

EHS-Net Retail Deli Study Protocol

I. Project Overview

Title

EHS-Net *Listeria* Retail Deli Study

Protocol Summary

Few studies have examined, in detail, the relationship between food safety practices in retail delis and the potential for cross-contamination of ready-to-eat products with foodborne pathogens, namely *Listeria monocytogenes* (*L. monocytogenes*). The purposes of this study are to collect descriptive data on and examine the relationships among (1) retail delis workers' behaviors while performing work-related tasks, (2) retail delis' environments, including physical and operational characteristics, and (3) managers' and workers' characteristics including food safety practices, knowledge, training, and certification.

This is an Environmental Health Specialists Network (EHS-Net) study. EHS-Net is a collaboration involving the Centers for Disease Control and Prevention (CDC), the U.S. Department of Agriculture's Food Safety and Inspection Service (USDA-FSIS), the U.S. Food and Drug Administration (FDA), and six state and local health departments (California, Minnesota, New York City, New York State, Rhode Island, and Tennessee).

Investigators/collaborators/funding mechanism(s)

Investigators include EHS-Net staff at each of the six EHS-Net sites. Funding for this study will be provided through EHS-Net and USDA-FSIS.

II. Introduction

Literature Review/Justification

Since 2002, the number of cases of listeriosis, the clinical manifestation of the foodborne pathogen, *L. monocytogenes*, in the United States is not continuing to decline, suggesting that *L. monocytogenes* remains a public health concern (CDC, 2008). Although *Listeria*'s infection rate is low in comparison to other major foodborne pathogens, it has one of the highest case fatality rates, with 19% of all listeriosis cases resulting in death (Scallan et al., 2011).

The primary route of exposure to *L. monocytogenes* is through ingestion of contaminated foods. Ready-to-eat products, namely deli meats, have been shown to have an increased likelihood of becoming contaminated with *L. monocytogenes* (FDA/USDA/CDC, 2003). According to the FDA, deli meats pose the greatest risk of listeriosis per year and per serving when compared to other ready-to-eat foods previously linked to *L. monocytogenes*-contamination. It was recently shown that 80% of the listeriosis cases attributed to deli meats were sliced and packaged at retail (Endrikat et al., 2010; Gombas et al., 2003).

Studies indicate that retail food establishments are an important source of foodborne illnesses (Friedman et al., 2004; Jones et al., 2004; Kassenborg et al., 2004; Olsen et al., 2000). These findings highlight a critical need to study these establishments to develop a good understanding of the potential causes and mechanisms of foodborne illnesses. In the case of *L. monocytogenes*, we need to identify and understand the characteristics of retail delis and deli workers by collecting data on the deli environment and food handling practices and policies from those responsible for preparing and cooking deli foods. Thus, this data collection will focus on determining how delis' characteristics, managers' and workers' characteristics, and delis' food safety policies and practices individually and collectively correlate with the risk of cross-contamination of ready-to-eat foods with *L. monocytogenes*.

Objectives

The study has 3 main objectives. The first objective is to collect descriptive data on deli workers' actions involved in completing work-related tasks (e.g., slicing deli meat for a customer). The data will be used to identify practices that could lead to cross-contamination of ready-to-eat products, such as deli meats and

cheeses, with *L. monocytogenes*. Also, these data will be used to fill gaps in the USDA-FSIS's risk assessment model for *L. monocytogenes* in retail establishments. More specifically, through computer simulations, these data will be used to estimate the risk of cross contamination of ready-to-eat products associated with particular sequences of actions.

The second objective of this study is to collect descriptive data on the physical and operational characteristics of the retail deli's environment. Focus will be placed on the policies and practices regarding food slicers, as recent data have suggested that slicers may serve as niches for *Listeria* colonies and could subsequently be linked to a number of listeriosis outbreaks. These data will be used to identify areas that need to be improved in retail delis' food safety policies and practices in order to reduce and/or prevent *L. monocytogenes*-contaminated ready-to-eat products (e.g., deli meats, deli salads, cheeses, etc.).

The third objective of this study is to collect descriptive data on both the deli manager's and worker's characteristics, i.e., food safety knowledge, food safety practices, training and certification. These data will be used to identify manager and worker characteristics that may increase the risk of contamination of ready-to-eat foods with *L. monocytogenes*.

Collectively, the entire data set will be used to identify relationships among retail delis' characteristics, deli managers' and workers' characteristics, delis' food safety policies and practices and the potential for cross-contamination with *L. monocytogenes*.

III. Procedures/Methods

Design

This study will use a cross-sectional random stratified sampling design to collect data regarding retail delis' characteristics, deli managers' and workers' characteristics, and food safety policies and practices. Each EHS-Net site will serve as its own mutually exclusive stratum. Meaning, retail delis will be randomly selected within their respective EHS-Net sites, independent of other sites. Information will be collected through a brief survey regarding food safety knowledge, a manager interview, a worker interview, and observations of the deli environment and workers' activities. The study will be conducted by EHS-Net environmental health specialists who work in state and local health departments.

Data collection

Approximately one month prior to data collection, the EHS-Net specialists will participate in a required training on data collection for this study. This training will consist of both a webinar and an interactive video. The webinar will be conducted by CDC staff. Specifically, we will review the data collection instruments to make sure all EHS-Net specialists fully understand the intent and meaning of the specific questions in the instruments; review the proper procedures to use when interviewing the deli managers and workers, and emphasize the proper techniques and specific criteria to use when inspecting the deli slicers. Additionally, a training video, currently being developed by USDA-FSIS, will be used to provide in depth guidance to EHS-Net specialists on collecting data for the notational analysis component of the study. Upon completion of these trainings, the EHS-Net specialists will start recruiting randomly-selected retail delis by telephone to ask for voluntary participation in the study. See attachment 1 for the manager recruiting script. If the retail deli's manager is willing to participate, the EHS-Net specialist will arrange a time to visit the establishment to conduct the interviews and observations. The visit by the EHS-Net specialist will include a short self-administered manager survey, interviews with the deli manager and a worker (See Attachments 2 and 3 for the manager informed consent, interview and survey, Attachment 4 for the worker recruiting and informed consent script, Attachment 5 for the worker interview), structured observations of the deli's environment and notational observations of workers performing work-related tasks (See Attachment 6). To help ensure cooperation and participation, the food workers from which participation will be solicited will be selected by the deli manager.

The data collection will be anonymous. Although specialists will keep a list of establishments in which they have collected data, no identifying information on retail establishments, deli managers or workers will be stored with the data. Thus, it will not be possible to link the study data with a specific retail deli. Any

information used to schedule retail deli visits, such as call logs, will be destroyed once data collection is complete.

Study Population

The 2008 and 2009 Homeland Security Infrastructure Project's (HSIP) databases of retail establishments in the United States will be combined to create a comprehensive and updated directory from which the retail establishments will be selected. The directory will then be refined to include only those retail establishments with delis where, typically, there is a delay between the purchase and consumption of the deli products as some of these data will be used by FSIS to estimate the potential for *Listeria* growth as a result of post-sale consumer handling (e.g., storage time and temperature until consumption). Thus, delis where consumption of the product is almost immediately after purchase (e.g., Jason's Deli, Subway, etc.) will be excluded from the study.

The study population will include only retail delis that are geographically located within the respective catchment areas of the six participating EHS-Net sites. Each participating site will define its own catchment area. For EHS-Net sites that do not have jurisdiction over the retail delis located within their catchment areas, MOUs will be developed between the sites and the agencies that do have jurisdiction (e.g., Departments of Agriculture). As mentioned previously, all retail delis will be randomly selected for participation. Each EHS-Net site will collect data from 50 retail delis, yielding a total of 300 retail delis. One manager from each selected retail deli will be asked to participate. Data on food safety policies and practices and food safety training and certification will be collected through interviews and surveys. In addition, one food worker will be selected for an interview, and up to three workers will be selected for the notational observation, from each retail deli. The deli worker to be interviewed will be selected by the deli manager for participation in this study.

Vulnerable populations

Although vulnerable populations are not targeted for inclusion in this study, there is a possibility that some of the female deli managers and/or workers may be pregnant. Because we plan to collect data through interview and observation only, we anticipate a minimal amount of risk to the study participants (see **Risk Summary**) and no risk to the fetus. Thus, it will be appropriate for pregnant women to be allowed to participate in these data collection efforts.

Study Instruments

The following data collection instruments were developed through a collaborative effort between the CDC and the USDA-FSIS and reviewed by a workgroup composed of representatives from the CDC, USDA-FSIS, and EHS-Net sites:

- 1) Deli Manager Interview – EHS-Net staff will conduct a face-to-face interview with the retail deli manager about the deli's characteristics (ownership, number of customers served, etc.) and food safety policies and practices. The interview will take about 25 minutes. (See Attachment 2)
- 2) The manager will also complete a self-administered food safety knowledge survey. The survey will take about 10 minutes. (See Attachment 3)
- 3) Deli Worker Interview – EHS-Net staff will interview one English-speaking food worker whom has experience with cleaning, sanitizing, and operating the retail deli's slicers about basic food safety knowledge as well as the deli's cleaning and sanitizing practices and policies. The interview will take about 15 minutes. (See Attachment 5)
- 4) Structured Observation – EHS-Net staff will conduct observations based on a set of structured questions to capture information about the deli environment, the workers' behaviors, and the deli's food safety practices. The structured observation will take about 30 minutes. (See Attachment 6)
- 5) Notational Analysis – EHS-Net staff will record, by hand, 100 sequential actions of one to three food workers, using the code key and notational analysis form provided. The notational analysis can take from 30 to 60 minutes per worker, depending on how busy the retail deli is at the time of the observation. (See Attachment 6)

Study Timeline

Activity	Time Frame
Train EHS-Net sites on data collection	Within 1 month of OMB approval
Data collection	Within 1.5 months of OMB approval
Data entry and quality assurance	Within 1.5-2 months of OMB approval
Data cleaning	Within 7 months of OMB approval
Data analysis	Within 8 months of OMB approval
Manuscript development	Within 10 months of OMB approval

Data Handling and Analysis

Analysis Plan

There are two separate analysis plans for this study. USDA-FSIS will use a portion of the data to fill in data gaps for an ongoing, national risk assessment of *L. monocytogenes* at retail. More specifically, the data gathered regarding deli worker behavior will be used in their risk assessment model to estimate how specific sequences of actions influence the risk of cross-contamination of ready-to-eat products in retail delis.

A separate analysis will be performed by an EHS-Net analytical work group. The analysis of the data will proceed in several stages. The first stage of analysis will involve data cleaning, editing, and recoding. The data will be checked for accuracy and examined for inconsistencies as they are entered into the electronic system. A frequency response analysis will be done for each variable to examine item non-response and extraneous responses. Variables with high item non-response or of poor quality will be discarded. The second stage will involve a descriptive analysis of the data set by running univariate frequencies and cross-tabulations for selected variables by demographic variables. Tests for association will be done using chi-square and t-tests. Analysis may also involve regression modeling of the data to examine any multivariate relationships and to control for confounding variables.

Analysis software

Software that will be used to analyze the data may include SAS, SPSS, and EpiInfo 2002.

Data Entry, Editing and Management

Data will be entered into the CDC's Environmental Health Specialists Information System (EHSNIS), a web-based information system designed specifically for this project. User accounts will be issued to the EHS-Net specialist in each state. Account privileges identify the data each specific user is authorized to access and the functions they are authorized to perform. Each EHS-Net specialist is responsible for the administration of the system for his or her own site, and includes user administration, correction and deletion of records capabilities. All data records are owned by the site entering the data. Each site has authority over its records and must grant permission to other sites or agencies who would like to use the data. Each week, CDC is responsible for downloading data from EHSNIS to run quality assurance procedures on the data. In instances where errors are found in the data, CDC will contact the corresponding EHS-Net site for clarifications and corrections.

Study Limitations

Data will be collected in those sites participating in EHS-Net. Therefore, findings may not be generalizable to the retail delis that are located outside of EHS-Net catchment areas. Additionally, the data may be subject to interviewer bias, recall bias, and the social desirability bias.

Dissemination, Notification, and Reporting of Results

Results of data analysis will be published in professional journals and presented at meetings. They will also be available for state and local health departments to utilize in their efforts to identify and change certain retail food safety policies and practices that may contribute to foodborne illnesses. Upon the request of participating retail delis, local and state health departments will also disseminate a final report that summarizes all of the data obtained in this study. In turn, these summaries could lead to the development of educational materials and outreach mechanisms for all retail deli employees and even consumers.

Risks Summary

The research procedures- interviews, surveys, and observations of employees working- present no more than minimal risk of harm to participants, as the probability and magnitude of harm or discomfort anticipated in participating in these activities are not greater in and of themselves than those ordinarily encountered in daily life. Additionally, the data collection is anonymous- participants will not provide personally identifiable information.

Although there is minimal risk involved in participating in this study, there is a risk involved in allowing the researcher into the establishment. The possibility exists, however unlikely, that an EHS-Net specialist may see an **imminent** health hazard in an establishment and out of an obligation to public health, call the local health department about the hazard (participants are informed of this possibility in the consent process). This could potentially lead to negative consequences for the establishment or employees of the establishment. For example, the establishment may get visited by its local inspector who may either give the establishment a poor inspection score or temporarily close the establishment. Additionally, as a result of those negative consequences, the employee who agreed to participate in the research may suffer negative consequences for doing so. It is important to note, however, that imminent health hazards are very rare, and are limited to relatively extreme situations such a lack of power or water, or sewage spills. EHS-Net has not encountered an imminent health hazard in any of the 9 studies (over 3,000 restaurants) we have conducted to date.

Benefits

To Subjects

Subjects may benefit from a better understanding of how their food safety practices and behaviors can potentially lead to contaminated food products.

To Humankind

Humankind may benefit from fewer cases of illness caused by *Listeria*-contaminated ready-to-eat foods.

To Regulatory Agencies

State and local food protection agencies may use the information learned from this study to assist retail delis in implementing prevention strategies that control for the presence of *Listeria* and other foodborne pathogens.

Informed Consent

A waiver of documentation of informed consent is requested in accordance with 45 CFR 46.117(c)(2). The proposed research meets the first criterion for the waiver, as the probability and magnitude of harm or discomfort in participation are not greater in and of themselves than those ordinarily encountered in daily life. Additionally, as the research involves no procedures for which written consent is normally required outside the research context, the study also meets the second criterion for waiver.

