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Consumer Labeling Research: Final Report

Prepared For
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Introduction

In September 2022, the U.S. Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS) contracted with RTI International to create and evaluate new labeling for raw meat and poultry products to motivate consumers to follow recommended safe handling practices. As part of the study, RTI conducted listening sessions and a literature review (described in separate reports) to inform the creation of new designs for the Safe Handling Instructions (SHI) label. The new label designs were tested and refined using a human-centered design approach via 12 consumer focus groups. After label designs were refined post-focus groups, RTI conducted in-depth interviews with nine consumers to obtain consumer feedback and finalize the test labels and icon designs. Lastly, RTI developed and administered a web-based experimental survey to identify the top-performing test labels (among the nine labels tested) relative to the current SHI label based on the outcomes of interest such as saliency (i.e. noticeability), changed food safety–related beliefs, and induced thinking about the risks of contracting foodborne illness. FSIS can use the study results to inform decisions regarding potentially updating the SHI label.

Key Findings

- When looking across all the analysis results, the two labels shown above performed the best relative to the current SHI label for two of the outcome measures:

  – Unaided recall, measured using a limited time exposure (LTE) experiment (indirect measurement approach)

  – Grabbing attention (direct outcome question)

  The ability for a label to capture attention is important since consumers must first notice the label before reading and paying attention to it.

- We did not find any evidence that the nine test labels performed better relative to the current SHI label for the other outcomes examined. The two labels shown above

performed better relative to one of the other test labels for communicating risk. Except for that outcome (communicating risk), there was no evidence that any test labels performed better relative to the other test labels.

- Despite the concerns voiced in the focus groups regarding the use of fear appeal messaging, the survey results suggest that survey respondents were not concerned about buying products with SHI labels containing the words *illness* or *bacteria*.

- About half of respondents would be somewhat or very unlikely to scan a QR code to get more information on safe handling, and 34% reported that they would be somewhat or very likely to do so. Statistical testing suggests a greater likelihood of use of a QR code among younger adults (ages 18-59) compared with adults ages 60 and older. In the consumer focus groups, most participants said that they would only scan a QR code out of curiosity, not necessarily to get more information on safe handling. Participants believed that a QR code would be helpful for new or inexperienced cooks.

- Half of respondents thought it would be useful to provide the recommended minimum internal temperature on the front of the package. Respondents were split as to whether the SHI label should appear on the front vs. the back of the package. Respondents did not want this information on the side of the package.

Recommendations

If FSIS proceeds with revising the SHI label regulations, we recommend the following based on the study findings:

- Use the two label designs shown above; manufacturers can choose between the two designs based on package color to provide contrast.
- Require manufacturers to place the SHI label on the front or back of the package (not the side of the package).
- Encourage manufacturers to voluntarily provide the recommended minimum internal temperature on the front of the package (some manufacturers already do this).
- FSIS may want to continue to explore the value of including a QR code with the SHI label. If FSIS decides to include a QR code, we recommend providing a QR code in addition to the label as designed, rather than replacing any of the information in the labels. Although the survey results were mixed regarding the usefulness of a QR code, many food manufacturers are including QR codes on their products that link to information about the product such as recipes.

If FSIS revises the SHI label regulations to update the SHI label, we recommend conducting a national campaign to make consumers aware of the revised SHI label. Making consumers aware of the revised label may encourage them to read and pay attention to the information on the label.

1.   Introduction

1.1   Background

The U.S. Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS) ensures that the public, stakeholders, and public health partners, as well as USDA-regulated industries receive valuable food safety information. FSIS strives to continuously increase consumer awareness of recommended food safety practices with the intent to improve food handling behaviors at home. As part of FSIS' efforts to reduce foodborne illness, the agency wants to develop effective labeling for raw and partially cooked meat and poultry products to motivate consumers to follow recommended safe handling practices.

Safe handling instructions (SHI) are required on the labels of raw and partially cooked meat and poultry products if those products are destined for household consumers or institutional uses (9 CFR 317.2[l] and 9 CFR 381.125[b]). FSIS has required the SHI label for raw and partially cooked meat and poultry products since 1994 (59 FR 40209). In 2020, FSIS contracted with RTI International to conduct a research study that comprised a web-based experimental survey and an experimental behavior change study that included meal preparation in a test kitchen environment, eye tracking, and in-depth interviews to create and evaluate potential new designs for the SHI label (Cates et al., 2020). For brevity, we refer to this study as the SHI Study. For the SHI Study, FSIS focused solely on recommendations from the National Advisory Committee on Meat and Poultry Inspection, so the focus was on updating the existing text and icons in the current SHI label and adding information on recommended internal minimal temperatures for different cuts of meat and poultry. The SHI Study found that the three labels tested did not perform better than the current SHI label with regard to visual saliency (i.e., noticeability) and behavior change for the safe handling practices displayed on the label (e.g., using a food thermometer to check the minimal internal temperature or washing hands with soap and water for 20 seconds and then drying) (Cates et al., 2020). Based on the results of the SHI Study, FSIS decided not to update the current SHI label.

Consumer groups and other stakeholders continue to advocate for improved labeling for raw and partially cooked meat and poultry products so that consumers safely prepare these products and thus help to prevent foodborne illness. In response, FSIS contracted with RTI and its subcontractor North Carolina State University to create and assess consumer response to new designs for the SHI label. This new study employed an external creative designer, used methodological approaches that were different from the prior SHI Study, and tested a larger number of labels compared with the prior SHI Study.

1.2   Project Overview

As shown in Figure 1-1, RTI used a multi-step approach to create and assess consumer response to potential new designs for the SHI label. We conducted seven listening sessions with consumer groups; representatives from the meat and poultry industry; and experts in health communication, food science, and food safety education to collect information on factors to

consider when creating new designs for the SHI label (Viator et al., 2023). Additionally, we conducted an extensive literature review to identify and summarize best practices for label design for attracting attention and motivating behavior change and recommendations for label design based on human factors research (Brophy et al., 2023). We worked with our external creative designer, Mr. Kevin Grady, to create new designs for the SHI label, which were informed by the findings from the listening sessions and literature review. We conducted two iterations of concept sessions with USDA and FSIS leadership to obtain feedback on the label designs prior to consumer testing.

We used a human-centered design approach to test and refine the labels. Human-centered design places consumers at the center of the design process and is driven by consumer insights gathered through an iterative co-creation process. This approach involved conducting 12 focus groups with consumers to obtain feedback on the initial label designs, including the format, layout, design features, and messaging. After revising the labels, we then conducted 9 in-depth interviews with consumers to further refine the label designs. To identify the top-performing labels, we conducted a web-based experimental survey that assessed the test labels on the outcomes of interest, such as visual saliency (i.e., noticeability), changed food safety–related beliefs, and induced thinking about the risks of contracting foodborne illness. This national survey of 2,400 preparers of raw meat or poultry products tested 9 test labels relative to the current SHI label (i.e., control). FSIS can use the results of this study to inform decisions regarding whether to revise the current SHI label, and if so, the optimal label design.

Figure 1-1.   Consumer Labeling Research Project Overview
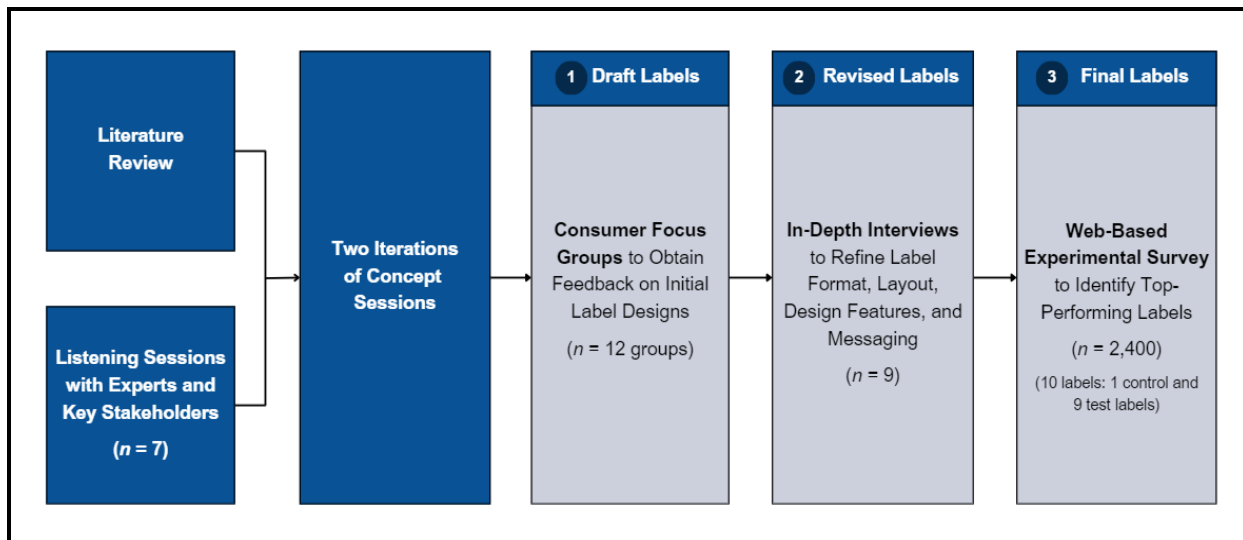
1.3   Organization of Report

This report is organized as follows:

- Section 2 provides a brief overview of the approach and key findings from the formative research (listening sessions and literature review), details the label creation process, and describes the methods and results for the consumer focus groups and in-depth interviews.

- Section 3 describes the methodology for the web-based experimental survey.

- Section 4 presents the results of the web-based experimental survey.

- Section 5 summarizes the study conclusions and provides our recommendations based on the research findings.

2.   Formative Research, Label Design, and Consumer Focus Groups and Interviews

This section provides a brief overview of the approach and key findings from the formative research (listening sessions and literature review), details the label creation process, and describes the methods and results for the consumer focus groups and in-depth interviews.

2.1   Listening Sessions with Key Stakeholders

2.1.1   Purpose

The purpose of the listening sessions was to collect input from relevant experts and stakeholder groups on important considerations for label format and messaging for potential new designs for the SHI label. This section provides a brief overview of the methods and key findings of the listening sessions. See the final report for additional information (Viator et al., 2023).

2.1.2   Methods

In December 2022 and January 2023, we conducted seven (1-hour) listening sessions with the following groups: consumer advocacy organizations, industry representatives for small and very small regulated establishments, industry representatives for large regulated establishments, nutrition educators and cooperative extension staff, food safety experts, communication and human factors experts, and FSIS leadership. During the sessions, we asked participants to provide their feedback on the following topics:

- Response to potentially revising the current SHI label
- Considerations for consumer information needs and messaging for new labeling
- Considerations for label design and format
- Other considerations for the new label (e.g., inclusion of a QR code)

We compiled the notes from each listening session into an Excel notes matrix. Using the matrix, we conducted a thematic analysis to identify patterns and meanings in the qualitative data gathered from the listening sessions. The themes that emerged from the notes matrix serve as the listening sessions' key findings.

2.1.3   Key Findings

One of the key findings that emerged from the listening sessions was the recommendation to conduct consumer research to inform label creation. As previously noted, our study design used a human-centered design approach, which included conducting consumer focus groups, in-depth interviews, and a web-based experimental survey to test and refine the labels.

Listening session participants offered the following additional recommendations for label creation:

- Include a title that is short and motivating, is risk-based, and includes the words "food safety."
- Use plain language.
- Use a risk-based approach to determine the instructions to include on a new label.
- Apply best practices for label design from communication and human factors research (e.g., white space, borders, mixed case for words, large font, symbols/icons).
- Keep the label simple and avoid technical terms.
- Use recognizable symbols/icons.
- Consider including a QR code that consumers could access to provide additional information in an engaging and instructional format.

We took these findings into consideration when creating the test labels.

2.2   Literature Review

2.1.1 Purpose

The purpose of the literature review was to identify labeling features that are most effective at capturing consumers' attention and motivating consumers to follow the label's instructions. This section provides a brief overview of the methods and key findings of the literature review; see the final report for additional information (Brophy et al., 2023). We used the findings from the literature review to inform the creation of the test labels for the focus groups.

2.1.2 Methods

To address our research questions and identify relevant research and studies for inclusion in the literature review, we conducted a search of the published peer-reviewed literature and grey literature. We searched PubMed, Web of Science, CINAHL, and PsycInfo for original research published in English between January 2010 and December 2022. We examined the grey literature (e.g., reports from government, industry, or other organizations; dissertations; presentations) for studies in English conducted between November 2022 and February 2023 to identify recent unpublished research. We summarized findings from the articles in evidence tables that included relevant information on the study design and population, outcomes, and findings relevant to our research questions. We reviewed the evidence tables to summarize the key findings from the literature review.

2.1.3 Key Findings

We included a total of 69 unique articles, reports, or books in the literature review. Topics addressed included research on instructional or warning labels, risk communication, behavioral psychology, and human factors design, as well as consumers' use of QR codes.

Drawing from the behavioral psychology and human factors research literature, the literature review identified best practices for label design and formatting to capture consumers' attention and help facilitate comprehension. Best practices include considerations about label placement (e.g., place labels on the front of the package), location of the main text (i.e., at the top of the

label), typographical cues for ease of reading and skimming (e.g., use of bold text), large font size to increase readability, use of symbols to draw attention and facilitate understanding, and use of the octagon shape and red color to indicate hazard.

Additional findings from the literature review regarding changing consumer risk perceptions and motiving behavior change are summarized below:

- For a label to be effective, consumers must first notice the label, then read it, then comprehend it, and then recall the instructions during future uses when they may not have access to the label (Spink et al., 2011).[1]
- Health warning labels can provide risk information and influence risk perceptions, but whether label exposure alone leads to behavior change is unclear.
- The more explicit messages are about the consequences on consumers' health, the more likely consumers are to change their behavior or risk perceptions.
- Consumers' intentions to use labels is positively influenced when consumers have greater confidence and trust in the labels.
- Warning messages are more effective when recommendations, explanations, and benefits are included in the message.
- Instructional labels that provide more detailed information are perceived as more beneficial and useful, provide improved control in decision-making, and are easier to understand and use compared with summary labels.

The literature review also explored consumers' use of QR codes, which were suggested for inclusion on the SHI label by listening session participants. We identified several advantages (e.g., connect consumers to multimedia content or information translated into multiple languages for increased accessibility) and disadvantages (e.g., concerns about security) of using QR codes on food packages. Although QR codes have become widespread, and some consumers are more comfortable with their use, at the time we conducted the literature review there was limited evidence from the literature that consumers would use QR codes on food packages to search for additional information. We created one label with a QR code to test in the consumer focus groups.

2.3   Label Design

After the formative research was completed, we worked with our external creative designer, Mr. Kevin Grady to create the initial label designs, which were informed by the findings from the listening sessions and literature review. Mr. Grady created 10 initial designs (with different versions, including the use of color) (see Appendix A). Each label design varied by different components, such as the shape of the label, alert word (word at top of label used to attract attention such as *Caution*), title (phrase at top of label such as *Food Safety Steps*, risk message to motivate use of the safe handling instructions such as *Follow these Instructions to Prevent*

Foodborne Illness, the safe handling instructions (short and long versions),[2] and icons (to symbolize the safe handling instructions). In June 2023, we conducted the first of two concept sessions with USDA and FSIS leadership to present the label designs and obtain their feedback. Mr. Grady revised the labels and presented six label designs during the second concept session with USDA and FSIS leadership in July 2023 (see Appendix B). Based on feedback from the second concept session, Mr. Grady created the four label designs to test in the consumer focus groups (see Figure 2-1). Label revisions included eliminating the use of color due to concerns about cost and feasibility, refining the titles and risk messages, including the mention of "raw meat" or "raw poultry" in the labels, refining the thermometer icon to make it more recognizable, and reducing the number of labels for testing in the focus groups.

Figure 2-1.   Focus Group Test Labels[a]

[a] The labels shown are for ground meat. Labels for poultry and steak/chops/roasts would use the appropriate minimum internal temperature for the "cook" message.

2.4   Consumer Focus Groups

2.4.1 Purpose

The purpose of the consumer focus groups was to assess consumer response to the four test label designs and identify features that resonate with participants, features that are not appealing, and suggestions for improving the labels. The focus groups explored the various design features of the test labels such as label shape, format, and layout; alert word and title; risk message; wording of the safe handling instructions; and icons used to symbolize the safe handling instructions. We used the findings from the focus groups to inform the final label designs for testing in the web-based experimental survey. This section briefly summarizes the methods and key findings from the consumer focus groups. We conducted a briefing with USDA

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[2] The test labels used the same four instructions used in the SHI Study (with modified wording): (1) wash hands with soap and water then dry; (2) clean utensils and surfaces that contact raw meat/poultry, then sanitize; (3) keep raw meat/poultry separate from other foods, and (4) use a food thermometer to ensure raw meat/poultry is cooked to proper internal temperature. These instructions were determined in the initial SHI Study using a risk-based approach (Cates et al., 2020).

and FSIS leadership to present the focus group findings and implications for label design; see the PowerPoint presentation for additional information (RTI, 2024).

2.4.2 Methods[3]

In February and March 2024, we conducted 12 consumer focus groups: 3 groups in each of 4 different locations (Syracuse, NY; Raleigh and Stanly County, NC; Dallas, TX; and Phoenix, AZ). Participants were English-speaking adults (aged 18 years or older) from the subpopulations of interest (see Table 2-1). We used a screening questionnaire to screen participants for eligibility (see Appendix C).

Table 2-1.   Consumer Focus Group Subpopulations and Locations

Subpopulation	Number of Groups	Location(s)
English-speaking Hispanic individuals	2	Dallas, TX and Phoenix, AZ
Individuals with limited cooking experience (i.e., beginner cooks)	2	Dallas, TX and Phoenix, AZ
Parents or guardians of young children (5 years of age or younger)	2	Syracuse, NY and Dallas, TX
Older adults (65 years of age or older)	2	Syracuse, NY and Phoenix, AZ
Individuals who are caregivers for both their children and older adults	2	Raleigh, NC and Syracuse, NY
Individuals who live in a rural location	1	Stanly County, NC
Individuals with limited literacy (as measure using the Rapid Estimate of Adult Literacy in Medicine [REALM] score < 60)	1	Raleigh, NC

We used a moderator's guide (see Appendix D) to provide structure for the focus group discussions. First, the moderator showed each of the four new label designs to participants (shown in Figure 2-1), and participants responded to each label individually. The moderator's guide asked a series of questions assessing participants responses to each of the new label designs, including first impressions, comprehension, and reactions to the title, alert words, and format of the label. The moderator then led participants in an activity to capture preferences for the best-performing label across several different dimensions: (1) likes the most, (2) likes the least, (3) best catches their attention, and (4) encourages them to follow the recommended instructions. Participants then independently completed a rank order exercise to rank their preferred title, alert word, risk message, and instruction length (see Appendix E).

We audio- and video-recorded the focused groups and transcribed the recordings. We coded the transcripts using NVivo 12 qualitative software and produced reports to identify common themes and any exceptions to these themes.

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[3] The Office of Management and Budget (OMB) approved the study (OMB control number 0583-0188, expiration date 1/31/2027). RTI's Institutional Review Board (IRB) reviewed the study protocol and determined that the protocol met the criteria for exemption from IRB review. RTI's IRB approval was received on 2/7/24.

