



SHOPPER HISTORY:

**Best Practices for Use during
Foodborne Illness Investigations**

October 2020



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1. Purpose and Scope

Investigating foodborne disease outbreaks is often not a straightforward task. Successfully identifying the source of foodborne outbreaks requires a detailed assessment of the case-patient's food exposures during the time periods of interest. Outbreaks caused by agents with long incubation times, products with long shelf lives, and products with a low brand recognition are especially hard to resolve through patient interviews. While accurate food histories from case-patients are the key to solving foodborne outbreaks, people's recollection of foods they have eaten can fade rapidly. Records associated with a case-patient's shopping purchase history (referred to as 'shopper history' within this document), such as paper receipts, transaction records obtained from store loyalty programs, and records of purchases made with credit or debit cards, can provide a valuable, objective source of information to investigators.¹ These records can assist with hypothesis generation and can set the stage for traceback of suspect food vehicles. Speedy and accurate exposure information can allow public health officials to quickly identify the suspected product, rule out other suspected vehicles, and prevent additional illnesses.

This document provides best practices for the request and use of shopper history during outbreak investigations and is a living document; it will be updated over time to reflect changes in outbreak investigation practices, retailer practices, purchase methods, consumer trends, and other related areas. This document focuses solely on acquisition and use of shopper history to aid in identifying a starting point for product traceback and/or identifying or confirming a common food exposure among case-patients. Details regarding best practices for a foodborne outbreak response are out of the scope for this document and can be found within the Council to Improve Foodborne Outbreak Response's (CIFOR) [Guidelines for Foodborne Disease Outbreak Response](#). Similarly, best practices for conducting a traceback following the collection of shopper history records are out of the scope for this document and can be found within the [Rapid Response Team \(RRT\) Best Practices Manual](#).

This document provides recommendations that local, state, and federal public health and regulatory officials can use when investigating foodborne outbreaks. Learning about shopper history best practices may help industry partners and consumers develop ideas for how to better collaborate with government investigators to solve outbreaks.

2. Background

a. Document Authors

This document is a product of the Shopper History Outbreak Partnership (SHOP), a group of state and federal public health and regulatory officials committed to identifying and promoting best practices for the use of shopper history during foodborne outbreaks to rapidly identify contaminated foods and prevent additional illness. More information about SHOP can be found online at: www.afdo.org/purchase-history.

b. What is Shopper History?

Shopper history refers to any type of record that provides information about a specific shopper's food purchases. Many different terms and sources of information can be used as shopper history. This should include, but is not limited to:

¹ Shopper history information that federal investigators obtain as part an official illness or outbreak investigation is exempt from the Paperwork Reduction Act (44 U.S.C. 3518(c); 5 CFR 1320.4(b)).

- Receipts (household shopping receipts/till receipts/register receipts that can be obtained in paper or electronic form from the shopper or from the food establishment);
- Shopper cards (also referred to as: loyalty cards, membership cards, warehouse store membership cards, rewards programs, or club cards);
- Paper or electronic credit/debit card or bank statements;
- Records of purchases made online, through a retailer app, or through a delivery service.

c. When is Shopper History Used in Outbreak Investigations?

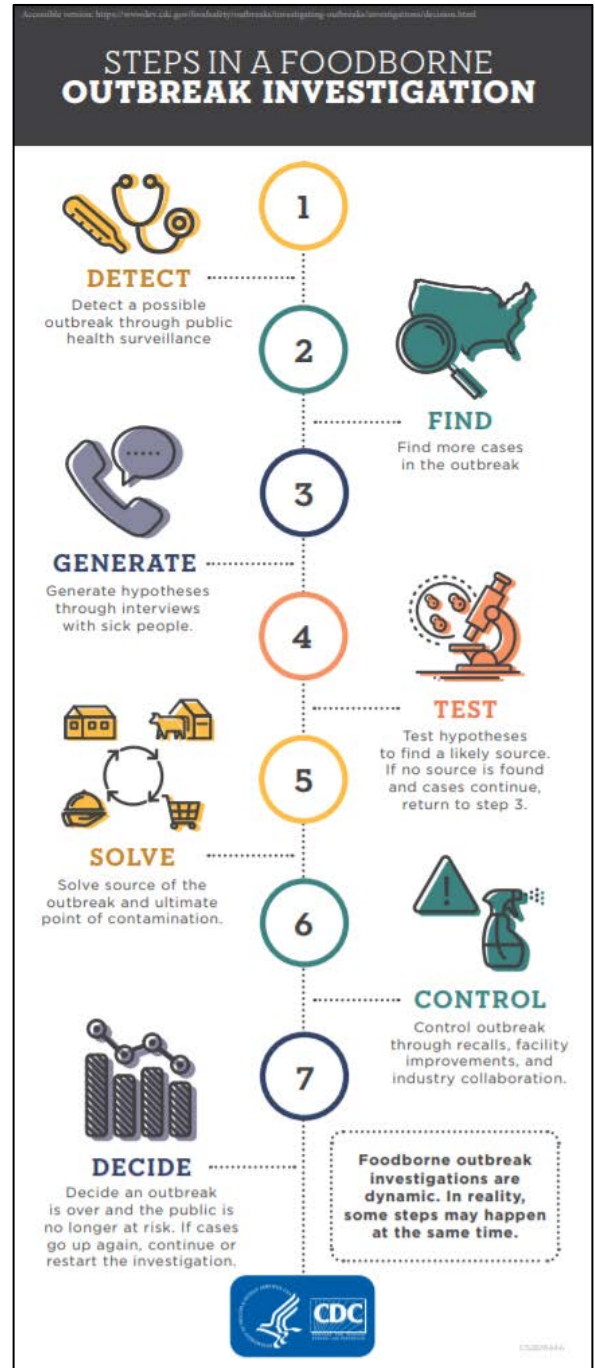
There are several steps to a foodborne outbreak investigation. These are displayed in Figure 1 to the right, and more information about these steps is available [here](#).² Foodborne outbreak investigations are dynamic, and some steps may happen at the same time. Shopper history may be of use at several points within an investigation, most commonly when generating and testing hypotheses and working to determine the source of the outbreak.

i. Generating and Testing Hypotheses

When investigators are generating and testing hypotheses about the likely source of the outbreak, specificity of information from case-patients about their food exposures is critical. Shopper history helps to obtain details of brand and product identity, purchase dates and locations, and distribution information from retailers.