Before conducting the study, we will obtain verbal informed consent from the establishment manager (See Attachment 2). The EHS-Net specialist will read the manager a short introduction describing the purpose of the study and how the data will be used. The interviewer will then ask the manager if he or she agrees to participate in the study. If the manager agrees, the interview will proceed; if the manager does not agree, the interview will cease.

Once a deli worker is identified by the deli manager as a potential participant for the study, the interviewer will read a brief recruiting and informed consent script to the worker (See Attachment 4). If the deli worker agrees to participate, the interview will proceed; if the deli worker does not agree, the interviewer will ask the manager to help recruit another participant for the study.

We are requesting a waiver of written informed consent; thus, neither managers nor workers will have to read the informed consent scripts. Nevertheless, we conducted readability analyses of sections from each of the informed consent scripts. These analyses indicated that the scripts were at an 8th grade reading level.

IRB Determination

In the past, our Center has classified EHS-Net studies like this one as exempt, because it is research involving interview/survey procedures and observation of public behavior, data collection is anonymous, and disclosure of human subjects' responses outside the research could not reasonably place them at risk of criminal or civil liability or be damaging to their financial standing, employability or reputation (45 CFR 46.101(b)). Although these criteria apply to this study as well, we believe that, going forward, EHS-Net studies like this one should receive expedited review rather than being classified as exempt. We believe this change is warranted by the risk that an EHS-Net specialist may see an imminent hazard in an establishment and call the local health department about the hazard. Although this situation does not technically meet the IRB criterion of 'disclosure of human subjects' responses outside the research could reasonably place the subjects at risk of ...', because it is not disclosure of research responses, but simply the researcher's presence in the establishment that leads to the risk, participation in our research may lead to this risk. Thus, we should err on the side of caution and obtain expedited review.

Funding Information

This study is funded by the CDC EHS-Net project through a cooperative agreement.

Institutional Information

Not applicable.

Approvals for other IRBs

IRB review or deferment will be obtained from CDC and all EHS-Net sites. EHS-Net sites that plan to undergo a local IRB review will do so following the IRB review by CDC.

EHS-Net Retail Deli Study: Data Collection Manual

I. STUDY DESIGN/METHOD

A. Sampling:

1. Stratified, random sampling
2. 50 retail delis per EHS-Net site

B. Data collection:

1. Data will be collected through: 1) manager interview, 2) manager survey, 3) worker interview, 4) structured observation, and 5) notational observation.
2. Data collection will be anonymous.

II. RECRUITMENT

A. Recruiting Procedure

We expect each EHS-Net site to collect data in 50 retail food establishments with a deli department. Each EHS-Net site will receive a list of randomly selected retail food establishments from CDC and will use this list to recruit retail deli participants for this study. **When recruiting, please use the provided recruiting script (Appendix 1) and adhere to the guidelines described below.**

1. Do NOT pick and choose retail establishments to contact. Contact all retail food establishments in the order they are listed. This is important; if you pick and choose retail food establishments to contact, then we no longer have a randomly selected sample.

2. Make multiple attempts to contact the retail establishments. Recruiters need to make a concerted effort to **establish** contact with any retail establishment that they initially tried to but could not make contact. This is important because there may be systematic differences between easy-to-contact retail delis and those that are hard-to-contact. For example, easy-to-contact retail delis may be less busy, better staffed, or better run than hard-to-contact retail delis. As these systematic differences could impact good food safety practices in the retail deli, we want to be sure that hard-to-contact retail delis are represented in our study sample as well as easy-to-contact retail delis. To ensure that every effort is made to contact all retail food establishments in the sample, please do the following:

- **Unanswered calls:** For unanswered calls, make a minimum of 10 attempts over two weeks to reach the establishment. Also, vary the time and day of the week when attempting to make contact with hard to reach establishments.
- **Answered calls:** For answered calls where no definitive responses were given with regard to study participation (i.e., Call back later, Not sure, etc.), at least 5 attempts over a minimum of 4 days should be made to re-contact the establishment in order to get a response.
- For retail food establishments with multiple unanswered calls or non-working numbers, consider using internet searches to find a working contact number.

3. Record all call attempts in the provided call tracking log. The *Listeria Retail Deli Study-Call Tracking Log*, located in Appendix 2, is designed to assist you in keeping track of your calls. The decision to use this log is optional, as CDC will not see this log. Please fill out the call log with the following information:

- Call date
- Call time
- Establishment information
- Attempt number (The number of attempts to contact that particular retail establishment.)
- Result or disposition of the call (e.g., No answer, Nonworking number, or Told to call back)

4. Record the final disposition of the recruitment of all of the retail establishments in the participation log. The *Listeria Retail Deli Study-Participation Log*, provided in Appendix 3, should be used to keep track of the responses of the retail delis during the recruitment process. Once you have made a final determination about a retail deli, fill out the participation log and send this log, in Excel format, back to CDC when your recruitment is complete.

For all retail delis, fill out the following information in the Excel worksheet:

- **Sample Id:** Fill in the sample ID as you are calling or recruiting each establishment.
- **Response Code:** In this column, fill in the response you received from the retail deli using the following codes, CL, I1, I2, I3, I4, P, R, U, and O:
 - **CL (CLOSED):** Use this code if you determine that the retail deli is closed permanently or no longer in operation.
 - **I1 (INELIGIBLE-- NOT AN EHS-NET RETAIL DELI):** Use this code if you determine that the retail deli does not meet the EHS-Net definition of a retail deli. An EHS-Net retail deli is defined as a deli (often located within the deli department of a retail establishment) that prepares and/or serves ready-to-eat foods to customers, where typically, there is a *delay* between the purchase and consumption of ready-to-eat foods. Restaurant-type delis where consumption of deli products is almost immediately after purchase (e.g., Jason's Deli and Subway) are *not* EHS-Net retail delis and thus excluded from this study.
 - **I2 (INELIGIBLE -NO RETAIL DELI):** Use this code if you determine that there is no deli in the retail establishment.
 - **I3 (INELIGIBLE - LANGUAGE):** Use this code if you are able to contact a retail establishment but there are no managers who speak English well enough to schedule a visit or complete data collection.
 - **I4 (INELIGIBLE – SCHEDULING):** Use this code when scheduling conflicts between you and the manager prevents you from visiting the establishment.

- **P (PARTICIPATING):** Use this code if you are able to contact a retail deli, it meets the EHS-Net definition of a retail deli, and the retail deli agrees to participate in the study.
- **R (REFUSED):** Use this code if you followed the protocol above for answered calls and made contact with a retail deli, but did not ever get a definitive response on participation. You will also use this code if you do make contact but the manager/owner declines to participate.
- **U (UNABLE TO CONTACT):** Use this response code if you followed the protocol above for unanswered calls and were not able to make contact with the retail deli. Also use this code if you cannot find a working phone/contact number for the retail establishment.
- **O (OTHER):** Something that does not fall into any of the other categories.

For any retail deli:

- **Reasons for refusal/Comments:** For refusing retail delis, enter any information the delis may have provided or that you were able to glean from them during the call on the reasons for refusal. Information on refusal is valuable, so if you do obtain any of this information, please record it. For all other retail delis, provide any comments that you may have obtained during the call.

For participating and refusing delis:

- **Ownership:** Enter whether the establishment is independently owned or belongs to a corporate chain, based on your knowledge of the retail establishment. If you cannot determine this, enter “Unsure”.
- **Communication:** Use this column to indicate the level of difficulty you encountered in trying to talk to someone at the establishment who could provide a definitive response about study participation. If you were able to talk to someone at the deli, enter “none” (no difficulty), “a little”, “some”, or “a lot”. For this question, *some* is more than *a little*, but less than *a lot*. This question is intended to be subjective, so use your judgment when answering. If you were not able to talk to someone at the retail deli, leave this cell blank.
- **Call No.:** Enter the total number of calls you made before you were able to talk to someone at the establishment who could provide a definitive response about study participation. If you did not make any calls (e.g., you knew that the retail deli closed recently), enter “zero”.

5. Stop recruiting once you have recruited and collected data in 50 retail delis. When you have collected data in 50 retail delis, you do not have to collect any more data, even if you have retail establishments on the list that you have not yet contacted.

B. Recruiting Script

When recruiting retail delis for participation, you will need to use the recruiting script entitled *Listeria Retail Deli Study- Manager Telephone Recruiting Script*. The recruiting script is provided for you in Appendix 1. Although you do not have to use this script word for word, you do need to share all of the information included in the script with the manager you are attempting to recruit.

C. Scheduling

All data collection visits should be scheduled in advance. Schedule visits at a time that will allow you to interview both a deli manager and a worker, as well as observe the deli's environment and workers performing work-related tasks (e.g., cleaning equipment and serving a customer). You are also strongly encouraged to vary the time of your visits to these retail delis as there may be differences in the behaviors and practices observed during busy hours and those observed during slower hours. For example, the busyness of the deli workers could impact their food safety practices.

III. DATA COLLECTION

A. Preparation

CDC will provide you with a list of retail establishments. Take the data collection instruments (manager interview, manager survey, worker interview, structured observation, and notational observation) to every data collection visit. **Do not write any identifying information (e.g., name, address, and phone number) about the retail establishment on any of the data collection forms.** All identifying information, including directions to the establishment, should be included in a separate list. This is to ensure that the data collected from this study is anonymous. That is, it should not be possible for anyone to establish a link between the data collected to the respective retail deli.

The data collectors will need to bring additional materials to every site visit. See material checklist below:

- Sanitizing solution test kits
- Calibrated thermometers for taking refrigerator and freezer temperatures
- Wipes for cleaning your thermometers
- Flashlights for inspecting the food slicers
- Watch or any device that indicates time for recording the start and end times during the structured observation and notational observation.

B. Informed Consent

When you arrive at the retail deli, you must obtain the manager's informed consent before you begin data collection. The script for this is included in the manager's data instrument, entitled *Listeria Retail Deli Study-Manager Informed Consent and Interview*. You must also ask the manager for permission to interview a deli worker before you attempt to get the deli worker's informed consent. In addition, you need to conduct the manager's interview before asking the manager to complete the manager survey. However, it is up to you to decide the order in which you conduct the interviews and observations. Depending on the situation, for example, after obtaining the manager's informed consent, you may wish to collect the data in the following order: structured observation, notational observation, worker informed consent and interview, manager interview, and then administer the manager's survey.

C. Manager Interview

After obtaining informed consent, you will interview the manager who has authority over the retail deli, using the data instrument, *Listeria Retail Deli Study-Manager Informed Consent and Interview*. Please use the following guidelines.

1. General Guidelines

- For each interview question, you will read the question aloud and mark the appropriate response. Texts that should be read aloud are in **bold**, while words you should not read aloud are not bolded.
- Answer choices should not be read aloud unless specifically noted or indicated by **bolded** text.
- In instances where you are required to read the answer choices, do not read the responses of “Unsure” or “Refused.”
- Questions that allow more than one answer or response choices will be followed by instruction that says “*Check all that apply.*”
- Please note and follow skip patterns. You may skip certain question(s) only if the response option selected by the respondent included an instruction to skip a question (e.g., (*Go to Q20*)).
- You should attempt to obtain an answer to each question in the interview; however, if you believe that the interviewee is unsure or does not know the answer to a question, the response should be recorded as “Unsure,” and if the manager refuses to answer a question, the response should be recorded as “Refused.”

2. Specific Questions

- Question 1: A chain establishment is defined as one that shares both its name *and* operations with other establishments. Chain ownership may be private, franchise or corporate.
- Questions 2-5: If managers are unsure, tell them that their best guess based on their experience in the retail deli will suffice.
- Questions 3 and 5: The responses should be *estimates* of the numbers of customers served on the deli’s busiest and slowest days. Managers do not need to provide the exact number of customers served. Customers may be represented by the number of receipts.
- Question 8: For this question, shift is an indicator of the different times of the day and it does *not* depend on or reflect what a “shift” would mean to a particular deli. Shifts are defined as: 1st shift – opening of deli to 10am; 2nd shift – 10am to 2pm; 3rd shift – 2pm to 6pm; 4th shift – 6pm to until deli closes. The manager’s response should reflect the total number of workers who worked during a particular shift or time of day. For example, if a worker works from 11am to 7pm then that one worker would be included in the tally for the second, third, and fourth shifts.
- Question 9: The manager’s response should reflect the age of the physical building that houses the retail establishment and not the age of the deli. For example, if the building is 15 years old but the deli is a new addition that has been constructed within the past 5 years, then 15 years should be recorded as the answer. If the manager cannot determine the exact age, then ask if he/she could estimate the age in 5- or 10-year intervals (e.g., building is 5-15 years old). If age interval cannot be determine, then use other clues such as how long the manager (or others) has worked at the store (same building). If the manager has worked in the store/building for 8 years, then the answer should be recorded as “at least 8 years old”. Be sure to record the exact or estimated years in the appropriate field.
- Question 10: The response should include the time that the manager has worked at the current establishment and any other foodservice establishments prior to the current one.

- Question 11: The response should include the time that the manager has worked at the *current* establishment as the Person-in-Charge (PIC) or deli manager.
- Questions 9-11: These data should be reported in terms of years and months. If the time is less than 12 months, then record the data in months. Round up the month if necessary. For example, 9.5 months should be recorded as 0 year and 10 months.
- Question 12: The manager's response should reflect duties or responsibilities associated with the *current* position only.
- Question 13: The response should be an average number of chubs of deli meat sold per week. Managers do not need to provide the exact number of chubs of deli meat sold per week.
- Questions 14 and 15: The responses should be based on all chubs of deli meats, regardless of type.
- Question 17: Each deli could have different means for recording or tracking the dates of opened chubs so you may receive a variety of responses. Typical responses may include: marking the dates on the wrapping of the chub, tracking dates on paper/notebook, or keeping a record of the dates electronically. Despite the method used, select *yes* as the answer choice if there is some type of record keeping system in place.
- Questions 20, 21, 22, 22a, 62, and 63: *Deli products* are foods that are prepared and/or sold in the retail deli as ready-to-eat foods (i.e., deli meats, cheeses, and deli salads). Deli meats and cheeses are often sold in chub form to be sliced to order or for use in other products such sandwiches and wraps. Some examples of deli salads include egg salad, tuna salad, and chicken salad.
- Question 20: The intent of the question is to determine how delis treat deli products that have reached their **sell-by** date. Do not read the response options out loud. You may need to select more than one response option depending on how the deli treats different expired products. For example, a deli may do one or a combination of these options: discard the products, re-purpose deli products by making them into other combination products, or continue to sell the deli products. This is a stand alone question and is separate from questions 21 and 22.
- Question 21: This question is asking about when the deli actually throws away or discards a deli product, and should be answered, regardless of the response(s) selected in question 20. Products may be discarded before, on the day of, or after the sell-by date. If products are not discarded or thrown away, indicate as such.
- Question 22: This question is asking for the different situation(s) in which combination products are made. For example, in addition to making the combination products on an as needed basis, some delis may make combination products when deli products are about to or have reached their sell-by date. But the question does not necessarily refer only to deli products that have reached their sell-by date. This question should be answered, regardless of the responses selected in question 20 and 21.
- Questions 24 and 26: Regardless whether the deli's policies (hand washing and glove use) are written or not, these questions must be answered by the deli manager.

