndependent Variables	Definition	Raw Clams	Raw Oysters	Raw Fish	Raw Egg	Steak Tartar	Raw Sprouts	Pink Hamburger
mmuno	1, if respondent is immunocompromised	0.94	0.84	0.84	0.96	1.22	0.97	1.02
Kidsless5	1, if respondent has kids less than 5	1.13	0.92	0.84	1.28*	0.78	0.9	0.62*
Age	Reference category: Age 18-29							
Age 30-39		1.34	1.27	1.16	0.93	0.89	0.99	1.5*
\ge 40-59		1.29	1.52*	0.74*	0.64*	0.47*	1.12	1.21
Age 60 plus		0.72	1.06	0.35*	0.4*	0.32*	0.73*	0.93
Race	Reference category: White							
Other race	Asian, Mixed race, Native American, Hawaiin, Pacific Islander	0.64	1.72*	1.76*	0.64*	1.36	1.43*	0.54*
Black		0.58	0.42*	0.47*	0.54*	0.53*	0.46*	0.14*
Hispanic		1.13*	1.09*	1.14*	0.97*	1.08*	0.98	0.89*
Gender	Reference category: Female							
Male		2.84*	2.74*	1.5*	1	2*	1.16*	1.42*
Education	Reference category: Less than high school							
High school grad		1.23	1.03	0.83	0.9	0.71	0.62*	1.64*
Some college		2.14*	1.69*	1.95*	1.06	0.73	1.52*	2.08*
College or higher		2.47*	2.45*	3.63*	1.16	0.96	2.03*	2.91*

\* = P<0.05

Odds ratios are reported

- Males are more likely to eat all potentially risky foods (except eggs, where they are the same as females).
- Those with higher levels of education are more likely to eat raw clams, raw oysters, raw fish, raw sprouts, and pink hamburger.
- Blacks are less likely than whites to eat all potentially risky foods (except raw clams, where they are the same as whites).
- Those age 60 and older are less likely to eat raw fish, raw egg, steak tartare, and raw sprouts.

## **COOK - Food Thermometer Use**

The percent of the U.S. population (who cooks the main meal) and reports owning a food thermometer has increased:

- 1998: 48%
- 2001:60%
- 2006: 69%

# Percent of U.S. Population Who Uses a Food Thermometer for **Cooking Roasts, Hamburgers, and Chicken Parts** Alwmes Use meti



- There have been major improvements in the percent of the U.S. population that report using a food thermometer when cooking roasts and chicken parts from 1998 to 2006.
- There was a small improvement in the percent of the U.S. population that reported using a food thermometer for hamburgers between 1998 and 2001, but this trend has stayed the same between 2001 and 2006.

e Foll	owing	Potent	ially KISK	y Foods.	
Juctore	Dow Eich		Stock Tartar	Dow Sproute	







## **COOL - 2006 Refrigerator Thermometer Use**

- 54% report having either put a thermometer in the refrigerator or have a built-in one.
- Of those who have a refrigerator thermometer, 43% reported correct temperatures.



----Roasts

Hamburgers

---- Chicken parts

Increase consumption reported for eating: raw clams, raw oysters, and raw fish. **2001 – 2006**: Eating raw clams and raw oysters stayed the same. Small improvement reported in eating raw eggs. Small increase in reported consumption of raw fish, pink hamburger, and steak tartare.

No change in eating: steak tartare, pink hamburgers, and raw eggs.

**1993 – 1998**: Significant improvement on four of the six measures of eating

potentially risky food. Improvements on: raw oyster, raw egg, steak tartare, and

**1998 – 2001**: Some of the measures of eating potentially risky foods show no

change between 1998 and 2001, others show an increase in unsafe consumption.

• Improvements in many food safety behaviors between 1993 and 1998.

pink hamburger.

• Most of these improvements have been maintained from 1998, 2001, and 2006.

• Continued improvement on food thermometer usage for roasts and chicken parts from 1998 through 2006.

• Males and those with higher levels of education more likely to practice unsafe food handling behaviors and more likely to eat potentially risky foods.