Shopper history has been particularly useful for generating and testing hypotheses during the following situations:

- When a case-patient cannot remember the specific products consumed.
 - How the data are used: Shopper history can identify food purchases (including date/time of purchase) made by the case-patient, which can help inform food history recall during additional interviews with public health epidemiologists (i.e., when/how the food product was consumed, who else ate it).



² Source: <https://www.cdc.gov/foodsafety/outbreaks/investigating-outbreaks/investigations/index.html>

- When case-patients report exposure to a common food establishment (or retailers under the same corporate umbrella/banner), but a common food exposure among case-patients has not been identified.
 - How the data are used: Shopper history can identify which food purchases the case-patients have in common, during a timeframe where that food could have caused illness.
- When a common food exposure of an unknown brand at one or more retailers is identified among case-patients.
 - How the data are used: Shopper history can determine whether case-patients were purchasing the same style and brand of product and whether purchases were made during the same timeframe.

ii. Determining the Source of an Outbreak

When investigators are trying to solve an outbreak by establishing a link between ill people and a contaminated source, shopper history can be essential. These records provide detailed information from restaurants and stores where case-patients purchased food to conduct a traceback and to identify a common point of contamination in the distribution chain.

Shopper history is particularly useful for identifying the source of an outbreak when an investigation identifies a suspect food vehicle. Shopper history can provide purchase dates, times, and other specifics on food products as a starting point for traceback activities. It can help to determine if there are supply chain commonalities among products purchased by different case-patients, and can support regulatory, enforcement, and/or other legal or public health actions by the state, the US Food and Drug Administration (FDA), or the US Department of Agriculture (USDA) Food Safety and Inspection Service (FSIS).

3. Responsibility

This section explains who has responsibility for which aspects of obtaining shopper history.

a. Acquiring Information from Case-Patients during Interviews

Communicable disease investigators (i.e., public health nurses, epidemiologists) may request shopper history during a case-patient interview. This could include requesting the case-patient or household's shopper card number, credit/debit card number (or last four digits of the card number), store locations where they would have purchased items of interest, dates of purchases made, copies or originals of printed or electronic receipts, and other relevant data (i.e., company privacy policy forms) needed prior to contacting a retailer (see *V. Acquiring Information from Case-Patients During Interviews*).

b. Requesting Information from the Retailer

This responsibility varies widely depending on the agency. Local public health or environmental health jurisdictions may have their own investigation and would serve as the primary contact with the food establishment. In some states, recall coordinators may act as the point of contact; in other states the primary contact may be the epidemiology staff. The responsible party may also change as the investigation develops and more jurisdictions are involved.

If possible, shopper history data collection should be centralized to avoid duplication and to streamline communications with a retailer. In multistate outbreaks, data collection requests would

ideally be consolidated and managed centrally by a federal agency. Centralized shopper history data collection conducted by a federal agency can be initiated based on requests from state partners, industry partners, or federal agencies. Federal agencies should ensure that shopper history obtained as part of a centralized effort is shared with applicable state partners in a timely fashion.

c. Reviewing/Analyzing the Data

The responsible party varies depending on the agency and the step in the collection process. The individual requesting the information from the retailer is often responsible for verifying which products are listed on the shopper history documents through follow up questions with the retailer. The epidemiology staff are often responsible for verifying that a certain ill individual is the consumer of a certain product in question. Compilation and analysis of the data is most often done by state or federal epidemiology staff, depending on the jurisdictions involved in an outbreak.

4. Acquiring Information from Case-Patients during Interviews

a. Identifying potential sources of shopper history

During initial and follow-up case-patient interviews, investigators should:

- Ask prompting questions about grocery stores and other sources of food prepared/served at home (including meal delivery, etc.);
- Ask specifically about grocery chains in the area where the case-patient resides;
- Remind case-patients during the first interview to hold onto any records or receipts; and
- Ask about other records of food purchases such as receipts or credit/debit card statements.

b. Obtaining case-patient permission and explaining confidentiality

Asking explicitly for permission to obtain shopper history data can be done during:

- *The initial interview* – The interview would include the explanation that records will only be requested in the event of an outbreak investigation.
- *At a follow-up hypothesis-generating interview* – The interview would occur when a case-patient has been included in a cluster (e.g., through molecular lab testing) but a common exposure has not been identified.
- *During a focused outbreak interview* – This interview would take place when the case-patient has been included in a cluster and the exposure has been narrowed to a limited number of common exposures.

Examples of how shopper history is currently requested in various existing questionnaires are:

- National Hypothesis Generating Questionnaire
 - “May we have permission to retrieve purchases based on your member card information? This information will be kept confidential. May we share this information with other public health officials to help with this outbreak investigation?”
- CDC *Listeria* Initiative Case-Patient Report Form
 - “Would you be willing to release your shopper card information so we can get an exact list of your foods and when they were purchased?”
- Oregon Hypothesis Generating (Shotgun) Survey
 - “If necessary—say, because of an outbreak investigation—would you be willing to let us ask the store(s) to provide us with shopping records?”

During the request, communicate with the case-patient or their household member(s) that shopper history will only be shared on a need-to-know basis with local, state, or federal staff during the investigation. All personal identifiers will be redacted (e.g. name, shopper card number, credit or debit card number, phone number, etc.). Communicate with the case-patient that this information could help solve the outbreak and prevent additional illnesses. Additionally, the case-patient may be able to access their own shopper history through an online account.

The time frame and scope of the shopper history request may vary based on the details of the investigation. It is important to discuss this with the case-patient or their household member(s). Examples of ways to ask this include:

- We are investigating foods you purchased from January 2019 to February 2019. Would you be willing to provide us your shopper card number so we can obtain this information for that specific timeframe?
- Would you allow us to request all shopper card data or just particular types of food?

c. Obtaining clarifying details about use of the purchase method

The following questions can be asked during a case-patient interview to obtain permission to request shopper history information and to help clarify who may have consumed the food listed on the shopper history records:

- Is this shopper card or online account in your name or someone else's name? Do you have the authority to give permission to obtain records?
- Do you share your shopper card with any family members, friends, or other customers on occasion?
- Do you always use this card when you shop at this particular store?
- Can you review your bank records to confirm the purchase date(s)?