- Question 27: *Ready-to-eat* foods are defined as foods that do not require further cooking or heating for safe consumption (e.g., deli meats, cheeses, rotisserie chicken, deli salads, vegetables, and fruits).
- Question 28: Answer “no” if there is not a policy on preparation of sanitizing solution, or if the deli does not use sanitizing solutions.
- Question 29: Try to lead the deli manager’s response(s) in the direction of the option(s) provided by elaborating further to get those responses. For example, you may need to ask, “Do you use the instructions provided by the manufacturer or do you use instructions provided by your establishment when preparing the sanitizing solution?”
- Question 32: Answer “no” if there is no policy on wet wiping cloths or if the deli does not use wet wiping cloths.
- Questions 35, 37, 39, 41, 42a, and 55a: The answer choices, “At the beginning of each day” and “At the end of each day” refer to when the deli opens and closes, respectively.
- Questions 35 and 35a: In instances where the delis use a combination of their own cleaning and a contractor’s cleaning service for the deli floor, use the “Other” response option to record *how often* the contractor cleans the floor (Q35) and how (e.g., cleaning method) the contractor cleans the floor (Q35a) .
- Questions 35a and 39a: A high pressure system is defined as a hose with a pistol grip nozzle. A low pressure system is defined as a hose without a pistol grip nozzle.
- Questions 36, 42, 43, 45, 48, 50, 52, 54, and 56. Answer “No” if there is no policy with regard to each of the items or equipment, or if the deli does not use or have the item or equipment in question.
- Questions 45 and 46: A “fully cleaned” slicer is defined as one that has been disassembled into its components where they are cleaned and sanitized and then reassembled for use. You may need to emphasize the definition of “fully cleaned” to the interviewees.
- Question 47, 47a, and 47b: These questions are trying to estimate the number of Hobart 2000 slicers that are still in use at retail delis and how many delis have been contacted by Hobart. The potential issue is a plastic/magnet piece screwed on to the knife cover that may not be sealed very well, resulting in the collection of food residue and microbes. If the managers are alarmed by these questions, reassure them that Hobart 2000 slicers (and other slicers) meet NSF design standards and are safe for food use, as long as they follow the instructions for cleaning, sanitizing, and maintenance as directed by the manufacturer.
- Questions 55a, 60, and 61: *Ready-to-eat* foods are defined as foods that do not require further cooking or heating for safe consumption (e.g., deli meats, cheeses, rotisserie chicken, deli salads, vegetables, and fruits).
- Questions 60 and 61: *Raw animal products* refer to animal products that have not been cooked (e.g., uncooked seafood, chicken, beef, and pork).

- Questions 66a: A valid certificate is one for which the date has not expired.

D. Manager's Survey

Please use the data instrument entitled *Listeria Retail Deli Study-Manager Survey* for this part of the data collection. The manager will complete this survey using pen and paper. Immediately after you complete the manager interview, ask them to take the survey. While they are taking the survey, remain nearby, but try to remain unobtrusive. This may be a good time to review your notes. We do not wish to give them the opportunity to look up the answers to the questions on the survey, but we also do not want them to feel that they are being monitored while they are taking the survey. If clarification is needed, these questions are about their retail deli's policies or standard operating procedures, not FDA's recommendations. Once the survey is completed, inform the manager that the correct answers, located in Appendix 4 (*Listeria Retail Deli Study-Manager Answer Summary*), will be provided during the debriefing. Be sure to print Appendix 4 and take it with you during data collection.

E. Worker Informed Consent and Interview

Before you can conduct the worker interview, you will first need to talk with the manager about which deli worker he or she can spare to talk with you for about 10 minutes. The deli worker will need to be someone who can speak English well enough to conduct the interview. Once you have identified the deli worker to be interviewed, attempt to find a place to interview him or her out of the sight and hearing of the manager and other deli workers. This may require that you ask the manager for some privacy. Then read the informed consent script to the deli worker and begin your interview (assuming the deli worker agrees to the interview). If the deli worker does not agree to the interview, you may ask the manager to identify another deli worker whom you could interview. You will need to interview only one worker per deli. Please use the data instrument entitled *Listeria Retail Deli Study-Worker Interview* for this interview.

1. General Guidelines

- For each interview question, you will read the question aloud and mark the appropriate response. Texts that should be read aloud are in **bold**, while those that should not be read aloud are not bolded.
- Answer choices should not be read aloud unless specifically noted.
- When reading answer choices, do not read the responses of "Unsure" or "Refused."
- Questions that allow more than one answer will be followed by instruction that says "*Check all that apply.*"
- Please note and follow skip patterns. You may skip certain question(s) only if the response option selected by the respondent included an instruction to skip a question (e.g., (*Go to Q20*)).
- You should attempt to obtain an answer to each question in the interview, however, if you believe that the interviewee is unaware or unsure of the answer to a question, the response should be recorded as "Unsure," and if the manager refuses to answer a question, the response should be recorded as "Refused."

2. Specific Questions

- Question 4: The response should include the time that the deli worker has been employed at the current establishment and any other foodservice establishments, including restaurants, commercial establishments, and other delis prior to the current one.
- Question 5: The response should include the time that the deli worker has worked at the *current* establishment *only*.
- Questions 4-5: These data should be reported in terms of years and months. If the time is less than 12 months, then record the data in months. Round up the month if necessary. For example, 9.5 months should be recorded as 0 year and 10 months.
- Question 6 and 6a-6e: First locate all the available slicers in the deli and assign each slicer a numerical value from 1 to 5. Keep in mind that the worker interview and the structured observation contain different questions about the *same* slicers. Thus, the numerical designation of the slicers should be the same for both data collection instruments. For example, slicer number 1 in the structured observation should also be labeled as slicer 1 in the worker's interview. Next, record the deli worker's responses to questions 6-6e for each of the respective slicers present. You may need to point to or walk with the deli worker to the specific slicer when you are asking these questions. Also, these questions refer to the tasks that occur during the interviewee's work shift.
- Questions 6b and 6c: A quick clean or "wipe down" of the slicers, refers to cleaning *without* disassembling the slicers into its components.
- Question 6d-6e: These questions refer to the process of fully cleaning the slicers. Fully cleaning and sanitizing the slicers consist of disassembling the slicers, cleaning and sanitizing the parts, and reassembling the slicers
- Questions 7: If the worker is unsure on how to answer the question, provide context by asking if inspections are done during a quick wipe down or full cleaning. Also, prompt the worker to estimate the frequency of inspections (occasionally or each time) when slicers are cleaned.
- Question 10: If the worker responded that he/she report the problem to the manager, ask the worker the whether the broken/missing seal was fixed/replaced or if he/she knew what the manager did with the worker's report of broken or missing seals.
- Question 11: A common use area is one that is available for use by the deli staff to perform any work-related task. For example, a countertop or table used for preparing deli salads and assembling deli sandwiches would be considered a common use area. Also, remind the worker that chicken salad may include rotisserie chicken that are prepared at the deli.
- Question 11a: Try to lead the deli worker's response(s) in the direction of the option(s) provided by elaborating further to get those responses. For example, you may need to ask, "Do you assemble the salads at the retail deli or do they come pre-made?"

- Question 13: Once the interview is completed, inform the worker that the correct answers to questions 13a-13e, located in Appendix 5 (*Listeria Retail Deli Study-Worker Answer Summary*), will be provided during the debriefing. Be sure to print out Appendix 5 and take it with you during data collection.

F. Structured Observation

For this portion of the data collection, you will need to make direct observations of the deli's environment and its workers. In order to answer the questions, you will need observe the deli's environment and workers, take temperatures, test sanitizer solution, inspect food slicers, and sketch a layout of the retail deli. Please use the data instrument entitled EHS-Net *Listeria Retail Deli Study-Structured Observation* for this part of the data collection.

1. General Guidelines

- During the structured observation, attempt to remain as unobtrusive as possible and keep interaction with workers to a minimum.
- The questions in this section may require you to make specific and general observations about the deli workers as they are working to prepare food, handle utensils, clean surfaces, etc.
- Do not read the questions aloud. Questions are bolded for easy distinction against the response choices.

2. Specific Questions

- Questions 3 and 3a: Locate all available sinks in the deli and assign each sink a numerical value from 1 to 5. Observe and record the different tasks that are being performed at each sink. Also, indicate whether there are soaps and/or hand drying supplies at or near each sink. Hand drying supplies may include paper or cloth towels or electric hand dryers.
- Question 4: Use the thermometer that you have brought with you to measure the temperatures for the display cases, refrigerators, and freezers that are being used by the deli department. If the display case is fully separated or partitioned into smaller compartments where there is no air flow between the compartments then you'd need to take the temperature for each of the compartments in the display case. *Deli products* are foods that are prepared and/or sold in the retail deli as ready-to-eat foods (i.e., deli meats, deli cheeses, and deli salads). Deli meats and cheeses are often sold in chub form to be sliced to order or for use in other products such as sandwiches and wraps. Some examples of deli salads include egg salad, tuna salad, and chicken salad.
- Questions 4 and 5: Refrigerators and freezers that store deli products may not be located within the deli areas; you may need to go outside of the deli area to find them.
- Questions 5a, 5b, 7, and 8: *Ready-to-eat* foods are defined as foods that do not require further cooking or heating for safe consumption (e.g., deli meats, cheeses, rotisserie chicken, deli salads, vegetables, and fruits).
- Questions 5a, 5b, and 8: *Raw animal products* refer to animal products that have not been cooked (e.g., uncooked seafood, chicken, beef, and pork).

- Question 6: You may need to ask the deli manager to see the records that indicated that the temperatures of incoming foods were taken and recorded as they were delivered to the retail deli.
- Questions 8 and 8a: These questions rely on your experience as inspectors to make the determination about the potential for *direct* cross contamination from raw animal products. This include observing practices and behaviors, such as preparation and handling of raw products and associated equipment, to determine if there is evidence of *direct* cross contamination to other food/surface/equipment.
- Question 11: Using the sanitizer test kits that you brought to the retail deli, measure the concentration of one of the sanitizing solutions that is currently in use in the retail deli. If there is more than one sanitizing solution (e.g., buckets) in use, randomly select one solution to test for its concentration. You may need to ask a deli employee to point out all of the sanitizing solutions that are in use at the present time. You should select “Yes” only if the sanitizing solution is at the proper concentration according to your test kit. If the sanitizing solution is outside the range of the proper concentration (e.g., too low or too high), it is not at the proper concentration and you should select “No”. Select “Could not observe” if you cannot find a sanitizing solution container in the deli; it may be that the solution is stored in another area.
- Questions 15a-15e: At this point, if you have not assigned each slicer in the retail deli a numerical value from 1 to 5, please do so. If each slicer already has a numerical designation from the worker’s interview, please use the same numerical designation here. That is, each slicer should have the same numerical value assignment in both the *structured observation* questionnaire and the *deli worker* questionnaire. Information on the make, model, and year of manufacture of the slicers should be displayed on the slicers. If you could not observe the make, model, or year on the slicers then mark as such below each response choices.
- Questions 15a1-15e1: For each available slicer, observe the entire slicer and mark any issues that you see. Here, we are trying to gauge the overall condition of the slicers.
- Sketching the deli area: Use the generic sketch provided to draw the layout of the deli area. Keep in mind that the top of the sketch represents the front area or customer service area of the deli. Appendix 6 (Example of Sketching of the Deli Area) provides a sample sketch of a deli area.
 - Be sure to record the *Establishment ID* in the top left corner of the sketching form so that the sketch could be linked to the rest of the data for each retail deli.
 - For items 1-11, use geometric shapes such as ovals, squares, and circles to depict the actual items in the deli. For each geometric shape drawn, be sure to label the item being depicted.
 - If there is more than one of the same item, be sure to label them as such. For example, if there are 3 sinks in the deli area, then each geometric shape should be labeled as sink #1, sink #2, and sink #3 on the sketch. Numerical assignment of the items (e.g., sinks and slicers) in the sketch should be the same as those assigned in the other data instruments (e.g., structured observation and deli work interview).

- These items do not need to be drawn to scale but the sketch should accurately reflect the relative placement of these items within the deli.
- For entry and exit points, please draw arrows to indicate directions of traffic. If a particular opening is for entry traffic only, then indicate this with an arrow pointing into the deli area. Draw an arrow pointing outside of the deli area for openings that only allow exiting traffic. For two-way traffic, use two arrows to indicate both entry and exiting traffic.
- For items such as refrigerators and freezers that may be stored in a location separate from the deli-proper area, be sure to indicate as such by drawing these items outside of the provided generic box.

G. Notational Observation

To complete the notational observation component, you will observe 1 to 3 deli workers performing work-related tasks (e.g., slicing meat for a customer). Keep in mind that you need to record 100 observations per deli worker. Do *not* record over 100 actions from the same person. For example, if an establishment has 3 deli workers present, 100 actions from each worker should be observed for a total of 300 actions. However, if an establishment only has 2 deli workers present, 100 actions from each should be reported for a total of 200 observations. These observations should take 30 to 60 minutes per worker depending on how busy the deli is at the time of your visit. Please use the data instrument entitled *Listeria Retail Deli Study-Notational Observation* to complete the notational observation component of this study.

1. Using the Code Key

A code key is included in the data instrument, *Listeria Retail Deli Study-Notational Observation*, to assist you in recording all of the observed actions on paper as quickly as possible. It is a list of shorthand codes that was used in previous notational observations. Here are your options with regard to the code key:

- You can use the *original* code key as it is provided.
- You can develop your own *supplemental* code key. This should be a short set of codes to be used as a supplement to the *original* code key.
- You can develop your own *comprehensive* code key. This should be a comprehensive set of codes that you would use exclusively for the notational observation.
- If you decide to develop your own set of codes, supplemental or comprehensive, you will need to:
 - Notify CDC of your decision.
 - Have a code key in place prior to pilot data collection. As you collect the *pilot* data, you may need to edit these codes along the way in order to suit your purpose.
 - Send the final, completed list of codes to CDC as soon as you are finished with pilot data collection.

