

Shopper Cards and Beyond – Success Stories of Using Consumer Purchase Data to Solve Outbreaks

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Shopper History Can Help Solve Outbreaks

Outbreak investigators use consumer food-purchase data (shopper history) to help solve outbreaks in multiple ways. First, investigators use the data in the epidemiologic investigation to generate hypotheses or confirm a food item of interest. Second, investigators use the data in the traceback investigation to identify the source of the food vehicle. The use of food-purchase data is a valuable tool to rapidly identify contaminated products and remove them from the marketplace to prevent additional illness.



Collaborations between Government and Industry

Challenges to obtaining shopper history in a timely manner include concerns about consumer confidentiality, lack of clarity regarding consumer consent, and lack of familiarity with relevant points of contact, policies, and authorities. Federal and state public health and food regulatory partners are collaborating with the retail industry to overcome these challenges, collecting and using shopper histories to investigate outbreaks while safeguarding consumer privacy.

Effective government-industry collaboration leads to solving outbreaks faster so that appropriate action can be taken to meet the common goal of providing safe food to consumers.

Beyond Shopper Cards

Traditionally, investigators have used shopper card or store membership accounts to obtain consumer shopper history. More recently, investigators and industry partners have collaborated on innovative strategies to obtain a record of purchases made by other methods.

Methods

Using outbreak investigation records and reports—particularly from CDC, FDA, FSIS, and state agencies—we gathered success stories in which shopper history was obtained via various methods and in various contexts to solve outbreaks.

Obtaining Shopper History – Menu of Potential Options

Investigators can use information obtained from cases/consumers to work with retailers and others to obtain shopper history via various methods:

Method/context of purchase	Partners to work with	Information Needed	
Shopper/loyalty card and membership program	Retailer	Card or membership number	
Debit/credit card	Retailer, financial institution	Card number; often via last four digits; retailers have established consumer phone hotlines	
Check/check-cashing card	Retailer	Unique check-cashing card number (required by some retailers to purchase with check)	
Electronic Benefits Transfer (EBT) card	Retailer	EBT card number	
Online/mobile phone app shopping	Retailer, third-party delivery service	Online/app shopping system account	
Meal-delivery service	Meal-delivery service company	Meal-delivery service account	

Success Stories

2019 *Salmonella* Dublin – EBT Card

In a 2019 outbreak of 13 *Salmonella* Dublin illnesses from 8 states linked to ground beef, one case used an EBT card to make purchases; the EBT card number was used to look up and identify ground beef purchases, which provided supporting evidence that led to a recall.

2018 *E. coli* O26 – Credit Card, Check, and Receipt

In a 2018 outbreak of 18 *E. coli* O26 illnesses from 3 states associated with ground beef, 3 different mechanisms allowed investigators to obtain purchase data that led to identification of the ground beef source and a supplier-level recall, as follows:

- Retailer 1: This retailer established a phone line for cases to call with their credit card information, which allowed the retailer to look up their purchases.
- Retailer 2: This retailer looked up a case's purchases made by check using the number of a check-cashing card, which is required by the retailer for check purchases.
- Retailer 3: One case provided a receipt for ground beef purchase from this retailer.

2014–15 *Listeria monocytogenes* – Receipt

In a 2014–15 outbreak of 35 *Listeria monocytogenes* illnesses from 12 states linked to commercially produced prepackaged caramel apples, one case provided an original retailer receipt that verified purchase of caramel apples prior to illness onset; this investigation led to a recall.

2013 Hepatitis A – Membership Program

In a 2013 outbreak of 165 Hepatitis A illnesses from 10 states associated with pomegranate arils, the retailer provided membership program records that allowed investigators to implicate a product, resulting in recalls. Additionally, the retailer used purchase records to identify and notify 250,000 customers who had purchased the product via automated phone call.

2011 *Salmonella* Enteritidis – Shopper Cards

In a 2011 outbreak of 43 *Salmonella* Enteritidis illnesses from 5 states, retailer shopper card records showed that cases had purchased pine nuts from bulk bins, which led to product recalls.

2010 *Salmonella* Montevideo – Membership Program

In a 2010 outbreak of 272 *Salmonella* Montevideo illnesses from 44 states, retailer membership program records allowed investigators to identify salami product purchases in common among cases and led to product recalls; pepper was later identified as the contaminated ingredient.

Discussion/Conclusion: Government and industry partners share a common goal to protect consumers by solving outbreaks and taking action to remove contaminated food from commerce as quickly as possible. Industry can help solve outbreaks by being innovative and using multiple approaches to obtain consumer food purchase records and by collaborating during investigations with government partners. Increasingly, efforts are being made to strengthen these partnerships and enhance cooperation during outbreak investigations.

Shopper History Outbreak Partnership (SHOP):

SHOP is a federal-state collaborative effort that promotes and enhances the use of consumer purchase data to investigate foodborne outbreaks.