5. Requesting Information from the Retailer

This section explains the various steps and considerations behind requesting shopper history from a food establishment.

a. Considerations Specific to Various Types of Shopper History

i. Shopper/Loyalty and Warehouse/Club Membership Accounts

These types of shopper history records typically require a membership number and a name to request information from the retailer.

ii. Credit/Debit Card Records

There are various options for obtaining detailed food transaction records using credit/debit cards that were used for the purchase. These options are detailed in Appendix 1: Obtaining Food Transaction Records from Credit/Debit Cards. This includes:

- Asking the case-patient to reprint a receipt by going to the retail store
- Asking stores to find itemized transaction information in their digital systems using details from the case-patient's bank statements, including location of purchase, time of purchase, or a transaction number.
- Requesting that the case-patient calls a retailer to obtain their shopper history

iii. Accounts for Online Ordering or Delivery Services

For grocery delivery services, sometimes there is no account number identifying either the case-patient or their account. The name or account username of the individual who owns the account and their email address may need to be provided to the retailer. Alternately for this type of shopper history, the account holder may have the option of checking their purchase history online and providing it to investigators.

b. Gathering Information about the Retailer

Obtain a corporate point of contact for the retailer you are requesting information from:

- Consider whether others in your organization may have a history with this retailer and if there is already a point of contact established. This may be the case for recall coordinators in your state.
- Consider reaching out to other agencies that have had experience working with a particular retailer. This may include neighboring states, districts, or federal agencies. The Association of Food and Drug Officials (AFDO) directory of state and local officials is a useful resource to obtain contact information for other public health or regulatory agencies: <http://dslo.afdo.org/>.
- Look on the company website for a phone number and ask to be directed to the appropriate person. Typically, the point of contact is a director/manager of food safety or quality assurance.

c. Gathering Information about your Case-Patient

Before requesting purchase data from the retailer, consider the purchaser's exposure date, illness onset date, pathogen incubation range, details about suspect product frequency of purchase, dates purchased, and product characteristics, such as product expiration date, shelf life, and likelihood that consumers will freeze this product, to make an appropriate timeframe request.

d. Sending a Request to the Retailer

i. Mode of Communications

The mode of communications with a retailer to request shopper history varies based on preference, including phone or email, depending on the preference of the requesting agency and retailer. See Appendix 3 for template emails and Appendix 4 for a suggested phone script.

ii. Determining Dates of Shopper History Information Requested

The timeframes requested will vary in each investigation depending on pathogen and the state of the suspected food (frozen, canned, fresh, etc.). See the table below for guidance behind selecting a timeframe.

Food Items	Timeframe Details
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Canned, frozen, and shelf-stable food	The timeframe for the shopper history request can be very broad. For these types of food, it is vital to obtain as much customer information as possible about the dates the suspect food was purchased.
Fresh food items, like produce and raw (non-frozen) meats	The timeframe for the shopper history request will be narrow as the product will have a short shelf life. Particularly, consider the shelf life for that particular item. For example, items like cilantro, basil, and lettuce will have much shorter shelf lives (about one week) compared to apples, grapes, and cherries which can last several weeks
Deli meats, cheeses, salads, or antipastos	The timeframe of purchase data requests could span several months since it is not uncommon for individuals to keep some types of deli items, such as unopened chubs of salami, olives, or aged cheeses, in their refrigerators for one or more months. For deli meats, the use by dates, best-by dates, and sell-by dates can be considered but should not be a final deciding factor for selecting purchaser data timeframes as businesses and buyers do not always adhere to these recommendations. Different brands of deli meats, cheeses, and salads will have a wide range of date suggestions depending upon how the meat is processed and packaged.

iii. Requesting Preferred Format

When requesting purchaser data from the retailer, ask them what type of format they are able to provide the data in. If possible, obtain the customer data in Excel. Data in Excel are easily searchable, formatted, and are compatible with most analytical software packages like SAS, R, and Epi Info. Receiving data in Excel is ideal, but if it is not an option, accept the available format and request the information be legible. PDF formats work well for keyword searches, but if more complex analytics are required, the data would need to be converted into another software package.

iv. Communicating Expectations

The retailer should send shopper/loyalty card data back to the requester as soon as possible, but within 48 hours. Communicate to the retailer that a timelier response can greatly help to identify the source of illnesses, reduce illness transmission in the community, and significantly reduce the overall impact of the outbreak. Communicate that you may reach out with questions to clarify product codes and identify products purchased.

Explain to the retailer that documentation may be shared, if requested, as part of an investigational file. This may vary state-to-state due to confidentiality laws. Request they redact any sensitive business information on the shopper history record, such as. prices for bulk products, etc.

Let retailers know that non-relevant, non-food purchases may be excluded from the records (e.g. alcohol, prescriptions, etc.).

v. Coordinating Requests with Investigation Partners

If feasible, while ensuring timeliness, batch the shopper/loyalty card data requests (instead of sending individually) by coordinating requests with investigation partners to lessen the burden on retailers, as well as encouraging continued retailer cooperation (see *IV. Responsibilities*).

e. Additional Information that May Be Helpful

If needed, consider asking the retailer to also provide the following items:

- The market share for the food item of interest to help assess baseline usage of the product (e.g., what percentage of your bagged salad is Brand A or what percentage of shoppers purchased bagged salad Brand A during the outbreak period?).
- A redacted random sample of other shopper history records from the same time period and location as the case-patient records to serve as a control group.

f. Overcoming Barriers at the Retailer

i. Notary and Other Legal Requirements by Retailers

Some retailers require a notarized signature from the cardholder before they are willing to release shopper/loyalty card records:

- Disclosure is required by law per Public Health Service Act Section 301;
- If a retailer requests notarized signatures, contact CDC at outbreakresponse@cdc.gov or the assessment epidemiologist for the cluster to request assistance (see example in Appendix 2).