Regardless of your decision, make sure there is an official code key in place and that you are familiar with these shorthand codes, prior to the start data collection.

2. Notational Observation of deli worker(s)

Select one worker in the deli who is beginning to perform a task (e.g., serving a customer or cleaning and sanitizing equipment) and for whom you can observe actions unobtrusively. Start your observations when the deli worker begins the task.

- Use the *Practice Notational Observation Form* to record the first 10 to 15 minutes of actions.
 - For the first worker observed, use the first 10 to 15 minutes of the notational observation to get used to observing the deli worker's actions and recording these actions with the shorthand codes.
 - You do not need to do the practice notation on subsequent workers. However, you should consider bringing at least one *Practice Notational Observation Form* for each worker just in case you do need to practice on multiple workers.
 - Once you feel comfortable with the practice portion of the notational observation, you may begin with the actual data collection.

- Use the *Notational Observation Form* for data collection on the first deli worker.
 - Fill out the *Date*, *Page number*, *Establishment ID*, and *Deli worker number*.
 - Record the time that you start observing the deli worker under the **Action No.** column by action number 1.
 - Focus on hand actions. Do *not* record “feet actions” or actions performed by foot such as operating foot pedals at sinks or trash cans.
 - After recording the first 20 actions, use a new sheet to record the next 20 actions. Again, fill out the *Date*, *Page number* (e.g., Page #: 2), *Establishment ID*, and *Deli worker number*. Each worker should have at least 5 sheets of recorded actions, totaling 100 sequential actions observed. Each line on the *Notational Observation Form* represents one action. For example, if a deli worker touches her cell phone, opens the deli case, picks up a chub, puts it on the food prep table, grabs some deli tissue and slices ham onto the deli tissue, we would expect the sequences of actions to resemble those depicted in Table 1.

Table 1. Example Notational Observation Form

Action No.	Action Sequence	Notes
1-TIME: 12:30 pm	TCH CP	
2	OPN CAS	
3	PUP CHB	
4	PON FPT	
5	GB DT	
6	SLI HM on DT	

- If the worker leaves the observation area and you can no longer see or follow him/her (e.g., worker enters the restroom), enter “Break” in the **Notes** column, in the same row that the last action was recorded. Resume your observation when the worker returns to a point where you can observe him or her.
- If the worker’s shift ends before you complete your observation, enter “Worker Off” in the **Action No.** column, leave all other columns blank, and end observation. Be sure to record the time that the observation ended in the **Action No.** column.
- If the worker moves around the deli, continue to observe him or her to the extent that you can without being obtrusive. For example, you may try to pick a place to stand that allows you to see the employee working in several different places. If the worker moves from one place to another permanently and you cannot observe him or her in the new place, then follow the worker to the new place. Do not follow workers to the restroom. We are trying to remain as unobtrusive as possible.
- Once you are finished with observing and notating 100 actions for a particular worker, record the end time at the bottom of the *Notational Observation Form*. You will only need to do this on the last sheet or Page #5.
- Repeat these steps for each additional deli worker being observed, for up to 3 deli workers.
- You will need to use separate notational observation forms for each worker being observed. Also, each worker will require multiple notational observation forms. We have provided you with one set of the notational observation forms which includes the instructions, the *Practice Notational Observation Form*, the *Notational Observation Form*, and the code key. You will need 1-3 copies of the *Practice Notational Observation Form* and a minimum of 5 copies of the *Notational Observation Form* for **each** worker observed. You should bring at least 15 copies of the *Notational Observation Form* to each establishment in case you can observe 3 deli workers.
- As you fill in each notational observation form, number the sheets consecutively in the space provided so that you can keep track of the pages.

H. Debrief

At the end of your visit, talk with the managers briefly about what you saw. Offer both the manager and worker the correct answers to the surveys, and ask if they have any questions. Mention any unsafe practices that you would like to bring to their attention. Thank them for allowing you into the retail deli.

IV. Other

A. Answers to possible questions.

“What are you doing?”

We are trying to learn more about retail delis’ food safety policies and practices. So we are watching deli workers perform work-related tasks, and taking notes on what they do.

“Why?”

In the long run, we hope to figure out how to make it easier for deli workers to do what they need to do.

“What are you going to do with your notes?”

They will be entered into a computer and analyzed along with other responses. We are not collecting any information that might identify you in any way.

B. Data Entry

1. General Data

Use EHSNIS (Environmental Health Specialist Network Information System) to enter the data collected from the following data instruments, *Listeria Retail Deli Study-Manager Informed Consent and Interview*, *Listeria Retail Deli Study-Manager Survey*, *Listeria Retail Deli Study-Worker Interview*, and *Listeria Retail Deli Study-Structured Observation* (except for the deli sketch). When you enter data into the information system, please keep in mind the following:

- Questions that are marked with asterisks are required questions and must be answered in order for you to save the forms (data).
- Be mindful of Automatic Disconnect Time (at top left of form) to avoid losing data that you have entered. Each page will disconnect after 45 minutes of inactivity.
- For questions that allow you to answer or enter the data as free text, please keep the responses short and concise, do not use hard returns, and do not use symbols (non-alphanumeric).
- For questions that use the “*Check all that apply*” format, you need to select a response during data entry for each of the options presented. For each option that was checked in the data instrument, select the “Yes” radio button. For each option that was *not* checked in the data instrument, select the “No” radio button.

2. Structured Observation Data– Sketch of the Deli Area

When entering the data from the structured observation instrument in EHSNIS, you will receive an *Evaluation ID* for each retail deli. This *Evaluation ID* should also be recorded in the top right corner of the deli sketch form. It is very important that you record the *Evaluation ID* on the sketch as it will be used to link the sketch to the rest of data from the data instruments for each retail deli. Create a digital scan of your sketches of the deli area from each of the establishments and send them to CDC via email.

3. Notational Observation Data

Use the provided Excel worksheets to enter the data collected from the *Listeria Retail Deli Study-Notational Observation* data instrument. This process requires that you transcribe your shorthand of the observed actions (from the Notational Observation Form) into full text in the Excel worksheet. You can enter the data manually or use the translation macros provided:

- **Data entry using the translation macros** – Use the Excel worksheet entitled *Notational Observation Data Entry-Translator* if you would like to perform data entry using the Excel macros to translate your shorthand into full text. Please follow these steps:
 - Step 1: Enter the *Evaluation Id*. For each recorded action, enter the EHSNIS-generated evaluation identification number under the **Evaluation Id** column.
 - Step 2: Enter the deli worker number. For each recorded action, enter the deli worker number (e.g., 1-3) under the **Deli Worker Number** column.
 - Step 3: Enter the action number. The **Action Number** column identifies the observed actions in sequential order (e.g., 1-100), and it should correspond with the **Action No.** column in the *Notational Observation Form*.
 - Step 4: Enter the shorthand codes for each observed action. Under the **Write the Code** column, enter the exact shorthand (from the code key) of each of the corresponding observed actions that was recorded in the *Notational Observation Form* (**Action Sequence** column).
 - Step 5: Translation into full text. After each entry of your shorthand codes under the **Write a Code** column, press *Enter* and a translation of the shorthand codes into full text will automatically populate in the corresponding cell under the column **Get a Translation**.
 - Step 6: Notes. Transcribe any corresponding notes from the *Notation Observation Form* into the Excel worksheet under the **Notes** Column.
 - Additional comments:
 - For the preposition *on*, you need to type it as “on” and do not use a shorthand code.
 - You can use any word that is not a code (e.g., #1) and it will be used without correction. That is, if you type “#1” in the **Write the Code** column, it would populate as “#1” in the **Get a Translation** column.
 - Entries are *not* case sensitive.

- You can use up to 8 codes per entry in the **Write the Code** column.
- **Manual data entry** – Use the Excel worksheet entitled *Notational Observation Data Entry-Manual* if you would like to enter your data by manually entering the shorthand codes and their corresponding full text translation. Please follow these steps:
 - Step 1: Enter the Evaluation ID. For each recorded action, enter the EHSNIS-generated Evaluation Identification number under the **Evaluation ID** column.
 - Step 2: Enter the deli worker number. For each recorded action, enter the deli worker number (e.g., 1-3) under the **Deli Worker Number** column.
 - Step 3: Enter the action number. The **Action Number** column identifies the observed actions in sequential order (e.g., 1-100) and it corresponds with the **Action No.** column in the *Notational Observation Form*.
 - Step 4: Enter the shorthand codes for each observed action. Under the **Code** column, enter the exact shorthand (from the code key) of each of the corresponding observed actions that was recorded in the *Notational Observation Form* (**Action Sequence** column).
 - Step 5: Translation into full text. For each of the corresponding shorthand codes, translate and enter the full text under the column **Translation**.
 - Step 4: Notes. Transcribe any corresponding notes from the Notation Observation Form into the Excel worksheet under the **Notes** column.
- Once you are finished with data entry and the data have been reviewed by your administrator, please send the Excel worksheets back to CDC. Be sure to send the data intermittently as you are done with data entry. Do *not* wait until you are finished with 50 establishments before sending the data to CDC.

Appendix 1: Retail Deli Study-Manager Telephone Recruiting Script

Hello this is _____ with the _____ Health Department. We are working with the Centers for Disease Control and Prevention (CDC) on a research project designed to help us better understand retail delis food safety policies and practices. Your deli was chosen at random to be in this project. The study involves an interview with a manager and a food worker, and an observation of the deli. Your participation is voluntary, but we would really appreciate your participation, as it will help us understand the difficult issues retail delis face. If you don't want to be part of the study or if you change your mind later, nothing will happen to you. Whether you are part of the study or not will not affect your deli's score on any health inspection. Also, if you decide to participate, your name and your establishment's name will not be recorded on the data collection form, nor will they be included in any reports.

Having said that, I need to let you know that at any time during the survey if I see something that is an imminent health hazard, such as no power, no water or sewage on the floor, I will need to stop the study and report the problem to the local agency that has jurisdiction over your grocery store.

Could we schedule a time to come out and speak with a deli manager, a worker, and observe your deli for a while?

No

Yes

YES

NO

Great! I'll visit your deli for about an hour and fifty minutes. Keeping in mind that a manager responsible for supervising the deli and a worker who handles food, operates and clean the deli's food slicers, and who speaks English needs to be available for the interview, when would be a convenient time to schedule the visit?

Date: _____

Time: _____

Please call me if you need to cancel or re-schedule, or if you have any questions.

If you have any questions at a later time, you can contact: (Local Contact Name and Telephone Number).

I understand. Thank you for your time.

Public reporting burden for this collection of information is estimated to average 3 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. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: CDC/ATSDR Information Collection Review Office, MS D-74; 1600 Clifton Road NE, Atlanta, Ga. 30333; ATTN: PRA (0920-0792)

Appendix 3: Retail Deli Study-Participation Log

Instructions

For all retail delis in which contact is attempted: Enter the participation code in Question 1.

For any retail deli: Enter any information on refusals or comments in Question 2.

For participating retail delis: Enter the participation code, any comments, and the answers to Questions 3-5.

For refusing retail delis: Enter the participation code, any information on reasons for refusal, and the answers to Questions 3-5.

	To be answered for <u>all</u> retail delis.		To be completed if you have any information on reasons for refusals or to make comments	To be answered for all <u>participating</u> and <u>refusing</u> retail delis.		
		CL =Closed I1 =Not an EHS-Net retail deli I2 =Ineligible - no deli in est. I3 =Ineligible-Language I4 - Scheduling P =Participating R =Refused U =Unable to contact O =Other	Reasons for refusal / Comments	Retail deli's ownership type: Independent/Chain	Difficulty communicating: None/A little/Some/A lot	Number of calls before answer: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, etc.
Obs	Sample ID	1. Response Code	2.Reason for refusal	3. Ownership	4. Communication	5. Call No.
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3						
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EHS-Net Retail Deli Study: Manager Informed Consent and Interview
Appendix 4: Retail Deli Study-Manager Answer Summary

1. What should you do to ensure that the sanitizing solution you are using on a food prep surface will work properly?

Answer: *When mixing the solution, use a test kit to check its concentration.* Using a test kit to ensure that the sanitizer solution is at the concentration recommended by the manufacturer is the best way to ensure that the solution will work properly.

2. What are the correct steps used to properly sanitize a prep table?

Answer: *Wash, rinse, sanitize, air dry.* These cleaning and sanitizing steps are recommended by the FDA and will help ensure clean food surfaces.

3. Common bacteria often found in food can grow well at what temperature range?

Note: There will be multiple answers to this question as some EHS-Net sites have different guidelines regarding the range of the temperature “danger zone.” Each EHS-Net site is listed beside the correct answer for their jurisdiction.

Answer:

- *Between 41°F and 135°F (5°C and 57°C)* (California and Rhode Island)
- *Between 41°F and 140°F (5°C and 60°C)* (Minnesota, New York City, and Tennessee)
- *Between 45°F and 140°F (7°C and 60°C)* (New York)

The temperature range that best supports the growth of bacteria is known as the temperature danger zone. The length of time a food remains in this temperature range greatly impacts the amount of bacterial growth.

4. What is the proper procedure for washing your hands?

Answer: *Wet hands with warm water. Apply soap. Vigorously scrub hands and arms for 10-15 seconds. Rinse hands. Dry hands with clean paper or cloth towel.* These hand washing steps are recommended by the US Food and Drug Administration (FDA) and will help ensure clean hands.

5. Deli workers should change their gloves:

Answer: *All of the above.* Changing gloves after they become dirty or torn, taking out the trash, and handling raw meat and before handling ready-to-eat foods will help ensure you don’t contaminate food or objects with dirty gloves.

6. Deli workers must wash their hands before they start work and after:

Answer: *All of the above.* Washing hands after using the restroom, sneezing, coughing, or using a tissue, and handling raw meat, poultry or seafood will help ensure you don’t contaminate food or objects with dirty hands.

- 7. When storing foods you should always place ready-to-eat foods that do not need additional cooking before eating on the lower shelves and raw animal products on the higher shelves.**

Answer: *False.* To avoid contact between ready-to-eat foods and fluids from raw animal products, ready-to-eat foods should always be stored above raw animal products.