2.4.3 Key Findings

The key findings from the focus groups are summarized below:

- Many participants agreed that the SHI label is useful for young or inexperienced cooks but said they would not read the instructions because they believe they are already following these practices.
- Participants preferred short and simple messaging and disliked redundant or repetitive text.
- Participants liked the use of icons to symbolize the safe handling instructions and said the icons were especially useful for low-literacy or non-English–speaking populations.
- Participants suggested increasing the font size to improve readability and using a "pop of color" to attract attention.
- Participants preferred the labels with reverse coloring (i.e., white text on black background, such as labels 1 and 4) saying it attracted attention.
- Participants liked the use of the alert words (e.g., *Attention* or *Important*), saying they helped to attract attention.
- Participants found the use of bold text to be effective for emphasizing important words in the risk message and safe handling instructions.
- Many participants said they were not receptive to fear-appeal messaging (e.g., use of words like *bacteria, illness,* or *caution*).
- Participants offered suggestions for improving several of the icons to make them more recognizable.
- Participants offered suggestions for improving the wording of several of the instructions to improve understanding.
- Participants had mixed responses to the inclusion of a QR code on the label. They said it would be useful for younger or inexperienced audiences, but older adults would not use it. Additionally, they would mostly scan the QR code out of curiosity to see what information was being linked.

2.4.4 Implications for Label Design

Based on the focus group findings, we created the nine labels to test in the web-based experimental survey:

- We retained labels 1 and 4 because these two labels were most preferred by participants.
- We retained label 2 to test a label with a QR code.
- We created three alternative versions of label 1 to measure consumer response (1) with and without slashes on the alert word; (2) with and without the use of reverse color; and (3) with a different alert word, title, and risk message.
- We created two alternative versions of label 4 to measure consumer response (1) with and without the reverse color and (2) with a different alert word, title, and risk message.

- We created a new label 3 that uses a horizontal rectangle shape and has a different title and no alert word.

Additionally, we developed alternative wording for the *wash hands*, *clean*, and *separate* instructions and alternative icon designs for the *clean*, *separate*, and *cook* instructions to test in the in-depth interviews. We determined that labels on meat products (ground meat and steak/chops/roast) would use images of meat for the icons (e.g., a steak) and labels on poultry products would use images of poultry for the icons (e.g., chicken leg or carcass).

2.5 In-depth Interviews with Consumers

2.5.1 Purpose

The purpose of the in-depth interviews was to obtain consumer response to the three new label designs (created following the focus groups), to test the alternative wording and icon designs for several of the safe handling instructions, and to test the titles and risk messages. We used the findings from the in-depth interviews to finalize the nine test labels for the experimental web-based survey.[4]

2.5.2 Methods[5]

In June 2024, we conducted nine interviews with English-speaking participants of various education level, race/ethnicity, age, and cooking experience. We used a screening questionnaire to screen participants for eligibility. The interviews were conducted virtually using the Zoom platform.

We used an interview guide to provide structure for the interviews. During the interviews, we asked participants to rank order alternative titles based on their ability to attract attention and to rank order alternative risk messages based on the degree to which they encouraged them to follow the recommended practices. The interviewer then asked a series of questions to obtain participant feedback following the ranking exercises. Next, the interviewer asked a series of questions to collect feedback regarding the alternative icon designs, alternative instructions, and the three new labels, including any recommended changes.

Following the interviews, we reviewed the notes from each interview to create a summary of the key finding and implications for label design.

2.5.3 Key Findings and Implications for Label Design

We used the findings from the in-depth interviews to inform the final wording of the titles and safe handling instructions and the icon design for the test labels. In particular, we refined the icon designs so they provided more detail but were still legible given the size of the label.

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[4] We had originally proposed to conduct a quantitative exploratory survey to refine the label designs before conducting the web-based experimental survey. Due to FSIS budget constraints, we were unable to conduct the survey so instead conducted the nine in-depth interviews to further refine the labels.

[5] RTI's IRB reviewed the study protocol and determined that the protocol met the criteria for exemption from IRB review. IRB approval was received on 5/23/24.

Additionally, we used an analog thermometer (instead of a digital one) for the "cook" icon to enhance recognition.

3. Methods for the Web-based Experimental Survey

This section summarizes the purpose of the web-based experimental survey and describes the study methods, including instrument development and testing, sample selection, data collection and survey response, and the analysis procedures. RTI subcontracted with Kantar (https://www.kantar.com/north-america), a provider of a non-probability-based, opt-in national online consumer research panel, to administer the survey.

3.1 Purpose

The web-based experimental survey had several components, which are summarized below.

- *Assess Saliency:* The primary purpose of the web-based experimental survey was to identify the most salient (i.e., noticeable) SHI label design(s) among the nine test labels relative to the current SHI label (i.e., control) using a limited time exposure (LTE) experiment.
- *Assess Secondary Outcomes:* We also measured additional outcomes in response to exposure to the test labels such as perceived risk impact, attitudes/beliefs, motivation/behavior, comprehension, and new information learned using a series of direct questions.
- *Reactions to Other Design Considerations:* Additionally, the survey explored respondents' preferences for various components of the label (e.g., title, alert word, risk message, placement of information). We added this section because funding was not available to conduct a separate quantitative exploratory survey to refine the test labels prior to conducting the experimental survey as originally planned.
- *Food Safety Behaviors and Risk Perceptions:* Lastly, we collected descriptive information on respondents' food safety behaviors and risk perceptions of foodborne illness.

3.2 Instrument Development and Testing

The survey instrument (Appendix E) was designed with an estimated participant burden of 20 minutes per response and was available in English. To assess label saliency and the other outcomes, an experimental approach was used in which respondents were randomly assigned to view 1 of 10 labels (the 9 test labels and the current SHI label, which served as the control). As described in this section, we used an LTE experiment to measure saliency, the primary outcome for the study, for the alternative label designs. To assess the secondary outcomes of interest (e.g., perceived risk impact, attitudes/beliefs), we reviewed the peer-reviewed literature to identify existing questions and modified them as needed. For several outcomes, we developed new questions. These 10 questions used a 5-point Likert scale (i.e., "Strongly disagree" to "Strongly agree") to assess agreement with the statement (see Table 3-1). To assess the perceived risk impact of the label and the risk message, we asked separate questions about the likelihood of getting food poisoning if the label instructions are not followed and the degree to which the risk message encourages one to follow the recommended practices

and the degree to which the risk message makes one concerned about the health risks of not following the practices. These questions used a 4-or 5-point Likert scale.

Table 3-1. Secondary Outcomes Assessed in the Web-based Experimental Survey[a]

Outcome	Survey Item (Assessed agreement using 5-point Likert scale, "Strongly Disagree" to "Strongly Agree")
Visual Receptivity	• The label is worth remembering. • The label grabbed my attention.
Perceived Risk Impact	• The label makes me think about health risks of food poisoning. • I believe following these instructions are important for the health and safety of my family.
Efficacy	• It would be difficult for me to follow these instructions.
Motivation/Behavior	• I would use this label to inform how I handle and prepare this product. • I would look for more information about food safety after reading this label.
Comprehension	• I understand what this label is telling me to do.
New Information Learned	• I learned something new from this label.
Receptivity to Fear Appeal Messaging	• I would have concerns about buying this product after reading this label.

[a]Sources reviewed to develop the survey items: Cantrell et al. (2013); Pepper et al. (2020); Chen et al. (2020); Emberger-Klein and Menrad (2018), and McCormack et al. (2016).

We also collected information on respondents' reactions to other design considerations such as the preferred alert word, title, risk message, and placement of minimum internal temperature and SHI label; descriptive information on respondents' food safety behaviors (using questions from the FDA Food Safety and Nutrition Survey) (Lando et al., 2021) and risk perceptions of foodborne illness; and awareness of the current SHI label. For these questions, we used multiple-choice questions (select one or select all that apply).

3.2.1 LTE Experiment

We used methods from signal detection theory to measure saliency (i.e., the ability of a stimulus to attract attention in a complex field) or noticeability of the SHI label on a raw meat package. Signal detection is a branch of psychophysiology that examines the ability of a subject to discriminate visual or auditory stimuli that contain information (i.e., signal) from stimuli that do not contain information (i.e., noise) (MacMillan, 2002). The methodology typically involves exposing subjects to stimuli and asking them to recall whether specific items were present. Subjects are typically exposed to the stimuli for a limited amount of time; thus, the approach is called LTE. For this study, we exposed respondents to one of 10 randomly assigned mock ground beef packages (i.e., 10 conditions) and then asked them to answer a series of questions. The packages were the same with the exception that the design of the SHI label varied (9 test labels and the current SHI as the control label) (see Figure 3-1).

Figure 3-1.   Test Labels for Experimental Survey
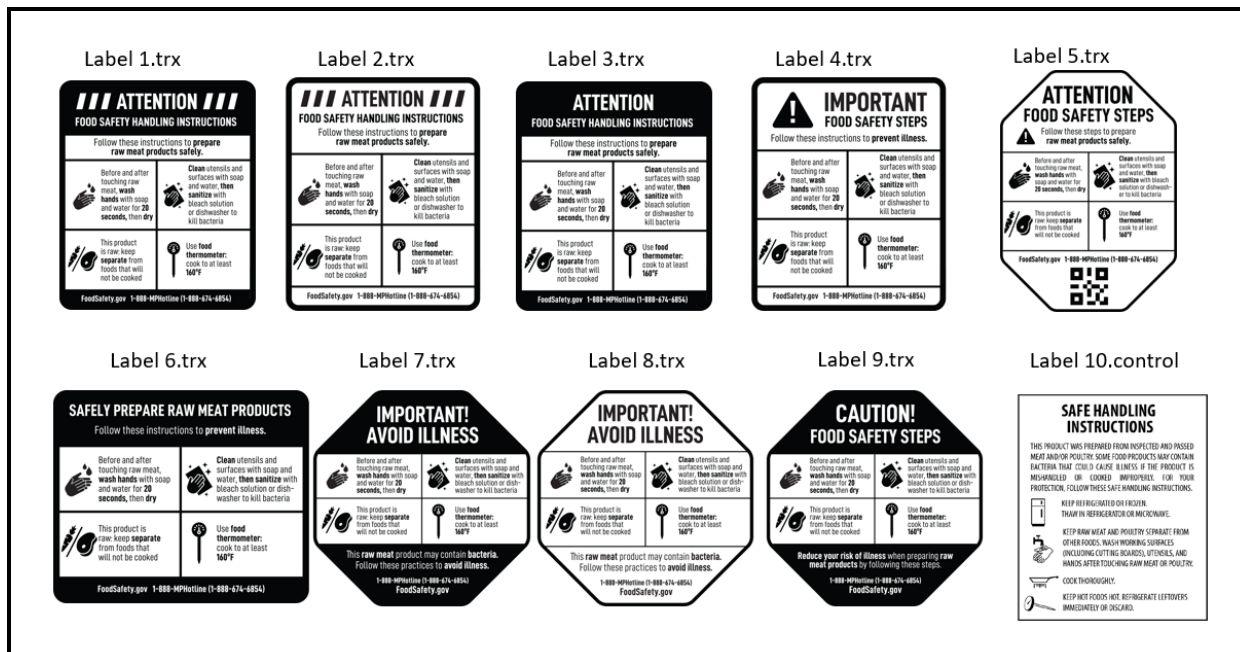
Before the mock ground beef package was shown (see Figure 3-2), respondents were instructed to carefully review the information on the package because they would be asked to answer questions about what they saw. Respondents first completed an unaided recall task in which they were asked to list everything they could remember seeing on the product package. Next, respondents completed a cued recognition task (i.e., aided recall). This task comprised eight dichotomous yes/no questions (shown in a random order) in which respondents were asked whether they remembered seeing certain words or images on the package. Four of the questions asked about items (words or images) that were on the package (i.e., hits), and four of the questions asked about items not on the package (i.e., false alarms). The hits asked about the alert word, title, handwashing icon, and thermometer icon. To practice the LTE task, respondents first completed an example task for a mock package of chicken tenders.

3.2.2   Instrument Testing

We conducted cognitive interviews using the programmed instrument with nine English-speaking adults who met the survey eligibility criteria (described in Section 3.3.2) to determine if any of the questions or response items were confusing or difficult to understand. Based on the cognitive interview findings, we revised the programmed instrument to improve understanding and readability. The cognitive interviews also confirmed the estimated burden of approximately 20 minutes (the average time to complete the survey was 16 minutes).

Figure 3-2.   Mock Ground Beef Package with One of the Test Labels

Before the administration of the full-scale survey, Kantar conducted a pilot with a sample of 104 randomly selected panelists (the pilot respondents were not included in the final analysis). The purpose of the pilot was to ensure the survey was working as intended and give respondents an opportunity to report whether they encountered any issues with the survey. To accomplish this, pilot respondents were asked at the end of the survey whether they found anything about the survey confusing or hard to understand and were able to elaborate on the issue if so. Based on the results of pilot, no changes were required to the instrument before proceeding with the survey. After the pilot, Kantar conducted a soft launch with 10% of our final sample, with a total of 244 randomly selected panelists (the soft-launch respondents were included in the final analysis). The purpose of the soft launch was to ensure that the programming logic, sample distribution and fulfillment, and data compilation procedures worked as intended. No concerns were encountered, so Kantar then launched the remaining sample.

3.3   Sample Selection

The population for the study was the U.S. general population of adults (18 years or older) who are members of the Kantar U.S. consumer opt-in panel.

3.3.1 Kantar Opt-In Panel Description

Kantar's U.S. consumer opt-in panel consists of approximately 1.5 million adults. Kantar uses the following methods to recruit panelists: email, co-registration, e-newsletter campaign, traditional banner placements, social marketing, and internal and external affiliate networks. A double opt-in approach is used to enroll consumers interested in participating on the panel. When a participant clicks on a link from a panel ad, they are directed to the panel registration survey. Each prospective panelist must provide demographic and household information, pass through some validation checks (e.g., verify postal address), and agree to the website terms, conditions, and privacy policy. Those who pass the checks are sent an email to confirm their email address. After clicking on a link within the email, they are prompted to complete the double opt-in process and become panel members.

3.3.2 Respondent Selection Methods

Kantar emails randomly selected panel members a study participation invitation. For this study, to achieve 2,400 completed surveys, Kantar sent email invitations to 13,221 English-speaking panel members. Selected panelists could access the survey through the survey portal, where they were provided information on informed consent and OMB approval. If panelists chose to proceed with the survey, they then answered a series of questions to determine whether they met the following eligibility criteria:

- Are aged 18 years or older
- Had more than "very little" experience cooking meals at home
- Had prepared a meal that includes using raw meat or poultry within the past 30 days
- Had not taken a ServSafe training or any other food safety class or cooked professionally
- Had not worked (or had or a family member who had worked) at one of the following industries, organizations, or professions in the past 5 years:
  - Market research, advertising, or public relations firm
  - Restaurant or other foodservice industry
  - Food processing plant or other food industry
  - Food and Drug Administration, U.S. Department of Agriculture, Centers for Disease Control and Prevention, or state agencies that oversee food safety
  - Doctor, nurse, dietitian, or other healthcare professional
- Did not have a medical or non-medical condition that hindered their ability to read and/or understand materials on a device's screen

As shown in Table 3-2, inbound quotas were used to ensure sufficient coverage of different demographic categories. Although we did not use a probability-based, nationally representative sample in any statistical sense, setting quotas helped ensure that the final sample of study participants was diverse with respect to these demographic characteristics.

Table 3-2.   Quotas for Inbound Sampling

Category	Percentage of U.S. Population of Adults Based on Census Data[a]	Quota for Survey
Race		
White (one race)	66	1,584
Black (one race)	13	312
Other race or two or more races	21	504
Hispanic		
No	81	1,944
Yes	19	456
Age		
18–34	27	652
35–44	17	413
45–59	25	604
60+	30	731
Education		
Less than high school or high school diploma/GED (including vocational training)	38	912
Some college (no degree) or associate or 2-year degree	28	672
Bachelor's degree	21	504
Graduate or professional degree	13	312
Total		2,400

[a] U.S. Census Bureau. (n.d.). 2015–2019 American Community Survey 5-year data profiles. Data Profiles | American Community Survey | U.S. Census Bureau. Race and ethnicity are for the U.S. population 18 years or older; age is for the U.S. population 20 years or older; and education is for the U.S. population 25 years or older. Percentages may not sum to 100% due to rounding.

3.4   Data Collection and Survey Response[6]

Data collection took place over the 3-week period from September 3, 2024 through September 25, 2024. The median completion time for the survey was 11.3 minutes (the OMB-approved burden was 20 minutes). Of the 13,221 selected panelists who received the email invitation, 12,129 responded to the invitation and completed the screening questions for a completion rate of 92%. Of these, 2,844 qualified (i.e., they have prepared raw meat or poultry in the past 30 days) and completed the survey for a qualification rate of 23%. Kantar dropped 444 cases during data cleaning because of quality concerns, such as respondents who sped through the survey or had responses that included gibberish (e.g., "kdjkjdfksacin"). Kantar replaced these

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[6] The OMB approved the study (OMB control number 0583-0192, expiration date 7/31/2025). RTI's IRB reviewed the study protocol and determined that the protocol met the criteria for exemption from IRB review.

respondents, yielding a total of 2,400 completed surveys (achieving the targeted number of surveys).

3.5   Analysis Procedures

3.5.1 Analysis for the Limited Time Exposure Experiment

Unaided Recall. We coded the open-ended responses to the unaided recall question to determine whether respondents recalled having seen the SHI label (coded as 1) or did not recall seeing it (coded as 0). Respondents who wrote a response suggesting they saw the SHI label (e.g., food safety label), including different components of the SHI label such as the instructions (e.g., handwashing), title or alert word (e.g., caution food safety steps) or general mentions (safety precautions) were coded as having recalled the SHI label. Respondents who did not mention any components of the SHI in their responses were coded as having not recalled the SHI label.

We conducted a training among the coders and had a second coder independently check the coding for 100% of the coded responses. We then calculated the proportion of respondents who reported seeing the SHI label for the unaided recall variable for the treatment conditions and control (current SHI label) condition. The Wald test was used to calculate 95% confidence intervals. We performed a chi-square test of independence to determine whether there was a statistically significant association between label condition and unaided recall. Because the results of this test demonstrated statistical significance (p < .05), we then conducted post hoc tests. We conducted individual comparisons to test whether the differences in the rate of unaided recall between the control and each of the treatment labels was statistically significant and conducted individual comparisons to test whether the differences in the rate of recall between treatment labels (e.g., Label 1 vs Label 2) was statistically significant (p <.05 level).

Aided Recall. As previously noted, four questions asked respondents to recall words or images that were on the SHI label; an affirmative (yes) response to each is referred to as a hit. Four additional questions asked respondents to recall words or images that were not on the mock package; an affirmative (yes) response to each is referred to as a false alarm. We calculated the proportion of hits and misses for each of the eight questions. Additionally, we calculated the *d′* score (Bylinskii et al., 2017). The *d′* score was calculated from the responses to the set of eight yes/no questions, where the numbers of hits and false alarms were summed separately. We calculated each respondent's *d′* score using the following formula:

$$d' = H\text{-}score - F\text{-}score$$

where

> *H-score* is the number of correct hits.

> *F-score* is the number of false alarms.

Applying this formula results in a *d′* score with a range of −4 to +4 for each of the 10 conditions. The condition with the highest *d′* score indicates that respondents were more likely to notice that

SHI label on the mock ground beef package. We performed an ANOVA test to determine whether the differences in the mean d′ scores were statistically significant. We then performed the Tukey procedure, a post-hoc test to determine which specific conditions' means (compared with each other) are different. The test compares all possible pairs of means (i.e., control vs. treatment, and treatment vs. treatment).

3.5.2 Analysis of Other Survey Questions

For the 10 questions used to assess the secondary outcomes of interest that used a 5-point Likert scale, we calculated a mean score, ranging from 1 to 5. Respondents who did not answer the question (i.e., missing values) were not included in the calculations. For each outcome, we performed an ANOVA test to determine whether the differences in the mean scores were statistically different, followed by the Tukey procedure. This same approach was used for the three questions used to assess the perceived risk impact of the label and the risk message,

For the remaining questions in which respondents could select one response or multiple responses from a list of responses (i.e., categorical variables), we calculated proportions. Respondents who did not answer the question (i.e., missing values) were not included in the calculations. For the question that asked about use of a QR code, we also conducted a chi-square test of independence to determine whether there was a statistically significant association between age category and use of a QR code.