Some retailers might prefer a letter on agency letterhead noting permission from the cardholder (see Appendix 3 for letter templates for both verbal and written consent from the consumer). Review existing state laws and determine if retailers are required to share this information without additional consent from the cardholder during an outbreak investigation; consult with your state's legal counsel if this is unclear. A compilation of state laws can be found online at: www.afdo.org/purchase-history.

ii. Credit/Debit Card Data Records

Although there are additional sensitivities with using credit/debit card data during foodborne illness investigations, in many instances, it is possible for the retailer to provide a record of purchases for purchases made using this method; can be assessed on a case-by-case basis.

g. Limits and Caveats of Shopper/Loyalty Card Data

There can be some limitations to shopper/loyalty/credit/debit card data if the cards are not used as intended. Some limits are described in the table below.

Limitation	Outcome
The shopper may have used another person's card or the cashier's "courtesy card" behind the register.	This prevents a clear picture of what was purchased and may have been consumed due to multiple shoppers' histories tied to one card.
The shopper may have multiple	Though less common, a shopper may have multiple loyalty cards for an individual store if they have forgotten or lost a card and elect to open a

loyalty cards for the same store.	second card. Missing purchases made with the “forgotten” card may also prevent a clear record of shopper history.
The shopper may have forgotten to use the card.	If the shopper did not use the card the data needed would not be available.
The shopper may have paid in cash.	Paying in cash eliminates the method of retrieving credit/debit card purchase data and may eliminate the ability to track purchases made with a shopper/loyalty card. Purchase with a credit/debit card allow the ability to track what, where, and when an item was purchased. Note that a shopper may pay in cash but still use a shopper/loyalty card.
The consumer might not have purchased food themselves.	There are various reasons why consumers might not purchase food themselves which can make traceback difficult. It might not be possible to track down the shopper or the shopper might not recall needed information because they were not shopping for themselves.
Data from the shopper card cannot be pulled due to encryption.	With the increased use of credit cards with chips, retailers are facing difficulty retrieving records because all the purchase history information is encrypted.

6. Reviewing and Analyzing the Data

This section reviews best practices for verifying and analyzing shopper history records once they have been obtained.

a. Verifying the Products

If the meaning of codes and abbreviations for food items on the receipt are not obvious, confirm these by asking the retailer or the case-patient for additional detail. Different retailers will use different abbreviations for products on their receipts. For example, both ground beef and green beans may be abbreviated with “GB”. If it is not clear exactly what the product is, this will need to be verified by the retailer and/or case-patient. The retailer will likely be able to provide more detail on the specific product such as lot numbers, weight, and source. Most retailers use a numeric code for the product. This number may be present on the receipt and providing this information to the retailer can be helpful in obtaining the exact product details for products that come in a variety of selections from a variety of brands. Pay attention to the quantity purchased as well as specificity of item (e.g., whole uncut watermelon vs. cut watermelon slices).

b. Verifying the Consumer

Before consolidating purchase data for analysis, the investigator should verify the case-patient consumed the implicated product. It is not uncommon for multiple individuals to use the same shopper or credit/debit cards. This confirmation can take place during the case-patient interview process by confirming the date the items were purchased and what was purchased. Ask the case-patient to review bank records and any available receipts to aid in confirming date of purchase and what items were purchased. It is ideal to capture this information during early interviews thereby

reducing the risk of losing case-patients to follow-up. Refer to Section V for questions that can be asked during a case-patient interview to help verify the consumer.

c. Analyzing the Data

All data must be consolidated into a format that can be easily shared and analyzed. Excel is the most common program used to consolidate, sort, and search this information and is compatible with other analytical tools like SAS, R, Epi Info, and SEDRIC. Other options include Microsoft Access or visually examining the data in the form it was received depending upon the size of the dataset.

Once the data are compiled and analyzed, create a written summary interpreting the data. The summary should include: how many times the implicated food item was purchased, dates, location name and address of where the product was purchased, manufacturer (name and address), USDA establishment number (if applicable), and other pertinent pieces of information.

Share your pertinent findings and shopper history records with other investigation partners as appropriate, including those conducting a traceback. See Appendix 7 for examples of shopper history summaries for sharing with investigation partners.

7. Data Maintenance/Confidentiality Considerations

This section details best practices in relation to maintenance of data and confidentiality of sensitive information for shopper history records. Retailers and public health officials should protect confidentiality by redacting personal identifiers and sharing information on a need to know basis in order to solve the outbreak.

a. Requesting Data from a Retailer

During the request, communicate with the retailer's responsible party that content from the purchase history could be made public following the closure of the investigation. Personal identifiers will be removed by the lead agency on the investigation (see *b.* below), but information that is not relevant to the investigation that the retailer considers sensitive should be removed or redacted by the retailer. Sensitive information may include pricing for products.

b. Requesting Data from the Case-Patient or Case-Patient Household

During the request, communicate with the case-patient or case-patient household member(s) that purchase records will only be shared on a need-to-know basis with local, state, or federal staff during the investigation. All personal identifiers will be redacted (e.g. name, credit/debit card number, phone number, etc.).

c. Data Maintenance and Storage

All data containing personal identifiers should be redacted or stored securely, whether physically or electronically, to prevent breach of confidentiality. Data will be destroyed following the closure of an investigation per each agency's data retention policy.

d. Sharing Data with Other Partners

Outbreak investigations require collaboration between local, state, and federal public health partners. Shopper/loyalty card purchase records contain personal identifiers that could be linked to a case-patient, so information should be redacted and shared on a need-to-know basis to prevent breach of confidentiality.

- Records to be shared with other partners should be “swept” for any identifying information and redacted. Personal identifiers may include credit/debit card information, account holder name, and account holder address.
- State agencies that are sharing confidential case-patient information with federal partners may not be allowed to do so under certain state laws.
- Leave at least one non-identifiable unique number on the shopper history record to link the record to a case-patient. This can include a partial shopper card number, or, alternately the PulseNet ID.
- If records were requested by a federal agency that is working with state partners during an investigation (i.e., a centralized shopper history data collection), the shopper history should be shared in a timely manner (ideally 24-48 hours) with applicable state/local partners. Records can be shared through secure email, fax, or uploaded into SEDRIC.

