

Characterization of High Risk Food Exposures Among the Hispanic Population, FoodNet 2000

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Background

Burden of Foodborne Illness in the U.S.

- 76 million persons develop foodborne illnesses each year in the U.S.
- 325,000 persons are hospitalized each year for a foodborne illness
- Approximately 5,000 persons die each year from a foodborne illness

Hispanics and Foodborne Illnesses

- Fastest growing minority group: population ≥ 35 M
- Higher incidence of several foodborne infections (including salmonellosis, listeriosis, campylobacteriosis, and shigellosis) when compared to other racial/ethnic minority groups
- There is little research on Hispanics' health behaviors focusing on foodborne illness and food safety issues
- Hispanics may have health education and promotion needs specific to their culture

*Lay, J et al. IDSA, 2002; *Lay, J et al. ICEID, 2002; *LA Dept of Health Services, 1999 Report

Definition of Hispanics

- The U.S. Census Bureau defines Hispanics as those who indicate their origins as Mexican-American, Chicano, Mexican, Puerto Rican, Cuban or South American
- U.S. Hispanic Population breakdown:
 - Mexican Americans- 66.1%
 - Puerto Ricans- 9.0%
 - Cubans- 6.0%
 - Other- 18.9%

Selected Outbreaks

Vehicle	Year	Location	Cases	Pathogen	Reference
Unpasteurized Mexican-style cheese	'00	NC	12	Listeria	JAMA 2001
Unpasteurized Mexican-style cheese	'85	CA	142	Listeria	NEJM 1988
Unpasteurized Mexican-style cheese	'97	CA	31	Salmonella	JAMA 1999
Fresh parsley	'98	USA & Canada	124	Shigella	MMWR 1999
Cilantro	'99	CA	41	Salmonella	J Infect Dis 2001
Unpasteurized milk	'01	WI	5	Campylobacter	MMWR 2002

Objectives

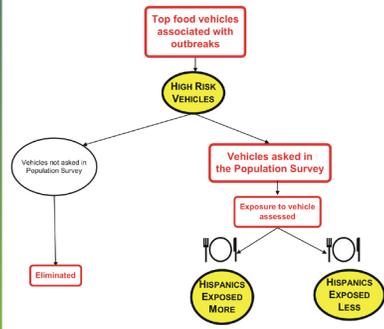
- To compare the frequency of high risk food exposures among Hispanics with Non-Hispanics

Methods

Definition of High Risk Vehicles

- Foods associated with foodborne disease outbreaks (1997-1999) of Listeria, Salmonella, and Campylobacter and Shigella
- Foodborne Disease Outbreaks:
 - Reported to CDC through the Foodborne and Disease Outbreak Surveillance System

Identifying High Risk Vehicle Exposures



Identifying High Risk Vehicle Exposures

- Used weighted 2000 FoodNet Population Survey to determine the frequency of Hispanic & Non-Hispanic exposure to high risk foods
- Included only respondents who answered the race & ethnicity questions

FoodNet Sites, 2000

Foodborne Diseases Active Surveillance Network (FoodNet)
(Population 33 million, 9 states)



States

- CA (3 counties)
- CT (entire state)
- GA (entire state)
- MD (6 counties)
- MN (entire state)
- NY (15 counties)
- OR (entire state)
- TN (11 counties)

US Population: 272,690,813
Bacterial FoodNet Areas: 10.8 % of U.S Population

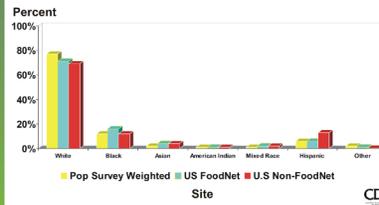
Population Survey Design

- Methods:
 - Based on the Behavioral Risk Factor and Surveillance Study (BRFSS)
 - Stratified by site
 - Random-digit-dial (RDD)
 - Listed & unlisted households
- Calling protocol:
 - 15 attempts over 3 calling occasions



Results

Race Comparison of Population Survey Respondents and US Census, 2001



Comparison of Food Exposures

Vehicle	Hispanics	Non-Hispanics	Difference
Cilantro	43%	10%	33%
Mango	28%	8%	20%
Soft cheese from raw milk	27%	10%	17%
Unpasteurized orange juice	21%	12%	9%
Runny eggs	30%	25%	5%
Sprouts	11%	7%	4%
Unpasteurized milk	4%	1%	3%
Parsley	16%	13%	3%
Oysters	7%	6%	1%
Eggs	85%	85%	1%
Raw fish	5%	4%	1%
Delicat meats	57%	59%	-2%
Lettuce	76%	80%	-4%
Milk	83%	86%	-3%
Fish	38%	43%	-5%
Hot Dog	48%	53%	-5%
Ice cream	56%	68%	-12%

$p < 0.0001$ for all vehicles reported



Summary

- Hispanics were more likely to eat 11 of the 17 high risk foods associated with outbreaks of *Campylobacter*, *Listeria*, and *Salmonella*, and *Shigella*
- For exposure differences $>4\%$, Hispanics were more likely to eat 5 of the 8 high risk foods

Limitations

- Hispanic respondents that did not speak English were not captured in this study
- Vehicles that were associated with outbreaks but were not asked in the Population Survey could not be analyzed (i.e. potato salad)

Opportunities

- The 2002-2003 FoodNet Population Survey is being conducted in English & Spanish to increase the number of Hispanic respondents
- Non-respondent information will be collected in 2004-2005
- Consider including vehicles identified with sporadic illness through case-control studies

Implications for Education Efforts

- Hispanics consume more high risk food, therefore, they would benefit from a targeted food safety education program

Targeted Food Education Program

- Target high risk vehicles that Hispanics consume:
 - Cilantro, mango, soft cheese from raw milk, unpasteurized orange juice, and runny eggs
- Target the family:
 - Education may be more effective if targeted to the close-knit family unit instead of one individual
- Education materials:
 - Translate & target to appropriate reading level
 - Include a Hispanic point of reference
 - Address Hispanic cultural tradition