

# Modernizing Safe Handling and Ready-to-Eat/Not-Ready-to-Eat Labeling Instructions: Behavior Change Study

## Executive Summary August 23, 2020

The U.S. Department of Agriculture, Food Safety and Inspection Service (USDA, FSIS) conducted a study to inform decisions about modernizing the Safe Handling Instructions (SHI) label and to provide information on consumers' use and understanding of labeling on ready-to-eat (RTE) and not-ready-to-eat (NRTE) meat and poultry products. FSIS contracted with RTI International and its subcontractor North Carolina State University (NCSU) to conduct the study.

- Phase I was a web-based experiment with a sample of U.S. consumers to select three variants of a revised SHI label (among 27 variants) that best attract participants' attention.
- Phase II was a behavior change study using a randomized experimental design with participant meal preparation and eye tracking in four geographic locations to evaluate whether any of the three revised SHI labels result in greater adherence to recommended safe handling instructions and greater visual salience to the SHI label on product packaging compared with the current SHI label.
- Phase III was a cost-benefit analysis to compare the value of the benefits from predicted reductions in foodborne illness (estimated using a predictive modeling approach) with the costs to industry to voluntarily update their product packaging to incorporate the revised SHI label.

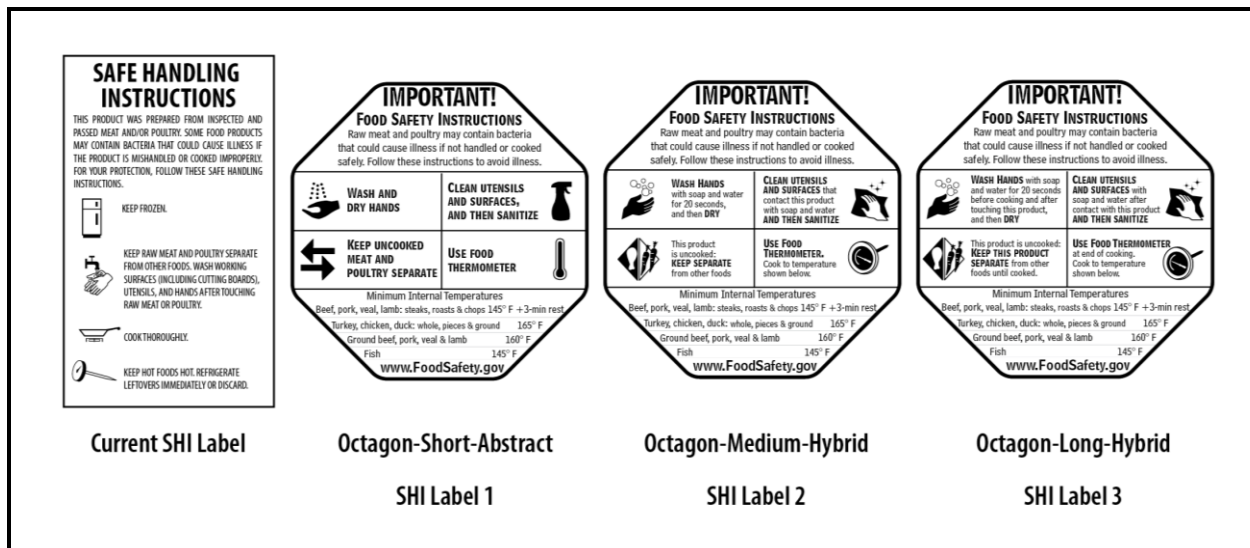
The approach and findings for Phase II, the behavior change study, are summarized below.

### ES.1 Study Approach

Participants in the behavior change study ( $n = 483$ ) took part in the following three activities:

- An **observational meal preparation experiment** using mobile eye tracking in a test kitchen to determine whether any of the three revised labels result in greater adherence to recommended safe handling instructions compared with the current SHI label. Participants prepared a meal of two types of pasta and meatballs: meatballs made from scratch using fresh ground beef and packaged, frozen NRTE meatballs.
- An **eye-tracking study** using mock food packages to obtain quantitative data that measure the visual salience of participants' attention to three revised SHI labels compared with the current SHI label. We also assessed participants' ability to correctly distinguish between RTE and NRTE products.
- **Post-interviews** to collect information on participants' awareness and use of the current SHI label and other information.

Data collection took place in test kitchens located in four different locations (North Carolina, California, Texas, and Rhode Island).



## ES.2 Findings and Conclusions

- The study findings suggest that the three revised SHI labels did not perform better than the current SHI label at encouraging participants' overall adherence to the four safe handling instructions on the revised SHI labels (i.e., handwashing, cleaning and sanitizing, avoiding cross-contamination, and thermometer use). The label adherence scores were relatively low for the current SHI and the three revised SHI labels.
- Statistical analysis examining safe food handling behaviors individually indicate the experimental variant, Octagon-Long-Hybrid, was significantly better than the current SHI label at encouraging proper handwashing behavior, but did not influence other safe food handling behaviors.
- Based on statistical analysis of the eye-tracking data, there were no significant differences in visual salience (i.e., attention) between any of the three revised SHI labels tested and the current SHI label.
- According to the eye-tracking data, attention to the SHI label is generally low, ranging from 1% to 38% of participants having any fixation on the SHI label, depending on the product viewed. For many of the products in the study, the rate of any fixation was higher for the manufacturer's cooking instructions (MCI) relative to the SHI label. The higher rate of fixation may be due to the MCI's larger size on the package and use of more text,
- The study also examined the respective attention participants give to the SHI label and the MCI when asked how to safely prepare an NRTE product. The results indicated that for the two NRTE products examined, participants were significantly more likely to look at the MCI before the SHI label.

- Regarding participants' ability to correctly distinguish between RTE products and NRTE products, the study found that participants are better at correctly identifying NRTE products than RTE products, that is, some participants incorrectly classified RTE products as NRTE products. From a food safety standpoint, participants handling and preparing RTE products as NRTE is not a concern.