



Emmy S. Myszka,
MPH, REHS

Tools to Improve Raw Chicken Handling at Restaurants: Report From San Mateo County, California

Editor's Note: NEHA strives to provide up-to-date and relevant information on environmental health and to build partnerships in the profession. In pursuit of these goals, we feature a column from the Environmental Health Services Branch (EHSB) of the Centers for Disease Control and Prevention (CDC) in every issue of the *Journal*.

In this column, EHSB and guest authors from across CDC will highlight a variety of concerns, opportunities, challenges, and successes that we all share in environmental public health. EHSB's objective is to strengthen the role of state, local, tribal, and national environmental health programs and professionals to anticipate, identify, and respond to adverse environmental exposures and the consequences of these exposures for human health.

The conclusions in this article are those of the author(s) and do not necessarily represent the views of CDC.

Emmy Myszka is the principal investigator for the San Mateo County Environmental Health Specialists Network and has six years of experience in environmental health research and compliance. She developed, implemented, and evaluated a case-control study involving 700 restaurants to measure an educational intervention.

Did you know that a droplet of raw chicken juice splashed off raw chicken during washing can travel nearly three feet (Everis & Betts, 2008)? If restaurants don't take care to avoid cross contamination, raw chicken juice can also drip or splash onto other foods during preparation. If it gets onto ready-to-eat foods or food contact surfaces, the consumer can ingest harmful bacteria present in the raw chicken juice and get sick with campylobacteriosis, salmonellosis, or other foodborne illnesses.

In 2011, 72% of raw chicken breasts tested in California were infected with *Campylobacter* (National Antimicrobial Resistance Monitoring System, 2011). With nearly three-quarters of chicken infected with *Campylobacter*, the opportunities for cross contamination are numerous. In San Mateo County, the incidence of campylobacteriosis in 2011 was 34.94 per 100,000 persons (California Department of Public Health, 2011), more than twice the national incidence. San Mateo County Environmental Health decided to take action to protect against

Campylobacter infections associated with restaurants. Specifically, we plan to reduce the number of infections by providing restaurants with high-quality training manuals that operators can use to train employees on how to handle raw chicken safely. As part of the Centers for Disease Control and Prevention's Environmental Health Specialists Network (EHS-Net) cooperative agreement, San Mateo County produced a "Campy Training Kit" that includes a training manual, quick reference cards, video, posters, shelving label, and a thermometer (Figure 1). The materials were produced in English, Spanish, and Chinese, the three most prevalent languages spoken in restaurants in San Mateo County.

Campy Training Kit: Description

The Raw Chicken Handling Training Manual for Owners and Managers is a three-ring binder aimed at getting managers directly involved in training food workers. It consists of three parts: management, raw chicken handling, and training and self-inspection checklists. The management section instructs managers on how to use the manual and offers tips to teach food workers effectively. The second section provides an overview of the problem with raw chicken and how to properly store, prepare, and cook it. The last section offers three active managerial control tools to ensure appropriate equipment for safe chicken handling is available, employees are trained, and a safe preparation environment is maintained daily with opening and closing checklists.

The quick reference cards offer a smaller abbreviated version of the content of the

FIGURE 1

Campy Training Kit



Kit contains raw chicken handling training manual, quick reference cards, training video, refrigerator shelving label, and thermometer.

FIGURE 2

Bilingual Posters on Safe Chicken Handling (English/Spanish and English/Chinese)



training manual and can be easily referenced in the kitchen by keeping them in a drawer or in a chef's pocket. The raw chicken handling training video runs approximately 10 minutes and shows how to implement the training. It is designed to be viewed by the manager to increase confidence in his or her ability to train food workers.

The shelving label can easily snap onto a bottom shelf in a walk-in cooler and provides a reminder to employees about where to store raw chicken. The digital thermometer comes with the cooking temperatures for proteins printed on the case in English for easy reference. The safe chicken handling bilingual poster is provided in English-Spanish and English-Chinese versions and highlights the most important points about raw chicken storage, preparation, and cooking (Figure 2).

Campy Training Kit: Evaluation

The effectiveness of the Campy Training Kit is being measured by surveys conducted before and after delivery. The surveys include observation of storage, preparation, and cooking of raw chicken in addition to a food handler and manager interview. Seven hundred restaurants in San Mateo County were selected to receive the kits and were placed into one of three study groups: intervention-full, intervention-lite, or control. Presurveys were conducted by San Mateo County environmental health specialists (EHS) in fall 2013. The intervention-lite group received a hand-delivered Campy Training Kit; the intervention-full group also received a hand-delivered kit, as well as an in-person training with an EHS. This training provided an introduction to the kit and taught managers how they could implement the training with food workers. The postsurveys were conducted in early 2014; at that point, the control group received their kits.

The data are currently being analyzed to measure how effective the Campy Training Kit is at improving how raw chicken is handled to avoid cross contamination. We will also determine if any difference occurred in the effectiveness between study groups. Anecdotal evidence suggests the kits were well received by the restaurants, and employees appreciated having access to free thermometers and other training materials.

A final report will be completed by December 2014 and will be posted on San Mateo County Health System's Web site.

Although all of the material focused on safe handling of raw chicken, the concepts are applicable to other raw proteins. Similarly, the content of this project was focused on the reduction of *Campylobacter*, but reductions in other foodborne illnesses commonly associated with raw chicken, such as *Salmonella* and *E. coli*, are expected. For electronic copies of the training materials, visit <http://www.smchealth.org/campy>. 🐷

Corresponding Author: Emmy S. Myszka, Principal Investigator and Environmental Health Specialist IV, San Mateo County Environmental Health, 2000 Alameda de las Pulgas, Ste. 100, San Mateo, CA 94403.
E-mail: emyszka@smcgov.org.

References

California Department of Public Health. (2011). *Campylobacteriosis yearly summary report 2011*. Retrieved from <http://www.cdph.ca.gov/programs/sss/Documents/Campy-Yearly-Report.pdf>

Everis, L., & Betts, G. (2003). Microbiological risk factors associated with the domestic handling of meat: Sequential transfer of bacterial contamination. *R&D Report*, 170, 26–31.

National Antimicrobial Resistance Monitoring System. (2011). *Retail meat report, 2011*. Retrieved from <http://www.fda.gov/Animal-Veterinary/SafetyHealth/AntimicrobialResistance/NationalAntimicrobialResistanceMonitoringSystem/ucm334828.htm>

Did You Know?

September is National Food Safety Education Month. NEHA Training & Education has resources to educate your community about the importance of food safety. From credentialing to training certifications and programs to top-notch texts and online courses, NEHA Food Safety Training can meet your food safety education needs. Visit www.nehatraining.org for more information.

Coming this October!

neha.org/member

NEHA's new membership categories gives every professional affordable options to belong and an opportunity to grow. Choose the NEHA membership that is right for you, your career, and your commitment to the environmental health profession.



Journal of Environmental Health Delivery
Select E-Journal or both
E-Journal and print delivery options

Multi-Year Memberships
Choose between one, two, and three-year membership options and receive discounts based on your commitment.

Visit neha.org/member for details on the **New Membership Options!**