4.   Results of the Web-based Experimental Survey

This section discusses the results of the web-based experimental survey. First, we describe the study sample, including their demographic characteristics, their food safety risk perceptions, and self-reported food safety behaviors. Next, we present the results of the experimental components of the survey (LTE and additional outcomes), followed by a summary of the descriptive information collected on respondents' preferred alert word, title, and risk message.

4.1   Study Sample

Table 4-1 summarizes the demographic characteristics of the survey respondents (n = 2,400). About 70% of respondents identified as female; 62% identified as White only and 43% were 35 to 59 years old. A third of respondents had graduated high school or had completed a GED (33%) while another third had some college, associate's degree, or technical/vocational school (33%), and about another third had a bachelor's degree or higher (34%). Nearly half of respondents (49%) had at least one individual in their household at risk for foodborne illness (i.e., an adult aged 65 years or older; a child aged 5 years or younger; a pregnant woman; or an individual diagnosed with diabetes, kidney disease, or another condition that weakens the immune system).

Table 4-1.   Demographic Characteristics of Survey Respondents

	n	%
Age		
18–34	649	27.04
35–44	415	17.29
45–59	605	25.21
60+	731	30.46
Education		
High school graduate/GED or less	794	33.08
Some college, associate's degree, or technical/vocational school	791	32.96
Bachelor's degree	504	21.00
Master's degree or higher	311	12.96

(continued)

Table 4-1. Demographic Characteristics of Survey Respondents (continued)

	n	%
Race/ethnicity		
White, alone	1,493	62.21
Black, alone	312	13.00
Hispanic, alone	284	11.83
Asian, alone	75	3.13
Multi-racial or some other race	211	9.84
U.S. Census Region		
Northeast	426	17.75
Midwest	516	21.50
West	413	17.21
South	1,045	43.54
Sex at Birth		
Male	710	29.58
Female	1,686	70.25
Prefer not to answer	4	0.17
Gender Identity		
Male	707	29.46
Female	1,684	70.17
Transgender	2	0.08
None of these	5	0.21
Prefer not to answer	2	0.08
Respondent or household member at risk for foodborne illness[a]		
65 years of age or older	710	29.58
5 years of age or younger	283	11.79
Pregnant	31	1.29
Diagnosed with a condition that weakens the immune system	336	14.00
None of the above	1,233	51.38
At least one household member at risk for foodborne illness		
Yes	1,167	48.63
No	1,233	51.38

[a] Responses may sum to more than 100%; question indicated "select all that apply."

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis.

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Respondents were asked a series of questions regarding their self-reported food safety behaviors and previous experience with food poisoning (see Table 4-2). About 70% of respondents reported owning a food thermometer. Among those who owned a food thermometer and cook the food in their household, self-reported food thermometer usage to test for doneness (i.e., use thermometer all the time, sometimes, or often) ranged from 91% for whole chickens and 85% for beef, lamb, or pork roasts to 76% for chicken parts and 58% for burgers. In comparison, for the 2019 FDA FNS survey, 62% of respondents reported owning a food thermometer. Usage among those who owned food thermometers and cook the food ranged from 85% for whole chickens and 79% for beef, lamb, or pork roasts to 40% for chicken parts and 36% for burgers (Lando et al., 2021).

Table 4-2.   Respondents' Self-Reported Food Safety Behaviors

	n	%
Owns Food Thermometer		
Yes	1,677	69.88
No	699	29.13
Don't know	24	1.00
If Own Food Thermometer and Cook the Food, Use Food Thermometer Use It All the Time, Sometimes, or Often to Test for Doneness		
Beef, lamb, or pork roasts	1,338	84.59
Whole chickens or turkeys	1,384	90.99
Chicken parts such as breasts or legs	1,256	76.08
Hamburgers made from beef	934	58.44
Frequency of Washing Hands with Soap Before Preparing Food		
All the time	1,876	78.17
Most times	370	15.42
Sometimes	107	4.46
Rarely	33	1.38
Never	14	0.58
Handwashing Behaviors After Handling Raw Meat or Chicken[a]		
Wash your hands with soap	2,144	89.74
Rinse or wipe your hands	392	16.41
Continue cooking without washing your hands	74	3.10
Other	19	0.80

(continued)

Table 4-2.   Respondents' Self-Reported Food Safety Behaviors (continued)

	n	%
Cutting Board Practices After Cutting Raw Meat or Chicken[a]		
Wash it with soap	1,856	78.38
Put it in the dishwasher	469	19.81
Rinse or wipe it	358	15.12
Wash it with bleach	326	13.77
Continue using it without rinsing or washing	44	1.86
Other	22	0.93
Previous Food Poisoning Experience in Household		
Yes	893	37.21
No	1,507	62.79

[a] Responses may sum to more than 100%; question indicated "select all that apply."

[b] Item asked only of those who responded "yes" to owning a food thermometer and prepare the food in their household (n = 1,677).

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis.

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Nearly all respondents reported washing their hands with soap most or all of the time before preparing food (94%). Additionally, most respondents reported following the correct cleaning practices when handling raw meat or chicken products. For example, 90% reported washing their hands with soap after handing raw meat or chicken products, and 98% reported washing their cutting board with soap or putting it in the dishwasher after cutting raw meat or chicken products. These results are generally similar to the 2019 FDA FNS survey (Lando et al., 2021).

Slightly more than a third of respondents reported previous experience with food poisoning in their household (37%). Respondents were asked several questions to better understand their perceived risk of food poisoning. Most respondents believe food poisoning is somewhat or very serious (92%) (Figure 4-1**)**. However, 81% of respondents believe it is somewhat or very unlikely that they will get food poisoning from the food they cook at home in the next 12 months (Figure 4-2).

Figure 4-1.   Respondents' Perceived Risk of Seriousness of Food Poisoning
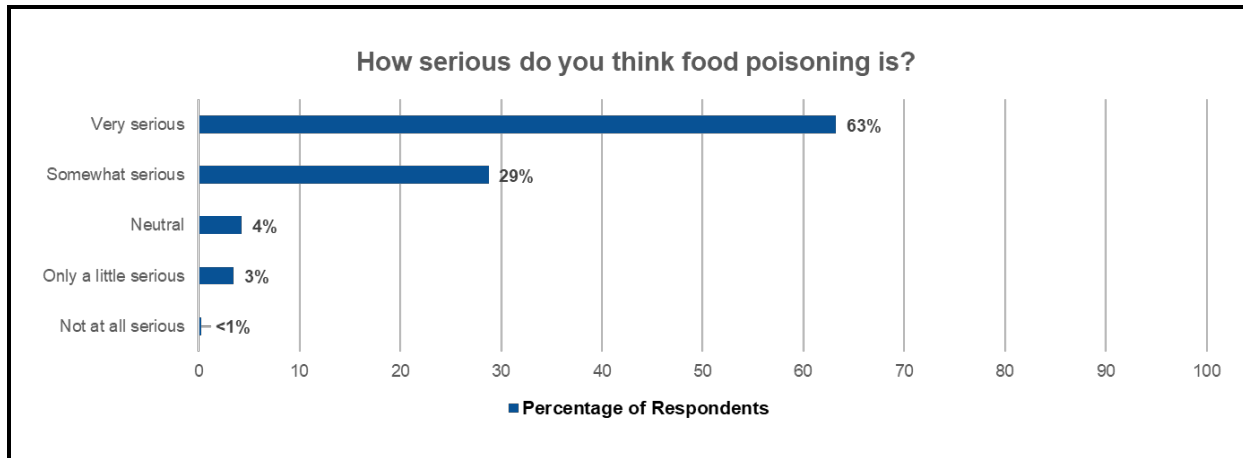
How serious do you think food poisoning is?

Very serious	63%
Somewhat serious	29%
Neutral	4%
Only a little serious	3%
Not at all serious	<1%

■ Percentage of Respondents

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis.
Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Figure 4-2.   Respondents' Perceived Risk of Contracting Food Poisoning from Food Cooked at Home
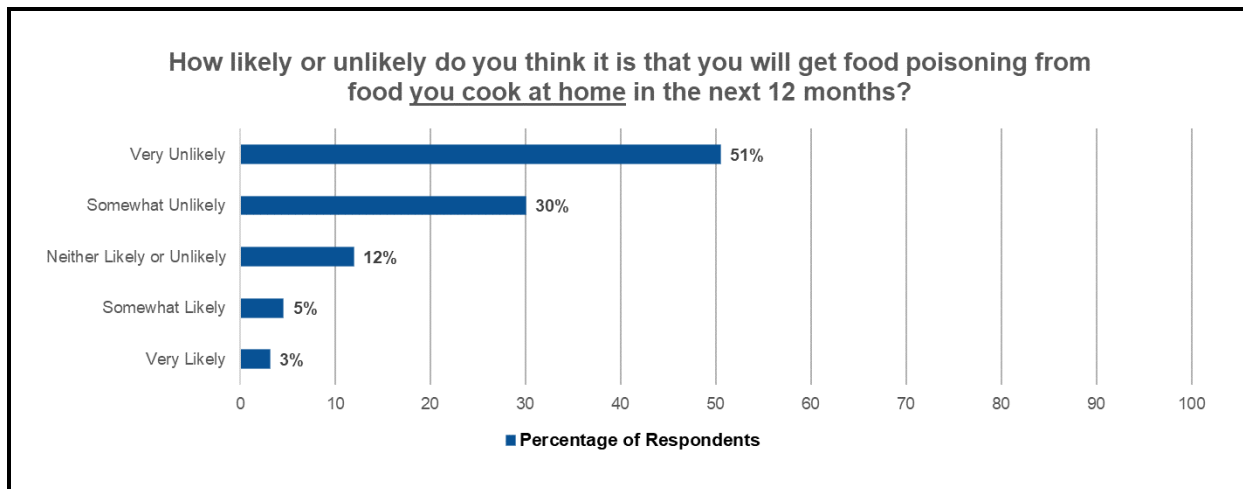
How likely or unlikely do you think it is that you will get food poisoning from food <u>you cook at home</u> in the next 12 months?

Very Unlikely	51%
Somewhat Unlikely	30%
Neither Likely or Unlikely	12%
Somewhat Likely	5%
Very Likely	3%

■ Percentage of Respondents

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis.
Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

4.2   Awareness of Current SHI Label

Respondents were asked about their awareness of the current SHI label and three other campaign logos (which were included as distractors) (see Figure 4-3). This question was asked after the experimental part of the survey so as not to bias respondents. Among respondents exposed to one of the nine treatment labels, 66% had previously seen the SHI label.

Figure 4-3.   Awareness of the Current SHI Label
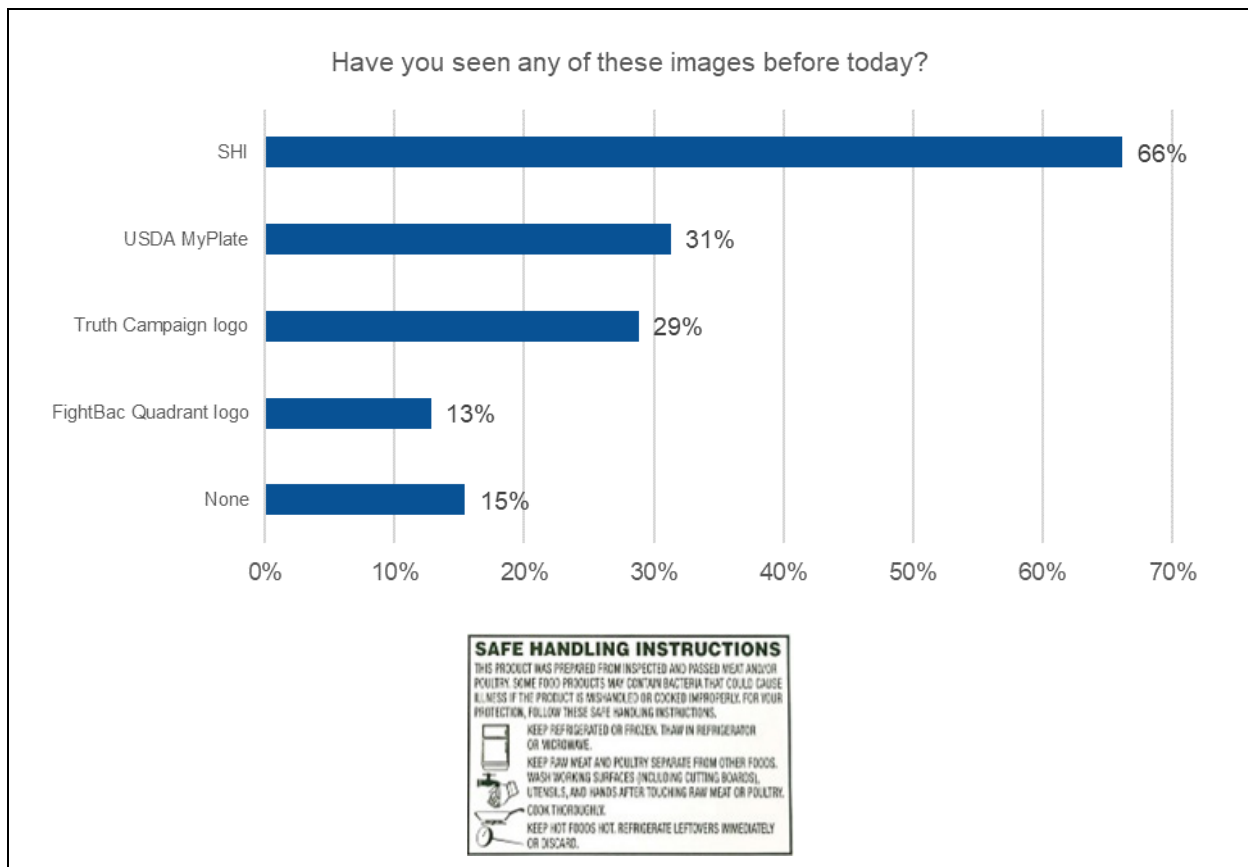
Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis.
Source: 2024 FSIS CLR Experimental Survey (adults who have prepared raw meat or poultry in the past 30 days).
    Number of respondents = 2,160 (excludes respondents in the control condition [i.e., the current SHI label].

4.3   Experimental Results

4.3.1 LTE Experiment: Unaided Recall

Unaided recall for the SHI label (i.e., respondents wrote a response suggesting they saw the SHI label) on a mock ground beef package ranged from 15% to 33% for the nine test labels, compared to 14% for the current SHI label (control) (see Figure 4-4). Labels 8 and 3 had the highest unaided recall, with 33% and 29% of respondents respectively mentioning at least one feature of the label, such as the title, an instruction, or a general phrase such as "food safety." When testing for significant differences between the rate of unaided recall for the 10 label conditions, labels 1, 3, 4, 7, 8, and 9 (blue bars) performed better relative to the current SHI label (orange bar). The rate of unaided recall for the labels shown as gray bars (labels 5, 2, and 8) was not significantly different compared to the control. Appendix F provides the results of this analysis in a tabular format. [click here to link to labels]

Figure 4-4.   Percentage of Respondents Who Recalled Seeing the SHI Label on the Mock Ground Beef Package by Label Condition (Unaided Recall)
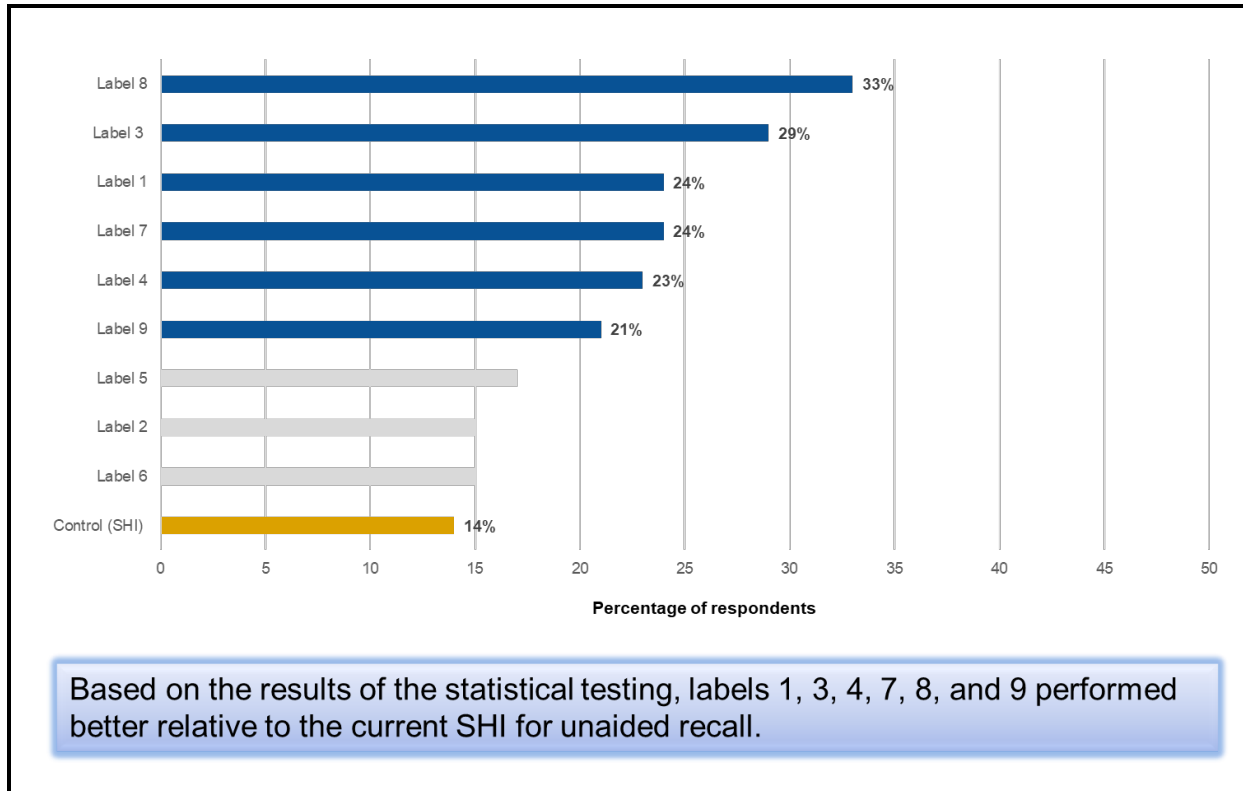
Note: Blue bars indicate that the rate of unaided recall for the test label is significantly different compared with the current SHI label (orange bar). Grey bars indicate that the rate of unaided recall for the test label is not significantly different compared with the current SHI label (orange bar).

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

4.3.2   LTE Experiment: Cued Recognition (Aided Recall)

Table 4-3 reports the results for the analysis of the cued recognition (aided recall) questions, including the responses to the eight dichotomous questions, the mean hits, the mean false alarms, and the mean d' score for the nine test labels and the current SHI label.

Title. When shown the title on the label viewed on the mock ground beef package and directly asked whether they remembered seeing it, the percentage of respondents who reported remembering the title ranged from 69% to 79% across the nine test labels and the current SHI label. The current SHI title, *Safe Handling Instructions*, and label 2, *Food Safety Handling Instructions*, had the highest recall (79% for both). However, it should be noted that *Food Safety Handling Instructions* also appeared on labels 1 and 3, and recall was slightly lower.

Thermometer icon. When shown the thermometer icon that appeared on all the treatment labels and directly asked whether they remembered seeing it, the percentage of respondents who reported remembering this icon ranged from 42% to 51% across the nine test labels. Recall of the thermometer icon on the current SHI label was 41%.