- 8. When a deli worker is sick with certain symptom(s), which of the following symptom(s) should you, the manager, be concerned about with regard to excluding that worker from handling food?**

Answer: *Vomiting and diarrhea.* These are common symptoms of many illnesses caused by germs in food. If the deli worker has these symptoms, he/she could potentially transmit these germs to customers through food.

Appendix 5: Retail Deli Study-Worker Answer Summary

a. One of the best ways to dry your hands after hand washing is with clean paper towels.

Answer: *Yes.* The US Food and Drug Administration (FDA) says that clean paper towels, clean/unused cloth towels, or hand drying devices should be used for drying hands following a hand wash.

b. Germs grow best in the temperature “danger zone” between 41°F and 135°F.

Note: There will be multiple answers to this question as some EHS-Net sites have different guidelines regarding the range of the temperature “danger zone.” Each EHS-Net site is listed beside the correct answer for their jurisdiction.

Answer: *Yes.*

- *Between 41°F and 135°F (5°C and 57°C)* (California and Rhode Island)
- *Between 41°F and 140°F (5°C and 60°C)* (Minnesota, New York City and Tennessee)
- *Between 45°F and 140°F (7°C and 60°C)* (New York)

The temperature range that best supports the growth of bacteria is known as the temperature danger zone. The length of time a food remains in this temperature range greatly impacts the amount of bacterial growth.

c. For a proper hand washing, deli workers must scrub their hands and arms for about 4 or 5 seconds.

Answer: *No.* The FDA says that food workers should scrub their hands and arms for at least 10-15 seconds to properly clean.

d. Deli workers should wash hands between glove changes.

Answer: *Yes.* The FDA says that food workers should wash their hands in between glove changes to ensure clean hands.

e. It’s okay to use hand sanitizer instead of washing your hands when the deli is busy.

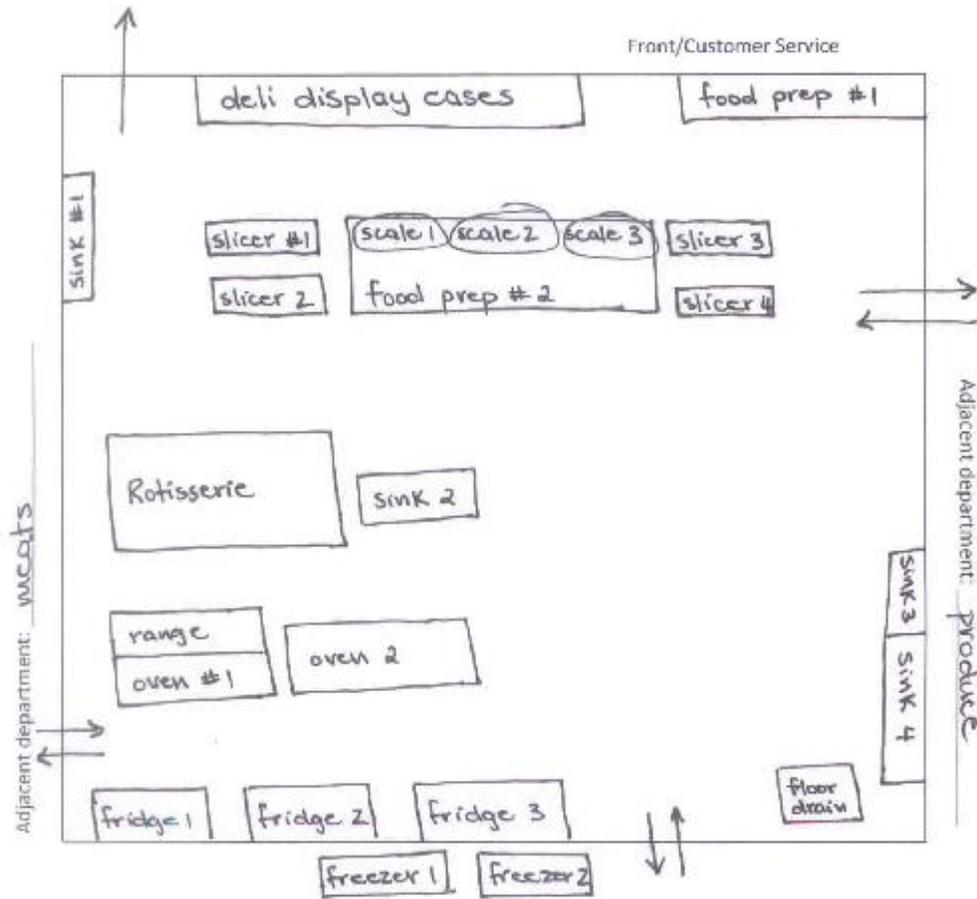
Answer: *No.* According to FDA’s Food Code (2009), hand sanitizer should be applied only to hands that have been properly cleaned.

Appendix 6: Example of Sketching of the Deli Area

Listeria Retail Deli Study-Structured Observation

Establishment ID: _____

Evaluation ID: _____



EHS-Net Retail Deli Study: Manager Telephone Recruiting Script

Public reporting burden for this collection of information is estimated to average 3 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. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: CDC/ATSDR Information Collection Review Office, MS D-74; 1600 Clifton Road NE, Atlanta, Ga. 30333; ATTN: PRA (0920-0792)

Hello this is _____ with the _____ Health Department. We are working with the Centers for Disease Control and Prevention (CDC) on a research project designed to help us better understand retail delis food safety policies and practices. Your deli was chosen at random to be in this project. The study involves an interview with a manager and a food worker, and an observation of the deli. Your participation is voluntary, but we would really appreciate your participation, as it will help us understand the difficult issues retail delis face. If you don't want to be part of the study or if you change your mind later, nothing will happen to you. Whether you are part of the study or not will not affect your deli's score on any health inspection. Also, if you decide to participate, your name and your establishment's name will not be recorded on the data collection form, nor will they be included in any reports.

Having said that, I need to let you know that at any time during the survey if I see something that is an imminent health hazard, such as no power, no water or sewage on the floor, I will need to stop the study and report the problem to the local agency that is responsible for inspecting your grocery store.

Could we schedule a time to come out and speak with a deli manager, a worker, and observe your deli for a while?

No

Yes

YES

NO

<p>Great! I'll visit your deli for about an hour and forty-five minutes. Keeping in mind that a manager responsible for supervising the deli and a worker who handles food, operates and clean the deli's food slicers, and who speaks English needs to be available for the interview, when would be a convenient time to schedule the visit?</p> <p>Date: _____</p> <p>Time: _____</p> <p>Please call me if you need to cancel or re-schedule, or if you have any questions.</p> <p>If you have any questions at a later time, you can contact: <u>(Local Contact Name and Telephone Number).</u></p>	<p>I understand. Thank you for your time.</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------

EHS-Net Retail Deli Study: Manager Informed Consent and Interview

Public reporting burden for this collection of information is estimated to average 22 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. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: CDC/ATSDR Information Collection Review Office, MS D-74; 1600 Clifton Road NE, Atlanta, Ga. 30333; ATTN: PRA (0920-0792)

INFORMED CONSENT

ESTABLISHMENT ID: _____

Let me give you a little background on why I am here and what we are going to be doing. I am working with _____ (state/local health department) on a research project designed to help us better understand retail delis' food safety policies and practices. Your retail deli was chosen at random to be in this project. Participation in this study is voluntary. You can choose to stop at any time. If you do not want to be part of the study or if you change your mind later, nothing will happen to you.

Having said that, I need to let you know that if at any time during my visit I see something that is an imminent health hazard, such as no power or water, or sewage on the floor, I will need to stop the study and report the problem to the local agency that is responsible for inspecting your grocery store.

For the next 22 minutes, I am going to ask you some questions about this retail deli's food safety policies and practices. Following your interview, I'm going to ask you to take a short, 10 minute survey on food safety. If any of the questions make you uncomfortable, you can choose not to answer them. The information I collect today will be combined with information from other retail delis in various states and analyzed. Your name and your retail establishment's name will not be recorded on the data collection form, nor will they be included in any reports.

The information you provide will be valuable in helping us understand the difficult issues retail delis face, so we ask you to be as open and honest as possible.

After our interview, I'd like to talk to one of your deli workers for about 10 minutes, if possible. It can be a worker of your choosing. However, it needs to be someone who uses and cleans the deli slicers and can speak English fairly well.

I'd also like to take some time to observe your deli's environment and your employees as they work. This will take about an hour and a half to two hours, but it will not interfere with your work or your employees' work. I will stay out of the way and will not talk with your employees much or at all.

Do you have any questions? If you have any questions at a later time or would like a summary of the study's findings, you can contact: (Local Contact Name). *(If have card)* My information is on this card. We expect to have all of the data summarized in about 12 months.

EHS-Net Retail Deli Study-Worker Interview

Note to data collectors: Read each interview question aloud and mark the appropriate response. Texts that should be read aloud are **bolded**, while those that should not be read aloud are not bolded.

ESTABLISHMENT DEMOGRAPHIC / CLASSIFICATION

I'd like to ask you some questions about this deli. Please be as open and honest as possible. Keep in mind that some of the questions will have more than one answer choice. The first few questions are general questions about the deli.

1. **Is this an independent establishment or a chain establishment?**
 Independent Chain Refused
2. **What is your busiest day of the week in terms of the number of customers served by the deli?**
 Monday Tuesday Wednesday Thursday
 Friday Saturday Sunday Unsure Refused
3. **Approximately how many customers are served by the deli on your busiest day?**
_____ customers (*Enter number of customers*) Unsure Refused
4. **What is your slowest day of the week in terms of customers served by the deli?**
 Monday Tuesday Wednesday Thursday
 Friday Saturday Sunday Unsure Refused
5. **Approximately how many customers are served by the deli on your slowest day?**
_____ customers (*Enter number of customers*) Unsure Refused
6. **How long is a typical work shift?**
_____ hours (*Enter number of hours*) Unsure Refused
7. **How many work shifts are there in the deli per day?**
_____ shifts (*Enter number of shifts*) Unsure Refused
8. **On average, how many employees, per shift, work in the deli?**
 - 8a. 1st shift (opening-10am): _____ employees (*Enter number of employees*)
 Unsure Refused
 - 8b. 2nd shift (10am-2pm): _____ employees (*Enter number of employees*)
 Unsure Refused
 - 8c. 3rd shift (2pm-6pm): _____ employees (*Enter number of employees*)
 Unsure Refused
 - 8d. 4th shift (6pm-closing): _____ employees (*Enter number of employees*)
 Unsure Refused
9. **How old is this building?** _____ years _____ months (*Enter years and months*)
_____ years (*Enter estimated year*)
 Unsure Refused

DELI MANAGER DEMOGRAPHIC

The next few questions are about you, the deli manager.

10. **Approximately how long have you worked in the retail food industry? By retail food industry, I am referring to any deli, restaurant, or commercial establishment that serves food to the public such as a grocery store.**

_____ years _____ months (*Enter years and months*)

- Unsure Refused

11. **Approximately how long have you been employed as the Person-In-Charge (the PIC) or deli manager here?**

_____ years _____ months (*Enter years and months*)

- Unsure Refused

12. **What duties or responsibilities are included in your position as PIC or deli manager? (Check all that apply)**

- Owner/partner
 Cook/chef/food preparer
Supervising workers that are responsible for preparing food
 Supervising workers that are responsible for cleaning equipment
 Training employees on work duties and responsibilities
 Training employees on proper food safety practices
 Other (*Describe*): _____
 Refused

FOOD HANDLING PRACTICES AND POLICIES

Now I'd like to ask you some general questions about this deli's food handling practices. If the question refers to something your deli doesn't do, just let me know. When I ask questions about chubs, I am referring to large chunks of deli meat that are sliced upon the customer's request.

13. **On average, how many chubs of deli meat do you sell per week?**

_____ chubs (*Enter number of chubs*) Unsure Refused

14. **What is the shortest amount of time a chub is opened before it is all sold?**

_____ days (*Enter number of days*) Unsure Refused

15. **What is the longest amount of time a chub is opened before it is all sold?**

_____ days (*Enter number of days*) Unsure Refused

16. **Regardless of type, what is the maximum number of days you can hold an opened chub according to the deli's policy?**

_____ days (*Enter number of days*) Unsure Refused

There is no deli policy.

Other (*Describe*): _____

17. **Is there a record keeping method in place for keeping up with the dates of these opened chubs?**

- Yes Unsure
 No Refused

18. **On average, how long are chubs stored in the freezer before they are placed in the refrigerator to thaw?**
 _____ days (*Enter number of days*) Unsure Refused
 Other (*Describe*): _____
19. **On average, how long are chubs stored in the refrigerator before they are placed in the deli case to be sold?**
 _____ days (*Enter number of days*) Unsure Refused
 Other (*Describe*): _____
20. **What do you do with deli products that have reached their sell-by dates? By deli products, I mean foods that are prepared and sold in the deli as ready-to-eat foods which include deli meats, deli cheeses, and deli salads. (Check all that apply)**
 Throw away or discard
 Use in some combination products such as deli salads, sandwiches, wraps, and soups
 Other (*Describe*): _____
 Unsure
 Refused
21. **When is a deli product discarded or thrown away? (Check all that apply)**
 On the sell-by date
 _____ days before the sell-by date (*Enter number of days*)
 _____ days after the sell-by date (*Enter number of days*)
 Product is not discarded or thrown away.
 Other (*Describe*): _____
 Unsure
 Refused
22. **When are deli products used to make other combination products? By combination products, I mean foods that are prepared using one or more deli products. Examples of combination products are deli salads, sandwiches, wraps, and soups. (Check all that apply)**
 On an as needed basis
 On the sell-by date
 _____ days before the sell-by date (*Enter number of days*)
 _____ days after the sell-by date (*Enter number of days*)
 Deli product is not used in other combination products. (*Go to Q23*)
 Other (*Describe*): _____
 Unsure (*Go to Q23*)
 Refused (*Go to Q23*)
- 22a. **What types of combination products are made with these deli products? (Check all that apply)**
 Cold deli salads (e.g., turkey, tuna, and chicken)
 Sandwiches (e.g., subs, pinwheels, and wraps)
 Soups
 Other (*Describe*): _____
 Unsure
 Refused

Now I'd like to ask you some general questions about this deli's policies, or standard operating procedures regarding food safety. In instances when I refer to written policies, I am talking about guidelines or rules that are physically located in the deli and are accessible to all employees. Please be as open and honest as possible as we are not looking for specific right or wrong answers to these questions.