8. Communications During and After the Outbreak

This section reviews best practices for communications with food retailers during an outbreak, immediately following an outbreak, and moving forward for improved public health agency/retailer relationships.

a. Providing Feedback to Retailers

Provide timely feedback to retailers regarding the outbreak investigation and thank them for their cooperation. Information shared may vary from state-to-state due to confidentiality laws. It is important to keep retailers informed of developments during the outbreak investigation. Information flow should not be in one direction only where the outbreak investigators are requesting shopper and product data from the retailer but not providing any pertinent investigation updates. When appropriate, share updated investigation information with the retailer. Consult with the outbreak team before any information is released to the retailer. No personal customer information should be shared with the retailer. Assign one or two contact people to serve as the main contact(s) with the retailer and provide them with their contact information. Inform the retailer that they can contact this individual anytime with questions or concerns during or after the investigation. This will help to ensure the information provided to the retailer is concise and accurate. If the investigation is part of a multistate outbreak and a federal agency is the lead, any information shared with the retailer should be approved by the federal agency lead. People involved in clearing information could include epidemiologists, laboratory management, environmental health specialists, regulatory compliance officers, and health communication specialists. Clearing information should be a team effort and should not be conducted by an individual.

Examples of information that may be shared with a retail point of contact could include lab results of tested food (be prepared to answer questions about whole genome sequencing [WGS], polymerase chain reaction [PCR], culture-independent diagnostic tests [CIDTs], and presumptive positives), recalls and recall protocol, probable/confirmed case-patient counts, states/counties impacted, traceback activities, etc. After the outbreak has concluded, communication channels should be left open to the retailer so they can inquire about the reasoning behind decisions for the scope of the recall, lack of a recall, and interpretation of data.

b. Building Relationships with Retailers

Build and maintain relationships with retailers. Invite retailers to collaborative seminars and workgroups such as Food Protection Task Force (FPTF) meetings. FPTFs consist of public health,

regulatory, industry, academia, and consumer groups. These FPTFs create an effective nationwide infrastructure for enhancing outreach, response, integration, and information sharing in state, local, and tribal governments (<https://www.fda.gov/federal-state-local-tribal-and-territorial-officials/national-integrated-food-safety-system-ifss-programs-and-initiatives/food-protection-task-force-fptf>). This consortium of FPTF members provides an environment for all of those involved in food safety to get to know each other and to learn about different organizations' roles in ensuring safe/unadulterated food to consumers. Retailers should also be included in appropriate meetings and conferences and be encouraged to participate in these meetings. Building these relationships before an outbreak investigation can help to promote timelier information sharing during outbreak investigations.

Volunteer to present educational programs at retailer meetings and internal food safety training. Many retailers do not accurately understand the process of outbreak investigation and why investigators request data. Conducting educational sessions and open forums during non-outbreak times can greatly enhance partnership during outbreak investigations. Presenting a concise summary of how outbreak investigations work and the collaborative role of retailers, including the many shared overarching goals of providing safe food to the public will lead to more open communication between regulators and retailers.

9. Glossary

See [CIFOR Guidelines Glossary](#).

10. Resources

- [Integrated Food Safety Centers of Excellence](#)
- [Møller Frederik T, Mølbak Kåre, Ethelberg Steen](#). Analysis of consumer food purchase data used for outbreak investigations, a review. [Euro Surveill](#). 2018;23(24):pii=1700503. <https://doi.org/10.2807/1560-7917.ES.2018.23.24.1700503>

11. Appendices

Appendix 1. Key points for obtaining credit/debit transaction records (Minnesota Center of Excellence)



Successfully identifying the source of foodborne disease outbreaks requires detailed assessment of exposures during the incubation period. Asking the case to review check registers and paper or online credit card/bank statements can provide the purchase date and location of foods consumed during the time period of interest. This can be an important starting point for recalling specific food exposures in a timely manner.

During investigations of outbreaks thought to be due to commercial food items, itemized paper receipts saved by cases and transaction records obtained from store loyalty programs, co-ops, or warehouse membership cards (“shopper cards”) are valuable sources of specific information about foods purchased by cases. When these sources of information are available, they should be used to the fullest extent possible. However, when these are not available (e.g., the store does not have a loyalty or membership program), another strategy exists – food transaction records can often be resurrected using credit or debit cards that were used for the purchase. Here are some key points for collecting transaction records, based on the Minnesota Department of Health’s experience.

1. Receipt reprints – gathered by case

- It is becoming more common for stores to have the ability to print copies of transactions made using a credit/debit card.
- If the case is willing, it is often easiest (and the fastest way to get information to public health officials) for the case to obtain the desired records.
- Ask the case to visit the grocery store location(s) where food items eaten before illness onset were purchased. The case will need to bring the credit/debit card(s) that was used for purchases.
- The case should present their card at the store’s customer service counter and request copies of receipts for all purchases made with the card during the time period of interest (typically the month prior to illness onset).
 - Stores may also have an in-store kiosk for customers to print receipts themselves using their card.
 - Some stores can also retrieve purchases made by check using the account number on a blank check.
- Investigators can pick up the printed receipts from the case, or ask the case to email or fax the receipts to the health department to facilitate rapid transfer of information. If these are not options, receipts can be mailed.

2. Digital receipts – gathered by public health/agriculture agency

- Some stores can find itemized transaction information in their digital system using details from the case's bank statements.
- The Department of Agriculture (or other agency with jurisdiction) must work with the store or their corporate contact to find out what information is needed to find the case's receipts in their digital transaction files. The information needed to find the case's digital receipts varies by store.
- Ask the case to look at paper or online credit card/bank statements and provide the needed details for all food purchases during the time period of interest (typically **the month** prior to illness onset). This may include:
 - Location of purchase
 - Date of purchase
 - Transaction number (if available – may or may not be listed depending on bank/credit card company)
 - Time of purchase (if available – more important if transaction number is not available)
 - Total dollar amount of transaction
- It is important to stress to the case that no part of the credit/debit card number needs to be shared.

Example credit card/bank statement:

Transaction number



Transactions				
Trans Date	Post Date	Card Reference Number	Description	Amount
				\$100.00
				\$75.00
03/05		6542950EHRP1N5BY9M		\$8.60
03/11		7541823EN0618ZAJXM		\$24.00
03/12		6541734ERTAXGHAVYM		\$29.00

- The store may require written consent from the case to access these records. An email from the case or a letter from the epidemiologist confirming the case's verbal consent will usually suffice.
 - See our website for a template that can be used for this purpose.