Table 4-3. Results for Analysis of Cued Recognition (Aided Recall) Questions by Label Condition

		Current SHI Label (Control) (n = 240)	Treatment								
			Label 1 (n = 240)	Label 2 (n = 240)	Label 3 (n = 240)	Label 4 (n = 240)	Label 5 (n = 240)	Label 6 (n = 240)	Label 7 (n = 240)	Label 8 (n = 240)	Label 9 (n = 240)
Title from assigned label (hit)		*Safe Handling Instructions*	*Food Safety Handling Instructions*			*Food Safety Steps*		*Safely Prepare Raw Meat Products*	*Avoid Illness*		*Food Safety Steps*
	n	189	176	190	187	183	179	166	174	168	187
	%	79	73	79	78	76	75	69	73	70	78
Thermometer image (hit)	n	99	108	115	122	121	104	107	116	112	100
	%	41	45	48	51	50	43	45	48	47	42
Handwashing icon (hit)	n	97	121	118	133	119	114	118	125	139	109
	%	40	50	49	55	50	48	49	52	58	45
Alert word (hit)		*Safe*	*Attention*			*Important*	*Attention*	*Safely*	*Important!*		*Caution!*
	n	122	170	143	130	147	121	154	177	166	118
	%	51	71	60	54	61	50	64	74	69	49
WARNING (false alarm)	n	75	119	112	112	125	109	99	155	148	115
	%	31	50	47	47	52	45	41	65	62	48
"Grass Fed" (false alarm)	n	38	49	50	46	47	43	58	51	46	42
	%	16	20	21	19	20	18	24	21	19	18
(grill image) (false alarm)	n	58	62	75	55	59	52	58	62	50	42
	%	24	26	31	23	25	22	24	26	21	18
(cow image) (false alarm)	n	109	118	118	110	122	119	123	127	108	112
	%	45	49	49	46	51	50	51	53	45	47

Table 4-3.   Results for Analysis of Cued Recognition (Aided Recall) Questions by Label Condition (continued)

		Current SHI Label (Control) (n = 240)	Treatment								
			Label 1 (n = 240)	Label 2 (n = 240)	Label 3 (n = 240)	Label 4 (n = 240)	Label 5 (n = 240)	Label 6 (n = 240)	Label 7 (n = 240)	Label 8 (n = 240)	Label 9 (n = 240)
Mean hits (0 to 4)	Mean (SD)	2.11 (1.29)	2.40 (1.26)	2.36 (1.25)	2.38 (1.31)	2.38 (1.38)	2.16 (1.40)	2.27 (1.33)	2.47 (1.26)	2.44 (1.23)	2.14 (1.31)
Mean false alarms (0 to 4)	Mean (SD)	1.17 (1.12)	1.45 (1.18)	1.48 (1.21)	1.35 (1.18)	1.47 (1.15)	1.34 (1.19)	1.41 (1.20)	1.65 (1.20)	1.47 (1.12)	1.30 (1.12)
Mean d' score (-4 to +4)	Mean (95% CI)	0.95 (0.80-1.10)	0.95 (0.76-1.13)	0.88 (0.70-1.05)	1.03 (0.85-1.21)	0.90 (0.74-1.07)	0.81 (0.63-0.99)	0.86 (0.68-1.04)	0.82 (0.65-0.99)	0.97 (0.81-1.13)	0.85 (0.68-1.01)

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis. We performed an ANOVA test to determine whether the differences in the mean d' scores were statistically significant. The differences were not statistically significant. CI = confidence interval

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Handwashing icon. When shown the handwashing icon that appeared on all the treatment labels and directly asked whether they remembered seeing it, the percentage of respondents who reported remembering this icon ranged from 45% to 58% across the nine test labels. Recall of the handwashing icon on the current SHI label was 40%.

Alert word. When shown the alert word on the label viewed on the mock ground beef package and directly asked whether they remembered seeing it, the percentage of respondents who reported remembering the alert word ranged from 49% to 74% across the nine test labels and the current SHI label.

Mean hits. The mean hits ranged from 2.11 to 2.47 across the 10 labels (nine test labels and current SHI label).

Mean false alarms. The mean false alarms ranged from 1.17 to 1.65 across the 10 labels (nine test labels and current SHI label).

d' score. We used the responses to the eight cued recognition questions to calculate a d' score for each respondent and then calculated the mean d' score for each of the 10 conditions. The mean d' score ranged from 0.81 to 1.03. The differences in the d' scores were not statistically significant meaning that for cured recognition (aided recall) none of the test labels performed better relative to the control. Unaided recall may be a better measure of saliency or noticeability because respondents are not cued, which could potentially inflate recall.

Test Labels for Experimental Survey
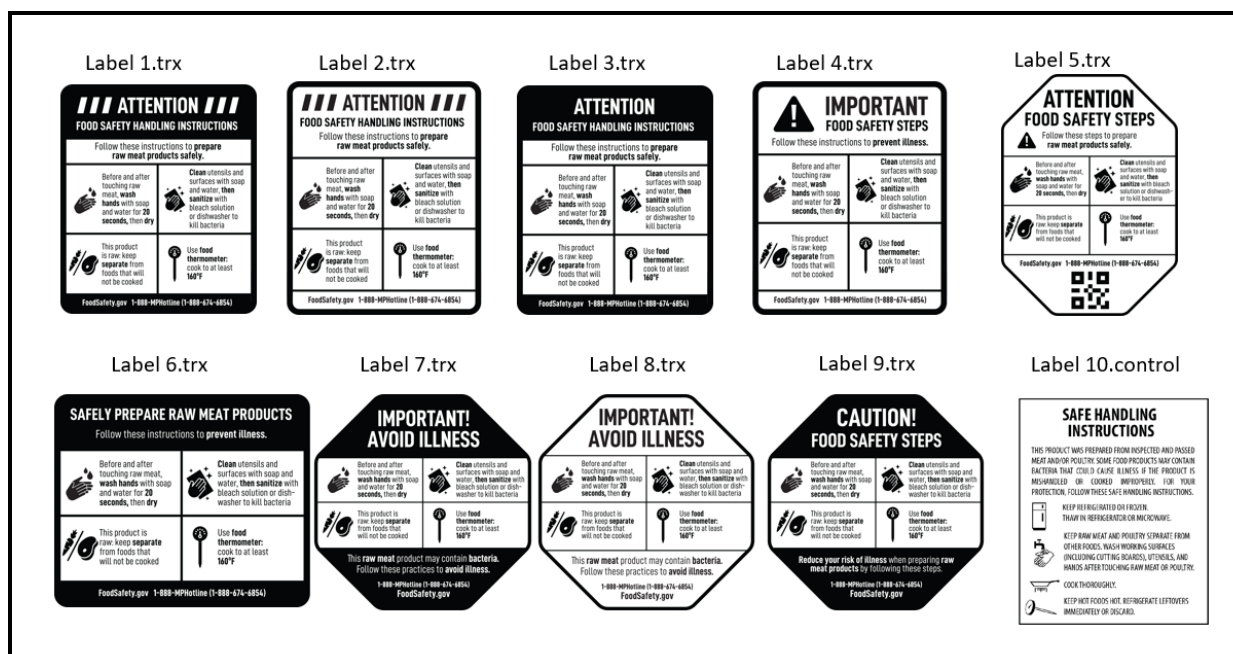
4.3.3 Experimental Results for Secondary Outcomes Assessed Using Direct Questions

Respondents were asked to indicate their level of agreement with 10 statements to assess the secondary outcomes (e.g., perceived risk impact, attitudes/beliefs) in response to viewing the

assigned SHI label condition (the same label viewed for the LTE experiment). Table 4-4 presents the statements and the mean level of agreement by label condition. Labels 7 and 8 generally received slightly higher mean scores for several of these statements. For example, labels 7 and 8 had the highest mean level of agreement for the statements regarding "worth remembering," "grabbed attention," and "made me think about the health risks of food poisoning" compared to the other eight labels. Conversely, the current SHI label had the highest mean level of agreement for "understanding what this label is telling me to do" (4.58) compared to the nine test labels. The mean level of agreement for the statement, "I would have concerns about buying this product after reading this label" was relatively low, ranging from 2.00 to 2.30 (see Table 4-4), which suggests that the use of fear-appeal messaging (e.g., using words such as "bacteria" and "illness") would not deter respondents from purchasing a product with this SHI label. [click here to link to labels]

When testing for significant differences between the mean values for the 10 label conditions, labels 7 and 8 performed better (blue bars) relative to the current SHI label (orange bar) for grabbing attention. The mean values for the labels shown as gray bars were not statistically different compared to the control. (see Figure 4-5). None of the test labels performed better relative to the current SHI label for any of the other secondary outcomes examined.

Except for one outcome (communicating risk), none of the test labels performed better relative to the other test labels. For communicating health risks (i.e., "this label makes me think about the health risks of food poisoning"), labels 1, 7, and 8 performed better than label 3 (see Figure 4-6).

Figure 4-7 shows respondents' mean response for the question on perceived likelihood they will get food poisoning from the food they cook at home if they do not follow the food safety instructions shown on the label. The mean responses ranged from 3.41 to 3.60. None of the test labels performed better relative to the current SHI label (orange bar) for respondents' perceived likelihood of getting food poisoning.

Lastly, as part of assessing response to the test labels, respondents were asked two questions to understand their perceived risk after reading one of the six different risk messages on the randomly assigned SHI label (the same label viewed for the LTE experiment), including the current SHI label (see Table 4-5). When asked to what extent the message makes you want to follow the recommended food safety instructions on the label, the mean responses were generally similar and ranged from 3.38 to 3.55. When asked to what extent the message makes you concerned about the health risks of unsafe food handling behaviors, the mean responses were generally similar and ranged from 2.94 to 3.15. None of the risk messages appearing on the test labels performed better relative to the risk message on the current SHI label for these questions.

Table 4-4. Mean Level of Agreement (Standard Deviation) for Secondary Outcomes Assessed Using Direct Questions by Label Condition

Statement	Current SHI Label (Control) (n = 240)	Label 1 (n = 240)	Label 2 (n = 240)	Label 3 (n = 240)	Label 4 (n = 240)	Label 5 (n = 240)	Label 6 (n = 240)	Label 7 (n = 240)	Label 8 (n = 240)	Label 9 (n = 240)
				Treatment						
The label is worth remembering	4.19 (0.83)	4.14 (0.96)	4.17 (0.83)	4.17 (0.87)	4.22 (0.86)	4.12 (0.84)	4.15 (0.77)	4.28 (0.76)	4.27 (0.78)	4.13 (0.88)
The label grabbed my attention[a]	**3.49 (1.06)**	3.76 (1.04)	3.73 (1.09)	3.59 (1.11)[ᶦ]	3.71 (1.11)	3.71 (1.09)	3.64 (1.08)	**3.94 (0.92)**	**3.80 (1.03)**	3.65 (1.06)
The label makes me think about the health risks of food poisoning[b]	3.87 (1.07)	**4.06 (0.91)**	4.00 (0.94)	**3.73 (1.03)**	3.98 (0.97)	3.93 (0.99)	3.97 (0.96)	**4.07 (0.95)**	**4.10 (0.88)**	3.83 (1.07)
I believe following these instructions are important for the health and safety of my family	4.52 (0.63)	4.48 (0.67)	4.52 (0.61)	4.51 (0.61)	4.51 (0.65)	4.48 (0.70)	4.47 (0.69)	4.56 (0.63)	4.53 (0.70)	4.41 (0.70)
I would use this label to inform how I handle and prepare this product	4.11 (0.93)	4.12 (0.93)	4.17 (0.84)	4.08 (0.92)	4.17 (0.83)	4.13 (0.96)	4.09 (0.91)	4.20 (0.83)	4.20 (0.88)	4.09 (0.88)
I would look for more information about food safety after reading this label	3.12 (1.21)	3.43 (1.16)	3.40 (1.12)	3.14 (1.14)	3.33 (1.16)	3.26 (1.22)	3.28 (1.17)	3.36 (1.16)	3.42 (1.09)	3.36 (1.12)
I understand what this label is telling me to do	4.58 (0.57)	4.51 (0.59)	4.47 (0.68)	4.51 (0.65)	4.47 (0.73)	4.50 (0.62)	4.50 (0.65)	4.47 (0.68)	4.50 (0.70)	4.50 (0.63)
I learned something new from this label	3.16 (1.25)	3.30 (1.20)	3.45 (1.09)	3.31 (1.14)	3.35 (1.19)	3.45 (1.18)	3.40 (1.19)	3.44 (1.21)	3.33 (1.12)	3.36 (1.2)
It would be difficult for me to follow these instructions	1.86 (1.08)	1.81 (1.03)	1.84 (1.04)	1.78 (0.96)	1.84 (1.05)	1.90 (1.05)	1.90 (1.08)	1.90 (1.06)	1.78 (0.98)	1.88 (1.05)
I would have concerns about buying this product after reading this label	2.04 (1.06)	2.17 (1.13)	2.19 (1.08)	2.00 (0.98)	2.21 (1.13)	2.24 (1.13)	2.25 (1.17)	2.30 (1.16)	2.25 (1.13)	2.06 (1.03)

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis. For each outcome, we performed an ANOVA test to determine whether the differences in the mean scores were statistically significant. For outcomes that were significant at the .05 level, we performed the Tukey procedure to determine which specific conditions' means are different from the control (i.e., control vs. treatment) and from each other (i.e., treatment vs. treatment). Response scale: Strongly disagree (1) Strongly disagree, (2) Disagree, (3) Neither agree nor disagree, (4) Agree, (5) Strongly Agree.

Source: 2024 FSIS CLR Experimental Survey (N=2,400) (adults who have prepared raw meat or poultry in the past 30 days).

[a]Mean value for Labels 7 and 8 were statistically different compared to the control label (p < .05), meaning the label performed better compared to the control.

[b]Mean values for Labels 7, 8, and 1 were statistically different compared to label 3 (p < .05), meaning these labels performed better compared to Label 3.

Note: Blue bars indicate that the mean level of agreement for the test label is significantly different compared with the current SHI label (orange bar). Grey bars indicate that the mean level of agreement for the test label is not significantly different compared with the current SHI label (orange bar).

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Figure 4-6.   Respondents' Mean Level of Agreement for Label Communicates Health Risks by Label Condition
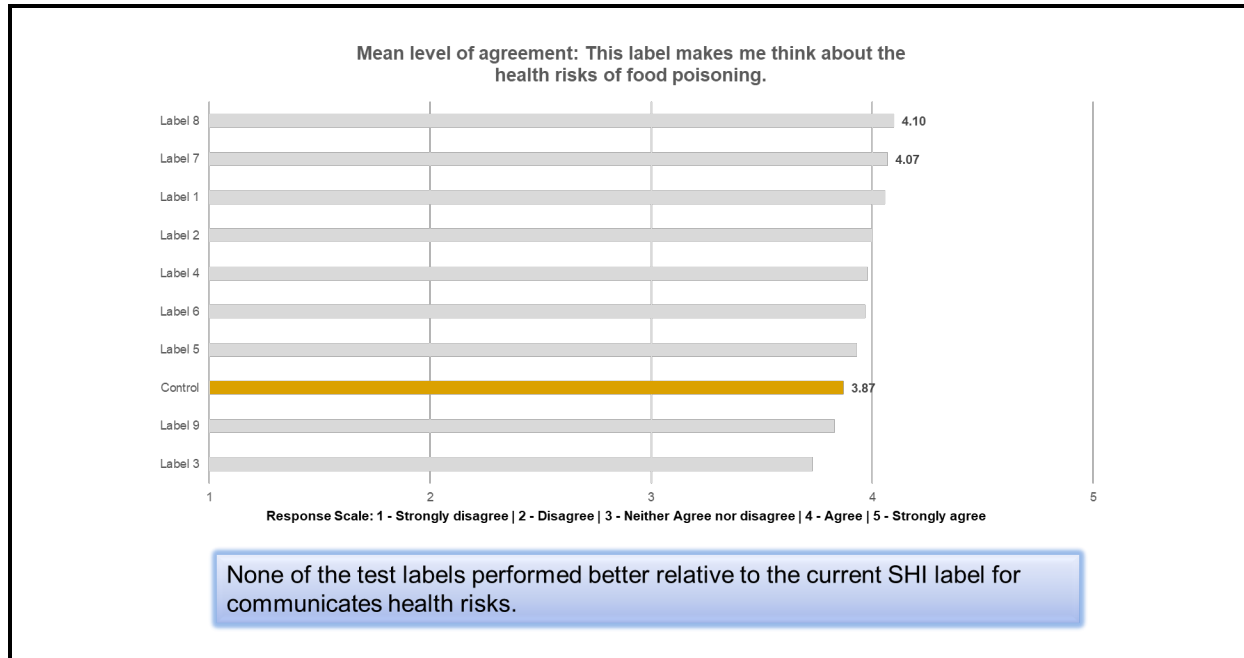
Mean level of agreement: This label makes me think about the health risks of food poisoning.

Label	Value
Label 8	4.10
Label 7	4.07
Label 1	
Label 2	
Label 4	
Label 6	
Label 5	
Control	3.87
Label 9	
Label 3	

Response Scale: 1 - Strongly disagree | 2 - Disagree | 3 - Neither Agree nor disagree | 4 - Agree | 5 - Strongly agree

None of the test labels performed better relative to the current SHI label for communicates health risks.

Note: Blue bars indicate that the mean level of agreement for the test label is significantly different compared with the current SHI (orange bar) – none were significantly different. Grey bars indicate that the mean level of agreement for the test label is not significantly different compared with the current SHI label (orange bar).

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Figure 4-7. **Respondents' Perceived Likelihood of Getting Food Poisoning for Not Following Food Safety Instructions by Label Condition**

Mean response: How likely or unlikely do you think it is that you will get food poisoning from the food you cook at home if you do not follow the food safety instructions shown on this label?

Label	Value
Label 1	3.60
Label 6	
Control	3.55
Label 8	
Label 7	
Label 2	
Label 5	
Label 4	
Label 3	
Label 9	3.41

Response Scale: 1 – Very unlikely | 2 – Somewhat unlikely | 3 - Neither likely nor unlikely | 4 – Somewhat likely | 5 – Very likely

None of the test labels performed better relative to the current SHI label for respondents' perceived risk of getting food poisoning.

Note: Blue bars indicate that the mean response for the test label is significantly different compared with the current SHI (orange bar) – none were significantly different. Grey bars indicate that the mean response for the test label is not significantly different compared with the current SHI label (orange bar).

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Table 4-5.   Mean Response (Standard Deviation) for Questions that Asked about Perceived Risk Impact of Risk Message

Key for the Label's Risk Message

Labels 1, 2, 3: *Follow these instructions to prepare raw meat products safely.*
Labels 4 and 6: *Follow these instructions to prevent illness.*
Label 5: *Follow these steps to prepare raw meat products safely.*
Labels 7 and 8: *This raw meat product may contain bacteria. Follow these practices to avoid illness.*
Label 9: *Reduce your risk of illness when preparing raw meat products by following these steps.*
Current SHI label: *This product was prepared from inspected and passed meat and/or poultry. Some food products may contain bacteria that could cause illness if the product is mishandled or cooked improperly. For your protection, follow these safe handling instructions.*

	Current SHI Label (Control) (n = 240)	Labels 1, 2, and 3 (n = 720)	Labels 4 and 6 (n = 480)	Label 5 (n = 240)	Labels 7 and 8 (n = 480)	Label 9 (n = 240)
Extent to which message makes you want to follow recommended food safety instructions on label	3.53 (0.76)	3.50 (0.77)	3.45 (0.78)	3.38 (0.89)	3.55 (0.75)	3.38 (0.87)
Extent to which message makes you concerned about the health risks of unsafe food handling behaviors	2.94 (1.03)	3.09 (0.98)	3.14 (0.96)	2.99 (1.05)	3.15 (0.97)	3.09 (0.98)

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis. We performed an ANOVA test to determine whether the differences in the mean scores were statistically significant. The differences were not statistically significant.

