ABSTRACT

Background: Numerous outbreak investigations and evaluations of epidemics of Escherichia coli O157:H7 infection in the United States have identified fresh ground beef as a common source. Studies of ground beef handling and cooking practices in restaurants are needed to identify gaps in knowledge in order to develop interventions to be a risk factor for infection with E. coli O157:H7. The purpose of this study was to assess ground beef handling and cooking practices for hamburgers, and to describe the frequency of use of irradiated ground beef. Study participants described handling and cooking practices for hamburgers. Respondents completed an interview and a self-evaluation to determine ground beef handling and cooking practices and use of irradiated ground beef products. Results: Ninety-five percent of respondents were receiving ground beef; 64% (147 of 228) reported that they never measure the temperature upon delivery. Fifty percent (190 of 383) respondents never measured the final cook temperature of hamburgers. To determine if foodworkers were assessing food temperature, respondents were asked if they measured the temperature of hamburgers is done by hand. Ninety percent (356 of 384) of respondents reported that they had never heard of irradiated ground beef. Descriptive analyses reveal the prevalence of risky ground beef handling practices in restaurants. While use of irradiated ground beef could reduce the risk of these practices, almost no restaurants use the product. These results indicate the need for educational and policy interventions to improve food safety. High temperature cooking of hamburgers, avoiding cross-contamination, and verification of the final cook temperature of ground beef are important factors to consider.

INTRODUCTION

Foodborne infections with E. coli O157:H7 continue to be a significant public health problem in the United States, causing an estimated 2.6 million illnesses and 52 deaths per year (1). Outbreak investigations and evaluations of sporadic E. coli O157:H7 cases have identified eating hamburger as a leading cause of infection, and recent studies have found that eating in a table-service restaurant is also a risk factor for infection with E. coli O157:H7 (2-4).

Study Objectives:
- Assess ground beef handling and cooking practices in restaurants for hamburgers and other beef products.
- Describe the frequency of use of irradiated ground beef in restaurants.

METHODS

This study was conducted by Environmental Health Specialists Network (EHS-Net) members in eight states CA, CO, CT, GA, MN, NY, OR, and TN. Each state was expected to enroll 50 randomly chosen eligible restaurants. Eligible restaurants were defined as facilities that prepare hamburgers. Temporary or mobile food stands, institutions, restaurants in supermarkets, and caterers were not eligible for enrollment. Only one restaurant from a particular chain was included per state. EHS-Net specialists interviewed the manager and observed food preparation areas. Site visits were conducted between April 6, 2004 and September 3, 2004.

RESULTS

Demographics and food safety policies (Tables 1 and 2)
- Of the 2,645 establishments that were contacted, 778 were eligible, and 390 (50%) agreed to participate.

Prevalence of Risky Food-Handling Practices in Restaurants that Serve Hamburgers
April K Bogard, 1 Ruthanne Marcus, 2 Danny Ripley, 3 Tammi Stigger, and Vince Radke 4
1 MN Department of Health; 2 CT FoodNet; 3 Nashville, TN Metro Public Health Department; 4 GA Division of Public Health; 5 Centers for Disease Control and Prevention

ABSTRACT

Background: Numerous outbreak investigations and evaluations of epidemics of E. coli O157:H7-associated foodborne illness in the United States have identified fresh ground beef as a common source. Studies of ground beef handling and cooking practices in restaurants are needed to identify gaps in knowledge in order to develop interventions to be a risk factor for infection with E. coli O157:H7. The purpose of this study was to assess ground beef handling and cooking practices for hamburgers, and to describe the frequency of use of irradiated ground beef. Respondents completed an interview and a self-evaluation to determine ground beef handling and cooking practices and use of irradiated ground beef products. Results: Ninety-five percent of respondents were receiving ground beef; 64% (147 of 228) reported that they never measure the temperature upon delivery. Fifty percent (190 of 383) respondents never measured the final cook temperature of hamburgers. To determine if foodworkers were assessing food temperature, respondents were asked if they measured the temperature of hamburgers is done by hand. Ninety percent (356 of 384) of respondents reported that they had never heard of irradiated ground beef. Descriptive analyses reveal the prevalence of risky ground beef handling practices in restaurants. While use of irradiated ground beef could reduce the risk of these practices, almost no restaurants use the product. These results indicate the need for educational and policy interventions to improve food safety. High temperature cooking of hamburgers, avoiding cross-contamination, and verification of the final cook temperature of ground beef are important factors to consider.

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