Appendix 2. Example form for government agency request for customer information (Kroger, CDC request)



The Kroger Co., 1014 Vine Street, Cincinnati, OH 45202-1100

GOVERNMENT AGENCY REQUEST FOR CUSTOMER PERSONALLY IDENTIFIABLE INFORMATION

Kroger aims to protect its customers' personally identifiable information through its compliance with the Kroger Privacy Policy (found at www.kroger.com). Kroger requires that all requests for disclosure of customer personally identifiable information from third parties be in writing. This form should not be used for customer information obtained by means of a customer's use of the pharmacy.

1. **Agency making request:** Centers for Disease Control

Contact name: [REDACTED]

Address: 1600 Clifton Road NE Atlanta, GA 30329

Phone number: [REDACTED]

2. **Information requested from Kroger. Please limit requests for information to the minimum information necessary to accomplish the intended purpose. If the request can be met without Kroger's disclosure of personally identifiable information, please explain.**

Shopper card history for phone number [REDACTED] from 11/1/2015 to 1/1/2016, *specifically looking for [REDACTED] purchases of any brand or type [REDACTED]*

3. **Reason for request:**

To gather lot information to help determine [REDACTED]
[REDACTED] to help protect additional persons from becoming ill due to this product.

5. **If requesting personally identifiable information, please indicate the permitted exception to the Kroger Privacy Policy.**

 express permission from customer (attach signed Kroger Customer Permission Form)

X disclosure required by law or legal process (please indicate applicable state or federal statute):

Public Health Service Act section 301

Signature: [REDACTED] **Title:** [REDACTED] Outbreak Response and Prevention Branch
Centers for Disease Control and Prevention

Print Name: [REDACTED] **Date:** [REDACTED]/2016

[REDACTED]

Appendix 3-1. Shopper History Request Example (Tennessee)

To whom it may concern,

We recently requested records from your agency as part of an ongoing disease outbreak investigation in which there are reported illnesses in the community. We are requesting **(insert retailer name)** provide customer information for **(insert shopper card number/ or credit/debit)** from **(insert date range)**. The authority to collect this information comes from the Communicable Diseases Rules of the Tennessee Code Annotated. These rules give us the explicit authority to collect this type of information, which is essential to our public health investigation. Please see the specific chapter that references this authority below.

1200-14-1-.15 GENERAL MEASURES FOR THE EFFECTIVE CONTROL OF DISEASE OUTBREAKS. (1) It shall be the duty of the local health officer or the Commissioner or his designated representative, on receiving a report of a communicable disease, or of a suspected epidemic of disease or of a suspected case of a disease of public health significance to:

- (a) Confer with the physician, laboratory, hospital, or person making the report;*
- (b) Collect such specimens for laboratory examination as may be necessary to confirm the diagnosis of the disease and/or to find the source of the infection or the epidemic;*
- (c) Obtain all names and information necessary to identify and contact all persons potentially exposed to the source of the disease outbreak as needed to protect the public health;*
- (d) Make a complete epidemiological investigation to include (but not limited to): review of appropriate medical and laboratory records of affected persons and controls, interviews of affected persons and controls, and recording of the findings on a communicable disease field record; and*
- (e) Establish appropriate control measures which may include examination, treatment, isolation, quarantine, exclusion, disinfection, immunization, disease surveillance, closure of establishment, education, and other measures considered appropriate by medical experts for the protection of the public's health.*

<https://www.tn.gov/content/dam/tn/health/documents/1200-14-01.pdf>

Appendix 3-2. Shopper History Request Example (New York)

Official Letterhead

[Date]

[Contact

Information]

To Whom it may concern:

The [XXXXXXXXXXXX Department of Health] (Department) is currently investigating a possible food-borne illness. To conduct this investigation, the Department must review the foods that were purchased or consumed by people who became ill. Consequently, the Department is hereby requesting [enter store name] provide the purchase history associated with the loyalty card for [patron name and/or loyalty card number] for the dates of [XX/XX/XXXX to XX/XX/XXXX]. Please provide this information to [Department of Health Employee Name] with the Department at [Employee Email Address] as soon as possible.

The Department is requesting this information pursuant to the Commissioner of Health's authority under [NYS Public Health law (PHL) section 206(1)(d)] to investigate the causes of disease, epidemics, the sources of mortality, and the effect of localities, employments and other conditions upon the public health. This information is critical to our investigation. If you refuse to provide this information, the Department, pursuant to [NYS PHL § 206(4)(a)], has the authority to subpoena this information. Thank you in advance for your cooperation.

Sincerely,

[signatory]

Appendix 3-3. Shopper History Request Example (Minnesota)



Protecting, Maintaining and Improving the Health of All Minnesotans

[Date]

To Whom It May Concern:

[Name] has provided verbal consent to the Minnesota Departments of Health (MDH) and Agriculture (MDA) to obtain her complete purchase records from [Facility], as needed for a foodborne illness outbreak investigation.

As part of her verbal consent, she provided her membership number [Number]. MDH and MDA would like to receive a copy of all her purchases in [Timeframe].

Please feel free to contact me at [Phone] if I can be of any further assistance.

Sincerely,

[Epidemiologist]

Epidemiologist Senior Foodborne Diseases Unit
Foodborne, Waterborne, Vectorborne, and Zoonotic Diseases
Minnesota Department of Health
Post Office Box 64975
Saint Paul, Minnesota 55164-0975

An equal opportunity employer

Appendix 3-4. Shopper History Request Example with Confirmation of Case-Patient's Verbal Consent (Minnesota)

****INSERT AGENCY LETTERHEAD****

Month Day, Year

To Whom It May Concern:

[Name of case-patient] provided verbal consent to the [State Health or Agriculture Department] to obtain his/her complete purchase records from [Retailer], as needed for a foodborne illness outbreak investigation. As part of his/her verbal consent, he/she provided his/her membership number (#####). [State Health or Agriculture Department] would like to receive a copy of all his/her purchases between Month Day, Year to Month Day, Year.

Please feel free to contact me at ###.###.#### if I can be of any further assistance.

Sincerely,

Agency POC First and Last Name

Agency Name

Agency Address

City, State Zip code

Appendix 4. Template call script requesting shopper history from retailer (Minnesota)

Request to speak with someone in quality assurance (QA), food safety, or management.

Script:

Investigation Lead: Good morning/afternoon – my name is [NAME] and I work with [AGENCY], could I please speak with someone in QA, food safety, or management?