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Response scale: (1) Not at all, (2) A little, (3) Some, (4) Completely.

4.4   Respondents' Preferences for Different Features of the SHI Label

The survey collected additional information about respondents' preferences for different features of the SHI label by asking a series of direct questions. Table 4-6 summarizes the results of these questions. Nearly half of respondents selected *Caution* as the alert word that does the best job of attracting attention (47%). Responses were mixed regarding the title that does the best job of attracting attention. None of the titles were selected by a majority of respondents; *Food Safety Handing Instructions* was the highest, with less than a third reporting it as the most attention-catching title (31%).

Similarly, responses were mixed regarding the most motivating risk message. None of the risk messages were selected by a majority of respondents. Two of the risk messages were selected by about 21% of respondents: *Reduce your risk of illness when preparing raw meat by following these steps* and the message on the current SHI label statement.

Additionally, we asked respondents what they considered to be "meat" and found that the word is not synonymous with just beef or pork. Most respondents think of beef (92%), chicken (85%), or pork (83%), when the word "meat" is used, while about two-thirds also consider turkey to be meat (67%). These findings suggest that using the word "meat" on product labels may convey both meat and poultry to many consumers.

Table 4-6.   Respondents' Preferences for Different Features of the SHI Label

	n	%
Most Attention-catching Alert Word		
Caution	1,123	46.79
Attention	685	28.54
Important	592	24.67
Most Attention-catching Title		
Food Safety Handling Instructions	748	31.17
Avoid Illness	475	19.79
Safe Handling Instructions	438	18.25
Safely Prepare Raw Meat Products	425	17.71
Food Safety Steps	314	13.08
Statement that Most Encourages to Follow Recommended Instructions		
Reduce your risk of illness when preparing raw meat by following these steps.	500	20.83
This product was prepared from inspected and passed meat and/or poultry. Some food products may contain bacteria that could cause illness if the product is mishandled or cooked improperly. For your protection, follow these safe handling instructions.	489	20.38
Follow these instructions to prepare raw meat products safely.	453	18.88
This raw meat product may contain bacteria. Follow these practices to avoid illness.	420	17.50
Follow these steps to avoid illness.	286	11.92
Follow these instructions to prevent illness.	252	10.50
Considers the Following Foods "Meat"[a]		
Beef	2,197	91.54
Chicken	2,036	84.83
Pork	1,991	82.96
Turkey	1,595	66.46
Fish	1,137	47.38
Deli meat	694	28.92
Something else	34	1.42

[a] Responses may sum to more than 100%; question indicated "select all that apply."

4.5   Respondents' Preferences for Location of the Minimum Internal Temperature and the SHI Label on Raw Meat or Poultry Products

When respondents were asked about their preferred location for providing the minimum internal temperature on raw meat or poultry product (if manufacturers were to voluntarily provide this information), nearly half of respondents (47%) preferred to see it on the front of the package,

and about a third (29%) said on the back (see Figure 4-8). Responses were mixed on the preferred location for the mandated SHI label. About 40% preferred the front of the package, and another 40% preferred the back of the package (see Figure 4-9). For both the minimum internal temperature and the SHI label, respondents did not want this information provided on the side of the package.

4.6   Respondents' Likelihood of Using a QR Code on the SHI Label

Respondents were asked about their likelihood of scanning a QR code to get more information about safe handling practices. Half of respondents reported that they would be somewhat or very unlikely to scan a QR code, and 34% reported that they would be somewhat or very likely to scan a QR code (see Figure 4-10). There is a statistically significant relationship between use of QR code and age, with a trend suggesting a greater likelihood of use among younger adults (ages 18-59) compared with adults ages 60 and older (see Figure 4-11).

Lastly, at the end of the survey, respondents were provided an opportunity to offer any other comments about the labels tested via an open-ended question. The most common responses, provided by 40 or more respondents, were about recommendations for improving the formatting of the label (increasing the font size for label text was most often mentioned), adding color to the label (using the color red on the label was most often mentioned), and the placement of the label (placing the label on the front of the package was most often mentioned).

Figure 4-8.   Respondent's Preferred Location for Displaying the Minimum Internal Temperature on Raw Meat or Poultry Products
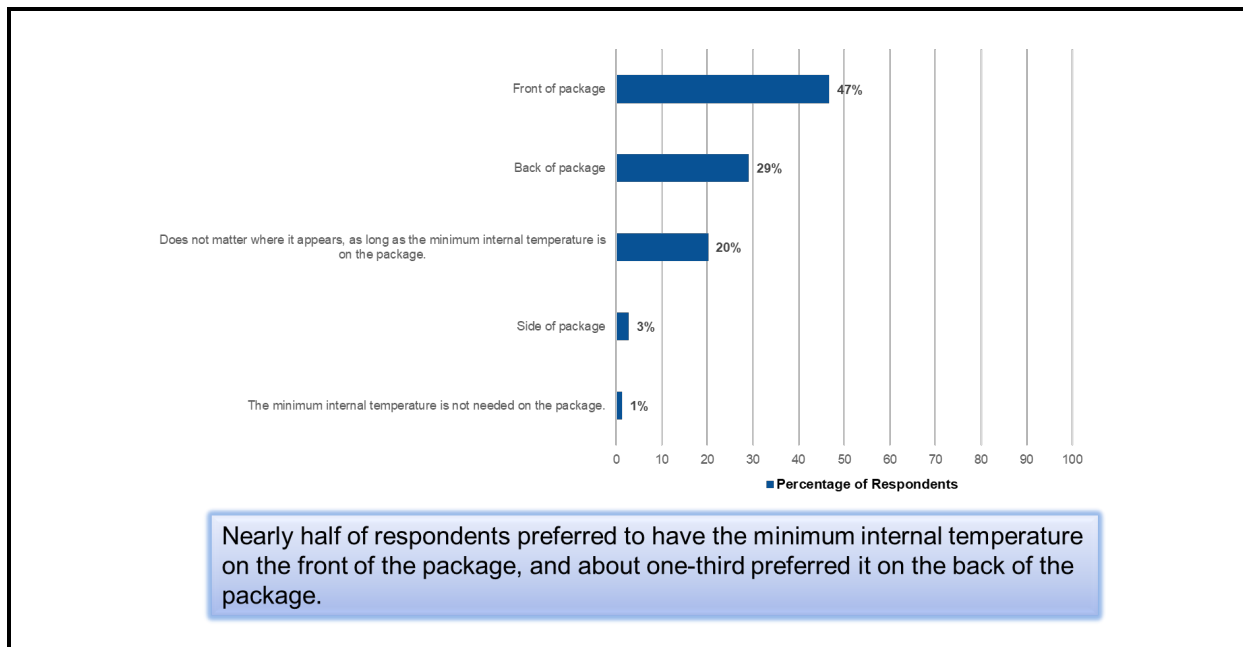
Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

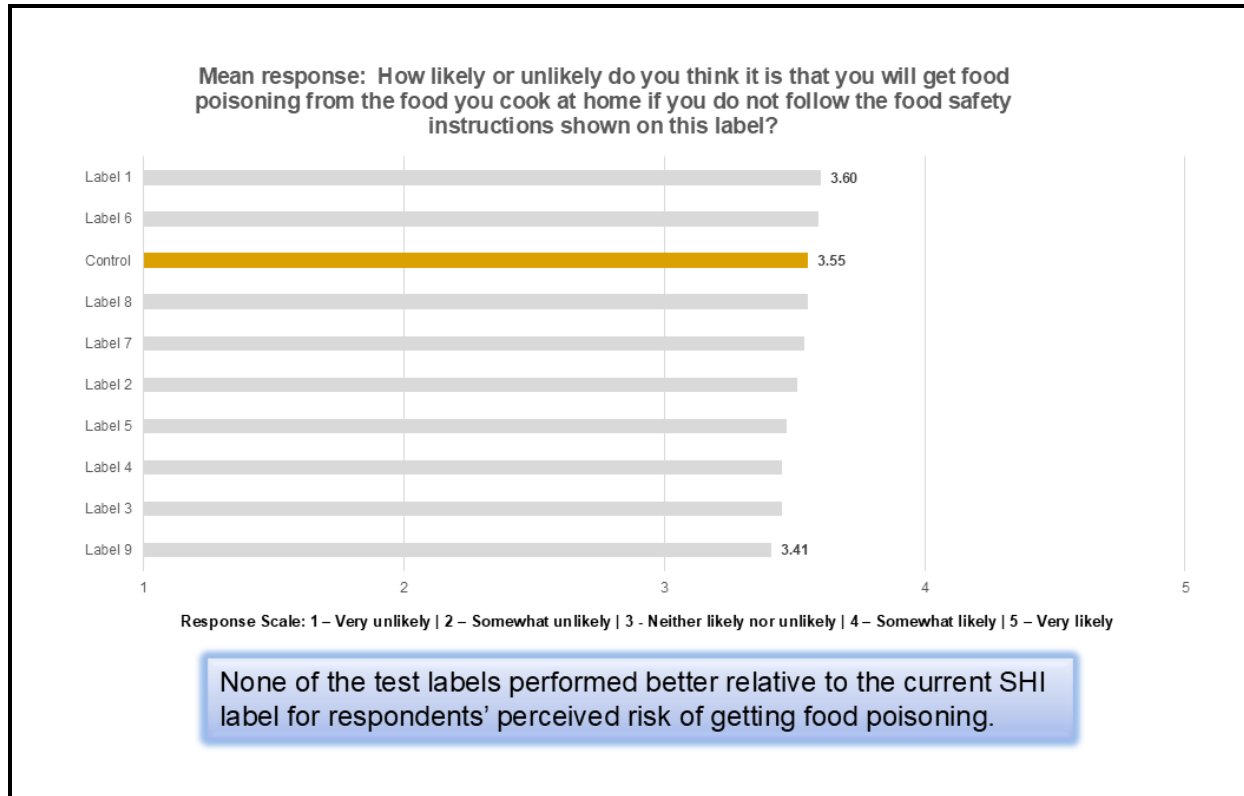**Figure 4-9.   Respondents' Preferred Location for Displaying the Mandated SHI Label on Raw Meat or Poultry Products**
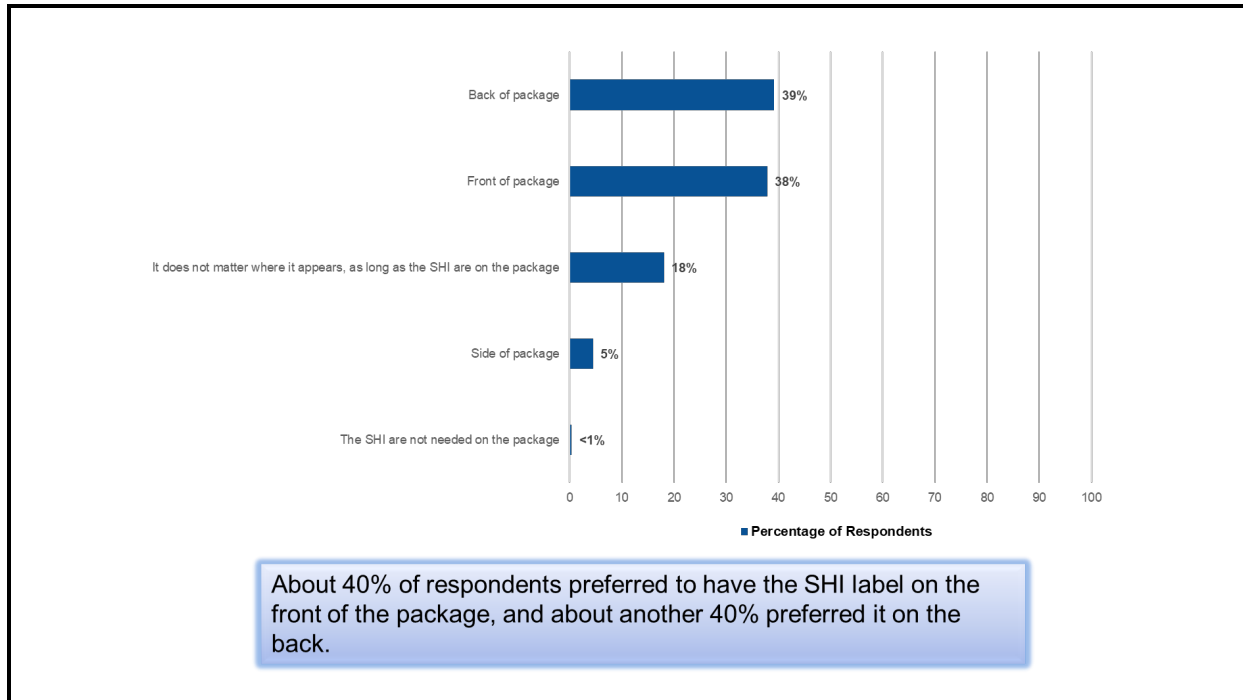
Back of package — 39%
Front of package — 38%
It does not matter where it appears, as long as the SHI are on the package — 18%
Side of package — 5%
The SHI are not needed on the package — <1%

■ Percentage of Respondents

About 40% of respondents preferred to have the SHI label on the front of the package, and about another 40% preferred it on the back.

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Figure 4-10.   Respondents' Likelihood of Using a QR Code on the SHI Label to Get More Information About Safe Handling Practices

Very unlikely — 29%
Somewhat unlikely — 21%
Neither likely nor unlikely — 16%
Somewhat likely — 19%
Very likely — 15%

■ Percentage of Respondents

Half of respondents said it was very or somewhat unlikely they would use a QR code to get more information.
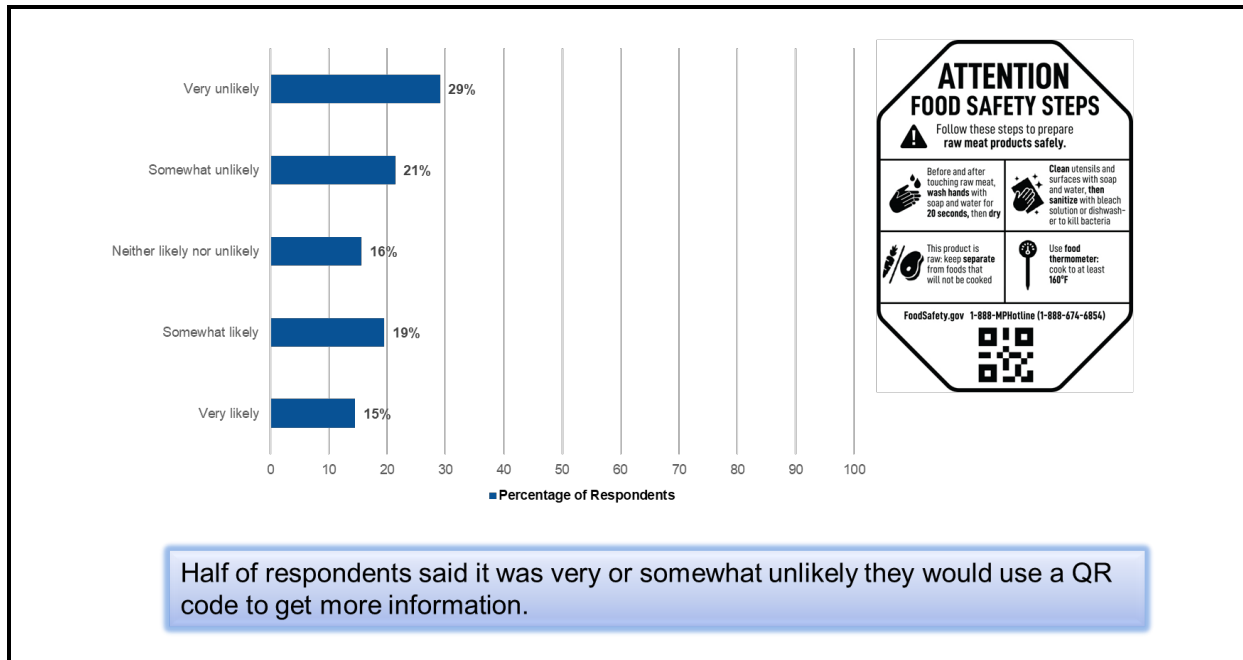
Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

Figure 4-11.   Respondents' Likelihood of Using a QR Code on the SHI Label to Get More Information about Safe Handling Practices, by Age Category
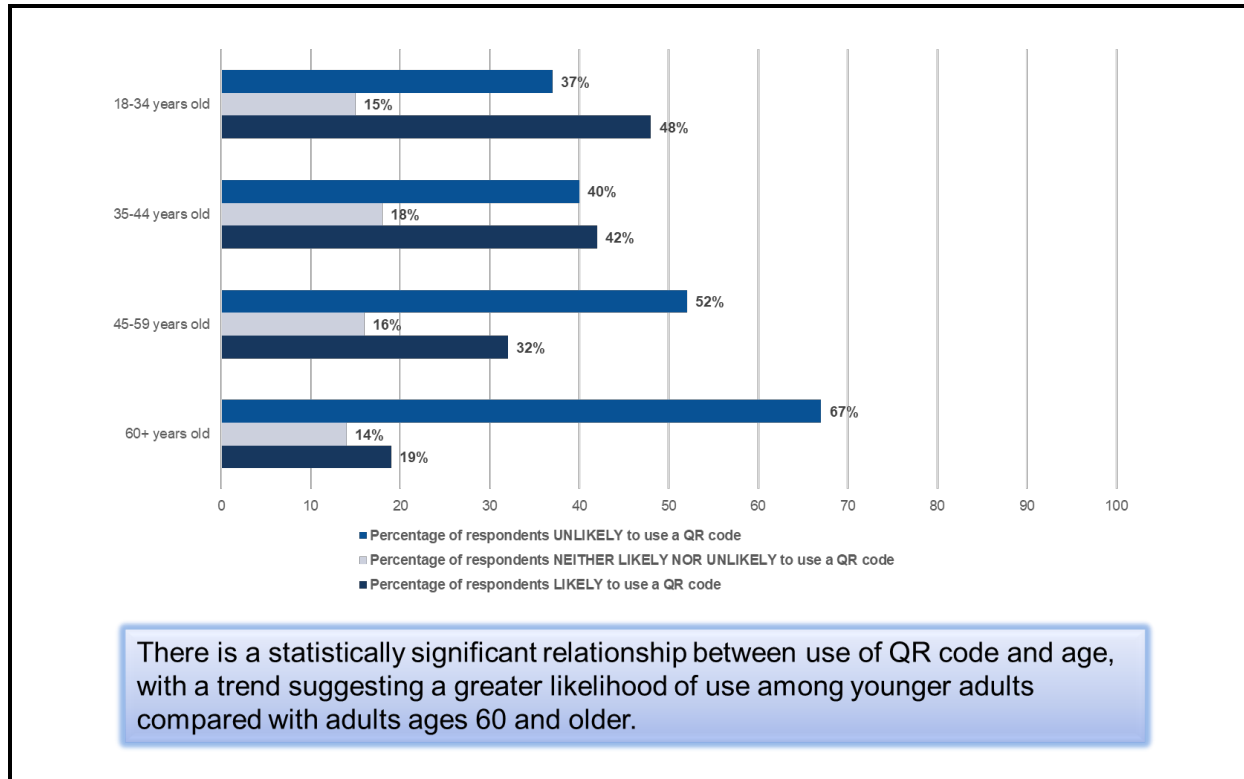
18-34 years old: 37%, 15%, 48%
35-44 years old: 40%, 18%, 42%
45-59 years old: 52%, 16%, 32%
60+ years old: 67%, 14%, 19%

■ Percentage of respondents UNLIKELY to use a QR code
▫ Percentage of respondents NEITHER LIKELY NOR UNLIKELY to use a QR code
■ Percentage of respondents LIKELY to use a QR code

There is a statistically significant relationship between use of QR code and age, with a trend suggesting a greater likelihood of use among younger adults compared with adults ages 60 and older.