23. Does this deli have a written policy concerning hand washing?
- Yes Unsure
 No Refused
24. Regardless whether it's written or not, does the hand washing policy address any of the following topics? (Read bolded answer choices aloud and check all that apply)
- Frequency of hand washing
 Hand washing before and after performance of work-related tasks
 Hand washing before and after handling specific food products
 Hand washing between glove changes
 Hand washing after using the restroom
 Other (Describe): _____
 Unsure
 Refused
25. Does this deli have a written policy concerning disposable glove use?
- Yes Unsure
 No Refused
26. Regardless whether it's written or not, does the glove policy address any of the following topics? (Read bolded answer choices aloud and check all that apply)
- When gloves should be worn by workers
 How often gloves should be changed
 Changing gloves when performing different tasks
 Changing gloves when handling different food products
 Other (Describe): _____
 Unsure
 Refused

27. Does the glove policy require you to wear gloves every time you handle ready-to-eat foods? Ready-to-eat foods are those that do not require further cooking or heating for safe consumption such as deli meats, deli cheeses, rotisserie chicken, vegetables, deli salads, and fruits.
- Yes Unsure
 No Refused

CLEANING AND SANITIZING PRACTICES AND POLICY

Now I'd like to ask you some general questions regarding this deli's cleaning and sanitizing policies.

28. Does this deli have a written policy concerning sanitizing solution preparation?
- Yes Unsure
 No Refused
29. How is the sanitizing solution prepared? (Check all that apply)

- Purchased from a retailer/vendor then diluted according to manufacturer's instruction
- Purchased from a retailer/vendor then diluted according to establishment's instruction
- Purchased from a retailer/vendor then used without further preparation
- Prepared in-house from common household-strength products
- Other (*Describe*): _____
- Unsure
- Refused

30. **What sanitizing solutions are currently in use in this deli?** (*Check all that apply*)
- Quaternary ammonia
 - Peracetic acid
 - Iodophors
 - Chlorine
 - Unsure
 - No sanitizing solutions are in use (*Go to Q32*)
 - Soaps/detergent
 - Water only
 - Other (*Describe*): _____
 - Refused

31. **When is the sanitizing solution changed?** (*Check all that apply*)
- When the water appears dirty
 - When the water changes color
 - Every _____ hours (*Enter number of hours*)
 - At the beginning of each shift
 - At the end of each shift
 - On an as needed basis
 - Other (*Describe*): _____
 - Unsure
 - Refused

32. **Does this deli have a written policy on how to store wet wiping cloths while they are in-use?**
- Yes
 - No
 - Refused
 - Unsure

33. **How are wet wiping cloths stored while they are in-use?** (*Check all that apply*)
- In a sanitizing solution
 - In a soap and water solution
 - In water
 - Not stored in any solution (e.g., on counter)
 - Other solution (*Describe*): _____
 - N/A: Do not use wet wiping cloths
 - Unsure
 - Refused

In some of the following questions, I am going to ask you how often certain items are cleaned. It may be that not every item gets cleaned. If that is the case, please just say so.

34. **Does this deli have a written policy for cleaning the deli floor?**
- Yes
 - No
 - Unsure
 - Refused

35. **How often is your deli floor cleaned?** (*Check all that apply*)
- Every _____ days (*Enter number of days*)
 - Unsure

- At the beginning of each day/when the deli opens Refused
- At the end of each day/when the deli closes
- Weekly
- Never (*Go to Q36*)
- Other (*Describe*): _____

35a. **How do you clean the deli floor?** (*Check all that apply*)

- Use a low pressure dispensing system, no chemicals (e.g., garden hose)
- Use a low pressure dispensing system, with chemicals
- Use a high pressure dispensing system, no chemicals (e.g., hose with pistol grip nozzle)
- Use a high pressure dispensing system, with chemicals
- Other (*Describe*): _____
- Unsure
- Refused

36. **Does this deli have a written policy for cleaning the deli floor drains?**

- Yes Unsure
- No Refused

37. **How often do you clean the deli floor drains?** (*Check all that apply*)

- Every _____ days (*Enter number of days*) Unsure
- At the beginning of each day/when the deli opens Refused
- At the end of each day/when the deli closes
- Weekly
- Never (*Go to Q38*)
- Other (*Describe*): _____
- N/A: No deli floor drains (*Go to Q38*)

37a. **What, if any, agents or chemicals are used to clean the deli floor drains?** (*Check all that apply*)

- Chemical sanitizer (*Enter name of sanitizer*) _____
- Tablet sanitizer/Sanitizer ring
- Probiotics
- No chemicals or agents are used
- Other (*Describe*): _____
- Unsure
- Refused

38. **Does this deli have a written policy for cleaning the deli walls?**

- Yes Unsure
- No Refused

39. **How often are your deli walls cleaned?** (*Check all that apply*)

- Every _____ days (*Enter number of days*) Unsure
- At the beginning of each day/when the deli opens Refused
- At the end of each day/when the deli closes
- Weekly
- Never (*Go to Q40*)
- Other (*Describe*): _____

39a. **How do you clean the deli walls?** (*Check all that apply*)

- Use a low pressure dispensing system, no chemicals (e.g., garden hose)
- Use a low pressure dispensing system, with chemicals
- Use a high pressure dispensing system, no chemicals (e.g., hose with pistol grip nozzle)
- Use a high pressure dispensing system, with chemicals
- Other (*Describe*): _____
- Unsure
- Refused

40. Does this deli have a written policy for cleaning the refrigerator units, such as a walk-in or reach-in?

- Yes
- No
- Unsure
- Refused

41. How often are the refrigerator units cleaned? (*Check all that apply*)

- Every _____ days (*Enter number of days*)
- At the beginning of each day/when the deli opens
- At the end of each day/when the deli closes
- Weekly
- Never
- Other (*Describe*): _____
- Unsure
- Refused

42. Does this deli have a written policy for discarding or cleaning real or artificial garnishes used in display cases?

- Yes
- No
- Unsure
- Refused (*Go to Q43*)

42a. How often are the real or artificial garnishes discarded or cleaned? (*Check all that apply*)

- Every _____ days (*Enter number of days*)
- At the beginning of each day/when the deli opens
- At the end of each day/when the deli closes
- Weekly
- Never
- Other (*Describe*): _____
- N/A: No garnishes used
- Unsure
- Refused

In some of the remaining questions, I am going to ask you about cleaning activities during a typical work shift. It may be that not every item gets cleaned during a work shift. If that is the case, please just say so.

43. Does this deli have a written policy for cleaning the cutting boards?

- Yes
- No
- Unsure
- Refused

44. On average, how many times are cutting boards cleaned during a shift?

- _____ times per shift (*Enter number of times*)
- Other (*Describe*): _____
- N/A: No cutting boards used
- Unsure
- Refused

45. Does this deli have a written policy for fully cleaning the food slicers? When I ask about slicers being fully cleaned, I am referring to them being disassembled, cleaned and sanitized, and reassembled for use.

- Yes Unsure
 No Refused

46. On average, how many times are food slicers fully cleaned during a shift?

_____ times per shift (*Enter number of times*)

- Other (*Describe*): _____
 N/A: No food slicers used
 Unsure
 Refused

47. Is one or more of your slicers a HOBART 2000 series?

- Yes Unsure
 No (*Go to Q48*) Refused (*Go to Q48*)

47a. Have you ever been contacted by HOBART about your slicer?

- Yes Unsure (*Go to Q48*)
 No (*Go to Q48*) Refused (*Go to Q48*)

47b. Please describe why your establishment was contacted by HOBART. _____

48. Does this deli have a written policy for cleaning the food prep tables?

- Yes Unsure
 No Refused

49. On average, how many times are food prep tables cleaned during a shift?

_____ times per shift (*Enter number of times*)

- Other (*Describe*): _____
 N/A: No food prep tables used
 Unsure
 Refused

50. Does this deli have a written policy for cleaning the food scales?

- Yes Unsure
 No Refused

51. On average, how many times are food scales cleaned during a shift?

_____ times per shift (*Enter number of times*)

- Other (*Describe*): _____
 N/A: No food scales used
 Unsure
 Refused

52. Does this deli have a written policy for cleaning the prep sinks?

- Yes Unsure
 No Refused

53. On average, how many times are prep sinks cleaned during a shift?

_____ times per shift (*Enter number of times*)

- Other (*Describe*): _____
 N/A: No prep sinks used
 Unsure
 Refused

54. Does this deli have a written policy for cleaning the display cases?

- Yes Unsure
 No Refused

55. On average, how many times are the outside areas of the display cases, including the doors and door handles, cleaned during a shift?

_____ times per shift (*Enter number of times*)

- Other (*Describe*): _____
 N/A: No display cases used (*Go to Q56*)
 Unsure
 Refused

55a. How often are the inner areas (where ready-to-eat foods are stored) of the display cases cleaned? (*Check all that apply*)

- Every _____ days (*Enter number of days*) Unsure
 At the beginning of each day/when the deli opens Refused
 At the end of each day/when the deli closes
 Weekly
 Never
 Other (*Describe*): _____

56. Does this deli have a written policy for cleaning knives?

- Yes Unsure
 No Refused

57. On average, how many times are the knives cleaned during a shift?

_____ times per shift (*Enter number of times*)

- Other (*Describe*): _____
 N/A: No knives used
 Unsure
 Refused

58. What do you do when employees do not follow these policies? (*Check all that apply*)

- No actions are taken
 Verbal reprimand
 Written reprimand
 Warning of a consequence
 Training is provided
 Other (*Describe*): _____
 Unsure
 Refused

CROSS-CONTAMINATION

59. Are any push carts, U-boats or hand trucks used in the deli also used in other parts of the retail establishment?

- Yes
- No
- Unsure
- Refused

60. How often are ready-to-eat and raw animal products prepared and processed in the same area within the deli? By raw animal products, I mean animal products that have not been cooked such as uncooked seafood, chicken, beef, and pork. (Read bolded answer choices aloud)

- Never
- Sometimes
- Usually
- Always
- Unsure
- Refused

61. How often are ready-to-eat foods and raw animal products stored in the same display case? (Read bolded answer choices aloud)

- Never
- Sometimes
- Usually
- Always
- Unsure
- Refused

62. Are any freezer units dedicated to the storage of deli products only?

- Yes
- No
- Unsure
- Refused

63. Are any refrigerators dedicated to the storage of deli products only?

- Yes
- No
- Unsure
- Refused

64. Do you ever record the temperature of the refrigerators?

- Yes
- No (Go to Q65)
- Unsure (Go to Q65)
- Refused (Go to Q65)

64a. How often are the temperatures of the refrigerators recorded?

- At the beginning of each shift
- At the end of each shift
- Daily
- Weekly
- Monthly
- Never
- Other (Describe): _____
- Unsure
- Refused

DELI MANAGER FOOD SAFETY TRAINING AND CERTIFICATION

The next few questions are about all Persons-in-Charge (PICs) or deli managers. These are individuals who supervise this deli area.

65. How many Persons-In-Charge (PICs) or deli managers, including you, work in this deli?

_____ deli managers (*Enter number of deli managers*)

- Unsure Refused

66. Have you, as the PIC or deli manager, ever been food safety certified? By food safety certified, I mean you have taken a food safety test and been issued a card with an expiration date on it, this program may or may not have involved training.

- Yes No (*Go to Q67*) Unsure (*Go to Q67*) Refused (*Go to Q67*)

66a. Do you currently hold a valid food safety manager certificate?

- Yes No (*Go to Q67*) Unsure (*Go to Q67*) Refused (*Go to Q67*)

66b. What organization provided the certificate- ServSafe, National Registry of Food

Safety Professionals, Thomson Prometric, a state or local health department, or some other organization? (*Check all that apply*)

- ServSafe
 National Registry of Food Safety Professionals
 Thomson Prometric (*known formerly as: Experior Assessments, National Assessment Institute, Chauncy, Educational Testing Service*)
 A state or local health department
 Other (*Describe*): _____
 Unsure
 Refused

67. Does this establishment require PICs or deli managers to be food safety certified?

- Yes Unsure
 No Refused

68. Does this establishment require PICs or deli managers to be trained in food safety?

- Yes Unsure
 No Refused

Thank you, that's the end of the interview.

Now I would like for you to answer this short survey; it's 8 questions and should not take you very long to complete.

EHS-Net Retail Deli Study: Manager Survey

Public reporting burden for this collection of information is estimated to average 10 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. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: CDC/ATSDR Information Collection Review Office, MS D-74; 1600 Clifton Road NE, Atlanta, Ga. 30333; ATTN: PRA (0920-0792)

Manager Survey

ESTABLISHMENT ID: _____

Please choose the best answer and mark your answer choice.

1. **What should you do to ensure that the sanitizing solution you are using on a food prep surface will work properly?**
 - When mixing the solution, use a test kit to check its concentration.
 - When using the solution, rinse it from the surface and then let it air dry.
 - After applying the solution, test the surface to confirm that no more microorganisms are present.
 - None of the above.
 - Unsure
2. **What are the correct steps used to properly sanitize a prep table?**
 - Rinse, wash, sanitize, air dry
 - Wash, rinse, sanitize, air dry
 - Sanitize, wash, rinse, air dry
 - Wash, rinse, air dry
 - Unsure
3. **Common bacteria often found in food can grow well at what temperature range?**
 - Below 32°F (0°C)
 - Between 1°F and 40°F (-17°C to 4°C)
 - Between 41°F and 135°F (5°C and 57°C)
 - Above 212°F (100°C)
 - Unsure

4. What is the proper procedure for washing your hands?

- Wet hands with warm water. Apply soap. Vigorously scrub hands and arms for 10-15 seconds. Rinse hands. Dry hands with clean paper or cloth towel.
- Wet hands with warm water. Apply soap. Vigorously scrub hands and arms for 2-5 seconds. Apply a hand antiseptic. Dry hands with clean paper or cloth towel.
- Wet hands with warm water. Apply soap. Rinse hands. Dry hands with paper or cloth towel.
- None of the above.
- Unsure

5. Deli workers should change their gloves:

- When they become soiled or torn
- After taking out the trash
- After handling raw meat and before handling ready-to-eat foods
- All of the above
- Unsure

6. Deli workers must wash their hands before they start work and after:

- Using the restroom
- Sneezing, coughing or using a handkerchief/disposable tissue
- Handling raw meat, poultry, or seafood
- All of the above
- Unsure

7. When storing food you should always place ready-to-eat foods that do not need additional cooking before eating on the lower shelves and raw animal products on the higher shelves.