Good morning/afternoon – my name is [NAME] and I work with [AGENCY]. We are currently working jointly with [PARTNER AGENCY, IF APPLICABLE] on an investigation of a cluster of cases of [FOODBORNE ILLNESS].

No specific food item has been confirmed as the source of the outbreak at this time, but epidemiologic investigation has identified that a case of illness shopped at [FACILITY] prior to illness.

OR

[SUSPECT FOOD ITEM] has been identified as a possible source of illness, so we are reviewing case-patient purchase histories to identify possible [SUSPECT FOOD ITEM] purchases prior to illness. We have confirmed that one case of illness shopped at [FACILITY] prior to illness.

Note that we do not state the case's name over the phone, only their shopper card number.

As a part of the investigation, [AGENCY] is collecting purchase history for all of the cases of illness in Minnesota. We have received verbal permission from the [FACILITY] shopper case-patient to obtain their shopper history using their shopper card number. We are looking for [ALL PURCHASES OR SUSPECT FOOD ITEM] made during [TIMEFRAME] by the household using [SHOPPER NUMBER].

Do you need any additional information for me or have any questions regarding this request?

Thank you.

A verbal discussion routinely requires email follow-up, similar to examples in Appendices 3-1 through 3-4.

Appendix 5. Template Letter – Case-Patient requesting retailer release shopper history to government agency

Retail POC
Title
Address
City, State Zip code
Email
Phone
Fax

Dear XXXXX:

I am requesting that [Retailer] release my club card purchase history to the [State Health or Agriculture Department] for the purposes of a public health investigation. Please find my club card and personal information below.

Name of cardholder: _____

Street address: _____

City, State, and Zip code: _____

Phone number: _____

[Retailer] Card number (if card number is unknown, enter phone number linked to card): _____

Timeframe of interest: _____ to _____

The [State Health or Agriculture Department] would appreciate your faxing my purchase history directly to _____ at _____.

Thank you very much for your cooperation in this matter.

Sincerely,

Signature of Cardholder _____ Date _____

Appendix 6-1: Shopper History Example (Rhode Island)

Location	Register	UPC / PLU	Tran No Dept No	Employee	Time	Date	Quantity	Total	Flags
					14:12				
		4900002892 - SPRITE 12PK 12Z CAN	1 - Grocery				1	\$6.29	TAX
		4900002892 - SPRITE 12PK 12Z CAN	1 - Grocery				1	\$6.29	TAX
		4900002890 - COKE CLASSIC 12PK 12Z	1 - Grocery				1	\$6.29	TAX
		4900002890 - COKE CLASSIC 12PK 12Z	1 - Grocery				1	\$6.29	TAX
		64420930749 - DH CKE MIX YLLW 15.25Z	1 - Grocery				1	\$2.19	
		210000230215	1 - Grocery				-1	(\$1.31)	Electronic Store Coupons
		64420930749 - DH CKE MIX YLLW 15.25Z	1 - Grocery				1	\$2.19	
		210000230215	1 - Grocery				-1	(\$1.31)	Electronic Store Coupons
		4087 - TOMATOES PLUM	4 - Produce				1	\$1.01	W,NS
		68826702029 - SB H&H CREAM 64 OZ.	8 - Dairy				1	\$5.79	
		68826700134 - SB ORANGE SODA 2L	1 - Grocery				1	\$0.79	TAX
		68826700134 - SB ORANGE SODA 2L	1 - Grocery				1	\$0.79	TAX
		68826700134 - SB ORANGE SODA 2L	1 - Grocery				1	\$0.79	TAX
		68826700134 - SB ORANGE SODA 2L	1 - Grocery				1	\$0.79	TAX
		20540810000 - SB ITALIAN BREAD	10 - Bakery				1	\$1.79	W
		210000231818	10 - Bakery				-1	(\$0.80)	Electronic Store Coupons
		68826712470 - SB STWB SLC W/ASP22.5Z	6 - Frozen Food				1	\$4.49	
		210000235209	6 - Frozen Food				-1	(\$0.50)	Electronic Store Coupons
		20731770000 - SB OVN RST ROTIS CHK HT	24 - Prepared Foods				1	\$4.99	TAX,W
		1500007604 - GBR 2ND SWT POT 2PK 8Z	1 - Grocery				1	\$1.19	
		1500007602 - GBR 2ND PEAS 2PK 8Z	1 - Grocery				1	\$1.19	
		1500007604 - GBR 2ND SWT POT 2PK 8Z	1 - Grocery				1	\$1.19	
		4100000324 - LPTN NOODLE SOUP 4.5Z	1 - Grocery				1	\$1.79	
		210000262373	1 - Grocery				-1	(\$0.20)	Electronic Store Coupons
		41200322277	1 - Grocery				-1	(\$3.79)	Store Coupons Scanned
		41200322277	1 - Grocery				-1	(\$3.79)	Store Coupons Scanned
		41200322277	1 - Grocery				-1	(\$3.79)	Store Coupons Scanned
		41200322277	1 - Grocery				-1	(\$3.79)	Store Coupons Scanned
		2841200322277	1 - Grocery				-1	(\$3.79)	Store Coupons Scanned
								\$36.85	
								\$1.32	TaxAmount
								\$38.17	Total
								\$100.00	Cash Tendered
								\$61.83	Cash Back(0)
		Shopper Card Other Activity ACCT#						\$0.00	
		Loyalty Points Earned ACCT#						\$37.00	
									Total Time: 102 (1.70 minutes)
									Ring Time: 41 (0.68 minutes)
									Tender Time: 13 (0.22 minutes)
									Other Time: 48 (0.80 minutes)
									Special Sign Off: 0 (0.00 minutes)
									Non Checkout Time: 0 (0.00 minutes)

Appendix 6-2: Shopper History Example (Indiana)

Store:	[REDACTED]		
Transaction Start Time:	05/04/2019 12:04:20 PM	Transaction End Time:	05/04/2019 12:06:53 PM
Invoice Number:	[REDACTED]	Terminal:	[REDACTED]
Customer Number:	[REDACTED]	Receipt Number:	111111
Customer Name:	Doe, John	Cashier:	11111 : Jane Doe