Source: 2024 FSIS CLR Experimental Survey (N = 2,400) (adults who have prepared raw meat or poultry in the past 30 days).

5. Conclusions and Recommendations

The web-based survey used an experimental design to identify the top performing test SHI labels based on saliency (i.e., noticeability) using an LTE experiment, and asked direct questions to assess consumer response to the secondary outcomes. The survey also explored respondents' reactions and preferences to various components of the SHI labels tested (e.g., titles, alert words, risk statements, placement of information). FSIS can use the results of this study to inform decisions regarding whether to revise the current SHI label, and if so, the optimal label design.

5.1 Conclusions

Labels 7 and 8 Performed the Best Relative to the Current SHI Label
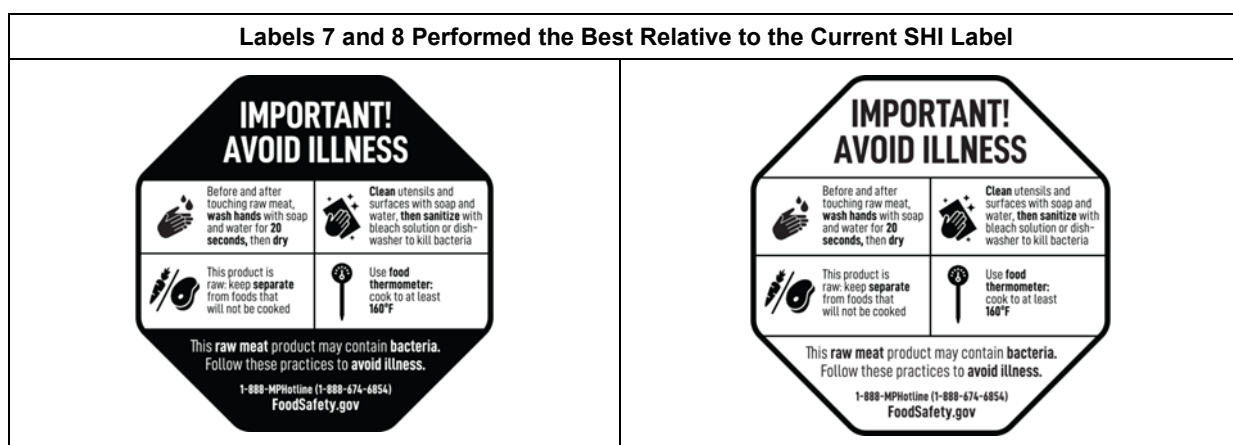
Overall, looking across all the results, we found evidence showing greater effectiveness for an alternative label over the current SHI label. In particular, labels 7 and 8 performed the best. Based on the results of statistical testing, labels 7 and 8 (among others) performed better than the control (existing SHI) for unaided recall which was measured using an LTE experiment (an indirect measurement approach). Additionally, for the secondary outcome, grabs attention, labels 7 and 8 performed significantly better than the control, measured using a direct question. Despite the concerns voiced in the focus groups regarding the use of fear appeal messaging, the survey results suggest that survey respondents were not concerned about buying products with SHI labels containing the words *illness* or *bacteria*.

About half of respondents would be somewhat or very unlikely to scan a QR code to get more information on safe handling, and 34% reported that they would be somewhat or very likely to scan a QR code. There is a statistically significant relationship between use of QR code and age, with a trend suggesting a greater likelihood of use among younger adults (ages 18-59) compared with adults ages 60 and older. In the consumer focus groups, most participants said that they would only scan a QR code out of curiosity, not necessarily to get more information on safe handling. Participants also agreed that a QR code would be helpful for new or inexperienced cooks.

Half of respondents preferred that the recommended minimum internal temperature appear on the front of the package, and respondents were split as to whether the SHI label should appear on the front vs. the back of the package. Respondents did not want this information on the side of the package.

5.2 Recommendations

If FSIS proceeds with revising the SHI label regulations, we recommend the following based on the study findings:

- Use label designs 7 and 8; manufacturers can choose between the two designs based on package color to provide contrast. These two label designs did a better job of attracting attention compared with the current SHI label. Consumers must first notice the SHI label before reading and paying attention to the information on the label.
- Require manufacturers to place the SHI label on the front or back of the package (not the side of the package). Respondents preferred this location, and the literature review supports the recommendation to place warning labels on the front of the package to attract attention.
- Encourage manufactures to voluntarily provide the recommended minimum internal temperature on the front of the package. Respondents believed providing the minimum internal temperature on the front of the package would be useful, and some manufacturers already do this.
- Continue to explore the value of including a QR code with the SHI label. Although the survey results were mixed regarding the usefulness of a QR code, many food manufacturers are including QR codes on their products that link to information about the product such as recipes. If FSIS decides to include a QR code, we recommend providing a QR code in addition to label designs 7 and 8 as designed rather than replacing any of the information in those labels.

If FSIS revises the SHI label regulations to update the SHI label, we recommend conducting a national campaign to make consumers aware of the revised SHI label based on findings from the literature review. With the significant effectiveness that we found for two label designs compared to the current SHI label, a national campaign would further enhance that effectiveness and may encourage more consumers to practice safe food handling to avoid foodborne illness.

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Appendices Contents

Appendices

Appendix A: First Concept Session Label Designs

New SHI
Label Designs

JUNE 26, 2023

Label 1

CAUTION!
FOOD SAFETY FACTS

This is a **raw meat product**. Here are steps to handle it safely.

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Label 2

STAY FOOD SAFE

⚠ Follow these steps to **avoid getting sick.**

Wash hands with soap and water for 20 seconds,

Clean utensils and surfaces that contact this product with soap and water and

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Label 3

ATTENTION!

SAFE FOOD. SAFE FAMILY.

This product may contain bacteria that could cause illness if prepared unsafely. Take these steps to **reduce your risk of illness.**

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

Label 4

IMPORTANT!
HOW TO HANDLE SAFELY

⚠️ Follow these instructions to **prepare food safely.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

Label 5

AVOID ILLNESS

⚠ This product **may contain bacteria** that could cause illness

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food **thermometer**: cook to **XXX°F**

See **manufacturer's cooking instructions** for additional safe handling information

FoodSafety.gov 1-888-MPHotline (1-888-674-6854)

Label 6

/// ATTENTION ///

FOOD SAFETY HANDLING INSTRUCTIONS

Raw meat. Follow these instructions to **stop food-related illness.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

Label 7

FOOD SAFETY INSTRUCTIONS

Food safety is important for everyone. Follow these steps to **stay safe.**

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

At risk populations are at **particular risk** for food-borne illness:

- Young children
- Older adults
- Pregnant
- Immuno compromised

FoodSafety.gov 1-888-MPHotline (1-888-674-6854)

Label 8

STEPS
FOR FOOD SAFETY

Wash and dry hands

Clean utensils and surfaces, and then sanitize

Keep uncooked meat and poultry separate

Use food thermometer: cook to XXX°F

Know your risk. Follow these steps for food safety.

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Label 9

FOOD SAFETY STEPS

Know your risk.
Follow these steps to
stop food-related illness.

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Label 10

RAW FOOD HANDLING

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food **thermometer:** cook to **XXX°F**

Reduce your risk. Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854) FoodSafety.gov

Label 10 Alts

RAW FOOD HANDLING

Wash and **dry hands**	**Clean utensils and surfaces**, and then **sanitize**
Keep **uncooked** meat and poultry **separate**	**Use food thermometer** to cook meat (not ground) to **XXX°F**

Reduce your risk. Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

RAW FOOD HANDLING

Wash and **dry hands**	**Clean utensils and surfaces**, and then **sanitize**
Keep **uncooked** meat and poultry **separate**	**Use food thermometer** to cook poultry to **XXX°F**

Reduce your risk. Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

RAW FOOD HANDLING

Wash and **dry hands**	**Clean utensils and surfaces**, and then **sanitize**
Keep **uncooked** meat and poultry **separate**	**Use food thermometer** to cook ground meat to **XXX°F**

Reduce your risk. Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Overview

1

CAUTION!
FOOD SAFETY FACTS

This is a **raw meat product.** Here are steps to handle it safely.

Wash and dry hands	**Clean utensils and surfaces,** and then **sanitize**
Keep **uncooked** meat and poultry **separate**	**Use food thermometer:** cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

2

STAY FOOD SAFE
⚠ Follow these steps to **avoid getting sick.**

Wash hands with soap and water for 20 seconds, then **dry**	**Clean utensils and surfaces** that contact this product with soap and water and **then sanitize**
This product is uncooked: **keep separate** from other foods	**Use food thermometer:** cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

3

ATTENTION!
SAFE FOOD. SAFE FAMILY.

This product may contain bacteria that could cause illness if prepared unsafely. Take these steps to **reduce your risk of illness.**

- **Wash** and **dry hands**
- **Clean utensils and surfaces,** and then **sanitize**
- Keep **uncooked** meat and poultry **separate**
- **Use food thermometer:** cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

4

IMPORTANT!
HOW TO HANDLE SAFELY

⚠ Follow these instructions to **prepare food safely.**

Wash hands with soap and water for 20 seconds, then **dry**	**Clean utensils and surfaces** that contact this product with soap and water and **then sanitize**
This product is uncooked: **keep separate** from other foods	**Use food thermometer:** cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

5

AVOID ILLNESS
⚠ This product **may contain bacteria** that could cause illness

Wash and **dry hands**	**Clean utensils and surfaces,** and then **sanitize**
Keep **uncooked** meat and poultry **separate**	**Use food thermometer:** cook to **XXX°F**

See **manufacturer's cooking instructions** for additional safe handling information

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

6

▐▐▐ ATTENTION ▐▐▐
FOOD SAFETY HANDLING INSTRUCTIONS

Raw meat. Follow these instructions to **stop food-related illness.**

Wash hands with soap and water for 20 seconds, then **dry**	**Clean utensils and surfaces** that contact this product with soap and water and **then sanitize**
This product is uncooked: **keep separate** from other foods	**Use food thermometer:** cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

7

FOOD SAFETY INSTRUCTIONS

Food safety is important for everyone. Follow these steps to **stay safe.**

Wash and **dry hands**	**Clean utensils and surfaces,** and then **sanitize**	**At risk populations** are at **particular risk** for food-borne illness:
Keep **uncooked** meat and poultry **separate**	**Use food thermometer:** cook to **XXX°F**	• Young children • Older adults • Pregnant • Immuno compromised

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

8

STEPS FOR FOOD SAFETY

Wash and **dry hands**	**Clean utensils and surfaces,** and then **sanitize**
Keep **uncooked** meat and poultry **separate**	**Use food thermometer:** cook to **XXX°F**

Know your risk. Follow these steps **for food safety.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

9

FOOD SAFETY STEPS

⚠ Know your risk. Follow these steps to **stop food-related illness.**

Wash hands with soap and water for 20 seconds, then **dry**	**Clean utensils and surfaces** that contact this product with soap and water and **then sanitize**
This product is uncooked: **keep separate** from other foods	**Use food thermometer:** cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

10

RAW FOOD HANDLING

Wash and **dry hands**	**Clean utensils and surfaces,** and then **sanitize**
Keep **uncooked** meat and poultry **separate**	**Use food thermometer:** cook to **XXX°F**

Reduce your risk. Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Color options

1

CAUTION!
FOOD SAFETY FACTS

This is a **raw meat product.** Here are steps to handle it safely.

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

2

STAY FOOD SAFE

Follow these steps to **avoid getting sick.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

3

ATTENTION!
SAFE FOOD. SAFE FAMILY.

This product may contain bacteria that could cause illness if prepared unsafely. Take these steps to **reduce your risk of illness.**

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

4

IMPORTANT!
HOW TO HANDLE SAFELY

Follow these instructions to **prepare food safely.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

5

AVOID ILLNESS

This product **may contain bacteria** that could cause illness

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

See **manufacturer's cooking instructions** for additional safe handling information

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

6

ATTENTION
FOOD SAFETY HANDLING INSTRUCTIONS

Raw meat. Follow these instructions to **stop food-related illness.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

7

FOOD SAFETY INSTRUCTIONS

Food safety is important for everyone. Follow these steps to **stay safe.**

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

At risk populations are at **particular risk** for food-borne illness:
• Young children
• Older adults
• Pregnant
• Immuno compromised

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

8

STEPS FOR FOOD SAFETY

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

Know your risk. Follow these steps **for food safety.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

9

FOOD SAFETY STEPS

Know your risk. Follow these steps to **stop food-related illness.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

10

RAW FOOD HANDLING

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXX°F**

Reduce your risk. Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Thank You

Appendix B: Second Concept Session Label Designs

New SHI Label Designs

JULY 25, 2023

Label 1

//// ATTENTION ////

FOOD SAFETY HANDLING INSTRUCTIONS

Follow these instructions to prepare
raw meat products safely.

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

Label 2

IMPORTANT
STAY FOOD SAFE

⚠ This is a **raw meat product.** Follow these steps to avoid getting sick.

Wash and dry **hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food **thermo-meter:** cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline 1-888-674-6854

Label 3

CAUTION
FOOD SAFETY FACTS

⚠ Reduce your risk. Follow these steps to **avoid getting sick.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to **XXX°F**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

Label 4

HOW TO HANDLE
RAW MEAT PRODUCTS
SAFELY

This is a raw meat product. Follow these instructions to **prevent foodborne illness.**

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to **XXXºF**

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

Label 5

AVOID ILLNESS

⚠ This product **may contain bacteria** that could cause illness.

Wash and dry **hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food **thermometer:** cook to **XXX°F**

See **manufacturer's cooking instructions** for additional safe handling information.

FoodSafety.gov 1-888-MPHotline (1-888-674-6854)

Label 6

**IMPORTANT!
STAY FOOD SAFE**

Wash and dry **hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food **thermometer:** cook to **XXXºF**

Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Overview

1

ATTENTION
FOOD SAFETY HANDLING INSTRUCTIONS

Follow these instructions to prepare **raw meat products safely.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to XXX°F

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

2

IMPORTANT
STAY FOOD SAFE

⚠ This is a **raw meat product.** Follow these steps to avoid getting sick.

Wash and dry **hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermo-meter: cook to XXX°F

FoodSafety.gov   1-888-MPHotline 1-888-674-6854

3

CAUTION
FOOD SAFETY FACTS

⚠ Reduce your risk. Follow these steps to **avoid getting sick.**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and **then sanitize**

This product is uncooked: **keep separate** from other foods

Use food thermometer: cook to XXX°F

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

4

HOW TO HANDLE RAW MEAT PRODUCTS SAFELY

This is a raw meat product. Follow these instructions to **prevent foodborne illness.**

Wash and **dry hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food thermometer: cook to XXX°F

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

5

AVOID ILLNESS

⚠ This product **may contain bacteria** that could cause illness.

Wash and dry **hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food **thermometer:** cook to XXX°F

See **manufacturer's cooking instructions** for additional safe handling information.

FoodSafety.gov   1-888-MPHotline (1-888-674-6854)

6

**IMPORTANT!
STAY FOOD SAFE**

Wash and dry **hands**

Clean utensils and surfaces, and then **sanitize**

Keep **uncooked** meat and poultry **separate**

Use food **thermometer:** cook to XXX°F

Follow these steps to **avoid getting sick.**

1-888-MPHotline (1-888-674-6854)
FoodSafety.gov

Thank You

Appendix C: Focus Group Screener

Appendix C – Focus Group Screener

Note: The market research facility maintains a list of individuals who have been screened for limited literacy using the Rapid Estimate of Adult Literacy in Medicine (REALM) assessment, so it won't be necessary to screen for limited literacy.

Hello, this is _____ from [facility], a local market research firm. May I please speak to_____?

(Hello, this is _____ from [facility], a local market research firm.) We are working with RTI, a nonprofit research organization, and the U.S. Department of Agriculture, or USDA, on a research study about cooking and would like to include your opinions. We are holding a discussion on [date] with a small group of people like yourself. The discussion group starts at [time] and will be in person at our facility located in [XXXXX]. It will last up to 1.5 hours and will be audio- and video-recorded. The discussion group is for research purposes only and is in no way sales related.

If you participate in this discussion group, you will receive a **$75** gift card and a free gift as a token of our appreciation. First, however, I need to ask you a few questions to see if you qualify for the study.

1. Which of the following best describes your level of cooking experience for preparing meals at home …? *(Read list.)*

   ☐ No experience ***Thank & terminate.***
   ☐ Very little experience *(Only recruit for the English Beginner Cooks groups.)*
   ☐ Some experience
   ☐ A lot of experience

2. In the past 30 days, which of the following have you prepared at home …? *(Read list and select all that apply.) Thank & terminate if #1 or #2 is __not__ selected.*

   ☐ 1. Meals made with raw beef or pork
   ☐ 2. Meals made with raw chicken or turkey
   ☐ 3. Meals made with seafood
   ☐ 4. Vegetarian dishes
   ☐ 5. None of the above *(Do not read.)*

3. Have you ever… *(Read list and select all that apply.) Thank & terminate if #1 or #2 is selected.*

   ☐ 1. Cooked professionally? ***Thank & terminate.***
   ☐ 2. ServSafe training or other food safety class? ***Thank & terminate.***
   ☐ 3. Taken a nutrition education class?
   ☐ 4. Volunteered at a food bank?
   ☐ 5. Prepared a meal at a soup kitchen or similar location?
   ☐ 6. None of the above *(Do not read.)*

4. In the past 5 years, have you or any member of your household worked for any of the following: *(Read list.)*

   ☐ Market research, advertising, or public relations firm ***Thank & terminate.***
   ☐ Restaurant or other foodservice industry ***Thank & terminate.***
   ☐ Food processing plant or other food industry ***Thank & terminate.***
   ☐ The Food and Drug Administration, U.S. Department of Agriculture, Centers for Disease Control and Prevention, or state agencies that oversee food safety ***Thank & terminate.***
   ☐ None of the above *(Do not read.)*

5. In the past 5 years, have you or any member of your household worked as a doctor, nurse, dietitian, or other healthcare professional?

   ☐ Yes ***Thank & terminate.***
   ☐ No

6. Are you the parent or guardian of any children aged 5 years or younger living in your household?

   ☐ Yes *(Eligible for Parents of Young Children group.)*
   ☐ No

7. Which of the following statements apply to you? *(Read list and select all that apply. Recruit for Caregiver group if #3 **AND** #1 OR #2 are selected.)*

☐ 1. I am the parent or guardian of one or more children aged 17 years or younger living in my household.

☐ 2. I am the parent or guardian of an adult child (aged 18 or older) who lives in my household or another location and help support them financially.

☐ 3. I help provide care for an adult aged 50 or older, for example, a parent or in-law, who lives in my household or another location.

☐ 4. None of the above *(Do not read.)*

8. [IF RECRUITING FOR THE ENGLISH-SPEAKING HISPANIC GROUPS]
Which of the following best describes your household? *(Read list.)*

☐ Spanish is the only language spoken by members of this household *Thank & terminate.*

☐ Spanish is the language most often spoken by members of this household, but English is also spoken *Recruit for English-Speaking Hispanics*

☐ Members of this household speak Spanish and English almost equally *Recruit for English-Speaking Hispanics*

☐ English is the language most often spoken by members of this household, but Spanish is also spoken *Recruit for English-Speaking Hispanics.*

☐ English is the only language spoken by members of this household *Thank & terminate.*

9. What is the last grade of school you completed? *(Read list. Recruit a mix to show per group that reflects local population.)*

☐ High school graduate or less, including GED
☐ Technical or vocational school
☐ Some college, but do not have a degree
☐ Associate's or 2-year degree
☐ College or 4-year degree
☐ Postgraduate degree

10. Which of the following categories best describes your age? *(Read list.)*

☐ Under 18 *Thank & terminate.*
☐ 18 to 24
☐ 25 to 35
☐ 36 to 45
☐ 46 to 55
☐ 56 to 64
☐ 65+ *(Eligible for Older Adults group.)*

11. Are you …? *(Read list. Recruit a mix to show per group that reflects local population.)*

☐ Hispanic or Latino **Recruit for English-Speaking Hispanics.**
☐ Not Hispanic or Latino

12. What is your race? Please select one or more. *(Read list. Recruit a mix to show per group that reflects local population.)*

☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Native Hawaiian or Other Pacific Islander
☐ White

13. How do you currently describe yourself? *(Read list. Recruit mix.)*

☐ Male
☐ Female
☐ Transgender female
☐ Transgender male
☐ Other
☐ Prefer not to answer

14. For study purposes, the group discussion will be audio- and video-recorded. During the discussion, no sensitive questions will be asked. Are you okay with us recording your participation in the discussion?