- True
- False
- Unsure

8. When a deli worker is sick with certain symptom(s), which of the following symptom(s) should you, the manager, be concerned about with regard to excluding that worker from handling food?

- Pink eye
- Runny nose and sneezing
- Vomiting and diarrhea
- None of the above
- Unsure

EHS-Net Retail Deli Study: Worker Recruiting Script and Informed Consent

Public reporting burden for this collection of information is estimated to average 3 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. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: CDC/ATSDR Information Collection Review Office, MS D-74; 1600 Clifton Road NE, Atlanta, Ga. 30333; ATTN: PRA (0920-0792)

INFORMED CONSENT

Let me give you a little background on why I am here. I am working with _____ (health department) on a research project. Your retail deli was chosen at random to be in this project, and your manager said that it would be okay for you to talk to me for a few minutes. However, your participation is voluntary—you do not have to talk to me if you do not want to- I will not tell your manager. If you do talk with me, I will not tell your manager anything that you say.

Would you be willing to talk to me for about 10 minutes about what you do at work and some of the deli's policies and practices?

No → Okay, thanks for your time. *(End interview)*

Yes → Great, thanks.

I am going to ask you some questions, and if any of the questions make you uncomfortable you can choose not to answer them. The information we collect today will be combined with information from other retail delis in various states. Your name and your establishment's name will not be linked in any way to the information we collect, nor will they be included in any reports.

The information you provide will be valuable in helping us understand the difficult issues that retail delis face so we ask you to be as open and honest as possible.

Do you have any questions?

If you have any questions at a later time or would like a summary of the study's findings, you can contact: (Local Contact Name). *(If have card)* My information is on this card. We expect to have all of the data summarized in about 12 months.

EHS-Net Retail Deli Study: Worker Interview

Public reporting burden for this collection of information is estimated to average 10 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. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to: CDC/ATSDR Information Collection Review Office, MS D-74; 1600 Clifton Road NE, Atlanta, Ga. 30333; ATTN: PRA (0920-0792)

ESTABLISHMENT ID: _____

*Note to data collectors: Read each interview question aloud and mark the appropriate response. Texts that should be read aloud are **bolded**, while those that should not be read aloud are not bolded.*

DELI WORKER DEMOGRAPHIC

1. **What are your primary job responsibilities here?** (Check all that apply)

- | | |
|------------------------------------------------------------|--------------------------------------------------|
| <input type="checkbox"/> Food preparation | <input type="checkbox"/> Cleaning |
| <input type="checkbox"/> Slicing (Using a slicer) | <input type="checkbox"/> Other (Describe): _____ |
| <input type="checkbox"/> Cooking | <input type="checkbox"/> Refused |
| <input type="checkbox"/> Washing dishes/equipment/utensils | |

2. **Besides the deli department, do you work in any other departments within this establishment?**

- Yes
- No (Go to Q3)
- Refused (Go to Q3)

2a. **What other department(s) do you also work in?**

_____ department (Enter department)
_____ department (Enter department)
_____ department (Enter department)

3. **During your shift, are you responsible for any cleaning and/or sanitizing duties?**

- Yes
- No (Go to Q4)
- Refused (Go to Q4)

3a. **What are those cleaning and/or sanitizing duties?** (Check all that apply)

- | | |
|------------------------------------------------|---------------------------------------------------------------------|
| <input type="checkbox"/> Food contact surfaces | <input type="checkbox"/> Utensils such as knives, tongs, and spoons |
| <input type="checkbox"/> Display cases | <input type="checkbox"/> Other (Describe): _____ |
| <input type="checkbox"/> Deli floors | <input type="checkbox"/> Unsure |
| <input type="checkbox"/> Deli slicers | <input type="checkbox"/> Refused |

4. **Approximately how long have you worked in the retail food industry? By retail food industry, I am referring to any deli, restaurant, or commercial establishment that serves food to the public.**

_____years _____months (*Enter years and months*) Unsure Refused

5. **Approximately how long have you worked as a food worker at this deli?**

_____years _____months (*Enter years and months*) Unsure Refused

Now I am going to ask you a few questions about the use and cleaning of the food slicers in the deli.

For each available slicer in the deli, assign it a numerical value from 1 to 5. Keep in mind that there are also questions in the structured observation instrument regarding these same slicers. Thus, the numerical designation should be the same for both data collection instruments. Ask the deli workers questions 6-6e for each available slicer. Be sure to point to or walk with the deli worker to the slicer in question as you complete this table.

Slicer Number	6. What kinds of foods do you slice with this slicer? (Check all that apply)	6a. How often do you use this slicer?
1	<input type="checkbox"/> Meats <input type="checkbox"/> Cheeses <input type="checkbox"/> Fish <input type="checkbox"/> Fruits/Vegetables <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> All day long <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused
2	<input type="checkbox"/> Meats <input type="checkbox"/> Cheeses <input type="checkbox"/> Fish <input type="checkbox"/> Fruits/Vegetables <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> All day long <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused
3	<input type="checkbox"/> Meats <input type="checkbox"/> Cheeses <input type="checkbox"/> Fish <input type="checkbox"/> Fruits/Vegetables <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> All day long <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused

Slicer Number	6b. How often do you “wipe down” or do a quick clean on this slicer?	6c. How do you “wipe down” or do a quick clean on this slicer?	6d. How easy is it to break down, clean, and sanitize this slicer-easy, somewhat easy, neither easy nor difficult, somewhat difficult, or difficult?	6e. How often do you break down, clean, then <u>sanitize</u> this slicer?
1	<input type="checkbox"/> After every customer <input type="checkbox"/> In between slicing different food products <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> No “wipe down” or quick cleaning in between scheduled full cleanings (<i>Go to Q6d</i>) <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Wipe slicer only <input type="checkbox"/> Wipe, apply sanitizer, and wipe <input type="checkbox"/> Wipe, apply sanitizer, and air dry <input type="checkbox"/> Apply sanitizer and wipe <input type="checkbox"/> Apply sanitizer and air dry <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Easy <input type="checkbox"/> Somewhat easy <input type="checkbox"/> Neither easy nor difficult <input type="checkbox"/> Somewhat difficult <input type="checkbox"/> Difficult <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused
2	<input type="checkbox"/> After every customer <input type="checkbox"/> In between slicing different food products <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> No “wipe down” or quick cleaning in between scheduled full cleanings (<i>Go to Q6d</i>) <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Wipe slicer only <input type="checkbox"/> Wipe, apply sanitizer, and wipe <input type="checkbox"/> Wipe, apply sanitizer, and air dry <input type="checkbox"/> Apply sanitizer and wipe <input type="checkbox"/> Apply sanitizer and air dry <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Easy <input type="checkbox"/> Somewhat easy <input type="checkbox"/> Neither easy nor difficult <input type="checkbox"/> Somewhat difficult <input type="checkbox"/> Difficult <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused
3	<input type="checkbox"/> After every customer <input type="checkbox"/> In between slicing different food products <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> No “wipe down” or quick cleaning in between scheduled full cleanings (<i>Go to Q6d</i>) <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Wipe slicer only <input type="checkbox"/> Wipe, apply sanitizer, and wipe <input type="checkbox"/> Wipe, apply sanitizer, and air dry <input type="checkbox"/> Apply sanitizer and wipe <input type="checkbox"/> Apply sanitizer and air dry <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Easy <input type="checkbox"/> Somewhat easy <input type="checkbox"/> Neither easy nor difficult <input type="checkbox"/> Somewhat difficult <input type="checkbox"/> Difficult <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> Other (<i>Describe</i>): _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused

Slicer Number	6. What kinds of foods do you slice with this slicer? (Check all that apply)	6a. How often do you use this slicer?
4	<input type="checkbox"/> Meats <input type="checkbox"/> Cheeses <input type="checkbox"/> Fish <input type="checkbox"/> Fruits/Vegetables <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> All day long <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused
5	<input type="checkbox"/> Meats <input type="checkbox"/> Cheeses <input type="checkbox"/> Fish <input type="checkbox"/> Fruits/Vegetables <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> All day long <input type="checkbox"/> Other (Describe): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused

Slicer Number	6b. How often do you “wipe down” or do a quick clean on this slicer?	6c. How do you “wipe down” or do a quick clean on this slicer?	6d. How easy is it to break down, clean, and sanitize this slicer-easy, somewhat easy, neither easy nor difficult, somewhat difficult, or difficult?	6e. How often do you break down, clean, then <u>sanitize</u> this slicer?
4	<input type="checkbox"/> After every customer <input type="checkbox"/> In between slicing different food products <input type="checkbox"/> Other <i>(Describe):</i> _____ _____ <input type="checkbox"/> No “wipe down” or quick cleaning in between scheduled full cleanings (<i>Go to Q6d</i>) <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Wipe slicer only <input type="checkbox"/> Wipe, apply sanitizer, and wipe <input type="checkbox"/> Wipe, apply sanitizer, and air dry <input type="checkbox"/> Apply sanitizer and wipe <input type="checkbox"/> Apply sanitizer and air dry <input type="checkbox"/> Other <i>(Describe):</i> _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Easy <input type="checkbox"/> Somewhat easy <input type="checkbox"/> Neither easy nor difficult <input type="checkbox"/> Somewhat difficult <input type="checkbox"/> Difficult <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> Other (<i>Describe</i>): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused
5	<input type="checkbox"/> After every customer <input type="checkbox"/> In between slicing different food products <input type="checkbox"/> Other <i>(Describe):</i> _____ _____ <input type="checkbox"/> No “wipe down” or quick cleaning in between scheduled full cleanings (<i>Go to Q6d</i>) <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Wipe slicer only <input type="checkbox"/> Wipe, apply sanitizer, and wipe <input type="checkbox"/> Wipe, apply sanitizer, and air dry <input type="checkbox"/> Apply sanitizer and wipe <input type="checkbox"/> Apply sanitizer and air dry <input type="checkbox"/> Other <i>(Describe):</i> _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Easy <input type="checkbox"/> Somewhat easy <input type="checkbox"/> Neither easy nor difficult <input type="checkbox"/> Somewhat difficult <input type="checkbox"/> Difficult <input type="checkbox"/> Unsure <input type="checkbox"/> Refused	<input type="checkbox"/> Every _____ hours <input type="checkbox"/> _____ times each day <input type="checkbox"/> Other (<i>Describe</i>): _____ _____ <input type="checkbox"/> Unsure <input type="checkbox"/> Refused

Now I am going to ask you a few questions about the seams and seals on the food slicers. By seams, I am referring to the areas on the food slicers created when one part or piece of metal is adjoined to another, for example, handles. By seals, I am referring to the sealant used to join these seams, fill in cracks, chips and/or deep scratches.

7. **How often do you inspect seams and seals on the slicers?** *(Check all that apply)*
- Each time, when fully cleaning and sanitizing slicers
 - Occasionally, when fully cleaning and sanitizing slicers
 - Each time, during wipe down or quick clean on slicers
 - Occasionally, during wipe down or quick clean on slicers
 - Never *(Go to Q10)*
 - Unsure *(Go to Q10)*
 - Refused *(Go to Q10)*

8. **When you do inspect seams and seals, which ones do you inspect?**

9. **When you do inspect a seal, what do you look for?**

10. **What do you do if a seal is in bad repair, broken, or missing?**

Next I'd like to ask you a few questions about this deli's practices.

11. **Are deli salads such as turkey, tuna, and chicken prepared in a common use area within the deli?**
By common use area, I mean an area that is available for use by the deli staff to perform any work-related task?

- Yes
- No *(Go to Q12)*
- Unsure
- Refused *(Go to Q12)*

11a. **How are deli salads prepared?** *(Check all that apply)*

- Food workers slice/cut and prepare (cook/assemble) ingredients
- Food workers prepare (cook/assemble) ingredients that come pre-cut and pre-packaged
- Deli salads (pre-made) are sold with no additional preparation by food workers
- Other *(Describe):* _____
- Unsure
- Refused

11b. Where are the deli salads sold?

- Only in the deli
- Only in other non-deli food departments
- Both in the deli and in other food departments
- Other (*Describe*): _____
- Unsure
- Refused

Now I am going to ask you a few questions about food safety training.

12. While employed here, have you received food safety training on topics such as how to prevent cross-contamination or how to do a proper hand wash?

- Yes
- No (*Go to Q13*)
- Unsure (*Go to Q13*)
- Refused (*Go to Q13*)

12a. Who conducted that training? (*Check all that apply*)

- Management
- Owner
- Supervisor
- Co-worker
- Other (*Describe*): _____
- Unsure
- Refused

13. For the following statements, please tell me if you think the statement is correct by saying Yes, No, Unsure or Refused.

13a. One of the best ways to dry your hands after hand washing is with clean paper towels.

- Yes
- No
- Unsure
- Refused

13b. Germs grow best in the temperature “danger zone” between 41°F and 135°F.

- Yes
- No
- Unsure
- Refused

13c. For a proper hand washing, deli workers must scrub their hands and arms for about 4 or 5 seconds.

- Yes
- No
- Unsure
- Refused

13d. Deli workers should wash hands between glove changes.

- Yes
- No
- Unsure
- Refused

13e. It’s okay to use hand sanitizer instead of washing your hands when the deli is busy.

- Yes
- No
- Unsure
- Refused

That is the end of the interview. Thank you for your time.

EHS-Net Retail Deli Study: Structured Observation and Notational Observation

ESTABLISHMENT – STRUCTURED OBSERVATION

Please answer the following questions by **observing** the deli’s environment and employees’ food handling practices. Do not interview the deli manager or workers for this data collection. Data collection should occur during the deli’s hours of operation.