	Quantity Sold	Unit Price	Ext Price	
Receipt Alias				Notes
SIX CHE RAV W/SAUC	1.000	\$5.99	\$5.99	Cucina di Carla Six Cheese Ravioli with Marinara Sauce
COLES CHEESESTICKS 11.50 OZ	1.000	\$4.89	\$4.89	Coles Cheese Sticks, with A Twist
DISC4			(\$2.89)	discount
COLES NACHO CHEESE PRETZEL STICK	1.000	\$4.89	\$4.89	Coles Pretzel Sticks, Filled with Pub Cheese
DISC4			(\$2.89)	discount
ECK SKLS TRY S SAU	1.000	\$4.39	\$4.39	Eckrich Skinless Turkey Smoked Sausage
DISC5			(\$1.89)	discount
OUI FRCH PEACH YOG	1.000	\$1.59	\$1.59	Yoplait Oui Yogurt, French Style, Peach
KRAFT COOL WHIP ORIGINAL WHIPPED	1.000	\$1.99	\$1.99	Cool Whip Whipped Topping, Original
UDRLY SMTH HND CRM	1.000	\$2.99	\$2.99	Udderly Smooth Hand Cream Original Formula
EE PANKO	1.000	\$2.29	\$2.29	Essential Everyday Bread Crumbs, Crispy, Panko, Plain
RAINBOW ROSE BUNCH 1CT	1.000	\$9.99	\$9.99	Rainbow Rose Bunch Dozen
PHILADELPHIA ORIGINAL CREAM CHEE	1.000	\$2.49	\$2.49	PHILADELPHIA ORIGINAL CREAM CHEE
PL SM CINN ROLL	1.000	\$1.79	\$1.79	Pillsbury Cinnamon Rolls, with Icing
FR BK BAN NUT LOAF	1.000	\$5.99	\$5.99	Fresh Baked Nut Loaf
SPARKLE PRINTS 1 ROLL	1.000	\$1.49	\$1.49	Sparkle Paper Towels, Full Sheet, Print, 1 Regular Roll
LEWIS NUTTY OAT	1.000	\$1.89	\$1.89	LEWIS NUTTY OAT
BELLA SUN LUCI SUN DRIED TOMATOE	1.000	\$3.99	\$3.99	Bella Sun Luci Tomatoes, Sun Dried, Halves
QUAKER CHEWY YOGURT COVERED GRAN	1.000	\$2.99	\$2.99	Quaker Chewy Yogurt Granola Bars, Strawberry
BC SCALLOPPOTATOES	1.000	\$1.99	\$1.99	Betty Crocker Scalloped Potatoes
[REDACTED]	4.000	\$1.00	\$4.00	[REDACTED]
YELLOW ONIONS 3.0 LB	1.000	\$2.99	\$2.99	YELLOW ONIONS 3.0 LB
ESSENTIAL EVERYDAY MINI PRETZELS	1.000	\$1.79	\$1.79	ESSENTIAL EVERYDAY MINI PRETZELS
HUNT'S MANWICH SLOPPY JOE SAUCE	1.000	\$1.25	\$1.25	HUNT'S MANWICH SLOPPY JOE SAUCE
PEPPERS GREEN BELL	1.000	\$1.89	\$1.89	PEPPERS GREEN BELL
JELL-O GELATIN DESSERT STRAWBERR	1.000	\$1.29	\$1.29	JELL-O GELATIN DESSERT STRAWBERRY
JELL-O GELATIN DESSERT STRAWBERR	1.000	\$1.29	\$1.29	JELL-O GELATIN DESSERT STRAWBERRY
EDDY OREGANO LEAVES	1.000	\$1.79	\$1.79	Essential everyday OREGANO LEAVES
GRAPES RED SELESS	2.890	\$1.25	\$3.44	GRAPES RED SEEDLEESS
Check - ECC			\$74.30	
SUBTOTAL			\$73.29	
IN 7%			\$1.01	
TOTAL			\$74.30	
TOTAL TENDERED			\$74.30	
Change			\$0.00	
			\$0.00	
--- Card Information ---			\$0.00	
			\$0.00	
Card Type: TELSC Swiped			\$0.00	
Account #: XXXXXXXXXXXXXXXXXXXX			\$0.00	
Exp Date :			\$0.00	
			\$0.00	
Amount: 74.30			\$0.00	
Approval #: XXXXXX			\$0.00	
Date: 5/4/19 12:06:53 PM EDT			\$0.00	
			\$0.00	
Reference #: XXXXXXXXXXXX			\$0.00	
Signature Captured			\$0.00	

Appendix 7: Example written summaries of shopper history findings for sharing with investigation partners

Example 1

The case-patient purchased raw yellow onions in one 3.0 lb size pre-packaged bag on 5/4/2019 from Grocery Store A located at 123 Main St. in Capital City. Additional information about the onions can be obtained by contacting the retailer.

Example 2

A cluster of eight *Salmonella* Newport infection case-patients with illness onsets ranging from 10/28 to 11/4 were identified by whole genome sequencing (WGS). All isolates are related within two alleles by cgMLKST. All case-patients reported “definitely” or “maybe” eating pre-cut fruit during their exposure period and all reported purchasing the fruit at either Store A or Store B using shopper cards. Permission to request shopper card history was obtained and the stores were asked to provide shopper history for the last two weeks in October and first week of November.

Case ID	Onset date	Grocery Store	Reported consuming pre-cut fruit	Pre-cut fruit on shopper card history	Shopper card history detail
1	11/4	Store A	Yes	Yes	Watermelon chunks in clamshell on 11/1
2	10/28	Store A	Yes	Yes	Watermelon chunks in a clamshell on 10/25
3	11/3	Store B	Maybe	Yes	Cantaloupe, honeydew and watermelon medley in clamshell 10/29, cantaloupe in clamshell 11/2
4	11/2	Store A	Yes	Yes	Cantaloupe chunks in clamshell 10/30
5	11/3	Store A	Maybe	Yes	Cantaloupe, honeydew and watermelon medley in clamshell 10/31
6	11/4	Store B	Yes	Yes	Cantaloupe chunks in clamshell 11/3, watermelon chunks in clamshell 10/29, 11/1, 11/3
7	11/2	Store A	Yes	Yes	Cantaloupe chunks in clamshell 10/30, watermelon chunks in clamshell 10/30
8	11/1	Store A	Yes	Yes	Cantaloupe chunks in clamshell 10/30, Watermelon chunks in clamshell 10/30