☐ Yes
☐ No *Thank & terminate.*

15. During the group discussion, you will be asked to review written materials and offer your opinions; therefore, I need to ask whether you have a medical or non-medical condition that hinders your ability to read and/or understand written materials.

☐ Yes *Thank & terminate.*
☐ No

Great! You qualify for our study. The discussion group is on [date] at [time] and will last up to 1.5 hours. For your time and opinions, you will receive a $75 gift card and a free gift.

16. Would you like to participate in the group discussion at [time] on [date]?

☐ Yes
☐ No *Thank & terminate.*

Great! May I please have your email address to send you a confirmation letter with directions before the group discussion? *(If no email)* may I please have your mailing address? *(Verify address and phone number.)*

Thank you. That's all the questions I have today. Please arrive at least 15 minutes before the start of the group to ensure you have time to sign in and get a meal/snack. If you arrive 15 minutes early, your name will go into a drawing to win an extra $25 gift card. You must be signed in at that time to be eligible for the drawing.

If needed:

If you have any questions about the study, you may contact Peyton Williams of RTI at 1-800-334-8571, extension 27046.

Appendix D: Focus Group Moderator's Guide

Appendix D – Focus Group Moderator's Guide

Introduction—Welcome Group (5 minutes)

- Who we are and who we represent:
    - My name is _____ and I work for RTI International, a nonprofit research organization.
    - Study is sponsored by the U.S. Department of Agriculture, or USDA.

- Why you have been asked to participate:
    - You are consumers who prepare food products at home.
    - Your experiences as consumers are important to USDA.
    - We want to hear your opinions and ideas about topics related to cooking at home.

- How the discussion will work:
    - Session will last about 1.5 hours.
    - So I can give you my full attention, tonight's session will be audio-recorded. I will use the recordings to write a summary report, but I will not use names in any report.
    - Staff members from USDA may be listening to hear your opinions firsthand.
    - We would like the discussion to be open and informal and encourage interaction.
    - We would like to hear from everyone in the group.
    - One person talks at a time.
    - Please silence or turn off cell phones.
    - There are no right or wrong answers or ideas—we want YOUR opinions.

Ice Breaker (5 minutes)

- What is your first name and your favorite meat or poultry dish to prepare at home?

Response to New Food Safety Instruction Labels (45 minutes)

First, I am going to show you some potential labels that were created to be put on packages of raw meat products. Similar labels will be created for raw poultry products.

For purposes of today's discussion, the label is shown on a package of raw ground beef patties [Moderator: Show mock physical product with current SHI], do not refer to label as SHI. We are going to look at four different labels, one at a time. I'm going to pass out a sheet that shows the first label. Please take a moment to read over this label and then we will talk about it.

Moderator will show one label at a time, rotating the order of the four labels to prevent order effects. Each label will be shown on the back of a package of raw ground beef patties on a sheet of paper.

Order of labels shown: *Raleigh & Stanly County (A, B, C, D)*

Dallas (B, C, D, A)

Syracuse (C, D, A, B)

Phoenix (D, A, B, C).

First Impressions

1. ⬆What do you like about the label?

2. ⬆What do you not like about the label?

3. Is there anything offensive or annoying about the label?

Format

4. What do you think about how the label looks? [Probe: Shape, font size, bolding of text]

    a. Does it get your attention or not? Why or why not?

5. How would you improve the format to better get your and other consumers' attention?

    a. [If needed] Label shape, font size for text, bolding of text.

Alert Word and Title

6. What do you think about the word at the top, referred to as the Alert Word, and the title?

Label	Alert Word and Title
A	Attention - Food Safety Handling Instructions
B	Caution - Food Safety Steps
C	How to Handle Raw Meat Products Safety
D	Important - Avoid Illness

a. Does it get your attention or not? Why or why not?

7. Any suggestions for revising the wording or how the alert word and title look to better get your attention?

Risk Message, Instructions, Icons

8. What do you think about the statement [Moderator: read risk messaging on label]?

Label	Risk Message
A	Follow these instructions to prepare raw meat products safely.
B	Reduce your risk of illness when preparing raw meat products by following these steps.
C	Follow these instructions to prevent foodborne illness.
D	This raw meat product may contain bacteria. Follow these practices to avoid illness

a. What is your reaction after reading this information?

b. Do you find this information concerning or not? If yes: how does that make you feel?

c. Is there anything you would change about this statement?

9. ⬆ What do you think about the food safety instructions provided on the label? [NOTE: The instructions are the same for all the labels except the length so the moderator will only ask these questions for the first label.]

a. What information did you already know?

b. What information was new to you?

c. Are the instructions clear? If no, what would you change?

d. What information is missing that would be useful to have to prepare the product safely?

e. What are your thoughts on including the end-point temperature for the product?

i. Is this information useful or not?

10. What do you think the icons mean? [NOTE: The icons are in the same format for all of the labels so the moderator will only ask these questions for the first label.]

a. Are they useful or not?

i. ⬇Do they help convey the main message or not?

b. Is there anything confusing about the icons?

c. How would you change the icons to make them better?

i. [If any participants find the thermometer icon confusing] Would an icon that looks like this be more meaningful? [Moderator will show handout with an iconic representation of dial thermometer.] Please raise your hand if you prefer this thermometer. **[Moderator say number of hands out loud for transcript.]**

QR Code Questions—Only Ask for Label with QR Code

11. ⬆ Have you seen this type of code before? [Moderator points to QR code]

a. What is it?

12. ⬆ If you were at home preparing a raw meat or poultry product and saw this QR code on a label, how likely is it that you would use the code? Please raise your hand if you would use the QR code. **[Moderator say number of hands out loud for transcript.]**

13. What information would you expect to find after accessing the code?

Manufacturer's Cooking Instructions (MCI) Note—Only Ask for Label with the MCI Note

14. Did you notice the note at the bottom about referring to the cooking instructions? If yes:

a. Do you think you would refer to the cooking instructions or not?

b. Is this note useful or not?

♻ *REPEAT QUESTIONS FOR EACH LABEL*

Questions for Labels 2 – 4 (Repeat for each Label)

OK, now I'm going to show you another label. As much as possible, I want you to consider it on its own merits and not compare it with the others.

Consumer Motivation to Follow Instructions on Safe Handling (5 minutes)

[Moderator: Ask after discussing all four labels]

15. ⬆ What are the labels asking you to do?

16. ⬆ What would you do after reading labels like these?

17. How likely are you to do this? Why?

18. How can we motivate people like you to read and follow these instructions when preparing raw meat and poultry products?

Voting Exercise (15 minutes)

[Moderator hangs the labels on a wall in the room.]

I've put the different labels you've looked at on the [wall or easel or table].

I'm giving you two Post-it Notes in each color. I want you to …

[Moderator, go through each color one at a time.]

- Put a Blue Post-it Note on the label you <u>like the most</u>.

- Put a Yellow Post-it Note on the label that <u>best catches your attention</u>.

- Put a Red Post-it Note on the label you <u>like the least</u>.

- ⬇ Put a Green Post-it Note on the label you think does the best job of <u>encouraging you to follow the recommended instructions</u>. [May need to eliminate for time]

For each color, you can put both Post-its on the same label to count two votes, or put on two different labels to count one vote for each.

[Moderator will demonstrate an example to make sure participants understand.]

[Give group opportunity to place votes, then repeat for each color.]

OK, let's talk about our votes. [Moderator: if there is a tie or close second, discuss both]

19. ⬆It looks like [label x] has the most Blue votes for overall favorite. Why did those who voted for this one vote for it?

20. ⬆On the other hand, [label x] has the most Red votes for least favorite. Why is that?

21. ⬇And [label x] has the most Yellow votes for the label that best catches your attention. Why did those who voted for this one vote for it? [Probe on shape if not mentioned].

22. ⬇Finally, [label x] has the most Green votes for doing the best job of encouraging you to follow the recommended instructions. Why is that?

Ranking Exercise (5 Minutes)

Now let's dig a little deeper into the different parts of the labels we've been discussing. I'm going to pass out a handout and we will briefly review each page. Please don't turn the pages until I've asked you to do so.

23. Okay, please turn to the first page. The labels used different alert words. Please rank order these by putting a 1 by the alert word that most attracts your attention, a 2 by the second best, and a 3 by the one that is least effective at attracting attention. There is also a space to write in and rank other suggestions you have for an alert word.

24. Now please turn to the next page. The labels used different titles. Please rank order these by putting a 1 by the title word that most attracts your attention, a 2 by the second best, a 3 by the third best, and a 4 by the one that is least effective at attracting attention. There is also a space to write in and rank other suggestions you have for a title.

25. Now turn to the next page. The labels used different messages to help convey the importance of following the instructions. Please rank order the messages by putting a 1 by the message that does the best job of encouraging you to follow the recommended instructions, a 2 by the second best, a 3 by the third best, and a 4 by the one that is least effective at encouraging you to follow the recommended instructions. There is also a space to write in and rank other suggestions you have for a motivating message.

26. Please turn to the last page. As shown here, the labels had two different sets of instructions that varied in terms of length. Please select the option—short vs. long—that you think is most useful.

27. Thank you. You can pass the sheets back to me. Any thoughts on the ranking exercise that you would like to share?

Response to Visual Cue Concepts (10 Minutes)

Now let's talk about an icon that could be shown on the front of a raw meat or poultry package. The purpose of this icon is to make consumers aware that the product is raw and needs to be handled safely to avoid illness. This icon would be in addition to the detailed food safety instruction label like the ones we've been looking at. I'm going to pass out a handout that shows an example of a such an icon on the front of a package of raw chicken tenders. Please take a few minutes to look at it.

28. What would you do if you were preparing a product at home and saw a food safety icon like this on the front of the package?
29. What are your thoughts on including a food safety icon like this on the front of the package of raw products to make consumers aware that the product is raw and needs to be handled safely?
    a. Did the icon get your attention or not? Tell me more about that.
    b. Do you think an icon like this is useful or not? Tell me more about that.
    c. In your opinion should USDA require a food safety icon instead of the food safety instructions label that we have been looking at or not? Why or why not?
    d. **[If necessary]** What about having a food safety icon in addition to these instructions?

Now I'm going to pass out another handout that shows six different designs for a food safety icon and a page for you to rank them.

30. Please rank order the icons by putting a 1 by the one that most attracts your attention, a 2 by the second best, a 3 by the third best, and so on. [IF TIME: We'll discuss your rankings after you are done.]
    a. [Moderator: go through each icon and ask for a show of hands for who ranked it as #1]
    b. For the 2 or 3 icons that got the most #1 votes, ask the following questions for each icon:
        i. ⬆Why does this icon best attract their attention?
        ii. ⬆What would you change, if anything, to make it better?
        iii. What do you think about the words on this icon?
        iv. What do you think about the graphics/pictures on this icon?

31. [Follow-up Question, if applicable:] We heard that some of you don't like the use of words like Caution, Bacteria, Foodborne illness because they are too scary. What other words can we use instead that capture the seriousness of not following these food safety instructions but would still get your attention and make you want to follow these instructions?

Wrap Up

Any final thoughts before we conclude the discussion? Thank participants and provide instructions for getting their incentive and mention free thermometer and magnet.

Appendix E: Focus Group Ranking Exercises

Task 1. Please rank order the alert words by putting a 1 by the alert word that most attracts your attention, a 2 by the second best, a 3 by the one that is least effective at attracting attention. There is also a space to write in and rank other suggestions you have for an alert word.

Alert words

____ Attention

____ Caution

____ Important

____ _____

Task 2. Please rank order the titles by putting a 1 by the title that most attracts your attention, a 2 by the second best, a 3 by the third best, and a 4 by the one that is least effective at attracting attention. There is also a space to write in and rank other suggestions you have for a title.

<u>Titles</u>

____ Food Safety Handling Instructions

____ Food Safety Steps

____ How to Handle Raw Meat Products Safety

____ Avoid Illness

____ _____

Task 3. Please rank order the messages by putting a 1 by the message that does the best job of encouraging you to follow the recommended instructions, a 2 by the second best, a 3 by the third best, and a 4 by the one that is least effective at encouraging you to follow the recommended instructions. There is also a space to write in and rank other suggestions you have for a motivating message.

Messages

_____ Follow these instructions to prepare raw meat products safely.

_____ Reduce your risk of illness when preparing raw meat products by following these steps.

_____ Follow these instructions to prevent foodborne illness.

_____ This raw meat product may contain bacteria. Follow these steps to avoid illness.

_____ _____

_____

_____

Task 4. The labels had two different sets of instructions that varied in terms of length. Please circle the option—short vs. long—that you think is most useful.

Short   Long

Wash and **dry** hands

Clean utensils and surfaces, and then **sanitize**

Separate raw meat and poultry from other foods

Use food **thermometer:** cook to **160°F**

Wash hands with soap and water for 20 seconds, then **dry**

Clean utensils and surfaces that contact this product with soap and water and then **sanitize**

This product is raw: **separate** raw meat/poultry from other foods

Use **food thermometer:** cook to **160°F**

Appendix F: Web-based Experimental Survey Instrument

Appendix F – Web-based Experimental Survey Instrument

Note: information in bold and brackets indicates programming instructions. Headers are for internal use and will not be displayed in the survey.

[All questions should be programmed on separate screens unless otherwise specified]

[DISPLAY 1]

RTI International is conducting this survey on cooking with funding from the U.S. Department of Agriculture (USDA). Your participation in this study is completely voluntary. All your answers will be kept private. In our experience, answering the survey questions involves no more risk of harm than you would experience in everyday life.

If you have any questions about the study, you may contact Esha Shah of RTI at 1-800-334-8571, extension 2-6810 or by email at eshashah@rti.org.

[Same page as above but display font in smaller text and have a line under paragraph above, as if this was presented as a footer]

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid Office of Management and Budget (OMB) control number. The valid OMB control number for this information collection is 0583-0192 and the expiration date is 07/31/2025. The time required to complete this information collection is estimated to average 20 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

[Next page]

The first set of questions ask about your experience preparing meals at home.

Screener

[All questions in the screener section should be programmed with a preceding "S", such as S1, S2, etc. Terminate logic to be implemented after respondent finishes through to the demographic questions at D8. For all questions if a respondent tries to skip a question they are shown a message, but in a second attempt to skip they are allowed to skip that question. If a respondent skips any screening question (S1, S2, S3, S4, S5, or D1-D8) terminate them after D7.]

1. **[SP]** Which of the following best describes your level of experience cooking meals at home? *(Select one.)*
   - o   No experience **[terminate]**

- ○ Very little experience
- ○ Some experience
- ○ A lot of experience

[IF Q1 ≠1]

2. **[MP, randomize, None of the above is exclusive and at the bottom]** In the past 30 days, which of the following have you prepared at home? *(Select all that apply.)*
   - □ Meals made with raw beef or pork
   - □ Meals made with raw chicken or turkey
   - □ Meals made with raw seafood
   - □ Vegetarian meals
   - □ None of the above

[Terminate if 1 or 2 is not selected.]

3. **[MP, None of the above is exclusive and at the bottom]** Which of the following have you done? *(Select all that apply.)*
   - □ Cooked professionally
   - □ Taught nutrition education classes
   - □ Volunteered at a food bank
   - □ Prepared a meal for a soup kitchen or similar location
   - □ Taken a ServSafe training or any other food safety class
   - □ None of the above

[Terminate if 1 or 5 is selected.]

4. **[MP, randomized, None of the above is exclusive and at the bottom]** Which of the following have you or any member of your <u>current</u> household worked for in the past 5 years? *(Select all that apply.)*
   - □ A market research, advertising, or public relations firm
   - □ A restaurant or other foodservice industry
   - □ A food processing plant or other food industry
   - □ The Food and Drug Administration, U.S. Department of Agriculture, Centers for Disease Control and Prevention, or state agencies that oversee food safety
   - □ As a doctor, nurse, dietitian, or other healthcare professional
   - □ None of the above

[Terminate if None of the above is <u>not</u> selected.]

5. You will be asked to review images and written materials on your device's screen and offer your opinions. Do you have a medical or non-medical condition that hinders your ability to read and/or understand materials on the device's screen? *(Select one.)*
   - ○ Yes **[terminate]**
   - ○ No

Demographics

[All questions in the demographics section should be programmed with a preceding "D": D1, D2, etc.]
Note: In-bound quotas are used for age, education, ethnicity, and race.

1. **[SP]** What is your age? *(Select one.)*
   o Under 18 **[terminate]**
   o 18 to 34
   o 35 to 44
   o 45 to 59
   o 60 or older

2. **[SP]** What is the highest grade or level of school you have <u>completed</u>? *(Select one.)*
   o Less than high school diploma or GED
   o High school diploma or GED
   o Technical or vocational school
   o Some college or associate's degree
   o Bachelor's degree
   o Master's degree or higher

3. **[MP]** What is your race and/or ethnicity? *(Select all that apply.)*
   □ American Indian or Alaska Native
   (For example, Navajo Nation, Blackfeet Tribe of the Blackfeet Indian Reservation of Montana, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, Aztec, Maya, etc.)
   □ Asian
   (For example, Chinese, Asian Indian, Filipino, Vietnamese, Korean, Japanese, etc.)
   □ Black or African American
   (For example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somali, etc.)
   □ Hispanic or Latino
   (For example, Mexican, Puerto Rican, Salvadoran, Cuban, Dominican, Guatemalan, etc.)
   □ Middle Eastern or North African
   (For example, Lebanese, Iranian, Egyptian, Syrian, Iraqi, Israeli, etc.)
   □ Native Hawaiian or Pacific Islander
   (For example, Native Hawaiian, Samoan, Chamorro, Tongan, Fijian, Marshallese, etc.)
   □ White
   (For example, English, German, Irish, Italian, Polish, Scottish, etc.)

4. **[SP]** What state do you <u>currently</u> live in? *(Select one.)* **[present 50 states plus, DC on screen]**

5. **[SP]** What sex were you assigned at birth on your original birth certificate? *(Select one.)*
   o Male
   o Female
   o Prefer not to answer
   o I don't know

6. **[SP]** Do you currently describe yourself as male, female, or transgender? *(Select one.)*
   o Male
   o Female
   o Transgender

      o   Identify in some other way

      o   Prefer not to answer

7. **[MP, randomize, None is exclusive and at the bottom]** Please select which of the following describe you or any of the members of your <u>current</u> household. *(Select all that apply.)*

    □   65 years of age or older

    □   5 years of age or younger

    □   Pregnant

    □   Diagnosed with a condition that affects the immune system, such as cancer, diabetes, HIV/AIDS, organ transplants, or autoimmune disease

    □   None of the above

Survey – Limited Time Exposure Experiment

Practice LTE

[DISPLAY]

On the next screen, you will see a food package. **If you are using your phone, please turn your phone to landscape orientation for the best user experience.** You will see the package for about 20 seconds. Please carefully review the information on the package as if you were planning to prepare the product at home. We are going to ask you a few questions about what you saw.

When you are ready to see the food package, click CONTINUE.