ESTABLISHMENT ID: _____

1. Date of observations: ____/____/____

2. Starting time of observations: _____AM/PM

Sink Number	3. Select the task(s) performed in each of the deli’s sinks. (Check all that apply)	3a. Are soaps and paper/cloth drying towels available at (or near) each sink?
1	<input type="checkbox"/> Hand washing <input type="checkbox"/> Opening chubs <input type="checkbox"/> Rinsing raw vegetables <input type="checkbox"/> Washing dishes, utensils, equipment <input type="checkbox"/> Other (Describe): _____ _____	<input type="checkbox"/> Only soap <input type="checkbox"/> Only paper/cloth drying towels (hand dryer) <input type="checkbox"/> Both soap and paper/cloth drying towels (hand dryer) <input type="checkbox"/> No soap or paper/cloth drying towels (hand dryer)
2	<input type="checkbox"/> Hand washing <input type="checkbox"/> Opening chubs <input type="checkbox"/> Rinsing raw vegetables <input type="checkbox"/> Washing dishes, utensils, equipment <input type="checkbox"/> Other (Describe): _____ _____	<input type="checkbox"/> Only soap <input type="checkbox"/> Only paper/cloth drying towels (hand dryer) <input type="checkbox"/> Both soap and paper/cloth drying towels (hand dryer) <input type="checkbox"/> No soap or paper/cloth drying towels (hand dryer)
3	<input type="checkbox"/> Hand washing <input type="checkbox"/> Opening chubs <input type="checkbox"/> Rinsing raw vegetables <input type="checkbox"/> Washing dishes, utensils, equipment <input type="checkbox"/> Other (Describe): _____ _____	<input type="checkbox"/> Only soap <input type="checkbox"/> Only paper/cloth drying towels (hand dryer) <input type="checkbox"/> Both soap and paper/cloth drying towels (hand dryer) <input type="checkbox"/> No soap or paper/cloth drying towels (hand dryer)
4	<input type="checkbox"/> Hand washing <input type="checkbox"/> Opening chubs <input type="checkbox"/> Rinsing raw vegetables <input type="checkbox"/> Washing dishes, utensils, equipment <input type="checkbox"/> Other (Describe): _____ _____	<input type="checkbox"/> Only soap <input type="checkbox"/> Only paper/cloth drying towels (hand dryer) <input type="checkbox"/> Both soap and paper/cloth drying towels (hand dryer) <input type="checkbox"/> No soap or paper/cloth drying towels (hand dryer)

Sink Number	3. Select the task(s) performed in each of the deli's sinks. (Check all that apply)	3a. Are soaps and paper/cloth drying towels available at (or near) each sink?
5	<input type="checkbox"/> Hand washing <input type="checkbox"/> Opening chubs <input type="checkbox"/> Rinsing raw vegetables <input type="checkbox"/> Washing dishes, utensils, equipment <input type="checkbox"/> Other (Describe): _____ _____	<input type="checkbox"/> Only soap <input type="checkbox"/> Only paper/cloth drying towels (hand dryer) <input type="checkbox"/> Both soap and paper/cloth drying towels (hand dryer) <input type="checkbox"/> No soap or paper/cloth drying towels (hand dryer)

4. What are the current temperatures of the refrigerators/coolers (walk-in and reach-in), freezers, and deli cases where deli products are stored? Deli products are defined as foods that are prepared and sold in the retail deli as ready-to-eat foods (i.e., chubs of deli meats, chubs of cheeses, and deli salads). (For each refrigerator or freezer, enter temperature and circle the unit of measurement)

- 4a1. Refrigerator 1 _____°F/°C
- 4a2. Refrigerator 2 _____°F/°C
- 4a3. Refrigerator 3 _____°F/°C
- 4a4. Refrigerator 4 _____°F/°C
- 4a5. Refrigerator 5 _____°F/°C

- 4b1. Freezer 1 _____°F/°C
- 4b2. Freezer 2 _____°F/°C
- 4b3. Freezer 3 _____°F/°C
- 4b4. Freezer 4 _____°F/°C
- 4b5. Freezer 5 _____°F/°C

- 4c1. Deli case 1 _____°F/°C
- 4c2. Deli case 2 _____°F/°C
- 4c3. Deli case 3 _____°F/°C
- 4c4. Deli case 4 _____°F/°C
- 4c5. Deli case 5 _____°F/°C

5. Is there a walk-in refrigerator or cooler?

- Yes
- No (Go to Q6)
- Could Not Observe (Go to Q6)

5a. Are raw animal products and deli products stored separately in containers, bins, or trays inside the cooler? Raw animal products are animal products that have not been cooked (e.g., uncooked seafood, chicken, beef, and pork).

- Yes
- No
- Could Not Observe

5b. Are raw animal products stored above ready-to-eat foods inside the cooler? Ready-to-eat foods are foods that do not require further cooking or heating for safe consumption (e.g., deli meats, cheeses, rotisserie chicken, vegetables, deli salads, and fruit).

- Yes
- No
- Could Not Observe

6. For incoming foods that require refrigeration, are there records to indicate that the temperatures of these foods are being taken and recorded when they are delivered?

- Yes
- No
- Could Not Observe

7. Estimate the percentage of workers in the deli who are handling ready-to-eat foods with bare hands.

_____ % (Enter percentage)

- Could Not Observe

8. Is there any evidence of potential direct cross-contamination of raw animal products with ready-to-eat foods within the deli area? For example, workers slicing raw animal products and cooked products with the same knife without cleaning and sanitizing between use.

- Yes
- No (*Go to Q9*)
- No raw animal products used (*Go to Q9*)
- Could Not Observe (*Go to Q9*)

8a. Please describe any evidence of direct cross-contamination. _____

9. Are any raw foods cooked in another area that is separate from but next to the deli area?

- Yes
- No (*Go to Q10*)
- Could Not Observe (*Go to Q10*)

9a. What types of raw foods are cooked in these adjacent areas? (Check all that apply)

- Poultry
- Beef
- Seafood
- Pork
- Other (*Describe*): _____
- Could Not Observe

10. Are wet wiping cloths used in this establishment?

- Yes
- No (*Go to Q11*)
- Could Not Observe (*Go to Q11*)

10a. Are all wet wiping cloths stored in a sanitizer solution between uses?

- Yes
- No
- Could Not Observe

11. Randomly select one sanitizing solution that is currently in use in the deli and measure its concentration. Is it at the proper concentration?

- Yes
- No
- Could Not Observe

12. Are there mechanical dish washing machines for utensils or other equipment?

- Yes
- No (*Go to Q13*)

12a. What method of sanitization is used for the mechanical dish washing machines?

- Only heat (*Go to Q12b*)
- Only chemical (*Go to Q12c*)
- Both heat and chemical (*Go to Q12b and then Q12c*)
- Could Not Observe (*Go to Q13*)

12b. Does the sanitizing cycle reach the temperatures recommended for sanitization?

- Yes (*Go to Q13*)
- No (*Go to Q13*)
- Could Not Observe (*Go to Q13*)

12c. Does the chemical sanitizing cycle have the required levels of chemical sanitizer recommended for the machine?

- Yes
- No
- Could Not Observe

13. Are milk crates located in the deli area?

- Yes
- No (*Go to Q14*)
- Could Not Observe (*Go to Q14*)

13a. What are the milk crates used for? (*Describe usage*) _____

14. Did you observe push carts, U-boats, or hand trucks used in the deli also being used in other departments?

- Yes
- No
- Could Not Observe

Keep in mind that there are also questions in the worker interview regarding these same slicers. Thus, the numerical designation of the slicers should be the same for both data collection instruments. For example, slicer number 1 in the structured observation should also be labeled as slicer number 1 in the worker's interview.

15. What types of slicers are currently in use in the deli?

15a. Slicer Number 1: Enter slicer's make, model, and year of manufacture.

Make: _____ **Model:** _____ **Year:** _____
 Could Not Observe Make Could Not Observe Model Could Not Observe Year

15a.1. Did you observe any of the following on slicer number 1?

(Check all that apply)

- Cracked seals and seams
- Missing seams
- Loose parts
- Missing parts
- Chips, cracks, and/or scratches
- Other (*Describe*): _____
- None

15b. Slicer Number 2: Enter slicer's make, model, and year of manufacture.

Make: _____

Model: _____

Year: _____

Could Not Observe Make

Could Not Observe Model

Could Not Observe Year

15b.1. Did you observe any of the following on slicer number 2?

(Check all that apply)

Cracked seals and seams

Missing seams

Loose parts

Missing parts

Chips, cracks, and/or scratches

Other (*Describe*): _____

None

15c. Slicer Number 3: Enter slicer's make, model, and year of manufacture.

Make: _____

Model: _____

Year: _____

Could Not Observe Make

Could Not Observe Model

Could Not Observe Year

15c.1. Did you observe any of the following on the slicer number 3?

(Check all that apply)

Cracked seals and seams

Missing seams

Loose parts

Missing parts

Chips, cracks, and/or scratches

Other (*Describe*): _____

None

15d. Slicer Number 4: Enter slicer's make, model, and year of manufacture.

Make: _____

Model: _____

Year: _____

Could Not Observe Make

Could Not Observe Model

Could Not Observe Year

15d.1. Did you observe any of the following on slicer number 4?

(Check all that apply)

Cracked seals and seams

Missing seams

Loose parts

Missing parts

Chips, cracks, and/or scratches

Other (*Describe*): _____

None

15e. Slicer Number 5: Enter slicer's make, model, and year of manufacture.

Make: _____

Model: _____

Year: _____

Could Not Observe Make

Could Not Observe Model

Could Not Observe Year

15e.1. Did you observe any of the following on slicer number 5?

(Check all that apply)

Cracked seals and seams

Missing seams

Loose parts

Missing parts

Chips, cracks, and/or scratches

- Other (*Describe*): _____
- None

16. Are there any physical barriers such as walls or other physical objects separating the deli from other departments in the retail establishment?

- Yes
- No
- Could Not Observe

17. End time of observations: _____AM/PM

Establishment ID: _____

Evaluation ID: _____

Sketch deli layout (paper provided).

Instructions: Before sketching the deli, familiarize yourself with the actual layout of the deli. Use the generic sketch below to fill in the relative layout of these items in the deli area, keeping in mind the orientation (the front or customer service area) of the deli. If there is more than one item/equipment (e.g., sink, slicer, prep area, etc.), please include all of them in the sketch.

Where applicable, include the following items and designated areas in the sketch:

1. Sinks
2. Floor drains
3. Deli cases
4. Refrigerators
5. Freezers
6. Ovens
7. Ranges
8. Rotisseries
9. Food preparation tables
10. Slicers
11. Food scales
12. Exit and entry points
13. Other department(s) adjacent to the deli

Establishment ID: _____

Evaluation ID: _____

Front/Customer

department:

Adjacent



Adjacent department: _____

Notational Observation

Instructions

1. Use the *Practice Notational Observation Form* included to record a deli worker's actions for the first 10-15 minutes. Once you feel comfortable with the practice part of the notational observation, use the *Notational Observation Form* provided to begin with the actual data collection.
2. Depending on the number of workers present, select **1 to 3** food workers for whom you can observe their actions unobtrusively.
3. Record the actions of one worker at a time. Start recording the actions of the worker when he/she is beginning a new task (e.g., food preparation or cleaning and sanitizing).
4. For **each deli worker** under observation, do the following:
 - a. Use **5** *Notational Observation Forms* to record **100** sequential actions
 - b. On each form, record the Date, Establishment Id, Deli Worker #, and Page #
 - c. Record all observed actions, **in sequential order**, under the **Action Sequence** column
 - d. Write out any actions that were not included in the code key provided
 - e. Include any relevant notes under the **Notes** columns
 - f. Each numbered row (**Action No.**) represents one action
 - g. Record the time at the start of the observation, under the **Action No.** column (at action #1)
 - h. Record the time after **100 actions** have been observed for a worker or at the end of Page #5 on the notational analysis form.

Date: _____

Page #: _____

Establishment Id: _____

Deli worker #: _____

Practice Notational Observation Form

Action No.	Action Sequence	Notes
1-TIME:		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Date: _____

Page #: _____

Establishment Id: _____

Deli worker #: _____

Notational Observation Form

Action No.	Action Sequence	Notes
1-TIME:		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

Code Key

Object/Equipment	Food	Action	Food Employee
SUR (ST, PL) – Work surface (Stainless steel, plastic)	SAL – Salami (chub)	WAS – Wash	HD – hair, face, etc.
SLI – Slicer	CRB – Corned beef	DRY – Dry	BD-Any body part below the neck
CTB – Cutting board	BOL - Bologna	TCH – Touch	CLO – Clothes – apron,
SNK – Sink	HM – Ham	CHG – Change gloves	HDS – Hands
SCL – Scale	CHB – Chub (unidentified)	CLN – Clean	GLV – Hands with disposable
K – Knife	DM – Deli meat (unidentified)	SAN – Sanitize	NGLV – Hands with non-disposable gloves
IM – Ice-maker	TRK – Turkey	WP – Wipe	Adjectives
CL – Reach-in cooler	RSF – Raw seafood	PT – Put	DIR – Dirty
FR – Walk-in refrigerator	CSF – Cooked seafood	PIN - Put in	PCON – Potentially
FRH – Walk-in refrigerator handle	CHE – Processed Cheese	PON – Put on	PRSL – Pre-sliced
FAU - Faucet	RCH – Raw chicken	PUP – Pickup	Cleaning and Sanitizing Supplies
CAS – Deli case	CCH – Cooked Chicken	CUT – Cut	SP – Soap
FRY – Fryer	ENT- Entrée	SPRD – Spread	HDSAN – Hand sanitizer
MN – Money	TM – Tomato	SL – Slice	NB – Nail brush
CT – To-go Container, Dish	BRD – Bread	OPN – Open	PAT – Paper towel
WR (P,PA) – Wrap (Plastic,	LT – Lettuce	CLS – Close	BR – Broom
DT – Deli tissue	PK – Pickles	UWP - Unwrap	MP – Mop
BG – Bag (plastic for deli	FRT – Fruit	RWP – Rewrap	TC – Trash Can
CRT – Cart	DS – Deli salad	SNZ – Sneeze	CLT – Cloth
UT – Utensils – tongs, spoons, ladles, etc.	PAS – Pasta salad (i.e., any salad with pasta/noodles)	UTR – Use Toilet room	SANR – Sanitizer
WL – Wall	C – Condiments (mayo, ketchup, etc)	EAT – Eat	
TEL – Telephone	COL – Cole slaw	DRI - Drink	
ONOFF – On/Off switch	GRN – Garnish	TB – Using tobacco	
LBL - Label	SAU – Sauce	PL – Peel off casing	
KN – Knob/handle	WT – Water	SC - Scoop	
BTM - Bottom		RE - Remove	
CP-Cell phone		W - With	
LD - Lid		MX - Mix	
		GV - Give	
		WE - Weigh	
		GB-Grab	
		US - Using	
		PRT - Print	
		TH AW – Throw away	
		TON – Turn on	
		TOF – Turn off	