[insert practice LTE_Caldwells.png—Display for 20 seconds]

You will automatically be moved to the next question after 20 seconds.

[DO NOT ALLOW RESPONDENT TO GO BACK IN SURVEY]

[TEXT—CODE EACH ROW AS SEPARATE VARIABLE]

1. Please list everything you remember seeing on the food package. Please type each thing you remember seeing—such as words, pictures, and symbols—on a SEPARATE row. For pictures or symbols, please provide a description of what you saw. Take as much time as you need. Click the CONTINUE button when you are done.

[DISPLAY]

Now we are going to ask you if you remember seeing different words, pictures, or symbols on the food package. Only click YES if you are sure you saw the word, picture, or symbol. Otherwise, click NO.

[PROMPT IF REFUSED]

[RANDOMIZE ORDER OF Q2 - 5]

[SP] (ON LABEL)

2. Do you remember seeing this image?

    [Insert practice LTE_Q2_GF]

GF
Gluten-Free™

o Yes
o No

[SP] (ON LABEL)

3. Do you remember seeing "Caldwells"?

Caldwells

o Yes
o No

[SP] (MISS - NOT ON THE LABEL)

4. Do you remember seeing "Organic"?

Organic

o Yes
o No

[SP] (MISS - NOT ON THE LABEL)

5. Do you remember seeing this image?

[Insert practice LTE_Q5_flag.png]

o Yes
o No

LTE for SHI Labels
[DISPLAY]

Next, you will see another food package. **If you are using your phone, please turn your phone to landscape orientation for the best user experience.** You will see the package for about 20 seconds. Please carefully review the information on the package as if you were going to prepare the product at home. We are going to ask you a few questions about what you saw.

When you are ready to see the food package, click CONTINUE.

[RANDOM ASSIGNMENT TO 1 OF 10 CONDITIONS (9 test
and 1 control, current SHI) —Display for 20 seconds, see table below for assignment].

Label No	Filename for image with package and label
1	Label_1_trx_package
2	Label_2_trx_package
3	Label_3_trx_package
4	Label_4_trx_package
5	Label_5_trx_package
6	Label_6_trx_package
7	Label_7_trx_package
8	Label_8_trx_package
9	Label_9_trx_package
10	Label_SHI_control_package

Nutrition Facts
Serving Size: 1 Patty (112g/4oz)
Servings Per Container: 4

Amount Per Serving
Calories 170 Calories from Fat 70

%Daily Value*

Total Fat 8g	12%
Saturated Fat 3g	16%
Cholesterol 70mg	24%
Sodium 75mg	3%
Total Carbohydrate 10g	0%
Protein 20g	
Calcium 0% •	Iron 15%

Not a significant source of dietary fiber, sugars, Vitamin A and Vitamin C.

*Percent Daily Values are based on a 2,000 calorie diet.

INGREDIENTS: GROUND BEEF, NATURAL FLAVORINGS

LEAN GROUND BEEF
93% LEAN • 7% FAT

//// ATTENTION ////
FOOD SAFETY HANDLING INSTRUCTIONS

Follow these instructions to prepare raw meat products safely.

Before and after touching raw meat, wash hands with soap and water for 20 seconds, then dry

Clean utensils and surfaces with soap and water, then sanitize with bleach solution or dishwasher to kill bacteria

This product is raw: keep separate from foods that will not be cooked

Use food thermometer: cook to at least 160°F

FoodSafety.gov 1-888-MPHotline (1-888-674-6854)

U.S. INSPECTED AND PASSED BY DEPARTMENT OF AGRICULTURE EST. 38

BROPHY BEEF PACKING CO., COLUMBUS, OH 43081

COOKING INSTRUCTIONS: FOR STOVETOP OR GRILL, COOK ON MEDIUM HIGH HEAT FOR 4-6 MINUTES ON EACH SIDE. FOR OVEN, PREHEAT OVEN TO BROIL AND COOK BURGERS ON A BAKING SHEET FOR 25 MINUTES, FLIP HALFWAY THROUGH.

NET WT. 16 OZ (1 LB)

You will automatically be moved to the next question after 20 seconds.

[DO NOT ALLOW RESPONDENT TO GO BACK IN SURVEY]

[TEXT—CODE EACH ROW AS SEPARATE VARIABLE]

6. Please list everything you remember seeing on the food package. Please type each thing you remember seeing—such as words, pictures, and symbols—on a SEPARATE row. For pictures or symbols, please provide a description of what you saw. Take as much time as you need. Click the CONTINUE button when you are done.

[DISPLAY]

Now we are going to ask you if you remember seeing different words, pictures, or symbols on the food package. Only click YES if you are sure you saw the word, picture, or symbol. Otherwise, click NO.

[PROMPT IF REFUSED]

[RANDOMIZE ORDER OF Q7–Q14; 4 HITS AND 4 MISSES; FILL WITH TITLE, SHAPE, AND ALERT WORK FROM ASSIGNED SHI LABEL]

[SP] (HIT 1 – Title)

7. Do you remember seeing this phrase, "[INSERT IMAGE FILE WITH TITLE]"?

FOOD SAFETY HANDLING INSTRUCTIONS

o   Yes
o   No

[use table below for assignment of filled text]

Label No	Title	Filename with Title Image
1	**Food Safety Handling Instructions**	**Title_1_trx**
2	**Food Safety Handling Instructions**	**Title_2_trx**
3	**Food Safety Handling Instructions**	**Title_3_trx**
4	**Food Safety Steps**	**Title_4_trx**
5	**Food Safety Steps**	**Title_5_trx**
6	**Safely Prepare Raw Meat Products**	**Title_6_trx**
7	**Avoid Illness**	**Title_7_trx**
8	**Avoid Illness**	**Title_8_trx**
9	**Food Safety Steps**	**Title_9_trx**
10	**Safe Handling Instructions (Control)**	**Title_10_control**

[SP] (HIT 2 – Thermometer Icon)

8. Do you remember seeing this image?
[IF CONDITION 1-9 USE SHI LTE_Q8_thermometer]

[IF CONDITION 10, USE SHI LT_Q8_Cook]

o Yes
o No

[SP] (HIT 3 – Handwashing Icon)

9. Do you remember seeing this image?
[[IF CONDITION 1-9 insert SHI LTE_Q9_HW

[IF CONDITION 10, USE SHI_LTE_Q9_OLD HW]

- o Yes
- o No

[SP] (HIT 4 – Alert word)

10. Do you remember seeing "[INSERT IMAGE FILE WITH ALERT WORD]"?

- o Yes
- o No

[use table below for assignment of image]

Label No	Alert Word	Filename with Alert Word Image
1	Attention	Alert_1_trx
2	Attention	Alert_2_trx
3	Attention	Alert_3_trx
4	Important	Alert_4_trx
5	Attention	Alert_5_trx
6	Safely	Alert_6_trx
7	Important!	Alert_7_trx
8	Important!	Alert_ 8_trx
9	Caution!	Alert_9_trx
10	Safe	Alert_10_control

[SP] (MISS 1 – NOT ON THE LABEL)

11. Do you remember seeing "INSERT IMAGE FILE WITH WARNING TITLE"?

[Insert Q11_warning.jpeg]

WARNING

o Yes
o No

[SP] (MISS 2)

12. Do you remember seeing "Grass Fed"?

GRASS FED

o Yes
o No

[SP] (MISS 3)

13. Do you remember seeing this image?

[Insert SHI LTE_Q13_grill.png]

o Yes
o No

[SP] (MISS 4)

14. Do you remember seeing this image?

[Insert SHI LTE_Q14_organic.png]

o Yes
o No

Additional Outcomes for SHI Label

Saliency, Perceived Risk Impact of Label (first 3 items)

Communication-Human Information Processing (C-HIP) (remaining items)

[SP] [Grid, randomize]

Next, you will see a potential new label that provides information on how to safely handle and cook raw meat or poultry products. Please look at the label as if you were going to prepare the product at home. Then, answer the questions to provide your honest feedback about the label. **If you are using your**

[Show SHI label assigned to respondent; label is NOT on a food package, use table below for assignment]

Label No	Filename with label only
1	Label_1_trx
2	Label_2_trx
3	Label_3_trx
4	Label_4_trx
5	Label_5_trx
6	Label_6_trx
7	Label_7_trx
8	Label_8_trx
9	Label_9_trx
10	Label_SHI_control

One of the test labels is shown below. The 9 test labels are provided at the end of the instrument.

How much do you agree or disagree with the following statement?

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
15. This label is worth remembering. *Visual receptivity; Modified from: Source: Cantrell, 2013*					
16. This label grabbed my attention. *Visual receptivity; Modified from: Source: Cantrell, 2013*					
17. This label makes me think about the health risks of food poisoning. *Perceived Risk Impact; Modified from: Pepper, 2020*					
18. I believe following the instructions on this label are important for the health and safety of my family. *Perceived Risk Impact; Modified from: Chen, 2020*					

19. It would be difficult for me to follow the instructions on this label. *Efficacy; Modified from: Chen, 2020*					
20. I would use this label to inform how I handle and prepare this product. *Motivation/Behavior; Modified from: Chen, 2020*					
21. I understand what this label is telling me to do. *Comprehension; Modified from: Emberger-Klein and Menrad, 2018*					
22. I learned something new from this label. *New Information Learned; Modified from: McCormack, 2016*					
23. I would look for more information about food safety after reading this label. *Motivation/Behavior; Modified from: McCormack, 2016*					
24. I would have concerns about buying this product after reading this label. *Receptivity to Fear Appeal Messaging; RTI developed*					

Perceived Risk Impact of Label

[Show SHI label assigned to respondent, same label shown for Questions 15-24]

Source: RTI Survey Methodologist/RTI Project Team

25. **[SP]** How likely or unlikely do you think it is that you will get food poisoning from food you cook at home if you do not follow the food safety instructions shown on this label?

- o   Very likely
- o   Somewhat likely
- o   Neither likely nor unlikely
- o   Somewhat unlikely
- o   Very unlikely

Perceived Risk Impact of Risk Statement
Modified from: Cantrell, 2013

[Show SHI label assigned to respondent, same label shown for Questions 15-25]

[Randomize 2 questions below]

26. **[SP]** How much does this message make you want to follow the recommended food safety instructions shown on the label?

    [Insert Message from SHI label assigned to respondent]

Label No	Fill for Message
1	Follow these instructions to **prepare raw meat products safely.**
2	Follow these instructions to **prepare raw meat products safely.**
3	Follow these instructions to **prepare raw meat products safely**.
4	Follow these instructions to **prevent illness.**
5	Follow these steps to prepare **raw meat products safely.**
6	Follow these instructions to **prevent illness.**
7	This **raw meat** product may contain **bacteria**. Follow these practices to **avoid illness.**
8	This **raw meat** product may contain **bacteria**. Follow these practices to **avoid illness.**
9	**Reduce your risk of illness** when preparing **raw meat products** by following these steps.
10	This product was prepared from inspected and passed meat and/or poultry. Some food products may contain bacteria that could cause illness if the product is mishandled or cooked improperly. For your protection, follow these safe handling instructions.

   o   Not at all
   o   A little
   o   Some
   o   Completely

27. **[SP]** How much does this message make you concerned about the health risks of unsafe food handling behaviors, such as not washing hands or undercooking raw meat or poultry?

[Insert Message from SHI label assigned to respondent, see table from Q26]

   o   Not at all
   o   A little
   o   Some
   o   Completely

Reacting to Design Considerations for New SHI

Reactions to Features of SHI

We asked you about one potential new design for a label on how to safely handle and cook raw meat or poultry products. For the next questions, please consider other potential design options and provide your honest feedback.

28. **[SP, randomize]** Below are words that may appear at the top of the label to get your attention. Which word does the best job of catching your attention? *(Select one.)*

    o Attention
    o Caution
    o Important

29. **[SP, randomize]** Below are potential titles for the label. Which title best catches your attention? *(Select one.)*

    o Food Safety Handling Instructions
    o Food Safety Steps
    o Avoid Illness
    o Safely Prepare Raw Meat Products
    o Safe Handling Instructions [*Note: original SHI*]

30. **[SP, randomize]** Below are messages to put on the label to encourage you to follow the recommended instructions. Which message does the best job of encouraging you to follow the recommended instructions? *(Select one.)*

    o Follow these instructions to prepare raw meat products safely.
    o Reduce your risk of illness when preparing raw meat products by following these steps.
    o Follow these instructions to prevent illness.
    o This raw meat product may contain bacteria. Follow these practices to avoid illness.
    o Follow these steps to avoid illness.
    o This product was prepared from inspected and passed meat and/or poultry. Some food products may contain bacteria that could cause illness if the product is mishandled or cooked improperly. For your protection, follow these safe handling instructions. [*Note: original SHI*]

[Next page]

31. **[MP, randomize responses, keep 'Something else' at bottom]** What foods do you think of when the word "meat" is used on safe handling instruction labels like the label you looked at today? *(Select all that apply.)*
    o   Beef
    o   Pork
    o   Chicken
    o   Turkey
    o   Deli meat
    o   Fish
    o   Something else

Placement of Final Temperature and SHI

32. [**SP, Randomize first three response options keep last two response options at end**] Where on the package would it be helpful to see the minimum internal temperature for raw meat or poultry? This is the recommended minimum temperature for cooking the meat or poultry to ensure that it is done and safe to eat (for example, 160∘F), not the oven temperature (for example, 350∘F). Here is an example of what this information may look like:

     "Cook until the internal temperature reaches 160∘F."
    o   This statement should appear on the front of the package
    o   This statement should appear on the back of the package.
    o   This statement should appear on the side of the package.
    o   It does not matter where it appears, as long as the minimum internal temperature is on the package.
    o   The minimum internal temperature is not needed on the package.

33. **[SP, Randomize first three response options keep last two response options at end]** Currently, manufacturers are required to provide Safe Handling Instructions (shown below) on raw meat and poultry products but can place them anywhere on the package.

Where on the package would it be most useful to have the Safe Handling Instructions?
    o   This information should appear on the front of the package.
    o   This information should appear on the back of the package.
    o   This information should appear on the side of the package.

o   It does not matter as long as the safe
     handling instructions are on the package.
o   The safe handling instructions are not needed on the package.

Use of QR code

34.   **[SP]** How likely or unlikely would you be to scan a QR code on a package of raw meat or
       poultry to get more information about safe handling practices? *(Select one.)*

[show Q25_QR circled from 91257220**]**

o   Very likely
o   Somewhat likely
o   Neutral
o   Somewhat unlikely
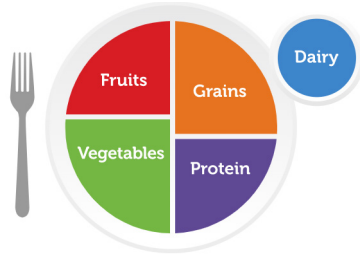o   Very unlikely

Awareness of SHI Label

35.   **[MP, randomize, None is exclusive and at the bottom]** Click on the images that you have seen
       before today. *(Select all that apply.)*

□   **[SHI]**

□   [**Myplate**][Show **Q1_Myplate_campaign.jpg** from 91257220]

☐ [**fight bac**][Show **Q1_fightbac_quadrant.jpg** from 91257220]

☐ [**Truth campaign**]][Show **Q1_truth_logo_orange_on_black.jpg** from 91257220]

☐ None of the above

Food Safety Behaviors and Risk Perceptions

Source: FDA Food Safety Survey, 2019

Thermometer Ownership and Use

The last section of the survey asks about your food handling behaviors at home.

36. **[SP]** Do you own a food thermometer, such as a meat thermometer?
    o Yes
    o No
    o I don't know

[IF Q35 (THERMOMETER OWNERSHIP)=YES]

37. **[SP]** Over the past 12 months, how often have you used a food thermometer to check the internal temperature when you cooked the following foods?

[Rotate through:]

1. Beef, lamb, or pork roasts
2. Whole chickens or turkeys
3. Chicken parts such as breasts or legs
4. Hamburgers made from beef

    o Always used a food thermometer
    o Often used a food thermometer
    o Sometimes used a food thermometer
    o Never used a food thermometer
    o Didn't cook this food in past 12 months

Handwashing

38. **[SP]** Before you begin preparing food, how often do you wash your hands with soap?
     o All the time
     o Most times
     o Sometimes
     o Rarely
     o Never

39. **[MP]** After handling raw meat or chicken, what do you usually do? *(Select all that apply.)*
     □ Continue cooking without washing your hands
     □ Rinse or wipe your hands
     □ Wash your hands with soap
     □ Other, please specify:
     □ I never handle raw meat or chicken **[exclusive]**

Cleaning/sanitizing

40. **[MP]** After cutting raw meat or chicken, what do you usually do with the cutting board or surface? *(Select all that apply.)*
     □ Continue using it without rinsing or washing
     □ Rinse or wipe it
     □ Wash it with soap
     □ Wash it with bleach
     □ Put it in the dishwasher
     □ Other, please specify:
     □ I don't cut raw meat or chicken **[exclusive]**

Risk Perceptions

41. **[SP]** How serious do you think food poisoning is? **(Select one.)** [perception of seriousness]
     o Not at all serious
     o Only a little serious
     o Neutral
     o Somewhat serious

o   Very serious

42. **[SP]** How likely or unlikely do you think it is that you will get food poisoning from food <u>you cook at home</u> in the next 12 months? *(Select one.)* [perception of susceptibility]
    o   Very likely
    o   Somewhat likely
    o   Neutral
    o   Somewhat unlikely
    o   Very unlikely

43. [**SP**] Have you or anyone in your household ever had food poisoning? Do not include allergies to food.
    o   Yes
    o   No
    o   Don't know

[No prompt should be shown]

44. **[Open ended]** Do you have any other comments to share about labels for the safe handling of raw meat and poultry?

[DISPLAY 99]

[For pilot survey only]

[SP]

99. Did you find anything about the survey confusing or hard to understand?
1. Yes
2. No
[If Q99 = 1]

[open-ended]
99a. Please describe what was confusing or hard to understand.

Thank you for completing the survey!

Appendix G: Web-based Experimental Survey: Results for Unaided Recall

Appendix Table G-1. Percentage of Respondents Who Recalled Seeing the SHI Label by Condition for Unaided Recall (Limited Time Exposure Experiment)

	Current SHI Label (Control) (n = 240)	Treatment								
		Label 1* (n = 240)	Label 2 (n = 240)	Label 3* (n = 240)	Label 4* (n = 240)	Label 5 (n = 240)	Label 6 (n = 240)	Label 7* (n = 240)	Label 8* (n = 240)	Label 9* (n = 240)
n	33	57	36	70	56	41	35	57	80	51
% (95% CI)	13.8 (9.39-18.11)	23.8 (18.37-29.13)	15.0 (10.48-19.52)	29.2 (23.42-34.92)	23.3 (17.98-28.68)	17.1 (12.32-21.84)	14.6 (10.12-19.05)	23.8 (18.37-29.13)	33.3 (27.37-39.30)	21.3 (16.07-26.43)

Note: Respondents who skipped the survey question (i.e., missing values) were excluded from the analysis. The Wald test was used to calculate 95% confidence intervals. We performed a chi-square test of independence to determine whether there was a statistically significant association between label condition and unaided recall. Because the results of this test demonstrated statistical significance ($p < .05$), we then conducted post hoc tests for all possible comparisons (treatment vs. control, and treatment vs. treatment) ($p < .05$ level). Asterisks are used to indicate when the comparisons for treatment versus control were statistically significant. For paired comparisons for treatment versus treatment, 17 comparisons were statistically significant. Among these, Label 7 performed better than Labels 2 and 6; Label 8 performed better than Labels 1, 2, 4, 5, 6, 7 and 9.

Source: 2024 FSIS CLR Experimental Survey (N=2,400) (adults who have prepared raw meat or poultry in the past 30 days).